JOHN N. HUGHES
ATTORNEY AT LAW
PROFESSIONAL SERVICE CORPORATION
124 WEST TODD STREET
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March 4, 2016

James Gardner
Acting Executive Director
Public Service Commission
211 Sower Blvd.
Frankfort, KY 40601

Re: Atmos Energy Corporation
Case No. 2015-00343

Dear Mr. Gardner:

Atmos Energy Corporation submits its responses to the Attorney General's First Data Request. A petition for confidentiality for certain responses to the Attorney General's responses is also being filed. I certify that the electronic documents are true and correct copies of the original documents.

If you have any questions about this filing, please contact me.

Submitted By:

Mark R. Hutchinson
Wilson, Hutchinson and Littlepage
611 Frederica St.
Owensboro, KY 42301
270 926 5011
randy@whplawfirm.com

And

John N. Hughes
124 West Todd St.
Frankfort, KY 40601
502 227 7270
jnhughes@johnnhughespsc.com

Attorneys for Atmos Energy Corporation

PETITION

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

Application of Atmos Energy Corporation	)	
for an Adjustment of Rates	)	Case No. 2015-00343
and Tariff Modifications	)	

PETITION FOR CONFIDENTIALITY FOR ITEMS 1, 13, 18, 21, 39, 43, 44, 45, 46, AND 47 OF THE ATTORNEY GENERAL'S FIRST DATA REQUEST

Atmos Energy Corporation (Atmos Energy) petitions for an order granting confidential protection of its responses to Items 1;13; 18; 21; 39; 43; 44; 45; 46 and 47 of the Attorney General's first data request. This petition is filed pursuant to 807 KAR 5:001, Section 13 and KRS 61.878. The information sought in the data requests is commercial information which if disclosed could cause substantial competitive harm to Atmos Energy. This information is not publicly available. It would be difficult or impossible for someone to discover this information from other sources. If this information were available to competitors in this form, they could use it to the competitive detriment of Atmos Energy. This information is not generally disclosed to non-management employees of Atmos Energy and is protected internally by the Company as proprietary information. The disclosure of this proprietary information would result in significant or irreparable competitive harm to Atmos Energy by providing its competitors with non-reciprocal competitive advantage. No public purpose is served by the disclosure of such information.

The Kentucky Open Records Act exempts from disclosure certain confidential or proprietary information. KRS 61.878(1)(c). To qualify for this exemption, and, therefore, maintain the confidentiality of the information, a party must establish that disclosure of the information would permit an unfair commercial advantage to competitors of the party seeking confidentiality.

The Attorney General's requests 43 through 47 seek information about confidential special contracts:

> 43. Please provide an unredacted copy of the Company's confidential response to PSC-1-59, Attachment 55 in executable electronic (Excel) format with all formulae and links intact.
>
> 44. Please provide a copy of all correspondence, emails, internal reports, notes, etc. concerning contract negotiations for negotiated rates for each special contract customer involved subsequent to the Commission's Order in Case No. 2013-00148. In this response, please categorize and separate all documents by individual customer.
>
> 45. In Case No. 2013-00148, the Commission's Order stated: "The Commission will therefore require Atmos-Ky. to internally conduct and maintain studies, analyses, reports, quantifications, etc., that demonstrate the threat of bypass by each of its special-contract customers, and that the special contracts continue to generate sufficient revenue to cover variable costs and contribute to fixed costs. This information is to be provided in Atmos-Ky.'s next base-rate case application." (page 38)
> Please identify specifically where each of these requirements are contained in the Company's filing by individual customer or contract. If such information has not specifically been provided within the Company's application, please provide each requirement by customer. In this response, please provide in hardcopy as well as in executable electronic (Excel) format with all formulae and links intact.
>
> 46. If not specifically provided in response to OAG-1-73 above, please provide the following:
> a. a copy of all documents, including Commission evaluations, that provided the acceptance by the Commission of each contract for each special contract customer;
> b. an identification of each customer by rate schedule taking discounted service that is included in the test year in this case;
> c. the actual rate(s) currently being charged for each

special contract customer, as well as the applicable billing determinants;

d. the revenues collected from each special contract customer;

e. the revenues that would have been collected at full tariff rates from each special contract customer, as well as the identification of the applicable full tariff rate schedule;

f. the treatment of the revenue shortfall (difference between full rates and discounted rates revenues) in this case;

g. all records, documents, evaluations and analyses undertaken by or for the Company associated with each special contract customer that supports the necessity for a tariff rate lower than the full tariff rate;

h. copies of each special contract service contract; map(s) showing the location of each special contract customer and proximity to closest transmission pipeline;

j. the annual throughput, revenues collected, and full tariff revenues associated with discounted services provided by the Company separated by rate schedule for each of the last three years;

k. list of each Atmos affiliate that provides gas supply or storage services to each special contract customer; and,

1. itemization and gross investment of dedicated facilities (e.g., mains, compressors, regulators, and services) used to serve each special contract customer.

47. Please provide all workpapers, source documents, electronic spreadsheets, etc. that supports the Company's verification for each of the 17 existing special contract customers "that special contract rates continue to generate sufficient revenue to cover variable costs and contribute to fixed system costs that would otherwise be borne by tariff customers" (Page 14, Lines 12 through 15 of Mr. Smith's Direct Testimony).

The Attorney General also requests information about certain customer curtailments in item 1-39:

39. For each request for interruption or curtailment of interruptible customers during the last five years, please provide the date, duration, requested level of load reduction, and actual load reduction for each request

The responses to these items provide information that identifies customer name, customer identifiable information, such as contracts, location, and specific volumetric usage and plant facilities associated with the customer. All of this information is protected by the scope of confidentiality. The applicable statutes provide that "records confidentially disclosed to an agency or required by any agency to be disclosed to it, generally recognized as confidential or proprietary, which if openly disclosed would permit an unfair commercial advantage to competitors of the entity that disclosed the records" shall remain confidential unless otherwise ordered by a court of competent jurisdiction." KRS 81.878(1).

The natural gas industry is very competitive. Atmos Energy has competitors, who could use this information to their advantage and to the direct disadvantage of Atmos Energy. Atmos Energy would be at a competitive threat of loss of business due to the ability of its competitors to leverage the information to their advantage. The public disclosure of the customer name, customer identifiable information, monetary terms negotiated with each customer and critical monetary terms would permit an unfair advantage to those competitors. With the identity of the customer and the knowledge of the contract terms, competitors would have inside information to target these customers. For these reasons, the customer name, customer identifiable information, and monetary terms in the contracts are exempt from public disclosure pursuant to KRS 61.878(c)(1).

As for the information specifically requested in Items 43 through 47 of the Attorney General's request, the Commission has previously ruled that these contract submissions are confidential in the prior rate case 2013-00148. The contract terms are also excluded from public disclosure by KRS 278.160(3). This same information is the subject of a pending petition for confidentiality in response to the Commission's first data request in this case.

The information requested also includes maps of Atmos Energy's' and its customers' infrastructure. Exemption from public disclosure of the information relevant to this petition are provided in KRS 61.878(1)(m). Under the Kentucky Open Records Act, the Commission is entitled to withhold from public disclosure information disclosed to it to the extent that open disclosure would "have a reasonable likelihood of threatening the public safety by exposing a vulnerability in preventing, protecting against, mitigating, or responding to a terrorist act and limited to: . . ,

(f) infrastructure records that expose a vulnerability referred to in this subparagraph through the disclosure of the location, configuration, or security of critical systems, including public utility critical systems. These critical systems shall include but not be limited to information technology, communications, electrical, fire suppression, ventilation, water, wastewater, sewage, and **gas** systems and;

(g) The following records when their disclosure will expose a vulnerability referred to in this subparagraph: **detailed drawings, schematics**, **maps**, or **specifications of structural elements**, floor plans, and operating, utility, or security systems of any building or facility owned, occupied, leased, or maintained by a public agency."

This Commission has recognized that similar reports with diagrams and maps "are infrastructure records that disclose the location, configuration, or security of public utility systems" and therefore, should be treated as confidential. See Case No. 2014-00166 *In the Matter of 2104 Integrated Resource Plan of Big Rivers Electric Corporation,* KY PSC Order, p. 7 (August 26, 2014).

The information contained in the specified document may provide detailed information about Atmos' Energy's distribution system and the location of critical components; as such, the disclosure of which could threaten the public safety generally and provide sensitive information relevant to the security against terroristic events.

The Attorney General also seeks confidential information about the company's state and federal income tax returns in items 18 and 21;

> 18. Please provide a schedule showing the history of the taxable income and losses for AEC in total and separated into utility, nonregulated, and other for each fiscal year since 2006. Show the taxable income or loss in each fiscal year; the loss carrybacks, if any, to the year carried back; the carryforward balance at the beginning of the fiscal year, if any; and the related carryforward ADIT at the end of the fiscal year, if any. In addition, please further separate the utility amounts into the Kentucky/Mid-States division, the Kentucky division/jurisdiction, and all other utility divisions. Provide all calculations, assumptions, data, and electronic spreadsheets with formulas intact. In addition, please provide all documents, including studies and/or other analyses developed by the Company to support the calculations each year.
>
> 21. Please refer to electronic workpaper "Att2 - ADIT for KY - Fall 2015" provided in response to Staff 1-59. Refer further to cell rows 105, 106 and 107 on worksheet tab "Division 002" that provide the account 190 ADIT amounts for "FD-NOL Credit Carryforward - Non Reg", "FD-NOL Credit Carryforward - Utility", and "FD-NOL Credit Carryforward- Other", respectively.
> a. Please provide a detailed description of the methodology used to disaggregate or separately determine the actual and projected NOL carryforward amounts for utility, nonregulated, and other.
> b. Please provide copies of all supporting documentation used to quantify the actual NOL carryforward amounts in fiscal years 2013, 2014, 2015, the base year, and the test year.
> c. Balances in these lines changed on a quarterly basis until the last month of actual data provided in June 2015. Please explain how those quarterly changes in the NOL carryforward amounts are determined separately for the utility and nonregulated.

d. Please provide the actual balances for utility and nonregulated NOL carryforward amounts as of September 30, 2015 and December 31, 2015 and provide copies of all supporting documentation used to quantify the balances.

KRS 61.878(1)(k) exempts from public disclosure "all public records or information the disclosure of which is prohibited by federal law or regulation." Federal law codified in 26 U.S.C.A. 5 6103(a), prohibits state officials from publicly disclosing any federal income tax return or its contents, making the requested federal income tax return exempt.

Returns and return information shall be confidential, and except as authorized by this title ... no officer or employee of any State ... shall disclose any return or return information obtained by him in any manner in connection with his service as such an officer or an employee or otherwise or under the provisions of this section....

The term "return information" means a taxpayer's identity, the nature, source, or amount of his income, payments, receipts, deductions, exemptions, credits, assets, liabilities, net worth, tax liability, tax withheld, deficiencies, overassessments, or tax payments, whether the taxpayer's return was, is being, or will be examined or subject to other investigation or processing, or any other data, received by, recorded by, prepared by, furnished to, or collected by the Secretary with respect to a return or with respect to the determination of the existence, or possible existence, of liability (or the amount thereof) of any person under this title for any tax, penalty, interest, fine, forfeiture, or other imposition, or offense. The effect of these two statutes is to preclude disclosure of the federal tax return.

Additionally, KRS 131.190(1) requires that all income tax information filed with the Kentucky Revenue Cabinet be treated in a confidential manner:

131.190 Information acquired in tax administration not to be divulged -- Exceptions.

(1) (a) No present or former commissioner or employee of the Department of Revenue, present or former member of a county board of assessment appeals, present or former property valuation administrator or employee, present or former secretary or employee of the Finance and Administration Cabinet, former secretary or employee of the Revenue Cabinet, or any other person, shall intentionally and without authorization inspect or divulge any information acquired by him of the affairs of any person, or information regarding the tax schedules, returns, or reports required to be filed with the department or other proper officer, or any information produced by a hearing or investigation, insofar as the information may have to do with the affairs of the person's business.

Thus, the requested state income tax return is also confidential and protected from disclosure by KRS 61.878(1)(1), which exempts from the Kentucky Open Records Act "...public records or information the disclosure of which is prohibited or restricted or otherwise made confidential by enactment of the General Assembly."

This information was determined to be confidential in Atmos Energy's prior rate application - Case No 2013-00148.

The Attorney General's request 1 seeks workpapers:

> 1. Please provide all workpapers not already provided in the filing and/or in response to the Staff discovery. Provide all electronic workpapers with formulas and links intact, including all supporting and linked workpapers.

Attorney General request 13 relates to the Atmos Energy financing plan, which details the company's current and expected financial activities, assumptions, plans and other detailed information about the company's financial condition and expectations.

> 13. Please refer to the Company's response to Staff 1-03, which provides the components of the capital structure for Atmos Energy Corporation for the last ten calendar years using ending balances and daily average balances of short term debt. Please identify and describe all reasons why the Company increased the common equity ratio to 53.3% in 2014 from 50.0% or less in prior years by issuing a significant amount of common equity. Provide a copy of all documents, including studies and/or other analyses developed by the Company to support the issuance of such a significant amount of common equity. In addition, explain why the Company did not issue long term debt in lieu of some or all of the issuance of common equity.

Certain workpapers associated with Mr. Schneider's testimony include documents related to the Sarbanes-Oxley audit. The financing plan associated with the information requested in AG 1-13 includes information about accounting controls; provides information that details the internal financial operations of the company, procedures, methodologies and controls for assuring financial accuracy, all of which directly expose the most sensitive details of the company's financial workings.

The Supreme Court of Kentucky has held that "disclosure of [this financial information] would unfairly advantage competing operators. The most obvious disadvantage may be the ability to ascertain the economic status of the entities without the hurdles systematically associated with acquisition of such information. *Marina Management Servs. v. Cabinet for Tourism, Dep't of Parks*, 906 S.W.2d 318, 319 (Ky. 1995); see also *Hoy v. Kentucky Indus. Revitalization*

Auth., 907 S.W.2d 766, 768 (Ky. 1995) ("It does not take a degree in finance to recognize that such information concerning the inner workings of a corporation is generally recognized as confidential or proprietary and falls within the wording of KRS 61.878(1)(c).").

Atmos Energy requests that the information be held confidentially indefinitely. The statutes cited above do not allow for disclosure at any time. Given the competitive nature of the natural gas business and the efforts of non-regulated competitors to encroach upon traditional markets, it is imperative that regulated information remain protected and that the integrity of the information remain secure.

For these reasons, Atmos Energy requests that the items identified in this petition be treated as confidential. Should the Commission determine that some or all of the material is not to be given confidential protection, Atmos Energy requests an hearing prior to any public release of the information to preserve its rights to notice of the grounds for the denial and to preserve its right of appeal of the decision.

Submitted by:

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Owensboro, KY 42303
270 926 5011
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Randy@whplawfirm.com

John N. Hughes
John N. Hughes
124 West Todd Street
Frankfort, KY 40601
502 227 7270
jnhughes@johnnhughespsc.com
Attorneys for Atmos Energy Corporation

MOTION

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

Application of Atmos Energy Corporation	)
for an Adjustment of Rates	) **Case No. 2015-00343**
and Tariff Modifications	)

MOTION TO DEVIATE FROM REGULATION

Atmos Energy Company, (Atmos Energy) by counsel, moves the Public Service Commission ("Commission") to grant authorization pursuant to 807 KAR 5:001 § 22 to deviate from the requirement that it upload an electronic version of all papers filed in this case to the Commission's website using the Commission's E-Filing System. Atmos Energy additionally moves the Commission to grant approval pursuant to 807 KAR 5:001 § 22 to deviate from the requirement that it file with the Commission one copy in paper medium of all papers electronically filed with the Commission. This motion is based on the number, size and nature of the files associated with Mr. Watson's depreciation study, requested by the Attorney General in item 1 of the first data request, more particularly:

AG_1-01_Attachment 3 – Watson Alliance Study KY Direct Workpapers Final, 586 Files.
AG_1-01_Attachment 4 – Watson Alliance Study Midstates GO Workpapers Final, 142 Files.
AG_1-01_Attachment 5 – Watson Alliance Study Shared Services Unit Workpapers Final, 387 Files.

1. On October 28, Atmos Energy filed its notice of election of use of electronic filing procedures.

2. On that same date, the Commission acknowledged receipt of the notice of election of use of electronic which requires that documents submitted to the Commission in this proceeding must comply with the rules of procedure adopted by the Commission found in 807 KAR 5:001 and that any deviation from these rules must be submitted in writing to the Commission for consideration.

3. 807 KAR 5:001 § 8(3) provides: "All papers shall be filed with the commission by uploading an electronic version using the commission's E-Filing System. In addition, the filing party shall file one (1) copy in paper medium with the commission as required by subsection (12)(a)2 of this section."

4. 807 KAR 5:001 § 8(12)(a)(2) provides: "A paper shall be consider timely filed with the commission if: "The paper, in paper medium, is filed at the commission's offices no later than the second business day following the successful electronic transmission."

5. Atmos Energy seeks a deviation from the Commission's Rules of Procedure (807 KAR 5:001) for approval to file the attachments referenced above in electronic format on a compact disk (CD), rather than as an upload into the E-Filing system. Each of the three depreciation studies is broken out into dozens of folders and sub-folders containing raw and unformatted data files, graphs, statistics, analyses, fitting of the curves, and other supporting data. There are approximately 1,100 files in various program formats, folders and sub-folders, which cannot be assembled into a document capable of electronic submission into the E-File system. Viewing the data on CD allows for easier understanding of the documentation organization supporting each study.

6. Atmos Energy also requests authority to deviate from the Commission's Rules of Procedure by substituting a CD for the paper copy of those attachments, due to the voluminous nature – approximately several thousand pages – and large number of files, folders and sub folders.

7. Atmos has served the Commission and the Attorney General with a CD containing the attachments.

WHEREFORE, Atmos Energy requests deviations from the requirement that parties upload all filings to the Commission's E-Filing System and submit a copy of the filing in to the Commission in paper medium and allow service of a CD of the attachments to the Commission and Attorney General in lieu of the requirements of 807 KAR 5:001.

Submitted by:

Mark R. Hutchinson
Wilson, Hutchinson & Littlepage
611 Frederica St.
Owensboro, KY 42303
270 926 5011
Fax: 270-926-9394

And

John N. Hughes
124 West Todd St.
Frankfort, KY 40601
502 227 7270
jnhughes@johnnhughespsc.com

Attorneys for Atmos Energy Corporation

Certification:

I certify that this is a true and accurate copy of the documents to be filed in paper medium; that the electronic filing was transmitted to the Commission on March 4, 2016; that one copy of the filing will be delivered to the Commission within two days; and that no party has been excused from participation by electronic means.

AFFIDAVITS

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF	)	
RATE APPLICATION OF	)	Case No. 2015-00343
ATMOS ENERGY CORPORATION	)	

AFFIDAVIT

The Affiant, Mark A. Martin, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

Mark A. Martin

STATE OF KENTUCKY

COUNTY OF DAVIESS

SUBSCRIBED AND SWORN to before me by Mark A. Martin on this the 1st day of March, 2016.

PEARL ANN SIMON
NOTARY PUBLIC
KENTUCKY, STATE AT LARGE
MY COMMISSION EXPIRES 09-26-17
NOTARY ID 496385

Notary Public - State of KY at Large

My Commission Expires: Sept. 26, 2017

Notary ID: 496385

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF RATE APPLICATION OF ATMOS ENERGY CORPORATION	)))	Case No. 2015-00343

AFFIDAVIT

The Affiant, Pace McDonald, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

[signature]
Pace McDonald

STATE OF Texas

COUNTY OF Dallas

SUBSCRIBED AND SWORN to before me by Pace McDonald on this the 3rd day of March, 2016.

NOTARY PUBLIC STATE OF TEXAS
PAMELA L. PERRY
My Commission Expires
October 29, 2016

[signature]
Notary Public

My Commission Expires: 10-29-16

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF RATE APPLICATION OF ATMOS ENERGY CORPORATION	)))	Case No. 2015-00343

AFFIDAVIT

The Affiant, Paul H. Raab, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

Paul H. Raab

STATE OF Maryland

COUNTY OF Montgomery

SUBSCRIBED AND SWORN to before me by Paul H. Raab on this the 1st day of March, 2016.

YAN FENG NOTARY PUBLIC MONTGOMERY COUNTY, MD MY COMMISSION EXPIRES 05-13-2019

Notary Public

My Commission Expires: 05/13/2019

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF	)	
RATE APPLICATION OF	)	Case No. 2015-00343
ATMOS ENERGY CORPORATION	)	

AFFIDAVIT

The Affiant, Jason L. Schneider, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

Jason L. Schneider

Jason L. Schneider

STATE OF Texas
COUNTY OF Dallas

SUBSCRIBED AND SWORN to before me by Jason L. Schneider on this the 1st day of March, 2016.

NOTARY PUBLIC STATE OF TEXAS
KATHERINE E. PARKS
My Commission Expires
July 16, 2018

Katherine E. Parks

Notary Public

My Commission Expires: 7/16/18

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF	)	
RATE APPLICATION OF	)	Case No. 2015-00343
ATMOS ENERGY CORPORATION	)	

AFFIDAVIT

The Affiant, Gary L. Smith, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

Gary L. Smith

STATE OF Texas

COUNTY OF Dallas

SUBSCRIBED AND SWORN to before me by Gary L. Smith on this the 1st day of March, 2016.

NOTARY PUBLIC STATE OF TEXAS
PAMELA L. PERRY
My Commission Expires
October 29, 2016

Notary Public

My Commission Expires: 10-29-16

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF	)	
RATE APPLICATION OF	)	Case No. 2015-00343
ATMOS ENERGY CORPORATION	)	

AFFIDAVIT

The Affiant, James H. Vander Weide, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

James H. Vander Weide
James H. Vander Weide

STATE OF NC
COUNTY OF Durham

SUBSCRIBED AND SWORN to before me by James H. Vander Weide on this the 29 day of February, 2016.

CHRISTIANA S CHAMBERLAIN
Notary Public
Durham Co., North Carolina
My Commission Expires Sept. 10, 2019

Christiana S Chamberlain
Notary Public
My Commission Expires: 9/10/19

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF	)	
RATE APPLICATION OF	)	Case No. 2015-00343
ATMOS ENERGY CORPORATION	)	

AFFIDAVIT

The Affiant, Gregory K. Waller, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

[signature]
Gregory K. Waller

STATE OF Texas
COUNTY OF Dallas

SUBSCRIBED AND SWORN to before me by Gregory K. Waller on this the 2nd day of March, 2016.

NOTARY PUBLIC STATE OF TEXAS
PAMELA L. PERRY
My Commission Expires
October 29, 2016

[signature]
Notary Public
My Commission Expires: 10-29-16

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF	)	
RATE APPLICATION OF	)	Case No. 2015-00343
ATMOS ENERGY CORPORATION	)	

AFFIDAVIT

The Affiant, Dane A. Watson, being duly sworn, deposes and states that the attached responses to the Office of the Attorney General's first request for information are true and correct to the best of his knowledge and belief.

Dane A. Watson

Dane A. Watson

STATE OF TEXAS

COUNTY OF COLLIN

SUBSCRIBED AND SWORN to before me by Dane A. Watson on this the 29 day of ~~March~~, 2016.
February

Laura Solano
Notary Public,
State of Texas
Expires: 05/12/2019

Laura Solano

Notary Public

My Commission Expires: 5/12/2019

REQUEST:

Please provide all workpapers not already provided in the filing and/or in response to the Staff discovery. Provide all electronic workpapers with formulas and links intact, including all supporting and linked workpapers.

RESPONSE:

Please see Confidential Attachment 1 for Mr. Schneider's workpaper.

Please see Attachment 2 for Mr. McDonald and Mr. Waller's workpaper.

Please see the Company's response to AG DR No. 1-28 for Dr. Vander Weide's workpapers.

Due to their voluminous nature, Mr. Watson's workpapers related to the three depreciation studies are being provided on CD only. Please see the three folders marked "AG_1-01_Att3 - Watson Alliance Study KY Direct Workpapers Final", "AG_1-01_Att4 - Watson Alliance Study Midstates GO Workpapers Final", and "AG_1-01_Att5 - Watson Alliance Study Midstates GO Workpapers Final".

ATTACHMENTS:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-01_Att1 - Schneider Workpaper (CONFIDENTIAL).pdf, 1 Page.

ATTACHMENT 2 - Atmos Energy Corporation, AG_1-01_Att2 - KY projection for rates revised.xlsx, 6 Pages.

ATTACHMENT 3 - Atmos Energy Corporation, AG_1-01_Att3 - Watson Alliance Study KY Direct Workpapers Final, 586 Files (CD Only).

ATTACHMENT 4 - Atmos Energy Corporation, AG_1-01_Att4 - Watson Alliance Study Midstates GO Workpapers Final, 142 Files (CD Only).

ATTACHMENT 5 - Atmos Energy Corporation, AG_1-01_Att5 - Watson Alliance Study Shared Services Unit Workpapers Final, 387 Files (CD Only).

Respondents: Pace McDonald, Jason Schneider, Dr. James Vander Weide, Greg Waller and Dane Watson

KY Rate Case
Oct-15
Deferred Balances

	6/30/2015	7/31/2015	8/31/2015	9/30/2015	10/31/2015	11/30/2015	12/31/2015
002 SSU							
Book Cost	197,628,004	188,483,242	188,703,283	191,233,913	192,745,862	195,474,107	200,100,668
Tax Cost	107,981,211	107,981,211	107,981,211	107,981,211	108,060,703	108,204,143	108,447,388
FXA01	(89,646,793)	(80,502,031)	(80,722,072)	(83,252,702)	(84,685,159)	(87,269,965)	(91,653,280)
Tax Effected	(32,721,079)	(29,383,241)	(29,463,556)	(30,387,236)	(30,910,083)	(31,853,537)	(33,453,447)
Tax Effected Monthly Activity		3,337,838	(80,315)	(923,680)	(522,847)	(943,454)	(1,599,910)
Tax Effected Monthly Activity Pro Rated		3,337,838	(80,315)	(923,680)	(522,847)	(943,454)	(1,599,910)
Per mosty recently provided ADIT	(32,721,079)	(29,383,241)	(29,463,556)	(30,387,236)	(30,910,083)	(31,853,537)	(33,453,447)
Difference	(0)						
Book Accum	(123,277,117)	(113,824,242)	(114,830,433)	(115,861,917)	(116,932,548)	(118,018,698)	(119,131,165)
Tax Accum	(102,362,282)	(102,362,282)	(102,362,282)	(102,362,282)	(102,555,421)	(102,751,360)	(102,952,046)
FXA02	20,914,835	11,461,960	12,468,151	13,499,636	14,377,127	15,267,338	16,179,119
Tax Effected	7,633,915	4,183,616	4,550,875	4,927,367	5,247,651	5,572,578	5,905,378
Tax Effected Monthly Activity		(3,450,299)	367,260	376,492	320,284	324,927	332,800
Tax Effected Monthly Activity Pro Rated		(3,450,299)	367,260	376,492	320,284	324,927	332,800
Per mosty recently provided ADIT	7,633,914						
Difference	1	4,183,616	4,550,875	4,927,367	5,247,651	5,572,578	5,905,378
CWIP							
FXA26	813,916	(2,882,991)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)
Tax Effected	297,078	(1,052,292)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)
Tax Effected Monthly Activity		(1,349,371)	(143,841)	-	-	-	-
		(1,052,292)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)
Tax Effected Monthly Activity Pro Rated	-	(1,349,371)	(143,841)	-	-	-	-
Sec481(a) Cushion Gas	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888
Sec 481(a) Line Pack Gas	182,597	182,597	182,597	182,597	182,597	182,597	182,597
	(66,230,557)	(70,235,576)	(69,843,511)	(71,342,657)	(71,897,622)	(73,592,216)	(77,063,751)
012 Call Center							
Book Cost	161,147,877	156,854,047	156,866,959	157,636,437	157,997,071	158,360,301	158,726,652
Tax Cost	38,056,589	38,056,589	38,056,589	38,056,589	38,077,189	38,097,938	38,118,865
FXA01	(123,091,288)	(118,797,458)	(118,810,370)	(119,579,848)	(119,919,882)	(120,262,363)	(120,607,787)
Tax Effected	(44,928,320)	(43,361,072)	(43,365,785)	(43,646,644)	(43,770,757)	(43,895,763)	(44,021,842)
Tax Effected Monthly Activity		1,567,248	(4,713)	(280,860)	(124,112)	(125,006)	(126,080)
Tax Effected Monthly Activity Pro Rated		1,567,248	(4,713)	(280,860)	(124,112)	(125,006)	(126,080)
Per mosty recently provided ADIT	(44,928,320)						
Difference	(0)	(43,361,072)	(43,365,785)	(43,646,644)	(43,770,757)	(43,895,763)	(44,021,842)
Book Accum	(52,182,230)	(48,357,213)	(49,115,994)	(49,895,044)	(50,678,409)	(51,463,796)	(52,251,219)
Tax Accum	(10,246,537)	(10,246,537)	(10,246,537)	(10,246,537)	(10,452,930)	(10,659,856)	(10,867,318)
FXA02	41,935,693	38,110,676	38,869,457	39,648,507	40,225,479	40,803,940	41,383,901
Tax Effected	15,306,528	13,910,397	14,187,352	14,471,705	14,682,300	14,893,438	15,105,124
Tax Effected Monthly Activity		(1,396,131)	276,955	284,353	210,595	211,138	211,686
Tax Effected Monthly Activity Pro Rated		(1,396,131)	276,955	284,353	210,595	211,138	211,686
Per mosty recently provided ADIT	15,306,528						
Difference	(0)	13,910,397	14,187,352	14,471,705	14,682,300	14,893,438	15,105,124
CWIP							
FXA26	(2,362,282)	(2,616,908)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)
Tax Effected	(862,233)	(955,171)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)
Tax Effected Monthly Activity		(92,938)	(312,533)	-	-	-	-
Tax Effected Monthly Activity Pro Rated		(92,938)	(312,533)	-	-	-	-
		(955,171)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)
	(83,517,877)	(83,303,690)	(83,414,076)	(83,404,504)	(83,167,566)	(82,931,586)	(82,697,048)

KY Rate Case
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Deferred Balances

	6/30/2015	7/31/2015	8/31/2015	9/30/2015	10/31/2015	11/30/2015	12/31/2015
050 GOF 091							
Book Cost	4,711,286	4,714,384	4,714,384	4,785,404	4,785,404	4,785,404	4,785,404
Acq ADJ	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495
Book Cost used to Calc Deferreds	8,876,780	8,879,879	8,879,879	8,950,899	8,950,899	8,950,899	8,950,899
Tax Cost	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)
FXA01	(29,291,265)	(29,294,364)	(29,294,364)	(29,365,384)	(29,365,384)	(29,365,384)	(29,365,384)
Tax Effected	(10,691,312)	(10,692,443)	(10,692,443)	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)
Tax Effected Monthly Activity		(1,131)	-	(25,922)	-	-	-
Tax Effected Monthly Activity Pro Rated	-	(1,131)	-	(25,922)	-	-	-
Per mosty recently provided ADIT	(10,691,312)						
Difference	(0)	(10,692,443)	(10,692,443)	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)
Book Accum	(3,009,872)	(3,026,957)	(3,038,240)	(3,048,487)	(3,059,044)	(3,069,601)	(3,080,158)
Acq ADJ	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)
Book Accum used to Calc Deferreds	(4,979,985)	(4,997,071)	(5,008,354)	(5,018,601)	(5,029,158)	(5,039,715)	(5,050,272)
Tax Accum	(2,851,627)	(2,851,627)	(2,851,627)	(2,851,627)	(2,857,383)	(2,863,139)	(2,868,895)
FXA02	2,128,358	2,145,444	2,156,726	2,166,974	2,171,775	2,176,576	2,181,377
Tax Effected	776,851	783,087	787,205	790,945	792,698	794,450	796,203
Tax Effected Monthly Activity		6,236	4,118	3,740	1,752	1,752	1,752
Tax Effected Monthly Activity Pro Rated	-	6,236	4,118	3,740	1,752	1,752	1,752
Per mosty recently provided ADIT	776,850						
Difference	(0)	783,087	787,205	790,945	792,698	794,450	796,203
CWIP							
FXA26	306,514	(101,829)	13,936	13,936	13,936	13,936	13,936
Tax Effected	111,878	(37,168)	5,086	5,086	5,086	5,086	5,086
Tax Effected Monthly Activity		(149,045)	42,254	-	-	-	-
Tax Effected Monthly Activity Pro Rated	-	(149,045)	42,254	-	-	-	-
		(37,168)	5,086	5,086	5,086	5,086	5,086
	(26,856,393)	(27,250,749)	(27,123,702)	(27,184,475)	(27,179,674)	(27,174,873)	(27,170,072)
State Bonus Depreciation TAX05	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262
Fed Benefit on State Bonus TAX11	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)
KY (009)							
Book Cost	453,545,378	462,073,954	465,677,479	474,925,006	478,448,088	482,555,018	487,978,933
Acq ADJ	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547
Book Cost used to Calc Deferreds	456,823,926	465,352,501	468,956,026	478,203,553	481,726,635	485,833,566	491,257,480
Tax Cost	302,114,047	302,114,047	302,114,047	302,114,047	305,175,448	308,744,189	313,457,330
FXA01	(154,709,879)	(163,238,454)	(166,841,980)	(176,089,507)	(176,551,187)	(177,089,377)	(177,800,150)
Tax Effected	(56,469,106)	(59,582,036)	(60,897,323)	(64,272,670)	(64,441,183)	(64,637,623)	(64,897,055)
Tax Effected Monthly Activity		(3,112,930)	(1,315,287)	(3,375,347)	(168,513)	(196,439)	(259,432)
Tax Effected Monthly Activity Pro Rated	-	(3,112,930)	(1,315,287)	(3,375,347)	(168,513)	(196,439)	(259,432)
Per mosty recently provided ADIT	(56,469,106)						
Difference	(0)	(59,582,036)	(60,897,323)	(64,272,670)	(64,441,183)	(64,637,623)	(64,897,055)
Book Accum	(157,381,931)	(157,838,881)	(158,312,639)	(157,903,919)	(158,693,414)	(159,374,798)	(159,800,195)
Acq ADJ	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)
Book Accum used to Calc Deferreds	(160,660,478)	(161,117,428)	(161,591,186)	(161,182,466)	(161,971,961)	(162,653,345)	(163,078,743)
Tax Accum	(197,151,433)	(197,151,433)	(197,151,433)	(197,151,433)	(198,450,145)	(199,571,017)	(200,270,793)
FXA02	(36,490,954)	(36,034,004)	(35,560,247)	(35,968,966)	(36,478,184)	(36,917,672)	(37,192,050)
Tax Effected	(13,319,198)	(13,152,412)	(12,979,490)	(13,128,673)	(13,314,537)	(13,474,950)	(13,575,098)
Tax Effected Monthly Activity		166,787	172,922	(149,183)	(185,865)	(160,413)	(100,148)
Tax Effected Monthly Activity Pro Rated	-	166,787	172,922	(149,183)	(185,865)	(160,413)	(100,148)
Per mosty recently provided ADIT	(13,319,199)						
Difference	(0)	(13,152,412)	(12,979,490)	(13,128,673)	(13,314,537)	(13,474,950)	(13,575,098)
CWIP							
FXA26	2,798,792	1,993,342	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492
Tax Effected	1,021,559	727,570	818,510	818,510	818,510	818,510	818,510
Tax Effected Monthly Activity		(293,989)	90,940	-	-	-	-
Tax Effected Monthly Activity Pro Rated	-	(293,989)	90,940	-	-	-	-
		727,570	818,510	818,510	818,510	818,510	818,510
	(188,402,041)	(197,279,117)	(200,159,734)	(209,815,981)	(210,786,879)	(211,764,556)	(212,749,708)
State Bonus Depreciation TAX05	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)
Fed Benefit on State Bonus TAX11	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)

KY Rate Case
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Deferred Balances

	1/31/2016	2/29/2016	3/31/2016	4/30/2016	5/31/2016	6/30/2016	7/31/2016	8/31/2016	9/30/2016
002 SSU									
Book Cost	202,222,674	203,994,143	205,608,557	206,694,586	207,910,920	208,796,868	209,605,113	210,887,499	212,199,506
Tax Cost	108,558,954	108,652,091	108,736,970	108,794,069	108,858,019	108,904,598	108,947,093	109,014,515	109,083,495
FXA01	(93,663,720)	(95,342,052)	(96,871,587)	(97,900,517)	(99,052,901)	(99,892,270)	(100,658,021)	(101,872,984)	(103,116,011)
Tax Effected	(34,187,258)	(34,799,849)	(35,358,129)	(35,733,689)	(36,154,309)	(36,460,679)	(36,740,178)	(37,183,639)	(37,637,344)
Tax Effected Monthly Activity	(733,810)	(612,591)	(558,280)	(375,559)	(420,620)	(306,370)	(279,499)	(443,462)	(453,705)
							334	303	273
Tax Effected Monthly Activity Pro Rated	(733,810)	(612,591)	(558,280)	(375,559)	(420,620)	(306,370)	(255,761)	(368,134)	(339,346)
Per mosty recently provided ADIT	(34,187,258)	(34,799,849)	(35,358,129)	(35,733,689)	(36,154,309)	(36,460,679)	(36,718,439)	(37,084,573)	(37,423,920)
Difference									
Book Accum	(120,255,703)	(121,390,317)	(122,534,115)	(123,684,090)	(124,840,985)	(126,010,488)	(127,183,871)	(128,364,547)	(129,552,685)
Tax Accum	(103,154,911)	(103,359,592)	(103,565,931)	(103,773,384)	(103,982,085)	(104,193,061)	(104,404,736)	(104,617,727)	(104,832,065)
FXA02	17,100,792	18,030,725	18,968,184	19,910,707	20,858,900	21,817,428	22,779,135	23,746,819	24,720,620
Tax Effected	6,241,789	6,581,215	6,923,387	7,267,408	7,613,498	7,963,361	8,314,384	8,667,589	9,023,026
Tax Effected Monthly Activity	336,411	339,425	342,173	344,021	346,091	349,863	351,023	353,205	355,437
							334	303	273
Tax Effected Monthly Activity Pro Rated	336,411	339,425	342,173	344,021	346,091	349,863	321,210	293,208	265,848
Per mosty recently provided ADIT									
Difference	6,241,789	6,581,215	6,923,387	7,267,408	7,613,498	7,963,361	8,284,571	8,577,789	8,843,627
CWIP									
FXA26	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)
Tax Effected	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-	-
							334	303	273
	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-	-
Sec481(a) Cushion Gas	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888
Sec 481(a) Line Pack Gas	182,597	182,597	182,597	182,597	182,597	182,597	182,597	182,597	182,597
	(78,152,517)	(78,900,917)	(79,492,993)	(79,579,400)	(79,783,591)	(79,664,432)	(79,468,476)	(79,715,755)	(79,984,981)
012 Call Center									
Book Cost	159,101,838	159,388,434	159,707,372	159,984,801	160,261,100	160,531,840	160,801,582	161,074,346	161,530,287
Tax Cost	38,140,296	38,156,667	38,174,886	38,190,733	38,206,516	38,221,981	38,237,390	38,252,971	38,279,015
FXA01	(120,961,542)	(121,231,767)	(121,532,486)	(121,794,068)	(122,054,584)	(122,309,859)	(122,564,192)	(122,821,375)	(123,251,272)
Tax Effected	(44,150,963)	(44,249,595)	(44,359,357)	(44,454,835)	(44,549,923)	(44,643,098)	(44,735,930)	(44,829,802)	(44,986,714)
Tax Effected Monthly Activity	(129,120)	(98,632)	(109,763)	(95,477)	(95,088)	(93,175)	(92,832)	(93,872)	(156,912)
							334	303	273
Tax Effected Monthly Activity Pro Rated	(129,120)	(98,632)	(109,763)	(95,477)	(95,088)	(93,175)	(84,947)	(77,926)	(117,362)
Per mosty recently provided ADIT									
Difference	(44,150,963)	(44,249,595)	(44,359,357)	(44,454,835)	(44,549,923)	(44,643,098)	(44,728,046)	(44,805,972)	(44,923,334)
Book Accum	(53,040,697)	(53,832,279)	(54,625,468)	(55,420,445)	(56,216,978)	(57,009,700)	(57,803,935)	(58,599,701)	(59,398,024)
Tax Accum	(11,075,322)	(11,283,880)	(11,492,861)	(11,702,313)	(11,912,176)	(12,121,034)	(12,330,291)	(12,539,951)	(12,750,285)
FXA02	41,965,376	42,548,400	43,132,607	43,718,132	44,304,803	44,888,666	45,473,644	46,059,750	46,647,739
Tax Effected	15,317,362	15,530,166	15,743,402	15,957,118	16,171,253	16,384,363	16,597,880	16,811,809	17,026,425
Tax Effected Monthly Activity	212,238	212,804	213,236	213,717	214,135	213,110	213,517	213,928	214,616
							334	303	273
Tax Effected Monthly Activity Pro Rated	212,238	212,804	213,236	213,717	214,135	213,110	195,383	177,590	160,521
Per mosty recently provided ADIT									
Difference	15,317,362	15,530,166	15,743,402	15,957,118	16,171,253	16,384,363	16,579,743	16,757,399	16,917,657
CWIP									
FXA26	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)
Tax Effected	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-	-
							334	303	273
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-	-
	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)
	(82,469,328)	(82,156,529)	(81,873,041)	(81,549,098)	(81,222,944)	(80,894,355)	(80,563,710)	(80,234,788)	(80,076,696)

KY Rate Case
Oct-15
Deferred Balances

	1/31/2016	2/29/2016	3/31/2016	4/30/2016	5/31/2016	6/30/2016	7/31/2016	8/31/2016	9/30/2016
050 GOF 091									
Book Cost	4,785,404	4,785,404	4,785,404	4,785,404	4,785,404	4,785,404	4,835,404	4,885,404	4,935,404
Acq ADJ	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495
Book Cost used to Calc Deferreds	8,950,899	8,950,899	8,950,899	8,950,899	8,950,899	8,950,899	9,000,899	9,050,899	9,100,899
Tax Cost	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)	(20,414,485)
FXA01	(29,365,384)	(29,365,384)	(29,365,384)	(29,365,384)	(29,365,384)	(29,365,384)	(29,415,384)	(29,465,384)	(29,515,384)
Tax Effected	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)	(10,736,615)	(10,754,865)	(10,773,115)
Tax Effected Monthly Activity	-	-	-	-	-	-	(18,250)	(18,250)	(18,250)
							334	303	273
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	(16,700)	(15,150)	(13,650)
Per mosty recently provided ADIT									
Difference	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)	(10,718,365)	(10,735,065)	(10,750,215)	(10,763,865)
Book Accum	(3,090,715)	(3,101,272)	(3,111,829)	(3,122,386)	(3,132,943)	(3,139,669)	(3,146,394)	(3,153,698)	(3,161,210)
Acq ADJ	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)
Book Accum used to Calc Deferreds	(5,060,829)	(5,071,386)	(5,081,943)	(5,092,500)	(5,103,057)	(5,109,782)	(5,116,508)	(5,123,812)	(5,131,324)
Tax Accum	(2,874,651)	(2,880,407)	(2,886,163)	(2,891,919)	(2,897,675)	(2,901,341)	(2,905,008)	(2,908,990)	(2,913,086)
FXA02	2,186,178	2,190,979	2,195,780	2,200,581	2,205,382	2,208,441	2,211,500	2,214,821	2,218,238
Tax Effected	797,955	799,707	801,460	803,212	804,965	806,081	807,197	808,410	809,657
Tax Effected Monthly Activity	1,752	1,752	1,752	1,752	1,752	1,116	1,116	1,212	1,247
							334	303	273
Tax Effected Monthly Activity Pro Rated	1,752	1,752	1,752	1,752	1,752	1,116	1,022	1,006	933
Per mosty recently provided ADIT									
Difference	797,955	799,707	801,460	803,212	804,965	806,081	807,193	808,109	809,042
CWIP									
FXA26	13,936	13,936	13,936	13,936	13,936	13,936	13,936	13,936	13,936
Tax Effected	5,086	5,086	5,086	5,086	5,086	5,086	5,086	5,086	5,086
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-	-
							334	303	273
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-	-
	5,086	5,086	5,086	5,086	5,086	5,086	5,086	5,086	5,086
	(27,165,270)	(27,160,469)	(27,155,668)	(27,150,867)	(27,146,086)	(27,143,008)	(27,189,949)	(27,236,628)	(27,283,211)
State Bonus Depreciation TAX05	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262
Fed Benefit on State Bonus TAX11	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)
KY (009)									
Book Cost	491,501,600	495,447,806	499,751,426	504,404,889	510,101,793	514,830,599	519,651,234	523,153,863	527,954,306
Acq ADJ	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547
Book Cost used to Calc Deferreds	494,780,147	498,726,353	503,029,973	507,683,436	513,380,340	518,109,147	522,929,782	526,432,410	531,232,853
Tax Cost	316,518,371	319,947,449	323,687,104	327,730,756	332,681,113	336,790,236	340,979,154	344,022,783	348,194,155
FXA01	(178,261,776)	(178,778,904)	(179,342,869)	(179,952,680)	(180,699,227)	(181,318,910)	(181,950,627)	(182,409,627)	(183,038,698)
Tax Effected	(65,065,548)	(65,254,300)	(65,460,147)	(65,682,728)	(65,955,218)	(66,181,402)	(66,411,979)	(66,579,514)	(66,809,125)
Tax Effected Monthly Activity	(168,493)	(188,752)	(205,847)	(222,581)	(272,490)	(226,184)	(230,577)	(167,535)	(229,611)
							334	303	273
Tax Effected Monthly Activity Pro Rated	(168,493)	(188,752)	(205,847)	(222,581)	(272,490)	(226,184)	(210,994)	(139,077)	(171,736)
Per mosty recently provided ADIT									
Difference	(65,065,548)	(65,254,300)	(65,460,147)	(65,682,728)	(65,955,218)	(66,181,402)	(66,392,396)	(66,551,473)	(66,703,209)
Book Accum	(160,630,980)	(161,386,390)	(162,081,266)	(162,718,284)	(163,156,902)	(163,644,641)	(164,126,994)	(164,892,590)	(165,402,654)
Acq ADJ	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)
Book Accum used to Calc Deferreds	(163,909,527)	(164,664,937)	(165,359,814)	(165,996,831)	(166,435,449)	(166,923,188)	(167,405,542)	(168,171,137)	(168,681,201)
Tax Accum	(201,637,427)	(202,880,071)	(204,023,137)	(205,071,026)	(205,792,550)	(206,594,876)	(207,388,344)	(208,647,743)	(209,486,794)
FXA02	(37,727,900)	(38,215,133)	(38,663,323)	(39,074,195)	(39,357,100)	(39,671,688)	(39,982,802)	(40,476,606)	(40,805,593)
Tax Effected	(13,770,683)	(13,948,524)	(14,112,113)	(14,262,081)	(14,365,342)	(14,480,166)	(14,593,723)	(14,773,961)	(14,894,041)
Tax Effected Monthly Activity	(195,585)	(177,840)	(163,589)	(149,968)	(103,261)	(114,825)	(113,557)	(180,238)	(120,080)
							334	303	273
Tax Effected Monthly Activity Pro Rated	(195,585)	(177,840)	(163,589)	(149,968)	(103,261)	(114,825)	(103,912)	(149,622)	(89,814)
Per mosty recently provided ADIT									
Difference	(13,770,683)	(13,948,524)	(14,112,113)	(14,262,081)	(14,365,342)	(14,480,166)	(14,584,078)	(14,733,791)	(14,823,814)
CWIP									
FXA26	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492
Tax Effected	818,510	818,510	818,510	818,510	818,510	818,510	818,510	818,510	818,510
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-	-
							334	303	273
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-	-
	818,510	818,510	818,510	818,510	818,510	818,510	818,510	818,510	818,510
	(213,747,183)	(214,751,545)	(215,763,701)	(216,784,382)	(217,813,835)	(218,748,106)	(219,690,938)	(220,643,740)	(221,601,799)
State Bonus Depreciation TAX05	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)
Fed Benefit on State Bonus TAX11	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)

KY Rate Case
Oct-15
Deferred Balances

	10/31/2016	11/30/2016	12/31/2016	1/31/2017	2/28/2017	3/31/2017	4/30/2017	5/31/2017
002 SSU								
Book Cost	213,711,455	216,439,700	221,066,261	223,188,267	224,959,736	226,574,150	227,660,179	228,876,513
Tax Cost	109,162,987	109,306,427	109,549,673	109,661,239	109,754,376	109,839,255	109,896,354	109,960,304
FXA01	(104,548,468)	(107,133,273)	(111,516,589)	(113,527,028)	(115,205,361)	(116,734,895)	(117,763,825)	(118,916,209)
Tax Effected	(38,160,191)	(39,103,645)	(40,703,555)	(41,437,365)	(42,049,957)	(42,608,237)	(42,983,796)	(43,404,416)
Tax Effected Monthly Activity	(522,847)	(943,454)	(1,599,910)	(733,810)	(612,591)	(558,280)	(375,559)	(420,620)
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	(346,655)	(547,979)	(793,380)	(301,566)	(204,757)	(139,186)	(62,765)	(34,572)
Per mosty recently provided ADIT	(37,770,574)	(38,318,553)	(39,111,933)	(39,413,499)	(39,618,256)	(39,757,443)	(39,820,208)	(39,854,779)
Difference								
Book Accum	(130,749,423)	(131,961,678)	(133,200,247)	(134,450,886)	(135,711,601)	(136,981,498)	(138,257,571)	(139,540,563)
Tax Accum	(104,993,132)	(105,156,287)	(105,322,984)	(105,491,306)	(105,660,983)	(105,831,897)	(106,003,641)	(106,176,317)
FXA02	25,756,291	26,805,391	27,877,263	28,959,581	30,050,618	31,149,601	32,253,930	33,364,246
Tax Effected	9,401,046	9,783,968	10,175,201	10,570,247	10,968,475	11,369,604	11,772,685	12,177,950
Tax Effected Monthly Activity	378,020	382,921	391,233	395,046	398,229	401,129	403,080	405,265
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	250,632	222,409	194,009	162,348	133,107	100,007	67,364	33,309
Per mosty recently provided ADIT								
Difference	9,094,280	9,316,689	9,510,678	9,673,026	9,806,132	9,906,139	9,973,503	10,006,813
CWIP								
FXA26	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)	(3,277,075)
Tax Effected	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-
	242	212	181	150	122	91	61	30
	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)	(1,196,132)
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-
Sec481(a) Cushion Gas	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888	1,504,888
Sec 481(a) Line Pack Gas	182,597	182,597	182,597	182,597	182,597	182,597	182,597	182,597
	(80,381,767)	(81,917,473)	(85,228,915)	(86,157,037)	(86,744,333)	(87,174,884)	(87,099,485)	(87,141,553)
012 Call Center								
Book Cost	161,890,921	162,254,151	162,620,502	162,995,688	163,282,284	163,601,222	163,878,651	164,154,950
Tax Cost	38,299,615	38,320,364	38,341,291	38,362,722	38,379,093	38,397,312	38,413,159	38,428,942
FXA01	(123,591,306)	(123,933,787)	(124,279,211)	(124,632,966)	(124,903,191)	(125,203,910)	(125,465,492)	(125,726,008)
Tax Effected	(45,110,827)	(45,235,832)	(45,361,912)	(45,491,032)	(45,589,665)	(45,699,427)	(45,794,905)	(45,889,993)
Tax Effected Monthly Activity	(124,112)	(125,006)	(126,080)	(129,120)	(98,632)	(109,763)	(95,477)	(95,088)
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	(82,288)	(72,605)	(62,522)	(53,063)	(32,967)	(27,365)	(15,956)	(7,815)
Per mosty recently provided ADIT								
Difference	(45,008,622)	(45,078,226)	(45,140,750)	(45,193,813)	(45,226,781)	(45,254,146)	(45,270,103)	(45,277,918)
Book Accum	(60,198,370)	(61,000,754)	(61,805,193)	(62,611,737)	(63,419,889)	(64,229,830)	(65,041,327)	(65,854,374)
Tax Accum	(12,841,453)	(12,932,853)	(13,024,486)	(13,116,360)	(13,208,417)	(13,300,677)	(13,393,115)	(13,485,729)
FXA02	47,356,917	48,067,902	48,780,707	49,495,377	50,211,472	50,929,153	51,648,212	52,368,645
Tax Effected	17,285,275	17,544,784	17,804,958	18,065,813	18,327,167	18,589,141	18,851,597	19,114,555
Tax Effected Monthly Activity	258,850	259,509	260,174	260,855	261,375	261,953	262,457	262,958
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	171,621	150,729	129,018	107,201	87,364	65,309	43,863	21,613
Per mosty recently provided ADIT								
Difference	17,069,478	17,240,207	17,359,224	17,476,426	17,563,780	17,629,097	17,672,960	17,694,573
CWIP								
FXA26	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)	(3,473,162)
Tax Effected	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-
	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)	(1,267,704)
	(79,707,551)	(79,339,048)	(78,971,667)	(78,610,751)	(78,164,881)	(77,747,920)	(77,290,442)	(76,830,526)

CASE NO. 2015-00343
ATTACHMENT 2
TO AG DR NO. 1-01

KY Rate Case
Oct-15
Deferred Balances

	10/31/2016	11/30/2016	12/31/2016	1/31/2017	2/28/2017	3/31/2017	4/30/2017	5/31/2017
050 GOF 091								
Book Cost	4,935,404	4,935,404	4,935,404	4,935,404	4,935,404	4,935,404	4,935,404	4,935,404
Acq ADJ	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495	4,165,495
Book Cost used to Calc Deferreds	9,100,899	9,100,899	9,100,899	9,100,899	9,100,899	9,100,899	9,100,899	9,100,899
Tax Cost	-20414485.21	(20,414,485.21)	(20,414,485.21)	(20,414,485.21)	(20,414,485.21)	(20,414,485.21)	(20,414,485.21)	(20,414,485.21)
FXA01	(29,515,384)	(29,515,384)	(29,515,384)	(29,515,384)	(29,515,384)	(29,515,384)	(29,515,384)	(29,515,384)
Tax Effected	(10,773,115)	(10,773,115)	(10,773,115)	(10,773,115)	(10,773,115)	(10,773,115)	(10,773,115)	(10,773,115)
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-
Per mosty recently provided ADIT								
Difference	(10,763,865)	(10,763,865)	(10,763,865)	(10,763,865)	(10,763,865)	(10,763,865)	(10,763,865)	(10,763,865)
Book Accum	(3,168,722)	(3,176,234)	(3,183,747)	(3,191,081)	(3,198,416)	(3,205,162)	(3,211,908)	(3,218,654)
Acq ADJ	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)	(1,970,114)
Book Accum used to Calc Deferreds	(5,138,836)	(5,146,348)	(5,153,860)	(5,161,195)	(5,168,529)	(5,175,275)	(5,182,021)	(5,188,767)
Tax Accum	(2,917,468)	(2,921,849)	(2,926,231)	(2,930,508)	(2,934,786)	(2,938,721)	(2,942,655)	(2,946,590)
FXA02	2,221,368	2,224,499	2,227,630	2,230,687	2,233,743	2,236,555	2,239,366	2,242,178
Tax Effected	810,799	811,942	813,085	814,201	815,316	816,343	817,369	818,395
Tax Effected Monthly Activity	1,143	1,143	1,143	1,116	1,116	1,026	1,026	1,026
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	758	664	567	459	373	256	172	84
Per mosty recently provided ADIT								
Difference	809,799	810,463	811,030	811,486	811,861	812,117	812,285	812,373
CWIP								
FXA26	13,936	13,936	13,936	13,936	13,936	13,936	13,936	13,936
Tax Effected	5,086	5,086	5,086	5,086	5,086	5,086	5,086	5,086
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-
	5,086	5,086	5,086	5,086	5,086	5,086	5,086	5,086
	(27,280,080)	(27,276,950)	(27,273,819)	(27,270,762)	(27,267,705)	(27,264,894)	(27,262,082)	(27,259,271)
State Bonus Depreciation TAX05	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262	6,888,262
Fed Benefit on State Bonus TAX11	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)	(2,410,892)
KY (009)								
Book Cost	528,699,685	530,527,034	533,622,825	535,998,348	538,493,057	541,513,216	543,783,137	547,099,337
Acq ADJ	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547	3,278,547
Book Cost used to Calc Deferreds	531,978,233	533,805,581	536,901,372	539,276,895	541,771,604	544,791,764	547,061,684	550,377,885
Tax Cost	348,841,856	350,429,741	353,119,846	355,184,070	357,351,862	359,976,246	361,948,706	364,830,338
FXA01	(183,136,376)	(183,375,840)	(183,781,526)	(184,092,825)	(184,419,742)	(184,815,517)	(185,112,978)	(185,547,547)
Tax Effected	(66,844,777)	(66,932,182)	(67,080,257)	(67,193,881)	(67,313,206)	(67,457,664)	(67,566,237)	(67,724,855)
Tax Effected Monthly Activity	(35,652)	(87,404)	(148,075)	(113,624)	(119,325)	(144,458)	(108,573)	(158,618)
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	(23,638)	(50,766)	(73,429)	(46,695)	(39,884)	(36,016)	(18,145)	(13,037)
Per mosty recently provided ADIT								
Difference	(66,720,847)	(66,777,613)	(66,861,043)	(66,897,737)	(66,937,621)	(66,973,637)	(66,991,782)	(67,004,819)
Book Accum	(166,755,739)	(167,889,630)	(168,769,252)	(169,804,968)	(170,823,035)	(171,740,695)	(172,820,365)	(173,692,459)
Acq ADJ	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)	(3,278,547)
Book Accum used to Calc Deferreds	(170,034,286)	(171,168,176)	(172,047,799)	(173,083,515)	(174,101,582)	(175,019,242)	(176,098,912)	(176,971,007)
Tax Accum	(210,468,256)	(211,290,725)	(211,928,760)	(212,680,018)	(213,418,474)	(214,084,100)	(214,867,240)	(215,499,815)
FXA02	(40,433,970)	(40,122,548)	(39,880,961)	(39,596,503)	(39,316,892)	(39,064,858)	(38,768,328)	(38,528,808)
Tax Effected	(14,758,399)	(14,644,730)	(14,556,551)	(14,452,723)	(14,350,665)	(14,258,673)	(14,150,440)	(14,063,015)
Tax Effected Monthly Activity	135,642	113,669	88,179	103,827	102,058	91,992	108,233	87,425
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	89,933	66,021	43,727	42,669	34,113	22,935	18,088	7,186
Per mosty recently provided ADIT								
Difference	(14,733,581)	(14,667,660)	(14,623,833)	(14,581,184)	(14,547,051)	(14,524,116)	(14,505,028)	(14,496,842)
CWIP								
FXA26	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492	2,242,492
Tax Effected	818,510	818,510	818,510	818,510	818,510	818,510	818,510	818,510
Tax Effected Monthly Activity	-	-	-	-	-	-	-	-
	242	212	181	150	122	91	61	30
Tax Effected Monthly Activity Pro Rated	-	-	-	-	-	-	-	-
	818,510	818,510	818,510	818,510	818,510	818,510	818,510	818,510
	(221,327,853)	(221,255,895)	(221,419,994)	(221,446,835)	(221,494,142)	(221,637,883)	(221,638,813)	(221,833,863)
State Bonus Depreciation TAX05	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)	(45,161)
Fed Benefit on State Bonus TAX11	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)	(671,523)

REQUEST:

Please refer to Schedule B.2 B of the Fall 2015 Rev Req Model provided in response to Staff 1-59. Please provide the actual data in the same level of detail and in the same format for each month from October 2011 through the most recent month available in live spreadsheet format.

RESPONSE:

While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 1.

ATTACHMENT:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-02_Att1 - Plant Data.xlsx, 12 Pages.

Respondent: Greg Waller

Atmos Energy Corporation
Plant Data

	Cost											
Row Labels	10/2011	11/2011	12/2011	1/2012	2/2012	3/2012	4/2012	5/2012	6/2012	7/2012	8/2012	9/2012
002 - Dallas Atmos Rate Division	**168,157,370**	**170,335,370**	**166,314,081**	**166,345,266**	**166,360,149**	**165,794,382**	**165,831,632**	**165,872,414**	**165,873,925**	**166,053,213**	**166,076,044**	**166,601,304**
39000-Structures & Improvements										2,641	5,877	5,871
39005-G-Structures & Improvements	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286
39009-Improv. to Leased Premises	8,253,038	8,253,038	8,592,758	8,593,230	8,593,230	8,576,886	8,576,886	8,576,886	8,576,886	8,576,886	8,576,886	8,576,886
39029-Improv. to Leased Prem-AEAM												
39100-Office Furniture & Equipment	11,475,202	11,482,508	11,516,992	11,524,958	11,524,958	10,736,150	10,745,072	10,745,072	10,745,068	10,777,277	10,770,555	10,782,602
39102-Remittance Processing												
39103-Office Furn. - Copiers & Type												
39104-G-Office Furniture & Equip.	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741
39120-Office Furniture & Equip-AEAM												
39200-Transportation Equipment	96,290	96,290	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143
39300-Stores Equipment												
39400-Tools Shop And Garage	83,933	83,933	184,233	185,288	185,380	185,402	185,402	185,868	185,896	185,896	212,213	212,213
39420-Tools And Garage-AEAM												
39500-Laboratory Equipment			12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	12,100	23,632
39700-Communication Equipment	2,355,236	2,355,236	2,193,131	2,193,131	2,193,131	2,193,131	2,193,131	2,193,131	2,193,131	2,193,131	2,193,131	2,439,868
39720-Communication Equip-AEAM												
39800-Miscellaneous Equipment	236,331	236,331	380,416	380,416	380,416	380,416	388,191	388,191	388,189	388,189	388,189	388,189
39820-Miscellaneous Equipment-AEAM												
39900-Other Tangible Property	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268
39901-Oth Tang Prop - Servers - H/W	24,806,700	25,425,605	23,671,182	23,671,074	23,671,074	23,670,982	23,671,015	23,671,018	23,671,009	23,671,009	23,671,009	23,698,912
39902-Oth Tang Prop - Servers - S/W	13,461,222	13,499,655	13,829,702	13,829,692	13,841,388	14,090,396	14,090,494	14,090,502	14,090,500	14,097,312	14,097,312	14,097,636
39903-Oth Tang Prop - Network - H/W	3,911,025	4,139,008	3,877,627	3,876,784	3,876,590	3,871,538	3,861,610	3,861,193	3,861,396	3,861,396	3,861,396	3,877,059
39904-Mainframe Cpu	1,095,465	1,095,465	0									
39905-Mainframe Hardware	1,159,964	1,159,964	0									
39906-Oth Tang Prop - PC Hardware	4,697,256	4,886,599	2,560,176	2,565,276	2,558,608	2,557,781	2,564,852	2,581,801	2,581,884	2,581,900	2,581,900	2,581,901
39907-Oth Tang Prop - PC Software	1,769,409	1,835,363	1,844,063	1,847,480	1,855,236	1,854,955	1,854,955	1,857,296	1,857,264	1,867,740	1,867,740	1,867,740
39908-Oth Tang Prop - Appl Software	82,761,384	83,791,459	85,557,643	85,571,781	85,573,980	85,570,587	85,593,866	85,615,299	85,616,542	85,743,678	85,743,678	85,954,740
39909-Oth Tang Prop - Mainframe S/W	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619
39921-OthTang Prop-Servers-H/W-AEAM												
39922-OthTang Prop-Servers-S/W-AEAM												
39923-OthTang Prop-Network-H/W-AEAM												
39924-Oth Tang Prop - Gen.												
39924-Oth Tang Prop - Gen.												
39926-OthTang Prop-PC Hardware-AEAM												
39928-Oth Tang Prop-Appl SW-AEAM												
RWIP												
009 - WKG Division	**354,298,430**	**354,418,345**	**356,054,222**	**356,692,439**	**357,341,367**	**358,208,610**	**359,185,981**	**359,997,580**	**361,340,394**	**362,216,029**	**363,433,632**	**370,136,905**
30100-Organization	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330
30200-Franch & Consent Grp	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853
32520-Producing Leaseholds	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353
32540-Rights-Of-Way	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422
33100-Producing Gas Wells -	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492
33100-Production Gas Wells Equipmen												
33201-Field Lines	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163
33202-Tributary Lines	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218
33400-Field Measuring And R	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384
33600-Purification Equipmen	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369
33600-Purification Equipment												
35010-Land	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127
35020-Rights-Of-Way	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682
35100-Structures & Improvements	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916
35102-Compressor Station Equipment	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261
35103-Meas. & Reg. Sta. Structures	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138
35104-Other Structures	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443
35200-Wells	2,825,137	2,823,542	2,823,449	2,823,449	2,823,449	2,823,449	2,823,449	2,823,449	2,823,449	2,823,449	2,823,449	2,823,449
35201-Well Construction	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595	1,867,595
35202-Well Equipment	455,309	455,309	455,309	455,309	455,309	455,309	455,309	455,309	455,309	455,309	455,309	455,309
35203-Cushion Gas	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833
35210-Leaseholds	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530
35211-Storage Rights	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614
35301-Field Lines	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497
35302-Tributary Lines	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458

Atmos Energy Corporation
Plant Data

Cost

Row Labels	10/2011	11/2011	12/2011	1/2012	2/2012	3/2012	4/2012	5/2012	6/2012	7/2012	8/2012	9/2012
35400-Compressor Station Equipment	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446
35500-Meas. & Reg. Equipment	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883
35600-Purification Equipment	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979
36510-Land & Land Rights	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970
36520-Rights-Of-Way	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772
36602-Meas. & Reg. Sta. Str	41,715	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002
36603-Other Structures	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826
36700-Mains - Cathodic Protection	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035
36701-Mains - Steel	28,784,759	28,798,449	28,878,393	28,878,393	28,878,393	28,878,393	28,878,393	28,878,393	28,878,393	28,878,393	28,878,393	28,873,489
36900-Meas. & Reg. Sta. Equipment	578,023	578,023	578,023	578,023	578,023	578,023	578,023	578,023	578,023	578,023	578,023	578,023
36901-Measuring And Reg. St	2,276,960	2,276,960	2,276,960	2,276,960	2,276,960	2,276,960	2,276,960	2,276,960	2,276,960	2,276,960	2,276,827	2,276,827
37400-Land & Land Rights	428,256	428,256	428,256	428,256	428,256	428,256	425,568	425,568	426,001	426,001	426,001	440,848
37401-Land	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326
37402-Land Rights	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401
37403-Land Other	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784
37500-Structures & Improvements	327,881	327,881	327,881	327,881	327,881	327,881	327,881	327,881	327,881	327,881	327,881	336,204
37501-Structures & Improvements T.B	101,507	101,507	101,507	101,507	101,507	101,507	101,507	101,507	101,507	101,507	101,507	101,507
37502-Land Rights	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591
37503-Improvements	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005
37600-Mains - Cathodic Protection	11,231,866	11,278,777	11,369,323	11,415,440	11,230,552	11,273,116	11,313,226	11,340,977	11,100,925	10,967,118	10,997,379	11,034,734
37601-Mains - Steel	77,933,189	78,002,125	77,938,381	78,062,292	77,991,487	77,993,689	77,918,064	77,939,331	77,651,079	77,687,694	77,724,692	80,352,132
37602-Mains - Plastic	35,381,680	35,419,372	35,803,696	36,157,798	36,381,075	36,693,427	36,981,353	37,084,932	37,337,103	37,491,639	37,737,839	40,784,063
37800-Meas. & Reg. Sta. Eq-General	4,671,916	4,671,903	4,670,457	4,681,915	4,696,888	4,696,746	4,696,192	4,696,013	4,691,259	4,700,853	4,706,941	4,849,479
37900-Meas. & Reg. - City Gate	1,868,615	1,868,615	1,878,866	1,876,143	1,876,143	1,876,140	1,876,140	1,876,140	1,876,140	1,876,140	1,876,140	1,963,784
37905-Meas. & Reg. Sta. Equip T.B.	1,425,083	1,425,083	1,425,083	1,425,083	1,425,083	1,425,083	1,425,083	1,425,083	1,425,054	1,425,054	1,424,849	1,415,373
38000-Services	87,026,880	86,771,059	87,430,708	87,263,387	87,644,688	87,832,235	88,157,991	88,536,374	88,768,866	89,183,413	89,691,845	89,981,698
38100-Meters	15,812,164	15,658,419	15,794,143	15,836,884	15,920,574	15,994,688	16,155,277	16,281,086	16,688,430	16,842,304	16,955,090	17,237,107
38200-Meter Installations	47,240,672	47,398,948	47,612,713	47,737,233	47,844,644	47,989,941	48,133,476	48,246,594	48,021,017	48,125,720	48,289,624	48,425,869
38300-House Regulators	6,026,325	6,107,854	6,242,184	6,318,441	6,397,288	6,482,481	6,562,476	6,604,380	6,730,728	6,791,405	6,875,814	6,868,569
38400-House Reg. Installations	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276
38500-Industrial Measuring	4,853,624	4,969,877	4,971,288	4,972,568	4,972,645	4,972,670	4,972,670	4,972,670	4,972,670	4,972,670	4,972,670	4,985,574
38500-Industrial Measuring												
38900-Land & Land Rights	88,638	88,638	88,638	88,638	88,638	88,638	88,638	88,638	786,216	786,216	786,216	786,216
38900-Land & Land Rights												
39000-Structures & Improvements	895,426	895,426	895,531	895,531	910,529	911,438	910,545	910,545	1,344,984	1,344,984	1,344,984	1,496,980
39002-Structures - Brick	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755
39003-Improvements	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022
39004-Air Conditioning Equipment	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461
39009-Improv. to Leased Premises	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376
39100-Office Furniture & Equipment	1,377,695	1,377,695	1,378,870	1,378,870	1,378,870	1,359,057	1,359,057	1,359,057	1,423,449	1,423,449	1,426,302	1,453,652
39103-Office Furn. - Copiers & Type												
39200-Transportation Equipment	395,444	395,444	395,444	395,444	395,444	395,444	395,444	395,444	395,444	395,444	395,444	395,444
39201-Wkg Trucks - Group												
39202-WKG Trailers	34,697	34,697	34,697	34,697	34,697	34,697	34,697	34,697	33,192	33,192	33,192	33,192
39400-Tools Shop And Garage	1,987,329	1,987,783	1,987,910	2,002,644	1,986,652	2,023,651	2,042,870	2,042,837	1,990,481	2,061,843	2,087,849	2,110,125
39603-Ditchers	104,581	104,581	104,581	104,581	104,581	104,581	104,581	104,581	53,704	53,704	53,704	53,704
39604-Backhoes	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747
39605-Welders	24,405	24,405	24,405	38,214	38,214	38,214	38,214	38,214	33,236	33,236	33,236	33,236
39700-Communication Equipment	377,663	377,663	377,663	377,663	377,663	377,663	377,663	377,663	377,663	377,663	377,663	377,663
39701-Communication Equip.												
39701-Communication Equip.												
39702-Communication Equip.												
39702-Communication Equip.												
39705-Comm. Equip. - Telemetering	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316
39800-Miscellaneous Equipment	3,340,077	3,340,140	3,328,931	3,328,264	3,344,301	3,344,301	3,344,301	3,344,301	3,340,301	3,343,835	3,343,835	3,329,293
39901-Oth Tang Prop - Servers - H/W	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990
39902-Oth Tang Prop - Servers - S/W	113,473	113,473	113,473	113,473	113,473	113,473	113,473	113,473	113,473	113,473	113,473	113,473
39903-Oth Tang Prop - Network - H/W	511,781	511,781	511,781	511,781	511,781	511,781	511,781	511,781	511,781	511,781	511,781	511,781
39906-Oth Tang Prop - PC Hardware	3,601,976	3,601,976	3,602,994	3,602,994	3,602,994	3,602,994	3,602,994	3,602,994	3,602,994	3,602,994	3,602,994	3,455,424
39907-Oth Tang Prop - PC Software	247,331	247,331	247,331	247,331	247,331	247,331	247,331	247,331	247,331	247,331	247,331	247,331
39908-Oth Tang Prop - Appl Software	411,710	411,710	411,710	411,710	411,710	411,710	411,710	411,710	411,710	411,710	411,710	411,710
RWIP												
RWIP Recon												

Atmos Energy Corporation
Plant Data

Row Labels	Cost 10/2011	11/2011	12/2011	1/2012	2/2012	3/2012	4/2012	5/2012	6/2012	7/2012	8/2012	9/2012
RWIP-Recon												
012 - Call Center Division	**204,859,707**	**204,911,091**	**179,186,401**	**179,195,005**	**179,199,713**	**179,179,031**	**159,696,381**	**159,715,913**	**159,723,335**	**159,723,121**	**159,727,435**	**159,962,518**
38900-Land	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240
38910-CKV Land&Land Rights	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123
39000-Structures & Improvements	13,177,653	13,180,113	13,180,105	13,180,105	13,180,105	13,180,105	13,180,105	13,180,105	13,180,105	13,180,105	13,180,105	13,181,947
39009-Improv. to Leased Premises	4,437,465	4,437,465	4,437,465	4,437,465	4,437,465	4,418,390	4,418,390	4,418,390	4,418,390	4,418,390	4,418,390	4,418,390
39010-CKV-Structures & Improvements	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518
39100-Office Furniture & Equipment	1,057,799	1,099,091	1,128,497	1,128,497	1,128,497	1,128,497	1,128,497	1,143,140	1,143,140	1,143,140	1,143,140	1,143,140
39103-Office Furn. - Copiers & Type												
39700-Communication Equipment	26,149,421	26,149,421	14,207,925	14,207,925	14,207,925	14,207,925	2,064,080	2,064,080	2,064,080	2,064,080	2,064,080	2,064,080
39710-CKV-Communication Equipment	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621
39800-Miscellaneous Equipment	9,533	4,891	2,980	2,980	2,980	2,980	2,980	2,980	4,914	4,914	4,914	9,812
39900-Other Tangible Property												
39901-Oth Tang Prop - Servers - H/W	13,047,925	13,047,925	6,143,377	6,143,377	6,143,377	6,143,377	5,383,786	5,383,786	5,383,786	5,383,572	5,383,572	5,383,572
39902-Oth Tang Prop - Servers - S/W	7,582,366	7,582,366	2,426,469	2,429,116	2,433,823	2,432,216	2,370,206	2,370,206	2,370,174	2,370,174	2,370,174	2,370,174
39903-Oth Tang Prop - Network - H/W	913,069	913,069	518,162	518,162	518,162	518,162	344,625	344,625	344,625	344,625	344,625	435,051
39906-Oth Tang Prop - PC Hardware	2,556,546	2,566,539	1,094,080	1,100,278	1,100,278	1,100,278	276,093	280,543	286,062	286,062	290,376	289,767
39907-Oth Tang Prop - PC Software	3,327,195	3,327,435	3,414,376	3,414,136	3,414,136	3,414,136	495,393	495,833	495,833	495,833	495,833	496,433
39908-Oth Tang Prop - Appl Software	93,619,811	93,621,850	93,652,240	93,652,240	93,652,240	93,652,240	91,051,500	91,051,500	91,051,500	91,051,500	91,051,500	91,189,428
39910-CKV-Other Tangible Property	90,541	90,541	90,341	90,341	90,341	90,341	90,341	90,341	90,341	90,341	90,341	90,341
39916-CKV-Oth Tang Prop-PC Hardware	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015
39917-CKV-Oth Tang Prop-PC Software	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541
39924-Oth Tang Prop - Gen.	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326	23,172,326
39924-Oth Tang Prop - Gen.												
RWIP												
091 - Brentwood Division	**5,719,679**	**5,719,679**	**5,713,217**	**5,527,835**	**5,527,835**	**5,557,181**	**5,557,181**	**5,557,181**	**5,556,654**	**5,556,654**	**5,556,654**	**5,556,654**
30100-Organization	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309
30300-Misc. Intangible Plant	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552
39001-Structures - Frame	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339
39004-Air Conditioning Equipment	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771
39009-Improv. to Leased Premises	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834
39100-Office Furniture & Equipment	63,450	63,450	63,450	63,450	63,450	63,450	63,450	63,450	63,450	63,450	63,450	63,450
39200-Transportation Equipment	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110
39300-Stores Equipment	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161
39400-Tools Shop And Garage	142,559	142,559	142,559	142,559	142,559	142,559	142,559	142,559	142,559	142,559	142,559	142,559
39600-Power Operated Equipment	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534
39700-Communication Equipment	320,786	320,786	317,545	317,545	317,545	317,545	317,545	317,545	317,545	317,545	317,545	317,545
39800-Miscellaneous Equipment	860,082	860,082	860,082	825,695	825,695	825,695	825,695	825,695	825,695	825,695	825,695	825,695
39900-Other Tangible Property	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993
39901-Oth Tang Prop - Servers - H/W	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194
39902-Oth Tang Prop - Servers - S/W	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273
39903-Oth Tang Prop - Network - H/W	251,698	251,698	251,698	248,089	248,089	248,089	248,089	251,698	251,698	251,698	251,698	251,698
39906-Oth Tang Prop - PC Hardware	1,237,293	1,237,293	1,234,072	1,086,687	1,086,687	1,116,033	1,116,033	1,112,423	1,111,896	1,111,896	1,111,896	1,111,896
39907-Oth Tang Prop - PC Software	128,631	128,631	128,631	128,631	128,631	128,631	128,631	128,631	128,631	128,631	128,631	128,631
39908-Oth Tang Prop - Appl Software	739,111	739,111	739,111	739,111	739,111	739,111	739,111	739,111	739,111	739,111	739,111	739,111
RWIP												
Grand Total	**733,035,186**	**735,384,485**	**707,267,921**	**707,760,546**	**708,429,064**	**708,739,204**	**690,271,175**	**691,143,088**	**692,494,308**	**693,549,016**	**694,793,764**	**702,257,381**

Atmos Energy Corporation
Plant Data

Row Labels	10/2012	11/2012	12/2012	1/2013	2/2013	3/2013	4/2013	5/2013	6/2013	7/2013	8/2013	9/2013
002 - Dallas Atmos Rate Division	**166,747,792**	**169,545,991**	**175,809,436**	**176,071,682**	**176,374,530**	**176,230,699**	**176,351,566**	**174,882,956**	**175,624,985**	**175,693,257**	**175,714,408**	**175,137,651**
39000-Structures & Improvements	40,547	46,106	49,306	49,306	49,306	49,306	49,306	49,306	145,273	212,987	212,987	462,279
39005-G-Structures & Improvements	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286
39009-Improv. to Leased Premises	8,668,800	8,668,800	8,855,976	8,856,030	8,856,030	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029
39029-Improv. to Leased Prem-AEAM												
39100-Office Furniture & Equipment	10,787,789	10,787,789	10,810,676	10,809,372	10,809,371	10,515,340	10,515,340	9,206,381	9,215,810	9,215,810	9,215,810	9,215,810
39102-Remittance Processing												
39103-Office Furn. - Copiers & Type												
39104-G-Office Furniture & Equip.	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741
39120-Office Furniture & Equip-AEAM												
39200-Transportation Equipment	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143
39300-Stores Equipment												
39400-Tools Shop And Garage	212,213	212,213	212,213	212,213	212,213	212,213	212,213	212,213	221,680	222,469	240,167	240,098
39420-Tools And Garage-AEAM												
39500-Laboratory Equipment	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632
39700-Communication Equipment	2,439,868	2,439,868	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692
39720-Communication Equip-AEAM												
39800-Miscellaneous Equipment	388,189	388,189	388,189	388,189	388,189	388,189	388,189	437,555	437,555	437,555	437,555	437,555
39820-Miscellaneous Equipment-AEAM												
39900-Other Tangible Property	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268	769,103	769,103	772,557	162,268
39901-Oth Tang Prop - Servers - H/W	23,698,912	25,846,749	26,107,815	26,113,779	26,220,352	26,305,182	26,316,210	26,316,150	26,319,264	26,319,264	26,319,264	26,319,264
39902-Oth Tang Prop - Servers - S/W	14,097,636	14,152,308	14,454,168	14,453,987	14,623,951	14,634,075	14,640,759	14,641,311	14,646,369	14,646,369	14,646,369	14,646,369
39903-Oth Tang Prop - Network - H/W	3,891,769	3,891,776	3,795,559	3,795,559	3,795,559	3,795,559	3,795,559	3,795,559	3,795,559	3,795,559	3,795,559	3,795,559
39904-Mainframe Cpu												
39905-Mainframe Hardware												
39906-Oth Tang Prop - PC Hardware	2,581,901	2,609,002	2,641,150	2,641,052	2,641,052	2,648,461	2,648,572	2,648,483	2,648,483	2,648,483	2,648,483	2,648,483
39907-Oth Tang Prop - PC Software	1,867,740	1,869,066	1,597,817	1,597,814	1,597,814	1,602,718	1,602,735	1,602,712	1,602,712	1,602,712	1,602,712	1,602,712
39908-Oth Tang Prop - Appl Software	85,954,740	86,516,438	92,330,186	92,587,999	92,614,312	92,657,246	92,760,273	92,550,875	92,563,035	92,562,802	92,562,802	92,347,111
39909-Oth Tang Prop - Mainframe S/W	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619	2,614,619
39921-OthTang Prop-Servers-H/W-AEAM												
39922-OthTang Prop-Servers-S/W-AEAM												
39923-OthTang Prop-Network-H/W-AEAM												
39924-Oth Tang Prop - Gen.												
39924-Oth Tang Prop - Gen.												
39926-OthTang Prop-PC Hardware-AEAM												
39928-Oth Tang Prop-Appl SW-AEAM												
RWIP												
009 - WKG Division	**381,306,516**	**382,330,084**	**382,243,004**	**383,487,613**	**384,713,708**	**385,788,686**	**387,326,223**	**388,123,524**	**389,640,692**	**391,077,598**	**393,067,955**	**396,742,114**
30100-Organization	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330
30200-Franch & Consent Grp	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853
32520-Producing Leaseholds	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353	2,353
32540-Rights-Of-Way	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422
33100-Producing Gas Wells -	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492	3,492
33100-Production Gas Wells Equipmen												
33201-Field Lines	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163	47,163
33202-Tributary Lines	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218	528,218
33400-Field Measuring And R	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384	192,384
33600-Purification Equipmen	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369	44,369
33600-Purification Equipment												
35010-Land	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127
35020-Rights-Of-Way	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682
35100-Structures & Improvements	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916
35102-Compressor Station Equipment	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261
35103-Meas. & Reg. Sta. Structures	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138
35104-Other Structures	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443
35200-Wells	3,705,764	3,705,170	3,706,441	3,706,441	3,706,441	3,706,441	3,706,441	3,706,441	3,706,441	3,706,441	3,706,441	4,674,802
35201-Well Construction	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999
35202-Well Equipment	455,309	455,309	455,309	455,309	455,309	455,309	455,309	449,149	449,149	449,192	449,192	437,438
35203-Cushion Gas	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833
35210-Leaseholds	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530
35211-Storage Rights	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614
35301-Field Lines	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497
35302-Tributary Lines	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458

Atmos Energy Corporation
Plant Data

Row Labels	10/2012	11/2012	12/2012	1/2013	2/2013	3/2013	4/2013	5/2013	6/2013	7/2013	8/2013	9/2013
35400-Compressor Station Equipment	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446
35500-Meas. & Reg. Equipment	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883
35600-Purification Equipment	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	163,979	405,597
36510-Land & Land Rights	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970
36520-Rights-Of-Way	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772
36602-Meas. & Reg. Sta. Str	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002
36603-Other Structures	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826
36700-Mains - Cathodic Protection	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	406,035	435,307
36701-Mains - Steel	28,873,489	28,570,796	28,570,796	28,547,050	28,547,050	28,547,050	28,547,050	28,547,050	28,544,551	28,544,551	28,544,551	28,544,551
36900-Meas. & Reg. Sta. Equipment	578,023	578,023	578,023	578,023	578,023	578,023	578,023	578,023	578,023	615,022	615,022	615,022
36901-Measuring And Reg. St	2,276,827	2,276,827	2,276,827	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023
37400-Land & Land Rights	440,848	440,848	440,848	483,722	483,722	483,722	483,722	483,722	483,723	483,727	483,727	526,452
37401-Land	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326
37402-Land Rights	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401
37403-Land Other	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784
37500-Structures & Improvements	336,178	336,173	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168
37501-Structures & Improvements T.B	101,507	101,507	101,507	101,507	101,507	101,507	100,539	100,539	100,539	100,501	100,501	100,501
37502-Land Rights	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591
37503-Improvements	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005
37600-Mains - Cathodic Protection	11,064,896	11,092,857	11,124,397	11,154,891	11,186,008	11,224,071	11,244,296	11,273,978	11,293,692	11,321,699	11,353,521	11,388,679
37601-Mains - Steel	88,993,191	89,036,167	89,188,173	89,296,526	89,083,017	89,230,213	89,123,033	89,025,337	89,128,686	89,193,703	89,232,261	88,831,098
37602-Mains - Plastic	41,419,526	41,620,913	42,045,520	42,403,429	42,903,732	42,993,187	43,630,330	43,745,831	44,502,816	44,709,338	44,978,449	47,084,919
37800-Meas. & Reg. Sta. Eq-General	4,899,516	4,900,618	5,001,533	5,031,110	5,075,036	5,075,091	5,074,185	5,082,066	5,087,890	5,087,211	5,087,198	5,093,806
37900-Meas. & Reg. - City Gate	1,966,561	1,984,869	1,986,345	2,035,319	2,092,610	2,127,169	2,126,652	2,126,557	2,151,247	2,175,999	2,175,983	2,259,130
37905-Meas. & Reg. Sta. Equip T.B.	1,415,373	1,415,373	1,415,373	1,415,373	1,415,373	1,415,373	1,415,373	1,415,373	1,414,780	1,405,100	1,405,100	1,405,100
38000-Services	90,582,153	91,052,495	91,616,811	91,857,241	92,296,631	92,672,646	93,328,088	93,689,617	94,085,289	94,745,665	95,611,279	95,874,383
38100-Meters	17,566,409	17,947,996	18,644,506	18,878,960	19,079,482	19,304,894	19,492,396	19,710,145	20,022,968	20,163,240	20,361,594	20,544,649
38200-Meter Installations	48,526,688	48,671,311	48,654,954	48,758,314	48,839,784	48,875,819	48,921,581	49,013,018	49,053,757	49,250,415	49,521,126	49,532,817
38300-House Regulators	6,926,096	6,957,457	6,976,370	6,997,333	7,035,991	7,031,694	7,113,984	7,137,161	7,081,105	7,115,137	7,134,828	7,188,811
38400-House Reg. Installations	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276
38500-Industrial Measuring	4,995,298	5,000,250	5,004,778	5,016,473	5,016,597	5,025,479	5,026,193	5,030,053	5,032,005	5,056,663	5,127,958	5,127,370
38500-Industrial Measuring												
38900-Land & Land Rights	786,216	786,216	786,216	786,216	786,216	786,216	786,216	786,216	786,216	786,216	786,216	786,216
38900-Land & Land Rights												
39000-Structures & Improvements	1,496,980	1,496,803	1,567,760	1,585,948	1,585,948	1,580,879	1,580,879	1,588,851	1,589,039	1,589,021	1,884,925	1,876,997
39002-Structures - Brick	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755	178,755
39003-Improvements	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022
39004-Air Conditioning Equipment	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461
39009-Improv. to Leased Premises	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376
39100-Office Furniture & Equipment	1,453,652	1,453,652	1,453,652	1,453,652	1,453,652	1,449,816	1,449,816	1,449,816	1,449,816	1,449,816	1,449,816	1,449,816
39103-Office Furn. - Copiers & Type												
39200-Transportation Equipment	395,444	395,444	395,444	395,444	395,444	395,444	395,444	395,444	395,444	358,343	358,343	358,343
39201-Wkg Trucks - Group												
39202-WKG Trailers	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192
39400-Tools Shop And Garage	2,110,326	2,110,326	2,110,344	2,123,510	2,145,044	2,158,367	2,176,395	2,188,716	2,103,095	2,082,533	2,092,869	2,105,336
39603-Ditchers	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704
39604-Backhoes	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747
39605-Welders	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236
39700-Communication Equipment	377,663	377,663	377,222	377,222	377,222	377,222	377,222	377,222	377,222	377,222	377,222	377,222
39701-Communication Equip.												
39701-Communication Equip.												
39702-Communication Equip.												
39702-Communication Equip.												
39705-Comm. Equip. - Telemetering	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316	66,316
39800-Miscellaneous Equipment	3,326,688	3,329,125	3,117,649	3,126,372	3,126,372	3,245,533	3,245,533	3,275,674	3,275,674	3,363,318	3,363,318	3,413,287
39901-Oth Tang Prop - Servers - H/W	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990	175,990
39902-Oth Tang Prop - Servers - S/W	113,473	113,473	100,775	100,775	100,775	100,775	100,775	100,775	100,775	100,775	100,775	100,775
39903-Oth Tang Prop - Network - H/W	511,781	511,781	52,297	52,297	52,297	52,297	52,297	52,297	52,297	52,297	52,297	52,297
39906-Oth Tang Prop - PC Hardware	3,455,424	3,455,424	2,507,892	2,507,892	2,533,161	2,533,188	2,533,188	2,533,188	2,533,188	2,533,188	2,452,177	2,460,141
39907-Oth Tang Prop - PC Software	247,331	247,331	13,883	13,883	13,883	13,883	13,883	13,883	13,883	13,883	13,883	13,883
39908-Oth Tang Prop - Appl Software	411,710	411,710	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014
RWIP												
RWIP Recon												

Atmos Energy Corporation
Plant Data

Row Labels	10/2012	11/2012	12/2012	1/2013	2/2013	3/2013	4/2013	5/2013	6/2013	7/2013	8/2013	9/2013
RWIP-Recon												
012 - Call Center Division	**159,962,518**	**159,993,650**	**160,051,262**	**160,052,332**	**160,053,552**	**160,788,289**	**160,818,671**	**150,640,182**	**151,746,657**	**151,772,096**	**151,807,203**	**153,019,115**
38900-Land	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240
38910-CKV Land&Land Rights	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123
39000-Structures & Improvements	13,181,947	13,181,947	13,181,947	13,181,947	13,181,947	13,181,947	13,181,947	13,182,141	13,197,279	13,197,279	13,222,138	12,331,919
39009-Improv. to Leased Premises	4,418,390	4,424,651	4,424,649	4,424,649	4,424,649	4,424,649	4,424,649	4,424,649	4,424,649	4,424,649	4,424,649	4,424,649
39010-CKV-Structures & Improvements	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,400,518	10,414,698	10,414,698	10,414,663
39100-Office Furniture & Equipment	1,143,140	1,143,140	1,143,140	1,143,140	1,143,140	1,143,140	1,143,140	1,277,908	1,330,884	1,334,673	1,334,673	2,268,134
39103-Office Furn. - Copiers & Type												
39700-Communication Equipment	2,064,080	2,064,080	2,064,080	2,064,080	2,064,080	2,064,080	2,064,080	1,945,225	1,945,225	1,945,225	1,945,225	1,945,225
39710-CKV-Communication Equipment	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621
39800-Miscellaneous Equipment	9,812	9,812	9,812	9,812	9,812	9,812	9,812	9,812	9,812	14,443	14,443	14,443
39900-Other Tangible Property												610,289
39901-Oth Tang Prop - Servers - H/W	5,383,572	5,383,572	5,383,572	5,383,572	5,383,572	5,451,037	5,451,037	7,878,639	7,877,147	7,877,024	7,877,024	7,877,050
39902-Oth Tang Prop - Servers - S/W	2,370,174	2,370,174	2,370,174	2,370,174	2,370,174	2,695,956	2,695,956	1,639,161	1,618,301	1,618,292	1,618,292	1,618,294
39903-Oth Tang Prop - Network - H/W	435,051	435,051	435,051	435,051	435,051	435,051	435,051	450,276	450,457	450,456	450,456	450,456
39906-Oth Tang Prop - PC Hardware	289,767	293,752	341,995	343,066	342,736	684,125	714,506	719,467	722,599	735,597	745,844	749,347
39907-Oth Tang Prop - PC Software	496,433	496,433	496,433	496,433	496,433	496,433	496,433	491,869	491,869	491,869	491,869	491,869
39908-Oth Tang Prop - Appl Software	91,189,428	91,210,314	91,229,032	91,229,032	91,229,032	91,229,032	91,229,032	102,810,985	103,868,386	103,858,359	103,858,359	104,413,245
39910-CKV-Other Tangible Property	90,341	90,341	90,341	90,341	91,890	91,992	91,992	91,992	91,992	91,992	91,992	91,992
39916-CKV-Oth Tang Prop-PC Hardware	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015
39917-CKV-Oth Tang Prop-PC Software	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541
39924-Oth Tang Prop - Gen.	23,172,326	23,172,326	23,162,979	23,162,979	23,162,979	23,162,979	23,162,979	0				
39924-Oth Tang Prop - Gen.												
RWIP												
091 - Brentwood Division	**5,556,607**	**5,556,607**	**4,031,062**	**4,031,062**	**4,281,047**	**4,257,533**	**4,257,533**	**4,206,295**	**4,206,295**	**4,206,295**	**4,211,622**	**4,958,561**
30100-Organization	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309
30300-Misc. Intangible Plant	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552
39001-Structures - Frame	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339
39004-Air Conditioning Equipment	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771
39009-Improv. to Leased Premises	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834
39100-Office Furniture & Equipment	63,450	63,450	68,248	68,248	63,917	63,917	63,917	63,917	63,917	63,917	63,917	63,917
39200-Transportation Equipment	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110
39300-Stores Equipment	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	4,161	0
39400-Tools Shop And Garage	142,559	142,559	142,559	142,559	142,559	142,559	142,559	142,978	142,978	142,978	142,978	142,978
39600-Power Operated Equipment	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534
39700-Communication Equipment	317,545	317,545	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	230,940	230,940
39800-Miscellaneous Equipment	825,695	825,695	825,463	825,463	825,463	825,463	825,463	817,796	817,796	817,796	817,796	817,796
39900-Other Tangible Property	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993
39901-Oth Tang Prop - Servers - H/W	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194
39902-Oth Tang Prop - Servers - S/W	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273
39903-Oth Tang Prop - Network - H/W	251,698	251,698	240,507	240,507	240,507	240,507	240,507	209,358	209,358	209,358	209,358	209,358
39906-Oth Tang Prop - PC Hardware	1,111,849	1,111,849	481,398	481,398	735,714	673,624	673,624	660,783	660,783	660,783	660,783	664,795
39907-Oth Tang Prop - PC Software	128,631	128,631	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816
39908-Oth Tang Prop - Appl Software	739,111	739,111	31,388	31,388	31,388	69,964	69,964	69,964	69,964	69,964	69,964	817,052
RWIP												
Grand Total	**713,573,433**	**717,426,332**	**722,134,764**	**723,642,690**	**725,422,838**	**727,065,207**	**728,753,993**	**717,852,957**	**721,218,629**	**722,749,245**	**724,801,187**	**729,857,441**

Atmos Energy Corporation
Plant Data

Row Labels	10/2013	11/2013	12/2013	1/2014	2/2014	3/2014	4/2014	5/2014	6/2014	7/2014	8/2014	9/2014
002 - Dallas Atmos Rate Division	**176,211,114**	**177,264,574**	**177,798,045**	**176,794,951**	**176,825,107**	**176,901,632**	**178,092,510**	**178,105,544**	**178,482,024**	**178,818,174**	**178,893,467**	**183,264,217**
39000-Structures & Improvements	480,148	481,439	486,269	466,287	466,287	492,992	938,477	940,822	940,720	940,720	940,720	1,309,246
39005-G-Structures & Improvements	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,154,286	9,199,401	9,199,401	9,199,401
39009-Improv. to Leased Premises	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029	8,856,029
39029-Improv. to Leased Prem-AEAM												
39100-Office Furniture & Equipment	9,218,296	9,218,296	9,298,222	9,298,222	9,298,222	9,347,436	9,347,436	9,359,619	9,416,214	9,421,895	9,421,895	10,496,896
39102-Remittance Processing												
39103-Office Furn. - Copiers & Type												
39104-G-Office Furniture & Equip.	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741
39120-Office Furniture & Equip-AEAM												
39200-Transportation Equipment	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	99,143	103,416	103,416
39300-Stores Equipment												
39400-Tools Shop And Garage	240,098	252,397	252,397	252,397	252,397	252,397	252,397	252,397	252,397	254,975	264,481	264,476
39420-Tools And Garage-AEAM												
39500-Laboratory Equipment	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632
39700-Communication Equipment	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692	2,448,692
39720-Communication Equip-AEAM												
39800-Miscellaneous Equipment	437,555	466,272	466,272	466,272	474,355	474,925	474,925	474,925	474,925	481,673	481,673	481,521
39820-Miscellaneous Equipment-AEAM												
39900-Other Tangible Property	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268	162,268	168,103	168,103	168,103
39901-Oth Tang Prop - Servers - H/W	26,561,336	26,561,336	29,080,621	28,844,353	28,844,358	28,844,299	29,086,086	29,086,041	29,085,997	29,085,997	29,087,101	29,891,192
39902-Oth Tang Prop - Servers - S/W	14,646,369	14,646,369	14,345,090	14,348,480	14,348,484	14,348,448	14,845,692	14,844,245	15,006,936	15,054,132	15,055,891	16,346,608
39903-Oth Tang Prop - Network - H/W	3,795,559	3,795,559	3,559,602	3,560,460	3,560,460	3,560,450	3,560,450	3,560,450	3,560,450	3,560,450	3,560,450	3,560,450
39904-Mainframe Cpu												
39905-Mainframe Hardware												
39906-Oth Tang Prop - PC Hardware	2,666,778	2,666,778	2,621,505	2,621,505	2,621,505	2,621,505	2,627,937	2,627,937	2,630,968	2,645,606	2,666,092	2,696,309
39907-Oth Tang Prop - PC Software	1,612,149	1,612,149	1,019,047	1,019,047	1,019,047	1,019,047	1,019,047	1,019,047	1,029,795	1,029,795	1,029,795	1,029,795
39908-Oth Tang Prop - Appl Software	93,130,416	94,141,569	94,850,996	94,099,905	94,121,969	94,122,109	94,122,038	94,122,038	94,265,598	94,473,958	94,512,123	95,314,477
39909-Oth Tang Prop - Mainframe S/W	2,614,619	2,614,619	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232
39921-OthTang Prop-Servers-H/W-AEAM												
39922-OthTang Prop-Servers-S/W-AEAM												
39923-OthTang Prop-Network-H/W-AEAM												
39924-Oth Tang Prop - Gen.												
39924-Oth Tang Prop - Gen.												
39926-OthTang Prop-PC Hardware-AEAM												
39928-Oth Tang Prop-Appl SW-AEAM												
RWIP												
009 - WKG Division	**397,656,093**	**399,611,900**	**401,105,145**	**407,028,840**	**407,695,128**	**411,730,895**	**414,395,486**	**412,466,316**	**413,517,598**	**416,151,742**	**418,008,105**	**424,189,446**
30100-Organization	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330
30200-Franch & Consent Grp	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853
32520-Producing Leaseholds	2,353	2,353	2,353	2,353	0							
32540-Rights-Of-Way	83,422	83,422	83,422	83,422	83,272	83,272	83,272	83,272	83,272	83,272	83,272	83,272
33100-Producing Gas Wells -												
33100-Production Gas Wells Equipmen	3,492	3,492	3,492	3,492	0							
33201-Field Lines	47,163	47,163	47,163	47,163	24,694	24,694	24,694	24,694	24,694	24,694	24,694	24,694
33202-Tributary Lines	528,218	528,218	528,218	528,218	518,838	518,838	518,838	518,838	518,838	518,838	518,838	518,838
33400-Field Measuring And R	192,384	192,384	192,384	192,384	9,180	9,180	9,180	9,180	9,180	9,180	9,180	9,180
33600-Purification Equipmen												
33600-Purification Equipment	44,369	44,369	44,369	44,369	150	150	150	150	150	150	150	150
35010-Land	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127
35020-Rights-Of-Way	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682
35100-Structures & Improvements	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916
35102-Compressor Station Equipment	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261
35103-Meas. & Reg. Sta. Structures	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138
35104-Other Structures	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443
35200-Wells	4,675,943	4,684,300	4,704,871	4,704,737	4,704,737	4,704,737	4,704,737	4,704,737	4,704,737	4,704,737	4,704,737	5,870,418
35201-Well Construction	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999
35202-Well Equipment	437,438	437,438	437,438	437,438	437,438	437,438	437,438	437,438	437,438	437,438	437,438	424,750
35203-Cushion Gas	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833
35210-Leaseholds	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530
35211-Storage Rights	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614
35301-Field Lines	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497
35302-Tributary Lines	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458

Atmos Energy Corporation
Plant Data

Row Labels	10/2013	11/2013	12/2013	1/2014	2/2014	3/2014	4/2014	5/2014	6/2014	7/2014	8/2014	9/2014
35400-Compressor Station Equipment	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446
35500-Meas. & Reg. Equipment	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883
35600-Purification Equipment	404,690	404,426	404,426	404,426	404,426	404,426	404,426	404,426	414,684	414,655	414,652	414,663
36510-Land & Land Rights	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970
36520-Rights-Of-Way	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772
36602-Meas. & Reg. Sta. Str	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002
36603-Other Structures	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826
36700-Mains - Cathodic Protection	431,856	431,512	431,159	431,159	431,159	431,159	431,159	185,509	185,509	185,509	185,509	185,509
36701-Mains - Steel	28,544,551	28,544,551	28,634,766	27,926,003	27,925,971	27,924,437	27,852,709	27,845,816	27,845,816	27,845,816	27,845,816	27,845,816
36900-Meas. & Reg. Sta. Equipment	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022
36901-Measuring And Reg. St	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,276,023	2,273,521	2,273,521	2,273,521
37400-Land & Land Rights	526,350	526,345	526,289	526,289	526,289	526,289	526,289	526,289	526,289	526,289	526,289	531,192
37401-Land	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326
37402-Land Rights	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401	253,401
37403-Land Other	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784
37500-Structures & Improvements	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168
37501-Structures & Improvements T.B	100,501	100,501	100,501	100,501	100,501	100,501	100,501	100,501	100,501	100,501	99,818	99,818
37502-Land Rights	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591	46,591
37503-Improvements	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005
37600-Mains - Cathodic Protection	11,415,400	11,440,444	11,467,832	11,488,518	11,520,513	11,556,729	11,587,355	20,793,197	20,511,819	20,518,621	20,562,526	20,715,876
37601-Mains - Steel	88,824,423	88,818,399	89,000,451	94,183,264	94,259,171	94,189,632	94,045,804	84,375,421	84,339,308	84,332,907	84,364,086	83,615,075
37602-Mains - Plastic	47,263,382	48,216,725	48,306,994	48,905,522	49,018,786	52,077,640	53,852,531	53,956,247	54,013,679	55,107,251	56,101,778	60,719,622
37800-Meas. & Reg. Sta. Eq-General	5,088,863	5,087,493	5,087,493	5,095,039	5,095,039	5,121,651	5,123,640	5,123,156	5,122,989	5,121,744	5,129,321	5,234,987
37900-Meas. & Reg. - City Gate	2,297,170	2,322,087	2,325,610	2,325,610	2,358,974	2,365,465	2,366,771	2,393,228	2,392,558	2,441,385	2,523,679	2,717,836
37905-Meas. & Reg. Sta. Equip T.B.	1,398,298	1,398,298	1,398,298	1,398,298	1,398,298	1,398,298	1,398,298	1,398,298	1,398,298	1,398,298	1,397,972	1,395,942
38000-Services	96,289,989	96,852,116	97,635,419	98,032,418	98,393,651	99,186,101	99,870,604	100,651,651	101,403,891	102,346,184	102,674,606	102,590,801
38100-Meters	20,652,617	20,917,710	21,338,819	21,546,246	21,720,712	22,017,415	22,241,972	22,186,076	22,320,050	22,542,739	22,673,798	22,987,936
38200-Meter Installations	49,663,229	49,758,186	49,771,268	49,830,328	49,916,256	49,919,490	49,989,961	50,113,132	49,987,819	50,088,588	50,185,867	50,095,568
38300-House Regulators	7,216,971	7,236,539	7,247,802	7,266,589	7,272,086	7,279,008	7,285,157	7,290,487	7,580,772	7,610,524	7,623,646	7,896,127
38400-House Reg. Installations	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276
38500-Industrial Measuring	5,137,044	5,147,453	5,158,392	5,161,875	5,166,632	5,168,569	5,170,749	5,178,040	5,179,668	5,183,383	5,205,072	5,196,746
38500-Industrial Measuring												
38900-Land & Land Rights	786,216	786,216	786,216	923,479	923,479	923,479	923,479	924,555	1,024,633	1,024,626	1,024,626	1,024,626
38900-Land & Land Rights												
39000-Structures & Improvements	1,876,997	1,876,997	1,876,997	1,876,997	1,876,997	1,901,118	1,968,966	2,047,078	2,053,520	2,139,282	2,139,216	2,139,227
39002-Structures - Brick	178,755	178,755	178,755	178,755	178,755	173,115	173,115	173,115	173,115	173,115	173,115	173,115
39003-Improvements	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022	725,022
39004-Air Conditioning Equipment	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461
39009-Improv. to Leased Premises	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376	1,279,376
39100-Office Furniture & Equipment	1,449,816	1,449,816	1,449,816	1,449,816	1,449,816	1,446,133	1,446,133	1,394,033	1,438,579	1,450,743	1,450,681	1,450,410
39103-Office Furn. - Copiers & Type												
39200-Transportation Equipment	358,343	358,343	358,343	358,343	358,343	260,695	260,695	260,695	260,695	260,695	260,695	417,941
39201-Wkg Trucks - Group												
39202-WKG Trailers	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192
39400-Tools Shop And Garage	2,105,336	2,105,336	2,105,336	2,105,336	2,146,224	2,202,942	2,205,143	1,705,861	1,726,481	1,726,481	1,726,481	1,738,370
39603-Ditchers	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704
39604-Backhoes	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747
39605-Welders	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236
39700-Communication Equipment	377,222	377,222	377,222	377,222	377,222	377,222	377,222	332,722	332,722	332,722	332,722	332,722
39701-Communication Equip.												
39701-Communication Equip.												
39702-Communication Equip.												
39702-Communication Equip.												
39705-Comm. Equip. - Telemetering	66,316	66,316	66,316	66,316	66,316	66,316	66,316	0				
39800-Miscellaneous Equipment	3,413,962	3,413,962	3,253,901	3,253,901	3,258,190	3,276,407	3,289,832	3,288,002	3,365,422	3,463,406	3,602,935	3,668,753
39901-Oth Tang Prop - Servers - H/W	175,990	175,990	175,990	175,990	175,990	175,990	175,990	0				
39902-Oth Tang Prop - Servers - S/W	100,775	100,775	100,775	100,775	100,775	100,775	100,775	0				
39903-Oth Tang Prop - Network - H/W	52,297	52,297	52,297	52,297	52,297	52,297	52,297	52,297	52,297	52,297	52,297	82,165
39906-Oth Tang Prop - PC Hardware	2,460,141	2,460,141	2,460,141	2,460,141	2,460,141	2,345,478	2,345,478	1,019,996	1,019,996	1,019,996	986,913	1,021,622
39907-Oth Tang Prop - PC Software	13,883	13,883	13,883	13,883	13,883	13,883	13,883	13,752	13,752	13,752	13,752	13,752
39908-Oth Tang Prop - Appl Software	139,014	139,014	139,014	139,014	139,014	139,014	139,014	123,515	123,515	123,515	123,515	123,515
RWIP												
RWIP Recon												

Atmos Energy Corporation
Plant Data

Row Labels	10/2013	11/2013	12/2013	1/2014	2/2014	3/2014	4/2014	5/2014	6/2014	7/2014	8/2014	9/2014
RWIP-Recon												
012 - Call Center Division	**153,111,081**	**156,464,594**	**156,219,881**	**157,232,983**	**157,232,983**	**157,234,940**	**157,240,625**	**157,240,738**	**157,241,182**	**157,244,484**	**157,266,324**	**159,091,056**
38900-Land	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240
38910-CKV Land&Land Rights	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123
39000-Structures & Improvements	12,537,933	12,554,732	12,556,050	12,576,032	12,576,032	12,576,032	12,576,032	12,576,032	12,576,032	12,576,032	12,576,032	12,583,275
39009-Improv. to Leased Premises	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434
39010-CKV-Structures & Improvements	10,414,663	10,414,663	10,414,663	10,414,663	10,414,663	10,414,663	10,414,663	10,414,663	10,414,663	10,419,807	10,419,807	10,419,807
39100-Office Furniture & Equipment	2,268,640	2,268,640	2,268,664	2,268,664	2,268,664	2,268,664	2,268,664	2,268,664	2,268,664	2,268,664	2,290,657	2,303,598
39103-Office Furn. - Copiers & Type							3,761	3,761	4,058	4,058	4,058	4,058
39700-Communication Equipment	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785
39710-CKV-Communication Equipment	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621
39800-Miscellaneous Equipment	25,390	25,390	25,439	25,439	25,439	25,439	25,439	25,439	25,439	25,439	25,439	28,617
39900-Other Tangible Property	610,178	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166
39901-Oth Tang Prop - Servers - H/W	7,892,587	8,115,294	7,682,644	7,924,716	7,924,716	7,924,716	7,924,716	7,924,716	7,924,716	7,924,716	7,924,716	7,924,716
39902-Oth Tang Prop - Servers - S/W	1,618,294	1,786,585	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302
39903-Oth Tang Prop - Network - H/W	461,847	494,467	494,406	494,406	494,406	494,406	494,406	494,406	494,406	494,406	494,406	494,406
39906-Oth Tang Prop - PC Hardware	749,347	749,347	864,718	864,718	864,718	866,675	868,600	868,712	868,860	867,018	866,866	872,783
39907-Oth Tang Prop - PC Software	491,869	491,869	499,710	499,710	499,710	499,710	499,710	499,710	499,710	499,710	499,710	499,710
39908-Oth Tang Prop - Appl Software	104,369,582	107,263,687	107,327,365	108,078,413	108,078,413	108,078,413	108,078,413	108,078,413	108,078,413	108,078,413	108,078,413	109,873,866
39910-CKV-Other Tangible Property	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992
39916-CKV-Oth Tang Prop-PC Hardware	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015
39917-CKV-Oth Tang Prop-PC Software	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541
39924-Oth Tang Prop - Gen.												
39924-Oth Tang Prop - Gen.												
RWIP												
091 - Brentwood Division	**4,958,561**	**4,979,948**	**4,993,956**	**4,993,956**	**5,010,663**	**4,988,938**	**4,988,877**	**4,988,868**	**4,988,874**	**4,988,874**	**4,988,874**	**5,054,276**
30100-Organization	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309
30300-Misc. Intangible Plant	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552
39001-Structures - Frame	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339
39004-Air Conditioning Equipment	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771
39009-Improv. to Leased Premises	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834
39100-Office Furniture & Equipment	63,917	63,917	63,917	63,917	63,917	41,784	41,784	41,784	41,784	41,784	41,784	41,784
39200-Transportation Equipment	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110
39300-Stores Equipment												
39400-Tools Shop And Garage	142,978	142,978	142,978	142,978	148,256	148,540	148,479	148,470	148,476	148,476	148,476	148,476
39600-Power Operated Equipment	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534
39700-Communication Equipment	230,940	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614
39800-Miscellaneous Equipment	817,796	817,796	817,796	817,796	817,796	817,796	817,796	817,796	817,796	817,796	817,796	817,796
39900-Other Tangible Property	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993
39901-Oth Tang Prop - Servers - H/W	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194
39902-Oth Tang Prop - Servers - S/W	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273
39903-Oth Tang Prop - Network - H/W	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358
39906-Oth Tang Prop - PC Hardware	664,795	664,795	663,469	663,469	674,897	675,021	675,021	675,021	675,021	675,021	675,021	722,503
39907-Oth Tang Prop - PC Software	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816	39,816
39908-Oth Tang Prop - Appl Software	817,052	843,767	859,101	859,101	859,101	859,101	859,101	859,101	859,101	859,101	859,101	877,021
RWIP												
Grand Total	**731,936,850**	**738,321,017**	**740,117,026**	**746,050,730**	**746,763,880**	**750,856,404**	**754,717,498**	**752,801,465**	**754,229,678**	**757,203,274**	**759,156,770**	**771,598,995**

Atmos Energy Corporation
Plant Data

Row Labels	10/2014	11/2014	12/2014	1/2015	2/2015	3/2015	4/2015	5/2015	6/2015	7/2015	8/2015	9/2015
002 - Dallas Atmos Rate Division	**183,330,586**	**183,569,237**	**195,570,965**	**195,888,030**	**195,919,916**	**195,592,886**	**195,601,150**	**195,852,576**	**197,628,004**	**188,483,242**	**188,703,283**	**188,771,987**
39000-Structures & Improvements	1,316,487	1,345,646	2,097,104	2,097,104	2,097,104	2,097,104	2,097,104	2,097,104	2,097,104	2,101,891	2,122,651	2,122,072
39005-G-Structures & Improvements	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401	9,199,401
39009-Improv. to Leased Premises	8,856,029	8,856,029	8,883,224	8,883,224	8,883,224	8,883,224	8,883,224	8,965,959	8,968,284	8,968,284	8,968,580	8,968,572
39029-Improv. to Leased Prem-AEAM												
39100-Office Furniture & Equipment	10,560,772	10,660,617	10,933,939	10,936,551	10,936,551	10,585,817	10,587,983	10,631,819	10,645,619	10,648,934	10,648,934	10,685,891
39102-Remittance Processing												
39103-Office Furn. - Copiers & Type												
39104-G-Office Furniture & Equip.	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741	63,741
39120-Office Furniture & Equip-AEAM												
39200-Transportation Equipment	103,416	103,416	103,416	103,416	103,416	103,416	103,416	103,416	103,416	103,416	103,416	103,416
39300-Stores Equipment												
39400-Tools Shop And Garage	264,476	264,476	264,476	271,572	294,948	309,560	310,208	310,208	433,307	439,357	439,357	440,789
39420-Tools And Garage-AEAM												
39500-Laboratory Equipment	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632	23,632
39700-Communication Equipment	2,448,692	2,448,692	2,460,470	2,461,160	2,461,160	2,461,161	2,461,161	2,461,161	2,461,161	2,426,749	2,439,990	2,439,990
39720-Communication Equip-AEAM												
39800-Miscellaneous Equipment	481,521	481,521	481,521	481,521	481,521	481,521	481,521	481,521	481,521	481,521	489,083	488,909
39820-Miscellaneous Equipment-AEAM												
39900-Other Tangible Property	168,103	168,103	168,103	168,103	168,103	168,103	168,103	168,103	168,103	168,103	168,103	168,103
39901-Oth Tang Prop - Servers - H/W	29,891,161	29,891,161	38,341,759	38,686,600	38,694,844	38,696,557	38,701,448	38,699,116	38,699,085	30,257,065	30,336,525	30,336,294
39902-Oth Tang Prop - Servers - S/W	16,346,357	16,346,357	16,894,391	16,885,735	16,885,891	16,886,100	16,886,414	16,886,594	17,001,892	16,922,077	16,948,934	16,948,310
39903-Oth Tang Prop - Network - H/W	3,560,450	3,560,450	3,294,832	3,253,171	3,253,171	3,254,075	3,253,713	3,253,713	3,270,656	3,256,714	3,256,714	3,256,714
39904-Mainframe Cpu												
39905-Mainframe Hardware												
39906-Oth Tang Prop - PC Hardware	2,696,306	2,694,298	2,539,324	2,549,204	2,549,525	2,555,286	2,555,286	2,560,471	2,560,471	1,608,182	1,667,012	1,669,448
39907-Oth Tang Prop - PC Software	1,029,795	1,027,518	1,011,760	1,013,548	1,013,532	1,013,537	1,013,537	1,013,537	1,013,537	686,133	686,133	686,133
39908-Oth Tang Prop - Appl Software	95,310,014	95,423,946	97,799,640	97,800,114	97,799,920	97,800,419	97,801,026	97,922,848	99,426,841	100,145,393	100,158,426	100,187,922
39909-Oth Tang Prop - Mainframe S/W	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	1,010,232	982,650	982,650	982,650
39921-OthTang Prop-Servers-H/W-AEAM												
39922-OthTang Prop-Servers-S/W-AEAM												
39923-OthTang Prop-Network-H/W-AEAM												
39924-Oth Tang Prop - Gen.												
39924-Oth Tang Prop - Gen.												
39926-OthTang Prop-PC Hardware-AEAM												
39928-Oth Tang Prop-Appl SW-AEAM												
RWIP												
009 - WKG Division	**425,495,780**	**440,260,477**	**443,434,030**	**446,222,219**	**445,083,204**	**448,172,032**	**450,824,784**	**452,521,048**	**453,545,378**	**462,073,954**	**465,677,479**	**470,188,396**
30100-Organization	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330	8,330
30200-Franch & Consent Grp	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853	119,853
32520-Producing Leaseholds												
32540-Rights-Of-Way	83,272	83,272	83,272	74,962	0							
33100-Producing Gas Wells -												
33100-Production Gas Wells Equipmen												
33201-Field Lines	24,694	24,694	24,694	0								
33202-Tributary Lines	518,838	518,838	518,838	0								
33400-Field Measuring And R	9,180	9,180	9,180	0								
33600-Purification Equipmen												
33600-Purification Equipment	150	150	150	0								
35010-Land	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127	261,127
35020-Rights-Of-Way	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682	4,682
35100-Structures & Improvements	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916	17,916
35102-Compressor Station Equipment	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261	153,261
35103-Meas. & Reg. Sta. Structures	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138	23,138
35104-Other Structures	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443	137,443
35200-Wells	5,870,020	5,870,020	5,870,020	5,870,020	5,870,020	5,870,020	5,870,020	5,870,020	5,870,020	5,870,020	6,650,497	6,646,226
35201-Well Construction	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999	1,699,999
35202-Well Equipment	424,750	424,750	424,750	424,750	424,750	424,750	424,750	424,750	424,750	424,750	415,819	415,819
35203-Cushion Gas	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833	1,694,833
35210-Leaseholds	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530	178,530
35211-Storage Rights	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614	54,614
35301-Field Lines	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497	178,497
35302-Tributary Lines	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458	209,458

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Row Labels	10/2014	11/2014	12/2014	1/2015	2/2015	3/2015	4/2015	5/2015	6/2015	7/2015	8/2015	9/2015
35400-Compressor Station Equipment	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446	923,446
35500-Meas. & Reg. Equipment	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883	240,883
35600-Purification Equipment	414,663	414,663	414,663	414,663	414,663	414,663	414,663	414,663	414,663	414,663	414,663	414,663
36510-Land & Land Rights	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970	26,970
36520-Rights-Of-Way	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772	867,772
36602-Meas. & Reg. Sta. Str	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002	49,002
36603-Other Structures	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826	60,826
36700-Mains - Cathodic Protection	185,509	185,509	185,509	185,509	185,509	185,509	185,509	185,509	185,509	185,509	185,509	166,665
36701-Mains - Steel	27,845,816	27,801,529	27,801,529	27,784,987	27,762,017	27,762,017	27,762,017	27,762,017	27,762,017	27,762,017	27,762,017	27,752,220
36900-Meas. & Reg. Sta. Equipment	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022	615,022
36901-Measuring And Reg. St	2,273,521	2,269,871	2,269,871	2,269,871	2,269,871	2,269,871	2,269,871	2,269,871	2,269,871	2,269,871	2,269,871	2,269,871
37400-Land & Land Rights	531,192	531,190	531,167	531,167	531,167	531,167	531,167	531,167	531,167	531,167	531,167	531,167
37401-Land	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326	37,326
37402-Land Rights	253,401	1,108,681	1,199,125	1,382,508	1,486,119	1,488,744	1,486,775	1,486,560	1,486,694	1,487,092	1,491,639	1,489,940
37403-Land Other	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784
37500-Structures & Improvements	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168	336,168
37501-Structures & Improvements T.B	99,818	99,818	99,818	99,818	99,818	99,818	99,818	99,818	99,818	99,818	99,818	99,818
37502-Land Rights	46,591	46,591	46,264	46,264	46,264	46,264	46,264	46,264	46,264	46,264	46,264	46,264
37503-Improvements	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005	4,005
37600-Mains - Cathodic Protection	20,750,736	20,774,895	20,836,506	20,860,292	20,900,394	20,979,600	21,037,180	21,072,972	20,725,421	20,660,765	20,684,473	20,723,609
37601-Mains - Steel	83,654,366	94,245,318	94,208,879	95,848,795	95,861,464	95,638,536	95,261,212	95,295,990	95,240,784	99,910,938	99,853,076	100,471,477
37602-Mains - Plastic	60,963,771	61,421,436	62,722,728	63,921,248	64,132,672	64,980,045	67,032,645	67,497,990	68,390,060	70,598,096	72,125,093	74,404,182
37800-Meas. & Reg. Sta. Eq-General	5,610,724	6,041,576	6,130,527	6,238,726	6,240,180	6,239,800	6,234,159	6,253,597	6,280,164	6,436,852	6,536,027	6,593,739
37900-Meas. & Reg. - City Gate	2,750,883	2,760,308	2,725,115	2,725,115	2,725,115	2,725,119	2,725,119	2,740,054	2,739,860	2,837,887	2,828,379	2,800,097
37905-Meas. & Reg. Sta. Equip T.B.	1,395,125	1,393,859	1,393,821	1,393,821	1,393,821	1,393,821	1,393,821	1,393,821	1,393,821	1,393,821	1,393,821	1,393,821
38000-Services	102,930,328	103,452,667	104,187,585	104,592,704	102,853,729	103,492,093	104,047,254	104,757,776	104,894,962	105,782,479	106,567,573	107,256,513
38100-Meters	23,171,797	23,417,181	23,649,693	23,605,889	23,763,492	25,381,438	25,483,958	25,652,765	25,930,077	26,167,837	26,407,453	27,093,283
38200-Meter Installations	50,112,004	50,206,430	50,164,630	49,956,729	50,089,151	50,097,254	50,360,782	50,392,019	50,366,004	50,397,414	50,462,608	50,424,827
38300-House Regulators	7,929,743	7,940,909	7,985,388	7,996,109	7,999,041	8,001,065	7,962,070	7,970,451	7,989,039	8,029,871	8,102,197	7,941,983
38400-House Reg. Installations	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276	154,276
38500-Industrial Measuring	5,202,801	5,202,517	5,207,153	5,214,498	5,217,901	5,236,997	5,237,834	5,238,441	5,247,798	5,256,103	5,270,160	5,272,087
38500-Industrial Measuring												
38900-Land & Land Rights	1,024,626	1,024,626	1,027,350	1,027,350	1,027,350	1,027,350	1,027,350	1,027,350	1,027,350	1,027,350	1,027,350	1,204,502
38900-Land & Land Rights												
39000-Structures & Improvements	2,139,227	3,711,706	4,354,998	4,387,240	4,390,063	4,414,908	4,455,317	4,455,317	4,563,322	4,594,618	4,594,618	4,591,849
39002-Structures - Brick	173,115	173,115	173,115	173,115	173,115	173,115	173,115	173,115	173,115	173,115	173,115	173,115
39003-Improvements	725,022	725,022	709,199	709,199	709,199	709,199	709,199	709,199	709,199	709,199	709,199	709,199
39004-Air Conditioning Equipment	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461	7,461
39009-Improv. to Leased Premises	1,279,376	1,279,376	1,246,194	1,246,194	1,246,194	1,246,194	1,246,194	1,246,194	1,246,194	1,246,194	1,246,194	1,246,194
39100-Office Furniture & Equipment	1,450,410	1,450,410	1,561,887	1,569,555	1,622,172	1,628,849	1,629,519	1,631,937	1,662,714	1,662,714	1,699,920	1,696,628
39103-Office Furn. - Copiers & Type												
39200-Transportation Equipment	417,941	417,941	419,004	419,004	419,004	362,906	362,906	362,906	362,906	362,906	362,906	362,906
39201-Wkg Trucks - Group												
39202-WKG Trailers	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	33,192	24,458
39400-Tools Shop And Garage	1,738,370	1,866,087	1,866,087	1,866,087	1,864,905	1,963,824	1,963,824	1,956,326	1,956,326	2,055,908	2,055,908	2,169,503
39603-Ditchers	53,704	53,704	53,704	53,704	53,704	53,704	53,704	53,704	47,303	47,303	47,303	47,303
39604-Backhoes	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747	62,747
39605-Welders	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236	33,236
39700-Communication Equipment	332,722	332,722	332,722	332,722	332,722	332,722	332,722	332,722	332,722	349,727	349,727	349,727
39701-Communication Equip.												
39701-Communication Equip.												
39702-Communication Equip.												
39702-Communication Equip.												
39705-Comm. Equip. - Telemetering												
39800-Miscellaneous Equipment	3,669,723	3,542,064	3,549,316	3,549,316	3,594,624	3,623,462	3,624,052	3,642,610	3,657,133	3,759,184	3,762,558	3,888,728
39901-Oth Tang Prop - Servers - H/W												
39902-Oth Tang Prop - Servers - S/W												
39903-Oth Tang Prop - Network - H/W	82,165	82,165	93,895	94,601	94,601	94,628	94,628	94,628	94,628	94,628	94,628	94,628
39906-Oth Tang Prop - PC Hardware	1,021,622	1,021,622	1,021,622	1,021,622	954,329	948,517	951,302	1,144,460	1,089,640	1,093,810	1,121,866	1,120,514
39907-Oth Tang Prop - PC Software	13,752	13,752	13,752	13,752	13,752	13,752	13,752	13,752	13,752	13,752	13,752	13,752
39908-Oth Tang Prop - Appl Software	123,515	123,515	123,515	123,515	123,515	123,515	123,515	123,515	123,515	123,515	123,515	123,515
RWIP												
RWIP Recon												

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Row Labels	10/2014	11/2014	12/2014	1/2015	2/2015	3/2015	4/2015	5/2015	6/2015	7/2015	8/2015	9/2015
RWIP-Recon												
012 - Call Center Division	**159,200,571**	**159,216,190**	**159,216,257**	**159,228,084**	**159,264,785**	**159,264,820**	**159,264,820**	**160,335,954**	**161,147,877**	**156,854,047**	**156,866,959**	**156,855,879**
38900-Land	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240	2,874,240
38910-CKV Land&Land Rights	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123	1,887,123
39000-Structures & Improvements	12,642,635	12,644,711	12,644,612	12,644,612	12,644,612	12,644,612	12,644,612	12,644,612	12,635,280	12,657,017	12,657,017	12,657,017
39009-Improv. to Leased Premises	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434	4,298,434
39010-CKV-Structures & Improvements	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807	10,419,807
39100-Office Furniture & Equipment	2,303,598	2,303,598	2,303,598	2,317,521	2,333,049	2,333,081	2,333,081	2,340,590	2,340,472	2,322,793	2,322,793	2,322,793
39103-Office Furn. - Copiers & Type	4,058	4,058	4,058	4,058	4,058	4,058	4,058	4,058	4,058	0		
39700-Communication Equipment	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785	1,962,785
39710-CKV-Communication Equipment	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621	271,621
39800-Miscellaneous Equipment	28,617	28,617	28,617	28,617	28,617	28,617	28,617	28,617	37,949	37,949	37,949	37,949
39900-Other Tangible Property	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166	629,166
39901-Oth Tang Prop - Servers - H/W	7,924,716	7,924,716	7,924,915	7,924,619	7,924,717	7,924,717	7,924,716	8,003,136	8,006,705	8,007,132	8,006,992	8,006,981
39902-Oth Tang Prop - Servers - S/W	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,786,302	1,788,636	1,800,594	1,800,655	1,800,635	1,800,635
39903-Oth Tang Prop - Network - H/W	494,406	494,406	494,406	494,406	494,406	494,406	494,406	533,685	533,775	534,223	534,074	534,068
39906-Oth Tang Prop - PC Hardware	872,792	876,897	988,599	988,895	998,792	998,806	998,807	998,807	1,002,637	870,516	907,639	907,504
39907-Oth Tang Prop - PC Software	499,710	499,710	491,799	491,799	491,799	491,799	491,799	491,799	491,799	188,782	188,782	188,782
39908-Oth Tang Prop - Appl Software	109,924,012	109,933,449	109,829,627	109,827,531	109,838,707	109,838,698	109,838,698	110,782,290	111,574,883	107,715,256	107,691,353	107,680,427
39910-CKV-Other Tangible Property	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992	91,992
39916-CKV-Oth Tang Prop-PC Hardware	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015	194,015
39917-CKV-Oth Tang Prop-PC Software	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541	90,541
39924-Oth Tang Prop - Gen.												
39924-Oth Tang Prop - Gen.												
RWIP												
091 - Brentwood Division	**5,047,688**	**5,085,601**	**5,085,472**	**5,100,162**	**4,723,590**	**4,722,568**	**4,719,783**	**4,719,783**	**4,711,286**	**4,714,384**	**4,714,384**	**4,746,113**
30100-Organization	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309	185,309
30300-Misc. Intangible Plant	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552	1,109,552
39001-Structures - Frame	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339	179,339
39004-Air Conditioning Equipment	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771	5,771
39009-Improv. to Leased Premises	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834	38,834
39100-Office Furniture & Equipment	41,784	41,784	41,784	41,784	41,784	39,554	39,554	39,554	39,554	42,653	42,653	42,503
39200-Transportation Equipment	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110	4,110
39300-Stores Equipment												
39400-Tools Shop And Garage	148,476	148,476	148,476	163,166	163,166	163,707	163,707	163,707	163,707	163,707	163,707	177,699
39600-Power Operated Equipment	19,534	19,534	19,534	19,534	19,534	19,534	19,534	19,534	11,037	11,037	11,037	15,719
39700-Communication Equipment	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614	225,614
39800-Miscellaneous Equipment	811,208	811,208	811,208	811,208	811,208	811,208	811,208	811,208	811,208	811,208	811,208	814,167
39900-Other Tangible Property	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993	76,993
39901-Oth Tang Prop - Servers - H/W	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194	344,194
39902-Oth Tang Prop - Servers - S/W	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273	8,273
39903-Oth Tang Prop - Network - H/W	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358	209,358
39906-Oth Tang Prop - PC Hardware	722,503	722,503	722,503	722,503	327,866	327,866	325,080	325,080	325,080	325,080	325,080	335,326
39907-Oth Tang Prop - PC Software	39,816	75,008	74,880	74,880	74,880	74,880	74,880	74,880	74,880	74,880	74,880	74,880
39908-Oth Tang Prop - Appl Software	877,021	879,742	879,742	879,742	897,807	898,473	898,473	898,473	898,473	898,473	898,473	898,473
RWIP												
Grand Total	**773,074,624**	**788,131,505**	**803,306,725**	**806,438,495**	**804,991,494**	**807,752,306**	**810,410,537**	**813,429,360**	**817,032,544**	**812,125,627**	**815,962,105**	**820,562,375**

Atmos Energy Corporation
Plant Data

Row Labels	10/2015	11/2015	12/2015	1/2016	Cost Total
002 - Dallas Atmos Rate Division	**188,838,128**	**188,833,480**	**196,754,978**	**196,743,173**	**9,307,333,081**
39000-Structures & Improvements	2,146,247	2,146,247	2,180,967	2,176,307	42,652,773
39005-G-Structures & Improvements	9,199,401	9,199,401	9,199,401	9,199,401	476,880,042
39009-Improv. to Leased Premises	8,968,572	8,968,572	8,968,040	8,968,040	457,334,784
39029-Improv. to Leased Prem-AEAM			532	532	1,063
39100-Office Furniture & Equipment	10,685,891	10,685,891	10,476,421	10,464,530	537,850,524
39102-Remittance Processing					
39103-Office Furn. - Copiers & Type					
39104-G-Office Furniture & Equip.	63,741	63,741	63,741	(2,645)	3,248,138
39120-Office Furniture & Equip-AEAM			221,289	221,289	442,578
39200-Transportation Equipment	103,416	103,416	103,416	103,416	5,226,631
39300-Stores Equipment					
39400-Tools Shop And Garage	439,016	439,171	411,276	434,225	13,507,397
39420-Tools And Garage-AEAM			42,919	42,919	85,838
39500-Laboratory Equipment	23,632	23,632	23,632	23,632	1,077,819
39700-Communication Equipment	2,439,990	2,439,990	2,431,166	2,431,166	124,813,345
39720-Communication Equip-AEAM			8,824	8,824	17,649
39800-Miscellaneous Equipment	488,909	488,909	814,832	836,286	23,305,994
39820-Miscellaneous Equipment-AEAM			7,388	7,388	14,777
39900-Other Tangible Property	168,103	168,103	168,103	183,671	10,388,333
39901-Oth Tang Prop - Servers - H/W	30,336,299	30,336,300	31,577,360	31,576,701	1,488,289,787
39902-Oth Tang Prop - Servers - S/W	16,948,323	16,948,323	18,136,963	18,136,923	791,245,810
39903-Oth Tang Prop - Network - H/W	3,256,714	3,256,714	3,276,588	3,276,588	188,461,531
39904-Mainframe Cpu					2,190,930
39905-Mainframe Hardware					2,319,929
39906-Oth Tang Prop - PC Hardware	1,669,448	1,669,448	2,338,177	2,341,851	134,891,701
39907-Oth Tang Prop - PC Software	686,133	686,133	688,902	689,166	69,345,300
39908-Oth Tang Prop - Appl Software	100,231,642	100,226,838	83,232,308	83,240,232	4,796,887,185
39909-Oth Tang Prop - Mainframe S/W	982,650	982,650	982,650	982,650	94,053,061
39921-OthTang Prop-Servers-H/W-AEAM			1,628,900	1,628,900	3,257,800
39922-OthTang Prop-Servers-S/W-AEAM			961,256	961,256	1,922,511
39923-OthTang Prop-Network-H/W-AEAM			37,965	37,965	75,930
39924-Oth Tang Prop - Gen.					
39924-Oth Tang Prop - Gen.					
39926-OthTang Prop-PC Hardware-AEAM			36,616	36,616	73,233
39928-Oth Tang Prop-Appl SW-AEAM			18,735,344	18,735,344	37,470,689
RWIP					
009 - WKG Division	**473,889,806**	**474,463,062**	**476,619,542**	**477,642,843**	**21,188,842,377**
30100-Organization	8,330	8,330	8,330	8,330	433,145
30200-Franch & Consent Grp	119,853	119,853	119,853	119,853	6,232,340
32520-Producing Leaseholds					65,870
32540-Rights-Of-Way					3,326,783
33100-Producing Gas Wells -					83,819
33100-Production Gas Wells Equipmen					13,970
33201-Field Lines					1,592,189
33202-Tributary Lines					20,497,318
33400-Field Measuring And R					5,487,744
33600-Purification Equipmen					1,064,863
33600-Purification Equipment					179,127
35010-Land	261,127	261,127	261,127	261,127	13,578,588
35020-Rights-Of-Way	4,682	4,682	4,682	4,682	243,442
35100-Structures & Improvements	17,916	17,916	17,916	17,916	931,642
35102-Compressor Station Equipment	153,261	153,261	153,261	153,261	7,969,588
35103-Meas. & Reg. Sta. Structures	23,138	23,138	23,138	23,138	1,203,196
35104-Other Structures	137,443	137,443	137,443	137,443	7,147,012
35200-Wells	6,646,226	6,646,226	6,646,226	6,646,226	235,482,122
35201-Well Construction	1,699,999	1,699,999	1,699,999	1,699,999	90,411,086
35202-Well Equipment	415,819	415,819	415,819	415,819	22,863,975
35203-Cushion Gas	1,694,833	1,694,833	1,694,833	1,694,833	88,131,314
35210-Leaseholds	178,530	178,530	178,530	178,530	9,283,565
35211-Storage Rights	54,614	54,614	54,614	54,614	2,839,942
35301-Field Lines	178,497	178,497	178,497	178,497	9,281,839
35302-Tributary Lines	209,458	209,458	209,458	209,458	10,891,827

Atmos Energy Corporation
Plant Data

Row Labels	10/2015	11/2015	12/2015	1/2016	Cost Total
35400-Compressor Station Equipment	923,446	923,446	923,446	923,446	48,019,195
35500-Meas. & Reg. Equipment	240,883	240,883	240,883	240,883	12,525,918
35600-Purification Equipment	414,663	414,663	414,663	414,663	15,706,065
36510-Land & Land Rights	26,970	26,970	26,970	26,970	1,402,459
36520-Rights-Of-Way	867,772	867,772	867,772	867,772	45,124,144
36602-Meas. & Reg. Sta. Str	49,002	49,002	49,002	49,002	2,540,803
36603-Other Structures	60,826	60,826	60,826	60,826	3,162,967
36700-Mains - Cathodic Protection	166,665	166,665	166,665	166,665	16,594,747
36701-Mains - Steel	27,752,220	27,752,220	27,752,220	27,752,220	1,470,201,917
36900-Meas. & Reg. Sta. Equipment	615,022	615,022	615,022	615,022	31,204,163
36901-Measuring And Reg. St	2,269,871	2,269,871	2,269,871	2,269,871	118,264,298
37400-Land & Land Rights	531,167	531,167	531,167	531,167	25,677,513
37401-Land	37,326	37,326	37,326	37,326	1,940,974
37402-Land Rights	1,509,683	1,509,699	1,509,693	1,510,177	31,008,950
37403-Land Other	2,784	2,784	2,784	2,784	144,762
37500-Structures & Improvements	336,168	336,168	336,168	336,168	17,389,607
37501-Structures & Improvements T.B	99,818	99,818	99,818	99,818	5,231,972
37502-Land Rights	46,264	46,264	46,264	46,264	2,418,157
37503-Improvements	4,005	4,005	4,005	4,005	208,264
37600-Mains - Cathodic Protection	20,738,815	20,756,423	20,828,024	20,842,050	786,027,403
37601-Mains - Steel	100,417,597	100,497,767	100,548,859	100,531,137	4,618,389,695
37602-Mains - Plastic	76,826,432	76,107,239	76,896,285	77,794,834	2,698,646,880
37800-Meas. & Reg. Sta. Eq-General	6,690,337	6,693,712	6,711,225	6,724,544	280,013,124
37900-Meas. & Reg. - City Gate	2,800,097	2,883,484	3,076,430	3,094,342	121,565,222
37905-Meas. & Reg. Sta. Equip T.B.	1,393,821	1,393,821	1,393,821	1,393,821	73,123,416
38000-Services	108,043,145	108,717,480	109,485,509	109,425,735	5,062,116,406
38100-Meters	27,369,542	27,512,179	27,780,960	27,876,480	1,100,303,522
38200-Meter Installations	50,540,363	50,630,362	50,544,950	50,558,164	2,567,309,417
38300-House Regulators	7,953,442	7,962,008	8,025,996	8,023,019	379,321,954
38400-House Reg. Installations	154,276	154,276	154,276	154,276	8,022,371
38500-Industrial Measuring	5,280,740	5,286,709	5,289,232	5,292,521	266,027,829
38500-Industrial Measuring					
38900-Land & Land Rights	1,204,900	1,207,372	1,208,801	1,209,292	41,694,458
38900-Land & Land Rights					
39000-Structures & Improvements	4,594,405	4,758,482	4,758,463	4,770,609	125,489,465
39002-Structures - Brick	173,115	173,115	173,115	173,115	9,165,547
39003-Improvements	709,199	709,199	709,199	709,199	37,479,619
39004-Air Conditioning Equipment	7,461	7,461	7,461	7,461	387,997
39009-Improv. to Leased Premises	1,246,194	1,246,194	1,246,194	1,246,194	66,062,997
39100-Office Furniture & Equipment	1,696,628	1,696,628	1,696,628	1,696,628	77,492,020
39103-Office Furn. - Copiers & Type					
39200-Transportation Equipment	362,906	379,824	380,705	380,705	19,290,563
39201-Wkg Trucks - Group					
39202-WKG Trailers	24,458	9,891	9,891	9,891	1,650,647
39400-Tools Shop And Garage	2,169,503	2,185,404	2,185,133	2,219,955	105,501,314
39603-Ditchers	47,303	47,303	47,303	47,303	3,148,407
39604-Backhoes	62,747	62,747	62,747	62,747	3,262,859
39605-Welders	33,236	33,236	33,236	33,236	1,726,667
39700-Communication Equipment	349,727	349,727	349,727	349,727	18,806,244
39701-Communication Equip.					
39701-Communication Equip.					
39702-Communication Equip.					
39702-Communication Equip.					
39705-Comm. Equip. - Telemetering					2,055,784
39800-Miscellaneous Equipment	3,888,728	3,890,314	3,890,284	3,890,284	179,251,474
39901-Oth Tang Prop - Servers - H/W			14,390	14,390	5,484,472
39902-Oth Tang Prop - Servers - S/W					3,301,795
39903-Oth Tang Prop - Network - H/W	94,628	94,628	94,628	94,628	9,833,666
39906-Oth Tang Prop - PC Hardware	1,120,514	1,120,514	1,120,514	1,120,514	114,177,537
39907-Oth Tang Prop - PC Software	13,752	13,752	13,752	13,752	3,987,431
39908-Oth Tang Prop - Appl Software	123,515	123,515	123,515	123,515	10,720,990
RWIP					
RWIP Recon					

Atmos Energy Corporation
Plant Data

Row Labels	10/2015	11/2015	12/2015	1/2016	Cost Total
RWIP-Recon					
012 - Call Center Division	**159,360,412**	**159,387,551**	**161,347,652**	**161,376,374**	**8,396,794,277**
38900-Land	2,874,240	2,874,240	2,874,240	2,874,240	**149,460,473**
38910-CKV Land&Land Rights	1,887,123	1,887,123	1,887,123	1,887,123	**98,130,390**
39000-Structures & Improvements	12,657,017	12,657,017	12,657,017	12,657,017	**668,794,712**
39009-Improv. to Leased Premises	4,298,434	4,298,434	4,298,434	4,298,434	**226,561,744**
39010-CKV-Structures & Improvements	10,419,807	10,419,807	10,419,807	10,419,807	**541,363,228**
39100-Office Furniture & Equipment	2,332,119	2,340,558	2,341,952	2,338,066	**93,573,827**
39103-Office Furn. - Copiers & Type					**60,274**
39700-Communication Equipment	1,962,785	1,962,785	1,962,785	1,962,785	**200,647,684**
39710-CKV-Communication Equipment	271,621	271,621	271,621	271,621	**14,124,303**
39800-Miscellaneous Equipment	37,949	37,949	42,912	42,912	**1,039,300**
39900-Other Tangible Property	629,166	629,166	629,166	629,166	**18,207,962**
39901-Oth Tang Prop - Servers - H/W	8,973,259	8,994,037	9,337,089	9,346,274	**387,345,947**
39902-Oth Tang Prop - Servers - S/W	1,857,260	1,857,210	1,884,820	1,884,902	**114,709,942**
39903-Oth Tang Prop - Network - H/W	534,163	534,163	628,992	629,268	**25,712,053**
39906-Oth Tang Prop - PC Hardware	910,958	910,958	938,805	938,805	**43,192,279**
39907-Oth Tang Prop - PC Software	188,782	188,782	190,247	190,247	**40,968,199**
39908-Oth Tang Prop - Appl Software	109,149,181	109,147,153	110,606,094	110,629,158	**5,313,120,108**
39910-CKV-Other Tangible Property	91,992	91,992	91,992	91,992	**4,757,480**
39916-CKV-Oth Tang Prop-PC Hardware	194,015	194,015	194,015	194,015	**10,088,801**
39917-CKV-Oth Tang Prop-PC Software	90,541	90,541	90,541	90,541	**4,708,109**
39924-Oth Tang Prop - Gen.					**440,227,461**
39924-Oth Tang Prop - Gen.					
RWIP					
091 - Brentwood Division	**4,746,113**	**4,753,091**	**3,822,932**	**3,822,821**	**256,027,361**
30100-Organization	185,309	185,309	185,309	185,309	**9,636,082**
30300-Misc. Intangible Plant	1,109,552	1,109,552	1,109,552	1,109,552	**57,696,687**
39001-Structures - Frame	179,339	179,339	179,339	179,339	**9,325,603**
39004-Air Conditioning Equipment	5,771	5,771	5,771	5,771	**300,092**
39009-Improv. to Leased Premises	38,834	38,834	38,834	38,834	**2,019,368**
39100-Office Furniture & Equipment	42,503	42,503	42,503	42,503	**2,813,163**
39200-Transportation Equipment	4,110	4,110	4,110	4,110	**213,704**
39300-Stores Equipment					**95,704**
39400-Tools Shop And Garage	177,699	178,789	178,767	178,767	**7,828,787**
39600-Power Operated Equipment	15,719	20,691	20,626	20,516	**985,889**
39700-Communication Equipment	225,614	225,614	0		**12,590,179**
39800-Miscellaneous Equipment	814,167	814,167	814,167	814,167	**42,686,865**
39900-Other Tangible Property	76,993	76,993	0		**3,849,661**
39901-Oth Tang Prop - Servers - H/W	344,194	344,194	6,124	6,124	**17,221,925**
39902-Oth Tang Prop - Servers - S/W	8,273	8,273	0		**413,657**
39903-Oth Tang Prop - Network - H/W	209,358	209,358	0		**11,201,957**
39906-Oth Tang Prop - PC Hardware	335,326	336,242	335,681	335,681	**37,204,947**
39907-Oth Tang Prop - PC Software	74,880	74,880	35,064	35,064	**3,760,312**
39908-Oth Tang Prop - Appl Software	898,473	898,473	867,085	867,085	**36,182,778**
RWIP					
Grand Total	**826,834,458**	**827,437,184**	**838,545,104**	**839,585,211**	**39,148,997,096**

REQUEST:

Please refer to Schedule D.2.2.! of the Fall2015 Rev Req Model showing adjustments to revenues and expenses.

a. Provide the electronic workpapers supporting this schedule.

b. Please disaggregate each of the revenue amounts shown on this schedule into base, PGA, PRP, and other revenue components.

c. Please indicate whether Adj 1 also reflects a reduction in PRP revenues in the test year compared to the base year" If so, why wasn't this identified as an additional reason for the adjustment in the description"

RESPONSE:

a) Please see Company's response to Staff DR No. 1-59, specifically the file titled "Fall 2015 KY Rev Req Model - Final Copy - External Links to 1-59 WPs.xlsx." This file will allow you to trace back to the various supporting workpapers, which have also been provided as part of the Company's response to Staff DR No. 1-59.

b) Please see Attachment 1

c) The proposed rates in this proceeding are based upon the Company's cumulative cost of service, including the $30 million of forecasted PRP investment from October 1, 2015 through September 30, 2016. Thus, the test period revenues reflect the PRP surcharge going to zero and the inclusion of the PRP revenue requirement into base rates.

ATTACHMENT:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-03_Att1 - Schedule D-2.1 Detailed Adjustments.xlsx, 1 Page.

Respondents: Gary Smith and Greg Waller

Atmos Energy Corporation, Kentucky/Mid-States Division
Kentucky Jurisdiction Case No. 2015-00343
Detailed Adjustments
Forecasted Test Period: Twelve Months Ended May 31, 2017

Data:__X____Base Period__X____Forecasted Period — FR 16(8)(d)2.1
Type of Filing:___X____Original_______Updated — Schedule D-2.1
Workpaper Reference No(s). — Witness: Waller, Smith

LN NO | Purpose and Description | Amount

ADJ1

SALE of Gas-Residential - the purpose of this Adjustment is to reflect the normalization of volumes due to colder weather in base period, continued efficiency gains in this market lowering the average normalized use per customer in the test year, and changes in gas costs between the periods.

	Amount
Forecasted	$95,823,030
Base	98,207,125
Adjustment	($2,384,095)
	-2.4%

	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Total
Base	$ 3,206,297	$ 3,108,915	$ 3,057,548	$ 3,056,795	$ 3,305,905	$ 4,089,123	$ 5,096,722	$ 5,469,892	$ 5,101,889	$ 5,432,599	$ 4,161,400	$ 3,487,220	
PRP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
PGA	$ 992,972	$ 770,463	$ 763,593	$ 788,549	$ 1,561,372	$ 4,256,583	$ 7,381,644	$ 8,673,924	$ 8,485,723	$ 7,424,476	$ 4,133,419	$ 2,016,006	
	$ 4,201,269	$ 3,877,378	$ 3,821,141	$ 3,845,344	$ 4,867,277	$ 8,345,706	$ 12,478,367	$ 14,143,816	$ 13,587,612	$ 12,857,075	$ 8,294,819	$ 5,503,226	$ 95,823,030

	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Total
Base	$ 4,610,207	$ 3,822,146	$ 2,895,904	$ 2,716,658	$ 2,649,642	$ 2,641,295	$ 2,647,499	$ 2,892,045	$ 3,673,542	$ 4,664,309	$ 5,036,638	$ 4,712,308	
PRP	$ 225,870	$ 223,766	$ 220,027	$ 219,669	$ 218,176	$ 215,451	$ 401,242	$ 405,235	$ 404,904	$ 419,548	$ 419,423	$ 375,190	
PGA	$ 12,663,073	$ 4,789,838	$ 1,691,253	$ 1,010,721	$ 814,957	$ 735,776	$ 720,676	$ 1,427,017	$ 4,044,692	$ 7,014,760	$ 8,242,748	$ 8,340,718	
	$ 17,499,150	$ 8,835,752	$ 4,807,185	$ 3,947,247	$ 3,682,775	$ 3,592,523	$ 3,769,417	$ 4,724,297	$ 8,123,139	$ 12,098,617	$ 13,698,809	$ 13,428,215	$ 98,207,125

SALE of Gas-Commercial - the purpose of this Adjustment is to reflect the normalization of volumes due to colder weather in base period, continued efficiency gains in this market lowering the average normalized use per customer in the test year, and changes in gas costs between the periods.

	Amount
Forecasted	$39,862,445
Base	40,950,740
Adjustment	($1,088,295)
	-2.7%

	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Total
Base	$ 1,055,575	$ 1,024,443	$ 1,001,597	$ 998,929	$ 1,076,337	$ 1,390,028	$ 1,777,029	$ 1,923,032	$ 1,844,835	$ 1,841,182	$ 1,425,995	$ 1,157,434	
PRP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
PGA	$ 784,812	$ 697,360	$ 688,763	$ 699,009	$ 999,434	$ 2,036,734	$ 3,295,857	$ 3,824,016	$ 3,797,850	$ 3,286,219	$ 2,029,978	$ 1,205,997	
	$ 1,840,387	$ 1,721,803	$ 1,690,360	$ 1,697,937	$ 2,075,771	$ 3,426,762	$ 5,072,886	$ 5,747,048	$ 5,642,685	$ 5,127,401	$ 3,455,973	$ 2,363,431	$ 39,862,445

	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Total
Base	$ 1,606,361	$ 1,283,967	$ 937,660	$ 877,411	$ 879,122	$ 854,239	857,357	933,608	1,247,128	1,627,474	1,772,495	1,706,829	
PRP	$ 83,866	$ 83,499	$ 78,464	$ 79,572	$ 79,481	$ 77,172	141,571	142,728	142,900	149,555	150,538	138,006	
PGA	$ 5,495,988	$ 2,291,325	$ 1,026,502	$ 770,015	$ 725,920	$ 687,183	640,526	915,813	1,940,388	3,139,701	3,642,881	3,743,476	
	$ 7,186,235	$ 3,658,790	$ 2,042,626	$ 1,726,998	$ 1,684,523	$ 1,618,594	1,639,455	1,992,149	3,330,416	4,916,730	5,565,913	5,588,311	$ 40,950,740

SALE of Gas-Industrial - the purpose of this Adjustment is to reflect known and measurable changes, increases and reductions, new plants and closings, shifts to transportion service from base period to test year and changes in gas costs between the periods.

	Amount
Forecasted	$4,880,527
Base	5,451,326
Adjustment	($570,799)
	-10.5%

	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Total
Base	$ 59,833	$ 40,719	$ 52,377	$ 42,659	$ 57,362	$ 70,466	$ 120,425	$ 153,168	$ 121,129	$ 190,628	$ 82,108	$ 68,106	
PRP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
PGA	$ 188,750	$ 112,274	$ 161,591	$ 128,045	$ 179,116	$ 235,615	$ 455,549	$ 600,042	$ 470,669	$ 770,141	$ 279,321	$ 240,435	
	$ 248,583	$ 152,993	$ 213,968	$ 170,704	$ 236,478	$ 306,081	$ 575,973	$ 753,210	$ 591,798	$ 960,768	$ 361,429	$ 308,541	$ 4,880,527

	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Total
Base	$ 180,000	$ 68,324	$ 50,381	$ 65,339	$ 64,018	$ 69,691	40,556	54,769	68,251	117,946	150,434	118,939	
PRP	$ 3,632	$ 2,592	$ 3,142	$ 3,211	$ 2,178	$ 2,011	2,103	2,593	2,214	2,479	2,733	2,189	
PGA	$ 1,014,250	$ 416,875	$ 308,690	$ 278,439	$ 172,227	$ 219,425	115,640	159,846	223,068	431,336	568,276	463,527	
	$ 1,197,882	$ 487,790	$ 362,213	$ 346,989	$ 238,424	$ 291,127	$ 158,300	$ 217,208	$ 293,534	$ 551,761	$ 721,443	$ 584,656	$ 5,451,326

SALE of Gas-Public Authority - The purpose of this Adjustment is to reflect the normalization of volumes due to colder weather in base period, continued efficiency gains in this market lowering the average normalized use per customer in the test year, and changes in gas costs between the periods.

	Amount
Forecasted	$7,189,609
Base	7,553,489
Adjustment	($363,880)
	-4.8%

	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Total
Base	$ 115,757	$ 110,482	$ 105,931	$ 109,666	$ 130,431	$ 195,369	$ 270,667	$ 298,266	$ 279,389	$ 283,063	$ 192,460	$ 136,249	
PRP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
PGA	$ 147,315	$ 127,844	$ 124,138	$ 129,710	$ 204,091	$ 442,345	$ 721,698	$ 842,781	$ 805,722	$ 748,089	$ 426,938	$ 241,206	
	$ 263,073	$ 238,326	$ 230,069	$ 239,375	$ 334,522	$ 637,714	$ 992,365	$ 1,141,047	$ 1,085,111	$ 1,031,153	$ 619,398	$ 377,456	$ 7,189,609

	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Total
Base	$ 246,448	$ 167,519	$ 123,587	$ 100,560	$ 94,469	$ 96,528	$ 96,634	$ 117,163	$ 182,540	$ 257,509	$ 285,040	$ 267,759	
PRP	$ 6,909	$ 6,929	$ 6,911	$ 6,957	$ 6,962	$ 6,799	$ 13,031	$ 13,268	$ 12,829	$ 13,158	$ 13,225	$ 11,630	
PGA	$ 1,193,064	$ 500,918	$ 259,799	$ 158,244	$ 132,852	$ 122,285	$ 118,858	$ 187,017	$ 421,425	$ 687,568	$ 802,924	$ 794,197	
	$ 1,446,421	$ 695,367	$ 390,277	$ 265,751	$ 234,283	$ 225,612	$ 228,524	$ 317,448	$ 616,794	$ 958,235	$ 1,101,190	$ 1,073,586	$ 7,553,489

SALE of Gas - Unbilled - no adjustment.

	Amount
Forecasted	$0
Base	0
Adjustment	$0
	0.0%

ADJ2

Forfeited discounts - the purpose of this adjustment is to reflect anticipated changes in the billed late payment fees from the base period to the test year.

	Amount
Forecasted	$1,140,887
Base	1,230,384
Adjustment	($89,496)
	-7.3%

Misc Service Revenues - the purpose of this adjustment is to reflect modest reduction in service charge revenues for the base period.

	Amount
Forecasted	$795,825
Base	796,529
Adjustment	($704)
	-0.1%

Revenue from Transportation - the purpose of this Adjustment is to reflect known and measurable changes in demand for existing industries and account for migration to transportation service from sales services.

	Amount
Forecasted	$14,493,604
Base	14,819,845
Adjustment	($326,241)
	-2.2%

	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Total
Base	$ 1,054,710	$ 1,013,351	$ 1,068,159	$ 1,050,911	$ 1,190,909	$ 1,319,363	$ 1,329,061	$ 1,473,668	$ 1,424,543	$ 1,335,401	$ 1,140,628	$ 1,092,902	
PRP	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
PGA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	$ 1,054,710	$ 1,013,351	$ 1,068,159	$ 1,050,911	$ 1,190,909	$ 1,319,363	$ 1,329,061	$ 1,473,668	$ 1,424,543	$ 1,335,401	$ 1,140,628	$ 1,092,902	$ 14,493,604

	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Total
Base	$ 1,306,649	$ 1,127,575	$ 1,099,803	$ 991,512	$ 1,002,287	$ 1,067,436	$ 955,849	$ 1,083,001	$ 1,200,515	$ 1,209,315	$ 1,341,508	$ 1,296,897	
PRP	$ 84,641	$ 81,249	$ 70,576	$ 70,102	$ 66,890	$ 62,672	$ 95,062	$ 107,908	$ 118,848	$ 119,746	$ 132,160	$ 127,645	
PGA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	$ 1,391,290	$ 1,208,824	$ 1,170,379	$ 1,061,614	$ 1,069,177	$ 1,130,108	$ 1,050,911	$ 1,190,909	$ 1,319,363	$ 1,329,061	$ 1,473,668	$ 1,424,543	$ 14,819,845

Other gas service revenues - the purpose of this adjustment is to reflect pro forma adjustments for individual customers and special contract reformations

	Amount
Forecasted	$2,618,728
Base	1,366,066
Adjustment	$1,252,662
	91.7%

ADJ3

Gas Purchase Costs - The purpose of this Adjustment is to reflect the purchase quantities for sales service. The Base Period Includes -$3.9MM of Unbilled Gas Costs that will zero out by the end of the base period when replaced by actuals. This effectively brings the Base Period Gas cost to $81MM. The difference between the adjusted Base Period Gas Cost of $81MM and the forecast period of $79MM is due to the Base Period being a colder than normal period and higher gas cost than the forecast period

	Amount
Forecasted	$79,378,177
Base	77,033,021
Adjustment	$2,345,156
	3.0%

Summary of Revenue Adjusments.

Base Year Revenues	170,375,504
Base Year Gas Costs	77,033,021
Base Year Gross Profit	93,342,483
Test Year Revenues	166,804,655
Test Year Gas costs	79,378,177
Test Year Gross Profit	87,426,479

REQUEST:

Please refer to the allocation percentages shown on Exhibit GKW-1 for the 2015 fiscal year based on cost data for the twelve months ended September 30,2014.

a. Please provide Exhibit GKW-1 in electronic format with all formulas intact.

b. Please provide an updated version of Exhibit GKW -1 using actual data for the twelve months ended September 30, 2015 in the same format. Please provide in electronic format with all formulas intact.

c. Please provide an updated version of Exhibit GKW -1 using actual data for the twelve months ended December 31, 2015 in the same format. Please provide in electronic format with all formulas intact.

d. Please provide the number of employees for each division/nonregulated affiliate shown on Exhibit GKW-1 for each month from October 2011 through the most recent month for which actual information is available and all budget/forecast months thereafter through the end of the test year. Please provide in electronic format with all formulas intact.

e. Please provide total operating expenses, excluding income taxes, for each division/nonregulated affiliate shown on Exhibit GKW-1 for each month from January 2011 through the most recent month for which actual information is available and all budget/forecast months thereafter through the end of the test year. Please provide in electronic format with all formulas intact.

RESPONSE:

a) Please see Attachment 1 for Exhibit GKW-1 with formulas included.

b) Please see Attachment 2. Please note that these are the composite factors used in the Company's books and records for Fiscal 2016.

c) Please see Attachment 3.

d) While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 4. Please note that our employees in Atmos Energy Holdings (non-regulated) are not recorded by individual company in our reporting system. Thus, they have all been included in the line, "Atmos Energy Holding Rollup" in Attachment 4. Most of our non-regulated employees work in Atmos Energy Marketing (AEM).

e) While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 5.

ATTACHMENTS:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-04_Att1 - Exhibit GKW-1 with Formulas.xlsx, 2 Pages.

ATTACHMENT 2 - Atmos Energy Corporation, AG_1-04_Att2 - Composite Factors Using FY15 Data.xlsx, 2 Pages.

ATTACHMENT 3 - Atmos Energy Corporation, AG_1-04_Att3 - Composite Factors Using CY15 Data.xlsx, 2 Pages.

ATTACHMENT 4 - Atmos Energy Corporation, AG_1-04_Att4 - Number of Employees.xls, 5 Pages.

ATTACHMENT 5 - Atmos Energy Corporation, AG_1-04_Att5 - Total Operating Expenses.xlsx, 48 Pages.

Respondent: Greg Waller

ATMOS ENERGY CORPORATION

Allocation of Atmos Corporate (Co. # 10) Cost Based on 12 Month Period Ended 9/30/14

A. Composite Allocation Factor:		Total	West Tex Div	CO/KS Div	LA Div 007	LA Div 077	Kentucky/ MidStates Div	Mississippi Div	Mid-Tex Div	Atmos P/L
Gross Direct PP&E	$	**8,527,002,426**	588,658,574	522,666,022	196,802,776	532,048,476	946,876,781	494,873,746	3,393,212,543	1,757,100,641
Average Number of Customers	#	**3,061,941**	299,553	243,084	74,693	272,260	332,626	250,173	1,588,126	347
Total O&M Expense *	$	**373,655,056**	30,013,523	24,974,685	8,753,909	22,587,103	38,004,205	33,429,741	109,826,806	81,576,653
(* w/o Allocation)										
Total Composite Factor										
Gross Direct PP&E	%	**100.00%**	**6.91%**	**6.13%**	**2.31%**	**6.24%**	**11.10%**	**5.80%**	**39.79%**	**20.61%**
Average Number of Customers	%	**100.00%**	**9.79%**	**7.94%**	**2.44%**	**8.89%**	**10.86%**	**8.17%**	**51.87%**	**0.01%**
Total O&M Expense	%	**100.00%**	**8.05%**	**6.68%**	**2.34%**	**6.04%**	**10.17%**	**8.95%**	**29.39%**	**21.83%**
Total Composite Factor for FY 2015	%	**100.00%**	**8.25%**	**6.92%**	**2.36%**	**7.06%**	**10.71%**	**7.64%**	**40.35%**	**14.15%**

	AEM	UCG Storage	WKG Storage	TLGP	Remaining non reg
Gross Direct PP&E	36,175,456	8,579,774	14,517,166	24,532,139	10,958,332
Average Number of Customers	1,064			15	-
Total O&M Expense *	24,247,740	512,520	758,107	1,132,882	(2,162,819)
(* w/o Allocation)					
Total Composite Factor					
Gross Direct PP&E	**0.42%**	**0.10%**	**0.17%**	**0.29%**	**0.13%**
Average Number of Customers	**0.03%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Total O&M Expense	**6.49%**	**0.14%**	**0.20%**	**0.30%**	**-0.58%**
Total Composite Factor for FY 2015	**2.31%**	**0.08%**	**0.12%**	**0.20%**	**-0.15%**

Atmos Energy Corporation
Atmos Energy Mid States Div
Development of Allocation Factors
For Fiscal Year 2015

Div #	Division Name	Sept ' 14 Direct Property Plant & Equipment	Percent of MidStates Property	YE Sept '14 Total O &M w/o 922	Percent of MidStates O & M	YE Sept '14 Avg Number of Customers	Percent of MidStates Customers	**MidStates Allocation Percent**
		(1)	(2)	(3)	(4)	(5)	(6)	**(7)**
09	KENTUCKY	424,189,446	45.04%	14,546,900	49.63%	174,958	52.60%	**49.09%**
93	TENNESSEE	439,670,059	46.68%	10,204,309	34.82%	134,946	40.57%	**40.69%**
96	VIRGINIA	77,963,001	8.28%	4,557,634	15.55%	22,722	6.83%	**10.22%**
	Total	941,822,505.68	100.00%	29,308,843.07	100.00%	332,626	100.00%	100.00%

ATMOS ENERGY CORPORATION

Allocation of Atmos Corporate (Co. # 10) Cost Based on 12 Month Period Ended 9/30/15

A. Composite Allocation Factor:		Total	West Tex Div	CO/KS Div	LA Div 007	LA Div 077	Kentucky/ MidStates Div	Mississippi Div	Mid-Tex Div	Atmos P/L
Gross Direct PP&E	$	**9,284,626,782**	652,745,151	556,770,002	220,793,722	568,893,960	1,017,265,170	531,795,843	3,663,720,621	1,980,795,729
Average Number of Customers	#	**3,071,905**	300,052	246,505	74,458	272,555	334,625	247,660	1,594,629	336
Total O&M Expense *	$	**406,452,781**	29,874,554	26,093,067	8,919,945	24,124,494	36,066,524	28,949,599	111,747,644	106,697,111
(* w/o Allocation)										
Total Composite Factor										
Gross Direct PP&E	%	**100.00%**	**7.03%**	**6.00%**	**2.38%**	**6.13%**	**10.96%**	**5.73%**	**39.46%**	**21.33%**
Average Number of Customers	%	**100.00%**	**9.79%**	**8.02%**	**2.42%**	**8.87%**	**10.89%**	**8.06%**	**51.91%**	**0.01%**
Total O&M Expense	%	**100.00%**	**7.35%**	**6.42%**	**2.19%**	**5.94%**	**8.87%**	**7.12%**	**27.49%**	**26.25%**
Total Composite Factor for FY 2016	%	**100.00%**	**8.06%**	**6.81%**	**2.33%**	**6.98%**	**10.24%**	**6.97%**	**39.62%**	**15.86%**

	AEM	UCG Storage	WKG Storage	TLGP	Remaining non reg
Gross Direct PP&E	37,422,226	8,757,455	14,537,861	22,516,173	8,612,867
Average Number of Customers	1,066			20	
Total O&M Expense *	27,142,217	445,540	1,787,409	1,084,476	3,520,202
(* w/o Allocation)					
Total Composite Factor					
Gross Direct PP&E	**0.40%**	**0.09%**	**0.16%**	**0.24%**	**0.09%**
Average Number of Customers	**0.03%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Total O&M Expense	**6.68%**	**0.11%**	**0.44%**	**0.27%**	**0.87%**
Total Composite Factor for FY 2016	**2.37%**	**0.07%**	**0.20%**	**0.17%**	**0.32%**

Atmos Energy Corporation
Atmos Energy Mid States Div
Development of Allocation Factors
For Fiscal Year 2016

Div #	Division Name	Sept ' 15 Direct Property Plant & Equipment	Percent of MidStates Property	YE Sept '15 Total O &M w/o 922	Percent of MidStates O & M	YE Sept '15 Avg Number of Customers	Percent of MidStates Customers	**MidStates Allocation Percent**
		(1)	(2)	(3)	(4)	(5)	(6)	**(7)**
09	KENTUCKY	470,188,396	46.44%	15,069,806	57.97%	174,857	52.25%	**52.22%**
93	TENNESSEE	460,185,235	45.45%	11,260,780	43.31%	136,978	40.93%	**43.23%**
96	VIRGINIA	82,079,245	8.11%	(332,937)	-1.28%	22,790	6.81%	**4.55%**
	Total	1,012,452,876.38	100.00%	25,997,649.29	100.00%	334,625	100.00%	100.00%

ATMOS ENERGY CORPORATION

Allocation of Atmos Corporate (Co. # 10) Cost Based on 12 Month Period Ended 12/31/15

A. Composite Allocation Factor:		Total	West Tex Div	CO/KS Div	LA Div 007	LA Div 077	Kentucky/ MidStates Div	Mississippi Div	Mid-Tex Div	Atmos P/L
Gross Direct PP&E	$	**9,595,402,998**	660,231,914	563,103,026	224,602,882	580,591,499	1,028,683,203	541,311,840	3,732,588,647	2,172,417,253
Average Number of Customers	#	**3,075,864**	299,933	247,199	74,443	272,903	335,204	247,449	1,597,314	332
Total O&M Expense *	$	**411,464,778**	29,520,131	26,025,820	9,455,594	24,135,140	35,282,961	33,079,437	112,182,533	108,642,922
(* w/o Allocation)										
Total Composite Factor										
Gross Direct PP&E	%	**100.00%**	**6.89%**	**5.87%**	**2.34%**	**6.05%**	**10.72%**	**5.64%**	**38.90%**	**22.64%**
Average Number of Customers	%	**100.00%**	**9.76%**	**8.04%**	**2.42%**	**8.87%**	**10.90%**	**8.04%**	**51.93%**	**0.01%**
Total O&M Expense	%	**100.00%**	**7.17%**	**6.33%**	**2.30%**	**5.87%**	**8.57%**	**8.04%**	**27.26%**	**26.40%**
Total Composite Factor (Based on CY15)	%	**100.00%**	**7.93%**	**6.75%**	**2.35%**	**6.93%**	**10.06%**	**7.24%**	**39.36%**	**16.35%**

	AEM	UCG Storage	WKG Storage	TLGP	Remaining non reg
Gross Direct PP&E	37,413,988	8,802,491	14,612,461	22,430,927	8,612,867
Average Number of Customers	1,067			20	-
Total O&M Expense *	26,121,308	439,926	1,934,115	1,109,801	3,535,089.60
(* w/o Allocation)					
Total Composite Factor					
Gross Direct PP&E	**0.39%**	**0.09%**	**0.15%**	**0.23%**	**0.09%**
Average Number of Customers	**0.03%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Total O&M Expense	**6.35%**	**0.11%**	**0.47%**	**0.27%**	**0.86%**
Total Composite Factor (Based on CY15)	**2.26%**	**0.07%**	**0.21%**	**0.17%**	**0.32%**

Atmos Energy Corporation
Atmos Energy Mid States Div
Development of Allocation Factors
Based on Calendar 2015

Div #	Division Name	Dec ' 15 Direct Property Plant & Equipment	Percent of MidStates Property	YE Dec '15 Total O &M w/o 922	Percent of MidStates O & M	YE Dec '15 Avg Number of Customers	Percent of MidStates Customers	**MidStates Allocation Percent**
		(1)	(2)	(3)	(4)	(5)	(6)	**(7)**
09	KENTUCKY	476,619,542	46.51%	14,926,689	58.89%	174,901	52.18%	**52.52%**
93	TENNESSEE	464,442,723	45.32%	11,466,555	45.24%	137,508	41.02%	**43.86%**
96	VIRGINIA	83,798,006	8.18%	(1,046,293)	-4.13%	22,795	6.80%	**3.62%**
	Total	1,024,860,271.24	100.00%	25,346,950.82	100.00%	335,204	100.00%	100.00%

Atmos Energy Corporation
Employee Count by Division

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12
Atmos Energy-Colorado-Kansas	289	287	286	285	283	281	283	283	283	288	281	279
Atmos Energy-Louisiana	435	433	431	429	432	433	431	429	431	428	430	428
KY/Mid States	568	570	570	569	571	568	568	565	570	566	466	467
MVG Regulated companies	366	366	365	365	364	363	363	361	363	361	361	359
Atmos Energy-West Texas	355	353	350	350	349	349	347	346	350	347	348	349
Atmos Energy-Mid-Tex	1,675	1,666	1,670	1,665	1,672	1,665	1,670	1,657	1,654	1,645	1,639	1,663
Atmos Pipeline - Texas	62	62	61	61	62	62	62	62	62	62	62	61
Atmos Energy Holding Rollup	132	133	134	134	133	132	133	133	129	129	128	113

CASE NO. 2015-00343
ATTACHMENT 4
TO AG DR NO. 1-04

Atmos Energy Corporation
Employee Count by Division

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
Atmos Energy-Colorado-Kansas	278	278	278	277	277	278	277	277	276	275	278	278
Atmos Energy-Louisiana	426	428	426	426	427	425	422	427	429	429	427	425
KY/Mid States	466	467	465	464	466	461	401	399	401	401	400	403
MVG Regulated companies	359	360	360	358	358	358	353	352	351	350	347	349
Atmos Energy-West Texas	350	351	353	354	354	352	349	348	346	344	345	345
Atmos Energy-Mid-Tex	1,658	1,669	1,664	1,679	1,679	1,675	1,682	1,683	1,680	1,680	1,689	1,690
Atmos Pipeline - Texas	59	59	61	61	60	60	60	59	59	60	60	60
Atmos Energy Holding Rollup	113	113	113	112	114	112	111	112	113	112	109	109

Atmos Energy Corporation
Employee Count by Division

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
Atmos Energy-Colorado-Kansas	278	278	277	275	278	280	280	280	280	279	280	280
Atmos Energy-Louisiana	414	417	412	409	413	426	427	422	420	421	419	421
KY/Mid States	406	408	408	408	408	406	406	408	408	405	405	409
MVG Regulated companies	336	337	336	333	332	333	333	334	337	341	340	340
Atmos Energy-West Texas	342	344	347	345	347	344	348	348	348	345	347	349
Atmos Energy-Mid-Tex	1,696	1,694	1,705	1,718	1,722	1,721	1,731	1,748	1,749	1,738	1.730	1,729
Atmos Pipeline - Texas	60	60	60	60	60	61	61	61	61	61	62	62
Atmos Energy Holding Rollup	111	112	113	113	112	112	110	110	111	112	111	111

Atmos Energy Corporation
Employee Count by Division

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15
Atmos Energy-Colorado-Kansas	282	283	285	284	284	284	284	283	284	279	278	279
Atmos Energy-Louisiana	426	424	426	424	422	424	428	426	424	420	417	416
KY/Mid States	412	411	409	402	400	398	399	397	397	394	392	392
MVG Regulated companies	340	340	340	337	339	339	337	335	333	329	328	329
Atmos Energy-West Texas	347	347	345	341	342	344	345	346	347	344	346	344
Atmos Energy-Mid-Tex	1,733	1,724	1,722	1,710	1,707	1,713	1,709	1,709	1,709	1,701	1,708	1,709
Atmos Pipeline - Texas	62	62	61	61	62	62	63	62	62	62	61	61
Atmos Energy Holding Rollup	111	109	108	108	109	109	109	109	109	108	110	111

Atmos Energy Corporation

Employee Count by Division

	Oct-15	Nov-15	Dec-15	Jan-16
Atmos Energy-Colorado-Kansas	280	280	281	284
Atmos Energy-Louisiana	418	417	413	420
KY/Mid States	396	393	394	397
MVG Regulated companies	329	332	330	329
Atmos Energy-West Texas	342	339	339	339
Atmos Energy-Mid-Tex	1,709	1,717	1,705	1,705
Atmos Pipeline - Texas	61	61	62	62
Atmos Energy Holding Rollup	106	107	107	106

Atmos Energy - West Texas
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Exc) Bad Debt)	2,234,219	2,116,379	2,316,226	2,016,494	2,395,481	2,200,155	2,043,926	2,197,721	2,117,515	2,212,228	2,307,591	2,424,855	2,409,327	2,296,347	2,332,258	2,162,984
Bad Debt Expense	25,361	22,033	18,071	10,498	8,476	8,069	7,705	7,680	(423,064)	9,498	14,221	21,404	24,597	18,384	16,361	10,141
Depreciation and Amortization	1,367,518	1,371,630	1,392,663	1,393,995	1,396,432	1,405,953	905,155	1,556,529	1,859,257	1,421,891	1,564,726	1,564,478	1,563,162	2,470,021	1,656,478	1,652,557
Taxes - Other Than Income Taxes	2,285,854	2,013,363	1,444,176	1,613,931	1,292,176	1,369,657	990,531	941,236	855,684	1,059,457	1,439,471	2,086,128	2,068,622	1,790,682	1,628,703	1,119,946
Total Direct Operating Expenses	5,912,952	5,523,405	5,171,135	5,034,918	5,092,565	4,983,834	3,947,317	4,703,165	4,409,392	4,703,074	5,326,009	6,096,865	6,065,708	6,575,434	5,633,800	4,945,628

Atmos Energy - West Texas
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,150,285	2,202,066	2,011,782	2,271,558	2,195,503	2,463,152	2,145,211	1,881,377	2,335,868	2,411,315	2,218,010	2,327,395	2,251,929	1,831,439	2,369,990
Bad Debt Expense	8,034	7,394	7,154	7,351	84,932	9,560	11,768	15,724	18,667	14,899	13,753	10,082	10,560	51,772	8,876
Depreciation and Amortization	1,676,661	1,701,285	1,718,182	1,774,398	1,880,707	1,741,771	1,746,514	1,605,235	1,709,323	1,713,367	1,728,910	1,742,546	1,755,930	1,743,364	1,791,596
Taxes - Other Than Income Taxes	1,233,483	1,251,190	830,850	851,160	850,458	1,063,955	1,312,327	1,695,291	2,176,950	1,841,808	1,685,303	1,533,490	1,398,332	1,683,836	1,226,264
Total Direct Operating Expenses	5,068,463	5,161,935	4,567,968	4,904,467	5,011,600	5,278,438	5,215,820	5,197,627	6,240,808	5,981,390	5,645,976	5,613,513	5,416,752	5,310,411	5,396,727

Atmos Energy - West Texas
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,128,402	2,568,899	2,485,540	2,265,710	2,208,559	2,418,958	2,050,074	2,537,614	2,691,915	2,249,027	2,114,875	2,361,197	2,443,199	2,328,207	2,482,624
Bad Debt Expense	8,728	847,520	9,635	11,706	17,212	19,578	33,588	32,028	12,568	56,311	74,838	10,333	10,495	1,570,357	28,169
Depreciation and Amortization	1,811,784	1,885,407	1,799,241	1,798,873	1,785,964	1,782,710	1,784,568	1,799,385	2,119,247	2,049,540	2,056,957	2,070,035	2,094,076	2,916,530	2,088,719
Taxes - Other Than Income Taxes	1,168,737	1,112,595	1,116,422	1,516,754	2,150,799	2,663,528	2,643,387	2,195,022	2,067,436	1,844,677	1,675,658	1,276,786	1,304,256	867,454	1,259,834
Total Direct Operating Expenses	5,117,651	6,414,421	5,410,838	5,593,043	6,162,534	6,884,774	6,511,617	6,564,049	6,891,166	6,199,555	5,922,328	5,718,352	5,852,026	7,682,548	5,859,346

Atmos Energy - West Texas
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,441,653	2,452,257	2,579,322	2,182,225	2,210,495	2,151,077	2,256,419	2,163,198	2,814,890	2,041,032	2,265,198	2,272,061	2,275,149	2,469,254	2,219,967
Bad Debt Expense	34,754	49,108	57,020	46,672	152,837	33,885	29,361	247,296	29,495	28,078	1,097,490	29,699	34,913	53,065	54,980
Depreciation and Amortization	2,110,487	2,162,499	2,212,507	2,165,832	2,027,387	1,961,993	2,029,040	2,044,480	2,035,870	2,035,496	2,075,845	2,037,968	2,043,914	2,040,776	2,045,640
Taxes - Other Than Income Taxes	1,646,578	2,328,537	2,894,790	2,367,353	2,238,698	1,947,383	1,781,268	1,597,889	1,257,874	1,213,132	1,371,340	1,311,551	1,612,589	1,978,887	2,280,046
Total Direct Operating Expenses	6,233,472	6,992,401	7,743,639	6,762,082	6,629,417	6,094,338	6,096,088	6,052,863	6,138,129	5,317,739	6,809,874	5,651,279	5,966,565	6,541,983	6,600,633

Atmos Energy - Colorado/Kansas
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	2,071,620	1,991,084	2,016,520	1,742,484	1,873,624	1,893,769	1,870,401	1,961,177	2,202,869	1,839,950	2,114,454	1,984,338	2,110,192	1,975,621	1,811,289	1,924,559
Bad Debt Expense	43,603	39,695	32,988	24,764	20,109	18,361	17,473	17,395	95,428	19,623	27,561	39,788	42,858	35,837	32,627	23,992
Depreciation and Amortization	1,409,922	1,410,395	1,437,488	1,426,982	1,432,106	1,439,050	1,464,386	1,485,698	1,567,069	1,472,240	1,478,646	1,476,822	1,468,718	1,481,757	1,507,230	1,498,747
Taxes - Other Than Income Taxes	865,804	881,028	689,532	734,250	682,766	631,702	671,683	741,250	712,246	684,735	713,917	785,969	824,705	817,910	744,880	723,734
Total Direct Operating Expenses	4,390,948	4,322,201	4,176,528	3,928,480	4,008,605	3,982,881	4,023,943	4,205,520	4,577,613	4,016,548	4,334,578	4,286,917	4,446,472	4,311,325	4,096,026	4,171,032

Atmos Energy - Colorado/Kansas
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,141,866	2,010,290	1,727,961	2,007,756	1,673,144	1,776,192	1,819,592	1,643,559	2,091,009	1,958,867	1,936,825	2,713,777	2,158,326	2,041,964	1,848,967
Bad Debt Expense	17,410	17,676	17,525	16,907	360,215	19,285	26,705	36,589	46,313	36,733	32,163	21,632	23,092	118,175	18,130
Depreciation and Amortization	1,504,063	1,505,201	1,518,240	1,503,411	1,516,068	1,452,913	1,456,773	1,462,741	1,465,571	1,465,641	1,472,421	1,480,242	1,492,298	1,491,273	1,509,769
Taxes - Other Than Income Taxes	696,784	683,328	631,919	595,798	674,587	760,027	827,459	884,050	968,134	945,853	935,012	853,840	890,385	754,297	741,383
Total Direct Operating Expenses	4,360,123	4,216,495	3,895,645	4,123,872	4,224,014	4,008,418	4,130,529	4,026,939	4,571,026	4,407,095	4,376,422	5,069,491	4,564,101	4,405,709	4,118,249

Atmos Energy - Colorado/Kansas
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,003,977	2,531,543	1,753,719	1,799,189	2,091,435	2,254,324	1,825,902	2,122,985	2,352,753	1,816,493	1,960,386	2,135,610	1,895,284	1,544,733	1,883,241
Bad Debt Expense	17,876	926,085	49,739	70,588	103,073	119,564	189,299	192,314	59,578	279,665	373,340	48,734	47,468	(111,491)	59,585
Depreciation and Amortization	1,528,637	1,653,657	1,528,155	1,535,950	1,547,377	1,523,516	1,525,071	1,543,663	1,581,459	1,526,191	1,561,903	1,570,376	1,596,679	1,678,198	1,601,543
Taxes - Other Than Income Taxes	773,595	738,686	765,268	921,256	793,795	1,206,839	1,004,435	916,400	889,732	799,791	1,031,393	508,414	744,386	546,735	940,300
Total Direct Operating Expenses	4,324,085	5,849,971	4,096,881	4,326,982	4,535,680	5,104,242	4,544,708	4,775,363	4,883,522	4,422,140	4,927,022	4,263,134	4,283,818	3,658,175	4,484,670

Atmos Energy - Colorado/Kansas
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,022,581	2,202,253	2,066,431	1,840,950	1,909,301	2,052,056	2,107,408	2,277,304	2,375,650	1,884,326	2,171,577	2,127,329	1,648,327	2,260,410	2,068,012
Bad Debt Expense	85,920	117,932	141,452	100,260	330,996	72,270	195,107	384,629	43,021	42,399	(273,582)	56,984	82,408	128,807	152,348
Depreciation and Amortization	1,603,444	1,610,472	1,613,497	1,622,840	1,629,466	1,634,251	1,642,185	1,654,483	1,670,510	1,689,116	1,720,868	1,684,184	1,686,576	1,693,720	1,693,255
Taxes - Other Than Income Taxes	1,038,012	978,704	1,137,765	914,175	852,229	878,584	910,390	827,607	881,613	841,458	828,209	881,241	954,274	802,243	943,888
Total Direct Operating Expenses	4,749,956	4,909,361	4,959,145	4,478,225	4,721,992	4,637,162	4,855,090	5,144,024	4,970,794	4,457,298	4,447,072	4,749,738	4,371,587	4,885,180	4,857,503

Atmos Energy - Louisiana
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	2,495,909	2,491,754	2,531,320	2,271,381	2,526,936	2,390,969	2,264,285	2,397,687	2,265,809	2,802,472	2,869,799	2,494,342	3,670,299	2,071,182	2,355,367	2,342,810
Bad Debt Expense	184,095	130,300	101,202	63,598	60,948	57,033	54,404	53,401	9,912	66,987	89,139	127,759	139,564	117,911	79,487	58,588
Depreciation and Amortization	2,016,853	2,010,047	2,022,548	2,025,521	2,023,203	2,030,207	2,068,445	2,089,945	2,180,204	2,092,216	2,104,449	2,090,080	2,091,428	2,096,156	2,096,012	2,070,075
Taxes - Other Than Income Taxes	898,315	897,438	633,491	899,005	904,377	856,819	899,798	846,392	722,635	864,329	928,431	908,361	930,708	927,958	930,296	971,337
Total Direct Operating Expenses	5,595,172	5,529,540	5,288,561	5,259,505	5,515,465	5,335,027	5,286,932	5,387,425	5,178,560	5,826,003	5,991,818	5,620,542	6,831,999	5,213,207	5,461,162	5,442,810

Atmos Energy - Louisiana
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,402,895	2,377,525	2,430,123	2,303,577	2,985,436	2,340,055	2,328,390	2,401,784	2,591,373	2,468,621	2,402,704	2,434,964	2,347,902	2,231,811	2,420,670
Bad Debt Expense	52,671	52,395	52,953	51,931	405,676	72,719	105,832	136,513	164,701	125,515	113,636	78,746	83,102	392,049	60,559
Depreciation and Amortization	2,076,151	2,082,896	2,054,800	2,084,925	2,158,113	2,061,703	2,068,116	2,065,951	2,032,637	2,037,782	2,053,548	2,108,558	2,146,265	2,083,364	2,088,133
Taxes - Other Than Income Taxes	949,859	968,714	943,664	915,900	930,419	875,564	945,470	898,553	942,056	910,891	906,767	922,324	970,266	899,828	911,138
Total Direct Operating Expenses	5,481,576	5,481,531	5,481,539	5,356,333	6,479,644	5,350,041	5,447,808	5,502,801	5,730,766	5,542,809	5,476,654	5,544,592	5,547,535	5,607,052	5,480,501

Atmos Energy - Louisiana
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,461,628	2,906,936	2,242,723	2,345,446	2,360,595	2,478,132	2,237,530	2,219,956	2,831,299	2,331,804	2,163,715	2,544,522	2,207,625	2,618,258	2,174,063
Bad Debt Expense	63,325	382,489	73,204	113,519	172,278	244,517	348,894	332,906	96,169	425,294	568,551	69,495	67,395	247,187	70,088
Depreciation and Amortization	2,073,863	1,999,801	2,042,052	2,045,788	2,048,819	2,054,883	2,061,292	2,070,293	2,152,450	2,004,281	2,094,954	2,144,867	2,174,777	2,304,076	2,144,141
Taxes - Other Than Income Taxes	901,648	900,271	952,655	1,107,142	(397,928)	1,001,501	1,016,938	999,002	1,030,384	1,033,133	1,043,963	901,246	993,491	681,099	1,066,358
Total Direct Operating Expenses	5,500,464	6,189,497	5,310,633	5,611,896	4,183,765	5,779,033	5,666,654	5,622,157	6,110,302	5,794,512	5,871,182	5,660,130	5,443,288	5,850,619	5,454,651

Atmos Energy - Louisiana
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,297,062	2,466,055	2,710,834	2,320,320	2,603,705	2,658,219	2,677,275	2,578,779	3,369,694	2,505,549	2,678,378	2,455,269	2,501,153	2,596,848	2,579,840
Bad Debt Expense	123,768	150,522	194,419	172,055	353,305	76,293	63,901	594,222	64,309	62,170	79,453	63,960	86,696	123,951	162,905
Depreciation and Amortization	2,156,061	2,164,915	2,165,138	2,165,824	2,019,994	2,175,043	2,192,152	2,198,458	2,199,072	2,218,218	2,231,664	2,220,810	2,222,077	2,234,570	2,235,642
Taxes - Other Than Income Taxes	1,139,099	998,125	1,099,837	1,057,773	1,056,825	1,080,341	1,135,221	1,049,943	1,048,475	1,047,796	1,033,349	1,076,692	1,187,325	976,941	1,131,125
Total Direct Operating Expenses	5,715,990	5,779,617	6,170,228	5,715,972	6,033,830	5,989,896	6,068,548	6,421,402	6,681,550	5,833,733	6,022,844	5,816,731	5,997,251	5,932,310	6,109,512

Atmos Energy - Kentucky/Mid-States
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	4,243,407	4,065,318	4,607,812	3,963,288	4,137,645	4,321,005	3,423,027	3,926,205	4,181,702	4,338,965	4,400,633	3,933,125	4,191,236	3,922,919	4,072,622	3,765,131
Bad Debt Expense	185,089	137,726	121,632	66,002	57,122	50,223	49,137	62,994	(176,112)	70,370	99,192	143,604	143,011	132,031	88,467	67,568
Depreciation and Amortization	2,868,755	2,875,225	3,143,852	2,942,693	2,928,483	2,914,044	2,975,552	3,007,575	3,238,365	3,016,839	3,018,805	3,009,677	3,012,077	3,015,843	3,022,524	3,003,913
Taxes - Other Than Income Taxes	1,532,988	1,402,218	52,410	1,227,192	1,321,852	1,059,962	1,196,864	1,060,521	517,286	1,146,181	1,246,109	1,299,592	1,471,159	1,293,296	1,404,130	1,225,445
Total Direct Operating Expenses	8,830,239	8,480,487	7,925,706	8,199,176	8,445,103	8,345,234	7,644,580	8,057,294	7,761,241	8,572,355	8,764,739	8,385,998	8,817,483	8,364,088	8,587,742	8,062,056

Atmos Energy - Kentucky/Mid-States
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	3,940,144	3,954,651	3,672,460	4,001,835	4,182,137	3,131,705	3,269,044	3,587,590	3,746,176	3,286,275	3,964,044	3,168,251	3,176,986	2,819,895	3,141,474
Bad Debt Expense	47,445	49,451	51,571	39,123	111,551	48,165	67,918	89,784	103,336	90,656	73,528	46,228	40,301	209,717	34,809
Depreciation and Amortization	3,000,532	3,011,796	3,033,961	2,489,786	2,719,250	2,513,400	2,519,363	2,507,320	2,512,595	2,527,893	2,551,371	2,208,577	2,227,245	2,235,751	2,258,739
Taxes - Other Than Income Taxes	1,079,018	1,168,827	1,114,466	993,321	953,230	990,869	1,123,237	1,124,597	1,247,078	1,117,033	1,124,953	925,886	1,001,891	833,914	866,872
Total Direct Operating Expenses	8,067,139	8,184,724	7,872,458	7,524,065	7,966,168	6,684,140	6,979,562	7,309,292	7,609,185	7,021,858	7,713,897	6,348,942	6,446,423	6,099,277	6,301,894

Atmos Energy - Kentucky/Mid-States
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	3,020,783	3,978,787	2,514,455	2,926,073	3,103,360	3,613,672	3,051,638	3,141,927	3,400,631	2,886,979	2,719,745	2,720,356	2,835,916	4,153,165	2,725,939
Bad Debt Expense	35,842	353,696	38,748	51,669	67,750	81,353	152,762	128,888	42,665	183,254	237,923	34,002	33,224	639,868	43,873
Depreciation and Amortization	2,289,676	2,452,564	2,300,725	2,304,842	2,313,491	2,323,695	2,327,751	2,347,309	2,375,324	2,448,597	2,479,040	2,500,773	2,539,093	2,646,187	2,555,816
Taxes - Other Than Income Taxes	846,827	909,051	909,558	1,071,768	260,086	1,171,772	1,038,615	1,006,751	1,101,140	948,649	954,100	872,156	933,140	516,972	1,021,355
Total Direct Operating Expenses	6,193,129	7,694,098	5,763,485	6,354,352	5,744,687	7,190,492	6,570,766	6,624,876	6,919,760	6,467,479	6,390,807	6,127,287	6,341,373	7,956,193	6,346,983

Atmos Energy - Kentucky/Mid-States
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,785,842	3,855,224	4,574,510	2,956,481	2,819,210	(1,124,199)	3,301,370	2,954,858	3,777,205	2,771,044	3,393,982	2,946,033	2,987,756	2,978,491	2,799,172
Bad Debt Expense	56,249	74,771	85,337	70,536	232,104	45,460	35,701	324,221	35,097	35,438	370,834	45,185	55,362	73,801	87,200
Depreciation and Amortization	2,576,149	2,592,437	2,592,470	2,590,068	2,616,722	2,629,425	2,647,101	2,651,556	2,667,790	2,715,013	2,867,084	2,724,070	2,728,487	2,734,599	2,713,145
Taxes - Other Than Income Taxes	1,126,924	1,049,252	1,287,851	1,141,867	1,133,873	1,180,152	1,225,218	1,126,683	1,163,379	1,140,718	2,088,037	1,187,101	1,352,627	1,208,231	1,398,666
Total Direct Operating Expenses	6,545,164	7,571,684	8,540,168	6,758,951	6,801,908	2,730,838	7,209,389	7,056,318	7,643,470	6,662,213	8,719,937	6,902,389	7,124,252	6,995,121	6,998,183

Atmos Energy - Mississippi
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	2,518,566	2,639,255	2,715,255	2,557,054	2,636,124	2,920,635	2,269,646	2,486,839	2,226,109	2,458,001	2,598,154	2,486,911	3,128,134	2,528,600	2,785,919	2,199,714
Bad Debt Expense	222,841	164,149	106,567	42,904	50,948	37,977	38,814	41,927	(229,821)	61,487	82,604	152,049	121,281	134,501	88,389	40,045
Depreciation and Amortization	1,075,197	1,077,040	1,082,409	1,085,288	1,087,243	1,101,787	1,124,003	1,133,933	1,184,740	1,134,516	1,142,511	1,134,945	1,131,241	1,073,202	937,834	1,049,201
Taxes - Other Than Income Taxes	1,558,114	1,409,956	1,401,065	1,008,964	1,117,371	967,093	1,009,671	971,129	866,157	974,079	1,081,958	1,288,485	1,271,204	1,336,395	1,210,550	1,081,763
Total Direct Operating Expenses	5,374,717	5,290,400	5,305,296	4,694,211	4,891,686	5,027,492	4,442,134	4,633,828	4,047,185	4,628,082	4,905,227	5,062,391	5,651,860	5,072,697	5,022,692	4,370,724

Atmos Energy - Mississippi
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,564,530	2,211,910	2,359,250	2,405,090	2,761,087	2,481,662	2,211,719	2,487,873	2,817,437	2,457,501	2,544,620	2,658,320	2,982,103	2,871,719	2,610,871
Bad Debt Expense	37,485	34,123	35,059	32,978	169,846	54,698	88,387	145,375	165,785	105,335	118,152	77,781	66,846	227,408	36,707
Depreciation and Amortization	1,053,577	1,067,509	1,076,048	1,083,447	1,067,754	1,021,991	1,026,350	1,030,581	1,027,352	1,100,229	1,062,889	1,045,669	1,057,632	1,068,859	1,072,035
Taxes - Other Than Income Taxes	1,018,517	1,030,236	987,792	986,150	995,341	1,073,349	1,253,961	1,369,297	1,434,241	1,303,963	1,323,039	1,161,020	1,280,936	1,111,795	1,076,679
Total Direct Operating Expenses	4,674,109	4,343,779	4,458,150	4,507,664	4,994,028	4,631,700	4,580,417	5,033,126	5,444,815	4,967,028	5,048,900	4,942,790	5,387,518	5,279,781	4,796,292

Atmos Energy - Mississippi
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	2,697,783	3,182,041	2,179,898	1,457,090	2,441,076	2,560,494	2,089,371	2,585,600	2,863,644	3,790,067	2,612,304	2,371,948	2,316,567	2,927,782	2,268,470
Bad Debt Expense	34,658	1,287,877	56,771	82,343	183,020	221,958	367,098	319,376	73,015	262,376	331,438	42,209	41,333	1,352,963	58,695
Depreciation and Amortization	1,083,041	1,143,536	1,076,070	1,071,140	1,127,039	1,128,759	1,132,103	1,095,702	1,138,395	1,041,946	1,170,191	1,168,873	1,147,862	1,469,898	1,214,027
Taxes - Other Than Income Taxes	1,073,997	1,069,968	1,122,800	1,321,334	1,634,932	1,714,184	1,639,684	1,460,608	1,280,989	1,185,222	1,160,690	1,055,385	1,120,550	873,739	1,201,845
Total Direct Operating Expenses	4,889,479	6,683,422	4,435,540	3,931,907	5,386,067	5,625,396	5,228,255	5,461,285	5,356,043	6,279,611	5,174,623	4,838,415	4,626,311	6,624,382	4,743,037

Atmos Energy - Mississippi
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	(1,985,350)	2,748,983	3,096,859	2,429,609	2,705,248	2,465,340	2,519,354	2,576,142	2,989,865	2,210,791	2,793,860	2,229,751	2,511,709	2,495,091	2,112,431
Bad Debt Expense	103,892	179,647	197,776	182,771	491,946	62,367	51,776	385,994	43,361	41,797	330,406	55,392	69,263	142,969	163,971
Depreciation and Amortization	1,215,631	1,190,949	1,177,143	1,176,733	1,180,892	1,228,507	1,249,368	1,271,448	1,268,341	1,276,506	1,313,736	1,288,137	1,251,192	1,243,176	1,245,795
Taxes - Other Than Income Taxes	1,337,170	1,501,445	1,641,255	1,551,842	1,558,305	1,295,315	1,157,634	1,145,757	1,158,799	1,155,401	1,395,008	1,271,944	1,407,909	1,404,841	1,558,321
Total Direct Operating Expenses	671,344	5,621,024	6,113,032	5,340,955	5,936,391	5,051,529	4,978,132	5,379,342	5,460,366	4,684,495	5,833,009	4,825,224	5,240,073	5,286,076	5,080,517

Atmos Energy - Mid-Tex
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	8,080,591	9,004,726	8,973,548	8,941,587	8,175,749	8,453,326	6,192,152	8,790,374	10,132,132	7,254,674	8,505,403	8,959,178	7,840,832	7,609,586	9,150,821	7,472,827
Bad Debt Expense	488,591	485,638	370,030	253,714	232,320	208,105	203,323	216,257	(2,277,133)	245,978	293,456	576,099	666,045	387,979	396,081	312,081
Depreciation and Amortization	7,862,163	7,878,011	7,921,738	7,961,342	7,999,634	8,002,719	7,964,383	7,960,148	9,101,536	8,189,032	8,248,569	8,188,773	8,196,153	8,223,591	8,238,570	8,195,217
Taxes - Other Than Income Taxes	11,172,876	11,322,429	10,171,988	12,852,446	10,793,983	8,846,632	6,683,374	6,259,091	3,931,966	6,142,147	7,055,784	9,315,696	11,251,472	11,082,676	9,990,353	10,121,057
Total Direct Operating Expenses	27,604,221	28,690,804	27,437,303	30,009,088	27,201,687	25,510,782	21,043,233	23,225,870	20,888,503	21,831,830	24,103,212	27,039,746	27,954,502	27,303,833	27,775,825	26,101,182

Atmos Energy - Mid-Tex
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	7,382,056	7,870,579	7,162,594	7,393,976	8,278,583	7,560,649	6,651,199	8,170,882	9,891,431	8,030,330	8,444,011	7,458,365	9,306,003	7,580,896	7,894,294
Bad Debt Expense	203,854	196,672	192,917	183,660	(10,656)	264,868	380,720	226,332	504,463	410,115	381,143	313,826	291,913	1,433,141	242,412
Depreciation and Amortization	8,238,710	8,164,934	8,204,381	8,234,017	8,292,583	8,193,302	8,219,811	8,287,546	7,343,669	7,370,207	7,383,635	7,411,750	7,434,515	7,634,008	7,487,418
Taxes - Other Than Income Taxes	9,194,952	8,309,363	5,916,335	5,681,902	7,867,393	5,733,032	6,656,821	8,460,124	11,120,368	9,976,238	9,948,836	10,806,315	9,621,235	9,037,047	7,083,938
Total Direct Operating Expenses	25,019,572	24,541,547	21,476,227	21,493,555	24,427,903	21,751,852	21,908,550	25,144,883	28,859,931	25,788,890	26,157,625	25,990,256	26,653,666	25,685,092	22,708,063

Atmos Energy - Mid-Tex
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	9,238,061	11,189,035	6,952,518	8,145,041	9,049,051	8,941,016	8,065,667	8,216,021	9,091,259	8,467,673	8,438,190	8,736,801	8,779,797	9,837,500	7,607,898
Bad Debt Expense	237,362	1,601,077	226,725	278,118	480,982	547,737	1,002,650	872,936	304,212	1,294,587	1,873,717	249,981	233,196	(258,570)	324,726
Depreciation and Amortization	7,562,715	7,829,187	7,578,970	7,817,907	7,828,329	7,831,548	7,833,836	7,853,453	8,094,906	8,068,291	8,579,423	8,585,902	8,624,384	9,029,650	8,680,990
Taxes - Other Than Income Taxes	7,199,624	6,743,581	6,485,024	7,653,929	7,697,880	12,887,981	13,034,871	13,489,981	14,084,948	13,114,655	12,350,252	8,631,810	7,872,421	4,868,550	7,759,351
Total Direct Operating Expenses	24,237,762	27,362,879	21,243,237	23,894,995	25,056,242	30,208,282	29,937,023	30,432,392	31,575,326	30,945,206	31,241,582	26,204,494	25,509,797	23,477,131	24,372,965

Atmos Energy - Mid-Tex
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	8,443,946	8,439,847	8,671,128	8,324,768	9,180,334	8,922,466	8,980,738	8,683,747	9,583,709	7,991,454	9,676,931	8,578,599	7,703,326	8,538,195	8,645,631
Bad Debt Expense	445,602	241,312	456,512	416,432	1,252,433	310,520	293,319	2,568,835	279,928	273,026	378,033	303,870	362,651	451,579	496,562
Depreciation and Amortization	8,683,735	8,733,847	8,734,505	8,744,359	8,717,650	8,554,562	8,564,076	9,142,748	9,086,049	9,084,979	9,162,142	9,151,979	9,161,806	9,205,222	9,216,002
Taxes - Other Than Income Taxes	9,202,921	13,048,571	14,742,009	13,748,080	13,514,095	13,675,002	12,353,859	11,807,256	8,373,767	7,832,210	9,306,714	7,195,791	9,691,037	9,762,007	13,729,043
Total Direct Operating Expenses	26,776,204	30,463,577	32,604,154	31,233,639	32,664,513	31,462,550	30,211,992	32,202,586	27,323,453	25,181,669	28,523,821	25,230,239	26,918,820	27,957,003	32,087,239

Atmos Energy - Atmos Pipeline - Texas
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	4,223,309	4,211,217	4,925,972	4,972,056	6,290,836	5,798,014	6,021,388	6,048,431	7,028,362	5,075,445	4,839,777	4,959,364	4,805,541	4,689,161	4,269,011	3,442,714
Bad Debt Expense	1	2	(100)	0	0	(11,769)	0	0	8,787	0	0	45,427	0	0	129	0
Depreciation and Amortization	1,943,740	1,926,274	1,927,968	1,928,280	2,437,262	2,424,836	2,431,741	2,443,357	2,735,260	2,503,620	2,549,348	2,597,793	2,595,884	2,600,321	2,595,575	2,600,643
Taxes - Other Than Income Taxes	1,295,463	1,321,849	1,495,901	1,254,447	1,249,660	1,224,628	1,272,117	1,289,357	744,222	1,229,866	1,294,042	1,260,244	1,320,989	1,320,497	1,274,025	1,257,019
Total Direct Operating Expenses	7,462,513	7,459,341	8,349,741	8,154,782	9,977,758	9,435,710	9,725,246	9,781,145	10,516,631	8,808,931	8,683,168	8,862,828	8,722,414	8,609,979	8,138,740	7,300,376

Atmos Energy - Atmos Pipeline - Texas
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	5,506,140	5,259,868	5,408,458	7,111,088	7,570,954	5,146,263	4,928,953	4,007,039	4,873,104	4,272,563	4,565,758	4,475,737	5,164,998	5,032,076	5,936,345
Bad Debt Expense	(284)	(1,165)	0	0	10,940	0	0	(684)	0	0	(88,917)	0	0	8,626	0
Depreciation and Amortization	2,605,740	2,590,317	2,598,560	2,635,763	2,963,454	2,737,333	2,768,446	2,884,311	2,893,447	2,898,281	2,898,112	2,891,699	2,888,536	2,895,853	2,903,509
Taxes - Other Than Income Taxes	1,299,377	1,281,632	1,274,738	1,352,674	1,402,401	1,277,801	1,375,814	1,294,919	1,447,573	1,428,364	1,401,494	1,426,446	1,455,209	1,404,957	1,562,698
Total Direct Operating Expenses	9,410,972	9,130,652	9,281,756	11,099,525	11,947,749	9,160,397	9,073,213	8,185,585	9,214,124	8,599,207	8,776,447	8,793,882	9,508,743	9,341,512	10,402,552

Atmos Energy - Atmos Pipeline - Texas
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	8,793,385	10,077,001	5,349,444	4,808,096	4,650,227	4,823,640	4,460,222	4,904,413	6,265,323	6,572,095	7,936,512	9,290,150	11,474,239	11,031,548	6,140,640
Bad Debt Expense	0	(14,173)	0	0	5,180	0	0	10,650	0	0	(4,355)	0	0	(731)	0
Depreciation and Amortization	3,120,405	3,622,265	3,193,542	3,212,821	3,379,973	3,382,549	3,384,575	3,388,560	3,408,026	3,419,503	3,453,475	3,480,448	3,529,921	3,797,571	3,700,036
Taxes - Other Than Income Taxes	1,453,418	1,530,100	1,440,855	1,584,206	1,637,690	1,620,752	1,643,866	(4,495,772)	1,665,869	1,655,218	1,732,280	1,680,110	1,765,026	1,212,317	1,595,664
Total Direct Operating Expenses	13,367,208	15,115,193	9,983,841	9,605,123	9,673,070	9,826,941	9,488,664	3,807,850	11,339,217	11,646,816	13,117,912	14,450,708	16,769,186	16,040,706	11,436,340

Atmos Energy - Atmos Pipeline - Texas
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15
Operating Expenses								
Direct O&M Expenses (Excl Bad Debt)	7,038,031	8,869,123	6,742,914	5,634,208	7,193,255	7,321,633	7,111,184	9,333,048
Bad Debt Expense	0	(11,307)	0	0	15,341	0	0	(224)
Depreciation and Amortization	3,774,039	3,907,733	3,910,674	3,921,954	3,915,066	3,924,820	3,940,195	3,950,962
Taxes - Other Than Income Taxes	1,759,441	1,509,671	1,767,489	1,769,160	1,701,400	1,827,670	2,255,143	2,110,263
Total Direct Operating Expenses	12,571,511	14,275,420	12,421,077	11,325,321	12,825,062	13,074,122	13,306,522	15,394,048

	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses							
Direct O&M Expenses (Excl Bad Debt)	12,260,186	13,207,129	15,841,873	6,541,408	7,556,655	9,886,451	6,663,288
Bad Debt Expense	0	0	77	0	(27)	(2,190)	0
Depreciation and Amortization	3,931,431	4,023,327	4,335,526	4,194,699	4,199,492	4,376,243	4,382,067
Taxes - Other Than Income Taxes	2,133,617	2,195,250	2,118,553	1,799,686	2,063,245	1,707,797	2,291,840
Total Direct Operating Expenses	18,325,233	19,425,706	22,296,030	12,535,794	13,819,365	15,968,300	13,337,195

Atmos Energy - Atmos Energy Marketing
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	1,994,386	1,581,261	2,150,214	1,709,532	1,750,582	1,701,076	1,657,003	1,881,830	3,849,245	1,773,901	1,917,625	541,162	1,871,972	894,888	1,359,219	1,184,283
Bad Debt Expense	62,500	62,500	(500,000)	62,500	62,500	62,500	62,500	62,500	(1,253,077)	90,000	90,000	0	0	0	0	0
Depreciation and Amortization	166,754	152,054	151,642	152,144	148,785	155,214	150,504	149,000	159,516	83,502	89,508	86,827	86,741	85,991	84,360	80,029
Taxes - Other Than Income Taxes	191,948	183,636	(748,281)	163,293	243,176	140,421	151,857	471,120	(21,951)	167,945	249,170	159,692	173,843	79,724	150,493	136,298
Total Direct Operating Expenses	2,415,588	1,979,450	1,053,575	2,087,469	2,205,043	2,059,212	2,021,863	2,564,450	2,733,733	2,115,348	2,346,303	787,681	2,132,556	1,060,603	1,594,072	1,400,610

Atmos Energy - Atmos Energy Marketing
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	1,754,613	3,217,610	1,849,254	1,782,428	2,751,440	2,560,105	1,105,425	1,568,212	1,911,773	1,640,268	1,663,723	1,951,468	2,088,638	5,538,028	1,821,689
Bad Debt Expense	0	19,000	0	0	793,456	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667
Depreciation and Amortization	80,279	365,001	368,594	372,250	393,261	232,469	227,796	228,957	228,593	228,666	226,521	226,101	225,847	226,182	235,012
Taxes - Other Than Income Taxes	211,888	129,936	147,245	144,908	129,252	152,814	110,331	62,270	195,361	135,140	(38,946)	138,197	184,310	114,438	143,055
Total Direct Operating Expenses	2,046,780	3,731,547	2,365,094	2,299,586	4,067,409	2,987,055	1,485,218	1,901,106	2,377,394	2,045,741	1,892,964	2,357,432	2,540,462	5,920,315	2,241,423

Atmos Energy - Atmos Energy Marketing
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	1,940,771	7,231,675	1,921,901	2,054,812	3,120,063	2,369,242	1,743,930	(1,162,373)	3,541,196	1,757,007	2,223,308	2,012,012	1,677,588	1,680,720	2,206,923
Bad Debt Expense	41,667	106,345	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	850,000	41,667
Depreciation and Amortization	235,912	236,042	243,277	242,736	244,004	243,738	243,238	242,398	242,427	242,298	242,856	263,095	244,260	270,131	241,998
Taxes - Other Than Income Taxes	127,643	190,649	136,453	250,458	49,370	234,938	145,979	149,664	156,530	172,545	143,324	149,847	137,463	21,626	161,672
Total Direct Operating Expenses	2,345,993	7,764,710	2,343,298	2,589,673	3,455,104	2,889,585	2,174,814	(728,644)	3,981,820	2,213,517	2,651,154	2,466,621	2,100,978	2,822,477	2,652,259

Atmos Energy - Atmos Energy Marketing
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	1,800,295	2,348,679	2,218,012	1,880,074	2,103,970	2,031,806	2,161,518	2,009,138	3,996,124	1,650,642	3,576,702	2,023,553	1,719,203	2,133,899	2,122,909
Bad Debt Expense	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	41,667	(1,300,000)	41,667	41,667	(500,000)	0
Depreciation and Amortization	247,361	245,974	241,854	241,863	247,990	247,983	249,322	249,242	243,104	240,434	258,680	243,019	243,212	244,181	244,269
Taxes - Other Than Income Taxes	281,352	138,529	273,631	154,916	139,925	171,325	181,751	158,757	158,531	150,581	146,994	137,346	270,227	6,602	239,877
Total Direct Operating Expenses	2,370,675	2,774,848	2,775,164	2,318,520	2,533,552	2,492,781	2,634,258	2,458,803	4,439,425	2,083,324	2,682,376	2,445,585	2,274,309	1,884,681	2,607,054

Atmos Energy - UCG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	33,035	25,018	27,388	24,533	27,458	176,324	46,244	40,870	43,608	32,026	31,512	. 41,363	26,124	35,497	29,684	28,565
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	12,677	12,676	12,677	12,676	12,677	12,677	12,677	12,968	28,033	13,411	13,411	13,411	13,411	13,411	13,316	13,409
Taxes - Other Than Income Taxes	900	900	(14,223)	900	900	900	900	900	900	900	900	900	1,000	1,025	1,025	1,025
Total Direct Operating Expenses	46,612	38,594	25,842	38,109	41,034	189,901	59,820	54,738	72,541	46,337	45,824	55,674	40,535	49,933	44,025	42,999

Atmos Energy - UCG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	22,700	25,017	42,432	27,496	36,197	36,389	29,280	38,926	31,555	25,305	24,386	23,323	26,521	23,551	25,210
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	13,409	22,995	14,094	14,094	14,473	14,551	14,544	14,552	14,552	14,552	14,527	14,507	14,502	14,503	14,504
Taxes - Other Than Income Taxes	1,025	1,025	1,025	1,025	1,025	1,283	1,482	1,529	1,338	1,301	(330)	1,310	1,368	1,288	1,323
Total Direct Operating Expenses	37,134	49,037	57,551	42,614	51,694	52,222	45,306	55,007	47,445	41,158	38,584	39,140	42,392	39,342	41,038

Atmos Energy - UCG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	25,858	81,109	28,610	31,746	25,487	38,306	25,670	46,947	50,657	22,813	50,949	61,263	67,674	62,397	29,036
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	14,504	14,511	14,501	14,501	14,501	14,501	14,501	14,502	14,503	15,529	15,532	15,535	15,537	15,695	15,698
Taxes - Other Than Income Taxes	1,305	1,284	2,137	2,375	2,066	2,266	2,196	2,203	2,206	2,228	2,191	2,212	2,178	(420)	1,326
Total Direct Operating Expenses	41,667	96,905	45,248	48,623	42,055	55,073	42,367	63,651	67,366	40,570	68,672	79,011	85,389	77,671	46,060

Atmos Energy - UCG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	18,466	24,913	26,288	27,858	31,979	45,457	46,865	33,578	29,520	63,379	68,201	20,602	17,613	28,587	435,049
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	15,698	15,790	15,770	15,771	15,770	15,770	15,815	15,810	15,602	15,609	16,054	16,261	16,148	16,200	16,200
Taxes - Other Than Income Taxes	1,615	1,273	1,561	1,421	1,444	1,422	1,495	1,451	1,475	1,435	1,435	3,960	4,352	3,912	4,031
Total Direct Operating Expenses	35,779	41,976	43,619	45,050	49,193	62,649	64,175	50,839	46,598	80,423	85,690	40,823	38,113	48,698	455,281

Atmos Energy - WKG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	31,213	17,755	22,182	22,675	98,076	46,727	(170,678)	42,161	47,582	34,739	34,808	41,677	39,378	24,889	30,156	39,009
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	23,797	23,798	23,788	23,788	23,802	23,783	23,810	26,988	27,491	26,681	26,692	26,650	26,650	26,651	26,650	26,650
Taxes - Other Than Income Taxes	5,376	3,095	5,167	3,345	6,016	3,638	2,801	3,642	3,344	3,045	4,797	8,091	5,850	3,614	3,222	3,095
Total Direct Operating Expenses	60,386	44,648	51,136	49,808	127,893	74,148	(144,067)	72,791	78,417	64,466	66,297	76,418	71,879	55,154	60,028	68,754

Atmos Energy - WKG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	24,990	15,758	24,666	21,514	37,101	15,368	21,935	33,686	41,958	25,278	30,828	18,017	26,642	25,576	24,702
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	26,651	26,651	26,653	26,654	26,867	34,415	27,466	28,293	27,694	27,696	27,697	27,698	27,690	27,703	27,704
Taxes - Other Than Income Taxes	3,107	3,533	3,536	3,171	3,025	6,575	2,497	3,413	5,364	4,066	15,668	4,108	7,085	4,326	3,957
Total Direct Operating Expenses	54,747	45,942	54,857	51,338	66,994	56,358	51,899	65,392	75,016	57,040	74,194	49,822	61,417	57,605	56,362

Atmos Energy - WKG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	31,206	138,105	65,008	31,512	28,735	44,428	30,273	25,400	30,898	27,789	30,193	27,775	39,377	376,719	41,621
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	27,704	27,878	27,730	27,734	27,728	27,720	27,720	27,720	27,732	27,732	27,737	27,742	27,744	27,969	28,071
Taxes - Other Than Income Taxes	4,258	4,164	5,154	10,068	6,524	9,758	6,057	5,442	6,006	8,190	5,273	4,963	4,889	1,123	5,280
Total Direct Operating Expenses	63,169	170,146	97,892	69,314	62,986	81,905	64,050	58,562	64,636	63,711	63,203	60,480	72,010	405,811	74,972

Atmos Energy - WKG Storage
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	(112,440)	31,431	31,550	33,114	32,052	53,302	260,648	50,096	44,936	346,565	974,535	28,954	51,635	26,728	(665,330)
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	28,072	28,160	28,161	28,161	28,160	28,160	28,162	28,186	27,908	27,917	28,153	29,522	39,323	29,944	29,945
Taxes - Other Than Income Taxes	10,659	3,255	9,471	6,254	6,231	6,090	8,375	5,325	5,034	5,093	5,065	7,392	10,082	4,638	8,405
Total Direct Operating Expenses	(73,710)	62,847	69,182	67,529	66,444	87,552	297,185	83,606	77,878	379,575	1,007,753	65,868	101,041	61,310	(626,980)

Atmos Energy - TLGP
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	96,292	62,955	63,317	61,762	125,885	98,032	63,455	94,952	97,542	75,957	67,592	82,052	81,541	97	64,085	88,918
Bad Debt Expense	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	66,017	66,358	66,021	66,022	66,042	66,014	66,055	66,060	66,813	66,530	66,942	66,632	67,430	66,766	66,765	66,766
Taxes - Other Than Income Taxes	61,360	62,014	(288,938)	61,268	61,441	61,811	61,278	65,283	(292,409)	61,420	61,845	61,360	40,952	47,112	47,277	47,097
Total Direct Operating Expenses	223,669	191,327	(159,598)	189,051	253,369	225,857	190,788	226,295	(128,053)	203,907	196,380	210,045	189,923	113,975	178,128	202,780

Atmos Energy - TLGP
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	81,577	105,506	128,649	59,751	453,189	96,666	61,242	97,275	31,175	96,267	78,701	73,167	134,897	71,347	74,072
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	66,767	66,767	66,793	66,797	68,149	67,190	67,228	67,321	67,324	67,483	67,626	67,818	68,201	68,253	68,809
Taxes - Other Than Income Taxes	47,256	47,026	49,284	47,071	47,011	65,241	65,815	65,951	64,005	66,644	124,451	65,948	66,123	65,882	82,888
Total Direct Operating Expenses	195,600	219,299	244,726	173,618	568,349	229,096	194,285	230,546	162,504	230,394	270,779	206,933	269,220	205,482	225,769

Atmos Energy - TLGP
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	106,802	92,720	113,399	93,169	80,093	84,966	80,289	79,085	99,271	93,821	101,377	82,715	95,772	128,926	81,510
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	71,907	72,361	69,074	68,957	68,944	68,928	68,968	68,998	69,012	69,012	69,022	68,958	69,667	71,043	69,398
Taxes - Other Than Income Taxes	82,834	82,771	81,236	81,916	100,089	68,462	75,760	68,281	60,789	68,354	68,247	67,308	67,209	59,786	64,546
Total Direct Operating Expenses	261,543	247,852	263,708	244,043	249,126	222,356	225,017	216,364	229,071	231,186	238,646	218,981	232,648	259,756	215,453

Atmos Energy - TLGP
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	90,707	79,554	116,336	70,213	94,230	85,134	110,186	80,655	97,080	81,403	97,468	75,689	74,099	127,307	66,593
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	69,328	69,474	69,450	69,450	69,448	69,448	69,751	69,791	66,604	62,059	63,264	63,265	63,265	63,399	63,403
Taxes - Other Than Income Taxes	65,268	64,412	63,882	66,532	63,589	63,535	63,718	63,607	83,210	62,447	62,251	23,636	25,449	24,072	23,712
Total Direct Operating Expenses	225,303	213,440	249,667	206,195	227,267	218,117	243,655	214,053	246,894	205,909	222,983	162,590	162,813	214,779	153,708

Atmos Energy - Remaining Nonregulated
Total Direct Operating Expenses
January 2011 - January 2016

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12
Operating Expenses																
Direct O&M Expenses (Excl Bad Debt)	586,641	315,548	19,168,013	661,150	(33,367)	11,323,960	257,379	291,914	209,980	225,299	191,411	324,190	273,159	196,277	376,936	127,727
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	112,353	112,293	112,230	112,231	112,314	53,102	53,278	53,004	55,928	85,725	18,506	48,576	48,934	48,935	48,932	48,934
Taxes - Other Than Income Taxes	45,385	43,916	(195,368)	43,884	44,626	43,731	44,180	55,041	(337,810)	49,894	60,626	44,558	42,262	46,142	47,594	46,845
Total Direct Operating Expenses	744,379	471,758	19,084,875	817,265	123,572	11,420,794	354,837	399,959	(71,902)	360,918	270,543	417,325	364,354	291,354	473,462	223,506

Atmos Energy - Remaining Nonregulated
Total Direct Operating Expenses
January 2011 - January 2016

	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	220,122	331,108	203,361	139,089	6,552,415	226,195	209,417	194,479	170,376	215,599	306,125	142,095	206,710	83,303	217,228
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	48,937	48,937	51,729	55,230	35,318	34,567	34,638	34,749	34,754	(222,345)	33,062	25,332	25,294	25,351	25,354
Taxes - Other Than Income Taxes	47,504	47,064	46,913	57,297	46,754	30,834	31,920	32,662	31,225	30,099	(197,939)	28,871	29,198	28,746	28,947
Total Direct Operating Expenses	316,562	427,109	302,003	251,616	6,634,487	291,595	275,974	261,890	236,354	23,353	141,249	196,299	261,202	137,400	271,529

Atmos Energy - Remaining Nonregulated
Total Direct Operating Expenses
January 2011 - January 2016

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	111,661	137,885	115,239	371,271	58,442	92,147	38,867	(2,848,519)	126,289	32,541	111,243	(344,088)	78,160	5,590	48,364
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	25,357	26,136	22,840	22,750	22,759	22,710	22,711	22,712	22,741	22,666	22,695	22,708	22,726	22,646	16,834
Taxes - Other Than Income Taxes	41,993	28,726	21,542	22,392	(506,598)	23,025	22,773	22,798	22,809	22,890	22,757	7,833	26,914	28,430	25,601
Total Direct Operating Expenses	179,011	192,747	159,621	416,414	(425,396)	137,882	84,350	(2,803,009)	171,839	78,096	156,694	(313,548)	127,800	56,666	90,799

Atmos Energy - Remaining Nonregulated
Total Direct Operating Expenses
January 2011 - January 2016

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Operating Expenses															
Direct O&M Expenses (Excl Bad Debt)	35,627	77,919	65,301	67,080	79,233	45,781	28,322	58,797	52,423	54,174	2,907,179	76,633	62,805	37,360	(60,528)
Bad Debt Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation and Amortization	16,833	16,602	16,639	16,638	16,640	16,643	16,558	16,185	30,009	16,997	16,099	22,486	22,494	22,752	22,753
Taxes - Other Than Income Taxes	25,059	26,264	26,418	26,611	26,632	26,609	26,472	26,555	26,509	33,024	26,584	38,158	39,949	38,501	38,617
Total Direct Operating Expenses	77,520	120,785	108,357	110,330	122,505	89,033	71,351	101,537	108,941	104,195	2,949,862	137,277	125,248	98,613	842

REQUEST:

Please refer to confidential electronic workpaper "Att30- O&M for KY- Fall2015 case updated" provided in response to Staff 1-59 and the tab entitled "Div 2 forecast."

a. Please provide the actual data in the same level of detail and in the same format for each month from October 2011 through the most recent month available with all formulas intact.

b. Please provide a variance analysis for each category of expense (labor, benefits, employee welfare, etc.) that identifies and describes all reasons for the change projected in the test year compared to the base year. In addition, provide all documents, including studies and/or other analyses developed by the Company to support the change projected in the test year compared to the base year.

c. Refer further to cell row 248 of this tab showing the monthly capitalization percentages. Please identify and describe all reasons for the change in the average capitalization percentage projected for the test year compared to the base year. Provide a copy of all documents relied upon to determine or calculate the capitalization percentages and to determine or calculate the change.

d. Please provide the actual capitalization percentage rate for labor and related costs for each month for division 2 from October 2011 through the most recent month available in a spreadsheet with cells and formulae intact.

e. Refer to cell row 77 of this tab showing injuries and damages insurance reserve. Please describe the entries in April and May of the base year and explain whether or not these amounts are recurring. If they are not recurring, then please explain why they are not.

f. Please provide in electronic format a schedule showing the activity and balances in the injuries and damages reserve for each month from October 2011 through the most recent month available with all formulas intact, starting with the beginning balance, accruals to the reserve, charges to the reserve, and ending balance each month. For the accruals to the reserve, provide all supporting documentation as well as the account/subaccount used to record the accruals. For the charges to the reserve, provide a description of each such charge or related group of charges.

RESPONSE:

a) While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 1.

b) Please see Attachment 2.

c) All amounts relied upon for calculation of percentages are in Attachment 30 to the Company's response to Staff DR No. 1-59.

d) While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 1.

e) Amounts charged to the Shared Services Injury and Damages Reserve Account 9250-07115 are recorded to Cost Center 1903, which does not allocate to the business units. Thus, the amounts referenced in the question, along with other expenses charged to this account in Shared Services, are not allocated to Kentucky operations.

f) Please see response to subpart (e).

ATTACHMENTS:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-05_Att1 - Div 002 O&M Oct11-Jan16.xlsx, 19 Pages.

ATTACHMENT 2 - Atmos Energy Corporation, AG_1-05_Att2 - SSU Variance (02 and 012).xlsx, 1 Page.

Respondent: Greg Waller

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Customer accounts-Meter readin - Non-project Labor 9020-01000	3,578	3,644	5,465	3,644	3,644	3,644	3,644	3,644	5,466	3,644	3,644	10,143	53,801
Customer accounts-Customer rec - Non-project Labor 9030-01000	4,306	4,380	6,569	4,380	4,380	4,380	4,380	3,547	-	-	-	-	36,320
A&G-Administrative & general s - Non-project Labor 9200-01000	2,587,972	2,495,591	3,738,452	2,676,504	2,531,530	2,625,348	2,513,797	2,483,801	3,697,050	2,587,623	2,543,092	2,513,775	32,994,536
Distribution-Operation supervi - Non-project Labor 8700-01000	0	0	0	0	0	0	0	0	0	0	14,005	-	14,005
Distribution-Other expenses - Non-project Labor 8800-01000	0	0	343	-	-	-	436	-	-	-	-	-	779
A&G-Administrative & general s - Capital Labor 9200-01001	132,582	135,143	210,280	115,076	170,280	160,118	165,782	218,908	373,069	236,022	278,417	242,205	2,437,883
Mains expenses - Capital Labor Contra 8560-01002	0	0	(279)	-	-	(996)	(62)	-	-	(558)	(248)	(279)	(2,422)
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(3,221)	(4,218)	(5,002)	(6,527)	(8,657)	(3,860)	(3,182)	(3,233)	(4,887)	(6,276)	(5,632)	(5,885)	(60,581)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(50,220)	(24,040)	(30,300)	(14,488)	(29,639)	(28,793)	(14,726)	(50,149)	(114,980)	(90,010)	(68,445)	(85,627)	(601,417)
A&G-Administrative & general s - O&M Project Labor and Contra 9200-01006	0	0	365	-	853	951	1,927	-	4,455	9,429	15,546	14,335	47,860
A&G-Office supplies & expense - O&M Project Labor and Contra 9210-01006	0	0	0	0	0	(1,663)	-	-	-	-	-	-	(1,663)
Distribution-Other expenses - Expense Labor Accrual 8800-01008	0	0	57	(57)	0	0	240	(240)	0	0	0	0	-
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	212	401	(1,457)	364	182	364	182	547	(1,640)	364	547	3,250	3,315
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	252	479	(1,752)	438	219	438	219	74	(2,483)	-	-	-	(2,116)
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	131,003	242,083	(976,480)	273,711	110,061	312,216	63,579	349,852	(1,122,430)	289,396	368,234	2,178	43,402
A&G-Office supplies & expense - Expense Labor Accrual 9210-01008	782	-	-	-	-	-	-	-	-	-	-	-	782
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	0	0	0	0	0	0	0	0	0	0	7,003	(6,766)	237
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	60,756	-	-	-	-	-	3,045	-	-	(30,914)	32,886
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	35,787	17,789	18,103	8,320	22,978	22,937	10,076	34,544	86,649	81,595	65,819	84,433	489,028
Mains expenses - Capital Labor Transfer In 8560-01011	0	0	279	-	-	996	62	-	-	558	248	279	2,422
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	3,221	4,218	5,002	6,527	8,657	3,860	3,182	3,233	4,887	6,276	5,632	5,885	60,581
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(118,149)	(128,892)	(198,083)	(108,909)	(163,619)	(154,262)	(161,132)	(203,302)	(344,738)	(227,606)	(275,791)	(241,010)	(2,325,495)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	0	0	0	0	0	0	0	0	0	0	0	474	474
A&G-Administrative & general s - Expense Labor Transfer In 9200-01013	0	0	365	-	853	1,949	2,024	598	7,301	10,508	(23,232)	70,469	70,834
A&G-Administrative & general s - Expense Labor Transfer Out 9200-01014	0	0	(365)	-	(853)	(951)	(1,927)	-	(4,455)	(9,429)	(15,546)	(14,335)	(47,860)
Labor	2,728,105	2,746,577	2,832,319	2,958,983	2,650,868	2,946,676	2,588,501	2,841,821	2,586,309	2,891,535	2,913,292	2,562,608	33,247,594
A&G-Employee pensions and bene - Other Benefits Load 9260-01200	912,893	949,144	(1,077,869)	663,935	1,458,242	640,116	571,633	628,043	569,917	636,945	650,180	582,045	7,175,224
A&G-Injuries & damages - Other Benefits Variance 9250-01201	121,244	(112,329)	(5,447)	(1,223)	(6,376)	(233)	(466)	(1,803)	(1,169)	(1,515)	(1,735)	101,685	90,615
A&G-Employee pensions and bene - Other Benefits Variance 9260-01201	59,720	(4,563)	(490,041)	(134,370)	(3,373)	226,515	(10,179)	22,985	134,939	99,087	(81,139)	(61,242)	(241,662)
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	0	0	1,171,349	218,965	(305,914)	214,338	191,406	210,295	190,832	213,276	217,707	192,876	2,515,130
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	0	0	876,439	162,744	(229,867)	159,305	142,262	156,300	141,634	158,516	161,810	143,354	1,872,697
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	0	0	311,740	72,501	93,678	(16,271)	118,161	90,178	89,424	77,025	34,598	141,598	1,012,633
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	0	0	234,145	22,434	73,606	(65,715)	75,891	57,117	56,538	45,563	(7,889)	118,713	610,403
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	9,136	9,460	9,679	10,324	8,999	9,631	8,557	9,008	8,694	9,389	9,412	8,447	110,733
A&G-Employee pensions and bene - Pension Regulated Asset O&M 9260-01226	0	0	0	0	(718,134)	(359,067)	(359,067)	(359,067)	(359,067)	(359,067)	(359,067)	2,872,536	-
A&G-Employee pensions and bene - OPEB Regulated Asset O&M 9260-01227	0	0	0	0	(234,526)	(117,263)	(117,263)	(117,263)	(117,263)	(117,263)	(117,263)	938,103	(0)
A&G-Employee pensions and bene - SERP Regulated Asset O&M 9260-01228	0	0	0	0	0	0	0	0	0	(13,918)	(13,918)	27,835	-
A&G-Employee pensions and bene - Other Benefits Projects 9260-01290	0	0	128	-	189	431	447	132	1,613	2,322	(5,134)	15,688	15,816
A&G-Injuries & damages - Other Benefits Projects 9250-01290	0	0	1	-	2	4	4	1	15	21	(46)	150	151
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	0	0	0	0	63	144	150	44	540	778	(1,719)	5,259	5,259
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	0	0	0	0	47	107	111	33	402	578	(1,278)	3,938	3,938
Benefits	1,102,993	841,713	1,030,125	1,005,310	136,635	692,043	621,648	696,001	717,229	751,737	484,519	5,090,985	13,170,936
A&G-Employee pensions and bene - Service Awards 9260-07421	6,328	19,252	2,299	20,724	6,369	1,154	2,540	762	3,900	10,757	3,302	4,217	81,604
Mains and Services Expenses - Uniforms 8740-07443	0	0	0	0	0	0	0	0	0	125	125	-	250
A&G-Office supplies & expense - Uniforms 9210-07443	363	115	-	191	100	-	-	29	125	-	-	-	922
Miscellaneous general expenses - Education Assistance Program 9302-07447	0	0	0	0	0	0	0	0	0	0	239	-	239
A&G-Employee pensions and bene - Education Assistance Program 9260-07447	11,052	3,612	49,851	39,393	14,123	12,763	19,825	55,963	24,362	13,713	30,210	28,707	303,572
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	749,000	1,137,113	1,308,367	1,646,000	890,720	174,000	20,138	460	-	-	-	2,594,972	8,520,771
A&G-Employee pensions and bene - Exec Compensation-Other 9260-07453	47	27	27	27	27	-	92	27	27	48	27	27	403
A&G-Employee pensions and bene - Restricted Stock - Management Incent 9260-07457	20,250	21,856	-	-	-	-	-	-	-	-	-	-	42,106
A&G-Employee pensions and bene - Restricted Stock - Long Term Incentl 9260-07458	177,747	172,239	177,981	179,388	168,076	180,364	173,901	477,763	316,395	268,992	266,312	567,006	3,126,162
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	246,743	238,960	246,926	246,926	233,437	249,536	240,929	409,003	4,689,327	78,054	96,730	94,225	7,050,796
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	42,946	65,469	75,137	75,137	72,399	77,392	74,750	77,241	1,101,242	15,479	22,624	21,894	1,721,710
A&G-Employee pensions and bene - Rabbi Trust Gain/Loss 9260-07486	(44,915)	(5,458)	(475,748)	(164,665)	222,299	(527,729)	(55,784)	(33,728)	(36,751)	(48,922)	(39,572)	(24,074)	(1,235,048)
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	(53,040)	(53,040)	(53,040)	(53,040)	(53,040)	(360,978)	(37,158)	(242,440)	(36,249)	(36,249)	(36,249)	(33,351)	(1,047,874)
A&G-Employee pensions and bene - COLI Loan Interest 9260-07488	121,881	99,327	121,881	121,881	121,881	121,881	113,576	118,915	113,870	113,870	113,870	113,870	1,396,704
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	632,155	632,155	634,178	633,655	632,155	632,155	632,155	632,165	632,155	632,155	632,155	632,155	7,589,378
A&G-Administrative & general s - Misc Employee Welfare Exp 9200-07499	0	50	-	-	-	-	-	-	-	-	-	-	50
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	12,285	26,894	65,751	25,818	20,938	76,061	25,998	71,495	24,924	21,072	29,589	58,767	459,593
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	49	110	835	(776)	4,140	12,158	2,594	380	2,591	663	6,060	8,276	37,080
A&G-Rents - Misc Employee Welfare Exp 9310-07499	0	836	-	378	1,174	831	629	-	766	153	1,915	-	6,683
Storage-Purification expenses - Misc Employee Welfare Exp 8210-07499	0	0	0	0	0	0	0	0	0	0	26	-	26
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	0	125	-	-	-	-	-	-	-	-	-	-	125
Employee Welfare	1,922,888	2,359,640	2,154,445	2,771,036	2,334,796	649,587	1,214,185	1,568,026	6,816,683	1,069,911	1,127,365	4,066,691	28,055,252
A&G-Property insurance - Blueflame Property Insurance 9240-04069	11,515	11,515	11,515	12,320	12,320	12,320	12,320	12,320	12,320	12,320	12,629	12,629	146,046
A&G-Injuries & damages - Insurance-Other 9250-04070	28,960	28,960	42,574	28,960	28,960	28,960	28,960	28,960	28,960	28,961	28,961	28,961	361,139
A&G-Property insurance - Insurance-Other 9240-04070	7,318	7,340	7,336	7,336	7,336	7,336	7,288	7,288	7,288	4,294	4,298	4,298	78,757
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	0	0	0	0	0	0	0	0	142	-	71	213
A&G-Injuries & damages - Insurance Reserve 9250-07115	0	0	0	0	0	(1,000,000)	-	-	-	-	-	3,000,000	2,000,000
A&G-Injuries & damages - Insurance - D&O 9250-07119	1,060,080	1,060,080	1,060,080	1,060,080	1,060,080	1,060,080	1,060,080	1,060,356	1,060,356	1,057,851	1,057,851	1,060,336	12,717,310
Insurance	1,107,874	1,107,895	1,121,506	1,108,697	1,108,697	108,697	1,108,649	1,108,925	1,108,925	1,103,568	1,103,739	4,106,295	15,303,464
Distribution-Rents - Building Lease/Rents 8810-04581	0	0	0	0	0	0	0	0	0	0	(5,208)	10,333	5,125
A&G-Office supplies & expense - Building Lease/Rents 9210-04581	1,460	(1,460)	0	0	0	0	0	0	0	0	0	0	-
A&G-Rents - Building Lease/Rents 9310-04581	379,564	357,971	369,456	384,187	365,713	370,687	370,412	369,738	384,700	361,573	372,451	361,966	4,428,417
A&G-Office supplies & expense - Building Maintenance 9210-04582	41,127	35,983	12,263	8,686	5,722	5,396	8,696	996	5,383	3,942	4,555	3,788	136,536
A&G-General advertising expens - Building Maintenance 9301-04582	0	0	0	198	-	-	-	-	-	39	(3)	-	234
A&G-Rents - Building Maintenance 9310-04582	32,477	32,461	38,305	34,983	36,712	28,580	25,432	31,153	28,026	34,853	42,973	34,782	400,737
A&G-Rents - Utilities 9310-04590	7,145	21,617	20,159	25,518	22,879	26,236	19,632	30,330	22,836	22,197	37,743	3,964	260,256
A&G-Office supplies & expense - Utilities 9210-04590	5,910	2,321	2,749	2,646	2,735	2,631	2,716	3,078	2,454	2,573	2,704	2,806	35,321
A&G-Office supplies & expense - Misc Rents 9210-04592	0	0	0	0	0	0	0	0	73	-	-	-	73
Rent, Maint., & Utilities	467,684	448,893	442,932	466,216	433,760	433,529	426,887	435,295	423,472	425,177	455,215	417,640	5,256,699

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	(1,778)	(1,970)	2,906	2,902	(7,860)	3,996	3,968	3,219	3,299	3,300	3,298	3,402	18,682
Mains and Services Expenses - Vehicle Expense 8740-03004	2,607	2,537	2,938	2,012	2,062	7,268	4,642	5,843	1,663	4,359	4,322	(3,215)	37,037
A&G-Office supplies & expense - Vehicle Expense 9210-03004	170	348	160	280	504	480	320	605	364	460	386	818	4,895
A&G-Office supplies & expense - Equipment Lease 9210-04301	143	143	143	143	143	143	228	143	143	143	143	143	1,806
Mains and Services Expenses - Equipment Lease 8740-04301	24	24	24	24	24	24	24	24	24	24	24	24	288
Miscellaneous general expenses - Heavy Equipment 9302-04302	0	0	0	0	0	0	0	0	0	2,273	-	-	2,273
A&G-Office supplies & expense - Heavy Equipment 9210-04302	0	0	0	1,526	(1,526)	8,552	-	1,132	-	-	-	1,740	11,424
Mains and Services Expenses - Heavy Equipment 8740-04302	0	0	0	0	95	108	108	-	-	-	100	108	519
Vehicles & Equip	1,166	1,082	6,171	6,887	(6,557)	20,571	9,290	10,967	5,493	10,560	8,274	3,020	76,924
A&G-Office supplies & expense - Inventory Materials 9210-02001	1,192	1,298	1,588	(54)	9,308	2,013	1,145	27	2,189	644	1,365	1,651	22,366
Distribution-Operation supervi - Inventory Materials 8700-02001	0	0	0	76	6,076	1,063	411	987	235	-	2,819	-	11,667
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	0	0	0	0	0	0	0	573	-	-	-	-	573
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	5,747	(7)	460	6,773	6,088	4,125	4,490	654	3,634	2,140	2,231	827	37,162
Miscellaneous general expenses - Non-Inventory Supplies 9302-02005	0	0	0	0	0	0	0	0	0	0	245	-	245
A&G-Rents - Non-Inventory Supplies 9310-02005	185	5	283	157	183	131	-	476	104	108	59	422	2,115
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	0	0	0	0	0	0	0	0	0	0	314	456	770
A&G-Office supplies & expense - Purchasing Card Charges 9210-02006	0	1,120	142	224	70	374	137	-	(1,331)	-	-	-	735
Customer accounts-Meter readin - Office Supplies 9020-05010	0	0	0	0	0	0	0	0	0	0	0	110	110
Sales-Demonstrating and sellin - Office Supplies 9120-05010	0	0	0	0	0	0	0	0	0	0	118	806	924
A&G-Office supplies & expense - Office Supplies 9210-05010	38,287	33,660	43,768	14,657	71,615	42,832	41,117	47,494	52,063	34,749	39,530	38,631	498,404
Miscellaneous general expenses - Office Supplies 9302-05010	0	0	49	-	-	-	-	-	-	-	-	58	106
A&G-Rents - Office Supplies 9310-05010	0	0	0	0	0	68	-	-	-	30	-	38	136
Distribution-Operation supervi - Office Supplies 8700-05010	0	0	114	-	-	-	-	350	-	457	-	-	920
Materials & Supplies	45,411	36,076	46,403	21,834	93,340	50,606	47,300	50,562	56,893	38,128	46,682	42,999	576,234
A&G-Maintenance of general pla - Offsite Storage 9320-04065	22,269	20,683	21,501	23,289	23,148	25,949	18,538	15,593	17,113	18,581	17,110	17,978	241,751
A&G-Office supplies & expense - Offsite Storage 9210-04065	13,326	3,718	11,342	14,684	4,331	4,784	3,517	3,688	4,257	1,357	3,671	26	68,700
A&G-Maintenance of general pla - Software Maintenance 9320-04201	608,696	677,329	470,063	553,051	523,225	544,397	442,420	(236,636)	472,991	436,092	444,571	456,288	5,392,488
Miscellaneous general expenses - Software Maintenance 9302-04201	0	0	0	0	0	0	0	0	29,688	475	11,206	9,077	50,446
A&G-Outside services employed - Software Maintenance 9230-04201	5,679	-	-	5,222	-	3,090	-	-	-	-	-	-	13,990
A&G-Office supplies & expense - Software Maintenance 9210-04201	45,790	65,577	52,546	151,596	76,730	85,089	70,819	374,431	210,839	174,117	163,237	161,779	1,632,553
A&G-Office supplies & expense - IT Equipment 9210-04212	722	108	289	559	1,398	38	-	49,061	13,629	12,551	10,874	11,555	100,785
A&G-Maintenance of general pla - IT Equipment 9320-04212	93,244	54,677	61,588	102,137	66,055	61,019	59,436	(11,623)	28,620	31,033	19,179	55,190	620,555
Information Technologies	789,727	822,093	617,330	850,537	694,887	724,366	594,730	194,515	777,137	674,206	669,848	711,894	8,121,289
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	16,861	17,021	17,938	17,095	(63,099)	17,453	8,756	19,206	13,968	12,572	9,908	12,892	100,671
A&G-Office supplies & expense - Long Distance 9210-05312	2,726	(33,475)	2,827	2,554	2,800	2,768	2,726	2,483	2,778	2,741	2,777	2,939	(3,355)
Miscellaneous general expenses - Long Distance 9302-05312	0	0	0	0	0	0	0	0	0	0	0	13	13
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	5,861	5,402	6,586	4,357	1,450	1,400	1,344	1,334	1,601	1,772	1,641	1,831	34,578
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	1,630	3,562	23,040	21,021	2,740	32,475	(6,777)	28,837	28,773	11,213	10,652	10,880	168,047
Distribution-Operation supervi - Telecom Maintenance & Repair 8700-05316	0	0	0	0	0	0	0	1,101	-	48	-	-	1,148
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	35,407	41,221	41,238	34,993	(11,406)	36,840	35,441	45,462	40,079	37,323	36,915	33,967	407,480
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	121	121	121	126	121	121	124	124	124	124	126	126	1,477
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	20,383	21,012	20,427	20,489	1,115	42,372	2,027	42,432	19,808	20,706	21,069	19,740	251,581
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	0	254	254	-	504	255	-	607	(115)	-	765	539	3,062
Distribution-Operation supervi - Use 05364 Cell service-all others 8700-05375	0	0	0	0	0	0	(115)	-	115	0	0	0	-
A&G-Office supplies & expense - Cell service for data uses 9210-05376	3,124	3,028	3,054	2,903	361	6,182	361	7,610	3,356	3,163	3,274	3,157	39,573
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	531	1,797	1,196	3,184	306	2,918	(1)	2,358	2,888	5,294	3,299	25,255	49,025
A&G-Office supplies & expense - Video Conference 9210-05380	4,192	-	-	-	-	-	-	-	-	-	-	-	4,192
A&G-Office supplies & expense - Audio Conference 9210-05390	1,127	1,127	1,127	1,151	1,151	900	999	1,008	1,011	1,008	978	2,679	14,264
Telecom	91,961	61,070	117,809	107,873	(63,957)	143,682	44,885	152,561	114,383	95,965	91,404	114,019	1,071,655
A&G-Office supplies & expense - Safety 9210-04018	0	0	38	-	-	-	-	-	-	-	-	133	171
Sales-Demonstrating and sellin - Promo Other, Misc 9120-04021	0	0	0	0	0	0	0	0	0	0	0	400	400
A&G-Office supplies & expense - Promo Other, Misc 9210-04021	685	391	1,509	6	2,218	516	93	2,722	7,100	1,523	239	16,772	33,774
A&G-Outside services employed - Promo Other, Misc 9230-04021	0	0	0	318	-	-	-	-	-	-	-	-	318
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	(591)	2,150	170	1,482	1,556	2,282	601	1,419	107	4,918	2,714	2,982	19,791
Customer accounts-Customer rec - Community Rel&Trade Shows 9030-04040	0	0	0	0	175	-	-	-	-	-	-	-	175
A&G-Office supplies & expense - Advertising 9210-04044	1,663	800	3,400	19,310	6,800	3,776	2,072	1,535	1,565	1,191	1,883	10,585	54,579
A&G-Outside services employed - Advertising 9230-04044	0	0	0	511	-	-	-	-	-	-	-	-	511
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	0	0	0	287	-	-	-	-	-	-	-	-	287
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	0	0	0	0	0	0	0	0	0	0	527	527
A&G-Office supplies & expense - Customer Relations & Assist 9210-04046	19,289	1,312	31,493	3,673	337	21,762	3,266	44,649	49,204	33,283	26,134	72,286	306,687
Marketing	21,045	4,653	36,611	25,587	11,085	28,337	6,032	50,325	57,976	40,916	30,970	103,686	417,221
Miscellaneous general expenses - Director's Fees 9302-04111	169,032	-	-	197,166	(7,500)	-	189,639	12,500	20,000	182,171	893	-	763,903
Miscellaneous general expenses - Board Meeting Expenses 9302-04112	13,581	9,246	617	366	23,422	5,704	23,312	1,603	11,477	135	14,917	2,310	106,689
A&G-Office supplies & expense - Board Meeting Expenses 9210-04112	0	0	0	0	0	0	699	-	3,547	-	-	2,353	6,599
Miscellaneous general expenses - Directors Retirement Expenses 9302-04113	0	0	99,622	-	-	941,069	-	-	111,258	-	-	117,837	1,269,786
Miscellaneous general expenses - Newswire/Blast Fax/Mail List 9302-04120	219	2,273	-	232	1,774	-	449	2,510	-	539	3,075	-	11,071
A&G-Office supplies & expense - Newswire/Blast Fax/Mail List 9210-04120	0	0	0	0	0	0	0	0	0	0	363	-	363
Miscellaneous general expenses - Inv Relations/Bnkg Inst 9302-04121	3,381	15,127	-	10,713	-	-	63,483	4,897	-	-	-	4,830	102,431
A&G-Office supplies & expense - Annual Report Design, Printing & Dis 9210-04122	45,850	6,333	-	252,222	-	-	-	-	-	-	-	-	304,405
Miscellaneous general expenses - Proxy Solicitation Exp 9302-04125	64,791	19,932	1,227	163,353	6,240	17,415	810	20,810	810	810	810	810	297,619
A&G-Employee pensions and bene - Proxy Solicitation Exp 9260-04125	0	0	0	0	0	27	-	-	-	-	-	-	27
Miscellaneous general expenses - Transfer Agent Administration 9302-04126	14,953	4,236	4,419	7,170	20,832	5,080	15,232	4,438	4,856	17,238	12,378	4,189	115,022
Miscellaneous general expenses - Tr & Reg of Bonds/Debt Fee 9302-04127	5,223	31,659	86,560	10,000	42,375	74,700	151,700	67,055	32,363	62,718	42,976	37,780	645,107
Miscellaneous general expenses - NYSE Fees & Exps 9302-04129	157	157	5,157	157	88,865	157	315	-	157	157	207	157	95,647
A&G-Office supplies & expense - Bank Service Charge 9210-04130	0	(3,088)	55	-	-	-	100	-	-	-	-	-	(2,932)
Miscellaneous general expenses - Reimbursement of Fraud Payments 9302-04135	0	60	74	-	-	117	26	264	-	150	(150)	56	595
A&G-Office supplies & expense - Analyst Activities 9210-04140	0	0	0	0	0	0	0	1,242	-	-	-	-	1,242
Miscellaneous general expenses - Analyst Activities 9302-04140	3,380	-	-	4,692	1,075	89	6,544	-	-	1,778	2,625	-	20,183
A&G-Office supplies & expense - Web Site 9210-04141	6	280	7,009	520	440	1,560	320	280	-	357	7,867	40,099	58,736
Miscellaneous general expenses - Web Site 9302-04141	677	677	677	677	677	677	677	677	677	677	677	677	8,119
Miscellaneous general expenses - Printing/Slides/Graphics 9302-04145	831	-	45,871	-	-	8,841	-	842	6,895	3,003	6,915	-	73,197

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
A&G-Office supplies & expense - Public Relations 9210-04146	10	472	828	7,107	-	97	16	7,845	1,301	4,190	1,086	250	23,203
Directors & Shareholders &PR	322,091	87,364	252,116	654,377	178,200	1,055,533	453,320	124,961	193,341	273,922	94,638	211,347	3,901,212
Distribution-Operation supervi - Membership Fees 8700-05415	0	0	0	0	0	0	0	0	0	0	0	350	350
Mains and Services Expenses - Membership Fees 8740-05415	0	0	0	0	615	-	-	-	-	-	-	-	615
Customer accounts-Customer rec - Membership Fees 9030-05415	0	200	-	-	-	-	-	-	-	-	-	-	200
A&G-Office supplies & expense - Membership Fees 9210-05415	1,339	8,928	26,533	31,111	4,601	7,316	25,874	7,081	6,921	28,061	5,033	10,040	164,839
Miscellaneous general expenses - Membership Fees 9302-05415	2,060	940	3,685	170	720	1,270	399	1,215	848	1,735	130	399	13,561
Miscellaneous general expenses - Club Dues - Deductible 9302-05417	0	205	-	-	-	-	-	505	255	-	-	-	965
A&G-Office supplies & expense - Club Dues - Deductible 9210-05417	0	0	0	1,740	240	500	-	-	390	240	240	150	3,500
A&G-Office supplies & expense - Association Dues 9210-07510	795	40	-	850	775	5,000	(5,000)	35,300	-	3,000	40	3,500	44,300
Miscellaneous general expenses - Association Dues 9302-07510	2,875	2,875	27,875	(22,125)	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	34,500
A&G-Office supplies & expense - Donations 9210-07520	0	0	0	21	-	-	-	-	-	-	-	-	21
Dues & Donations	7,059	13,188	60,093	11,767	9,826	16,961	24,148	46,976	11,289	35,911	8,318	17,314	262,850
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	0	0	0	0	11	-	-	-	-	-	-	-	11
Mains and Services Expenses - Postage/Delivery Services 8740-05111	0	0	0	0	0	0	0	0	0	0	0	11	11
Distribution-Other expenses - Postage/Delivery Services 8800-05111	0	0	0	13	-	-	-	-	-	-	-	-	13
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	12,032	17,476	13,698	17,585	17,880	12,311	12,349	19,048	19,899	14,512	17,645	15,885	190,319
A&G-Outside services employed - Postage/Delivery Services 9230-05111	0	0	0	0	0	0	0	0	0	0	0	51	51
Miscellaneous general expenses - Postage/Delivery Services 9302-05111	0	47	(31)	-	-	-	-	-	-	27	-	-	42
Print & Postages	12,032	17,523	13,667	17,598	17,891	12,311	12,349	19,048	19,899	14,538	17,645	15,947	190,447
Distribution-Operation supervi - Meals and Entertainment 8700-05411	0	206	-	-	-	-	-	-	331	357	-	-	895
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	0	0	0	0	0	0	0	0	0	0	0	28	28
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	0	0	0	26	53	-	-	-	-	-	-	79
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	35,297	30,535	40,198	15,715	31,340	30,183	29,908	38,973	20,911	19,067	42,575	47,344	383,046
A&G-Outside services employed - Meals and Entertainment 9230-05411	0	0	0	0	0	0	0	0	148	-	161	60	370
A&G-Employee pensions and bene - Meals and Entertainment 9260-05411	0	0	0	0	0	0	0	0	0	0	95	-	95
Miscellaneous general expenses - Meals and Entertainment 9302-05411	1,979	3,338	2,666	286	21,639	2,160	3,112	2,160	2,930	582	3,469	493	44,816
A&G-Rents - Meals and Entertainment 9310-05411	0	0	0	0	806	268	174	162	200	162	184	184	2,140
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	2,181	526	2,926	109	-	884	1,244	500	1,476	723	2,508	3,263	16,338
Miscellaneous general expenses - Spousal & Dependent Travel 9302-05412	1,463	-	-	-	-	-	390	-	-	655	671	-	3,178
A&G-Office supplies & expense - Transportation 9210-05413	24,722	32,693	32,245	27,158	32,550	50,647	43,698	51,168	21,267	32,526	34,278	71,876	454,828
Miscellaneous general expenses - Transportation 9302-05413	4,679	1,600	2,286	1,074	2,241	613	1,538	1,793	1,048	3,265	1,951	4,432	26,519
A&G-Rents - Transportation 9310-05413	0	50	-	-	150	-	-	150	-	100	-	100	550
Mains and Services Expenses - Transportation 8740-05413	(309)	(70)	(421)	-	(47)	163	-	(422)	(25)	(58)	(272)	-	(1,461)
Customer accounts-Meter readin - Transportation 9020-05413	0	0	0	260	-	-	-	-	-	-	-	-	260
Customer accounts-Customer rec - Transportation 9030-05413	0	343	159	-	47	188	167	-	-	-	-	-	903
A&G-Office supplies & expense - Lodging 9210-05414	16,981	20,955	30,608	11,429	12,000	27,739	23,575	31,399	22,457	19,718	23,074	49,435	289,370
A&G-Outside services employed - Lodging 9230-05414	0	0	0	0	0	0	0	0	0	133	-	-	133
Miscellaneous general expenses - Lodging 9302-05414	766	746	870	285	1,077	170	682	1,289	232	2,065	1,631	340	10,154
Mains and Services Expenses - Lodging 8740-05414	0	302	-	-	-	91	-	-	-	-	-	-	392
Customer accounts-Customer rec - Lodging 9030-05414	0	0	0	0	662	-	198	-	-	-	-	-	860
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	107	46,486	(1,103)	9,085	14,006	17,164	2,506	20,339	11,193	5,921	4,378	4,552	134,635
Miscellaneous general expenses - Misc Employee Expense 9302-05419	69	16	21	11	21	11	22	5	11	25	25	-	236
Distribution-Operation supervi - Misc Employee Expense 8700-05419	0	0	0	74,486	-	-	-	33,097	-	-	-	8,213	115,795
Travel & Entertainment	87,935	137,727	110,456	139,896	116,520	130,334	107,213	181,612	82,179	85,241	114,728	190,319	1,484,160
Customer accounts-Customer rec - Employee Development 9030-05420	0	979	595	-	-	-	-	-	-	-	-	-	1,574
A&G-Office supplies & expense - Employee Development 9210-05420	2,344	10,599	9,416	10,001	790	119,189	3,431	6,958	1,512	12,193	4,270	48,055	228,760
Miscellaneous general expenses - Employee Development 9302-05420	0	647	-	24	10	-	1,195	165	352	1,531	(253)	-	3,671
A&G-Office supplies & expense - Training 9210-05421	0	2,911	1,914	26,362	17,884	9,803	7,439	13,400	2,108	9,265	17,846	25,398	134,130
Miscellaneous general expenses - Training 9302-05421	0	60	-	-	-	500	-	-	-	-	-	-	560
A&G-Office supplies & expense - Books & Manuals 9210-05424	11,702	5,925	9,681	10,348	108,641	57,790	14,556	16,538	169,998	21,181	6,886	81,640	514,886
A&G-Outside services employed - Books & Manuals 9230-05424	0	0	0	0	0	0	0	12,755	1,052	-	-	-	13,807
Miscellaneous general expenses - Books & Manuals 9302-05424	0	0	0	2,570	-	221	7,871	-	-	-	-	323	10,986
A&G-Office supplies & expense - Regulatory Compliance Training 9210-05425	0	700	-	-	-	675	350	-	-	-	-	-	1,725
Distribution-Operation supervi - Safety Training 8700-05426	0	0	0	0	0	0	0	0	0	0	0	3,125	3,125
A&G-Office supplies & expense - Safety Training 9210-05426	407	237	-	-	336	94	110	303	13,787	308	32	724	16,338
A&G-Outside services employed - Safety Training 9230-05426	0	0	0	0	0	0	0	4,712	-	2,000	2,772	11,466	20,951
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	13,373	220	170	3,145	-	2,446	1,420	2,494	2,790	3,535	12,604	14,934	57,130
A&G-Office supplies & expense - Computer Skills & Systems Training 9210-05428	(647)	904	1,516	-	-	306	4,222	-	812	28,987	-	487	36,566
A&G-Outside services employed - Computer Skills & Systems Training 9230-05428	0	7,466	4,657	-	-	-	-	-	-	-	-	-	12,123
A&G-Office supplies & expense - Work Environment Training 9210-05429	0	66	-	634	550	423	-	788	-	506	42	343	3,351
Training	27,178	30,714	27,950	53,084	128,212	191,446	40,594	58,113	192,410	79,486	44,000	186,496	1,059,683
A&G-Office supplies & expense - Gas Supplies Services 9210-05430	0	0	0	0	0	0	0	0	0	0	250	-	250
Customer accounts-Customer rec - Contract Labor 9030-06111	0	0	0	0	0	0	0	0	0	469	-	-	469
A&G-Administrative & general s - Contract Labor 9200-06111	5,311	10,690	20,138	9,117	11,801	5,840	38,375	30,792	4,260	24,299	9,769	104,516	274,906
A&G-Office supplies & expense - Contract Labor 9210-06111	74,328	29,919	33,943	74,910	26,479	93,468	110,216	29,633	60,539	37,599	(67,631)	161,082	664,486
A&G-Outside services employed - Contract Labor 9230-06111	453,496	500,516	498,271	461,321	501,850	507,389	548,261	893,042	693,952	529,499	534,949	811,465	6,734,011
Miscellaneous general expenses - Contract Labor 9302-06111	13,120	8,754	5,857	14,644	29,102	7,468	11,373	7,870	10,004	9,815	25,322	13,534	156,861
A&G-Rents - Contract Labor 9310-06111	0	0	4,406	2,225	2,362	2,314	2,264	2,399	2,111	3,518	6,408	3,047	31,054
A&G-Maintenance of general pla - Contract Labor 9320-06111	6,145	-	-	6,533	7,712	6,012	11,568	13,025	5,543	6,603	-	-	63,140
Distribution-Operation supervi - Contract Labor 8700-06111	0	0	23	-	-	-	1,055	140	-	-	13	25	1,256
Miscellaneous general expenses - Legal 9302-06121	0	1,028	-	169	-	-	-	118	-	-	-	1,166	2,480
A&G-Office supplies & expense - Legal 9210-06121	755	28,421	26,846	7,268	73,240	50,232	6,488	33,419	23,490	3,282	(240,641)	(10,782)	2,018
A&G-Outside services employed - Legal 9230-06121	56,094	21,815	19,082	1,703	16,073	15,515	6,092	6,383	-	1,111	7,315	-	151,182
Outside Services	609,249	601,142	608,567	577,890	668,619	688,236	735,691	816,821	799,897	616,195	275,753	1,084,053	8,082,112
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(3,204,000)	(3,650,164)	(3,882,857)	(3,692,504)	(4,039,754)	(3,856,458)	(3,123,530)	(3,379,181)	(6,569,597)	(3,169,604)	(3,385,297)	(3,426,064)	(45,399,011)
A&G-Office supplies & expense - Land Rights 9210-04869	0	0	0	0	0	0	0	0	0	0	299	-	299
A&G-Office supplies & expense - Misc General Expense 9210-07590	(318,190)	1,204	1,000,503	(999,813)	2,041	(71,512)	3,846	1,975	(6,328)	6,385	(9,443)	14,980	(374,352)
A&G-Outside services employed - Misc General Expense 9230-07590	0	0	4,500	-	-	-	-	-	-	-	-	-	4,500
A&G-Regulatory commission expe - Misc General Expense 9280-07590	0	0	0	0	0	936	-	-	-	-	-	-	936
A&G-Office supplies & expense - Use only for HR exp default ***Forme 9210-09195	0	1,520	-	(1,520)	0	0	0	0	0	0	0	0	-

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
A&G-Office supplies & expense - Reimbursements 9210-09911	0	0	0	0	0	0	0	0	0	0	0	(271,136)	(271,136)
Miscellaneous	**(3,522,190)**	**(3,647,440)**	**(2,877,854)**	**(4,693,838)**	**(4,037,713)**	**(3,927,034)**	**(3,119,684)**	**(3,377,206)**	**(6,575,925)**	**(3,183,219)**	**(3,394,441)**	**(3,682,221)**	**(46,038,764)**
Total O&M Expenses Before Allocations	**5,822,207**	**5,669,909**	**6,600,646**	**6,073,733**	**4,475,109**	**3,965,880**	**4,915,737**	**4,979,322**	**7,387,589**	**5,023,776**	**4,091,950**	**15,243,092**	**74,248,950**
Div 2 gross expenses	5,822,207	5,669,909	6,600,646	6,073,733	4,475,109	3,965,880	4,915,737	4,979,322	7,387,589	5,023,776	4,091,950	15,243,092	74,248,950
Div 12 gross expenses	3,909,463	3,982,726	4,092,736	4,318,139	3,678,709	3,735,934	3,308,162	3,265,602	3,174,247	3,325,167	3,342,744	3,446,739	43,580,368
SSU Capital Credits	3,204,000	3,650,164	3,882,857	3,692,504	4,039,754	3,856,458	3,123,530	3,379,181	6,569,597	3,189,604	3,385,297	3,426,064	45,399,011
pre-capitalization totals	12,935,670	13,302,799	14,576,238	14,084,376	12,193,573	11,558,272	11,347,429	11,624,105	17,131,433	11,538,547	10,819,991	22,115,896	163,228,329
effective average cap rate	24.77%	27.44%	26.64%	26.22%	33.13%	33.37%	27.53%	29.07%	38.35%	27.64%	31.29%	15.49%	27.81%

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (002)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Customer accounts-Meter readin - Non-project Labor 9020-01000	10,230	14,757	10,316	10,316	10,316	10,316	10,316	15,474	10,316	10,316	6,845	3,469	122,988
A&G-Administrative & general s - Non-project Labor 9200-01000	2,562,144	3,848,060	2,622,380	2,666,396	2,577,810	2,585,019	2,606,718	4,027,012	2,700,809	2,748,778	2,760,972	2,692,264	34,398,364
Distribution-Operation supervi - Non-project Labor 8700-01000	0	0	10,218	-	-	-	-	-	-	-	24,223	-	34,441
Mains and Services Expenses - Non-project Labor 8740-01000	0	0	685	-	-	-	-	-	-	-	685	-	1,371
A&G-Administrative & general s - Capital Labor 9200-01001	298,492	353,483	224,713	149,657	223,456	193,601	220,690	90,734	47,387	19,901	27,515	86,516	1,936,146
Mains expenses - Capital Labor Contra 8560-01002	0	(96)	-	-	-	(128)	-	-	-	-	(64)	-	(287)
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(9,924)	(3,908)	-	(65)	(371)	-	(2,698)	(3,373)	-	-	(3,490)	(1,251)	(25,081)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(86,311)	(114,069)	(72,247)	(22,181)	(19,097)	(17,244)	(11,335)	(17,390)	(16,652)	(10,969)	(18,910)	(47,289)	(453,675)
A&G-Administrative & general s - O&M Project Labor and Contra 9200-01006	13,437	24,092	20,230	18,777	15,849	14,425	18,335	6,984	-	-	-	-	132,129
Mains and Services Expenses - Expense Labor Accrual 8740-01008	0	0	206	(206)	0	0	0	0	0	0	343	(343)	-
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	1,578	(4,190)	635	1,547	(0)	516	1,032	(3,611)	-	1,547	(704)	(1,515)	(3,163)
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	396,662	(1,029,821)	142,762	419,016	(39,852)	130,624	253,861	(878,540)	4,034	424,309	280,975	100,259	204,288
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	131	(368)	3,065	(3,065)	(361)	-	-	-	-	-	12,112	(12,112)	(598)
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	97,787	-	-	-	-	-	12,197	-	-	(29,945)	80,039
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	68,509	60,022	33,271	13,236	12,447	13,560	8,163	15,910	15,661	10,878	18,563	44,335	314,554
Mains expenses - Capital Labor Transfer In 8560-01011	0	96	-	-	-	128	-	-	-	-	64	-	287
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	9,924	3,908	-	65	371	-	2,698	3,373	-	-	3,490	1,251	25,081
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(280,689)	(299,436)	(185,738)	(140,711)	(216,806)	(189,917)	(217,517)	(89,253)	(46,397)	(19,810)	(27,168)	(83,582)	(1,797,025)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	566	-	228	-	-	-	-	-	-	-	-	-	794
A&G-Administrative & general s - Expense Labor Transfer In 9200-01013	25,323	41,615	31,626	30,329	27,426	21,102	18,335	6,984	-	-	-	-	202,740
A&G-Administrative & general s - Expense Labor Transfer Out 9200-01014	(13,437)	(24,092)	(20,230)	(18,777)	(15,849)	(14,425)	(18,335)	(6,984)	-	-	-	-	(132,129)
Labor	**2,996,633**	**2,870,054**	**2,919,910**	**3,124,333**	**2,575,338**	**2,747,576**	**2,890,261**	**3,167,321**	**2,727,356**	**3,184,951**	**3,085,451**	**2,752,079**	**35,041,263**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	313,236	298,826	293,392	326,083	268,746	286,981	299,046	331,835	285,092	334,420	323,972	292,112	3,653,742
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	208,824	199,217	195,595	217,389	179,164	191,321	199,364	221,224	190,061	222,947	215,981	194,742	2,435,828
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(26,575)	19,170	20,099	(42,479)	9,563	(24,781)	(19,207)	(2,150)	57,939	(24,313)	(7,127)	54,522	14,660
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(9,711)	34,086	15,636	(24,634)	(17,602)	(39,069)	(14,659)	(3,788)	37,429	(16,927)	(4,447)	25,621	(18,084)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	4,226	6,254	3,395	1,335	(2,627)	(3,185)	1,269	1,775	2,574	1,394	1,586	547,118	565,135
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	8,757	8,386	8,299	9,442	7,882	8,537	8,990	10,198	8,475	9,792	9,537	8,741	107,035
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	513,110	489,505	480,604	534,156	440,232	470,102	489,866	543,578	487,007	547,812	530,698	478,508	5,985,177
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(22,400)	(297,521)	(183,495)	(253,357)	(111,527)	(338,596)	(170,301)	(88,844)	(182,975)	(237,060)	145,268	(675,226)	(2,416,034)
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	4,469	7,170	5,492	5,226	4,725	3,636	3,159	1,203	-	-	-	-	35,081
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	92,479	86,225	86,621	96,272	79,344	84,728	88,290	97,970	84,170	98,733	95,649	86,243	1,076,724
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	24,397	29,284	19,658	29,845	15,405	16,865	32,188	(3,702)	32,724	35,816	(1,467)	60,976	292,189
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	889	1,415	963	913	826	635	552	210	-	-	-	-	6,403
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	597	569	559	621	512	547	570	632	543	637	617	556	6,960
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	(981)	(992)	(879)	14,249	9	(50)	(1,046)	(63,463)	59,191	(1,020)	(1,005)	(938)	3,075
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	5	8	6	6	5	4	4	1	-	-	-	-	41
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	8,950	8,538	8,383	9,317	7,678	8,199	8,544	9,481	8,145	9,555	9,256	8,346	104,392
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	6,876	22,450	10,651	14,307	13,843	13,341	12,558	29,735	17,538	16,683	18,084	19,061	195,126
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	94	154	117	112	101	78	68	26	-	-	-	-	751
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	14,916	14,230	13,971	15,528	12,797	13,666	14,240	15,802	13,576	15,925	15,427	13,910	173,988
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	583	2,843	2,577	206	(6,944)	1,145	1,185	(4,777)	4,942	1,092	2,007	(5,171)	(331)
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	137	221	169	161	145	112	97	37	-	-	-	-	1,079
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	23,866	22,788	22,354	24,844	20,476	21,865	22,784	25,283	21,721	25,480	24,684	22,256	278,380
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(901)	2,737	2,234	(1,697)	(21,554)	(313)	(200)	(18,334)	5,647	(506)	977	(19,264)	(49,177)
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	220	354	271	258	233	179	156	59	-	-	-	-	1,730
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	2,726	4,349	3,337	3,189	2,866	2,205	1,916	730	-	-	-	-	21,298
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	1,887	2,901	2,254	2,114	1,912	1,471	1,278	487	-	-	-	-	14,302
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	61	83	68	61	55	42	37	14	-	-	-	-	421
Benefits	**1,170,735**	**965,230**	**1,012,530**	**983,446**	**906,289**	**719,684**	**980,727**	**1,107,222**	**1,113,799**	**1,040,458**	**1,379,697**	**1,112,113**	**12,491,911**
A&G-Employee pensions and bene - Service Awards 9260-07421	3,003	28,515	4,063	1,541	500	5,376	3,357	16,137	8,605	49	1,000	5,104	77,251
Mains and Services Expenses - Uniforms 8740-07443	0	0	0	0	0	125	-	-	-	184	-	-	309
A&G-Office supplies & expense - Uniforms 9210-07443	0	0	0	0	0	0	0	331	-	-	-	-	331
A&G-Employee pensions and bene - Education Assistance Program 9260-07447	9,042	8,245	49,726	46,956	4,800	12,801	13,939	60,880	24,992	20,636	22,168	8,150	282,334
A&G-Office supplies & expense - Non-Qual Retirment Exp 9210-07449	0	87	-	-	-	-	-	-	-	433	-	-	520
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	797,000	1,277,274	1,546,000	2,178,854	1,356,975	-	-	-	-	-	-	4,877,248	12,033,350
A&G-Employee pensions and bene - Exec Compensation-Other 9260-07453	48	27	27	27	27	27	27	48	27	27	48	27	387
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	99,550	201,315	212,651	211,467	174,510	207,492	775,608	251,866	420,458	269,253	267,361	2,751,886	5,843,418
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	96,987	93,859	126,164	115,601	85,097	94,215	1,664,500	130,978	623,944	140,013	119,543	162,426	3,353,327
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	22,623	354,856	21,112	30,906	18,749	20,758	20,088	20,758	20,088	20,758	20,758	20,088	591,541
A&G-Employee pensions and bene - Rabbi Trust Gain/Loss 9260-07486	127	(35,903)	(36,176)	(1,567,268)	(487)	(2,373,095)	(188,957)	(56,505)	(296,783)	(5,115)	(29,305)	(23,291)	(4,612,759)
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	(21,297)	(21,297)	(21,297)	(21,297)	(21,297)	(21,297)	(20,521)	(417,474)	(25,393)	(25,393)	(25,393)	(25,393)	(667,348)
A&G-Employee pensions and bene - COLI Loan Interest 9260-07488	109,675	63,779	109,675	109,675	109,675	109,675	113,825	(10,164)	119,710	143,788	119,710	119,710	1,218,736
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	745,546	745,546	745,546	745,546	745,104	747,567	2,874,951	690,801	701,405	706,659	699,301	690,801	10,840,791
A&G-Office supplies & expense - SERP Capitalized 9210-07490	0	0	0	0	0	104	-	-	-	-	-	-	104
A&G-Office supplies & expense - Employee Broadcast and Publication 9210-07495	0	0	0	117,740	25,975	49,130	48,197	246,665	19,300	24,800	56,664	19,007	607,479
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	29,347	40,189	51,596	(92,033)	5,520	9,399	9,602	9,585	13,418	12,380	10,027	28,940	127,968
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	4,015	80	-	-	4,343	6,264	6,114	(6,114)	3,310	-	-	-	18,012
Miscellaneous general expenses - Misc Employee Welfare Exp 9302-07499	0	0	0	0	0	0	0	0	0	0	0	12,863	12,863
A&G-Rents - Misc Employee Welfare Exp 9310-07499	666	750	508	53	582	612	868	539	824	526	516	802	7,246
A&G-Maintenance of general pla - Misc Employee Welfare Exp 9320-07499	0	0	0	0	0	0	25	25	-	-	-	-	50
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	0	0	100	-	-	-	-	-	-	-	-	-	100
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	0	0	0	0	0	0	0	0	0	30	113	-	144
Employee Welfare	**1,896,332**	**2,757,322**	**2,809,697**	**1,877,767**	**2,510,073**	**(1,130,827)**	**5,321,623**	**938,357**	**1,533,906**	**1,311,028**	**1,262,510**	**8,648,367**	**29,736,154**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	12,629	12,629	12,629	12,991	12,991	12,700	13,016	13,041	13,016	13,017	13,015	13,016	154,691
A&G-Injuries & damages - Insurance-Other 9250-04070	28,961	(21,298)	4,104	15,118	3,831	3,831	3,831	3,831	3,831	3,831	3,831	3,911	57,615
A&G-Property Insurance - Insurance-Other 9240-04070	4,298	4,298	4,298	4,339	4,298	4,298	4,315	4,314	4,314	4,314	4,314	4,314	51,715
A&G-Injuries & damages - Insurance Reserve 9250-07115	0	0	0	(1,000,000)	-	1,300,000	-	-	-	-	-	750,000	1,050,000
A&G-Injuries & damages - Insurance - D&O 9250-07119	1,065,227	(799,487)	132,870	132,870	132,870	132,870	107,151	132,870	132,870	132,870	132,870	163,869	1,599,720
A&G-Injuries & damages - Environmental & Safety 9250-07120	0	0	0	0	0	0	0	0	0	0	(3,095)	3,095	-
A&G-Injuries & damages - Insurance - Public Liability 9250-07121	0	2,018,661	1,061,175	1,061,175	1,061,175	1,061,175	1,011,735	1,061,313	1,061,313	1,061,313	1,061,313	1,058,218	12,578,563
Insurance	**1,111,114**	**1,214,803**	**1,215,076**	**226,493**	**1,215,165**	**2,514,873**	**1,140,048**	**1,215,370**	**1,215,345**	**1,215,345**	**1,212,248**	**1,996,424**	**15,492,304**

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (002)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Distribution-Rents - Building Lease/Rents 8810-04581	(6,660)	-	-	-	-	-	-	-	-	-	-	-	(6,660)
A&G-Office supplies & expense - Building Lease/Rents 9210-04581	0	2,110	2,110	2,109	2,109	2,109	(9,603)	2,278	2,151	2,151	2,151	2,151	11,826
A&G-Rents - Building Lease/Rents 9310-04581	374,372	372,201	372,921	287,252	350,361	350,981	351,204	350,461	351,854	349,626	348,696	344,338	4,204,266
A&G-Office supplies & expense - Building Maintenance 9210-04582	16,914	3,370	8,870	43,993	5,406	8,058	5,352	8,010	4,102	4,443	6,432	5,558	120,508
A&G-Rents - Building Maintenance 9310-04582	62,471	26,790	33,002	37,348	21,848	33,618	35,686	29,449	38,919	54,690	89,974	103,497	567,293
A&G-Maintenance of general pla - Building Maintenance 9320-04582	0	0	0	0	0	0	1,074	-	-	-	-	-	1,074
A&G-Rents - Utilities 9310-04590	19,953	21,582	20,507	32,643	20,981	20,400	19,597	32,817	4,086	37,760	18,440	23,029	271,795
A&G-Office supplies & expense - Utilities 9210-04590	2,676	2,314	2,356	3,311	2,327	2,177	2,164	2,455	2,384	2,379	2,655	2,537	29,736
A&G-Office supplies & expense - Misc Rents 9210-04592	0	0	0	0	0	661	445	-	-	-	436	-	1,543
Rent, Maint., & Utilities	469,726	428,368	439,766	406,655	403,032	418,003	405,921	425,471	403,496	451,048	468,784	481,109	5,201,379
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	3,187	3,237	3,972	3,304	3,227	3,233	239	4,150	3,272	3,284	3,312	1,913	36,330
Mains and Services Expenses - Vehicle Expense 8740-03004	6,630	3,545	3,907	3,357	2,637	5,354	2,925	6,029	3,611	4,194	8,032	5,082	55,204
A&G-Office supplies & expense - Vehicle Expense 9210-03004	712	599	386	363	591	789	512	687	655	695	604	647	7,241
A&G-Rents - Vehicle Expense 9310-03004	0	0	0	43	-	-	-	-	-	-	-	-	43
A&G-Office supplies & expense - Equipment Lease 9210-04301	0	293	150	143	493	(350)	353	143	143	2,243	317	143	4,074
Mains and Services Expenses - Equipment Lease 8740-04301	24	24	24	24	24	24	24	24	24	28	28	46	317
A&G-Office supplies & expense - Heavy Equipment 9210-04302	2,906	1,718	200	886	-	8,552	1,981	2,101	-	-	1,898	412	20,656
Mains and Services Expenses - Heavy Equipment 8740-04302	398	-	81	-	-	-	218	289	379	44	100	-	1,508
Vehicles & Equip	13,859	9,417	8,719	8,120	6,973	17,602	6,253	13,422	7,984	10,488	14,291	8,244	125,372
A&G-Office supplies & expense - Inventory Materials 9210-02001	758	729	7,231	1,152	1,214	10,315	2,863	2,662	3,145	1,538	2,167	1,739	35,514
Distribution-Operation supervi - Inventory Materials 8700-02001	0	744	163	105	3	71	-	-	-	-	-	96	1,202
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	2,731	933	2,992	1,543	6,762	3,962	4,561	1,432	3,566	3,797	6,727	6,610	45,616
A&G-Rents - Non-Inventory Supplies 9310-02005	176	-	132	277	148	142	162	322	181	168	173	178	2,059
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	38	-	-	-	-	-	-	-	-	-	-	-	38
A&G-Office supplies & expense - Purchasing Card Charges 9210-02006	0	0	221	(221)	0	0	0	1,160	-	154	-	-	1,314
A&G-Office supplies & expense - Parts 9210-04306	0	0	0	30	-	-	-	-	-	-	-	-	30
Sales-Demonstrating and sellin - Office Supplies 9120-05010	67	-	-	-	-	-	-	-	-	-	-	-	67
A&G-Administrative & general s - Office Supplies 9200-05010	0	0	0	0	0	0	0	0	0	0	3,656	-	3,656
A&G-Office supplies & expense - Office Supplies 9210-05010	31,599	30,879	29,433	33,230	18,696	21,485	79,048	41,586	47,080	16,636	45,830	77,885	473,387
Miscellaneous general expenses - Office Supplies 9302-05010	0	0	0	224	275	(54)	-	64	154	-	221	313	1,196
A&G-Rents - Office Supplies 9310-05010	0	0	173	-	18	-	-	-	38	-	-	-	229
A&G-Maintenance of general pla - Office Supplies 9320-05010	0	0	645	-	-	-	-	-	-	-	-	-	645
Mains expenses - Office Supplies 8560-05010	0	0	0	0	0	44	-	-	-	-	-	-	44
Distribution-Operation supervi - Office Supplies 8700-05010	0	0	0	0	0	0	0	0	276	-	-	-	276
Materials & Supplies	35,368	33,284	41,010	36,341	27,116	35,966	86,634	47,226	54,440	22,292	58,775	86,820	565,272
A&G-Maintenance of general pla - Offsite Storage 9320-04065	17,091	18,747	18,214	17,461	19,366	29,488	-	43,791	-	38,463	19,323	17,617	239,560
A&G-Office supplies & expense - Offsite Storage 9210-04065	3,802	7,640	-	-	9,874	-	8,056	5,341	-	4,774	11,950	10,090	61,427
Storage-Operation supervision - Software Maintenance 8140-04201	541	-	-	-	-	-	-	-	-	-	-	-	541
A&G-Maintenance of general pla - Software Maintenance 9320-04201	1,002,808	510,416	540,008	66,207	336,892	352,096	309,529	320,325	31,070	24,077	17,333	14,375	3,525,134
A&G-Rents - Software Maintenance 9310-04201	0	0	0	0	2,040	2,466	2,056	2,057	2,060	2,069	2,039	16,983	31,769
Miscellaneous general expenses - Software Maintenance 9302-04201	8,686	223	2,923	11,411	2,908	6,897	11,368	2,851	3,026	2,878	10,940	(90)	64,021
A&G-Outside services employed - Software Maintenance 9230-04201	0	0	0	0	0	0	0	0	0	0	24,080	1,987	26,067
A&G-Office supplies & expense - Software Maintenance 9210-04201	194,113	194,773	363,213	350,088	340,442	379,159	299,105	392,684	611,252	783,120	695,534	656,634	5,260,117
A&G-Office supplies & expense - IT Equipment 9210-04212	8,533	8,939	13,411	24,613	23,609	22,539	60,655	93,380	43,148	59,518	57,771	57,787	473,902
A&G-Maintenance of general pla - IT Equipment 9320-04212	25,444	48,918	38,538	4,465	8,060	6,868	10,282	42,572	1,497	11,904	17,596	2,843	218,986
Information Technologies	1,261,018	789,556	976,307	474,243	743,191	799,512	701,050	903,001	692,053	926,803	856,565	778,224	9,901,524
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	11,873	5,344	11,330	21,830	11,916	13,053	14,925	14,260	14,003	13,381	11,425	10,957	154,298
A&G-Office supplies & expense - Long Distance 9210-05312	2,621	(34,499)	2,923	2,466	3,045	2,525	2,932	2,951	2,752	2,085	2,385	2,609	(5,206)
Miscellaneous general expenses - Long Distance 9302-05312	0	0	0	0	0	13	-	-	10	13	-	-	36
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	1,734	1,620	1,692	1,634	1,404	1,633	1,541	1,402	1,618	1,374	1,380	1,397	18,429
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	15,994	5,642	21,245	24,653	13,832	22,100	22,915	22,696	10,043	18,556	17,594	18,793	214,262
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	38,666	26,178	38,063	41,243	34,544	33,281	36,963	40,643	42,113	40,951	39,416	37,728	449,790
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	128	127	127	127	128	132	135	132	-	270	143	137	1,587
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	20,911	20,935	1,546	40,632	1,140	41,598	20,872	19,997	22,678	1,405	41,878	22,825	256,415
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	0	149	126	-	256	123	-	248	237	-	235	115	1,490
A&G-Office supplies & expense - Cell service for data uses 9210-05376	3,378	3,290	472	6,180	451	6,059	3,629	3,360	3,481	875	5,915	3,779	40,869
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	9,103	7,938	311	2,440	1,508	5,409	4,574	2,439	2,265	(1,137)	3,645	4,298	42,794
A&G-Office supplies & expense - Audio Conference 9210-05390	2,568	302	-	5,682	1,271	1,251	3,669	1,279	1,245	1,240	1,240	1,252	20,979
Telecom	106,977	37,025	77,835	146,867	69,494	127,176	112,156	109,606	100,445	79,014	125,256	103,892	1,195,744
A&G-Office supplies & expense - Safety, Newspaper 9210-04001	0	0	485	-	-	-	-	-	-	-	-	-	485
Sales-Demonstrating and sellin - Promo Other, Misc 9120-04021	0	0	0	0	0	0	4,765	134	-	-	-	-	4,899
A&G-Office supplies & expense - Promo Other, Misc 9210-04021	1,281	1,080	50	5,375	70	-	7,876	875	-	-	653	1,393	18,653
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	600	82	(2,145)	123	550	188	2,714	1,902	3,355	5,077	3,645	500	16,491
Sales-Demonstrating and sellin - Advertising 9120-04044	0	0	0	1,299	-	-	-	-	-	-	-	-	1,299
A&G-Office supplies & expense - Advertising 9210-04044	714	-	4,064	511	-	15,434	1,248	4,259	-	2,916	3,631	37,200	69,975
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	0	652	-	-	-	-	-	-	-	-	-	-	652
A&G-Office supplies & expense - Customer Relations & Assist 9210-04046	14,337	25,347	28,954	17,803	6,107	20,710	3,248	76,766	32,114	24,798	24,599	15,512	290,293
Marketing	16,932	27,161	31,408	25,111	6,727	36,331	19,850	83,936	35,469	32,790	32,428	54,605	402,746
Miscellaneous general expenses - Director's Fees 9302-04111	211,561	2,413	-	240,762	-	-	234,540	-	-	234,626	-	21,039	944,881
A&G-Maintenance of general pla - Board Meeting Expenses 9320-04112	0	0	0	0	146	-	-	-	-	-	-	-	146
Miscellaneous general expenses - Board Meeting Expenses 9302-04112	8,873	3,425	7,959	27,994	50,109	17,293	(29,384)	10,801	4,836	5,076	12,485	52,787	172,254
A&G-Office supplies & expense - Board Meeting Expenses 9210-04112	0	0	957	-	-	1,353	1,391	-	95	-	2,590	15,557	21,942
Miscellaneous general expenses - Directors Retirement Expenses 9302-04113	0	0	106,364	104,355	-	1,200,600	-	-	97,554	-	124,098	73,475	1,706,447
Miscellaneous general expenses - Newswire/Blast Fax/Mail List 9302-04120	232	2,793	-	481	2,019	-	621	2,439	-	240	2,819	240	11,884
Miscellaneous general expenses - Inv Relations/Bnkg Inst 9302-04121	270	-	-	-	-	-	55,000	4,538	-	-	-	4,830	64,638
A&G-Office supplies & expense - Annual Report Design, Printing & Dis 9210-04122	55,521	29	50,994	189,832	770	-	-	-	-	-	-	-	297,147
Miscellaneous general expenses - Proxy Solicitation Exp 9302-04125	60,787	9,072	29,410	190,624	3,167	14,468	810	810	899	810	810	810	312,477
Miscellaneous general expenses - Transfer Agent Administration 9302-04126	(2,146)	5,282	13,075	6,619	12,706	6,731	12,764	10,365	4,288	12,942	4,893	6,409	93,926
Miscellaneous general expenses - Tr & Reg of Bonds/Debt Fee 9302-04127	89,060	39,109	94,240	157,000	24,620	-	41,000	24,055	71,255	41,069	12,820	39,780	634,207
Miscellaneous general expenses - NYSE Fees & Exps 9302-04129	207	315	-	89,546	157	-	210	157	157	-	315	157	91,223

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (002)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Customer accounts-Customer rec - Bank Service Charge 9030-04130	0	0	0	0	563	161	168	130	-	-	-	-	1,023
A&G-Office supplies & expense - Bank Service Charge 9210-04130	0	0	0	0	0	0	100	-	-	-	-	-	100
Miscellaneous general expenses - Reimbursement of Fraud Payments 9302-04135	990	143	(22)	(69)	-	-	-	-	-	317	(317)	64	1,088
A&G-Office supplies & expense - Analyst Activities 9210-04140	0	12	-	-	-	795	795	1,020	-	-	-	-	2,622
Miscellaneous general expenses - Analyst Activities 9302-04140	1,783	-	15,273	-	6,965	1,687	3,483	-	1,631	-	3,483	1,737	36,041
Sales-Demonstrating and sellin - Web Site 9120-04141	0	3,767	-	-	-	-	-	-	-	-	-	-	3,767
A&G-Office supplies & expense - Web Site 9210-04141	5,975	-	40	300	1,295	376	-	6,320	396	320	-	839	15,861
Miscellaneous general expenses - Web Site 9302-04141	677	677	677	677	677	677	677	677	677	-	677	1,353	8,119
Miscellaneous general expenses - Printing/Slides/Graphics 9302-04145	965	1,616	41,113	-	7,964	6,150	2,931	8,322	150	2,630	504	42	72,389
A&G-Office supplies & expense - Public Relations 9210-04146	5	10	-	-	-	590	240	1,361	-	17,162	930	5,981	26,300
Directors & Shareholders &PR	**434,759**	**68,665**	**360,080**	**1,008,121**	**111,357**	**1,250,881**	**325,345**	**70,994**	**181,937**	**315,112**	**166,107**	**225,102**	**4,518,459**
A&G-Office supplies & expense - Membership Fees 9210-05415	36,287	4,378	7,240	45,399	7,672	8,882	30,099	5,405	4,100	29,357	4,323	6,103	189,246
Miscellaneous general expenses - Membership Fees 9302-05415	490	25	625	525	-	1,340	-	899	4,015	2,755	(977)	15	9,712
A&G-Maintenance of general pla - Membership Fees 9320-05415	0	205	-	-	-	-	-	-	-	-	-	-	205
Production maps and records - Membership Fees 7510-05415	0	0	0	0	0	0	0	475	-	-	-	-	475
A&G-Office supplies & expense - Club Dues - Nondeductible 9210-05416	0	0	0	0	0	0	0	0	0	0	0	110	110
A&G-Office supplies & expense - Club Dues - Deductible 9210-05417	0	0	0	2,000	-	-	-	-	361	-	-	5,170	7,531
A&G-Office supplies & expense - Association Dues 9210-07510	0	0	1,200	-	-	675	31,200	-	3,819	-	40	2,245	39,179
Distribution-Operation supervi - Association Dues 8700-07510	0	0	0	0	0	0	0	0	0	0	0	50,000	50,000
Miscellaneous general expenses - Association Dues 9302-07510	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	34,500
Dues & Donations	**39,652**	**7,483**	**11,940**	**50,799**	**10,547**	**13,772**	**64,174**	**9,654**	**15,170**	**34,987**	**6,261**	**66,518**	**330,958**
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	0	0	0	11	-	-	-	-	-	-	10	-	21
Mains and Services Expenses - Postage/Delivery Services 8740-05111	0	0	0	0	0	0	11	-	-	-	-	-	11
Sales-Demonstrating and sellin - Postage/Delivery Services 9120-05111	0	0	0	0	0	0	0	0	0	0	0	27	27
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	14,796	15,024	17,883	18,448	17,960	14,394	15,048	12,533	10,608	13,055	15,436	9,079	174,263
Miscellaneous general expenses - Postage/Delivery Services 9302-05111	102	-	-	11	-	-	10	47	-	-	-	-	170
Print & Postages	**14,898**	**15,024**	**17,883**	**18,471**	**17,960**	**14,394**	**15,069**	**12,580**	**10,608**	**13,055**	**15,446**	**9,106**	**174,492**
Mains expenses - Meals and Entertainment 8560-05411	0	0	0	0	0	181	-	-	-	-	-	-	181
Distribution-Operation supervi - Meals and Entertainment 8700-05411	0	31	60	-	17	-	395	326	-	25	-	-	854
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	0	0	0	0	0	0	35	-	35
Distribution-Maintenance super - Meals and Entertainment 8850-05411	0	0	0	0	0	0	13	-	-	-	-	37	50
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	0	0	0	0	0	0	0	0	62	-	-	-	62
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	16,718	33,127	32,212	27,743	25,076	30,595	39,962	31,197	28,956	29,248	36,308	76,039	407,182
A&G-Outside services employed - Meals and Entertainment 9230-05411	0	0	0	0	0	0	0	0	0	175	14	-	190
Miscellaneous general expenses - Meals and Entertainment 9302-05411	203	7,466	404	3,630	2,430	3,557	1,373	876	1,172	1,981	3,035	1,002	27,128
A&G-Rents - Meals and Entertainment 9310-05411	157	151	-	421	243	157	333	334	343	604	413	-	3,156
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	716	1,645	4,926	1,745	1,058	641	1,714	928	438	2,232	1,965	3,903	21,912
Miscellaneous general expenses - Spousal & Dependent Travel 9302-05412	0	0	4,724	8,414	1,158	-	667	-	2,752	108	763	988	19,572
A&G-Administrative & general s - Transportation 9200-05413	0	0	0	0	0	0	0	0	0	168	-	-	168
A&G-Office supplies & expense - Transportation 9210-05413	15,466	33,158	40,525	24,084	36,893	39,942	37,750	35,685	40,625	41,786	51,279	81,155	478,369
A&G-Outside services employed - Transportation 9230-05413	0	0	0	0	0	0	0	0	0	1,997	165	-	2,162
Miscellaneous general expenses - Transportation 9302-05413	1,633	1,912	2,952	2,316	2,816	2,303	5,122	2,424	5,309	2,652	2,615	2,493	34,549
Storage-Purification expenses - Transportation 8210-05413	0	0	0	0	0	0	0	0	0	0	0	198	198
Mains and Services Expenses - Transportation 8740-05413	0	0	(180)	(18)	-	-	-	-	(739)	180	-	-	(757)
Distribution-Maintenance super - Transportation 8850-05413	0	0	0	0	0	0	577	-	-	-	-	28	605
Customer accounts-Meter readin - Transportation 9020-05413	0	0	0	0	0	0	0	0	24	-	-	-	24
A&G-Office supplies & expense - Lodging 9210-05414	11,999	17,705	17,675	13,857	20,972	18,710	24,560	18,846	30,883	26,781	28,433	44,736	275,160
A&G-Outside services employed - Lodging 9230-05414	0	272	22	-	-	-	-	-	-	864	-	-	1,159
Miscellaneous general expenses - Lodging 9302-05414	1,060	1,541	557	888	984	728	1,403	710	2,103	2,147	1,877	522	14,520
Distribution-Operation supervi - Lodging 8700-05414	0	0	0	0	0	0	0	0	0	0	0	2,582	2,582
Distribution-Maintenance super - Lodging 8850-05414	0	0	0	0	0	0	403	-	-	-	-	-	403
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	53,934	7,876	(444)	57,687	15,502	5,884	1,735	9,905	3,467	13,516	2,619	33,514	205,195
Miscellaneous general expenses - Misc Employee Expense 9302-05419	0	0	0	0	65	-	-	25	97	20	-	25	232
Distribution-Operation supervi - Misc Employee Expense 8700-05419	62,463	40,708	-	-	-	-	-	(20,354)	-	-	-	-	82,817
Travel & Entertainment	**164,373**	**145,593**	**103,434**	**140,767**	**107,213**	**102,697**	**116,007**	**80,901**	**115,494**	**124,485**	**129,522**	**247,223**	**1,577,709**
A&G-Office supplies & expense - Employee Development 9210-05420	2,847	15,223	2,660	9,527	51,698	(39,981)	7,598	12,714	17,474	91,594	21,198	36,254	228,805
Miscellaneous general expenses - Employee Development 9302-05420	949	595	-	-	-	80	560	500	495	-	-	-	3,179
A&G-Administrative & general s - Training 9200-05421	0	0	0	0	0	227	-	-	-	-	-	-	227
A&G-Office supplies & expense - Training 9210-05421	5,084	10,335	18,064	32,695	27,996	4,410	7,508	19,817	6,113	5,723	12,980	61,695	212,418
Miscellaneous general expenses - Training 9302-05421	0	0	55	20	40	-	1,425	-	-	-	-	60	1,600
A&G-Office supplies & expense - Books & Manuals 9210-05424	20,508	12,182	9,572	23,489	13,899	26,938	26,882	10,428	13,845	116,828	14,590	11,676	300,835
A&G-Outside services employed - Books & Manuals 9230-05424	0	0	0	0	0	0	0	0	14,697	-	-	-	14,697
Miscellaneous general expenses - Books & Manuals 9302-05424	0	1,000	1,510	1,214	42	2,006	3,304	1,436	6,983	6,287	-	1,360	25,142
Distribution-Operation supervi - Safety Training 8700-05426	258	7,463	-	-	-	-	-	-	6,225	514	-	-	14,459
A&G-Office supplies & expense - Safety Training 9210-05426	0	366	1,770	110	127	613	-	119	1,982	1,130	303	4,608	11,129
A&G-Outside services employed - Safety Training 9230-05426	758	-	-	10,006	4,333	-	-	368	39	7,838	3,378	161	26,881
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	0	6,745	3,285	(1,482)	1,553	8,069	8,758	2,084	2,694	1,550	9,718	2,885	43,859
A&G-Office supplies & expense - Computer Skills & Systems Training 9210-05428	0	0	0	0	70	-	499	-	-	-	-	850	1,419
A&G-Office supplies & expense - Work Environment Training 9210-05429	1,195	-	325	-	118	-	-	221	-	-	-	3,695	5,554
Training	**31,599**	**53,909**	**37,241**	**75,580**	**99,875**	**362**	**56,534**	**47,687**	**70,546**	**231,463**	**62,166**	**123,243**	**890,204**
A&G-Administrative & general s - Contract Labor 9200-06111	0	0	18,116	36,464	6,165	12,514	5,547	10,748	1,189	3,696	-	-	94,439
A&G-Office supplies & expense - Contract Labor 9210-06111	89,108	55,804	38,224	51,634	40,174	22,498	40,109	16,775	37,544	113,265	130,660	448,844	1,084,640
A&G-Outside services employed - Contract Labor 9230-06111	561,039	679,276	418,543	572,157	567,715	626,288	528,286	612,340	595,131	802,224	639,859	1,077,176	7,680,035
A&G-Employee pensions and bene - Contract Labor 9260-06111	0	0	0	0	0	0	0	0	0	0	0	216	216
Miscellaneous general expenses - Contract Labor 9302-06111	13,740	14,156	34,009	16,320	11,264	6,525	8,562	13,231	4,360	6,162	8,409	26,943	163,681
A&G-Rents - Contract Labor 9310-06111	2,588	2,588	6,730	3,158	7,185	19,216	5,648	5,647	4,261	5,603	5,647	8,393	76,664
Distribution-Operation supervi - Contract Labor 8700-06111	0	0	0	0	0	978	-	-	25	-	-	-	1,003
Miscellaneous general expenses - Legal 9302-06121	0	(10)	-	487	4,139	-	463	35	-	-	-	-	5,114
A&G-Office supplies & expense - Legal 9210-06121	1,221	-	62,577	-	-	4,835	(67,335)	-	-	-	-	(62,500)	(61,202)
A&G-Outside services employed - Legal 9230-06121	8,265	1,275	2,084	14,781	(13,337)	2,530	27,516	474	8,796	4,121	45,171	1,246	102,922
Outside Services	**675,962**	**753,088**	**580,282**	**695,001**	**623,304**	**695,383**	**548,798**	**659,250**	**651,305**	**935,071**	**829,747**	**1,500,319**	**9,147,512**

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (002)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(4,624,131)	(3,969,732)	(4,112,738)	(4,519,262)	(3,684,279)	(4,067,762)	(2,155,672)	(6,004,717)	(3,693,723)	(3,725,939)	(3,944,208)	(4,030,596)	(48,532,757)
Sales-Demonstrating and sellin - Misc General Expense 9120-07590	0	0	0	0	0	0	753	-	-	-	-	-	753
A&G-Office supplies & expense - Misc General Expense 9210-07590	2,085	(25,159)	50	392	731	(108,801)	1,607	27,550	(46,581)	(154,842)	(18,599)	202,086	(119,581)
Miscellaneous general expenses - Misc General Expense 9302-07590	0	0	0	83	(13)	52	-	1,383	117	-	-	321	1,942
A&G-Office supplies & expense - Use only for HR exp default ***Forme 9210-09195	0	0	22	-	-	-	(22)	0	0	0	0	0	-
A&G-Office supplies & expense - Reimbursements 9210-09911	0	(64,538)	(87,503)	(66,356)	(58,205)	-	(101,841)	-	(71,154)	-	-	(53,420)	(503,015)
Miscellaneous	**(4,622,046)**	**(4,059,428)**	**(4,200,169)**	**(4,585,142)**	**(3,741,765)**	**(4,176,511)**	**(2,255,274)**	**(5,975,784)**	**(3,811,341)**	**(3,880,782)**	**(3,962,807)**	**(3,881,609)**	**(49,152,658)**
Total O&M Expenses Before Allocations	**5,817,891**	**6,116,553**	**6,442,948**	**4,712,972**	**5,691,871**	**4,186,874**	**10,535,176**	**2,916,212**	**5,118,010**	**6,047,608**	**5,742,447**	**14,311,780**	**77,640,343**
Div 2 gross expenses	5,817,891	6,116,553	6,442,948	4,712,972	5,691,871	4,186,874	10,535,176	2,916,212	5,118,010	6,047,608	5,742,447	14,311,780	77,640,343
Div 12 gross expenses	3,486,417	3,453,213	4,262,027	4,363,660	3,846,497	3,915,171	4,221,268	4,666,778	3,820,938	4,107,340	4,487,310	4,532,228	49,162,846
SSU Capital Credits	4,624,131	3,969,732	4,112,738	4,519,262	3,684,279	4,067,762	2,155,672	6,004,717	3,693,723	3,725,939	3,944,208	4,030,596	48,532,757
pre-capitalization totals	13,928,439	13,539,497	14,817,713	13,595,894	13,222,647	12,169,806	16,912,116	13,587,707	12,632,671	13,880,887	14,173,964	22,874,604	175,335,946
effective average cap rate	33.20%	29.32%	27.76%	33.24%	27.86%	33.43%	12.75%	44.19%	29.24%	26.84%	27.83%	17.62%	27.68%

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Customer accounts-Meter readin - Non-project Labor 9020-01000	3,469	7,089	7,492	7,587	3,714	-	-	-	-	-	-	-	29,352
Customer accounts-Customer rec - Non-project Labor 9030-01000	0	0	3,232	3,232	3,232	3,232	3,277	4,848	3,232	3,232	3,232	3,232	33,981
Sales-Advertising expenses - Non-project Labor 9130-01000	0	(6,063)	-	-	-	-	-	-	-	-	-	-	(6,063)
A&G-Administrative & general s - Non-project Labor 9200-01000	2,823,404	4,212,646	2,809,433	2,872,790	2,765,502	2,751,959	2,762,444	4,150,763	2,793,283	2,748,213	2,745,660	2,767,004	36,203,100
Distribution-Operation supervi - Non-project Labor 8700-01000	0	(721)	-	-	-	-	286	-	-	-	-	-	(435)
Distribution-Operation supervi - Capital Labor 8700-01001	0	(10,373)	-	-	-	-	-	-	-	-	-	-	(10,373)
A&G-Administrative & general s - Capital Labor 9200-01001	60,583	74,666	71,763	62,156	101,940	135,676	109,982	194,845	88,357	132,941	146,756	148,704	1,328,368
Mains expenses - Capital Labor Contra 8560-01002	0	(342)	-	-	(151)	(50)	(100)	(249)	(782)	(961)	(1,896)	(967)	(5,499)
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(519)	-	-	-	-	-	(3,474)	(5,074)	-	-	-	-	(9,068)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(30,037)	(54,197)	(48,044)	(45,945)	(66,724)	(101,219)	(64,525)	(122,963)	(47,155)	(77,524)	(81,744)	(98,620)	(838,698)
A&G-Administrative & general s - O&M Project Labor and Contra 9200-01006	0	0	0	0	750	2,037	1,618	599	118	-	-	-	5,121
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	0	0	0	0	34	-	-	-	-	-	-	-	34
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	520	(1,247)	1,441	1,171	(1,936)	(1,857)	-	-	-	-	-	-	(1,908)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	0	0	1,131	485	-	162	353	(1,322)	162	485	162	323	1,939
Sales-Advertising expenses - Expense Labor Accrual 9130-01008	0	(1,010)	1,010	0	0	0	0	0	0	0	0	0	-
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	495,636	(1,274,275)	281,204	453,084	(53,644)	130,121	281,665	(1,104,998)	148,422	398,735	129,985	281,522	167,457
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	0	(120)	120	0	(17)	17	186	(186)	0	0	0	0	-
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	10,472	-	-	-	-	-	(59,349)	-	-	21,642	(27,235)
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	27,045	47,370	31,824	27,348	40,341	61,551	34,962	68,820	20,690	40,805	35,986	32,801	469,542
Mains expenses - Capital Labor Transfer In 8560-01011	0	342	-	-	151	50	100	249	782	961	1,896	967	5,499
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	519	-	-	-	-	-	3,474	5,074	-	-	-	-	9,068
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(57,591)	(67,839)	(55,542)	(43,669)	(75,558)	(96,007)	(80,420)	(140,702)	(61,892)	(96,222)	(100,997)	(82,884)	(959,212)
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	0	10,373	-	-	-	-	-	-	-	-	-	-	10,373
A&G-Administrative & general s - Expense Labor Transfer In 9200-01013	0	0	27	-	-	-	-	-	-	-	-	-	27
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	0	0	0	0	(34)	-	-	-	-	-	-	-	(34)
A&G-Administrative & general s - Expense Labor Transfer Out 9200-01014	0	0	0	0	(750)	(2,037)	(1,618)	(599)	(118)	-	-	-	(5,121)
Labor	3,323,031	2,936,298	3,115,563	3,338,348	2,716,852	2,883,633	3,048,210	3,049,105	2,885,750	3,150,664	2,879,039	3,073,723	36,400,216
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	282,458	249,585	263,930	283,760	230,932	245,109	259,098	258,066	250,333	267,806	243,673	257,727	3,092,478
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	219,320	193,796	204,934	220,331	179,312	190,320	201,182	200,381	194,377	207,944	189,205	200,117	2,401,218
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(9,370)	60,520	32,541	(9,841)	79,681	46,376	35,009	26,549	57,008	10,928	50,291	30,891	409,583
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(43,149)	6,620	(14,242)	(45,028)	25,348	(829)	(11,287)	(16,718)	6,982	(27,552)	3,453	(11,674)	(128,077)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	974	1,274	693	(55)	1,675	1,049	781	594	1,236	356	1,126	749	10,451
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	11,028	9,353	9,818	10,617	8,771	9,402	9,694	9,670	9,283	10,105	9,300	9,675	116,716
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	581,531	513,852	543,386	584,211	475,449	504,636	533,437	531,313	515,392	551,366	501,680	530,614	6,366,866
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(194,331)	(263,330)	(179,292)	(210,945)	(172,351)	(242,996)	(236,445)	(72,871)	(76,292)	(33,743)	(436)	(137,028)	(1,820,060)
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	0	0	5	-	-	-	-	-	-	-	-	-	5
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	106,337	93,962	99,362	106,827	86,939	92,276	97,543	97,154	94,243	100,821	91,736	97,027	1,164,227
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	20,604	68,891	17,399	33,765	18,394	11,582	26,586	25,663	20,078	29,575	31,052	11,003	314,593
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	0	0	1	-	-	-	-	-	-	-	-	-	1
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	9,969	8,809	9,315	10,015	8,151	8,651	9,145	9,108	8,835	9,452	8,600	9,096	109,146
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	(19,290)	(16,948)	(17,790)	12,521	(14,597)	(16,301)	(17,202)	(17,400)	(16,785)	(19,936)	(16,841)	(17,185)	(177,753)
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	0	0	0	-	-	-	-	-	-	-	-	-	0
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	9,969	8,809	9,315	10,015	8,161	8,651	9,145	9,108	8,835	9,452	8,600	9,096	109,146
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	17,142	38,121	18,905	19,724	23,109	21,186	16,929	42,842	24,151	24,162	25,317	24,514	296,104
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	0	0	0	-	-	-	-	-	-	-	-	-	0
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	16,615	14,682	15,525	16,692	13,584	14,418	15,241	15,180	14,726	15,753	14,334	15,160	181,910
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	583	4,337	2,732	410	(7,322)	3,740	2,948	2,494	(8,058)	2,304	4,051	(6,870)	1,348
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	0	0	0	-	-	-	-	-	-	-	-	-	0
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	26,584	23,490	24,841	26,707	21,735	23,069	24,386	24,289	23,561	25,205	22,934	24,257	291,057
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(4,410)	1,619	(927)	(4,656)	(16,805)	731	(531)	(1,161)	(13,357)	(2,508)	1,269	(25,035)	(65,771)
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	0	0	0	-	-	-	-	-	-	-	-	-	0
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	0	0	2	-	-	-	-	-	-	-	-	-	2
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	0	0	2	-	-	-	-	-	-	-	-	-	2
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	0	0	0	-	-	-	-	-	-	-	-	-	0
Benefits	1,032,564	1,017,441	1,040,456	1,065,069	970,156	921,069	975,657	1,143,261	1,114,549	1,181,491	1,189,344	1,022,136	12,673,192
A&G-Employee pensions and bene - Service Awards 9260-07421	7,567	32,813	8,614	1,882	2,131	(487)	4,008	2,948	3,436	6,138	11,957	4,414	85,421
Mains and Services Expenses - Uniforms 8740-07443	0	119	-	-	-	-	-	-	-	-	150	152	421
A&G-Office supplies & expense - Uniforms 9210-07443	0	43	125	101	-	168	-	-	-	275	265	-	977
A&G-Employee pensions and bene - Education Assistance Program 9260-07447	11,262	14,743	42,623	53,096	18,480	3,426	13,383	53,561	24,801	14,925	34,774	14,465	299,541
A&G-Office supplies & expense - Education Assistance Program 9210-07447	0	0	25	-	-	-	-	-	-	-	-	-	25
A&G-Office supplies & expense - Non-Qual Retirment Exp 9210-07449	0	0	0	0	0	0	0	0	317	-	-	-	317
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	908,000	1,364,909	1,685,679	2,269,000	815,861	16,024,330	(10,284,734)	96,218	-	-	-	-	12,879,263
A&G-Employee pensions and bene - Exec Compensation-Other 9260-07453	27	27	27	27	27	27	27	27	27	-	54	27	324
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	0	0	0	0	0	(6,795,203)	5,428,075	1,367,128	0	0	0	0	-
A&G-Employee pensions and bene - Restricted Stock - Long Term Incentl 9260-07458	267,362	281,849	280,005	291,580	262,084	290,164	940,764	1,361,093	1,126,062	227,531	220,841	531,557	6,080,893
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	117,198	113,708	117,499	118,071	106,128	117,499	113,709	2,020,173	131,057	135,253	135,253	169,511	3,395,060
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	20,758	363,461	18,607	18,607	16,807	18,607	18,007	18,607	18,007	18,607	18,607	19,285	567,970
A&G-Employee pensions and bene - Rabbi Trust Gain/Loss 9260-07486	(46,249)	(20,543)	(19,608)	(1,578,507)	(15,887)	(15,676)	(782,695)	(23,954)	(47,776)	(36,394)	(87,050)	(159,161)	(2,833,619)
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	(29,031)	(29,031)	(29,031)	(29,031)	(29,031)	(29,031)	(290,397)	(43,648)	(67,550)	(503,612)	(276,607)	139	(1,356,059)
A&G-Employee pensions and bene - COLI Loan Interest 9260-07488	69,340	114,256	114,256	114,256	114,256	114,256	84,084	111,935	113,639	28,237	113,639	113,639	1,205,791
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	5,238,932	689,400	720,201	707,957	699,902	694,956	710,774	695,401	693,583	712,183	694,651	699,651	12,957,592
A&G-Office supplies & expense - Employee Broadcast and Publication 9210-07495	2,285	59,608	25,079	11,225	27,581	28,752	10,450	10,185	82,475	19,828	44,089	21,587	343,144
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	7,810	12,278	3,665	2,516	8,454	7,986	3,448	16,305	3,176	16,883	11,905	31,746	125,171
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	3,031	5,831	-	2,620	3,020	(2,920)	-	3,308	6,589	-	2,679	5,608	29,966
Miscellaneous general expenses - Misc Employee Welfare Exp 9302-07499	1,061	-	-	-	-	-	-	-	-	-	-	4,933	5,995
A&G-Rents - Misc Employee Welfare Exp 9310-07499	946	537	156	857	421	721	102	325	106	604	19	686	5,481
Storage-Purification expenses - Misc Employee Welfare Exp 8210-07499	0	0	0	0	3,800	470	-	-	-	-	-	-	4,270
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	0	0	175	-	-	-	-	-	-	-	-	-	175
Employee Welfare	6,580,300	3,004,009	2,968,099	1,984,458	2,033,934	10,458,043	(4,030,995)	5,888,613	2,087,951	640,258	925,227	1,458,221	33,798,118
A&G-Property insurance - Blueflame Property Insurance 9240-04069	29,820	29,820	46,744	(46,302)	14,463	13,168	13,168	13,168	13,168	13,168	13,168	13,168	166,723
A&G-Injuries & damages - Insurance-Other 9250-04070	2,108	2,108	2,108	13,668	2,108	2,108	2,108	37,224	6,484	3,968	3,968	6,484	84,448
A&G-Property insurance - Insurance-Other 9240-04070	4,372	4,372	4,503	4,372	4,372	4,372	4,372	(30,734)	0	0	0	0	-

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	71	71	-	142	-	-	-	-	71	-	-	355
A&G-Injuries & damages - Insurance Reserve 9250-07115	0	0	0	0	0	1,000,000	-	(1,000,000)	(750,000)	-	-	-	(750,000)
A&G-Injuries & damages - Insurance - D&O 9250-07119	143,203	143,203	143,203	143,203	143,203	143,203	143,203	143,203	143,203	141,159	141,159	141,159	1,712,303
A&G-Office supplies & expense - Environmental & Safety 9210-07120	0	0	0	0	0	0	(3,447)	-	-	-	-	-	(3,447)
A&G-Injuries & damages - Insurance - Public Liability 9250-07121	1,239,755	1,234,117	1,234,117	1,234,117	1,234,117	1,234,117	1,144,070	1,234,117	1,234,765	1,234,441	1,234,441	1,234,441	14,726,613
Insurance	**1,419,259**	**1,413,691**	**1,430,746**	**1,349,058**	**1,398,404**	**2,396,968**	**1,303,474**	**396,978**	**647,620**	**1,392,807**	**1,392,736**	**1,395,252**	**15,936,994**
A&G-Office supplies & expense - Building Lease/Rents 9210-04581	2,151	2,151	2,151	2,151	2,151	2,151	2,151	2,373	2,175	2,049	2,500	1,850	26,003
A&G-Rents - Building Lease/Rents 9310-04581	358,054	356,513	356,963	352,497	356,059	357,314	357,835	356,340	360,425	357,298	357,356	358,194	4,284,849
A&G-Office supplies & expense - Building Maintenance 9210-04582	35,692	4,318	3,937	40,409	5,155	4,548	4,947	9,464	5,562	8,551	7,860	30,176	160,621
A&G-Rents - Building Maintenance 9310-04582	30,960	36,178	51,914	32,157	78,349	24,958	39,233	25,852	23,884	22,252	47,944	44,639	458,320
A&G-Maintenance of general pla - Building Maintenance 9320-04582	1,055	-	2,098	4,214	1,084	9,369	1,588	2,444	3,369	1,055	1,654	1,770	29,701
A&G-Rents - Utilities 9310-04590	22,632	19,238	7,618	16,804	19,303	2,630	33,941	18,842	19,064	19,543	17,814	3,561	200,991
A&G-Office supplies & expense - Utilities 9210-04590	2,403	2,375	2,360	3,303	4,324	4,128	3,985	2,594	3,650	4,447	4,687	2,404	40,661
Rent, Maint., & Utilities	**452,949**	**420,773**	**427,042**	**451,536**	**466,426**	**405,098**	**443,680**	**417,909**	**418,129**	**415,195**	**439,815**	**442,594**	**5,201,146**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	4,873	3,585	3,435	3,412	2,239	2,572	2,985	3,093	3,090	2,982	3,414	3,189	38,870
Mains and Services Expenses - Vehicle Expense 8740-03004	5,115	3,479	5,759	3,657	2,193	5,185	8,877	5,788	(1,269)	5,950	4,319	5,672	54,723
A&G-Office supplies & expense - Vehicle Expense 9210-03004	592	513	461	347	571	667	589	490	520	769	2,155	2,884	10,557
A&G-Rents - Vehicle Expense 9310-03004	0	0	0	17	-	-	-	-	-	-	-	-	17
A&G-Office supplies & expense - Equipment Lease 9210-04301	150	155	143	191	138	143	143	143	143	143	143	143	1,782
Mains and Services Expenses - Equipment Lease 8740-04301	32	28	28	28	28	28	28	82	82	82	82	82	610
A&G-Office supplies & expense - Heavy Equipment 9210-04302	370	-	-	630	1,424	-	18,857	1,556	-	3,162	261	-	26,259
Mains and Services Expenses - Heavy Equipment 8740-04302	694	-	-	-	-	6	218	191	572	706	756	1,657	4,801
Vehicles & Equip	**11,826**	**7,760**	**9,826**	**8,282**	**6,593**	**8,601**	**31,697**	**11,344**	**3,138**	**13,794**	**11,130**	**13,627**	**137,619**
A&G-Office supplies & expense - Inventory Materials 9210-02001	375	-	-	384	2,968	2,284	1,775	8,186	1,517	3,436	3,785	37,244	61,954
Distribution-Operation supervi - Inventory Materials 8700-02001	8	-	-	10	1	23	184	15	314	26	-	-	580
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	9,093	881	1,425	1,840	5,983	3,588	3,295	3,724	6,665	13,139	4,984	11,597	66,214
A&G-General advertising expens - Non-Inventory Supplies 9301-02005	0	0	0	0	0	306	-	-	-	-	-	-	306
A&G-Rents - Non-Inventory Supplies 9310-02005	0	202	292	302	304	123	276	267	635	312	938	387	4,040
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	579	251	-	-	20	-	-	-	130	324	-	-	1,303
A&G-Office supplies & expense - Purchasing Card Charges 9210-02006	15	235	(15)	300	-	1,008	(302)	-	-	-	-	-	1,241
A&G-Office supplies & expense - Parts 9210-04306	21	-	-	-	-	-	-	-	-	-	-	-	21
A&G-Office supplies & expense - Office Supplies 9210-05010	34,531	43,895	43,021	25,907	35,388	44,990	18,876	39,990	69,851	35,605	28,889	57,259	478,203
Miscellaneous general expenses - Office Supplies 9302-05010	0	0	(101)	167	-	75	22	-	-	-	-	-	163
A&G-Rents - Office Supplies 9310-05010	0	0	0	0	0	0	0	11	-	11	-	11	33
Distribution-Operation supervi - Office Supplies 8700-05010	0	0	0	0	0	354	83	-	-	-	-	-	437
Distribution-Maintenance super - Office Supplies 8850-05010	0	0	0	0	0	0	0	38	-	-	-	-	38
Materials & Supplies	**44,623**	**45,465**	**44,622**	**28,909**	**44,663**	**52,751**	**24,210**	**52,232**	**79,114**	**52,852**	**38,595**	**106,498**	**614,532**
A&G-Maintenance of general pla - Offsite Storage 9320-04065	16,565	16,989	18,465	50	18,387	17,954	16,481	18,166	32,985	-	25,014	17,686	198,722
A&G-Outside services employed - Offsite Storage 9230-04065	0	0	0	50	-	-	-	-	-	50	-	-	100
A&G-Office supplies & expense - Offsite Storage 9210-04065	8,065	20,961	7,629	25,609	7,437	8,670	12,096	4,194	9,350	12,710	4,168	8,781	129,669
Storage-Operation supervision - Software Maintenance 8140-04201	500	41	-	-	-	-	-	-	-	-	-	541	1,083
A&G-Maintenance of general pla - Software Maintenance 9320-04201	11,331	19,380	19,246	32,145	20,167	11,748	17,529	21,200	13,105	12,999	12,443	18,840	210,134
A&G-Rents - Software Maintenance 9310-04201	2,075	754	1,966	2,068	2,068	2,073	2,074	1,959	2,010	2,753	1,323	2,018	23,140
Miscellaneous general expenses - Software Maintenance 9302-04201	2,878	8,649	-	-	-	2,988	5,702	20,281	2,923	8,538	2,923	5,846	60,727
A&G-Outside services employed - Software Maintenance 9230-04201	0	0	880	-	-	-	-	8,384	8,363	-	8,388	16,784	42,799
A&G-Office supplies & expense - Software Maintenance 9210-04201	774,928	812,936	784,059	791,445	793,571	824,488	764,930	821,754	829,041	862,861	850,510	851,955	9,762,479
A&G-Office supplies & expense - IT Equipment 9210-04212	74,601	75,505	82,334	74,125	73,525	79,971	36,544	70,513	77,784	76,877	77,202	78,899	877,880
A&G-Outside services employed - IT Equipment 9230-04212	0	0	0	0	129	-	-	-	-	-	1,570	-	1,699
A&G-Maintenance of general pla - IT Equipment 9320-04212	478	1,164	288	1,382	-	3,904	82,917	(77,336)	1,415	635	9,482	2,572	26,902
Information Technologies	**891,421**	**956,379**	**914,868**	**926,873**	**915,283**	**951,797**	**938,253**	**889,115**	**976,976**	**977,424**	**993,022**	**1,003,922**	**11,335,332**
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	12,822	7,180	16,098	15,361	10,712	13,424	6,116	20,644	10,002	13,441	5,517	20,817	152,134
A&G-Office supplies & expense - Long Distance 9210-05312	1,867	(35,531)	1,962	1,756	2,168	2,307	2,216	2,229	2,525	2,129	2,318	2,358	(11,696)
Miscellaneous general expenses - Long Distance 9302-05312	0	10	-	-	-	-	-	-	-	-	-	-	10
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	1,516	1,363	1,387	1,446	2,291	1,431	1,070	794	820	849	1,055	871	14,893
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	18,100	30,117	15,584	20,006	21,753	18,331	22,900	18,109	19,880	20,913	18,453	18,389	242,536
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	48,948	29,141	60,493	41,969	65,793	46,811	57,697	54,633	45,556	42,082	42,983	52,228	588,335
A&G-Outside services employed - WAN/LAN/Internet Service 9230-05331	0	0	0	0	8,280	-	-	-	-	-	-	-	8,280
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	137	140	136	137	137	143	143	141	146	152	150	157	1,719
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	21,551	21,780	1,369	42,715	21,554	22,577	21,569	20,956	19,209	20,589	20,537	21,455	255,861
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	0	115	115	-	206	-	304	102	101	104	104	104	1,255
A&G-Office supplies & expense - Cell service for data uses 9210-05376	2,412	2,980	622	6,447	3,477	3,307	3,404	3,367	3,021	3,231	2,930	3,375	38,574
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	5,497	2,200	163	2,644	3,754	2,444	3,202	2,989	6,536	1,834	2,451	1,366	35,079
A&G-Office supplies & expense - Audio Conference 9210-05390	1,257	1,257	1,252	1,003	1,353	1,278	1,720	1,268	1,263	1,247	1,236	1,236	15,370
Telecom	**114,108**	**60,752**	**99,182**	**133,483**	**141,478**	**112,052**	**120,341**	**125,233**	**109,058**	**106,571**	**97,735**	**122,356**	**1,342,351**
A&G-Office supplies & expense - Promo Other, Misc 9210-04021	186	2,186	7,156	1,881	1,362	76	-	1,380	55	253	1,578	4,487	20,602
A&G-Outside services employed - Promo Other, Misc 9230-04021	0	0	0	0	0	8,819	-	-	-	-	-	-	8,819
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	403	1,597	-	1,140	434	1,472	1,530	-	2,060	3,476	195	-	12,306
A&G-Office supplies & expense - Advertising 9210-04044	890	-	3,587	91	3,219	1,440	9,149	6,741	159	5,000	4,970	24,399	59,644
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	23,185	-	-	-	-	-	-	-	-	-	-	1,642	24,827
A&G-Office supplies & expense - Customer Relations & Assist 9210-04046	2,514	25,332	20,767	3,870	19,213	3,745	7,619	31,324	52,504	33,287	32,004	46,824	279,002
Marketing	**27,180**	**29,114**	**31,510**	**6,981**	**24,228**	**15,553**	**18,298**	**39,444**	**54,778**	**42,016**	**38,747**	**77,351**	**405,199**
Miscellaneous general expenses - Director's Fees 9302-04111	252,185	-	-	235,580	83	20,875	214,735	-	-	235,582	150	145	959,335
Miscellaneous general expenses - Board Meeting Expenses 9302-04112	15,572	(3,775)	946	4,984	25,470	3,507	1,741	1,383	-	-	(1,524)	-	48,303
A&G-Office supplies & expense - Board Meeting Expenses 9210-04112	2,097	275	1,226	-	-	38	-	-	223	-	-	-	3,860
Miscellaneous general expenses - Directors Retirement Expenses 9302-04113	0	0	102,291	-	-	1,471,255	-	-	122,165	-	-	93,834	1,789,545
Miscellaneous general expenses - Newswire/Blast Fax/Mail List 9302-04120	481	2,679	-	267	3,116	-	267	2,291	-	267	2,242	-	11,610
A&G-Office supplies & expense - Newswire/Blast Fax/Mail List 9210-04120	0	0	0	931	-	-	341	415	-	-	-	14,391	16,078
Miscellaneous general expenses - Inv Relations/Bnkg Inst 9302-04121	0	0	0	0	0	0	0	55,000	4,538	-	-	4,830	64,368
A&G-Office supplies & expense - Annual Report Design, Printing & Dis 9210-04122	46,511	-	-	201,375	-	-	-	-	-	-	-	-	247,886
Miscellaneous general expenses - Proxy Solicitation Exp 9302-04125	810	66,255	810	270,383	4,729	13,667	810	810	810	-	1,620	810	361,515

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Miscellaneous general expenses - Transfer Agent Administration 9302-04126	11,945	4,195	9,754	22,462	13,585	7,077	11,165	4,202	6,099	-	15,891	6,091	112,468
Miscellaneous general expenses - Tr & Reg of Bonds/Debt Fee 9302-04127	96,109	19,000	10,680	95,000	62,205	93,000	48,000	81,055	11,109	43,000	19,080	50,320	630,557
Miscellaneous general expenses - NYSE Fees & Exps 9302-04129	74	74	170	74	74	190	34,660	-	49	153	74	74	35,666
Customer accounts-Customer rec - Bank Service Charge 9030-04130	(459)	-	-	-	-	-	-	-	-	-	-	-	(459)
Miscellaneous general expenses - Reimbursement of Fraud Payments 9302-04135	70	(70)	0	0	0	0	0	0	0	0	0	0	-
A&G-Office supplies & expense - Analyst Activities 9210-04140	0	0	0	0	0	795	1,245	33	-	-	-	-	2,073
Miscellaneous general expenses - Analyst Activities 9302-04140	(230)	3,952	5,254	-	(726)	1,756	3,324	219	1,853	4,317	-	6,841	26,560
Sales-Demonstrating and sellin - Web Site 9120-04141	0	0	0	0	0	0	0	0	320	-	-	-	320
A&G-Office supplies & expense - Web Site 9210-04141	879	640	4,400	9,991	13,076	427	485	42	-	75	325	300	30,639
Miscellaneous general expenses - Web Site 9302-04141	677	677	677	677	-	677	1,353	677	677	677	625	728	8,119
Miscellaneous general expenses - Printing/Slides/Graphics 9302-04145	991	54	-	35,911	-	623	-	250	-	-	375	-	38,205
A&G-Office supplies & expense - Public Relations 9210-04146	135	-	175	275	584	-	-	-	1,759	400	2,491	-	5,819
Directors & Shareholders &PR	429,847	93,955	136,383	877,910	122,197	1,613,885	318,125	146,378	149,601	284,471	41,349	178,364	4,392,465
Distribution-Operation supervi - Membership Fees 8700-05415	308	-	-	-	-	-	-	-	-	-	-	-	308
A&G-Office supplies & expense - Membership Fees 9210-05415	52,572	17,578	11,872	30,817	6,916	33,384	32,978	5,916	4,368	33,858	10,433	4,639	245,331
Miscellaneous general expenses - Membership Fees 9302-05415	15	2,330	1,090	2,525	1,658	3,000	2,274	2,952	2,283	750	130	646	19,653
A&G-Maintenance of general pla - Club Dues - Nondeductible 9320-05416	0	59	-	-	-	-	-	-	-	-	-	-	59
A&G-Office supplies & expense - Club Dues - Deductible 9210-05417	0	0	175	-	-	-	265	-	1,561	-	5,000	3,000	10,001
Distribution-Operation supervi - Club Dues - Deductible 8700-05417	0	0	0	0	0	0	0	0	0	850	-	-	850
A&G-Office supplies & expense - Association Dues 9210-07510	0	0	1,150	-	25,950	-	-	39,650	950	290	625	4,850	73,465
Distribution-Operation supervi - Association Dues 8700-07510	0	0	0	0	0	0	0	0	0	0	0	50,000	50,000
Miscellaneous general expenses - Association Dues 9302-07510	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	2,875	34,500
A&G-Office supplies & expense - Donations 9210-07520	1,000	(1,088)	-	248	-	-	-	-	225	-	-	-	385
Dues & Donations	56,770	21,754	17,162	36,464	37,399	39,259	38,392	51,393	12,262	38,623	19,063	66,010	434,551
Customer accounts-Meter readin - Postage/Delivery Services 9020-05111	0	0	0	0	0	0	0	0	9	-	-	-	9
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	11,962	9,444	9,605	14,477	12,941	16,475	14,706	10,014	10,826	8,506	9,768	10,432	139,155
Miscellaneous general expenses - Postage/Delivery Services 9302-05111	71	-	1,503	25	51	-	279	77	256	102	-	51	2,416
Print & Postages	12,033	9,444	11,108	14,503	12,992	16,475	14,985	10,091	11,090	8,608	9,768	10,484	141,580
Mains expenses - Meals and Entertainment 8560-05411	0	0	0	0	0	0	0	31	-	-	-	-	31
Distribution-Operation supervi - Meals and Entertainment 8700-05411	0	136	2,912	83	-	-	-	2,658	-	116	-	-	5,905
Mains and Services Expenses - Meals and Entertainment 8740-05411	0	0	0	0	63	-	-	-	-	-	-	-	63
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	1,500	217	-	107	2,218	859	819	4,464	10,183
Distribution-Maintenance super - Meals and Entertainment 8850-05411	24	-	-	-	-	-	-	27	-	-	-	-	51
Customer accounts-Operation su - Meals and Entertainment 9010-05411	0	125	-	-	-	-	-	-	-	85	-	-	210
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	0	251	-	-	-	-	-	-	-	-	-	251
Sales-Demonstrating and sellin - Meals and Entertainment 9120-05411	0	0	0	0	0	5,055	-	-	-	-	-	-	5,055
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	30,865	41,983	50,019	32,442	36,781	32,246	51,737	47,367	34,079	36,571	43,614	58,566	496,270
A&G-Outside services employed - Meals and Entertainment 9230-05411	6	-	-	-	-	-	-	-	-	-	-	143	149
Miscellaneous general expenses - Meals and Entertainment 9302-05411	1,364	1,746	1,819	900	2,266	1,232	981	226	332	827	229	1,155	13,075
A&G-Rents - Meals and Entertainment 9310-05411	354	-	177	177	-	-	354	177	177	-	177	-	1,593
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	0	20	-	-	-	-	-	-	-	-	-	-	20
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	88	539	9,301	1,773	1,722	22,069	6,909	1,091	266	1,067	324	(1,557)	45,591
Miscellaneous general expenses - Spousal & Dependent Travel 9302-05412	0	0	0	0	910	393	4	-	-	636	-	-	1,942
A&G-Administrative & general s - Transportation 9200-05413	0	0	0	0	0	0	0	0	0	0	0	856	856
A&G-Office supplies & expense - Transportation 9210-05413	27,358	40,293	37,507	37,965	50,814	75,420	60,134	51,623	46,368	54,986	37,588	59,734	579,791
A&G-Outside services employed - Transportation 9230-05413	94	-	-	-	-	-	-	-	-	-	-	704	798
Miscellaneous general expenses - Transportation 9302-05413	1,969	2,932	2,298	3,629	3,165	5,488	3,820	1,036	4,427	5,404	522	3,797	38,486
Mains expenses - Transportation 8560-05413	0	0	0	0	0	0	0	78	-	-	-	-	78
Distribution-Operation supervi - Transportation 8700-05413	0	0	13	-	-	-	-	-	-	114	226	581	933
Mains and Services Expenses - Transportation 8740-05413	0	(611)	-	-	466	-	-	-	-	-	-	-	(145)
Distribution-Maintenance super - Transportation 8850-05413	0	0	0	0	0	0	0	573	-	-	-	-	573
Distribution-Maintenance of st - Transportation 8860-05413	12	-	-	-	-	-	-	-	-	-	-	-	12
Customer accounts-Operation su - Transportation 9010-05413	0	0	0	0	0	0	0	0	0	129	-	-	129
Customer accounts-Customer rec - Transportation 9030-05413	0	0	0	0	0	188	-	-	-	-	-	-	188
A&G-Office supplies & expense - Lodging 9210-05414	14,024	26,479	28,079	15,810	29,485	21,319	42,608	49,390	30,355	27,194	25,377	36,974	347,095
A&G-Outside services employed - Lodging 9230-05414	71	-	-	-	-	-	-	-	-	-	-	419	490
Miscellaneous general expenses - Lodging 9302-05414	1,281	714	886	1,131	696	2,108	2,209	1,084	1,233	3,222	171	462	15,198
Mains expenses - Lodging 8560-05414	0	0	0	0	0	0	0	370	-	139	-	-	509
Distribution-Operation supervi - Lodging 8700-05414	0	0	0	0	0	0	0	0	0	0	0	246	246
Mains and Services Expenses - Lodging 8740-05414	0	0	0	0	539	-	-	-	-	-	-	-	539
Distribution-Maintenance super - Lodging 8850-05414	456	-	-	-	-	-	-	370	-	-	-	-	826
Customer accounts-Operation su - Lodging 9010-05414	0	0	0	0	0	0	0	0	0	224	-	-	224
A&G-Administrative & general s - Misc Employee Expense 9200-05419	0	0	0	0	0	0	0	0	0	0	12	-	12
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	269	16,940	708	14,280	18,174	(5,822)	2,042	6,225	11,514	4,351	7,914	8,225	84,822
Miscellaneous general expenses - Misc Employee Expense 9302-05419	0	40	-	47	5	10	-	-	-	-	-	-	102
Distribution-Operation supervi - Misc Employee Expense 8700-05419	0	12,591	-	-	-	-	-	-	-	189,789	-	18,317	220,696
Travel & Entertainment	78,235	143,927	133,970	108,236	146,586	159,924	172,799	162,433	130,969	325,711	116,972	193,086	1,872,847
A&G-Office supplies & expense - Employee Development 9210-05420	74,874	2,501	2,816	4,165	11,023	4,789	21,087	96,007	35,357	55,260	10,090	30,769	348,760
A&G-Outside services employed - Employee Development 9230-05420	0	0	0	0	0	0	0	1,595	-	-	-	-	1,595
Miscellaneous general expenses - Employee Development 9302-05420	350	80	1,590	125	-	107	3,090	235	80	20	750	250	6,657
Distribution-Measuring and reg - Training 8760-05421	0	0	200	-	-	-	-	-	-	-	-	-	200
A&G-Office supplies & expense - Training 9210-05421	18,441	9,477	10,209	21,129	21,082	21,710	26,312	10,449	30,741	3,768	18,180	44,684	236,182
Miscellaneous general expenses - Training 9302-05421	25	-	205	45	25	55	444	-	-	-	-	35	834
A&G-Maintenance of general pla - Training 9320-05421	0	55	-	-	-	-	-	-	-	-	-	-	55
A&G-Office supplies & expense - Books & Manuals 9210-05424	29,670	11,865	10,013	39,553	11,687	14,949	25,646	115,206	(3,885)	29,967	12,987	21,212	318,769
A&G-Outside services employed - Books & Manuals 9230-05424	0	0	0	0	0	0	0	0	15,733	-	-	-	15,733
Miscellaneous general expenses - Books & Manuals 9302-05424	0	(245)	19	1,120	-	1,475	4,664	356	-	-	-	379	7,767
Miscellaneous general expenses - Regulatory Compliance Training 9302-05425	0	0	0	0	0	0	0	0	0	0	0	375	375
A&G-Office supplies & expense - Safety Training 9210-05426	18,000	1,689	17	718	18,641	4,354	-	25,960	1,630	200	-	1,064	72,293
A&G-Outside services employed - Safety Training 9230-05426	0	0	4,161	-	-	-	4,368	12,198	6,467	5,438	5,728	1,335	39,697
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	1,604	75	4,788	13,239	3,843	1,145	4,717	4,470	1,500	4,307	369	5,911	45,967
A&G-Outside services employed - Technical (Job Skills) Training 9230-05427	0	0	0	13,889	-	-	-	-	-	-	-	-	13,889
A&G-Office supplies & expense - Computer Skills & Systems Training 9210-05428	0	2,375	-	-	-	4,264	-	-	-	399	9,378	-	16,416

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Mains expenses - Work Environment Training 8560-05429	0	0	0	0	0	0	0	0	0	0	112	-	112
A&G-Office supplies & expense - Work Environment Training 9210-05429	0	471	-	129	-	989	791	-	-	-	-	657	3,036
Training	**142,964**	**28,322**	**34,017**	**94,112**	**66,302**	**53,836**	**91,018**	**266,496**	**87,624**	**99,358**	**57,595**	**106,692**	**1,128,336**
A&G-Administrative & general s - Contract Labor 9200-06111	0	0	0	0	0	0	0	0	0	0	0	4,653	4,653
A&G-Office supplies & expense - Contract Labor 9210-06111	15,418	74,144	118,550	27,736	60,415	88,635	140,490	43,134	470,442	(301,950)	35,590	429,495	1,202,100
A&G-Outside services employed - Contract Labor 9230-06111	660,664	668,275	598,552	799,646	470,620	428,300	555,686	559,017	522,903	725,392	472,125	1,117,364	7,578,544
A&G-Regulatory commission expe - Contract Labor 9280-06111	0	0	0	0	0	0	0	0	0	0	18,900	-	18,900
Miscellaneous general expenses - Contract Labor 9302-06111	12,949	17,600	3,767	24,106	11,258	(1,792)	4,463	4,424	5,539	15,906	10,877	5,106	114,204
A&G-Rents - Contract Labor 9310-06111	4,230	6,152	10,692	1,593	4,988	2,213	5,792	5,538	4,495	6,450	5,647	5,692	63,483
A&G-Maintenance of general pla - Contract Labor 9320-06111	0	12,000	990	-	-	-	455	-	-	-	-	-	13,445
Miscellaneous general expenses - Legal 9302-06121	1,877	-	-	682	286	-	1,527	9,217	896	-	100	-	14,585
A&G-Outside services employed - Legal 9230-06121	604	3,573	-	81,773	11,583	20,977	12,108	1,978	966	3,455	1,600	15,605	154,221
Outside Services	**695,743**	**781,744**	**732,551**	**935,537**	**559,150**	**538,332**	**720,521**	**623,308**	**1,005,241**	**449,251**	**544,840**	**1,577,915**	**9,164,134**
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(6,905,452)	(7,507,304)	(4,574,478)	(4,646,297)	(3,854,048)	(4,192,816)	(4,069,454)	(6,595,042)	(4,638,817)	(4,316,749)	(3,762,667)	(3,795,355)	(58,857,481)
Sales-Demonstrating and sellin - Misc General Expense 9120-07590	0	0	0	0	0	805	-	-	-	-	-	-	805
A&G-Office supplies & expense - Misc General Expense 9210-07590	57,565	4,817	45,306	(25,449)	2,880	(97,598)	10,973	35,746	6,311	24,800	(144,085)	385,681	306,849
Miscellaneous general expenses - Misc General Expense 9302-07590	74	-	-	91	228	223	-	-	-	745	-	-	1,361
Miscellaneous	**(6,847,813)**	**(7,502,487)**	**(4,529,172)**	**(4,670,656)**	**(3,850,939)**	**(4,289,386)**	**(4,058,481)**	**(6,559,296)**	**(4,632,506)**	**(4,291,204)**	**(3,906,752)**	**(3,409,774)**	**(58,548,466)**
Total O&M Expenses Before Allocations	8,465,038	3,468,340	6,617,933	6,689,103	5,811,705	16,337,891	170,183	6,514,037	5,141,345	4,887,891	4,888,224	7,438,456	76,430,146
Div 2 gross expenses	8,465,038	3,468,340	6,617,933	6,689,103	5,811,705	16,337,891	170,183	6,514,037	5,141,345	4,887,891	4,888,224	7,438,456	76,430,146
Div 12 gross expenses	5,555,814	4,696,573	4,734,913	5,262,714	4,393,542	4,811,982	5,109,007	4,921,458	4,568,168	5,127,246	4,891,422	5,339,219	59,412,058
SSU Capital Credits	6,905,452	7,507,304	4,574,478	4,645,297	3,854,048	4,192,816	4,069,454	6,595,042	4,638,817	4,316,749	3,762,667	3,795,355	58,857,481
pre-capitalization totals	20,926,304	15,672,217	15,927,324	16,597,114	14,059,294	25,342,690	9,348,644	18,030,537	14,348,330	14,331,887	13,542,313	16,573,029	194,699,684
effective average cap rate	33.00%	47.90%	28.72%	27.99%	27.41%	16.54%	43.53%	36.58%	32.33%	30.12%	27.78%	22.90%	30.23%

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Customer accounts-Customer rec - Non-project Labor 9030-01000	4,972	3,369	3,369	3,369	3,369	3,369	3,369	5,054	3,369	3,369	3,369	3,369	43,719
A&G-Administrative & general s - Non-project Labor 9200-01000	4,335,965	2,855,425	2,872,264	2,884,827	2,839,357	2,868,799	2,847,271	4,266,709	2,863,266	2,854,180	2,834,063	2,806,558	37,128,704
Distribution-Operation supervi - Non-project Labor 8700-01000	73	-	-	-	-	-	-	-	-	146	-	-	220
Meter and house regulator expe - Non-project Labor 8780-01000	0	0	0	0	2,004	-	-	-	-	-	-	-	2,004
A&G-Administrative & general s - Capital Labor 9200-01001	147,012	74,023	65,865	46,717	92,137	82,479	112,982	164,420	126,574	137,769	119,352	176,970	1,348,300
Mains expenses - Capital Labor Contra 8560-01002	(3,758)	(1,061)	-	(231)	(255)	(255)	(1,896)	(6,617)	(931)	(418)	(681)	(1,575)	(17,680)
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(47)	-	-	-	(175)	(1,703)	(1,214)	(20,649)	(39,194)	(33,539)	(28,357)	(14,063)	(138,961)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(86,504)	(49,116)	(39,757)	(31,295)	(62,778)	(53,795)	(100,090)	(156,249)	(141,485)	(138,978)	(108,033)	(113,221)	(1,081,300)
A&G-Administrative & general s - O&M Project Labor and Contra 9200-01006	0	0	196	137	491	118	59	353	-	-	-	-	1,355
Mains expenses - O&M Project Labor and Contra 8560-01006	0	0	0	0	0	0	0	1,379	626	345	115	-	2,465
Mains and Services Expenses - O&M Project Labor and Contra 8740-01006	0	0	0	0	0	0	0	0	0	223	-	-	223
Mains and Services Expenses - Expense Labor Accrual 8740-01008	0	0	0	0	0	0	0	0	0	(111)	111	0	-
Meter and house regulator expe - Expense Labor Accrual 8780-01008	0	0	0	0	1,002	(1,002)	0	0	0	0	0	0	-
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(1,111)	14	505	337	(0)	337	337	(1,516)	337	505	168	337	251
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(929,708)	(4,638)	435,026	293,463	(22,912)	301,776	271,840	(1,281,989)	284,091	431,940	131,644	265,528	176,060
Mains expenses - Expense Labor Accrual 8560-01008	0	0	0	0	0	0	0	(230)	11	46	109	63	-
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	12	(12)	0	0	0	0	0	0	0	73	(73)	0	-
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	66,558	-	-	(9,838)	-	-	(53,315)	-	-	(4,265)	(861)
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	34,872	29,273	20,123	18,488	35,201	34,634	64,834	103,631	109,840	116,495	94,921	87,925	750,236
Mains expenses - Capital Labor Transfer In 8560-01011	3,758	1,061	-	231	255	255	1,896	6,617	931	418	681	1,575	17,680
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	47	-	-	-	175	1,703	1,214	20,649	39,194	33,539	28,357	14,063	138,961
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(95,380)	(54,180)	(46,232)	(33,910)	(64,560)	(63,318)	(77,726)	(111,801)	(96,929)	(116,285)	(106,240)	(151,674)	(1,017,236)
Mains expenses - Expense Labor Transfer Out 8560-01014	0	0	0	0	0	0	0	(1,379)	(626)	(345)	(115)	-	(2,465)
A&G-Administrative & general s - Expense Labor Transfer Out 9200-01014	0	0	(196)	(137)	(491)	(118)	(59)	(353)	-	-	-	-	(1,355)
Mains and Services Expenses - Expense Labor Transfer Out 8740-01014	0	0	0	0	0	0	0	0	0	(223)	-	-	(223)
Labor	3,410,203	2,854,158	3,377,722	3,181,996	2,822,822	3,163,441	3,122,817	2,988,027	3,097,779	3,290,150	2,969,393	3,071,591	37,350,098
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	270,816	228,333	264,893	254,560	225,826	253,862	249,825	239,042	250,488	263,212	237,551	246,068	2,984,477
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	216,653	182,666	211,915	203,648	180,661	203,090	199,860	191,234	200,390	210,570	190,041	196,855	2,387,581
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(17,303)	70,883	19,089	16,889	59,298	(5,464)	11,621	44,892	12,233	(14,009)	39,761	(790)	237,100
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(63,794)	1,036	(44,808)	(39,087)	(3,971)	(54,128)	(43,850)	(27,818)	(39,915)	(61,361)	(19,003)	(53,343)	(450,042)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	4,103	(387)	984	299,335	1,876	(880)	50,340	718	536	(247)	85,546	349	442,276
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	12,573	10,655	12,086	11,994	10,760	12,025	11,838	11,304	11,682	12,261	11,085	12,112	140,376
A&G-Employee pensions and bene - Employer 401K Expense 9260-01239	0	(1,607)	1,607	0	0	0	0	0	0	0	0	0	-
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	558,558	470,936	546,342	525,029	465,786	523,591	516,265	493,024	516,631	542,875	489,950	507,516	6,155,483
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(109,526)	23,151	57,583	(32,074)	(99,958)	(78,419)	105,794	(69,420)	62,496	176,348	87,636	(24,291)	99,320
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	121,867	102,750	119,202	114,552	101,622	114,238	112,421	107,569	112,719	118,445	106,898	110,731	1,343,014
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	(38,986)	35,591	26,778	8,779	(38,718)	14,900	1,358	(1,649)	491	(2,894)	4,688	(1,396)	8,941
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	3,385	2,854	3,311	3,182	2,823	3,173	3,123	2,988	3,131	3,290	2,969	3,076	37,306
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	(6,889)	(5,066)	(6,220)	40,530	(5,518)	(6,417)	(5,821)	(5,570)	(5,566)	(7,774)	(5,327)	(5,806)	(25,445)
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	23,696	19,979	23,178	22,274	19,760	22,213	21,860	20,916	21,918	23,031	20,786	21,531	261,142
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	20,752	7,875	3,069	6,795	10,594	5,256	7,113	34,509	8,301	6,478	9,833	6,826	127,401
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	16,926	14,271	16,556	15,910	14,114	15,866	15,614	14,940	15,656	16,451	14,847	15,379	186,530
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	934	6,041	2,482	(4,860)	5,636	1,596	(4,998)	3,684	2,726	(5,627)	4,430	(4,272)	7,772
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	27,082	22,833	26,489	25,456	22,583	25,386	24,983	23,904	25,049	26,321	23,755	24,607	298,448
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(3,982)	4,187	(1,467)	(20,805)	3,569	(2,751)	(21,078)	524	(1,006)	(21,802)	1,624	(19,694)	(82,681)
Benefits	1,036,887	1,196,981	1,283,070	1,452,106	976,722	1,047,137	1,255,268	1,084,794	1,197,958	1,285,568	1,307,072	1,035,458	14,159,000
A&G-Office supplies & expense - Service Awards 9210-07421	0	0	0	0	0	0	0	0	0	0	0	27	27
A&G-Employee pensions and bene - Service Awards 9260-07421	9,614	20,166	7,948	1,070	584	2,621	7,300	7,393	6,393	6,471	6,722	27,911	104,193
A&G-Office supplies & expense - Uniforms 9210-07443	0	0	158	-	769	390	(111)	150	186	717	206	15	2,480
A&G-Employee pensions and bene - Education Assistance Program 9260-07447	9,266	6,083	65,117	23,297	14,569	16,598	10,385	59,209	18,983	26,335	29,591	11,179	289,611
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	983,000	1,198,444	1,046,380	1,589,000	1,456,000	1,280,000	1,094,000	(2,114,530)	10,401,984	(3,169,797)	-	769,506	14,533,987
A&G-Employee pensions and bene - Exec Compensation-Other 9260-07453	27	27	27	27	27	-	54	27	27	27	27	27	324
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	0	0	0	0	0	0	0	0	(4,752,510)	4,752,510	0	(453,175)	(453,175)
A&G-Employee pensions and bene - Restricted Stock - Long Term Incent 9260-07458	327,496	318,940	327,495	311,009	294,235	325,759	315,251	1,053,116	411,130	2,936,044	8,063	(1,005)	6,627,538
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	131,924	128,539	131,924	131,924	119,157	131,924	158,783	1,849,942	586,174	596,011	477	(871)	3,965,909
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	17,962	272,431	15,454	15,454	13,964	15,454	14,955	15,454	95,167	32,833	-	(280)	508,646
A&G-Employee pensions and bene - Rabbi Trust Gain/Loss 9260-07486	(5,594)	(19,365)	(2,661,429)	(8,375)	(5)	(35,930)	(584,212)	(14,432)	(34,447)	(392,640)	(11,115)	(24,208)	(3,771,772)
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	(12,808)	(12,808)	(12,808)	(12,808)	(12,808)	(430,142)	(23,789)	(17,412)	(36,873)	(36,873)	(264,988)	(36,873)	(910,990)
A&G-Employee pensions and bene - COLI Loan Interest 9260-07488	75,218	100,595	100,595	100,595	100,595	93,049	66,852	81,447	90,710	90,710	32,159	90,710	1,023,235
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	766,600	747,489	753,705	779,768	747,812	752,459	785,011	762,275	761,739	767,920	748,624	758,488	9,133,891
A&G-Office supplies & expense - Employee Broadcast and Publication 9210-07495	1,144	50,214	21,729	36,370	28,479	20,155	21,905	1,614	83,664	19,084	59,332	14,457	358,146
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	7,732	18,158	8,220	5,274	13,160	5,264	11,205	15,568	5,629	14,884	23,527	16,217	144,859
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	539	125	2,485	6,417	5,741	3,294	-	6,410	1,800	-	2,798	4,062	33,671
Miscellaneous general expenses - Misc Employee Welfare Exp 9302-07499	0	0	0	0	0	206	5,800	-	-	24,789	-	-	30,796
A&G-Rents - Misc Employee Welfare Exp 9310-07499	121	-	-	-	-	-	-	-	-	-	-	-	121
Employee Welfare	2,314,241	2,828,018	(193,000)	2,979,023	2,782,278	2,181,119	1,903,390	1,706,230	7,639,757	5,668,826	635,429	1,176,187	31,621,497
A&G-Property insurance - Blueflame Property Insurance 9240-04069	13,168	13,168	13,168	13,168	13,168	13,537	13,537	13,537	13,537	13,537	13,537	13,537	160,600
A&G-Injuries & damages - Insurance-Other 9250-04070	18,044	6,484	6,484	6,484	4,976	6,484	6,496	6,531	6,531	6,646	6,646	6,646	88,455
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	71	-	-	-	-	71	-					142
A&G-Injuries & damages - Insurance Reserve 9250-07115	0	0	(1,000,000)	1,000,000	0	0	(1,000,000)	(1,000,000)	-	-	-	2,000,000	-
A&G-Injuries & damages - Insurance - D&O 9250-07119	141,159	141,159	141,159	141,159	141,159	141,159	141,159	141,159	141,159	144,263	144,263	144,263	1,703,219
A&G-Injuries & damages - Insurance - Public Liability 9250-07121	1,397,311	1,397,311	1,397,311	1,397,311	1,397,311	1,397,311	1,305,078	1,397,311	1,397,311	1,397,311	1,397,311	1,397,311	16,675,498
Insurance	1,569,682	1,558,193	558,122	2,558,122	1,558,614	1,558,491	466,341	558,538	1,558,538	1,561,757	1,561,757	3,561,757	18,627,913
A&G-Office supplies & expense - Building Lease/Rents 9210-04581	2,175	2,175	2,175	2,175	2,175	2,175	2,175	6,811	2,390	2,175	2,175	2,175	30,948
A&G-Rents - Building Lease/Rents 9310-04581	352,910	359,909	356,766	354,654	353,754	359,669	353,719	359,618	357,096	357,626	356,788	356,769	4,279,478
A&G-Office supplies & expense - Building Maintenance 9210-04582	53,581	9,420	40,517	13,203	15,202	23,577	8,995	14,079	12,537	13,257	11,558	20,075	236,000
A&G-Outside services employed - Building Maintenance 9230-04582	0	410	-	-	-	-	-	-	-	-	-	-	410
A&G-Rents - Building Maintenance 9310-04582	25,899	18,253	38,710	26,757	57,089	39,997	35,654	38,687	41,628	27,658	23,059	238,318	611,710
A&G-Maintenance of general pla - Building Maintenance 9320-04582	3,793	1,436	36,250	5,559	2,138	10,092	1,407	8,757	8,677	3,007	3,888	7,355	92,360
A&G-Rents - Utilities 9310-04590	20,068	21,736	31,862	19,616	2,925	17,643	16,684	31,440	3,710	36,475	17,115	18,312	237,607
Distribution-Other expenses - Utilities 8800-04590	0	91	165	-	82	-	-	-	-	-	-	-	338

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
A&G-Office supplies & expense - Utilities 9210-04590	6,325	4,326	3,300	4,090	3,651	3,799	3,653	3,927	3,955	4,065	4,537	4,179	49,808
A&G-Rents - Misc Rents 9310-04592	0	0	0	0	0	0	947	-	-	-	-	-	947
Rent, Maint., & Utilities	**464,752**	**417,755**	**509,765**	**426,053**	**437,015**	**456,953**	**423,235**	**463,320**	**429,994**	**444,462**	**419,120**	**647,183**	**5,539,606**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	6,024	4,276	4,874	4,768	4,779	4,715	(4,620)	4,722	4,756	(8,268)	4,608	4,632	35,266
Mains and Services Expenses - Vehicle Expense 8740-03004	7,213	2,220	4,694	7,217	(4,590)	8,613	6,488	4,535	6,467	6,622	5,183	6,775	61,436
A&G-Office supplies & expense - Vehicle Expense 9210-03004	1,369	752	700	840	1,266	977	1,219	1,475	1,007	280	96	135	10,116
A&G-Office supplies & expense - Equipment Lease 9210-04301	616	-	-	-	-	-	16	-	-	-	-	-	632
Mains and Services Expenses - Equipment Lease 8740-04301	82	82	82	82	24	24	24	24	24	24	24	24	520
A&G-Office supplies & expense - Heavy Equipment 9210-04302	2,273	-	-	1,132	93	-	1,547	-	1,105	-	-	-	6,151
Mains and Services Expenses - Heavy Equipment 8740-04302	286	171	325	(1,038)	-	(47)	111	-	156	169	98	110	340
Vehicles & Equip	**17,863**	**7,500**	**10,676**	**13,001**	**1,572**	**14,282**	**4,785**	**10,756**	**13,515**	**(1,173)**	**10,008**	**11,677**	**114,462**
A&G-Office supplies & expense - Inventory Materials 9210-02001	7,363	8,678	3,894	4,316	8,645	12,142	28,913	9,703	23,789	9,689	9,193	10,578	136,903
Distribution-Other expenses - Non-Inventory Supplies 8800-02005	0	0	0	0	0	0	0	0	517	40	-	-	558
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	21,833	7,350	17,933	12,909	13,655	7,813	3,966	19,516	15,979	10,199	4,884	9,431	145,469
A&G-Property insurance - Non-Inventory Supplies 9240-02005	0	0	0	0	0	0	0	0	0	78	6	-	85
Miscellaneous general expenses - Non-Inventory Supplies 9302-02005	441	-	-	-	-	-	-	-	-	-	-	320	761
A&G-Rents - Non-Inventory Supplies 9310-02005	28	88	335	333	-	444	-	-	-	-	-	-	1,229
A&G-Office supplies & expense - Purchasing Card Charges 9210-02006	308	1,403	-	-	-	-	-	771	(771)	-	-	2,159	3,870
Customer accounts-Operation su - Office Supplies 9010-05010	0	0	0	0	0	0	0	7,088	-	-	-	-	7,088
Customer service-Miscellaneous - Office Supplies 9100-05010	0	0	0	0	0	447	-	-	-	-	-	-	447
A&G-Office supplies & expense - Office Supplies 9210-05010	24,809	34,795	44,363	31,836	42,866	40,001	31,346	35,410	32,119	31,158	34,954	38,083	421,739
Miscellaneous general expenses - Office Supplies 9302-05010	1,868	-	259	-	16	36	-	-	-	-	-	-	2,181
A&G-Rents - Office Supplies 9310-05010	0	0	12	7	-	-	154	13	-	-	160	13	358
Mains expenses - Office Supplies 8560-05010	0	0	0	0	0	0	0	0	58	-	-	-	58
Materials & Supplies	**56,550**	**52,314**	**66,795**	**49,401**	**65,182**	**60,885**	**64,379**	**72,500**	**71,691**	**51,165**	**49,198**	**60,584**	**720,744**
A&G-Maintenance of general pla - Offsite Storage 9320-04065	16,802	25,060	15,410	17,635	15,586	16,142	17,601	31,067	32,458	-	17,288	16,934	221,902
A&G-Office supplies & expense - Offsite Storage 9210-04065	4,273	4,133	4,164	4,225	-	8,868	4,275	4,262	4,293	4,317	4,289	4,323	51,424
A&G-Maintenance of general pla - Software Maintenance 9320-04201	6,510	16,916	9,242	11,660	14,893	23,495	19,381	39,379	9,441	11,480	7,989	938	171,324
A&G-Rents - Software Maintenance 9310-04201	2,019	2,017	2,016	2,005	2,026	2,046	2,798	1,341	2,418	1,923	1,922	1,922	24,455
Miscellaneous general expenses - Software Maintenance 9302-04201	5,840	2,923	5,846	2,923	5,911	-	11,686	2,923	5,846	2,923	5,843	5,846	58,508
A&G-Outside services employed - Software Maintenance 9230-04201	0	0	8,785	111	-	-	-	-	-	(5,314)	-	-	3,583
A&G-Office supplies & expense - Software Maintenance 9210-04201	857,681	788,311	809,355	839,559	849,420	872,659	863,599	851,265	873,612	900,889	882,586	1,191,413	10,580,348
Distribution-Other expenses - IT Equipment 8800-04212	53	-	-	-	-	-	-	-	-	-	-	-	53
A&G-Office supplies & expense - IT Equipment 9210-04212	82,328	82,256	62,894	73,118	71,261	74,344	43,938	86,020	75,926	76,648	78,244	74,139	881,116
A&G-Maintenance of general pla - IT Equipment 9320-04212	3,461	419	640	2,013	4,430	3,556	3,564	439	1,497	2,201	2,120	3,397	27,735
Information Technologies	**978,968**	**922,035**	**918,351**	**953,148**	**963,527**	**1,001,109**	**966,841**	**1,016,716**	**1,005,490**	**995,068**	**1,000,282**	**1,298,912**	**12,020,448**
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	12,160	5,897	19,512	10,076	8,487	15,777	15,848	11,008	7,571	21,131	11,799	13,981	153,248
A&G-Office supplies & expense - Long Distance 9210-05312	2,337	(4,805)	1,013	4,327	2,547	2,414	2,813	2,154	2,344	2,593	2,552	2,796	23,083
Miscellaneous general expenses - Long Distance 9302-05312	0	0	0	0	0	10	-	-	-	-	-	-	10
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	884	863	860	1,141	880	872	893	825	819	835	865	1,239	10,976
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	19,769	18,423	20,091	18,871	18,811	18,270	18,375	19,429	23,886	19,293	19,901	18,722	233,841
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	21,417	39,074	60,956	38,596	34,565	46,851	42,078	38,965	47,499	40,905	40,151	52,062	503,118
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	152	156	152	149	153	149	157	151	151	151	153	152	1,827
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	20,068	20,798	20,389	20,343	19,484	20,221	1,334	40,286	21,674	20,654	21,324	10,863	237,438
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	0	235	118	233	-	117	107	327	-	121	121	-	1,378
A&G-Office supplies & expense - Cell service for data uses 9210-05376	3,022	3,040	2,286	2,591	2,154	1,892	693	3,275	2,614	2,341	2,841	3,357	30,105
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	0	0	0	26	-	-	-	-	-	-	-	-	26
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	5,832	6,995	4,717	3,489	4,575	5,527	665	6,794	5,126	200	4,226	2,269	50,416
A&G-Office supplies & expense - Audio Conference 9210-05390	1,224	1,301	1,241	1,240	1,240	1,240	1,246	1,227	1,186	1,178	1,184	1,554	15,060
Telecom	**86,864**	**91,978**	**131,336**	**101,081**	**92,896**	**113,340**	**84,208**	**124,440**	**112,870**	**109,402**	**105,117**	**106,995**	**1,260,525**
A&G-Office supplies & expense - Safety 9210-04018	0	0	0	0	0	0	371	-	-	-	-	-	371
A&G-Office supplies & expense - Promo Other, Misc 9210-04021	1,233	40	4,383	139	5,599	1,378	167	1,869	5,267	5,494	7	2,998	28,575
A&G-Employee pensions and bene - Community Rel&Trade Shows 9260-04040	0	0	0	0	0	0	0	0	0	0	0	450	450
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	1,000	2,070	496	152	(87)	790	267	2,194	6,131	4,413	1,643	1,571	20,642
Sales-Demonstrating and sellin - Advertising 9120-04044	0	1,732	-	-	893	-	-	-	-	275	2,245	-	5,145
A&G-Office supplies & expense - Advertising 9210-04044	204	2,760	2,791	-	-	3,000	3,275	1,191	-	-	10,736	46,711	70,667
Storage-Purification expenses - Advertising 8210-04044	0	0	0	0	0	0	0	0	0	0	0	1,191	1,191
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	0	46	-	-	-	-	-	400	-	-	-	-	446
A&G-Office supplies & expense - Customer Relations & Assist 9210-04046	32,974	5,628	16,435	2,845	1,043	20,736	7,454	16,192	38,554	10,500	22,807	55,832	230,999
Marketing	**35,412**	**12,276**	**24,106**	**3,136**	**7,449**	**25,904**	**11,534**	**21,845**	**49,952**	**20,683**	**37,438**	**108,752**	**358,486**
Miscellaneous general expenses - Director's Fees 9302-04111	285,592	-	20,875	214,692	-	-	95,033	-	140,500	235,539	(150)	-	992,080
Miscellaneous general expenses - Board Meeting Expenses 9302-04112	0	0	0	0	335	315	953	76	-	-	-	114	1,793
A&G-Office supplies & expense - Board Meeting Expenses 9210-04112	0	0	0	0	0	(1,008)	-	-	-	-	-	-	(1,008)
Miscellaneous general expenses - Directors Retirement Expenses 9302-04113	0	0	115,244	-	-	1,689,161	-	-	129,021	-	-	125,621	2,059,047
Miscellaneous general expenses - Newswire/Blast Fax/Mail List 9302-04120	267	2,583	-	275	1,652	-	275	2,203	-	275	2,203	-	9,733
A&G-Office supplies & expense - Newswire/Blast Fax/Mail List 9210-04120	0	0	0	275	-	-	-	-	-	-	-	16,384	16,659
Miscellaneous general expenses - Inv Relations/Bnkg Inst 9302-04121	0	0	0	0	0	100	60,000	-	-	-	125	4,975	65,200
A&G-Office supplies & expense - Annual Report Design, Printing & Dis 9210-04122	44,383	-	124,856	96,618	-	-	-	-	-	-	-	41,000	306,857
A&G-Office supplies & expense - Proxy Solicitation Exp 9210-04125	0	0	0	2,000	-	-	-	-	-	-	-	-	2,000
Miscellaneous general expenses - Proxy Solicitation Exp 9302-04125	8,995	31,809	2,669	110,178	93,312	35,803	1,620	810	810	810	810	810	288,437
Miscellaneous general expenses - Transfer Agent Administration 9302-04126	10,794	4,048	11,709	8,013	12,171	-	14,866	6,234	13,765	6,536	5,873	13,528	107,537
A&G-General advertising expens - Tr & Reg of Bonds/Debt Fee 9301-04127	0	0	0	0	0	0	0	0	49,000	-	-	-	49,000
Miscellaneous general expenses - Tr & Reg of Bonds/Debt Fee 9302-04127	60,580	29,190	100,900	123,000	35,135	-	43,000	34,305	-	53,870	30,830	52,320	563,129
Miscellaneous general expenses - NYSE Fees & Exps 9302-04129	146	74	7,574	115,928	68	68	138	68	68	68	138	68	124,407
A&G-Office supplies & expense - Bank Service Charge 9210-04130	0	(80)	160	-	-	-	-	-	-	-	-	-	80
Miscellaneous general expenses - Reimbursement of Fraud Payments 9302-04135	0	0	0	0	0	0	0	132	95	-	-	-	227
A&G-Office supplies & expense - Analyst Activities 9210-04140	0	17	11,979	-	-	2,726	-	-	593	-	-	450	15,765
Miscellaneous general expenses - Analyst Activities 9302-04140	4,220	-	2,298	3,543	-	4,828	3,543	-	-	5,559	-	6,282	30,273
A&G-Office supplies & expense - Web Site 9210-04141	20	-	-	6,716	974	-	-	320	-	-	-	133,069	141,098
Miscellaneous general expenses - Web Site 9302-04141	0	625	728	-	1,353	677	677	625	728	677	625	728	7,442
Miscellaneous general expenses - Printing/Slides/Graphics 9302-04145	1,018	-	40,387	-	826	947	-	-	-	188	-	2,544	45,909

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
A&G-Office supplies & expense - Printing/Slides/Graphics 9210-04146	0	0	0	0	0	0	0	0	0	0	0	105	105
A&G-Office supplies & expense - Public Relations 9210-04146	1,190	250	3	439	2,269	701	4,731	6,020	6,000	2,233	1,064	88	24,989
Directors & Shareholders &PR	**417,204**	**68,516**	**439,383**	**681,678**	**148,096**	**1,734,317**	**224,837**	**50,792**	**340,580**	**305,754**	**41,518**	**398,084**	**4,850,758**
A&G-Office supplies & expense - Membership Fees 9210-05415	31,592	7,767	8,240	35,699	9,356	9,273	32,557	10,234	5,869	31,768	67,791	12,306	262,452
Miscellaneous general expenses - Membership Fees 9302-05415	375	600	150	495	-	-	-	1,913	1,220	-	130	679	5,562
A&G-Office supplies & expense - Club Dues - Nondeductible 9210-05416	0	0	0	0	110	-	-	-	-	-	-	62	172
A&G-Office supplies & expense - Club Dues - Deductible 9210-05417	0	0	0	0	0	0	0	0	527	5,902	2,000	-	8,429
A&G-Office supplies & expense - Association Dues 9210-07510	0	35	25,000	1,208	5,000	(950)	-	40,830	-	-	50	57,550	128,723
Miscellaneous general expenses - Association Dues 9302-07510	0	3,450	3,450	3,450	3,450	3,450	3,450	3,450	3,450	3,450	3,450	3,450	37,950
A&G-Office supplies & expense - Donations 9210-07520	20	-	-	-	-	-	-	-	-	-	-	-	20
Dues & Donations	**31,987**	**11,852**	**36,840**	**40,852**	**17,916**	**11,773**	**36,007**	**56,427**	**11,066**	**41,120**	**73,421**	**74,047**	**443,308**
Distribution-Other expenses - Postage/Delivery Services 8800-05111	0	0	0	0	0	0	11	-	-	-	-	-	11
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	8,554	7,592	18,480	9,917	11,872	15,468	11,267	9,298	16,088	21,015	11,178	14,404	155,133
A&G-Outside services employed - Postage/Delivery Services 9230-05111	0	0	0	0	0	0	124	-	-	613	-	-	737
Miscellaneous general expenses - Postage/Delivery Services 9302-05111	78	98	51	105	51	227	180	-	-	429	74	129	1,423
A&G-Rents - Postage/Delivery Services 9310-05111	0	0	0	0	0	0	0	0	51	-	-	-	51
Print & Postages	**8,632**	**7,690**	**18,531**	**10,022**	**11,923**	**15,695**	**11,582**	**9,298**	**16,139**	**22,057**	**11,252**	**14,534**	**157,355**
Mains expenses - Meals and Entertainment 8560-05411	0	0	0	0	0	0	39	-	-	-	-	13	53
Distribution-Operation supervi - Meals and Entertainment 8700-05411	21	-	54	-	-	-	-	-	-	462	-	42	598
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	104	-	5	-	-	-	-	-	-	-	109
Customer accounts-Operation su - Meals and Entertainment 9010-05411	0	0	0	0	0	0	44	-	153	98	-	209	504
A&G-Administrative & general s - Meals and Entertainment 9200-05411	12	-	-	-	-	-	-	-	17	-	-	86	115
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	64,662	36,605	69,447	28,220	22,376	46,711	37,663	55,888	43,472	39,335	68,068	71,596	584,044
A&G-Outside services employed - Meals and Entertainment 9230-05411	0	0	0	0	0	0	0	0	0	0	0	311	311
Miscellaneous general expenses - Meals and Entertainment 9302-05411	518	129	102	209	421	554	33	768	1,062	4,674	348	505	9,323
A&G-Rents - Meals and Entertainment 9310-05411	203	177	45	177	-	-	-	-	-	-	-	-	602
A&G-Maintenance of general pla - Meals and Entertainment 9320-05411	0	0	0	0	3,844	-	-	-	-	-	-	59	3,903
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	1,080	2,049	2,172	5,587	129	530	-	762	201	50	60	1,017	13,636
Miscellaneous general expenses - Spousal & Dependent Travel 9302-05412	0	0	0	0	0	0	0	0	0	146	-	-	146
A&G-Administrative & general s - Transportation 9200-05413	392	-	-	-	-	-	-	-	898	-	-	651	1,941
A&G-Office supplies & expense - Transportation 9210-05413	29,665	39,909	23,048	26,738	29,538	55,158	41,577	29,388	46,739	24,591	39,870	63,251	449,474
A&G-Outside services employed - Transportation 9230-05413	0	0	0	0	0	0	0	0	0	0	0	2,203	2,203
Miscellaneous general expenses - Transportation 9302-05413	2,172	901	1,500	1,319	925	2,165	1,657	1,541	5,483	4,073	2,320	2,349	26,405
A&G-Maintenance of general pla - Transportation 9320-05413	0	0	0	0	10	-	-	-	-	-	-	-	10
Mains expenses - Transportation 8560-05413	0	0	0	0	0	0	219	-	-	-	-	237	456
Distribution-Operation supervi - Transportation 8700-05413	0	381	9	-	-	-	25	296	-	-	125	127	963
Customer accounts-Operation su - Transportation 9010-05413	25	-	-	-	-	-	10	-	-	264	-	-	300
A&G-Administrative & general s - Lodging 9200-05414	340	-	-	-	-	-	446	-	251	-	-	-	1,036
A&G-Office supplies & expense - Lodging 9210-05414	26,168	33,830	30,307	20,121	16,314	33,699	34,987	26,208	39,283	17,472	31,780	54,339	364,509
A&G-Outside services employed - Lodging 9230-05414	0	0	0	0	0	0	0	0	0	0	0	381	381
Miscellaneous general expenses - Lodging 9302-05414	1,357	-	482	-	383	1,017	1,234	641	1,640	2,355	648	534	10,291
Mains expenses - Lodging 8560-05414	0	0	0	0	0	0	297	-	-	-	-	246	543
Distribution-Operation supervi - Lodging 8700-05414	0	1,651	-	-	-	-	297	-	-	-	285	-	2,233
Customer accounts-Operation su - Lodging 9010-05414	0	0	0	0	0	0	446	-	-	-	-	-	446
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	1,666	1,335	29,642	9,571	10,421	7,095	(3,447)	17,330	25,324	5,147	5,406	7,753	117,242
Distribution-Operation supervi - Misc Employee Expense 8700-05419	18,271	-	-	-	-	12,079	5,052	-	-	9,216	-	-	44,619
Travel & Entertainment	**146,552**	**116,967**	**156,912**	**91,942**	**84,366**	**159,007**	**120,579**	**132,824**	**164,523**	**107,903**	**148,910**	**205,909**	**1,636,395**
A&G-Office supplies & expense - Employee Development 9210-05420	8,651	11,042	3,182	9,499	8,204	50,572	26,043	29,379	23,408	18,497	13,427	51,996	253,901
Miscellaneous general expenses - Employee Development 9302-05420	0	30	(185)	870	596	31	1,320	394	100	428	-	21	3,604
A&G-Office supplies & expense - Training 9210-05421	1,537	6,256	10,853	9,389	17,260	9,192	13,832	15,357	37,526	8,066	56,106	113,501	298,876
A&G-Office supplies & expense - Books & Manuals 9210-05424	28,316	17,436	6,483	24,616	24,383	15,815	39,594	15,458	43,679	153,916	17,068	21,999	408,764
A&G-Outside services employed - Books & Manuals 9230-05424	0	0	0	0	0	0	0	0	16,675	-	-	-	16,675
Miscellaneous general expenses - Books & Manuals 9302-05424	0	0	2,344	-	662	1,351	4,136	2,656	-	-	4,797	-	15,946
A&G-Office supplies & expense - Regulatory Compliance Training 9210-05425	0	0	0	0	0	0	0	0	0	0	73	7	79
A&G-Office supplies & expense - Safety Training 9210-05426	9,434	23,458	38,967	41,135	41,136	41,199	17,609	11,288	62,795	16,033	22,908	20,067	346,027
A&G-Outside services employed - Safety Training 9230-05426	0	0	0	0	0	0	0	0	34	3	-	-	36
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	(2,505)	939	3,644	2,520	3,837	2,434	10,296	9,849	9,615	19,614	3,082	16,213	79,538
A&G-Outside services employed - Technical (Job Skills) Training 9230-05427	0	0	0	0	0	6,696	650	-	-	-	-	-	7,346
A&G-Office supplies & expense - Computer Skills & Systems Training 9210-05428	0	0	4,637	-	-	-	-	-	-	495	-	-	5,132
Distribution-Operation supervi - Work Environment Training 8700-05429	0	0	0	0	0	0	368	-	-	-	-	-	368
A&G-Office supplies & expense - Work Environment Training 9210-05429	0	0	136	1,773	-	2,175	2,688	-	25	-	486	-	7,283
Training	**45,433**	**59,161**	**70,061**	**89,801**	**96,077**	**129,466**	**116,537**	**84,381**	**193,857**	**217,052**	**117,946**	**223,803**	**1,443,575**
A&G-Injuries & damages - Settlement 9250-05418	0	0	0	0	0	0	0	0	0	0	0	40,000	40,000
Miscellaneous general expenses - Settlement 9302-05418	0	40	-	-	-	-	-	-	-	-	-	-	40
A&G-Office supplies & expense - Gas Supplies Services 9210-05430	0	0	0	0	0	0	0	0	0	11,543	952	-	12,495
Customer service-Miscellaneous - Contract Labor 9100-06111	0	3,029	-	-	-	-	-	-	-	-	-	-	3,029
A&G-Administrative & general s - Contract Labor 9200-06111	2,772	12,792	-	-	3,732	-	-	8,316	-	-	-	-	27,612
A&G-Office supplies & expense - Contract Labor 9210-06111	60,527	147,600	208,413	421,738	179,079	98,268	113,590	133,859	116,601	90,965	239,499	162,416	1,972,556
A&G-Outside services employed - Contract Labor 9230-06111	509,412	498,554	460,010	370,880	546,958	539,775	479,901	551,361	898,066	629,067	670,473	934,934	7,089,391
A&G-General advertising expens - Contract Labor 9301-06111	0	0	0	4,360	-	-	-	-	-	-	-	-	4,360
Miscellaneous general expenses - Contract Labor 9302-06111	28,659	6,184	(17,794)	119,503	(71,321)	13,067	15,231	17,234	13,339	16,747	22,549	26,899	190,296
A&G-Rents - Contract Labor 9310-06111	5,470	4,312	16,023	5,686	6,789	5,299	5,190	7,054	5,891	7,360	5,411	3,635	78,140
A&G-Maintenance of general pla - Contract Labor 9320-06111	0	810	-	-	-	-	1,379	338	-	-	-	-	2,527
A&G-Office supplies & expense - Collection Fees 9210-06112	0	0	0	0	0	0	0	0	0	-	-	-	0
Miscellaneous general expenses - Legal 9302-06121	779	(15)	302	3,023	-	624	-	940	-	-	1,833	-	7,484
A&G-Office supplies & expense - Legal 9210-06121	0	0	0	303	-	-	-	-	-	-	-	-	303
A&G-Outside services employed - Legal 9230-06121	2,498	3,484	3,213	20,528	8,610	8,164	757	4,623	3,134	2,822	11,532	14,541	83,905
Outside Services	**610,116**	**676,790**	**670,166**	**946,020**	**673,847**	**665,196**	**616,048**	**723,725**	**1,037,031**	**758,524**	**952,250**	**1,182,425**	**9,512,138**
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(4,440,435)	(4,875,681)	(4,748,480)	(3,088,874)	(5,092,435)	(4,740,221)	(4,321,278)	(3,254,665)	(5,980,828)	(8,767,439)	(7,774,361)	(198)	(57,084,896)
A&G-Office supplies & expense - Misc General Expense 9210-07590	(251,882)	(40,759)	12,672	2,423	3,019	(351,066)	(141)	(4,682)	(902)	(152)	825	(2,279,826)	(2,910,471)
Miscellaneous general expenses - Misc General Expense 9302-07590	69	-	380	-	273	48	104	-	-	-	-	-	875

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Miscellaneous	(4,692,248)	(4,916,440)	(4,735,427)	(3,086,451)	(5,089,142)	(5,091,239)	(4,321,315)	(3,259,347)	(5,981,730)	(8,767,591)	(7,773,536)	(2,280,024)	(59,994,492)
Total O&M Expenses Before Allocations	6,539,178	5,965,744	3,343,408	10,490,930	5,649,161	7,246,876	5,107,074	5,845,266	10,959,009	6,110,725	1,666,572	10,897,874	79,821,818
Div 2 gross expenses	6,539,178	5,965,744	3,343,408	10,490,930	5,649,161	7,246,876	5,107,074	5,845,266	10,959,009	6,110,725	1,666,572	10,897,874	79,821,818
Div 12 gross expenses	5,367,522	4,686,206	5,122,202	4,991,437	4,630,640	5,012,946	5,016,265	4,967,862	4,893,949	5,310,276	4,726,287	5,578,984	60,304,577
SSU Capital Credits	4,440,435	4,875,681	4,748,460	3,088,874	5,092,435	4,740,221	4,321,278	3,254,665	5,980,828	8,767,439	7,774,361	198	57,084,896
pre-capitalization totals	16,347,135	15,527,631	13,214,090	18,571,241	15,372,236	17,000,044	14,444,618	14,067,794	21,833,786	20,188,440	14,167,220	16,477,056	197,211,291
effective average cap rate	27.16%	31.40%	35.93%	16.63%	33.13%	27.88%	29.92%	23.14%	27.39%	43.43%	54.88%	0.00%	28.95%

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Customer accounts-Operation su - Non-project Labor 9010-01000	42,449	-	-	-	42,449
Customer accounts-Customer rec - Non-project Labor 9030-01000	212,743	146,473	151,701	172,150	683,067
A&G-Administrative & general s - Non-project Labor 9200-01000	4,483,125	3,034,213	3,014,188	3,044,888	13,576,415
A&G-Administrative & general s - Capital Labor 9200-01001	234,500	141,383	137,964	100,831	614,678
Mains expenses - Capital Labor Contra 8560-01002	(5,300)	(4,958)	-	(3,297)	(13,556)
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(26,326)	(13,480)	(16,914)	(8,542)	(65,261)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(167,334)	(108,492)	(100,069)	(76,907)	(452,801)
Mains expenses - O&M Project Labor and Contra 8560-01006	0	236	118	-	353
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	(22,805)	(7,075)	-	-	(29,880)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(57,628)	8,485	24,324	17,809	(7,010)
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(1,099,954)	156,477	447,321	171,460	(324,697)
Mains expenses - Expense Labor Accrual 8560-01008	0	(71)	71	0	-
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	152,106	-	152,106
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	137,956	90,670	67,444	67,652	363,722
Mains expenses - Capital Labor Transfer In 8560-01011	5,300	4,958	-	3,297	13,556
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	26,326	13,480	16,914	8,542	65,261
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(205,122)	(123,561)	(105,340)	(91,577)	(525,600)
Mains expenses - Expense Labor Transfer Out 8560-01014	0	(236)	(118)	-	(353)
Labor	**3,557,930**	**3,338,502**	**3,789,710**	**3,406,307**	**14,092,450**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	263,287	245,421	268,295	252,067	1,029,069
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	138,759	129,344	141,399	132,846	542,347
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(43,816)	(19,403)	(70,006)	(3,167)	(136,393)
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(5,916)	6,403	(21,692)	3,596	(17,609)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	2,004	1,622	(898)	121,946	124,674
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	30,601	29,145	32,066	29,841	121,653
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	626,196	583,704	638,106	599,510	2,447,517
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(131,359)	6,906	63,709	167,040	106,297
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	124,528	116,078	126,896	119,221	486,722
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	3,361	1,277	(2,492)	77,024	79,171
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	3,558	3,317	3,626	3,406	13,906
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	(6,182)	(5,729)	(6,513)	44,621	26,197
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	28,463	26,532	29,005	27,250	111,251
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	28,497	6,041	706	(22,474)	12,771
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	17,790	16,582	18,128	17,032	69,532
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	2,741	4,338	658	(15,183)	(7,446)
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	28,463	26,532	29,005	27,250	111,251
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(1,363)	1,163	(4,597)	(36,261)	(41,059)
Benefits	**1,109,613**	**1,179,274**	**1,245,400**	**1,545,565**	**5,079,851**
A&G-Employee pensions and bene - Service Awards 9260-07421	6,382	24,117	8,720	1,223	40,442
A&G-Office supplies & expense - Uniforms 9210-07443	0	0	119	150	269
A&G-Employee pensions and bene - Education Assistance Program 9260-07447	11,451	9,950	56,065	22,549	100,014
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	245,825	389,459	1,007,000	1,309,000	2,951,284
A&G-Employee pensions and bene - Exec Compensation-Other 9260-07453	27	-	76	27	130
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	453,175	(453,175)	0	0	-
A&G-Employee pensions and bene - Restricted Stock - Long Term Incentl 9260-07458	254,558	289,070	298,706	291,376	1,133,710
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	68,275	178,039	105,675	105,675	457,664
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	10,998	317,314	22,865	11,912	363,089
A&G-Employee pensions and bene - Rabbi Trust Gain/Loss 9260-07486	(62,072)	(63)	(2,433,235)	(573,201)	(3,068,570)
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	(32,942)	(32,942)	(32,942)	(32,942)	(131,768)
A&G-Employee pensions and bene - COLI Loan Interest 9260-07488	81,390	88,029	88,029	88,029	345,476
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	697,811	717,218	696,406	701,652	2,813,087
A&G-Office supplies & expense - Employee Broadcast and Publication 9210-07495	21,680	76,934	23,608	12,781	135,002
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	0	0	64	-	64
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	14,883	7,762	13,851	1,905	38,401
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	0	163	-	3,115	3,278
Miscellaneous general expenses - Misc Employee Welfare Exp 9302-07499	0	0	273	-	273
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	0	0	150	-	150
Employee Welfare	**1,771,440**	**1,611,874**	**(144,571)**	**1,943,251**	**5,181,994**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	13,537	13,537	13,537	13,537	54,148
A&G-Injuries & damages - Insurance-Other 9250-04070	6,521	6,521	6,521	6,609	26,173
A&G-Injuries & damages - Insurance - D&O 9250-07119	144,263	144,263	144,263	144,263	577,051
A&G-Injuries & damages - Insurance - Public Liability 9250-07121	1,470,769	1,475,484	1,475,484	1,475,484	5,897,220
Insurance	**1,635,090**	**1,639,805**	**1,639,805**	**1,639,893**	**6,554,592**
A&G-Office supplies & expense - Building Lease/Rents 9210-04581	2,175	2,175	2,175	2,175	8,699
A&G-Rents - Building Lease/Rents 9310-04581	354,439	354,525	354,506	348,097	1,411,567
A&G-Office supplies & expense - Building Maintenance 9210-04582	45,281	13,170	23,087	6,679	88,216
A&G-Rents - Building Maintenance 9310-04582	41,434	42,418	25,873	28,042	137,766
A&G-Maintenance of general pla - Building Maintenance 9320-04582	1,855	2,183	2,500	1,715	8,253
A&G-Rents - Utilities 9310-04590	19,031	10,426	17,255	17,771	64,483
A&G-Office supplies & expense - Utilities 9210-04590	4,155	4,108	3,988	3,945	16,195

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Rent, Maint., & Utilities	**468,369**	**429,004**	**429,382**	**408,423**	**1,735,179**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	4,632	4,067	5,003	4,164	17,865
Mains and Services Expenses - Vehicle Expense 8740-03004	8,919	4,698	5,947	10,349	29,913
A&G-Office supplies & expense - Vehicle Expense 9210-03004	101	795	273	-	1,169
Mains and Services Expenses - Equipment Lease 8740-04301	24	24	24	24	96
Vehicles & Equip	**13,676**	**9,583**	**11,247**	**14,537**	**49,043**
A&G-Office supplies & expense - Inventory Materials 9210-02001	23,096	16,293	6,769	6,179	52,337
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	0	106	-	28	134
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	6,200	5,317	38,950	3,623	54,090
Miscellaneous general expenses - Non-Inventory Supplies 9302-02005	26	-	-	378	404
A&G-Office supplies & expense - Purchasing Card Charges 9210-02006	(2,159)	-	-	-	(2,159)
Customer accounts-Customer rec - Office Supplies 9030-05010	0	53	-	-	53
A&G-Office supplies & expense - Office Supplies 9210-05010	34,653	36,577	30,887	31,247	133,364
A&G-Rents - Office Supplies 9310-05010	0	23	-	46	69
A&G-Maintenance of general pla - Office Supplies 9320-05010	0	0	254	-	254
Materials & Supplies	**61,816**	**58,370**	**76,859**	**41,501**	**238,546**
A&G-Maintenance of general pla - Offsite Storage 9320-04065	16,379	-	34,382	16,018	66,779
A&G-Office supplies & expense - Offsite Storage 9210-04065	4,221	4,443	4,240	4,234	17,138
A&G-Maintenance of general pla - Software Maintenance 9320-04201	4,983	758	713	10,817	17,271
A&G-Rents - Software Maintenance 9310-04201	1,918	1,918	1,920	1,925	7,682
Miscellaneous general expenses - Software Maintenance 9302-04201	0	30,443	54,315	9,049	93,806
A&G-Outside services employed - Software Maintenance 9230-04201	0	105,121	-	-	105,121
A&G-Office supplies & expense - Software Maintenance 9210-04201	1,095,485	923,685	938,726	900,467	3,858,364
A&G-Office supplies & expense - IT Equipment 9210-04212	78,355	128,703	102,204	104,492	413,754
A&G-Maintenance of general pla - IT Equipment 9320-04212	1,206	-	547	866	2,618
Information Technologies	**1,202,547**	**1,195,072**	**1,137,047**	**1,047,869**	**4,582,534**
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	12,073	10,459	7,658	18,180	48,370
A&G-Office supplies & expense - Long Distance 9210-05312	6,896	(6,638)	(2,779)	(2,631)	(5,151)
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	1,033	1,063	1,038	1,004	4,138
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	20,391	30,766	11,604	(1,478)	61,282
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	39,808	41,645	45,318	40,370	167,141
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	168	-	341	173	682
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	22,161	23,169	21,017	18,456	84,803
A&G-Office supplies & expense - Cell service for data uses 9210-05376	2,754	2,554	2,496	2,328	10,133
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	3,855	8,665	2,612	4,964	20,095
A&G-Office supplies & expense - Audio Conference 9210-05390	2,468	(282)	1,082	1,009	4,277
Telecom	**111,606**	**111,402**	**90,388**	**82,374**	**395,770**
Customer accounts-Customer rec - Promo Other, Misc 9030-04021	0	0	84	-	84
A&G-Office supplies & expense - Promo Other, Misc 9210-04021	0	0	8,345	279	8,623
Miscellaneous general expenses - Community Rel&Trade Shows 9302-04040	0	0	0	1,895	1,895
Sales-Demonstrating and sellin - Community Rel&Trade Shows 9120-04040	0	0	0	2,500	2,500
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	4,080	1,183	3,332	1,326	9,921
A&G-Office supplies & expense - Advertising 9210-04044	158	300	14,086	4,612	19,157
A&G-Office supplies & expense - Customer Relations & Assist 9210-04046	2,160	782	2,777	6,249	11,968
Marketing	**6,398**	**2,265**	**28,624**	**16,861**	**54,147**
Miscellaneous general expenses - Director's Fees 9302-04111	285,592	-	-	235,516	521,109
Miscellaneous general expenses - Board Meeting Expenses 9302-04112	1,189	59	-	-	1,247
Miscellaneous general expenses - Directors Retirement Expenses 9302-04113	0	0	135,852	-	135,852
Miscellaneous general expenses - Newswire/Blast Fax/Mail List 9302-04120	275	2,635	-	284	3,195
A&G-Office supplies & expense - Newswire/Blast Fax/Mail List 9210-04120	312	-	-	-	312
A&G-Office supplies & expense - Annual Report Design, Printing & Dis 9210-04122	3,383	-	88,589	196,770	288,741
A&G-Office supplies & expense - Proxy Solicitation Exp 9210-04125	0	0	2,000	120	2,120
Miscellaneous general expenses - Proxy Solicitation Exp 9302-04125	9,432	-	116,034	203,703	329,169
Miscellaneous general expenses - Transfer Agent Administration 9302-04126	6,706	-	18,315	14,643	39,663
Miscellaneous general expenses - Tr & Reg of Bonds/Debt Fee 9302-04127	11,000	40,859	100,140	195,000	346,999
Miscellaneous general expenses - NYSE Fees & Exps 9302-04129	68	138	68	68	342
A&G-Office supplies & expense - Analyst Activities 9210-04140	0	23	-	-	23
Miscellaneous general expenses - Analyst Activities 9302-04140	3,543	-	4,159	9,076	16,779
A&G-Office supplies & expense - Web Site 9210-04141	1,919	-	16,160	959	19,038
Miscellaneous general expenses - Web Site 9302-04141	677	677	677	-	2,030
Miscellaneous general expenses - Printing/Slides/Graphics 9302-04145	1,364	3,485	40,677	-	45,527
A&G-Office supplies & expense - Public Relations 9210-04146	2,578	465	2,142	157	5,342
Directors & Shareholders &PR	**328,037**	**48,342**	**524,812**	**856,297**	**1,757,488**
A&G-Office supplies & expense - Membership Fees 9210-05415	2,371	10,402	46,693	38,639	98,105
Miscellaneous general expenses - Membership Fees 9302-05415	727	-	690	795	2,212
A&G-Office supplies & expense - Club Dues - Nondeductible 9210-05416	110	20	-	-	130
A&G-Office supplies & expense - Association Dues 9210-07510	0	0	30,575	-	30,575
Miscellaneous general expenses - Association Dues 9302-07510	3,450	-	6,900	3,450	13,800
A&G-Office supplies & expense - Donations 9210-07520	0	2,250	-	250	2,500

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 002)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Dues & Donations	**6,658**	**12,672**	**84,858**	**43,134**	**147,321**
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	10,088	16,361	15,040	7,445	48,935
Miscellaneous general expenses - Postage/Delivery Services 9302-05111	180	149	47	51	427
Print & Postages	**10,269**	**16,510**	**15,087**	**7,496**	**49,362**
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	820	1,515	794	1,766	4,895
A&G-Administrative & general s - Meals and Entertainment 9200-05411	0	110	-	-	110
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	43,403	79,514	35,913	52,870	211,700
Miscellaneous general expenses - Meals and Entertainment 9302-05411	153	213	296	224	887
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	1,319	772	783	2,632	5,505
A&G-Administrative & general s - Transportation 9200-05413	0	842	-	-	842
A&G-Office supplies & expense - Transportation 9210-05413	22,135	37,499	25,725	25,980	111,339
Miscellaneous general expenses - Transportation 9302-05413	1,926	2,213	1,509	87	5,736
Customer accounts-Customer rec - Transportation 9030-05413	1,744	586	412	1,249	3,991
A&G-Administrative & general s - Lodging 9200-05414	0	675	-	-	675
A&G-Office supplies & expense - Lodging 9210-05414	24,368	32,916	16,455	13,269	87,009
Miscellaneous general expenses - Lodging 9302-05414	452	830	274	-	1,556
Customer accounts-Customer rec - Lodging 9030-05414	965	898	-	339	2,202
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	32,522	47,629	(31,007)	4,295	53,438
Distribution-Operation supervi - Misc Employee Expense 8700-05419	0	0	166	-	166
Travel & Entertainment	**129,608**	**206,211**	**51,320**	**102,711**	**489,850**
Customer accounts-Customer rec - Employee Development 9030-05420	0	0	70	3,912	3,982
A&G-Office supplies & expense - Employee Development 9210-05420	13,268	21,102	52,287	(1,607)	85,050
A&G-Outside services employed - Employee Development 9230-05420	0	0	0	21,000	21,000
Miscellaneous general expenses - Employee Development 9302-05420	2,160	55	30	-	2,245
A&G-Office supplies & expense - Training 9210-05421	15,250	22,835	26,582	10,139	74,806
A&G-Office supplies & expense - Books & Manuals 9210-05424	16,744	8,279	18,402	15,708	59,133
Miscellaneous general expenses - Books & Manuals 9302-05424	428	-	2,735	191	3,354
A&G-Office supplies & expense - Safety Training 9210-05426	16,918	41,800	14,350	93,217	166,285
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	600	-	14,959	24,480	40,039
A&G-Outside services employed - Technical (Job Skills) Training 9230-05427	0	0	0	5,188	5,188
A&G-Office supplies & expense - Computer Skills & Systems Training 9210-05428	3,600	-	15,000	1,238	19,838
A&G-Office supplies & expense - Work Environment Training 9210-05429	0	0	235	-	235
Training	**68,968**	**94,071**	**144,650**	**173,464**	**481,154**
A&G-Office supplies & expense - Settlement 9210-05418	0	575	-	-	575
A&G-Office supplies & expense - Contract Labor 9210-06111	198,688	85,875	64,211	213,704	562,478
A&G-Outside services employed - Contract Labor 9230-06111	666,214	637,726	482,477	488,503	2,274,919
Miscellaneous general expenses - Contract Labor 9302-06111	54,875	40,584	25,736	11,104	132,298
A&G-Rents - Contract Labor 9310-06111	7,290	6,183	5,257	6,825	25,555
Miscellaneous general expenses - Legal 9302-06121	5,438	-	-	-	5,438
A&G-Outside services employed - Legal 9230-06121	24,100	25,178	27,486	57,383	134,146
Outside Services	**956,604**	**796,121**	**605,166**	**777,519**	**3,135,411**
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(4,468,359)	(4,428,375)	(4,368,478)	(3,131,812)	(16,397,023)
Customer accounts-Customer rec - Misc General Expense 9030-07590	0	0	226	-	226
A&G-Office supplies & expense - Misc General Expense 9210-07590	1,263	6,740	1,890	(876)	9,016
Miscellaneous general expenses - Misc General Expense 9302-07590	0	64	1,493	-	1,557
Miscellaneous	**(4,467,096)**	**(4,421,571)**	**(4,364,869)**	**(3,132,688)**	**(16,386,224)**
Total O&M Expenses Before Allocations	**6,971,533**	**6,327,506**	**5,364,915**	**8,974,514**	**27,638,468**
Div 2 gross expenses	6,971,533	6,327,506	5,364,915	8,974,514	27,638,468
Div 12 gross expenses	4,409,855	4,403,959	4,811,827	4,636,147	18,261,788
SSU Capital Credits	4,468,359	4,428,375	4,368,478	3,131,812	16,397,023
pre-capitalization totals	15,849,747	15,159,840	14,545,220	16,742,472	62,297,279
effective average cap rate	28.19%	29.21%	30.03%	18.71%	26.32%

Total SSU

	Base	Test	Difference	
Labor	4,000,050	4,213,831	213,781	5.34%
Benefits	1,458,383	1,528,659	70,276	4.82%
Employee Welfare	1,894,915	1,698,936	(195,979)	-10.34%
Insurance	1,040,013	1,076,439	36,426	3.50%
Rent, Maint., & Utilities	437,291	431,037	(6,253)	-1.43%
Vehicles & Equip	8,133	9,228	1,095	13.46%
Materials & Supplies	50,143	56,580	6,437	12.84%
Information Technologies	877,722	863,784	(13,938)	-1.59%
Telecom	170,627	150,224	(20,403)	-11.96%
Marketing	18,242	15,187	(3,055)	-16.75%
Directors & Shareholders &PR	264,517	295,264	30,747	11.62%
Dues & Donations	29,169	29,477	309	1.06%
Print & Postages	12,790	14,973	2,183	17.07%
Travel & Entertainment	152,621	154,903	2,282	1.50%
Training	81,384	73,742	(7,642)	-9.39%
Outside Services	688,397	656,921	(31,476)	-4.57%
Provision for Bad Debt	-	-	-	
Miscellaneous	(3,612,045)	(3,313,964)	298,081	-8.25%
Total O&M Expenses	7,572,350	7,955,221	382,870	5.06%

Div 002

	Base	Test	Difference		Variance Explanation
Labor	2,114,745	2,270,683	155,938	7.37%	Primary drivers include budgeted merit increase and longer than normal vacancies in base period
Benefits	784,290	830,465	46,174	5.89%	Primary drivers include budgeted merit increase and longer than normal vacancies in base period
Employee Welfare	1,848,788	1,662,640	(186,148)	-10.07%	Test year based on FY 2016 budget where assumption of normal (100% of target) incentive payout is anticipated. Incentive compensation is removed from revenue requirement as a ratemaking adjustment.
Insurance	1,036,413	1,076,439	40,026	3.86%	Higher budgeted premiums in test period
Rent, Maint., & Utilities	292,543	293,466	923	0.32%	Change between base and test period is immaterial.
Vehicles & Equip	6,806	7,816	1,010	14.85%	Change between base and test period is immaterial.
Materials & Supplies	45,578	52,134	6,556	14.38%	Change between base and test period is immaterial.
Information Technologies	763,052	861,711	98,660	12.93%	These costs are budgeted in division 002 and recorded to both 002 and 012. The variance for SSU in total is negative.
Telecom	103,957	134,578	30,621	29.46%	These costs are budgeted in division 002 and recorded to both 002 and 012. The variance for SSU in total is negative.
Marketing	18,108	14,952	(3,156)	-17.43%	Change between base and test period is immaterial.
Directors & Shareholders &PR	249,439	279,829	30,390	12.18%	Base period is lower than normal due to timing of bank service charges
Dues & Donations	28,594	28,973	379	1.32%	Change between base and test period is immaterial.
Print & Postages	11,482	13,483	2,002	17.43%	Change between base and test period is immaterial.
Travel & Entertainment	107,059	119,951	12,892	12.04%	Amount necessary to adjust base period to expected level of expense budgeted for test period. Variance for SSU in total is immaterial.
Training	74,288	64,908	(9,381)	-12.63%	Base period higher than normal due to security training for enterprise
Outside Services	540,760	575,481	34,722	6.42%	Amount necessary to adjust base period to expected level of expense budgeted for test period. The variance for SSU in total is negative.
Provision for Bad Debt			-		
Miscellaneous	(3,612,859)	(3,314,643)	298,216	-8.25%	Higher capitalization rate in base period
			-		
Total O&M Expenses	4,413,042	4,972,866	559,823	12.69%	

Div 012

	Base	Test	Difference		Variance Explanation
Labor	1,885,305	1,943,148	57,843	3.07%	Primary driver is budgeted merit increase
Benefits	674,093	698,194	24,101	3.58%	Primary driver is budgeted merit increase
Employee Welfare	46,127	36,296	(9,831)	-21.31%	Test year based on FY 2016 budget where assumption of normal (100% of target) incentive payout is anticipated. Incentive compensation is removed from revenue requirement as a ratemaking adjustment.
Insurance	3,600	-	(3,600)	-100.00%	Change between base and test period is immaterial.
Rent, Maint., & Utilities	144,747	137,571	(7,176)	-4.96%	Change between base and test period is immaterial.
Vehicles & Equip	1,327	1,411	84	6.36%	Change between base and test period is immaterial.
Materials & Supplies	4,566	4,447	(119)	-2.61%	Change between base and test period is immaterial.
Information Technologies	114,670	2,072	(112,598)	-98.19%	These costs are budgeted in division 002 and recorded to both 002 and 012. The variance for SSU in total is negative.
Telecom	66,670	15,646	(51,024)	-76.53%	These costs are budgeted in division 002 and recorded to both 002 and 012. The variance for SSU in total is negative.
Marketing	134	236	102	75.68%	Change between base and test period is immaterial.
Directors & Shareholders &PR	15,078	15,435	357	2.37%	Change between base and test period is immaterial.
Dues & Donations	575	505	(70)	-12.17%	Change between base and test period is immaterial.
Print & Postages	1,308	1,490	181	13.87%	Change between base and test period is immaterial.
Travel & Entertainment	45,561	34,951	(10,610)	-23.29%	Expect normal travel activity to call centers in test year. Base period was higher than normal.
Training	7,095	8,834	1,739	24.51%	Change between base and test period is immaterial.
Outside Services	147,637	81,440	(66,198)	-44.84%	Lower contract labor activity and collection fees related to credit card processing fees expected in test period
Provision for Bad Debt			-		
Miscellaneous	814	679	(135)	-16.62%	Change between base and test period is immaterial.
			-		
Total O&M Expenses	3,159,308	2,982,355	(176,953)	-5.60%	

REQUEST:

Please refer to electronic workpaper "Att30- O&M for KY- Fall 2015 case_updated" provided in response to Staff 1-59 and the tab entitled "Div 12 forecast."

a. Please provide the actual data in the same level of detail and in the same format for each month from October 2011 through the most recent month available in spreadsheet with cells and formulae intact.

b. provide a variance analysis for each category of expense (labor, benefits, employee welfare, etc.) that identifies and describes all reasons for the change projected in the test year compared to the base year. In addition, provide all documents, including studies and/or other analyses developed by the Company to support the change projected in the test year compared to the base year.

RESPONSE:

a) While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 1.

b) Please see the Company's response to AG DR No. 1-05 subpart (b).

ATTACHMENT:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-06_Att1 - Div 012 O&M Oct11-Jan16.xlsx, 10 Pages.

Respondent: Greg Waller

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Customer accounts-Operation su - Non-project Labor 9010-01000	165,330	164,881	249,866	164,912	159,345	162,281	155,107	151,327	221,913	147,909	143,244	142,409	2,028,523
Customer accounts-Customer rec - Non-project Labor 9030-01000	945,654	948,020	1,465,669	1,001,631	947,164	926,537	862,434	845,478	1,293,419	855,649	849,979	850,898	11,792,431
Customer service-Miscellaneous - Non-project Labor 9100-01000	0	5	-	-	-	-	-	-	-	-	-	-	5
A&G-Administrative & general s - Non-project Labor 9200-01000	731,790	724,450	1,085,945	807,095	731,365	685,877	645,284	515,138	909,758	638,901	571,261	590,884	8,637,746
Distribution-Other expenses - Non-project Labor 8800-01000	0	0	0	0	0	0	756	-	-	-	-	-	756
Customer accounts-Operation su - Capital Labor 9010-01001	0	0	0	43	-	-	-	-	-	-	-	-	43
A&G-Administrative & general s - Capital Labor 9200-01001	181,297	191,389	321,416	122,447	296,203	235,709	290,791	357,331	567,853	304,297	356,976	338,791	3,564,504
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(26,214)	(24,428)	(32,289)	(26,449)	(47,036)	(34,750)	(44,520)	(51,619)	(98,989)	(45,118)	(70,734)	(72,272)	(574,417)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(253,420)	(293,454)	(460,382)	(211,983)	(420,095)	(348,101)	(425,347)	(511,013)	(805,360)	(444,550)	(561,964)	(491,397)	(5,247,066)
A&G-Administrative & general s - O&M Project Labor and Contra 9200-01006	0	0	0	0	0	999	97	598	2,846	1,078	5,467	11,890	22,974
Distribution-Other expenses - Expense Labor Accrual 8800-01008	0	0	0	0	0	0	416	(416)	0	0	0	0	-
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	10,356	16,241	(65,936)	16,498	6,004	17,403	4,168	20,620	(68,943)	14,783	19,854	(418)	(9,372)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	53,586	96,103	(376,375)	110,697	28,330	83,923	11,550	117,496	(376,265)	83,907	125,512	3,917	(37,617)
Customer service-Miscellaneous - Expense Labor Accrual 9100-01008	0	3	(3)	0	0	0	0	0	0	0	0	0	-
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	52,880	68,408	(290,744)	102,335	4,756	55,200	12,414	11,911	(209,027)	72,086	59,659	15,600	(44,322)
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	148,708	-	-	-	-	-	(168,014)	-	-	1,305	(18,001)
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	160,859	196,919	332,896	134,140	310,324	234,732	319,497	393,195	646,314	343,860	476,009	408,514	3,957,258
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	26,214	24,428	32,289	26,449	47,036	34,750	44,520	51,619	98,989	45,118	70,734	72,272	574,417
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(88,736)	(94,854)	(173,930)	(44,604)	(186,432)	(122,341)	(184,942)	(239,512)	(408,807)	(203,607)	(271,022)	(255,908)	(2,274,696)
A&G-Administrative & general s - Expense Labor Transfer Out 9200-01014	0	0	0	0	0	(999)	(97)	(598)	(2,846)	(1,078)	(5,467)	(11,890)	(22,974)
Labor	1,959,598	2,018,112	2,217,129	2,203,111	1,876,963	1,931,221	1,692,129	1,661,554	1,602,841	1,813,235	1,769,509	1,604,795	22,350,194
A&G-Employee pensions and bene - Other Benefits Load 9260-01200	685,859	706,339	723,947	486,878	(463,897)	424,149	373,939	367,071	390,730	400,487	389,853	362,932	4,848,288
A&G-Office supplies & expense - Other Benefits Load 9210-01200	0	0	0	0	0	0	0	0	0	0	0	1,022	1,022
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	0	0	0	163,027	638,862	142,023	125,210	122,911	130,833	134,100	130,539	119,652	1,707,156
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	0	0	0	121,169	477,328	105,557	93,062	91,353	97,240	99,669	97,022	88,930	1,271,331
Benefits	685,859	706,339	723,947	771,074	652,293	671,729	592,211	581,335	618,803	634,255	617,415	572,536	7,827,796
A&G-Employee pensions and bene - Service Awards 9260-07421	7,020	3,165	309	3,531	2,097	3,984	2,830	1,451	4,133	5,922	3,987	2,113	40,541
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	0	11,889	-	-	-	-	-	-	-	-	-	-	11,889
A&G-Employee pensions and bene - Restricted Stock - Management Incent 9260-07457	2,145	2,307	-	-	-	-	-	-	-	-	-	-	4,452
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	10,250	9,919	10,747	9,708	7,362	7,869	7,616	24,373	10,915	13,427	10,834	25,568	148,587
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	14,234	13,775	27,799	13,413	10,874	11,624	11,249	15,206	72,525	8,906	9,048	8,505	217,157
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	4,501	6,846	37,190	6,572	4,925	5,264	5,095	5,264	43,550	3,095	3,095	2,996	128,393
Customer accounts-Operation su - Misc Employee Welfare Exp 9010-07499	2,060	(1,892)	-	-	-	-	-	-	-	-	-	-	168
Customer service-Supervision - Misc Employee Welfare Exp 9070-07499	0	0	0	0	0	0	0	548	-	-	-	-	548
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	5,070	15,488	6,599	4,854	13,837	17,657	8,151	7,135	6,280	9,067	9,947	9,888	113,973
A&G-Rents - Misc Employee Welfare Exp 9310-07499	113	202	247	185	586	329	259	(24)	109	30	973	(574)	2,435
Employee Welfare	45,392	61,699	82,890	38,263	39,681	46,727	35,200	53,952	137,511	40,448	37,885	48,494	668,143
A&G-Property insurance - Blueflame Property Insurance 9240-04069	14,372	14,372	14,372	15,915	15,915	15,915	15,915	15,915	15,915	15,915	16,314	16,314	187,152
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	0	71	-	-	-	-	-	-	-	-	-	71
Insurance	14,372	14,372	14,443	15,915	15,915	15,915	15,915	15,915	15,915	15,915	16,314	16,314	187,223
A&G-Rents - Building Lease/Rents 9310-04581	79,879	153,038	37,952	90,254	90,145	90,254	90,254	90,254	90,254	90,145	90,362	90,500	1,083,289
A&G-Office supplies & expense - Building Maintenance 9210-04582	37,442	46,622	30,639	37,878	38,598	41,011	48,565	42,944	40,125	36,503	36,682	47,582	484,609
A&G-Rents - Building Maintenance 9310-04582	830	1,277	1,714	1,127	814	559	1,309	765	942	756	998	1,818	12,908
A&G-Rents - Utilities 9310-04590	717	587	541	607	643	501	595	794	497	832	781	777	7,874
Customer accounts-Customer rec - Utilities 9030-04590	11,357	10,675	10,027	10,027	886	8,253	8,066	9,239	9,162	10,081	11,471	10,987	110,231
Customer service-Miscellaneous - Utilities 9100-04590	0	121	(121)	0	0	0	0	0	0	0	96	-	96
A&G-Office supplies & expense - Utilities 9210-04590	10,884	8,754	14,399	7,113	8,383	8,011	6,738	9,997	10,626	12,932	20,038	9,428	127,303
Rent, Maint., & Utilities	141,109	221,073	95,151	147,006	139,469	148,588	155,547	153,992	151,606	151,249	160,429	161,091	1,826,310
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	671	-	671	671	671	671	671	671	671	671	671	671	7,381
A&G-Office supplies & expense - Vehicle Lease Payments 9210-03002	0	671	-	-	-	-	-	-	-	-	-	-	671
Mains and Services Expenses - Vehicle Expense 8740-03004	434	(64)	198	98	409	672	331	272	247	239	390	114	3,340
Customer accounts-Operation su - Vehicle Expense 9010-03004	20	-	-	-	-	-	-	-	-	-	-	-	20
A&G-Office supplies & expense - Vehicle Expense 9210-03004	27	531	57	12	-	20	91	14	65	20	-	29	865
A&G-Office supplies & expense - Equipment Lease 9210-04301	0	0	0	104	-	-	-	-	-	-	-	-	104
Vehicles & Equip	1,151	1,138	926	885	1,080	1,363	1,093	958	983	930	1,061	814	12,381
Customer accounts-Operation su - Non-Inventory Supplies 9010-02005	0	12	-	-	-	-	-	-	-	-	-	-	12
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	0	0	0	0	0	191	243	-	-	-	-	-	434
A&G-Rents - Non-Inventory Supplies 9310-02005	32	-	-	-	-	-	-	-	-	-	-	-	32
Customer accounts-Operation su - Purchasing Card Charges 9010-02006	6	-	-	(6)	0	0	0	0	0	0	0	0	-
Customer accounts-Operation su - Office Supplies 9010-05010	210	(202)	-	-	-	-	-	-	224	-	-	-	232
Customer accounts-Customer rec - Office Supplies 9030-05010	0	0	0	0	0	0	0	0	22	-	-	-	22
A&G-Office supplies & expense - Office Supplies 9210-05010	9,204	10,258	8,607	9,544	11,371	7,704	(2,735)	8,393	8,267	7,490	8,574	29,631	116,309
Miscellaneous general expenses - Office Supplies 9302-05010	0	0	0	0	0	0	0	258	-	-	-	-	258
A&G-Rents - Office Supplies 9310-05010	0	0	0	0	0	13	-	-	-	-	-	-	13
Storage-Purification expenses - Office Supplies 8210-05010	0	24	-	-	-	-	-	-	-	-	-	-	24
Materials & Supplies	9,452	10,093	8,607	9,538	11,371	7,908	(2,492)	8,651	8,513	7,490	8,574	29,631	117,335
A&G-Maintenance of general pla - Software Maintenance 9320-04201	322,162	317,297	297,754	297,414	298,578	316,491	289,741	264,270	299,264	265,252	264,315	264,279	3,496,816
A&G-Office supplies & expense - Software Maintenance 9210-04201	21,103	21,103	35,392	47,998	26,685	24,582	24,567	43,171	33,376	70,945	70,945	122,245	542,110
A&G-Administrative & general s - Software Maintenance 9200-04201	0	0	0	0	0	0	14,614	-	-	-	-	-	14,614
Distribution-Operation supervi - Software Maintenance 8700-04201	572	572	572	572	572	572	572	572	572	572	572	572	6,859
Distribution-Operation supervi - IT Equipment 8700-04212	0	0	0	11,190	-	-	-	(11,190)	0	0	0	0	-
Customer service-Miscellaneous - IT Equipment 9100-04212	0	0	0	0	168	-	-	-	-	-	-	-	168
A&G-Office supplies & expense - IT Equipment 9210-04212	(4,000)	7,898	3,743	16	-	1,013	943	7,732	1,501	1,222	4,462	17,944	42,475
A&G-Maintenance of general pla - IT Equipment 9320-04212	1,623	1,623	1,623	3,573	2,863	1,623	1,988	1,948	1,948	2,057	1,957	1,948	24,771
Information Technologies	341,459	348,492	339,084	360,763	328,865	344,280	332,424	306,502	336,660	340,047	342,250	406,988	4,127,813
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	35,395	32,165	21,251	47,665	33,127	29,087	26,234	36,336	23,210	30,018	26,509	24,659	365,656
A&G-Office supplies & expense - Long Distance 9210-05312	88	97	77	1,667	1,699	1,755	1,702	1,741	1,821	1,651	1,666	1,688	15,653

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	7,229	8,572	7,511	5,036	6,199	5,795	7,163	5,826	6,873	7,157	6,329	7,829	81,519
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	96,197	15,966	4,476	26,578	12,960	23,339	10,491	20,342	15,874	15,363	15,209	15,337	272,131
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	53,226	47,642	38,688	46,261	41,388	33,038	24,612	35,840	33,759	31,579	32,360	30,585	448,976
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	11,240	10,771	11,148	9,604	76	19,907	-	23,853	10,570	10,595	10,907	10,680	129,351
A&G-Office supplies & expense - Cell service for data uses 9210-05376	401	335	327	331	-	569	-	597	279	278	278	278	3,674
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	79	329	171	325	93	813	92	1,127	1,386	1,745	951	805	7,916
Customer accounts-Customer rec - Cell phone equipment and accessories 9030-05377	0	0	0	0	35	-	-	-	-	-	-	-	35
Telecom	203,855	115,876	83,647	137,467	95,577	114,303	70,294	125,661	93,772	98,388	94,210	91,862	1,324,911
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	0	0	0	0	0	3,300	-	-	1,360	-	-	-	4,660
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	0	0	0	0	0	0	0	0	0	0	750	-	750
Marketing	-	-	-	-	-	3,300	-	-	1,360	-	750	-	5,410
Customer accounts-Customer rec - Bank Service Charge 9030-04130	72,558	6,807	5,051	52,029	6,322	6,592	56,303	6,203	6,616	56,292	6,605	-	281,378
A&G-Office supplies & expense - Bank Service Charge 9210-04130	0	1,083	-	541	541	541	541	1,083	541	-	541	541	5,954
Directors & Shareholders &PR	72,558	7,890	5,051	52,570	6,863	7,133	56,844	7,286	7,158	56,292	7,146	541	287,331
A&G-Office supplies & expense - Membership Fees 9210-05415	16	215	380	180	680	349	150	-	280	50	937	495	3,732
Miscellaneous general expenses - Membership Fees 9302-05415	0	0	0	0	0	0	0	0	0	4,500	-	-	4,500
A&G-Office supplies & expense - Club Dues - Deductible 9210-05417	0	240	-	90	-	75	-	-	-	-	-	-	405
Dues & Donations	16	455	380	270	680	424	150	-	280	4,550	937	495	8,637
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	0	0	14	-	-	-	-	-	-	-	-	-	14
Customer accounts-Operation su - Postage/Delivery Services 9010-05111	0	0	22	-	-	-	-	-	-	-	-	-	22
Customer accounts-Meter readin - Postage/Delivery Services 9020-05111	0	0	6	-	-	-	-	-	-	-	-	-	6
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	2,274	2,203	2,310	3,218	2,693	2,251	1,976	2,887	1,725	1,988	1,917	3,602	29,043
Print & Postages	2,274	2,203	2,352	3,218	2,693	2,251	1,976	2,887	1,725	1,988	1,917	3,602	29,085
Customer accounts-Operation su - Meals and Entertainment 9010-05411	59	-	-	-	-	9	-	-	-	12	-	-	79
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	236	-	100	137	195	61	42	-	267	14	82	1,135
Customer service-Supervision - Meals and Entertainment 9070-05411	0	0	0	0	0	0	0	1,054	-	-	-	-	1,054
A&G-Administrative & general s - Meals and Entertainment 9200-05411	107	-	-	-	-	-	-	-	-	-	-	-	107
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	11,620	13,083	14,662	7,842	10,093	9,430	14,825	18,450	5,765	6,897	13,502	15,987	142,157
A&G-Outside services employed - Meals and Entertainment 9230-05411	400	-	658	707	576	-	606	379	-	79	-	152	3,557
A&G-Rents - Meals and Entertainment 9310-05411	0	0	0	0	158	52	29	32	39	32	36	36	414
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	1,868	-	2,840	330	35	507	15	35	-	60	3,593	321	9,605
A&G-Office supplies & expense - Transportation 9210-05413	12,830	20,205	8,449	10,743	13,630	11,692	18,669	25,103	11,961	10,974	18,565	30,826	193,646
A&G-Outside services employed - Transportation 9230-05413	3,143	-	3,709	6,659	4,344	-	4,077	2,558	-	2,073	-	909	27,472
Customer accounts-Customer rec - Transportation 9030-05413	0	1,834	-	-	574	122	2,706	371	383	31	317	-	6,338
A&G-Office supplies & expense - Lodging 9210-05414	13,950	15,306	6,407	7,619	10,161	9,626	14,894	23,359	5,381	10,425	12,739	19,869	149,734
A&G-Outside services employed - Lodging 9230-05414	1,915	-	2,533	3,952	2,523	-	2,474	1,233	-	988	-	415	16,034
Customer accounts-Customer rec - Lodging 9030-05414	0	1,005	-	-	607	-	5,587	315	168	106	94	-	7,882
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	0	94	60	480	2,408	-	-	2,250	197	66	1,159	222	6,935
Travel & Entertainment	45,891	51,763	39,318	38,432	45,246	31,632	63,944	75,181	23,895	32,009	50,018	68,821	566,149
A&G-Office supplies & expense - Employee Development 9210-05420	2,144	-	1,492	8,250	517	346	3,975	18,253	1,750	3,090	2,495	3,015	45,327
A&G-Administrative & general s - Training 9200-05421	0	0	0	0	0	0	0	0	0	0	14,836	-	14,836
A&G-Office supplies & expense - Training 9210-05421	(425)	225	-	595	-	990	2,685	-	-	475	1,125	-	5,670
A&G-Office supplies & expense - Books & Manuals 9210-05424	0	0	0	63	-	97	68	-	30	-	-	35	293
A&G-Administrative & general s - Technical (Job Skills) Training 9200-05427	0	0	0	0	0	0	0	11,000	-	-	-	-	11,000
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	0	0	0	0	0	0	0	0	2,500	-	-	-	2,500
A&G-Office supplies & expense - Computer Skills & Systems Training 9210-05428	0	0	0	0	0	0	1,100	-	-	-	-	-	1,100
Training	1,719	225	1,492	8,908	517	1,433	7,828	29,253	4,280	3,565	18,456	3,050	80,726
A&G-Injuries & damages - Settlement 9250-05418	0	0	0	0	0	0	0	0	0	0	0	1,665	1,665
A&G-Office supplies & expense - Settlement 9210-05418	0	0	0	0	0	0	0	1,264	258	-	-	-	1,522
Customer accounts-Operation su - Contract Labor 9010-06111	0	0	0	0	0	974	-	-	-	-	-	-	974
A&G-Administrative & general s - Contract Labor 9200-06111	0	0	0	0	0	0	0	0	0	0	0	48,307	48,307
A&G-Office supplies & expense - Contract Labor 9210-06111	125,989	325,309	364,661	267,576	333,447	259,783	201,597	172,265	124,375	76,518	175,559	343,329	2,770,408
A&G-Outside services employed - Contract Labor 9230-06111	77,320	95,608	112,884	91,273	77,591	143,450	83,019	68,086	43,085	48,028	38,988	41,562	920,915
Customer accounts-Customer rec - Legal 9030-06121	0	0	0	0	0	0	0	0	1,000	-	-	-	1,000
A&G-Outside services employed - Legal 9230-06121	180,000	-	-	170,000	50,000	-	-	-	-	-	-	-	400,000
Outside Services	383,308	420,917	477,545	528,850	461,038	404,208	284,616	241,615	168,718	124,546	214,547	434,882	4,144,790
Customer accounts-Operation su - Misc General Expense 9010-07590	0	68	-	-	-	-	-	-	-	-	-	-	68
A&G-Administrative & general s - Misc General Expense 9200-07590	143	-	-	-	-	-	-	-	-	-	-	-	143
A&G-Office supplies & expense - Misc General Expense 9210-07590	1,308	1,847	506	2,303	457	3,517	483	860	229	260	1,327	2,824	15,922
A&G-Office supplies & expense - Use only for HR exp default ***Forme 9210-09195	0	165	268	(433)	0	0	0	0	0	0	0	0	-
Miscellaneous	1,451	2,080	774	1,870	457	3,517	483	860	229	260	1,327	2,824	16,133
Total O&M Expenses Before Allocations	3,909,463	3,982,726	4,092,736	4,318,139	3,678,709	3,735,934	3,308,162	3,265,602	3,174,247	3,325,167	3,342,744	3,446,739	43,580,368

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Customer accounts-Operation su - Non-project Labor 9010-01000	149,399	222,292	152,093	158,237	151,755	155,591	161,649	245,713	131,997	132,195	131,851	134,135	1,924,906
Customer accounts-Meter readin - Non-project Labor 9020-01000	0	0	0	0	0	0	0	0	12,389	5,087	5,087	5,087	27,630
Customer accounts-Customer rec - Non-project Labor 9030-01000	875,615	1,299,627	896,892	954,765	973,289	1,038,868	1,014,659	1,635,201	999,447	981,072	990,804	981,941	12,642,981
A&G-Administrative & general s - Non-project Labor 9200-01000	611,336	953,889	674,027	730,790	709,477	701,749	754,739	1,259,424	869,557	851,885	873,179	862,237	9,852,289
Distribution-Operation supervi - Non-project Labor 8700-01000	0	0	0	803	-	-	-	-	-	-	-	-	803
A&G-Administrative & general s - Capital Labor 9200-01001	400,628	456,794	307,978	166,333	220,984	219,463	196,293	56,608	-	-	-	7,141	2,032,420
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(175,524)	(344,916)	(126,061)	(38,183)	(26,448)	17,318	(14,209)	2,937	-	-	-	-	(705,087)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(612,132)	(695,885)	(460,244)	(293,508)	(422,754)	(393,133)	(401,201)	(122,278)	(2,306)	(1,972)	(4,842)	(32,361)	(3,442,616)
A&G-Administrative & general s - O&M Project Labor and Contra 9200-01006	11,886	17,524	11,396	11,552	11,577	6,677	-	-	-	-	-	-	70,611
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	25,905	(60,060)	8,579	24,679	(2,017)	9,506	19,193	(58,037)	(7,953)	19,879	13,048	7,849	2,570
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	0	0	0	0	0	0	0	0	3,092	(1,057)	509	254	2,798
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	140,243	(352,545)	52,463	160,577	8,335	81,954	88,862	(336,262)	(22,672)	142,567	102,873	44,765	111,161
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	90,946	(232,818)	43,530	123,100	(9,602)	31,471	107,317	(242,939)	7,485	123,365	95,836	37,640	176,534
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	0	0	0	361	-	-	-	-	-	-	-	-	361
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	241,092	-	-	-	-	-	52,771	-	-	(44,605)	249,258
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	526,649	573,496	385,667	213,588	349,138	308,754	326,522	92,710	2,306	1,972	4,842	27,239	2,812,884
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	175,524	344,916	126,061	38,183	26,448	(17,318)	14,209	(2,937)	-	-	-	-	705,087
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(315,345)	(334,405)	(233,400)	(86,413)	(147,368)	(135,084)	(121,814)	(27,039)	-	-	-	(2,019)	(1,402,887)
A&G-Administrative & general s - Expense Labor Transfer Out 9200-01014	(11,886)	(17,524)	(11,396)	(11,552)	(11,577)	(6,677)	-	-	-	-	-	-	(70,611)
Labor	**1,893,444**	**1,830,588**	**2,068,676**	**2,151,312**	**1,831,237**	**2,020,139**	**2,146,419**	**2,505,100**	**2,046,094**	**2,254,992**	**2,212,987**	**2,029,303**	**24,990,291**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	197,564	190,372	190,700	224,675	191,064	210,991	225,374	263,036	209,299	236,774	232,364	217,760	2,589,972
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	131,709	126,915	127,133	149,783	127,376	140,661	150,249	175,357	139,533	157,849	154,909	145,174	1,726,646
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	323,628	311,847	312,384	368,039	312,982	345,624	369,184	430,877	342,852	387,859	380,634	356,712	4,242,621
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	56,328	56,205	56,302	66,333	56,409	62,293	66,539	77,668	61,793	69,905	68,603	64,291	764,658
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	376	363	363	428	364	402	429	501	399	451	443	415	4,933
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	5,645	5,439	5,449	6,419	5,459	6,028	6,439	7,515	5,980	6,765	6,639	6,222	73,999
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	9,408	9,065	9,081	10,699	9,098	10,047	10,732	12,525	9,967	11,275	11,065	10,370	123,332
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	15,052	14,505	14,529	17,118	14,557	16,076	17,171	20,041	15,947	18,040	17,704	16,591	197,331
Benefits	**741,710**	**714,710**	**715,941**	**843,493**	**717,310**	**792,122**	**846,119**	**987,511**	**785,768**	**888,918**	**872,360**	**817,535**	**9,723,495**
A&G-Employee pensions and bene - Service Awards 9260-07421	1,724	1,279	513	644	-	2,557	4,621	2,803	5,558	5,181	426	5,409	30,717
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	0	6,473	-	-	-	-	-	-	-	-	-	-	6,473
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	1,596	8,942	9,227	9,240	8,346	9,240	42,675	14,149	23,196	15,327	15,327	143,242	300,505
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	8,787	8,504	8,773	8,767	7,837	8,767	40,611	12,493	19,944	11,657	11,657	11,281	159,221
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	3,095	19,808	2,970	2,977	2,689	2,977	2,881	2,977	2,881	2,977	2,977	2,881	52,092
Customer accounts-Operation su - Misc Employee Welfare Exp 9010-07499	0	0	0	0	0	0	0	0	0	0	0	530	530
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	0	0	0	0	0	0	0	0	0	0	0	536	536
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	7,520	8,565	8,823	8,703	8,259	12,483	34,838	(20,330)	8,335	12,245	15,756	14,114	119,310
A&G-Rents - Misc Employee Welfare Exp 9310-07499	131	146	99	200	114	119	170	155	165	105	100	157	1,662
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	171	56	-	-	-	-	-	-	-	30	113	-	371
Employee Welfare	**23,025**	**53,773**	**30,405**	**30,551**	**27,345**	**36,163**	**125,796**	**12,247**	**60,080**	**47,524**	**46,357**	**178,150**	**671,417**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	16,314	16,314	16,314	16,772	16,772	16,395	16,803	16,836	16,804	16,805	16,802	16,804	199,737
Insurance	**16,314**	**16,314**	**16,314**	**16,772**	**16,772**	**16,395**	**16,803**	**16,836**	**16,804**	**16,805**	**16,802**	**16,804**	**199,737**
A&G-Rents - Building Lease/Rents 9310-04581	91,617	91,508	91,508	153,572	107,024	107,024	107,321	107,321	107,321	107,321	107,321	107,212	1,286,070
A&G-Office supplies & expense - Building Maintenance 9210-04582	50,778	40,868	43,377	46,916	39,058	71,082	39,670	43,220	42,959	75,342	49,998	56,661	599,928
A&G-Rents - Building Maintenance 9310-04582	529	1,428	607	1,094	1,052	551	274	170	490	766	944	531	8,436
A&G-Rents - Utilities 9310-04590	776	627	826	219	1,333	626	1,696	711	801	645	874	853	9,987
Customer accounts-Customer rec - Utilities 9030-04590	11,299	9,171	8,110	7,933	15,662	7,172	7,907	8,107	9,013	10,065	9,819	10,049	114,308
A&G-Office supplies & expense - Utilities 9210-04590	13,711	10,106	10,635	9,190	8,772	7,781	5,742	7,175	9,123	10,733	14,912	13,883	121,764
Rent, Maint., & Utilities	**168,710**	**153,709**	**155,063**	**218,924**	**172,901**	**194,235**	**162,610**	**166,704**	**169,706**	**204,872**	**183,868**	**189,190**	**2,140,493**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	671	671	671	671	671	671	671	671	671	671	671	198	7,580
Mains and Services Expenses - Vehicle Expense 8740-03004	176	190	435	35	4,139	1,018	137	165	-	170	104	542	7,111
A&G-Office supplies & expense - Vehicle Expense 9210-03004	31	16	20	-	-	15	-	12	25	61	175	21	376
Vehicles & Equip	**878**	**877**	**1,126**	**706**	**4,810**	**1,704**	**808**	**848**	**696**	**902**	**951**	**761**	**15,067**
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	0	0	51	-	223	-	-	-	-	-	9	43	326
A&G-Rents - Non-Inventory Supplies 9310-02005	0	0	0	0	27	-	-	-	-	-	-	-	27
A&G-Office supplies & expense - Purchasing Card Charges 9210-02006	86	-	-	-	-	-	-	-	-	-	-	-	86
Customer accounts-Operation su - Office Supplies 9010-05010	0	0	0	0	0	65	-	146	-	-	-	-	211
Customer accounts-Customer rec - Office Supplies 9030-05010	0	0	0	0	87	-	-	-	-	-	-	43	130
A&G-Office supplies & expense - Office Supplies 9210-05010	6,255	9,770	5,856	8,859	11,265	5,374	12,460	9,838	4,318	3,138	6,366	15,803	99,303
Materials & Supplies	**6,342**	**9,770**	**5,908**	**8,859**	**11,602**	**5,439**	**12,460**	**9,984**	**4,318**	**3,138**	**6,374**	**15,889**	**100,084**
A&G-Maintenance of general pla - Software Maintenance 9320-04201	79,771	40,420	46,918	40,952	17,546	10,329	10,329	537	718	537	699	1,349	250,104
A&G-Office supplies & expense - Software Maintenance 9210-04201	77,770	101,133	601,310	251,726	264,607	268,582	355,003	417,002	270,072	287,718	287,718	287,718	3,470,361
A&G-Administrative & general s - Software Maintenance 9200-04201	0	0	0	0	119,010	-	-	-	-	-	-	-	119,010
Distribution-Operation supervi - Software Maintenance 8700-04201	572	572	572	572	572	572	572	572	572	572	572	572	6,859
Customer accounts-Operation su - IT Equipment 9010-04212	0	0	0	0	0	0	0	0	0	0	0	69	69
A&G-Office supplies & expense - IT Equipment 9210-04212	0	39	3,977	2,477	428	96	1,535	1,457	212	(273)	716	(291)	10,373
A&G-Maintenance of general pla - IT Equipment 9320-04212	1,948	1,948	1,948	2,039	1,955	2,359	-	157	9	2,607	-	-	14,970
Information Technologies	**160,060**	**144,111**	**654,725**	**297,766**	**404,117**	**281,939**	**367,439**	**419,724**	**271,582**	**291,160**	**289,705**	**289,417**	**3,871,746**
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	14,836	18,030	21,037	21,501	19,798	27,125	24,450	14,676	33,537	24,788	20,511	32,860	273,151
A&G-Office supplies & expense - Long Distance 9210-05312	1,709	2,165	1,649	2,173	1,766	1,696	1,747	1,797	2,162	1,714	1,707	1,743	22,017
Customer accounts-Operation su - Long Distance 9010-05312	0	0	0	0	0	0	0	0	0	0	0	1,863	1,863
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	6,099	6,740	7,191	6,971	8,207	8,534	9,491	7,186	8,697	4,709	4,534	4,240	82,598
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	15,337	15,167	2,206	75,931	26,751	24,544	24,544	24,638	24,560	24,560	24,560	43,632	326,431
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	39,525	32,971	32,852	32,532	32,045	33,010	28,372	40,384	37,112	36,704	33,572	33,005	412,085
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	11,130	11,227	-	22,411	272	22,592	11,724	12,920	12,348	165	22,770	11,217	138,796
A&G-Office supplies & expense - Cell service for data uses 9210-05376	279	278	-	641	-	732	278	338	320	-	641	320	3,827
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	1,900	1,786	75	2,899	714	3,702	2,889	3,502	4,440	261	2,927	2,351	27,446

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Customer accounts-Customer rec - Cell phone equipment and accessories 9030-05377	0	0	0	0	0	0	0	0	0	0	0	43	43
Telecom	**90,816**	**88,353**	**65,010**	**165,058**	**89,552**	**121,935**	**103,495**	**105,443**	**123,176**	**92,922**	**111,222**	**131,275**	**1,288,257**
Customer service-Operating inf - Community Rel&Trade Shows 9090-04040	0	0	0	0	0	3,220	(3,220)	0	0	0	0	0	-
Marketing	**0**	**0**	**0**	**0**	**0**	**3,220**	**(3,220)**	**0**	**0**	**0**	**0**	**0**	**-**
Customer accounts-Customer rec - Bank Service Charge 9030-04130	57,261	7,104	-	61,219	-	4,015	45,780	6,740	13,213	49,613	6,752	6,419	258,116
A&G-Office supplies & expense - Bank Service Charge 9210-04130	531	541	541	569	541	541	606	541	541	541	541	541	6,578
A&G-Office supplies & expense - Public Relations 9210-04146	6,000	-	-	-	-	-	-	-	-	-	-	-	6,000
Directors & Shareholders &PR	**63,792**	**7,645**	**541**	**61,788**	**541**	**4,556**	**46,386**	**7,281**	**13,754**	**50,154**	**7,294**	**6,960**	**270,694**
A&G-Office supplies & expense - Membership Fees 9210-05415	50	50	430	215	140	50	1,124	410	50	50	299	5,166	8,034
A&G-Office supplies & expense - Club Dues - Deductible 9210-05417	0	0	0	200	-	-	-	-	-	-	-	-	200
A&G-Office supplies & expense - Association Dues 9210-07510	0	0	0	0	0	0	0	655	-	-	50	230	935
Dues & Donations	**50**	**50**	**430**	**415**	**140**	**50**	**1,124**	**1,065**	**50**	**50**	**349**	**5,396**	**9,169**
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	0	0	0	11	-	-	-	-	292	40	679	-	1,022
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	1,505	1,778	1,107	2,908	1,875	2,393	2,606	2,293	1,960	2,062	2,160	3,828	26,477
Print & Postages	**1,505**	**1,778**	**1,107**	**2,920**	**1,875**	**2,393**	**2,606**	**2,293**	**2,251**	**2,102**	**2,839**	**3,828**	**27,499**
Distribution-Operation supervi - Meals and Entertainment 8700-05411	0	0	0	0	0	0	0	0	0	489	164	91	744
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	0	0	0	0	0	0	35	-	35
Customer accounts-Operation su - Meals and Entertainment 9010-05411	0	0	120	-	-	280	(280)	-	-	-	-	8,372	8,492
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	0	0	0	0	0	0	0	0	0	0	67	-	67
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	0	14	55	7	311	88	121	-	-	-	6,758	7,353
Customer accounts-Miscellaneou - Meals and Entertainment 9050-05411	0	0	0	0	0	0	0	0	0	0	46	-	46
Customer service-Supervision - Meals and Entertainment 9070-05411	0	0	0	320	-	-	-	-	-	-	-	-	320
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	12,316	8,131	9,260	18,236	35,432	35,919	22,057	64,512	20,933	14,411	35,280	26,814	303,303
A&G-Outside services employed - Meals and Entertainment 9230-05411	0	402	191	370	280	309	384	928	343	-	-	-	3,208
A&G-Rents - Meals and Entertainment 9310-05411	31	30	-	83	48	31	65	135	67	118	81	-	690
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	0	9	-	-	-	-	-	-	3,523	1,004	401	5,035	9,973
A&G-Office supplies & expense - Transportation 9210-05413	12,355	14,480	17,518	24,735	30,310	17,001	13,271	15,703	23,309	17,782	31,746	34,759	252,969
A&G-Outside services employed - Transportation 9230-05413	0	3,231	1,272	3,116	1,716	1,781	2,203	5,179	2,224	-	-	-	20,721
Customer accounts-Operation su - Transportation 9010-05413	0	0	0	0	0	0	0	0	0	0	0	2,466	2,466
Customer accounts-Meter readin - Transportation 9020-05413	0	0	0	0	0	0	0	0	0	0	380	-	380
Customer accounts-Customer rec - Transportation 9030-05413	150	-	-	-	-	899	1,375	173	424	-	-	3,116	6,136
Customer accounts-Miscellaneou - Transportation 9050-05413	0	0	0	0	0	0	0	0	0	0	929	-	929
A&G-Office supplies & expense - Lodging 9210-05414	6,202	9,298	10,680	38,672	43,775	10,001	6,461	18,554	17,729	1,019	19,012	24,331	205,734
A&G-Outside services employed - Lodging 9230-05414	0	2,111	729	1,707	1,447	776	1,370	2,022	2,717	-	-	-	12,880
Distribution-Operation supervi - Lodging 8700-05414	0	0	0	0	0	0	0	0	0	0	534	267	800
Customer accounts-Operation su - Lodging 9010-05414	0	0	0	0	0	0	0	0	0	0	0	6,333	6,333
Customer accounts-Meter readin - Lodging 9020-05414	0	0	0	0	0	0	0	0	0	0	158	-	158
Customer accounts-Customer rec - Lodging 9030-05414	0	0	0	0	0	1,273	1,229	224	345	-	-	2,499	5,570
Customer accounts-Miscellaneou - Lodging 9050-05414	0	0	0	0	0	0	0	0	0	0	281	-	281
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	20	8	10,024	757	9,318	662	279	-	-	3,550	7,410	1,020	33,047
Travel & Entertainment	**31,073**	**37,701**	**49,808**	**88,050**	**122,333**	**69,242**	**48,502**	**107,551**	**71,615**	**38,373**	**96,524**	**121,861**	**882,634**
A&G-Office supplies & expense - Employee Development 9210-05420	11,369	89	-	45	9,032	-	1,566	500	3,750	11,924	16,160	12,778	67,212
A&G-Office supplies & expense - Training 9210-05421	0	0	0	0	3,375	-	-	-	20	-	5,020	50	8,465
A&G-Office supplies & expense - Books & Manuals 9210-05424	0	48	-	-	16	165	11	-	-	-	110	-	348
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	0	0	0	0	0	2,121	-	-	-	-	-	-	2,121
Training	**11,369**	**137**	**-**	**45**	**12,422**	**2,285**	**1,577**	**500**	**3,770**	**11,924**	**21,290**	**12,828**	**78,147**
A&G-Injuries & damages - Settlement 9250-05418	0	0	0	295	-	-	-	-	-	-	-	-	295
A&G-Administrative & general s - Contract Labor 9200-06111	0	2,040	-	-	-	-	-	-	-	-	-	66,072	68,112
A&G-Office supplies & expense - Contract Labor 9210-06111	232,935	352,585	458,850	417,656	375,272	297,339	281,038	239,762	227,660	199,811	614,638	605,011	4,302,557
A&G-Outside services employed - Contract Labor 9230-06111	43,141	38,462	35,979	58,446	57,282	65,603	62,854	80,720	21,673	3,050	742	27,961	495,911
Customer accounts-Customer rec - Collection Fees 9030-06112	0	0	0	0	0	0	0	0	0	0	0	11,270	11,270
Outside Services	**276,076**	**393,087**	**494,829**	**476,397**	**432,554**	**362,941**	**343,892**	**320,481**	**249,333**	**202,861**	**615,380**	**710,314**	**4,878,145**
Customer accounts-Operation su - Misc General Expense 9010-07590	0	0	0	0	0	0	0	0	0	0	0	1,209	1,209
A&G-Office supplies & expense - Misc General Expense 9210-07590	1,251	609	242	604	987	412	351	3,209	1,941	568	3,007	1,507	14,689
Miscellaneous general expenses - Vendor Comp Sales Tax 9302-07592	0	0	0	0	0	0	0	0	0	75	-	-	75
A&G-Office supplies & expense - Use only for HR exp default ***Forme 9210-09195	0	0	1,901	-	-	-	(1,901)	0	0	0	0	0	-
Miscellaneous	**1,251**	**609**	**2,143**	**604**	**987**	**412**	**(1,550)**	**3,209**	**1,941**	**643**	**3,007**	**2,717**	**15,973**
Total O&M Expenses Before Allocations	3,486,417	3,453,213	4,282,027	4,363,660	3,846,497	3,915,171	4,221,268	4,666,778	3,820,938	4,107,340	4,487,310	4,532,228	49,162,846

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Customer accounts-Operation su - Non-project Labor 9010-01000	476,233	678,123	455,843	451,021	446,662	454,980	596,252	656,833	435,145	478,027	412,011	413,477	5,956,608
Customer accounts-Customer rec - Non-project Labor 9030-01000	1,749,273	2,613,426	1,734,519	1,848,303	1,773,046	1,777,121	1,725,476	2,596,746	1,709,483	1,706,685	1,739,819	1,732,599	22,706,496
A&G-Administrative & general s - Non-project Labor 9200-01000	277,442	409,127	244,254	283,807	241,889	270,199	261,012	407,297	256,493	288,580	310,967	285,561	3,536,630
A&G-Administrative & general s - Capital Labor 9200-01001	484	31,154	47,603	36,388	51,082	37,696	42,940	74,112	43,569	38,211	33,339	41,736	478,316
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(3,029)	(3,938)	-	-	-	-	-	-	-	-	-	-	(6,968)
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(15,069)	(44,210)	(66,588)	(50,330)	(77,082)	(84,277)	(80,401)	(128,007)	(76,284)	(81,913)	(84,890)	(75,304)	(844,334)
A&G-Administrative & general s - O&M Project Labor and Contra 9200-01006	0	0	27	-	-	-	-	-	-	-	-	-	27
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	259,589	(220,342)	46,525	65,966	(1,179)	25,908	46,303	(187,191)	21,192	62,069	13,394	42,081	174,312
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	(2,798)	-	-	-	-	-	-	-	-	-	-	-	(2,798)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	684,424	(788,920)	171,511	292,406	(12,865)	90,894	144,143	(686,769)	80,054	255,164	101,901	169,650	499,492
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(280,020)	(126,022)	17,292	42,597	(7,132)	27,665	21,048	(106,084)	13,374	52,913	25,622	15,853	(302,893)
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	(8,335)	-	-	-	-	-	(91,649)	-	-	40,029	(59,955)
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	14,585	38,242	31,616	23,964	42,187	38,695	54,639	84,451	48,836	56,600	63,507	52,999	550,321
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	3,029	3,938	-	-	-	-	-	-	-	-	-	-	6,968
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	0	(25,187)	(12,631)	(10,022)	(16,207)	(12,114)	(17,178)	(30,556)	(16,120)	(12,897)	(11,956)	(19,434)	(184,302)
A&G-Administrative & general s - Expense Labor Transfer Out 9200-01014	0	0	(27)	-	-	-	-	-	-	-	-	-	(27)
Labor	**3,164,142**	**2,565,392**	**2,661,608**	**2,984,101**	**2,442,321**	**2,646,767**	**2,794,235**	**2,678,833**	**2,424,091**	**2,843,438**	**2,603,714**	**2,699,251**	**32,507,893**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	268,952	218,058	226,945	247,105	207,597	224,975	225,607	225,442	213,838	237,442	221,316	226,034	2,743,312
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	206,833	169,316	176,216	191,870	161,193	174,687	175,177	175,049	166,039	184,367	171,845	175,509	2,130,101
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	553,726	448,944	467,240	508,746	427,406	463,184	464,485	464,145	440,254	488,852	455,650	465,364	5,647,995
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	101,253	82,093	85,438	93,028	78,154	84,697	84,934	84,872	80,504	89,390	83,319	85,095	1,032,776
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	9,492	7,696	8,010	8,721	7,327	7,940	7,963	7,957	7,547	8,380	7,811	7,978	96,823
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	9,492	7,696	8,010	8,721	7,327	7,940	7,963	7,957	7,547	8,380	7,811	7,978	96,823
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	15,821	12,827	13,350	14,536	12,212	13,234	13,271	13,261	12,579	13,967	13,019	13,296	161,371
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	25,313	20,523	21,360	23,257	19,539	21,174	21,234	21,218	20,126	22,348	20,830	21,274	258,194
Benefits	**1,192,882**	**967,153**	**1,006,568**	**1,095,984**	**920,755**	**997,831**	**1,000,634**	**999,901**	**948,434**	**1,053,126**	**981,600**	**1,002,527**	**12,167,395**
A&G-Employee pensions and bene - Service Awards 9260-07421	6,776	4,457	8,958	1,457	1,905	1,628	3,474	958	1,948	2,742	7,211	3,249	44,762
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	0	6,753	-	-	-	-	-	-	-	-	-	-	6,753
A&G-Employee pensions and bene - Restricted Stock - Long Term Incentl 9260-07458	14,411	16,560	17,112	17,112	15,456	(3,776)	41,590	72,773	55,596	13,179	13,179	18,768	291,959
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	11,657	11,281	11,658	11,657	10,529	(7,674)	21,926	50,869	11,707	12,997	12,997	12,578	172,204
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	2,977	22,877	2,575	2,575	2,326	2,575	14,352	1,909	1,848	1,994	1,994	1,930	59,933
Customer accounts-Customer rec - SERP Capitalized 9030-07490	0	0	0	0	0	0	0	0	16	-	-	-	16
A&G-Office supplies & expense - Employee Broadcast and Publication 9210-07495	0	0	0	0	0	0	0	0	0	1,700	140	-	1,840
Customer accounts-Operation su - Misc Employee Welfare Exp 9010-07499	0	114	1,228	472	379	766	1,811	989	623	178	956	1,499	9,013
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	43	69	355	468	-	108	-	-	1,874	-	1,326	3,976	8,219
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	8,850	15,611	8,650	8,395	7,447	8,482	6,053	11,725	3,850	16,318	8,323	14,488	118,190
A&G-Rents - Misc Employee Welfare Exp 9310-07499	102	105	51	131	136	142	21	63	62	436	19	135	1,404
Employee Welfare	**44,816**	**77,827**	**50,586**	**42,267**	**38,178**	**2,251**	**89,228**	**139,306**	**77,523**	**49,544**	**46,144**	**56,621**	**714,293**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	0	0	0	77,568	16,804	10,882	10,882	10,882	10,882	10,882	10,882	10,882	170,543
Insurance	**0**	**0**	**0**	**77,568**	**16,804**	**10,882**	**10,882**	**10,882**	**10,882**	**10,882**	**10,882**	**10,882**	**170,543**
A&G-Rents - Building Lease/Rents 9310-04581	149,986	149,877	149,877	149,769	149,877	150,201	150,201	150,201	150,309	150,201	150,201	150,201	1,800,900
Customer accounts-Customer rec - Building Maintenance 9030-04582	0	0	0	0	0	0	0	1,055	-	-	-	-	1,055
A&G-Office supplies & expense - Building Maintenance 9210-04582	36,462	55,148	57,230	40,741	44,879	50,480	59,423	55,198	43,419	38,929	36,894	52,581	571,383
A&G-General advertising expens - Building Maintenance 9301-04582	0	0	0	0	0	225	19	-	-	-	-	-	244
A&G-Rents - Building Maintenance 9310-04582	549	1,117	1,544	1,522	3,844	1,480	847	982	951	592	670	363	14,460
Customer accounts-Operation su - Building Maintenance 9010-04582	0	0	0	1,379	-	-	-	-	-	87	-	-	1,466
A&G-Rents - Utilities 9310-04590	874	747	916	849	703	516	700	684	652	716	752	698	8,807
Customer accounts-Customer rec - Utilities 9030-04590	9,131	7,572	7,280	7,449	6,748	7,079	7,756	7,908	9,438	9,520	9,601	10,694	100,176
A&G-Office supplies & expense - Utilities 9210-04590	14,683	10,677	8,554	13,309	7,673	8,604	9,102	8,709	11,198	13,996	12,878	15,994	135,377
A&G-Office supplies & expense - Misc Rents 9210-04592	0	0	0	0	0	0	65	5	-	-	-	-	70
Rent, Maint., & Utilities	**211,685**	**225,140**	**225,401**	**215,019**	**213,724**	**218,584**	**228,111**	**224,741**	**215,967**	**214,040**	**210,995**	**230,531**	**2,633,938**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	1,499	1,060	2,619	1,051	2,213	1,883	1,465	(8,426)	851	851	851	849	6,767
Mains and Services Expenses - Vehicle Expense 8740-03004	560	1,828	787	773	380	893	482	271	644	862	472	587	8,538
Customer accounts-Operation su - Vehicle Expense 9010-03004	0	0	0	0	0	0	0	0	0	0	0	48	48
Customer accounts-Customer rec - Vehicle Expense 9030-03004	0	0	0	0	0	0	0	10	-	-	275	-	285
A&G-Office supplies & expense - Vehicle Expense 9210-03004	83	57	29	16	-	-	36	-	20	95	190	100	627
Vehicles & Equip	**2,142**	**2,945**	**3,435**	**1,840**	**2,593**	**2,776**	**1,983**	**(8,145)**	**1,515**	**1,809**	**1,788**	**1,584**	**16,264**
Customer accounts-Operation su - Non-Inventory Supplies 9010-02005	43	-	-	-	-	-	-	-	-	20	-	-	64
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	0	12	-	-	-	-	-	-	10	-	-	-	22
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	16	3	32	58	-	-	-	-	-	45	31	-	185
Customer accounts-Operation su - Office Supplies 9010-05010	139	249	132	121	89	85	238	295	277	195	295	930	3,046
Customer accounts-Customer rec - Office Supplies 9030-05010	723	47	163	664	1,137	858	326	672	133	627	522	377	6,250
A&G-Office supplies & expense - Office Supplies 9210-05010	7,385	5,580	4,923	5,091	5,171	4,008	4,294	5,315	4,017	9,463	4,559	12,141	71,948
Distribution-Operation supervi - Office Supplies 8700-05010	33	-	-	-	-	49	-	-	-	45	-	-	127
Distribution-Other expenses - Office Supplies 8800-05010	0	0	0	0	0	0	0	0	0	1,161	-	-	1,161
Materials & Supplies	**8,339**	**5,891**	**5,250**	**5,934**	**6,398**	**5,001**	**4,859**	**6,283**	**4,437**	**11,557**	**5,407**	**13,448**	**82,803**
A&G-Maintenance of general pla - Software Maintenance 9320-04201	537	920	3,858	809	537	886	(166)	599	87	2,523	250	6,108	16,947
A&G-Outside services employed - Software Maintenance 9230-04201	0	0	0	0	0	0	0	216	-	-	-	-	216
A&G-Office supplies & expense - Software Maintenance 9210-04201	272,452	263,508	265,769	269,454	269,876	269,589	267,071	268,748	268,748	273,687	282,178	282,910	3,253,991
Distribution-Operation supervi - Software Maintenance 8700-04201	572	572	572	572	572	572	572	572	572	572	572	572	6,859
Customer accounts-Operation su - Software Maintenance 9010-04201	0	0	0	0	0	0	0	0	0	0	0	159	159
Customer accounts-Operation su - IT Equipment 9010-04212	0	0	0	0	0	0	0	250	-	35	-	-	285
Customer accounts-Customer rec - IT Equipment 9030-04212	0	0	280	280	280	491	18,966	280	(18,391)	280	280	303	3,048
A&G-Office supplies & expense - IT Equipment 9210-04212	4,257	605	466	354	283	312	5,259	18,548	277	277	6,606	2,450	39,693
Miscellaneous general expenses - IT Equipment 9302-04212	0	105	-	-	-	-	-	-	-	-	-	-	105
A&G-Maintenance of general pla - IT Equipment 9320-04212	309	264	3,389	659	54	-	1,365	216	13	98	-	1,136	7,503
Information Technologies	**278,126**	**265,973**	**274,333**	**272,128**	**271,602**	**271,849**	**293,067**	**289,429**	**251,305**	**277,471**	**289,886**	**293,637**	**3,328,805**

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	21,604	26,049	24,350	29,376	26,293	24,608	24,329	32,012	31,398	28,853	20,274	39,935	329,082
A&G-Office supplies & expense - Long Distance 9210-05312	1,708	1,699	1,804	1,764	3,825	2,135	2,011	1,775	1,889	1,856	1,882	2,085	24,413
Customer accounts-Operation su - Long Distance 9010-05312	0	0	0	0	15	-	10	-	-	-	-	38	63
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	5,726	5,311	7,017	6,068	12,540	6,614	162,009	6,392	6,052	6,204	7,265	8,477	239,675
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	26,528	28,708	28,563	28,040	27,987	27,987	10,266	26,853	25,097	25,631	25,141	25,097	305,897
Customer accounts-Operation su - Telecom Maintenance & Repair 9010-05316	0	167	-	-	-	-	-	-	-	-	-	-	167
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	48,305	30,053	54,758	55,536	45,512	59,726	25,140	61,067	41,007	55,123	45,578	43,681	565,486
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	11,672	11,602	116	23,665	10,766	11,656	9,875	11,473	9,864	10,532	10,368	10,736	132,325
A&G-Office supplies & expense - Cell service for data uses 9210-05376	320	320	-	643	320	322	370	356	349	350	351	290	3,991
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	249	2,166	76	2,189	1,243	1,054	1,163	2,057	588	1,590	1,131	12	13,517
Customer accounts-Operation su - Cell phone equipment and accessories 9010-05377	108	58	30	86	-	97	192	141	65	43	96	-	916
Customer accounts-Customer rec - Cell phone equipment and accessories 9030-05377	0	0	57	-	-	-	-	96	-	-	-	-	154
Telecom	**116,221**	**106,134**	**116,770**	**147,365**	**128,500**	**134,201**	**235,364**	**142,223**	**116,309**	**130,181**	**112,086**	**130,331**	**1,615,685**
A&G-Office supplies & expense - Promo Other, Misc 9210-04021	0	0	0	0	600	-	-	-	-	-	-	-	600
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	0	0	0	970	700	-	-	76	350	-	-	625	2,721
Customer accounts-Operation su - Community Rel&Trade Shows 9010-04040	0	0	0	0	0	0	232	48	-	-	-	-	280
Marketing	**-**	**-**	**-**	**970**	**1,300**	**-**	**232**	**124**	**350**	**-**	**-**	**625**	**3,601**
Customer accounts-Customer rec - Bank Service Charge 9030-04130	51,567	(3,389)	(2,757)	9,816	1,198	6,028	17,716	(3,556)	(2,587)	42,180	2,229	6,487	124,929
A&G-Office supplies & expense - Bank Service Charge 9210-04130	541	541	576	541	541	541	541	550	550	550	550	550	6,573
A&G-Office supplies & expense - Printing/Slides/Graphics 9210-04145	0	0	0	0	0	0	0	0	0	279	(279)	0	-
Directors & Shareholders &PR	**52,108**	**(2,848)**	**(2,181)**	**10,356**	**1,739**	**6,569**	**18,257**	**(3,006)**	**(2,037)**	**43,009**	**2,500**	**7,037**	**131,502**
Customer accounts-Operation su - Membership Fees 9010-05415	0	0	250	185	249	-	25	-	641	235	895	-	2,480
A&G-Office supplies & expense - Membership Fees 9210-05415	50	3,000	280	-	90	423	220	-	-	150	-	5,750	9,963
Customer accounts-Customer rec - Club Dues - Nondeductible 9030-05416	0	176	-	-	-	-	-	-	-	-	-	-	176
Customer accounts-Operation su - Club Dues - Deductible 9010-05417	0	0	312	-	-	-	-	-	-	-	-	-	312
A&G-Office supplies & expense - Association Dues 9210-07510	0	0	0	0	0	0	0	0	0	0	0	5,750	5,750
Customer accounts-Customer rec - Association Dues 9030-07510	0	0	0	141	-	-	-	-	-	-	-	-	141
Dues & Donations	**50**	**3,176**	**842**	**326**	**339**	**423**	**245**	**-**	**641**	**385**	**895**	**11,500**	**18,822**
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	55	-	-	-	-	-	22	-	29	43	14	-	162
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	1,661	1,355	1,541	1,742	1,866	2,587	1,229	1,731	1,976	1,067	2,109	3,511	22,376
Print & Postages	**1,716**	**1,355**	**1,541**	**1,742**	**1,866**	**2,587**	**1,251**	**1,731**	**2,005**	**1,110**	**2,123**	**3,511**	**22,538**
Distribution-Operation supervi - Meals and Entertainment 8700-05411	0	0	307	-	-	4	-	-	-	-	227	-	538
Customer accounts-Operation su - Meals and Entertainment 9010-05411	3,081	4,940	11,400	5,467	5,885	8,737	9,277	13,591	8,180	16,031	19,354	20,092	126,035
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	0	0	0	0	0	1,416	-	-	-	-	-	-	1,416
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	2,644	1,366	5,856	4,541	618	3,759	2,897	1,688	3,960	18,816	8,278	10,146	64,568
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	7,783	3,996	15,774	9,913	7,177	7,803	6,462	12,468	6,805	11,773	8,725	15,935	114,615
A&G-Rents - Meals and Entertainment 9310-05411	68	-	34	34	-	-	68	34	34	-	34	-	306
Customer accounts-Operation su - Spousal & Dependent Travel 9010-05412	0	0	599	63	158	-	-	-	-	-	141	1,276	2,238
Customer accounts-Customer rec - Spousal & Dependent Travel 9030-05412	0	0	30	-	-	-	-	-	930	-	171	-	1,130
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	0	0	1,761	140	7	-	-	99	-	2,900	1,078	389	6,373
A&G-Office supplies & expense - Transportation 9210-05413	11,294	5,462	10,568	2,557	8,993	9,513	11,563	12,448	5,353	18,603	14,091	15,036	125,485
Distribution-Operation supervi - Transportation 8700-05413	0	0	0	0	474	-	-	-	-	-	-	-	474
Customer accounts-Operation su - Transportation 9010-05413	2,684	6,762	8,013	3,179	9,534	18,009	13,713	16,924	20,673	11,886	15,082	22,660	149,120
Customer accounts-Customer rec - Transportation 9030-05413	2,422	1,284	395	1,455	708	5,378	3,116	2,387	2,390	9,071	6,052	3,050	37,708
A&G-Office supplies & expense - Lodging 9210-05414	10,775	5,773	5,166	726	2,573	2,627	11,456	4,656	7,406	8,663	6,986	12,133	78,938
Distribution-Operation supervi - Lodging 8700-05414	0	0	0	0	0	223	-	-	-	-	-	-	223
Customer accounts-Operation su - Lodging 9010-05414	2,226	3,052	9,249	2,634	4,734	21,331	9,387	5,855	7,012	4,382	30,531	11,448	111,840
Customer accounts-Customer rec - Lodging 9030-05414	1,729	2,152	560	688	289	2,164	718	920	5,620	5,759	4,000	3,692	28,289
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	21	-	-	-	-	-	-	-	62	3,749	-	54	3,887
Customer accounts-Operation su - Misc Employee Expense 9010-05419	0	54	-	-	-	-	-	-	-	-	-	-	54
Customer accounts-Customer rec - Misc Employee Expense 9030-05419	0	0	61	-	-	-	-	-	-	14	-	-	75
Travel & Entertainment	**44,728**	**34,843**	**69,772**	**31,398**	**41,149**	**80,964**	**68,657**	**71,070**	**68,425**	**111,647**	**114,748**	**115,912**	**853,312**
Customer accounts-Operation su - Employee Development 9010-05420	0	0	35	1,390	-	995	795	5,964	1,965	655	4,668	-	16,467
Customer accounts-Customer rec - Employee Development 9030-05420	0	0	0	0	0	0	0	0	0	350	1,255	-	1,605
A&G-Office supplies & expense - Employee Development 9210-05420	0	0	1,350	1,390	7,460	-	775	159	-	3,790	-	13,600	28,524
Customer accounts-Operation su - Training 9010-05421	0	0	38	-	-	6,345	385	-	64	-	-	-	6,832
A&G-Office supplies & expense - Training 9210-05421	0	0	0	0	0	10,355	-	-	-	840	16,200	21,982	49,377
Customer accounts-Operation su - Books & Manuals 9010-05424	0	0	0	58	-	-	-	-	-	-	-	-	58
A&G-Office supplies & expense - Books & Manuals 9210-05424	0	0	0	313	324	10	380	-	509	110	780	-	2,427
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	0	0	0	0	0	0	0	0	0	0	3,190	-	3,190
A&G-Outside services employed - Technical (Job Skills) Training 9230-05427	0	0	0	5,208	-	-	-	-	-	-	-	-	5,208
Training	**-**	**-**	**1,423**	**8,359**	**7,784**	**17,705**	**2,335**	**6,123**	**2,538**	**5,745**	**26,093**	**35,582**	**113,687**
A&G-Injuries & damages - Settlement 9250-05418	0	0	0	0	0	0	0	850	-	-	-	-	850
Customer accounts-Operation su - Contract Labor 9010-06111	0	0	0	0	0	0	0	0	0	0	1,150	-	1,150
Customer accounts-Customer rec - Contract Labor 9030-06111	39,000	55,052	35,588	83,501	88,872	38,124	76,095	-	-	-	-	-	416,231
Customer service-Miscellaneous - Contract Labor 9100-06111	0	0	0	0	2,977	-	-	-	-	-	-	-	2,977
A&G-Office supplies & expense - Contract Labor 9210-06111	351,581	312,223	231,228	222,926	205,165	331,936	254,573	333,849	403,968	336,247	451,885	592,884	4,028,466
A&G-Outside services employed - Contract Labor 9230-06111	47,491	50,708	37,171	43,190	467	42,878	24,241	26,927	41,390	36,451	29,008	117,660	497,583
A&G-Maintenance of general pla - Contract Labor 9320-06111	0	0	0	0	0	0	0	0	0	0	0	15,137	15,137
Customer accounts-Customer rec - Collection Fees 9030-06112	0	24,567	14,675	17,160	276	86	-	-	-	-	-	-	56,763
Outside Services	**438,072**	**442,549**	**318,661**	**366,777**	**297,756**	**413,025**	**354,909**	**361,626**	**445,358**	**372,698**	**482,043**	**725,682**	**5,019,157**
Customer accounts-Operation su - Misc General Expense 9010-07590	4	20	507	116	-	-	4,397	-	30	-	116	226	5,416
Customer accounts-Customer rec - Misc General Expense 9030-07590	0	0	0	86	-	149	75	-	87	236	-	-	632
A&G-Office supplies & expense - Misc General Expense 9210-07590	783	1,024	396	378	733	419	287	339	309	368	375	333	5,743
Distribution-Operation supervi - Misc General Expense 8700-07590	0	0	0	0	0	0	0	0	0	0	27	-	27
Miscellaneous	**787**	**1,044**	**903**	**580**	**733**	**568**	**4,758**	**339**	**425**	**604**	**518**	**559**	**11,819**
Total O&M Expenses Before Allocations	5,555,814	4,696,573	4,734,913	5,262,714	4,393,542	4,811,982	5,109,007	4,921,458	4,568,168	5,127,246	4,891,422	5,339,219	59,412,058

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Customer accounts-Operation su - Non-project Labor 9010-01000	642,227	435,917	402,179	408,310	419,632	418,976	422,828	623,408	419,647	417,266	413,105	504,952	5,528,445
Customer accounts-Customer rec - Non-project Labor 9030-01000	2,570,525	1,707,864	1,658,856	1,765,138	1,792,033	1,799,334	1,831,960	2,710,375	1,744,922	1,736,803	1,700,794	1,777,005	22,795,609
A&G-Administrative & general s - Non-project Labor 9200-01000	524,586	333,033	332,614	341,650	339,105	351,081	326,994	480,795	313,627	317,766	343,474	343,441	4,348,166
A&G-Administrative & general s - Capital Labor 9200-01001	54,050	46,630	54,928	26,995	60,098	45,917	64,071	130,731	108,307	92,790	74,526	52,265	811,309
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(100,359)	(67,853)	(74,748)	(40,084)	(83,309)	(69,378)	(74,376)	(133,477)	(90,984)	(87,581)	(82,656)	(108,623)	(1,013,429)
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	(141,049)	1,941	51,892	43,284	1,901	45,329	44,594	(182,078)	42,975	61,756	18,575	101,011	80,132
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(611,139)	(1,455)	236,577	219,026	13,448	183,584	181,772	(809,643)	158,993	257,679	67,035	219,617	115,494
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(83,906)	(4,173)	49,787	37,779	(1,272)	41,096	18,248	(148,764)	29,637	49,113	30,028	34,326	51,900
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	32,945	-	-	5,485	-	-	(15,663)	-	-	(21,829)	938
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	69,937	27,673	53,845	24,887	54,389	52,949	48,920	80,682	58,083	55,104	55,321	74,586	656,377
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(23,628)	(6,450)	(34,024)	(11,797)	(31,176)	(29,487)	(38,615)	(77,937)	(75,405)	(60,314)	(47,191)	(18,230)	(454,257)
Labor	**2,901,244**	**2,473,128**	**2,764,851**	**2,815,187**	**2,564,846**	**2,844,884**	**2,826,395**	**2,664,093**	**2,694,140**	**2,840,384**	**2,573,011**	**2,958,522**	**32,920,685**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	232,100	197,850	218,552	225,215	204,586	227,152	223,712	213,127	216,784	227,231	205,841	238,428	2,630,578
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	185,680	158,280	174,842	180,172	163,669	181,722	178,969	170,502	173,427	181,785	164,673	190,742	2,104,462
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	478,705	408,066	450,764	464,506	421,959	468,501	461,405	439,575	447,117	468,663	424,547	491,758	5,425,567
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	104,445	89,033	98,349	101,347	92,064	102,218	100,670	95,907	97,553	102,254	92,628	107,293	1,183,760
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	2,901	2,473	2,732	2,815	2,557	2,839	2,796	2,664	2,710	2,840	2,573	2,960	32,862
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	20,309	17,312	19,123	19,706	17,901	19,876	19,575	18,649	18,969	19,883	18,011	20,862	230,176
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	14,506	12,366	13,660	14,076	12,787	14,197	13,982	13,320	13,549	14,202	12,865	14,902	164,411
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	23,210	19,785	21,855	22,521	20,459	22,715	22,371	21,313	21,678	22,723	20,584	23,843	263,058
Benefits	**1,061,855**	**905,165**	**999,877**	**1,030,358**	**935,981**	**1,039,220**	**1,023,481**	**975,058**	**991,788**	**1,039,580**	**941,722**	**1,090,809**	**12,034,895**
A&G-Employee pensions and bene - Service Awards 9260-07421	5,396	3,758	2,783	1,462	2,220	10,939	1,909	8,272	1,275	5,222	9,576	4,921	57,732
A&G-Employee pensions and bene - Education Assistance Program 9260-07447	0	0	0	0	40	-	-	-	-	-	-	-	40
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	0	6,791	-	-	-	-	-	-	-	-	-	-	6,791
A&G-Employee pensions and bene - Restricted Stock - Long Term Incentl 9260-07458	18,418	17,824	18,418	18,418	16,635	18,418	17,824	57,440	22,621	164,424	-	-	370,439
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	12,997	12,578	12,997	12,997	11,739	12,997	12,578	48,754	13,169	39,880	-	-	190,687
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	1,994	25,644	1,254	7,264	1,136	1,254	1,214	1,254	1,214	3,724	-	-	45,951
A&G-Office supplies & expense - Employee Broadcast and Publication 9210-07495	0	0	0	0	0	0	0	0	0	0	0	860	860
Customer accounts-Operation su - Misc Employee Welfare Exp 9010-07499	554	1,127	597	689	674	139	733	386	307	1,038	1,686	2,205	10,134
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	628	281	173	929	-	36	57	52	129	187	2,023	268	4,764
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	9,910	14,310	10,102	5,840	11,281	5,856	9,847	10,835	5,946	13,607	8,865	9,585	115,982
A&G-Rents - Misc Employee Welfare Exp 9310-07499	24	-	-	-	-	-	-	-	-	-	-	-	24
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	0	0	0	0	0	0	0	0	0	87	-	-	87
Employee Welfare	**49,920**	**82,312**	**46,324**	**47,598**	**43,725**	**49,639**	**44,161**	**126,994**	**44,661**	**228,168**	**22,150**	**17,839**	**803,489**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	10,882	10,882	10,882	10,882	10,882	10,472	10,472	10,472	10,472	10,472	10,472	10,472	127,709
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	0	0	0	0	71	-	-	-	-	-	-	71
Insurance	**10,882**	**10,882**	**10,882**	**10,882**	**10,882**	**10,543**	**10,472**	**10,472**	**10,472**	**10,472**	**10,472**	**10,472**	**127,780**
A&G-Rents - Building Lease/Rents 9310-04581	150,092	150,309	150,201	150,092	150,092	150,201	150,092	150,309	150,201	150,201	150,201	150,201	1,802,192
A&G-Office supplies & expense - Building Maintenance 9210-04582	33,704	58,780	64,065	26,630	38,725	71,276	48,431	42,338	49,300	41,469	51,060	44,841	570,620
A&G-Rents - Building Maintenance 9310-04582	236	60	647	65	-	-	(19)	-	-	-	-	-	990
A&G-Rents - Utilities 9310-04590	931	619	687	641	574	832	746	606	728	734	908	953	8,959
Customer accounts-Customer rec - Utilities 9030-04590	9,581	8,889	7,344	7,462	7,011	6,733	8,038	7,521	8,161	9,700	10,254	10,013	100,708
A&G-Administrative & general s - Utilities 9200-04590	0	0	0	0	0	0	0	0	0	0	1,148	-	1,148
A&G-Office supplies & expense - Utilities 9210-04590	14,149	12,792	11,124	11,826	8,671	9,928	9,328	10,234	8,921	10,304	9,833	12,707	129,816
A&G-Office supplies & expense - Misc Rents 9210-04592	0	0	0	0	0	0	0	0	169	14	-	-	183
Rent, Maint., & Utilities	**208,694**	**231,450**	**234,068**	**196,716**	**205,073**	**238,970**	**216,616**	**211,009**	**217,479**	**212,421**	**223,404**	**218,715**	**2,614,616**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	850	848	969	1,427	380	380	1,692	890	890	890	2,535	1,299	13,052
Mains and Services Expenses - Vehicle Expense 8740-03004	1,015	432	510	486	94	196	323	202	534	378	1,312	984	6,468
Customer accounts-Operation su - Vehicle Expense 9010-03004	41	-	-	-	-	-	-	-	-	-	-	-	41
A&G-Office supplies & expense - Vehicle Expense 9210-03004	259	-	57	-	180	546	-	-	20	37	-	-	1,099
Mains and Services Expenses - Heavy Equipment 8740-04302	0	0	0	0	0	0	0	0	0	0	4	-	4
Vehicles & Equip	**2,165**	**1,281**	**1,536**	**1,915**	**654**	**1,123**	**2,016**	**1,092**	**1,445**	**1,305**	**3,850**	**2,283**	**20,664**
Customer accounts-Operation su - Non-Inventory Supplies 9010-02005	0	0	0	0	0	0	0	0	65	-	-	-	65
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	0	0	0	0	0	0	0	0	670	-	-	-	670
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	48	1	-	-	112	-	933	249	326	275	279	238	2,460
A&G-Rents - Non-Inventory Supplies 9310-02005	0	0	0	0	0	87	-	-	-	-	-	-	87
Customer accounts-Customer rec - Purchasing Card Charges 9030-02006	0	0	0	0	0	0	0	0	17	(17)	0	0	-
Customer accounts-Operation su - Office Supplies 9010-05010	78	184	255	446	525	710	368	741	326	806	126	2,783	7,349
Customer accounts-Customer rec - Office Supplies 9030-05010	436	886	344	72	-	-	16	92	41	(41)	52	49	1,947
A&G-Office supplies & expense - Office Supplies 9210-05010	7,827	7,102	6,166	6,428	6,264	6,618	6,065	5,505	4,232	5,539	6,180	13,469	81,396
Distribution-Operation supervi - Office Supplies 8700-05010	0	108	-	-	-	-	-	-	-	-	-	-	108
Materials & Supplies	**8,389**	**8,281**	**6,766**	**6,946**	**6,900**	**7,416**	**7,382**	**6,586**	**5,675**	**6,563**	**6,638**	**16,540**	**94,082**
A&G-Maintenance of general pla - Software Maintenance 9320-04201	5,599	362	31	556	6,115	2,746	1,689	7,481	87	4,193	760	22	29,641
A&G-Office supplies & expense - Software Maintenance 9210-04201	381,689	321,671	321,736	261,148	321,566	321,532	323,693	335,332	324,975	326,740	326,709	326,709	3,893,501
Customer accounts-Operation su - Software Maintenance 9010-04201	0	0	787	600	-	-	-	-	-	-	-	-	1,387
Customer accounts-Operation su - IT Equipment 9010-04212	0	0	0	0	0	0	231	43	-	-	-	-	274
Customer accounts-Customer rec - IT Equipment 9030-04212	46	-	-	-	-	-	-	-	-	-	-	-	46
A&G-Office supplies & expense - IT Equipment 9210-04212	1,588	952	1,284	1,424	644	258	1,684	362	651	656	493	4,549	14,544
A&G-Outside services employed - IT Equipment 9230-04212	0	0	0	0	0	0	0	0	0	0	5	-	5
A&G-Maintenance of general pla - IT Equipment 9320-04212	1,542	630	-	76	99	254	1,630	919	58	43	476	-	5,726
Information Technologies	**390,463**	**323,615**	**323,838**	**263,804**	**328,424**	**324,791**	**326,927**	**344,137**	**325,771**	**331,632**	**328,443**	**331,280**	**3,945,123**
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	26,077	25,814	31,132	22,836	32,056	44,751	34,927	45,979	40,234	39,697	45,355	46,999	435,859
Customer accounts-Customer rec - Long Distance 9030-05312	0	0	0	0	0	0	0	16	-	5	-	8	29
A&G-Office supplies & expense - Long Distance 9210-05312	1,818	1,930	2,032	1,733	1,971	2,110	1,961	1,883	1,901	1,935	1,886	2,036	23,199
Customer accounts-Operation su - Long Distance 9010-05312	0	0	0	0	0	0	0	5	-	1	-	-	6
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	7,216	7,100	7,959	6,606	7,808	8,364	8,494	6,373	7,516	8,701	9,222	7,175	92,533
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	25,894	30,121	24,686	27,557	28,181	27,603	27,770	27,958	53,683	41,708	40,586	40,586	396,333

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Customer accounts-Operation su - Telecom Maintenance & Repair 9010-05316	0	0	0	0	123	-	-	-	-	-	-	-	123
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	29,814	45,832	45,151	44,617	45,268	45,332	72,115	124,290	33,710	85,357	50,551	60,244	682,182
Customer accounts-Operation su - WAN/LAN/Internet Service 9010-05331	0	0	541	-	-	-	-	-	-	-	-	-	541
Customer accounts-Customer rec - WAN/LAN/Internet Service 9030-05331	0	0	0	0	0	0	0	39	-	-	-	-	39
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	10,555	10,394	10,015	10,035	10,884	10,295	247	22,141	11,389	11,821	13,086	11,235	132,195
A&G-Office supplies & expense - Cell service for data uses 9210-05376	290	290	196	257	188	207	-	484	282	297	282	310	3,081
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	1,308	2,940	1,433	2,513	3,342	900	425	5,181	1,756	2,240	3,158	2,064	27,256
Customer accounts-Operation su - Cell phone equipment and accessories 9010-05377	49	-	38	-	226	-	-	225	401	381	35	265	1,619
Customer accounts-Customer rec - Cell phone equipment and accessories 9030-05377	0	0	0	0	65	-	118	-	-	351	27	-	561
Telecom	103,021	124,420	123,183	116,058	130,212	139,561	146,057	234,572	150,871	192,493	164,187	170,923	1,795,558
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	350	-	-	-	-	-	-	63	-	-	-	1,775	2,188
Customer accounts-Operation su - Community Rel&Trade Shows 9010-04040	0	0	0	0	0	0	197	34	-	-	-	-	231
Marketing	350	-	-	-	-	-	197	96	-	-	-	1,775	2,418
Customer accounts-Customer rec - Bank Service Charge 9030-04130	53,037	7,000	5,150	38,107	5,046	6,089	51,370	5,489	6,695	52,021	6,667	6,744	243,415
A&G-Office supplies & expense - Bank Service Charge 9210-04130	1,100	550	-	-	-	-	-	-	-	-	-	-	1,650
Directors & Shareholders &PR	54,137	7,550	5,150	38,107	5,046	6,089	51,370	5,489	6,695	52,021	6,667	6,744	245,065
Customer accounts-Operation su - Membership Fees 9010-05415	0	0	250	-	-	-	-	657	-	245	240	-	1,392
Customer accounts-Customer rec - Membership Fees 9030-05415	0	0	0	0	0	0	0	0	312	-	-	23	335
A&G-Office supplies & expense - Membership Fees 9210-05415	0	235	95	71	-	-	35	-	-	886	-	5,750	7,072
Customer accounts-Operation su - Club Dues - Nondeductible 9010-05416	0	0	0	0	45	-	45	-	-	-	-	-	90
A&G-Office supplies & expense - Club Dues - Nondeductible 9210-05416	0	0	0	0	90	-	-	-	-	-	-	-	90
Dues & Donations	-	235	345	71	135	-	80	657	312	1,131	240	5,773	8,979
Customer accounts-Operation su - Postage/Delivery Services 9010-05111	0	0	0	0	0	0	0	0	39	-	-	169	208
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	63	12	86	-	-	-	-	-	47	(21)	-	-	187
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	952	1,254	1,835	1,692	1,967	1,177	2,409	2,152	961	1,893	1,091	3,189	20,570
Print & Postages	1,016	1,266	1,921	1,692	1,967	1,177	2,409	2,152	1,047	1,872	1,091	3,358	20,965
Customer accounts-Operation su - Meals and Entertainment 9010-05411	8,244	10,873	19,951	6,149	6,736	6,292	9,435	12,567	11,230	10,188	15,872	16,522	134,059
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	0	0	0	0	0	0	0	0	0	61	-	-	61
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	6,445	8,509	2,268	7,634	4,183	2,834	2,562	6,474	2,423	4,003	11,345	5,116	63,796
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	6,419	12,674	9,434	4,334	7,167	3,711	6,884	8,418	11,699	11,332	5,590	13,193	100,856
A&G-Rents - Meals and Entertainment 9310-05411	40	34	10	34	-	-	-	-	-	-	-	-	118
Customer accounts-Operation su - Spousal & Dependent Travel 9010-05412	0	0	1,638	-	-	135	22	5	-	89	275	2,372	4,536
Customer accounts-Customer rec - Spousal & Dependent Travel 9030-05412	0	26	-	3,838	-	-	61	132	344	13	-	-	4,414
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	0	0	7,001	-	-	-	-	-	-	5,053	400	46	12,500
A&G-Office supplies & expense - Transportation 9210-05413	7,124	7,254	5,195	4,787	6,713	9,483	10,175	11,509	14,096	13,019	11,200	16,082	116,636
A&G-Outside services employed - Transportation 9230-05413	0	0	0	0	0	0	0	0	396	332	-	-	728
Distribution-Operation supervi - Transportation 8700-05413	0	0	0	0	0	0	0	111	-	-	-	-	111
Customer accounts-Operation su - Transportation 9010-05413	7,158	7,216	7,314	8,742	10,030	9,695	20,692	17,258	27,098	12,967	18,148	20,363	166,680
Customer accounts-Meter readin - Transportation 9020-05413	0	0	0	0	0	0	0	0	0	406	-	-	406
Customer accounts-Customer rec - Transportation 9030-05413	3,749	4,182	1,987	1,772	2,879	2,511	3,324	4,547	6,230	4,101	5,524	4,640	45,245
A&G-Office supplies & expense - Lodging 9210-05414	5,983	6,084	6,192	2,794	3,104	3,900	7,319	8,335	11,156	9,201	7,851	10,378	82,297
A&G-Outside services employed - Lodging 9230-05414	0	0	0	0	0	0	0	0	146	-	-	-	146
Customer accounts-Operation su - Lodging 9010-05414	6,322	2,920	7,679	2,385	4,324	10,852	7,715	17,989	10,188	10,519	10,953	10,147	101,993
Customer accounts-Meter readin - Lodging 9020-05414	0	0	0	0	0	0	0	0	0	181	-	-	181
Customer accounts-Customer rec - Lodging 9030-05414	2,317	6,126	922	1,427	6,072	890	1,763	8,943	2,732	3,497	4,476	2,740	41,906
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	1,350	79	(27)	-	-	-	-	-	-	35	-	1,891	3,328
Customer accounts-Operation su - Misc Employee Expense 9010-05419	0	87	-	-	-	-	111	2,775	-	70	-	45	3,087
Customer accounts-Customer rec - Misc Employee Expense 9030-05419	0	80	-	-	-	-	-	89	-	-	-	-	169
Travel & Entertainment	55,151	66,143	69,562	43,896	51,006	50,303	70,062	99,152	97,739	85,066	91,634	103,535	883,251
Customer accounts-Operation su - Employee Development 9010-05420	1,037	-	-	8,725	2,285	-	-	-	909	1,385	730	-	15,071
Customer accounts-Customer rec - Employee Development 9030-05420	0	0	0	795	-	-	-	-	-	398	655	-	1,848
A&G-Office supplies & expense - Employee Development 9210-05420	6,080	-	3,044	-	10,771	3,560	-	1,042	-	17,177	5,290	7,180	54,143
Customer accounts-Operation su - Training 9010-05421	0	0	0	0	0	0	0	0	0	730	655	-	1,385
Customer accounts-Customer rec - Training 9030-05421	0	0	0	0	0	0	0	0	0	0	0	495	495
A&G-Office supplies & expense - Training 9210-05421	3,278	-	-	-	-	-	2,695	-	2,395	1,460	1,350	1,703	12,881
Customer accounts-Operation su - Books & Manuals 9010-05424	0	0	0	0	34	-	-	-	-	-	-	-	34
Customer accounts-Customer rec - Books & Manuals 9030-05424	0	215	-	-	-	-	87	-	-	-	-	392	693
A&G-Office supplies & expense - Books & Manuals 9210-05424	0	0	0	261	134	133	415	-	332	196	-	-	1,470
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	0	0	0	0	0	0	1,000	-	1,050	-	-	3,395	5,445
A&G-Outside services employed - Technical (Job Skills) Training 9230-05427	0	0	0	0	0	15,623	-	-	-	-	-	-	15,623
Training	10,395	215	3,044	9,781	13,224	19,316	4,197	1,042	4,686	21,346	8,680	13,165	109,089
A&G-Injuries & damages - Settlement 9250-05418	0	0	0	0	0	0	263	-	-	-	-	-	263
Customer accounts-Operation su - Contract Labor 9010-06111	0	200	-	-	-	-	-	-	-	-	895	-	1,095
Customer service-Miscellaneous - Contract Labor 9100-06111	0	29,812	39,844	4,890	-	-	-	-	-	-	-	-	74,545
A&G-Office supplies & expense - Contract Labor 9210-06111	482,231	378,753	352,483	345,321	291,760	249,288	242,769	223,519	290,246	282,272	273,270	527,052	3,938,963
A&G-Outside services employed - Contract Labor 9230-06111	26,511	41,072	136,986	57,002	40,351	30,274	39,095	61,428	48,664	77	68,220	97,699	647,379
A&G-Outside services employed - Legal 9230-06121	0	0	0	680	-	-	-	-	-	-	-	-	680
Outside Services	508,742	449,837	529,313	407,892	332,111	279,562	282,127	284,947	338,911	282,348	342,385	624,751	4,662,926
Customer accounts-Operation su - Misc General Expense 9010-07590	0	0	977	-	-	-	-	-	59	-	881	215	2,131
Customer accounts-Customer rec - Misc General Expense 9030-07590	0	4	-	-	-	-	-	-	-	-	33	850	887
A&G-Office supplies & expense - Misc General Expense 9210-07590	1,100	425	564	535	453	353	319	314	2,200	3,474	800	1,436	11,973
Miscellaneous	1,100	429	1,541	535	453	353	319	314	2,259	3,474	1,714	2,501	14,992
Total O&M Expenses Before Allocations	5,367,522	4,686,206	5,122,202	4,991,437	4,630,640	5,012,946	5,016,265	4,967,862	4,893,949	5,310,276	4,726,287	5,578,984	60,304,577

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Customer accounts-Operation su - Non-project Labor 9010-01000	577,568	393,357	386,525	386,931	1,744,381
Customer accounts-Customer rec - Non-project Labor 9030-01000	2,483,363	1,665,433	1,693,056	1,712,139	7,553,991
A&G-Administrative & general s - Non-project Labor 9200-01000	474,815	326,990	336,518	333,682	1,472,006
Distribution-Operation supervi - Non-project Labor 8700-01000	0	267	30	-	297
A&G-Administrative & general s - Capital Labor 9200-01001	51,069	21,643	15,813	17,861	106,386
A&G-Administrative & general s - Capital Labor Contra 9200-01002	(113,089)	(54,372)	(50,719)	(39,781)	(257,961)
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	(202,077)	21,746	55,929	19,529	(104,873)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(650,264)	85,736	262,245	94,194	(208,089)
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(121,222)	18,961	53,336	15,408	(33,517)
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	0	80	(67)	(14)	-
A&G-Administrative & general s - PTO Accrual 9200-01010	0	0	(8,036)	-	(8,036)
A&G-Administrative & general s - Capital Labor Transfer In 9200-01011	74,005	37,679	37,095	26,275	175,053
A&G-Administrative & general s - Capital Labor Transfer Out 9200-01012	(11,985)	(4,949)	(2,189)	(4,355)	(23,478)
Labor	**2,562,182**	**2,512,571**	**2,779,537**	**2,561,871**	**10,416,160**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	189,601	185,930	206,280	189,578	771,391
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	99,925	97,990	108,715	99,913	406,544
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	450,944	442,212	490,613	450,889	1,834,659
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	89,676	87,940	97,565	89,665	364,847
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	2,562	2,513	2,788	2,562	10,424
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	20,497	20,101	22,301	20,495	83,394
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	12,811	12,563	13,938	12,809	52,121
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	20,497	20,101	22,301	20,495	83,394
Benefits	**886,515**	**869,350**	**964,500**	**886,407**	**3,606,772**
A&G-Employee pensions and bene - Service Awards 9260-07421	10,513	4,472	9,781	2,052	26,819
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	10,829	10,479	10,828	10,829	42,965
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	9,113	8,819	9,113	9,113	36,158
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	1,254	21,473	(9,977)	976	13,726
A&G-Office supplies & expense - SERP Capitalized 9210-07490	0	34	-	-	34
A&G-Office supplies & expense - Employee Broadcast and Publication 9210-07495	71	-	-	-	71
Customer accounts-Operation su - Misc Employee Welfare Exp 9010-07499	547	291	1,703	1,078	3,619
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	1,298	55	1,361	24	2,738
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	9,773	11,978	14,937	3,353	40,042
Employee Welfare	**43,397**	**57,602**	**37,747**	**27,425**	**166,172**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	10,472	10,472	10,472	10,472	41,886
Insurance	**10,472**	**10,472**	**10,472**	**10,472**	**41,886**
A&G-Rents - Building Lease/Rents 9310-04581	152,485	152,485	152,485	152,485	609,942
A&G-Office supplies & expense - Building Maintenance 9210-04582	56,435	37,914	56,868	56,253	207,470
A&G-Rents - Building Maintenance 9310-04582	0	487	-	-	487
A&G-Rents - Utilities 9310-04590	930	698	658	606	2,892
Customer accounts-Customer rec - Utilities 9030-04590	9,916	8,174	7,323	7,295	32,709
A&G-Office supplies & expense - Utilities 9210-04590	9,548	11,584	6,303	14,957	42,392
Rent, Maint., & Utilities	**229,315**	**211,343**	**223,638**	**231,596**	**895,892**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	1,300	1,298	1,299	1,777	5,673
Mains and Services Expenses - Vehicle Expense 8740-03004	654	244	508	379	1,785
A&G-Office supplies & expense - Vehicle Expense 9210-03004	26	-	-	45	71
Vehicles & Equip	**1,980**	**1,543**	**1,806**	**2,201**	**7,530**
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	271	281	339	605	1,497
Customer accounts-Operation su - Office Supplies 9010-05010	229	478	691	196	1,594
Customer accounts-Customer rec - Office Supplies 9030-05010	0	110	711	333	1,154
A&G-Office supplies & expense - Office Supplies 9210-05010	7,700	7,158	5,844	3,796	24,497
Distribution-Operation supervi - Office Supplies 8700-05010	0	0	38	-	38
Materials & Supplies	**8,200**	**8,028**	**7,623**	**4,930**	**28,780**
A&G-Maintenance of general pla - Software Maintenance 9320-04201	771	72	-	232	1,075
A&G-Office supplies & expense - Software Maintenance 9210-04201	335,954	303,699	323,162	320,700	1,283,515
Customer accounts-Customer rec - Software Maintenance 9030-04201	256	-	-	-	256
Customer accounts-Operation su - Software Maintenance 9010-04201	192	-	-	-	192
Customer accounts-Operation su - IT Equipment 9010-04212	0	16	-	-	16
A&G-Office supplies & expense - IT Equipment 9210-04212	2,035	4,174	-	-	6,210
A&G-Maintenance of general pla - IT Equipment 9320-04212	258	-	-	-	258
Information Technologies	**339,465**	**307,962**	**323,162**	**320,932**	**1,291,521**
A&G-Office supplies & expense - Monthly Lines and service 9210-05310	46,223	44,902	43,079	32,787	166,990
Customer accounts-Customer rec - Long Distance 9030-05312	0	9	-	-	9
A&G-Office supplies & expense - Long Distance 9210-05312	2,031	2,206	2,163	2,138	8,539
A&G-Office supplies & expense - Toll Free Long Distance 9210-05314	5,838	7,490	6,113	7,627	27,067
A&G-Office supplies & expense - Telecom Maintenance & Repair 9210-05316	(10,349)	37,025	66,165	5,080	97,920
A&G-Office supplies & expense - WAN/LAN/Internet Service 9210-05331	46,164	20,281	74,394	47,014	187,853

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Regulated Shared Services (Div 012)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
A&G-Office supplies & expense - Cellular, radio, pager charges 9210-05364	9,102	9,029	8,383	7,827	34,342
A&G-Office supplies & expense - Cell service for data uses 9210-05376	281	281	234	246	1,042
A&G-Office supplies & expense - Cell phone equipment and accessories 9210-05377	1,082	1,733	536	514	3,865
Customer accounts-Operation su - Cell phone equipment and accessories 9010-05377	35	-	-	-	35
Telecom	**100,405**	**122,955**	**201,067**	**103,233**	**527,661**
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	225	-	-	-	225
Marketing	**225**	**-**	**-**	**-**	**225**
Customer accounts-Customer rec - Bank Service Charge 9030-04130	46,500	7,279	4,911	43,821	102,511
Directors & Shareholders &PR	**46,500**	**7,279**	**4,911**	**43,821**	**102,511**
A&G-Office supplies & expense - Membership Fees 9210-05415	235	-	-	-	235
Dues & Donations	**235**	**-**	**-**	**-**	**235**
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	0	13	-	-	13
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	2,040	1,722	1,919	2,316	7,997
Print & Postages	**2,040**	**1,735**	**1,919**	**2,316**	**8,010**
Customer accounts-Operation su - Meals and Entertainment 9010-05411	10,213	6,669	19,125	3,976	39,983
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	6,471	6,355	6,191	1,651	20,668
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	3,137	13,773	8,455	2,303	27,667
Customer accounts-Operation su - Spousal & Dependent Travel 9010-05412	(1,592)	-	4,422	10	2,840
Customer accounts-Customer rec - Spousal & Dependent Travel 9030-05412	0	0	295	30	324
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	0	1,460	5,221	-	6,681
A&G-Office supplies & expense - Transportation 9210-05413	6,331	13,353	6,766	8,989	35,439
Customer accounts-Operation su - Transportation 9010-05413	14,740	9,467	5,561	7,936	37,704
Customer accounts-Customer rec - Transportation 9030-05413	2,219	2,775	2,038	6,483	13,514
A&G-Office supplies & expense - Lodging 9210-05414	4,552	9,481	3,732	3,472	21,238
Customer accounts-Operation su - Lodging 9010-05414	4,710	10,200	2,079	2,437	19,426
Customer accounts-Customer rec - Lodging 9030-05414	3,547	12,713	511	1,442	18,213
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	0	1,605	26	792	2,424
Customer accounts-Operation su - Misc Employee Expense 9010-05419	144	70	-	-	214
Travel & Entertainment	**54,472**	**87,922**	**64,421**	**39,520**	**246,334**
Customer accounts-Customer rec - Employee Development 9030-05420	199	-	-	1,197	1,396
A&G-Office supplies & expense - Employee Development 9210-05420	1,460	1,350	295	17,910	21,015
Customer accounts-Operation su - Training 9010-05421	13	-	-	-	13
A&G-Office supplies & expense - Training 9210-05421	5,845	-	1,085	-	6,930
Customer accounts-Operation su - Books & Manuals 9010-05424	0	0	72	-	72
A&G-Office supplies & expense - Books & Manuals 9210-05424	39	-	438	195	672
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	0	0	2,415	159	2,575
Training	**7,556**	**1,350**	**4,305**	**19,461**	**32,672**
Customer accounts-Customer rec - Contract Labor 9030-06111	0	0	237	-	237
A&G-Office supplies & expense - Contract Labor 9210-06111	99,855	188,498	167,570	195,686	651,609
A&G-Outside services employed - Contract Labor 9230-06111	16,921	15,053	18,282	54,913	105,169
Customer accounts-Operation su - Collection Fees 9010-06112	0	0	100	-	100
A&G-Office supplies & expense - Bill Print Fees 9210-06116	0	0	0	42,592	42,592
Outside Services	**116,776**	**203,552**	**186,188**	**293,191**	**799,707**
Customer accounts-Operation su - Misc General Expense 9010-07590	(69)	-	21	-	(48)
A&G-Office supplies & expense - Misc General Expense 9210-07590	192	297	508	409	1,407
Miscellaneous general expenses - Misc General Expense 9302-07590	0	0	0	88,362	88,362
Miscellaneous	**123**	**297**	**529**	**88,771**	**89,721**
Total O&M Expenses Before Allocations	4,409,855	4,403,959	4,811,827	4,636,147	18,261,788

REQUEST:

Please refer to electronic workpaper "Att30- O&M for KY- Fall 2015 case_ updated" provided in response to Staff 1-59 and the tab entitled "Div 9 forecast."

a. Please provide the actual data in the same level of detail and in the same format for each month from October 2011 through the most recent month available in electronic format with all formulas intact

b. Please provide a variance analysis for each category of expense (labor, benefits, employee welfare, etc.) that identifies and describes all reasons for the change projected in the test year compared to the base year. In addition, provide all documents, including studies and/or other analyses developed by the Company to support the change projected in the test year compared to the base year.

RESPONSE:

a) While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 1.

b) Please see Attachment 2.

ATTACHMENTS:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-07_Att1 - Div 009 O&M Oct11-Jan16.xlsx, 29 Pages.

ATTACHMENT 2 - Atmos Energy Corporation, AG_1-07_Att2 - Div 009 Variance.xlsx, 1 Page.

Respondent: Greg Waller

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Distribution-Maint of mains - Non-project Labor 8670-01000	2,904	2,056	533	2,672	955	415	879	1,023	3,627	2,735	5,365	6,331	29,495
Maintenance of services - Non-project Labor 8920-01000	567	989	852	1,321	633	769	1,051	539	1,272	548	658	949	10,148
Maintenance of meters and hous - Non-project Labor 8930-01000	5,340	3,697	5,009	4,661	4,381	2,478	2,856	5,673	6,692	6,687	7,647	3,440	58,561
Customer accounts-Operation su - Non-project Labor 9010-01000	0	0	0	0	0	0	0	0	23	275	92	217	606
Customer accounts-Meter readin - Non-project Labor 9020-01000	47,117	46,575	66,241	36,860	36,146	37,436	34,274	31,193	42,760	10,449	22,996	17,111	429,157
Customer accounts-Customer rec - Non-project Labor 9030-01000	31,133	31,974	47,777	32,590	33,789	36,081	32,972	33,644	46,143	30,080	31,780	29,538	417,410
Customer service-Operating Inf - Non-project Labor 9090-01000	6,452	6,610	9,915	6,610	6,610	6,610	6,610	6,610	9,915	6,784	6,958	6,958	86,639
Sales-Supervision - Non-project Labor 9110-01000	8,746	7,221	10,800	7,207	7,221	7,221	7,221	7,196	10,815	9,287	11,346	11,353	105,633
A&G-Administrative & general s - Non-project Labor 9200-01000	21,617	20,661	29,834	21,974	21,812	21,813	23,935	24,689	40,845	26,861	26,966	26,972	309,979
Wells expenses - Non-project Labor 8160-01000	2,191	3,458	10,835	3,878	3,355	3,414	2,140	2,717	3,675	5,535	2,410	3,215	46,821
Lines expenses - Non-project Labor 8170-01000	1,110	1,280	5,520	2,515	2,542	1,951	1,436	2,392	3,712	2,897	2,627	3,008	30,989
Compressor station expenses - Non-project Labor 8180-01000	4,265	1,032	1,568	-	596	775	1,252	493	243	141	190	-	10,554
Storage-Measuring and regulati - Non-project Labor 8200-01000	0	145	179	-	72	421	319	-	86	264	-	119	1,606
Storage-Purification expenses - Non-project Labor 8210-01000	72	-	1,207	155	326	-	-	-	-	-	-	-	1,761
Maintenance of compressor stat - Non-project Labor 8340-01000	348	-	30	1,311	181	613	-	-	358	-	-	119	2,959
Maintenance of measuring and r - Non-project Labor 8350-01000	0	0	0	0	0	0	0	775	-	-	238	-	1,013
Mains expenses - Non-project Labor 8560-01000	9,513	16,904	14,597	15,335	18,278	15,159	10,779	11,236	12,110	7,525	6,130	5,738	143,305
Transmission-Measuring and reg - Non-project Labor 8570-01000	2,070	2,866	9,819	5,391	6,035	3,661	1,316	3,164	7,603	6,985	4,877	4,930	58,718
Transmission-Maintenance of ma - Non-project Labor 8630-01000	3,272	5,813	915	-	-	106	-	2,081	8,336	3,785	3,424	5,388	33,120
Distribution-Operation supervi - Non-project Labor 8700-01000	58,927	59,122	99,697	62,367	61,760	57,165	54,809	54,922	84,813	50,777	49,714	47,862	731,955
Distribution load dispatching - Non-project Labor 8710-01000	0	0	0	0	0	0	0	0	0	96	-	-	96
Mains and Services Expenses - Non-project Labor 8740-01000	93,265	94,720	123,243	80,885	79,087	83,723	81,459	83,969	117,177	87,840	83,434	80,918	1,089,720
Distribution-Measuring and reg - Non-project Labor 8750-01000	17,360	16,658	23,831	16,654	20,330	19,925	16,734	20,265	26,495	19,277	22,300	21,961	241,788
Distribution-Measuring and reg - Non-project Labor 8760-01000	3,367	3,612	2,230	2,476	1,179	2,156	3,537	1,439	502	1,267	3,278	4,639	29,703
Distribution-Measuring and reg - Non-project Labor 8770-01000	2,644	4,316	3,895	3,740	2,258	472	797	118	472	472	310	186	19,680
Meter and house regulator expe - Non-project Labor 8780-01000	73,399	69,176	115,108	65,606	50,740	51,222	54,199	49,316	72,819	50,949	48,062	56,113	756,729
Customer installations expense - Non-project Labor 8790-01000	399	813	2,975	1,277	494	586	1,531	558	957	893	662	1,040	12,183
Distribution-Other expenses - Non-project Labor 8800-01000	1,100	7,122	6,312	4,327	7,337	3,345	5,558	4,194	12,130	7,700	5,394	3,400	67,918
Distribution-Operation supervi - Capital Labor 8700-01001	405,466	393,696	610,567	413,361	438,546	438,834	443,078	452,444	706,335	471,183	476,037	472,323	5,719,870
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(412,789)	(406,352)	(624,010)	(422,867)	(450,183)	(448,462)	(457,497)	(467,871)	(724,593)	(487,023)	(478,873)	(473,153)	(5,853,674)
Mains and Services Expenses - Expense Labor Accrual 8740-01008	8,134	10,272	(41,027)	7,769	3,326	10,227	2,941	13,976	(39,248)	11,215	10,973	(1,258)	(2,703)
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	(1,046)	1,260	(6,856)	1,857	2,303	1,831	(759)	4,982	(9,770)	2,331	4,403	(170)	386
Distribution-Measuring and reg - Expense Labor Accrual 8760-01008	(484)	485	(1,976)	495	(395)	606	867	(938)	(923)	360	1,196	680	(28)
Distribution-Measuring and reg - Expense Labor Accrual 8770-01008	998	1,351	(2,156)	660	(406)	(667)	202	(356)	(4)	87	(10)	(62)	(364)
Meter and house regulator expe - Expense Labor Accrual 8780-01008	6,358	4,595	(25,780)	3,777	(2,666)	5,315	4,198	4,712	(22,385)	5,696	6,209	4,015	(5,955)
Customer installations expense - Expense Labor Accrual 8790-01008	(385)	309	(33)	(49)	(249)	95	549	(451)	(231)	153	18	189	(84)
Distribution-Other expenses - Expense Labor Accrual 8800-01008	(4,660)	4,024	(3,577)	463	1,420	(1,262)	1,385	(121)	(914)	673	2	(997)	(3,565)
Distribution-Maint of mains - Expense Labor Accrual 8870-01008	1,362	(261)	(1,248)	846	(553)	(175)	276	233	(112)	353	1,726	483	2,930
Maintenance of services - Expense Labor Accrual 8920-01008	(229)	332	(501)	321	(209)	131	193	(200)	(165)	(20)	137	146	(66)
Maintenance of meters and hous - Expense Labor Accrual 8930-01008	(234)	(534)	(1,568)	797	121	(514)	332	2,400	(2,856)	1,225	1,483	(2,103)	(1,450)
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	0	0	0	0	0	0	0	0	4	92	(50)	63	109
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	10,955	4,360	(19,234)	1,861	1,557	4,260	133	2,984	(14,708)	(3,470)	7,841	(2,942)	(6,404)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	575	3,660	(12,820)	3,443	2,109	4,525	94	5,346	(15,790)	2,838	5,367	(1,126)	(1,780)
Customer service-Operating Inf - Expense Labor Accrual 9090-01008	401	748	(2,644)	661	330	661	330	991	(2,974)	722	1,105	-	331
Sales-Supervision - Expense Labor Accrual 9110-01008	(261)	(117)	(2,894)	723	366	722	361	1,066	(3,235)	1,448	2,423	3	605
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	1,488	1,540	(8,457)	2,718	1,034	2,181	2,258	4,118	(10,475)	2,594	4,081	1,003	4,085
Wells expenses - Expense Labor Accrual 8160-01008	(249)	1,042	(442)	(449)	(15)	365	(530)	725	(1,289)	1,325	(732)	402	153
Lines expenses - Expense Labor Accrual 8170-01008	(341)	222	88	(40)	136	(41)	(186)	884	(1,055)	395	300	190	553
Compressor station expenses - Expense Labor Accrual 8180-01008	1,079	(1,675)	(409)	(261)	238	149	301	(344)	(304)	9	46	(95)	(1,267)
Storage-Measuring and regulati - Expense Labor Accrual 8200-01008	0	94	(64)	(30)	29	182	(35)	(176)	14	78	(92)	60	60
Storage-Purification expenses - Expense Labor Accrual 8210-01008	(65)	(40)	201	(147)	76	(130)	-	-	-	-	-	-	(105)
Maintenance of reservoirs and - Expense Labor Accrual 8320-01008	(983)	-	-	-	-	-	-	-	-	-	-	-	(983)
Maintenance of compressor stat - Expense Labor Accrual 8340-01008	93	(191)	5	454	(386)	234	(306)	-	60	(60)	-	59	(39)
Maintenance of measuring and r - Expense Labor Accrual 8350-01008	0	0	0	0	0	0	0	542	(542)	0	119	(119)	-
Processing-Maintenance of puri - Expense Labor Accrual 8360-01008	(46)	-	-	-	-	-	-	-	-	-	-	-	(46)
Mains expenses - Expense Labor Accrual 8560-01008	1,009	5,755	(8,555)	2,935	1,944	268	(1,651)	1,936	(5,847)	615	431	(196)	(1,354)
Transmission-Measuring and reg - Expense Labor Accrual 8570-01008	(1,414)	724	(226)	250	527	(584)	(1,106)	1,491	(948)	1,178	(6)	27	(87)
Transmission-Maintenance of ma - Expense Labor Accrual 8630-01008	907	1,979	(3,626)	(152)	-	53	(53)	1,457	(68)	(65)	387	982	1,802
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	4,322	6,019	(21,813)	5,212	(1,116)	7,870	1,562	8,301	(24,310)	3,637	7,085	(926)	(4,157)
Distribution load dispatching - Expense Labor Accrual 8710-01008	0	0	0	0	0	0	0	0	0	33	(33)	0	-
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	221,568	211,018	375,917	238,097	209,187	218,864	240,809	235,055	361,785	253,985	228,205	240,270	3,034,762
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(214,245)	(198,361)	(362,475)	(228,591)	(197,550)	(207,236)	(226,390)	(219,628)	(343,528)	(238,145)	(225,369)	(239,441)	(2,900,957)
Labor	**424,483**	**452,794**	**427,308**	**413,927**	**365,655**	**393,816**	**357,019**	**401,663**	**355,502**	**373,550**	**401,296**	**341,812**	**4,708,825**
A&G-Employee pensions and bene - Other Benefits Load 9260-01200	195,129	208,361	196,672	99,652	(188,614)	94,800	85,849	96,598	85,394	89,780	96,462	82,089	1,142,170
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	0	0	0	38,026	148,218	36,169	32,705	36,807	32,485	34,180	36,731	31,219	426,540
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	0	0	0	52,348	208,142	49,766	44,779	50,429	44,263	46,696	50,210	42,499	589,132
Benefits	**195,129**	**208,361**	**196,672**	**190,026**	**167,745**	**180,735**	**163,333**	**183,833**	**162,141**	**170,657**	**183,402**	**155,807**	**2,157,841**
Mains expenses - Uniforms 8560-07443	565	2,017	599	138	(70)	137	122	-	-	-	-	125	3,634
Distribution-Operation supervi - Uniforms 8700-07443	250	-	-	12	-	334	-	-	-	-	125	-	721
Mains and Services Expenses - Uniforms 8740-07443	479	851	743	840	242	1,087	250	500	319	149	248	500	6,207
Meter and house regulator expe - Uniforms 8780-07443	98	-	125	-	-	-	-	-	-	-	-	106	329
Customer accounts-Meter readin - Uniforms 9020-07443	87	125	-	106	-	120	-	-	7	125	117	125	811
A&G-Employee pensions and bene - Uniforms 9260-07443	18,260	15,506	5,655	3,022	2,355	2,506	850	1,216	470	1,202	548	850	52,442
Customer accounts-Meter readin - Uniforms Capitalized 9020-07444	(39)	(61)	-	(52)	-	(66)	-	-	(4)	(87)	(73)	(90)	(472)
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	(9,691)	(8,145)	(3,277)	(1,574)	(1,309)	(1,410)	(499)	(718)	(247)	(738)	(337)	(514)	(28,461)
Mains expenses - Uniforms Capitalized 8560-07444	(96)	(129)	(89)	(31)	16	(29)	(55)	-	-	-	-	(32)	(446)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	(140)	-	-	(5)	-	(177)	-	-	-	-	(80)	-	(402)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	(204)	(305)	(374)	(391)	(159)	(595)	(151)	(313)	(198)	(104)	(140)	(334)	(3,268)
Meter and house regulator expe - Uniforms Capitalized 8780-07444	(59)	-	(62)	-	-	-	-	-	-	-	-	(71)	(193)
A&G-Employee pensions and bene - Non-Qual Retirment Exp 9260-07449	108	-	60	39	-	-	-	-	-	-	-	-	207
Customer accounts-Meter readin - Misc Employee Welfare Exp 9020-07499	0	0	0	0	0	53	-	-	-	-	-	-	53
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	19	48	75	-	-	-	-	-	-	45	82	122	391
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	0	0	0	0	0	0	34	-	-	-	-	-	34

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	558	19	55	139	245	56	258	18	150	121	863	338	2,819
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	3,105	3,805	2,808	4,176	2,753	4,197	24,432	3,363	4,706	3,019	2,634	6,298	65,297
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	11	16	53	-	70	78	49	139	-	357	615	164	1,551
Mains and Services Expenses - Misc Employee Welfare Exp 8740-07499	0	140	-	-	15	29	-	49	3,040	24	20	65	3,383
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	131	-	-	-	-	-	-	-	-	-	-	-	131
Distribution-Rents - Misc Employee Welfare Exp 8810-07499	0	0	70	-	-	-	-	-	-	-	-	-	70
Employee Welfare	13,439	13,887	6,441	6,418	4,157	6,319	25,289	4,255	8,242	4,113	4,622	7,653	104,836
A&G-Property insurance - Blueflame Property Insurance 9240-04069	25,802	25,802	25,802	27,266	27,266	27,266	27,266	27,266	27,266	27,266	27,950	27,950	324,168
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	102	2	-	1,959	108	735	200	107	3,165	1,075	102	7,553
A&G-Property insurance - Insurance Capitalized 9240-04072	(13,552)	(13,423)	(13,164)	(14,019)	(15,707)	(14,787)	(15,103)	(15,114)	(15,174)	(16,878)	(15,470)	(16,135)	(178,526)
A&G-Employee pensions and bene - Environmental & Safety 9260-07120	4	-	-	-	-	-	-	-	-	-	-	-	4
Distribution-Operation supervi - Environmental & Safety 8700-07120	834	-	-	-	-	154	-	-	-	-	444	-	1,432
Mains and Services Expenses - Environmental & Safety 8740-07120	2,656	396	357	990	2,635	1,052	269	8	524	39	-	79	9,006
Meter and house regulator expe - Environmental & Safety 8780-07120	0	0	0	0	0	0	0	6	-	-	-	-	6
Customer accounts-Customer rec - Environmental & Safety 9030-07120	0	0	0	0	0	0	0	0	0	152	-	-	152
Insurance	15,743	12,876	12,997	14,237	16,153	13,793	13,187	12,386	12,723	13,744	13,999	11,996	163,795
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(109)	(5)	-	(109)	(17)	-	(36)	(61)	(383)	(44)	(22)	(102)	(888)
Distribution-Operation supervi - Building Lease/Rents Capitalized 8700-04580	0	0	0	0	0	0	0	0	0	(22)	-	-	(22)
Mains and Services Expenses - Building Lease/Rents Capitalized 8740-04580	0	0	(951)	-	-	-	-	-	(190)	-	-	-	(1,141)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(36,759)	(37,574)	(35,555)	(39,240)	(40,230)	(39,481)	(40,142)	(40,629)	(43,230)	(43,220)	(43,241)	(42,441)	(481,743)
Storage well royalties - Building Lease/Rents 8250-04581	637	82	-	489	74	-	80	170	1,025	183	71	396	3,206
Distribution-Operation supervi - Building Lease/Rents 8700-04581	0	0	0	0	0	0	0	0	0	38	-	-	38
Mains and Services Expenses - Building Lease/Rents 8740-04581	0	0	1,800	-	-	-	-	-	300	-	-	-	2,100
Distribution-Rents - Building Lease/Rents 8810-04581	70,747	73,273	68,305	71,803	67,903	67,734	68,259	68,081	70,994	70,054	69,154	69,929	836,337
A&G-Rents - Building Lease/Rents 9310-04581	2,525	2,847	2,121	3,250	2,686	2,686	2,686	2,686	2,491	2,594	2,644	2,636	31,851
Storage-Purification expenses - Building Maintenance 8210-04582	0	0	0	0	0	0	0	641	-	-	-	-	641
Storage-Maintenance of structu - Building Maintenance 8310-04582	0	0	0	0	88	-	-	-	-	-	-	-	88
Distribution-Operation supervi - Building Maintenance 8700-04582	0	240	183	-	858	-	139	-	-	-	-	-	1,420
Mains and Services Expenses - Building Maintenance 8740-04582	101	58	63	586	74	58	17	278	141	1,237	25	189	2,827
Distribution-Measuring and reg - Building Maintenance 8750-04582	0	0	0	79	-	-	-	-	815	3,500	314	503	5,212
Distribution-Measuring and reg - Building Maintenance 8770-04582	720	-	-	-	-	160	-	580	640	530	320	320	3,270
Meter and house regulator expe - Building Maintenance 8780-04582	0	0	0	0	0	0	0	11	-	-	-	5	16
Distribution-Other expenses - Building Maintenance 8800-04582	1,835	200	-	-	-	132	41	205	-	-	40	231	2,684
Distribution-Rents - Building Maintenance 8810-04582	12,280	16,779	16,143	18,251	22,654	19,749	21,452	19,689	21,744	15,085	19,106	31,941	234,872
Distribution-Maintenance of st - Building Maintenance 8860-04582	0	223	50	66	105	72	53	715	-	547	433	2,298	4,561
Mains and Services Expenses - Railroad easements and crossings 8740-04585	0	0	0	0	0	652	-	-	-	-	-	-	652
Distribution-Rents - Utilities 8810-04590	297	845	1,246	670	354	556	730	908	822	949	1,700	448	9,523
Customer accounts-Customer rec - Utilities 9030-04590	299	305	237	199	-	152	255	328	37	75	-	489	2,375
Transmission-Measuring and reg - Utilities 8570-04590	432	506	332	442	433	372	319	450	482	564	496	468	5,298
Lines expenses - Utilities 8170-04590	0	0	0	0	0	0	38	-	-	114	101	110	362
Compressor station expenses - Utilities 8180-04590	0	0	0	0	0	0	0	0	26	49	142	37	254
Compressor station fuel and po - Utilities 8190-04590	60	60	60	60	65	64	63	63	57	53	54	33	692
Storage-Measuring and regulati - Utilities 8200-04590	(1)	13	75	114	114	117	18	30	(35)	77	75	75	673
Storage-Purification expenses - Utilities 8210-04590	127	116	126	177	-	219	188	144	126	115	85	104	1,526
Distribution-Operation supervi - Utilities 8700-04590	7,187	6,656	5,621	7,775	6,311	5,791	6,889	7,671	6,822	9,771	9,055	8,567	88,115
Distribution load dispatching - Utilities 8710-04590	32	14	57	49	38	56	19	38	36	37	37	37	449
Mains and Services Expenses - Utilities 8740-04590	2,788	2,227	2,864	3,268	3,116	3,333	1,799	3,109	2,841	3,479	3,520	2,810	35,154
Distribution-Measuring and reg - Utilities 8750-04590	96	86	71	76	85	70	(3)	225	78	93	90	82	1,048
Distribution-Measuring and reg - Utilities 8770-04590	603	388	404	518	439	93	265	480	79	258	188	298	4,014
Meter and house regulator expe - Utilities 8780-04590	937	829	938	1,030	1,115	1,374	429	1,164	1,213	1,308	1,129	1,269	12,736
Storage-Other expenses - Utilities 8240-04590	19	19	20	19	21	20	21	17	19	19	17	19	232
Storage well royalties - Utilities 8250-04590	447	456	737	1,269	1,056	604	403	300	88	82	60	112	5,614
Mains expenses - Utilities 8560-04590	851	1,405	1,877	1,597	1,261	1,992	626	1,459	1,426	1,525	1,525	1,469	17,013
Distribution-Other expenses - Capitalized Utility Costs 8800-04599	(1,192)	(117)	-	-	-	(58)	(18)	(137)	-	-	(24)	(144)	(1,689)
Distribution-Rents - Capitalized Utility Costs 8810-04599	(6,796)	(9,489)	(9,538)	(10,470)	(15,302)	(12,006)	(13,121)	(12,222)	(14,030)	(9,791)	(12,943)	(21,108)	(146,816)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(3,810)	(3,688)	(3,236)	(4,357)	(4,448)	(3,360)	(4,359)	(4,726)	(4,288)	(6,211)	(5,775)	(5,505)	(53,762)
Mains expenses - Capitalized Utility Costs 8560-04599	(425)	(661)	(899)	(826)	(640)	(957)	(329)	(795)	(823)	(927)	(919)	(824)	(9,024)
Compressor station expenses - Capitalized Utility Costs 8180-04599	0	0	0	0	0	0	0	0	(20)	(42)	(120)	(31)	(213)
Rent, Maint., & Utilities	53,927	56,094	53,150	56,887	48,212	50,196	46,780	50,869	49,304	52,080	47,337	54,721	619,558
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	45,625	61,824	61,715	57,624	56,070	58,621	68,284	28,598	65,071	52,195	54,758	61,746	672,131
Storage-Operation supervision - Capitalized transportation costs 8140-03003	0	(1)	-	-	-	-	-	-	-	-	-	-	(1)
Mains expenses - Capitalized transportation costs 8560-03003	(15)	(7)	-	-	-	(2)	-	-	-	-	(2)	-	(25)
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(18)	(35)	(81)	(264)	(783)	(47)	(179)	(268)	(100)	(49)	(32)	(102)	(1,958)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(62,762)	(73,398)	(82,940)	(73,331)	(79,445)	(101,036)	(96,090)	(83,750)	(91,891)	(83,022)	(92,016)	(88,533)	(1,008,214)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	0	0	0	0	0	(33)	-	-	-	-	(47)	-	(80)
Meter and house regulator expe - Capitalized transportation costs 8780-03003	(29)	(28)	(83)	(101)	(20)	(32)	(27)	(287)	(320)	(163)	(123)	(116)	(1,327)
Maintenance of services - Capitalized transportation costs 8920-03003	0	0	0	0	(2)	-	-	-	-	-	-	-	(2)
Customer accounts-Meter readin - Capitalized transportation costs 9020-03003	0	0	0	0	(17)	-	(18)	-	-	(4)	-	-	(39)
Storage-Operation supervision - Vehicle Expense 8140-03004	0	11	-	-	-	-	-	-	-	-	-	-	11
Mains expenses - Vehicle Expense 8560-03004	86	103	-	-	-	11	-	-	-	-	6	-	206
Distribution-Operation supervi - Vehicle Expense 8700-03004	40	77	143	422	1,384	96	289	444	153	85	64	152	3,350
Mains and Services Expenses - Vehicle Expense 8740-03004	83,130	84,810	103,389	79,433	85,616	122,691	98,597	120,251	88,292	90,512	98,673	85,686	1,142,079
Distribution-Measuring and reg - Vehicle Expense 8750-03004	0	0	0	0	0	75	-	-	-	-	137	-	211
Meter and house regulator expe - Vehicle Expense 8780-03004	48	48	133	161	29	51	42	418	485	256	190	172	2,033
Maintenance of services - Vehicle Expense 8920-03004	0	0	0	0	4	-	-	-	-	-	-	-	4
Customer accounts-Meter readin - Vehicle Expense 9020-03004	0	0	0	0	28	-	28	-	-	6	-	-	62
Mains and Services Expenses - Equipment Lease 8740-04301	16,656	21,528	24,588	21,681	23,023	20,151	20,884	21,211	23,653	22,135	22,914	23,772	262,175
Distribution-Maintenance of ot - Heavy Equipment 8940-04302	0	0	0	0	0	0	22	-	-	216	-	33	271
Mains and Services Expenses - Heavy Equipment 8740-04302	7,580	14,571	14,467	16,388	(20,546)	8,790	11,824	8,516	10,593	13,020	18,976	27,825	132,002
Meter and house regulator expe - Heavy Equipment 8780-04302	0	0	0	29	-	-	-	-	-	-	179	-	208
Distribution-Rents - Heavy Equipment 8810-04302	0	0	40	-	-	-	-	-	-	-	-	-	40
Mains expenses - Heavy Equipment 8560-04302	1,227	446	142	1,206	1,084	2,307	105	4,670	151	2,038	8,130	1,461	22,947
Transmission-Maintenance of ma - Heavy Equipment 8630-04302	0	0	0	0	0	0	0	0	0	0	0	797	797
Distribution-Operation supervi - Heavy Equipment 8700-04302	0	220	(62)	17	163	1,278	271	455	338	21	29	91	2,821

Atmos Energy Corporation

Operation & Maintenance Expenses

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	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Maintenance of other equipment - Heavy Equipment 7690-04302	0	0	4	-	-	-	-	-	-	-	-	-	4
Compressor station expenses - Heavy Equipment 8180-04302	0	0	0	0	0	0	0	0	0	0	30	-	30
Maintenance of compressor stat - Heavy Equipment 8340-04302	0	0	523	1,853	-	-	-	-	1,494	-	-	-	3,870
Mains and Services Expenses - Use 03004 Licenses & Permits, Tax 8740-04305	0	0	0	0	10	-	-	-	-	-	-	-	10
Distribution-Operation supervi - Use 03004 Licenses & Permits, Tax 8700-04305	0	0	0	0	85	-	-	-	-	-	-	-	85
Transmission-Measuring and reg - Use 03004 Licenses & Permits, Tax 8570-04305	0	0	0	0	0	0	0	15	-	-	-	-	15
Mains expenses - Use 03004 Licenses & Permits, Tax 8560-04305	0	0	0	0	0	0	0	15	-	-	-	-	15
Mains expenses - Heavy Equipment Capitalized 8560-04307	(1,202)	(437)	(139)	(1,182)	(1,042)	(2,261)	(103)	(4,577)	(148)	(1,997)	(7,968)	(1,432)	(22,488)
Transmission-Maintenance of ma - Heavy Equipment Capitalized 8630-04307	0	0	0	0	0	0	0	0	0	0	0	(782)	(782)
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	0	(215)	61	(17)	(160)	(1,252)	(265)	(446)	(331)	(21)	(29)	(90)	(2,765)
Maintenance of other equipment - Heavy Equipment Capitalized 7690-04307	0	0	(4)	-	-	-	-	-	-	-	-	-	(4)
Compressor station expenses - Heavy Equipment Capitalized 8180-04307	0	0	0	0	0	0	0	0	0	0	(29)	-	(29)
Maintenance of compressor stat - Heavy Equipment Capitalized 8340-04307	0	0	(513)	(1,816)	-	-	-	-	(1,464)	-	-	-	(3,793)
Distribution-Maintenance of ot - Heavy Equipment Capitalized 8940-04307	0	0	0	0	0	0	(22)	-	-	(212)	-	(32)	(266)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(23,751)	(35,377)	(38,273)	(37,307)	(2,428)	(28,362)	(32,034)	(29,132)	(33,561)	(34,452)	(40,829)	(50,788)	(386,294)
Meter and house regulator expe - Heavy Equipment Capitalized 8780-04307	0	0	0	(28)	-	-	-	-	-	-	(175)	-	(203)
Distribution-Rents - Heavy Equipment Capitalized 8810-04307	0	0	(40)	-	-	-	-	-	-	-	-	-	(40)
Vehicles & Equip	66,614	74,139	83,071	64,768	63,033	81,044	71,586	66,135	62,416	60,565	63,837	59,862	817,068
Distribution-Maint of mains - Inventory Materials 8870-02001	100	176	248	168	135	80	12	-	-	-	-	-	919
Storage-Measuring and regulati - Inventory Materials 8200-02001	0	840	-	-	-	-	-	-	-	-	-	-	840
Mains expenses - Inventory Materials 8560-02001	1,389	-	-	1,345	-	-	3,942	2,785	537	-	4,036	-	14,035
Transmission-Measuring and reg - Inventory Materials 8570-02001	0	0	0	(359)	(22)	22	-	-	-	-	-	-	(359)
Transmission-Maintenance of me - Inventory Materials 8650-02001	0	0	0	(97)	(6)	6	-	-	-	-	-	-	(97)
Distribution-Operation supervi - Inventory Materials 8700-02001	0	0	0	48	-	-	-	-	-	-	-	-	48
Mains and Services Expenses - Inventory Materials 8740-02001	3,181	3,099	4,336	2,169	5,490	3,059	9,830	10,995	14,843	16,067	11,105	20,461	104,655
Distribution-Measuring and reg - Inventory Materials 8750-02001	72	83	215	146	133	52	2,390	-	-	-	-	-	3,091
Distribution-Measuring and reg - Inventory Materials 8760-02001	1,253	723	1,539	555	920	857	186	-	-	-	190	-	6,223
Distribution-Measuring and reg - Inventory Materials 8770-02001	1,520	1,554	1,872	1,112	1,653	1,585	555	-	-	-	-	-	9,851
Meter and house regulator expe - Inventory Materials 8780-02001	2,134	2,401	2,822	1,694	2,388	2,288	649	50	103	-	-	-	14,528
Storage-Measuring and regulati - Warehouse Loading Charge 8200-02004	0	118	-	-	-	-	-	-	-	-	-	-	118
Mains expenses - Warehouse Loading Charge 8560-02004	194	-	-	188	-	-	158	111	21	-	161	-	835
Transmission-Measuring and reg - Warehouse Loading Charge 8570-02004	0	0	0	(50)	(3)	3	-	-	-	-	-	-	(50)
Transmission-Maintenance of me - Warehouse Loading Charge 8650-02004	0	0	0	(14)	(1)	1	-	-	-	-	-	-	(14)
Distribution-Operation supervi - Warehouse Loading Charge 8700-02004	0	0	0	7	-	-	-	-	-	-	-	-	7
Mains and Services Expenses - Warehouse Loading Charge 8740-02004	445	434	607	304	769	428	393	440	594	643	444	818	6,320
Distribution-Measuring and reg - Warehouse Loading Charge 8750-02004	10	12	30	20	19	7	96	-	-	-	-	-	194
Distribution-Measuring and reg - Warehouse Loading Charge 8760-02004	175	101	215	78	129	120	7	-	-	-	8	-	834
Distribution-Measuring and reg - Warehouse Loading Charge 8770-02004	213	218	262	156	231	222	22	-	-	-	-	-	1,324
Meter and house regulator expe - Warehouse Loading Charge 8780-02004	299	336	395	237	334	320	26	2	4	-	-	-	1,954
Distribution-Maint of mains - Warehouse Loading Charge 8870-02004	14	25	35	24	19	11	0	-	-	-	-	-	127
Odorization - Non-Inventory Supplies 8711-02005	0	0	0	0	0	0	0	14	-	-	625	420	1,058
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	8,844	10,775	6,414	10,605	12,439	14,751	6,340	14,591	8,498	14,583	9,494	14,285	131,618
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	1,476	1,288	753	570	960	3,861	7,176	2,978	4,461	5,828	266	1,332	30,948
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	18	188	-	-	-	130	299	364	-	101	201	-	1,300
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	3,321	8,807	690	1,005	382	78	514	997	509	6,411	19,837	12,219	54,769
Meter and house regulator expe - Non-Inventory Supplies 8780-02005	172	184	306	1,052	291	559	206	1,522	1,484	1,353	503	295	7,927
Customer installations expense - Non-Inventory Supplies 8790-02005	14	-	-	14	14	-	13	57	35	37	51	59	294
Distribution-Other expenses - Non-Inventory Supplies 8800-02005	101	1,501	51	965	-	383	1,037	-	4	-	-	331	4,373
Distribution-Rents - Non-Inventory Supplies 8810-02005	0	44	295	128	-	-	30	493	-	211	74	101	1,377
Distribution-Maint of mains - Non-Inventory Supplies 8870-02005	0	7	-	-	-	-	281	-	-	-	-	-	289
Maintenance of measuring and r - Non-Inventory Supplies 8890-02005	0	0	0	2,403	-	572	25	-	-	-	1,599	-	4,599
Maintenance of measuring and r - Non-Inventory Supplies 8900-02005	0	0	0	2,589	-	1,060	-	-	-	3,402	1,166	93	8,309
Maintenance of measuring and r - Non-Inventory Supplies 8910-02005	0	0	0	70	322	1,048	-	428	-	1,357	1,357	2,900	7,481
Maintenance of services - Non-Inventory Supplies 8920-02005	0	0	0	0	0	85	-	-	-	-	71	-	156
Distribution-Maintenance of ot - Non-Inventory Supplies 8940-02005	314	1,198	1,841	826	1,266	1,163	548	1,007	2,517	3,062	998	2,057	16,817
Customer accounts-Meter readin - Non-Inventory Supplies 9020-02005	0	137	33	127	66	316	196	74	1,112	30	5	240	2,338
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	0	0	0	0	0	0	0	0	91	-	-	-	91
Sales-Supervision - Non-Inventory Supplies 9110-02005	0	0	0	(24)	-	-	-	-	-	-	-	-	(24)
Wells expenses - Non-Inventory Supplies 8160-02005	647	1,174	351	180	1,074	291	15	-	94	-	1,903	-	5,729
Lines expenses - Non-Inventory Supplies 8170-02005	0	0	8	-	28	-	-	-	-	-	76	-	112
Compressor station expenses - Non-Inventory Supplies 8180-02005	2,570	160	457	1,023	245	576	684	845	207	58	153	537	7,516
Storage-Measuring and regulati - Non-Inventory Supplies 8200-02005	0	0	0	58	-	-	-	-	-	-	-	528	586
Storage-Purification expenses - Non-Inventory Supplies 8210-02005	16	-	20	87	-	-	-	-	-	-	-	-	124
Maintenance of reservoirs and - Non-Inventory Supplies 8320-02005	111	-	-	-	-	-	-	-	-	-	-	-	111
Maintenance of compressor stat - Non-Inventory Supplies 8340-02005	214	169	-	32	395	110	-	21	-	-	-	-	940
Maintenance of measuring and r - Non-Inventory Supplies 8350-02005	0	0	0	0	0	0	0	7	-	-	-	-	7
Mains expenses - Non-Inventory Supplies 8560-02005	923	548	509	815	1,077	1,229	535	917	1,364	2,132	2,317	1,143	13,510
Transmission-Measuring and reg - Non-Inventory Supplies 8570-02005	18	-	864	22	-	28	272	723	546	513	217	487	3,690
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	279	282	1,259	827	356	278	988	605	898	642	602	2,121	9,138
Compressor station expenses - Purchasing Card Charges 8180-02006	0	0	0	0	0	0	127	-	(127)	0	0	0	-
Mains and Services Expenses - Purchasing Card Charges 8740-02006	0	0	0	0	0	0	0	0	0	0	38	-	38
Customer accounts-Customer rec - Refurbished Meters 9030-04595	0	0	0	0	0	0	0	0	0	0	120	-	120
Maintenance of services - Office Supplies 8920-05010	0	0	0	0	0	0	63	-	-	-	-	-	63
Customer accounts-Meter readin - Office Supplies 9020-05010	0	0	0	0	0	102	-	-	-	-	-	-	102
Customer accounts-Customer rec - Office Supplies 9030-05010	1,579	741	356	2,123	1,747	1,935	955	1,547	354	927	178	361	12,802
Customer service-Operating inf - Office Supplies 9090-05010	0	0	130	38	63	-	254	-	-	-	40	-	526
Sales-Supervision - Office Supplies 9110-05010	30	39	-	23	30	210	413	50	181	-	18	-	993
A&G-Office supplies & expense - Office Supplies 9210-05010	21	-	-	-	-	-	-	-	15	4	-	44	84
Distribution-Operation supervi - Office Supplies 8700-05010	871	9,361	4,481	7,727	5,268	6,794	4,771	6,551	4,331	8,389	2,837	3,747	65,129
Mains and Services Expenses - Office Supplies 8740-05010	1,480	1,193	705	1,465	1,336	424	1,523	594	503	485	328	995	11,032
Distribution-Measuring and reg - Office Supplies 8750-05010	0	0	0	0	0	0	0	42	-	-	-	-	42
Meter and house regulator expe - Office Supplies 8780-05010	378	800	3,076	232	2,136	1,205	1,963	282	673	584	1,145	1,273	13,748
Distribution-Other expenses - Office Supplies 8800-05010	4	96	499	38	27	100	327	23	20	194	9	144	1,481
Distribution-Rents - Office Supplies 8810-05010	0	0	0	69	-	-	-	78	-	9	-	-	156
Materials & Supplies	34,403	48,811	35,674	42,819	41,710	46,351	47,824	49,194	43,872	67,060	62,172	66,989	586,880

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Distribution-Operation supervi - Software Maintenance 8700-04201	0	0	0	8,087	(8,087)	0	0	0	759	46	-	10,368	11,173
Distribution-Operation supervi - IT Equipment 8700-04212	493	493	493	493	493	493	570	570	570	570	570	570	6,377
Information Technologies	**493**	**493**	**493**	**8,580**	**(7,594)**	**493**	**570**	**570**	**1,329**	**616**	**570**	**10,938**	**17,550**
Distribution-Operation supervi - Monthly Lines and service 8700-05310	4,112	6,908	6,468	7,964	8,512	9,529	5,828	6,696	5,669	8,691	9,035	6,099	85,529
Distribution-Operation supervi - Long Distance 8700-05312	89	277	235	157	163	365	186	208	138	120	90	62	2,091
Sales-Supervision - Long Distance 9110-05312	0	0	0	0	10	-	-	-	-	5	-	-	15
A&G-Office supplies & expense - Long Distance 9210-05312	0	0	0	0	0	0	0	3	-	-	-	-	3
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	4,647	5,698	6,105	5,870	6,838	6,700	6,372	6,078	5,496	5,049	4,551	4,725	68,129
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	229	1,650	1,043	1,464	1,463	795	452	452	292	419	372	470	9,099
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	886	2,287	1,960	4,279	3,414	3,358	2,756	3,640	3,513	1,436	1,437	1,416	30,384
Distribution-Maintenance of ot - Cellular, radio, pager charges 8940-05364	21	98	99	304	-	102	97	193	48	99	226	127	1,414
Mains and Services Expenses - Cellular, radio, pager charges 8740-05364	64	27	-	-	-	-	21	-	-	-	-	-	112
Meter and house regulator expe - Cellular, radio, pager charges 8780-05364	0	0	0	0	0	0	0	0	42	-	-	-	42
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	588	12,313	12,272	20,195	2,586	11,564	10,865	17,009	5,609	12,097	21,044	11,480	137,623
Distribution-Operation supervi - Cell service for data uses 8700-05376	0	0	1,943	5,947	400	4,175	4,442	8,152	741	5,366	9,801	4,749	45,706
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	0	83	477	21	-	129	97	69	211	276	64	1,225	2,652
Mains expenses - Cell phone equipment and accessories 8560-05377	0	0	0	0	0	0	0	35	-	-	-	-	35
A&G-Employee pensions and bene - Cell phone equipment and accessories 9260-05377	0	0	24	-	-	-	-	-	-	-	-	-	24
Sales-Supervision - Cell phone equipment and accessories 9110-05377	0	0	0	28	-	-	-	-	-	-	-	-	28
Mains and Services Expenses - Cell phone equipment and accessories 8740-05377	105	134	49	-	-	-	11	-	-	-	-	32	329
Meter and house regulator expe - Cell phone equipment and accessories 8780-05377	69	64	36	-	40	-	-	17	102	-	11	50	388
A&G-Employee pensions and bene - Capitalized Telecom Costs 9260-05399	0	0	(12)	-	-	-	-	-	-	-	-	-	(12)
Distribution-Maintenance of ot - Capitalized Telecom Costs 8940-05399	(11)	(51)	(50)	(156)	-	(55)	(53)	(106)	(26)	(55)	(120)	(73)	(757)
Sales-Supervision - Capitalized Telecom Costs 9110-05399	0	0	0	(14)	(5)	-	-	-	-	(3)	-	-	(22)
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(88)	(83)	(25)	-	-	-	(17)	-	-	-	-	(18)	(232)
Meter and house regulator expe - Capitalized Telecom Costs 8780-05399	(36)	(33)	(18)	-	(22)	-	-	(9)	(80)	-	(6)	(29)	(233)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(2,934)	(10,711)	(11,361)	(19,149)	(7,953)	(15,060)	(12,486)	(18,785)	(8,622)	(15,030)	(21,361)	(13,877)	(157,347)
Telecom	**7,739**	**18,661**	**19,245**	**26,909**	**15,447**	**21,603**	**18,572**	**23,651**	**13,131**	**18,460**	**25,144**	**16,437**	**224,999**
Distribution-Other expenses - Safety, Newspaper 8800-04001	0	0	0	0	0	0	125	-	-	-	-	-	125
Meter and house regulator expe - Required By Law, Safety 8780-04002	0	0	0	0	0	0	0	0	0	0	26	-	26
Transmission-Measuring and reg - Required By Law, Safety 8570-04002	0	15	-	-	-	-	-	-	-	-	-	-	15
Mains expenses - Required By Law, Safety 8560-04002	0	15	-	-	-	-	-	-	-	-	-	-	15
Sales-Supervision - Promo Other, Misc 9110-04021	0	0	0	35	-	-	-	35	75	110	49	-	304
Sales-Demonstrating and sellin - Promo Other, Misc 9120-04021	186	64	280	243	225	159	137	173	525	-	-	353	2,346
A&G-Office supplies & expense - Promo Other, Misc 9210-04021	0	0	0	0	0	0	0	0	1,552	163	-	-	1,716
Customer service-Operating Inf - Community Rel&Trade Shows 9090-04040	359	-	57	-	100	-	198	-	-	-	-	-	713
Customer service-Miscellaneous - Community Rel&Trade Shows 9100-04040	0	0	0	0	0	128	-	-	-	-	-	-	128
Sales-Supervision - Community Rel&Trade Shows 9110-04040	60	274	70	690	-	343	2,364	733	-	-	555	-	5,090
Sales-Demonstrating and sellin - Community Rel&Trade Shows 9120-04040	1,787	1,153	712	1,583	1,571	704	528	72	731	244	188	670	9,942
Sales-Advertising expenses - Community Rel&Trade Shows 9130-04040	0	0	0	150	-	-	75	-	-	-	-	-	225
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	0	153	-	-	200	-	-	-	-	2,000	-	-	2,353
Sales-Advertising expenses - Advertising 9130-04044	758	599	799	199	200	3,223	890	610	765	905	275	320	9,543
Distribution-Operation supervi - Advertising 8700-04044	0	0	0	0	0	179	-	-	-	-	-	-	179
Customer service-Operating Inf - Customer Relations & Assist 9090-04046	11,589	3,900	10	-	-	419	-	1,060	99	-	598	-	17,675
Sales-Supervision - Customer Relations & Assist 9110-04046	390	2,916	-	312	1,341	139	369	1,456	3,000	-	1,278	890	12,090
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	6,042	4,093	2,378	16,338	10,277	6,604	3,412	4,966	1,885	4,226	2,627	10,330	73,178
Distribution-Operation supervi - Customer Relations & Assist 8700-04046	0	0	0	875	495	545	-	-	-	-	-	-	1,915
Marketing	**21,171**	**13,181**	**4,305**	**20,426**	**14,409**	**12,443**	**8,097**	**9,105**	**8,632**	**7,648**	**5,596**	**12,564**	**137,577**
Sales-Supervision - Public Relations 9110-04146	0	0	0	0	50	-	-	-	-	-	-	-	50
Distribution-Measuring and reg - Public Relations 8750-04146	78	-	-	-	-	-	-	-	-	-	-	-	78
Directors & Shareholders &PR	**78**	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**128**
Distribution-Operation supervi - Membership Fees 8700-05415	0	0	0	0	29	-	-	-	-	-	-	-	29
Distribution-Other expenses - Membership Fees 8800-05415	0	0	0	0	89	-	78	-	-	-	-	-	167
Sales-Demonstrating and sellin - Membership Fees 9120-05415	0	0	0	100	-	-	-	-	-	-	-	-	100
A&G-Office supplies & expense - Membership Fees 9210-05415	0	0	0	0	0	0	0	32	52	35	-	-	119
Miscellaneous general expenses - Membership Fees 9302-05415	0	0	0	50	-	-	-	-	-	-	-	-	50
Miscellaneous general expenses - Club Dues - Deductible 9302-05417	0	0	0	0	0	250	-	-	-	-	-	-	250
A&G-Office supplies & expense - Club Dues - Deductible 9210-05417	0	0	0	0	0	0	0	0	0	28	-	-	28
Distribution-Operation supervi - Club Dues - Deductible 8700-05417	0	100	-	-	-	-	-	-	73	-	-	-	173
Distribution-Operation supervi - Association Dues 8700-07510	0	0	0	0	0	0	0	0	0	50	-	-	50
Miscellaneous general expenses - Association Dues 9302-07510	0	835	435	7,410	712	1,160	10,090	520	1,944	3,535	5,375	15	32,031
Customer service-Operating inf - Association Dues 9090-07510	0	0	0	0	0	0	0	0	0	0	8	-	8
Sales-Supervision - Association Dues 9110-07510	0	0	0	0	0	0	0	0	0	0	87	-	87
Sales-Demonstrating and sellin - Association Dues 9120-07510	0	0	0	0	0	0	0	0	595	875	-	-	1,470
Mains and Services Expenses - Donations 8740-07520	401	-	-	-	-	-	-	-	-	-	-	-	401
Distribution-Operation supervi - Donations 8700-07520	0	0	0	0	0	0	0	0	300	-	-	-	300
Dues & Donations	**401**	**935**	**435**	**7,560**	**830**	**1,410**	**10,168**	**552**	**2,963**	**4,524**	**5,471**	**15**	**35,264**
Mains expenses - Postage/Delivery Services 8560-05111	0	0	0	0	0	63	-	-	-	106	-	18	187
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	243	283	315	229	451	41	432	55	406	479	302	70	3,305
Mains and Services Expenses - Postage/Delivery Services 8740-05111	299	129	484	84	134	143	30	-	361	219	204	84	2,169
Distribution-Measuring and reg - Postage/Delivery Services 8750-05111	0	0	0	0	0	0	0	0	12	-	-	-	12
Meter and house regulator expe - Postage/Delivery Services 8780-05111	0	5	16	-	-	11	-	-	68	3	-	5	108
Distribution-Other expenses - Postage/Delivery Services 8800-05111	598	106	-	-	615	-	-	-	-	-	-	-	1,319
Distribution-Rents - Postage/Delivery Services 8810-05111	0	0	0	0	85	-	-	-	-	-	-	-	85
Distribution-Maintenance super - Postage/Delivery Services 8850-05111	23	342	304	250	241	235	11	179	35	117	577	164	2,478
Customer accounts-Meter readin - Postage/Delivery Services 9020-05111	13	-	-	-	-	-	-	-	2	-	-	-	15
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	55	116	196	129	110	79	337	180	-	15	91	268	1,576
Sales-Supervision - Postage/Delivery Services 9110-05111	0	0	248	134	77	65	-	-	67	-	-	-	590
Sales-Demonstrating and sellin - Postage/Delivery Services 9120-05111	0	0	0	0	0	0	29	-	309	-	-	-	338
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	0	0	0	148	-	-	-	-	165	-	12	-	325
A&G-Employee pensions and bene - Postage/Delivery Services 9260-05111	38	6	-	-	-	-	-	-	-	32	-	-	76
Print & Postages	**1,269**	**985**	**1,563**	**974**	**1,711**	**638**	**840**	**414**	**1,424**	**972**	**1,185**	**610**	**12,583**

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Distribution-Operation supervi - Meals and Entertainment 8700-05411	2,022	5,158	5,082	4,827	6,073	2,470	4,944	7,984	6,264	4,623	4,709	6,417	60,563
Mains and Services Expenses - Meals and Entertainment 8740-05411	309	292	528	387	236	319	715	704	1,138	398	341	398	5,764
Distribution-Measuring and reg - Meals and Entertainment 8750-05411	175	186	20	525	136	111	96	199	422	217	-	219	2,307
Distribution-Measuring and reg - Meals and Entertainment 8760-05411	0	0	0	233	-	-	-	-	-	-	-	-	233
Distribution-Measuring and reg - Meals and Entertainment 8770-05411	46	-	-	-	-	-	-	-	-	-	-	-	46
Meter and house regulator expe - Meals and Entertainment 8780-05411	24	81	137	352	-	-	214	346	31	-	143	66	1,394
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	12	-	-	-	-	-	-	-	-	-	-	12
Customer accounts-Operation su - Meals and Entertainment 9010-05411	0	0	0	0	0	0	0	0	0	0	0	223	223
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	0	0	120	-	-	195	-	-	-	55	70	106	545
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	27	-	-	14	-	14	302	116	183	-	164	-	819
Customer service-Operating inf - Meals and Entertainment 9090-05411	0	132	175	100	270	-	199	688	313	321	-	698	2,895
Sales-Supervision - Meals and Entertainment 9110-05411	169	347	129	734	581	428	381	577	275	697	373	537	5,220
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	14	67	93	28	129	100	6	123	68	14	-	151	793
Miscellaneous general expenses - Meals and Entertainment 9302-05411	0	0	0	0	138	195	-	122	-	106	-	-	560
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	1,345	-	79	-	250	-	-	-	-	70	-	60	1,804
Meter and house regulator expe - Spousal & Dependent Travel 8780-05412	0	0	0	0	0	0	0	0	0	0	44	-	44
Customer accounts-Operation su - Spousal & Dependent Travel 9010-05412	0	0	0	0	0	0	0	0	0	0	0	26	26
Customer service-Operating inf - Spousal & Dependent Travel 9090-05412	0	0	0	0	100	-	-	-	-	-	-	-	100
Sales-Supervision - Spousal & Dependent Travel 9110-05412	0	6	-	2	-	-	-	-	-	-	-	-	8
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	0	0	0	3	-	-	-	-	-	-	-	14	17
Sales-Demonstrating and sellin - Transportation 9120-05413	0	25	70	-	-	-	-	-	-	-	-	-	95
A&G-Office supplies & expense - Transportation 9210-05413	11	415	359	-	-	39	1,643	745	-	15	107	143	3,477
Miscellaneous general expenses - Transportation 9302-05413	0	0	0	0	910	992	-	703	-	1,587	-	-	4,191
Distribution-Operation supervi - Transportation 8700-05413	1,433	441	439	462	413	1,858	2,319	3,147	221	507	714	1,034	12,989
Mains and Services Expenses - Transportation 8740-05413	0	0	0	0	0	0	0	0	50	-	-	-	50
Meter and house regulator expe - Transportation 8780-05413	56	507	-	-	-	-	-	42	-	-	230	-	835
Customer accounts-Operation su - Transportation 9010-05413	0	0	0	0	0	0	0	0	0	0	0	375	375
Customer accounts-Customer rec - Transportation 9030-05413	0	41	-	-	100	-	-	-	-	-	-	-	141
Customer service-Operating inf - Transportation 9090-05413	0	887	696	998	506	-	1,107	354	777	1,521	748	1,995	9,590
Sales-Supervision - Transportation 9110-05413	1,268	2,472	2,235	2,020	2,738	2,764	2,178	3,436	2,432	1,991	2,915	3,766	30,215
Customer service-Operating inf - Lodging 9090-05414	0	105	211	89	808	-	527	-	243	524	-	295	2,803
Sales-Supervision - Lodging 9110-05414	519	725	339	329	1,291	1,468	244	1,262	717	674	526	674	8,768
A&G-Office supplies & expense - Lodging 9210-05414	186	735	-	-	-	157	116	349	-	-	124	213	1,880
A&G-Employee pensions and bene - Lodging 9260-05414	0	0	863	-	-	-	-	-	-	-	-	-	863
Miscellaneous general expenses - Lodging 9302-05414	0	0	0	0	245	465	-	-	-	150	-	-	860
Distribution-Operation supervi - Lodging 8700-05414	1,574	1,009	469	508	4,937	2,063	5,098	5,204	6,014	2,880	3,518	4,371	37,646
Mains and Services Expenses - Lodging 8740-05414	0	0	1,114	-	432	202	1,590	1,423	1,445	-	143	1,350	7,700
Distribution-Measuring and reg - Lodging 8750-05414	0	290	-	50	-	115	303	490	-	267	-	-	1,513
Distribution-Measuring and reg - Lodging 8760-05414	0	0	0	51	-	-	-	-	-	-	-	-	51
Distribution-Measuring and reg - Lodging 8770-05414	0	0	151	-	-	-	-	-	-	-	-	-	151
Meter and house regulator expe - Lodging 8780-05414	0	505	125	-	-	(1,384)	280	504	-	245	-	-	275
Distribution-Other expenses - Lodging 8800-05414	0	245	-	-	-	-	-	-	-	-	-	-	245
Customer accounts-Operation su - Lodging 9010-05414	0	0	0	0	0	0	0	0	0	0	0	971	971
Customer accounts-Meter readin - Lodging 9020-05414	0	0	0	0	0	483	-	-	-	565	-	-	1,048
Customer accounts-Customer rec - Lodging 9030-05414	0	0	0	0	140	320	146	-	245	125	-	-	976
A&G-Employee pensions and bene - Misc Employee Expense 9260-05419	0	31	-	-	-	-	-	-	-	-	559	-	590
Wells expenses - Misc Employee Expense 8160-05419	0	0	119	-	-	-	-	-	-	-	-	-	119
Mains expenses - Misc Employee Expense 8560-05419	58	-	-	-	-	-	-	-	-	-	-	-	58
Distribution-Operation supervi - Misc Employee Expense 8700-05419	5	6,744	(400)	58	-	-	-	38	-	-	-	294	6,740
Mains and Services Expenses - Misc Employee Expense 8740-05419	25	-	58	-	13	-	58	-	-	60	118	58	390
Meter and house regulator expe - Misc Employee Expense 8780-05419	0	0	0	0	0	0	0	0	0	0	0	150	150
Customer service-Operating inf - Misc Employee Expense 9090-05419	0	0	0	95	-	-	-	-	-	-	-	-	95
Sales-Supervision - Misc Employee Expense 9110-05419	0	0	0	8	29	-	-	-	-	-	-	-	37
Travel & Entertainment	9,256	21,455	13,213	11,875	20,475	13,377	22,466	28,555	20,827	17,612	15,546	24,604	219,260
Distribution-Operation supervi - Employee Development 8700-05420	0	0	0	0	0	725	-	850	-	-	-	-	1,575
Mains and Services Expenses - Employee Development 8740-05420	0	0	0	0	135	-	-	-	-	-	-	-	135
Distribution-Measuring and reg - Employee Development 8750-05420	0	0	0	0	150	-	-	-	-	-	-	-	150
Sales-Supervision - Employee Development 9110-05420	0	0	0	0	0	0	0	0	42	8	655	-	705
Sales-Demonstrating and sellin - Employee Development 9120-05420	0	0	0	185	-	-	-	-	-	-	50	-	235
Distribution-Operation supervi - Training 8700-05421	107	-	-	-	-	-	-	4,296	75	-	-	-	4,478
Mains and Services Expenses - Training 8740-05421	0	369	-	-	-	-	-	205	20	-	-	545	1,139
Distribution-Other expenses - Training 8800-05421	0	0	226	-	-	-	-	-	-	-	-	-	226
Sales-Supervision - Training 9110-05421	0	0	0	0	0	0	0	177	-	-	-	-	177
A&G-Office supplies & expense - Training 9210-05421	0	0	0	0	51	-	12	-	-	-	-	4	66
Mains and Services Expenses - Operator Qualifications Training 8740-05422	0	0	0	0	34	-	-	-	-	-	-	-	34
Distribution-Measuring and reg - Operator Qualifications Training 8750-05422	0	0	0	0	0	0	4	-	-	-	-	-	4
Distribution-Operation supervi - Books & Manuals 8700-05424	0	0	0	620	-	-	-	-	-	-	-	-	620
Mains and Services Expenses - Books & Manuals 8740-05424	0	0	0	0	45	-	-	-	-	-	-	228	273
Distribution-Operation supervi - Safety Training 8700-05426	0	0	0	0	0	0	0	0	595	-	-	-	595
Mains and Services Expenses - Safety Training 8740-05426	0	0	0	0	0	0	0	0	30	13	-	-	43
Meter and house regulator expe - Safety Training 8780-05426	0	0	0	0	0	0	0	0	73	-	-	-	73
Distribution-Other expenses - Safety Training 8800-05426	0	0	0	0	0	47	-	-	-	-	-	-	47
Customer accounts-Customer rec - Safety Training 9030-05426	0	0	0	0	0	0	0	322	-	-	-	-	322
Distribution-Operation supervi - Technical (Job Skills) Training 8700-05427	0	0	104	6	-	-	-	-	-	-	-	-	110
Mains and Services Expenses - Technical (Job Skills) Training 8740-05427	0	0	0	0	650	162	-	-	-	-	-	-	812
A&G-Office supplies & expense - Technical (Job Skills) Training 9210-05427	0	0	0	79	-	-	-	-	-	-	-	-	79
A&G-Employee pensions and bene - Technical (Job Skills) Training 9260-05427	0	240	141	-	150	150	-	50	-	43	37	20	832
Training	107	609	471	890	1,216	1,084	16	5,900	834	65	742	796	12,732
A&G-Injuries & damages - Settlement 9250-05418	450,000	-	1,980	10,324	6,623	14,575	25,000	1,383	-	-	514	700,000	1,210,399
A&G-Outside services employed - Gas Supplies Services 9230-05430	2,623	2,115	2,846	2,005	1,808	1,860	8,747	(1,986)	3,798	3,057	3,609	3,600	32,181
Distribution-Maint of mains - Contract Labor 8870-06111	0	0	640	-	-	-	-	-	-	-	-	24,963	25,603
Customer accounts-Meter readin - Contract Labor 9020-06111	42,452	63,385	70,786	72,529	75,152	74,038	94,906	55,322	105,201	88,534	69,534	89,926	881,766
Customer accounts-Customer rec - Contract Labor 9030-06111	0	0	0	0	0	0	0	0	0	1,114	-	-	1,114
A&G-Employee pensions and bene - Contract Labor 9260-06111	0	154	1,493	-	284	701	-	-	-	-	-	-	2,632

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Compressor station expenses - Contract Labor 8180-06111	0	0	0	330	-	-	-	-	-	-	-	236	566
Storage-Measuring and regulati - Contract Labor 8200-06111	0	0	0	0	0	0	0	0	0	183	-	-	183
Maintenance of compressor stat - Contract Labor 8340-06111	0	0	0	0	0	0	0	0	60	-	-	-	60
Mains expenses - Contract Labor 8560-06111	37,000	-	1,598	3,196	-	1,598	1,598	10,984	-	1,598	1,598	1,598	60,770
Transmission-Measuring and reg - Contract Labor 8570-06111	0	0	0	0	0	0	0	0	0	0	1,493	90	1,583
Transmission-Maintenance of ma - Contract Labor 8630-06111	0	0	1,598	-	-	-	-	-	1,598	-	-	-	3,196
Distribution-Operation supervi - Contract Labor 8700-06111	1,420	1,953	1,136	-	450	-	-	1,823	-	802	-	-	7,583
Mains and Services Expenses - Contract Labor 8740-06111	60,120	36,369	29,855	25,694	24,859	27,160	27,280	43,980	31,244	37,156	44,463	58,308	446,488
Distribution-Measuring and reg - Contract Labor 8750-06111	0	0	0	0	0	0	0	1,789	-	-	-	-	1,789
Distribution-Measuring and reg - Contract Labor 8770-06111	0	0	0	0	0	0	0	0	0	0	0	3,680	3,680
Customer accounts-Customer rec - Collection Fees 9030-06112	818	-	-	-	-	-	75	277	809	-	137	(27)	2,089
A&G-Outside services employed - Legal 9230-06121	161,502	101,356	(87,880)	14,473	25,954	46,212	(21,091)	22,612	40,833	27,609	19,868	23,413	374,861
Outside Services	**755,936**	**205,331**	**24,153**	**128,551**	**135,130**	**166,144**	**134,515**	**136,185**	**183,543**	**140,053**	**141,216**	**905,787**	**3,056,543**
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	17,685	22,514	29,321	32,050	27,613	24,393	18,066	15,378	15,226	(69,712)	15,288	63,979	211,801
Provision for Bad Debt	**17,685**	**22,514**	**29,321**	**32,050**	**27,613**	**24,393**	**18,066**	**15,378**	**15,226**	**(69,712)**	**15,288**	**63,979**	**211,801**
Distribution-Operation supervi - Land Rights 8700-04889	30	-	-	-	-	49	-	-	-	-	-	-	79
Customer accounts-Meter readin - Misc General Expense 9020-07590	419	-	-	1,875	113	138	85	-	2,275	-	801	967	6,672
Customer service-Operating inf - Misc General Expense 9090-07590	0	0	0	0	0	0	42	-	-	-	-	-	42
Sales-Miscellaneous sales expe - Misc General Expense 9160-07590	0	0	0	0	0	0	0	220	-	-	-	-	220
A&G-Employee pensions and bene - Misc General Expense 9260-07590	0	0	42	-	-	-	-	-	50	-	-	-	92
A&G-Franchise requirements - Misc General Expense 9270-07590	9,798	251	479	21,433	493	508	35,767	-	302	12,459	1,459	-	82,951
A&G-Regulatory commission expe - Misc General Expense 9280-07590	21,581	21,581	20,932	15,275	15,275	15,275	15,275	15,275	15,275	15,275	15,275	15,275	201,572
Miscellaneous general expenses - Misc General Expense 9302-07590	0	0	0	0	0	100	-	-	-	-	-	-	100
Storage-Operation supervision - Misc General Expense 8140-07590	(817)	(290)	(270)	(270)	(279)	(299)	(289)	-	(558)	(279)	(299)	(841)	(4,491)
Wells expenses - Misc General Expense 8160-07590	(1,713)	(2,691)	(298)	(298)	(318)	(398)	(341)	-	(636)	(318)	(398)	(3,670)	(11,081)
Storage well royalties - Misc General Expense 8250-07590	33	73	127	114	222	163	45	41	11	7	6	6	847
Distribution-Operation supervi - Misc General Expense 8700-07590	480	201	363	306	674	265	125	1,177	4	318	627	707	5,248
Distribution load dispatching - Misc General Expense 8710-07590	0	0	0	0	0	0	0	0	5	(5)	0	0	-
Mains and Services Expenses - Misc General Expense 8740-07590	995	39	425	87	711	964	935	2,500	513	2,159	7	895	10,230
Meter and house regulator expe - Misc General Expense 8780-07590	0	0	1,048	139	553	725	-	-	74	-	-	-	2,538
Distribution-Other expenses - Misc General Expense 8800-07590	0	219	-	-	-	-	-	-	-	-	-	-	219
Distribution-Rents - Misc General Expense 8810-07590	0	0	0	0	0	0	0	0	0	2,457	-	-	2,457
A&G-Office supplies & expense - Vendor Comp Sales Tax 9210-07592	(1,413)	(1,430)	(1,486)	(1,478)	(1,500)	(1,501)	(1,500)	-	(1,194)	(1,212)	(1,905)	(1,189)	(15,808)
A&G-Office supplies & expense - Use only for HR exp default ***Forme 9210-09195	0	37	-	(37)	0	0	0	0	0	0	0	0	-
Distribution-Operation supervi - Reimbursements 8700-09911	(967)	-	-	(2,220)	-	-	(3,934)	62	-	(1,245)	-	-	(8,303)
Mains and Services Expenses - Reimbursements 8740-09911	0	0	0	0	0	0	0	0	0	0	0	(431)	(431)
Miscellaneous	**28,425**	**17,989**	**21,360**	**34,925**	**15,944**	**15,990**	**46,211**	**19,276**	**16,122**	**29,617**	**15,574**	**11,719**	**273,152**
Total O&M Expenses Before Allocations	**1,646,299**	**1,169,116**	**929,871**	**1,061,821**	**931,896**	**1,029,829**	**984,520**	**1,007,899**	**958,231**	**891,623**	**1,002,997**	**1,746,289**	**13,360,391**

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Distribution-Maint of mains - Non-project Labor 8870-01000	2,713	3,680	2,443	4,273	3,050	3,416	2,860	4,845	4,075	1,668	3,144	3,600	39,987
Maintenance of services - Non-project Labor 8920-01000	867	1,893	518	1,079	1,062	638	1,255	1,408	644	637	935	2,810	13,747
Maintenance of meters and hous - Non-project Labor 8930-01000	5,434	3,045	2,859	3,392	4,270	1,521	1,943	2,863	6,685	8,808	9,169	6,724	56,712
Customer accounts-Meter readin - Non-project Labor 9020-01000	19,195	45,011	30,351	37,815	36,199	35,479	39,104	41,262	34,296	34,729	31,568	26,780	410,790
Customer accounts-Customer rec - Non-project Labor 9030-01000	26,041	32,371	22,037	24,069	29,100	29,591	33,593	29,258	17,923	18,002	18,660	16,974	297,621
Customer service-Operating inf - Non-project Labor 9090-01000	7,132	10,958	7,306	7,306	7,306	7,306	7,306	10,958	7,306	7,306	7,306	7,306	94,798
Sales-Supervision - Non-project Labor 9110-01000	11,541	17,601	11,715	11,732	11,736	11,736	11,968	18,282	12,171	12,186	12,197	12,193	155,057
A&G-Administrative & general s - Non-project Labor 9200-01000	29,151	43,202	28,193	28,431	28,471	31,105	33,461	64,636	45,420	45,427	44,390	43,611	465,499
Wells expenses - Non-project Labor 8160-01000	5,469	7,145	8,578	5,806	5,259	5,100	5,038	7,315	4,123	2,471	1,922	3,067	61,292
Lines expenses - Non-project Labor 8170-01000	1,687	7,326	4,320	3,916	5,127	3,980	3,955	5,490	3,560	3,514	1,635	1,393	45,921
Compressor station expenses - Non-project Labor 8180-01000	862	3,444	1,111	752	751	467	1,739	3,731	771	647	1,613	816	16,704
Storage-Measuring and regulati - Non-project Labor 8200-01000	150	109	301	362	137	98	747	75	-	-	-	-	1,978
Storage-Purification expenses - Non-project Labor 8210-01000	0	307	334	3,984	4,718	2,651	2,912	576	326	-	421	178	16,408
Maintenance of compressor stat - Non-project Labor 8340-01000	0	1,038	982	-	-	-	-	674	123	614	-	-	3,431
Maintenance of measuring and r - Non-project Labor 8350-01000	0	0	0	0	0	0	0	0	338	-	-	-	338
Processing-Maintenance of puri - Non-project Labor 8360-01000	0	246	-	-	-	-	-	-	1,289	430	-	-	1,965
Mains expenses - Non-project Labor 8560-01000	9,893	20,731	10,801	13,075	10,860	13,396	14,423	13,960	6,448	9,683	8,102	16,996	148,367
Transmission-Measuring and reg - Non-project Labor 8570-01000	5,561	8,927	8,781	5,565	5,641	7,469	3,455	5,819	4,370	4,419	2,668	3,992	66,669
Transmission-Maintenance of ma - Non-project Labor 8630-01000	5,288	1,773	-	89	1,333	176	-	2,071	392	-	2,166	3,351	16,642
Transmission-Maintenance of me - Non-project Labor 8650-01000	0	0	0	0	123	-	-	1,859	-	-	588	-	2,570
Distribution-Operation supervi - Non-project Labor 8700-01000	52,846	83,148	72,286	68,541	53,319	74,772	65,664	82,569	55,653	54,674	47,435	54,608	765,514
Mains and Services Expenses - Non-project Labor 8740-01000	92,335	118,871	84,673	89,065	97,334	86,088	82,342	140,277	94,825	87,765	82,209	75,718	1,131,502
Distribution-Measuring and reg - Non-project Labor 8750-01000	17,694	24,957	13,856	17,952	18,387	20,776	16,594	31,018	20,483	19,989	20,979	22,998	245,683
Distribution-Measuring and reg - Non-project Labor 8760-01000	2,588	3,625	-	2,126	2,169	1,827	3,453	3,610	2,569	2,055	4,352	3,753	32,127
Distribution-Measuring and reg - Non-project Labor 8770-01000	949	4,432	4,095	3,944	2,600	2,031	1,927	482	1,686	241	1,204	964	24,755
Meter and house regulator expe - Non-project Labor 8780-01000	53,748	86,501	55,600	60,041	53,314	53,839	60,493	90,503	56,259	58,404	52,800	59,829	741,331
Customer installations expense - Non-project Labor 8790-01000	155	1,702	1,309	3,336	999	2,347	3,647	2,700	1,162	690	397	739	19,182
Distribution-Other expenses - Non-project Labor 8800-01000	8,016	7,958	841	4,974	20,940	37,229	46,536	9,206	5,160	8,105	10,987	13,256	173,208
Distribution-Operation supervi - Capital Labor 8700-01001	469,733	699,380	466,614	448,489	438,610	469,939	399,005	693,373	471,356	470,444	495,317	506,180	6,028,440
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(470,540)	(694,623)	(466,658)	(449,324)	(437,281)	(467,281)	(396,721)	(687,165)	(473,121)	(466,256)	(494,728)	(503,252)	(6,006,950)
Mains expenses - O&M Project Labor and Contra 8560-01006	0	0	1,750	-	-	-	-	-	-	-	-	-	1,750
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	887	26,344	8,402	4,345	1,196	444	225	-	674	-	-	(1,573)	40,943
Mains and Services Expenses - Expense Labor Accrual 8740-01008	19,559	(40,206)	5,590	14,677	3,721	(756)	6,361	(26,026)	327	11,400	5,999	540	1,186
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	521	(7,342)	(3)	3,922	196	2,114	(431)	(4,787)	(49)	2,875	2,494	2,160	1,669
Distribution-Measuring and reg - Expense Labor Accrual 8760-01008	(637)	(1,078)	(604)	957	19	(63)	1,159	(1,470)	40	180	1,354	(112)	(255)
Distribution-Measuring and reg - Expense Labor Accrual 8770-01008	524	122	490	546	(515)	(245)	141	(1,076)	341	(325)	506	(72)	437
Meter and house regulator expe - Expense Labor Accrual 8780-01008	6,880	(20,519)	2,263	10,338	(3,027)	2,928	9,377	(21,212)	(1,019)	9,297	3,038	6,506	4,850
Customer installations expense - Expense Labor Accrual 8790-01008	(419)	183	109	1,108	(1,052)	724	1,014	(1,738)	(160)	(15)	(77)	208	(114)
Distribution-Other expenses - Expense Labor Accrual 8800-01008	3,510	(3,884)	(1,074)	1,986	7,185	9,191	9,307	(26,387)	(244)	1,962	2,251	1,797	5,591
Distribution-Maint of mains - Expense Labor Accrual 8870-01008	(1,402)	(1,150)	119	1,190	(551)	336	8	(908)	211	(263)	817	408	(1,165)
Maintenance of services - Expense Labor Accrual 8920-01008	89	(248)	(160)	330	(8)	(159)	434	(618)	(74)	94	212	1,078	1,071
Maintenance of meters and hous - Expense Labor Accrual 8930-01008	1,812	(3,025)	350	669	395	(1,161)	406	(689)	1,194	1,852	1,062	(886)	1,978
Customer accounts-Operation su - Expense Labor Accrual 9010-01008	(109)	-	-	-	-	-	-	-	-	-	-	-	(109)
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	3,921	(4,975)	1,603	7,911	(1,177)	1,900	5,723	(16,586)	1,697	5,318	1,893	(1,055)	6,174
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	2,158	(11,532)	1,216	4,220	2,264	1,701	5,360	(15,280)	(396)	2,720	2,129	6	(5,433)
Customer service-Operating inf - Expense Labor Accrual 9090-01008	1,157	(2,809)	365	1,096	(0)	365	731	(2,557)	-	1,096	731	365	539
Sales-Supervision - Expense Labor Accrual 9110-01008	1,825	(4,566)	581	1,765	2	587	1,313	(4,134)	(4)	1,831	1,224	607	1,030
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	4,462	(11,748)	1,258	4,336	18	2,741	4,524	(9,304)	582	6,816	4,024	1,791	9,500
Wells expenses - Expense Labor Accrual 8160-01008	1,947	(2,364)	1,383	39	(246)	183	473	(1,804)	(188)	(42)	(27)	726	80
Lines expenses - Expense Labor Accrual 8170-01008	(408)	125	75	466	545	(317)	383	(1,458)	(20)	511	(588)	(51)	(738)
Compressor station expenses - Expense Labor Accrual 8180-01008	560	14	(241)	5	(0)	(105)	810	(422)	(429)	66	548	(358)	449
Storage-Measuring and regulati - Expense Labor Accrual 8200-01008	38	(80)	72	73	(101)	(13)	399	(436)	(13)	-	-	-	(60)
Storage-Purification expenses - Expense Labor Accrual 8210-01008	0	51	49	1,692	330	(798)	422	(1,651)	(15)	(81)	211	(113)	98
Maintenance of compressor stat - Expense Labor Accrual 8340-01008	(59)	173	122	(295)	-	-	-	112	(82)	215	(246)	-	(59)
Maintenance of measuring and r - Expense Labor Accrual 8350-01008	0	0	0	0	0	0	0	0	84	(84)	0	0	-
Processing-Maintenance of puri - Expense Labor Accrual 8360-01008	0	41	(41)	0	0	0	0	0	322	(150)	(172)	0	-
Mains expenses - Expense Labor Accrual 8560-01008	3,561	(2,975)	(215)	2,643	(997)	1,811	1,956	(6,327)	(715)	2,261	178	5,297	6,478
Transmission-Measuring and reg - Expense Labor Accrual 8570-01008	1,150	(2,127)	1,147	(130)	34	1,196	(1,662)	(1,103)	123	675	(434)	862	(270)
Transmission-Maintenance of ma - Expense Labor Accrual 8630-01008	743	(3,142)	(295)	40	560	(511)	(89)	345	(247)	(98)	1,084	759	(851)
Transmission-Maintenance of me - Expense Labor Accrual 8650-01008	0	0	0	0	55	(55)	0	310	(310)	0	294	(294)	-
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	10,419	(20,224)	6,601	10,117	(5,833)	(130)	14,518	(25,637)	152	7,957	1,848	6,317	6,103
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	230,883	370,989	242,613	267,515	212,798	254,867	222,732	349,040	246,594	243,409	229,146	277,213	3,147,799
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(230,077)	(375,746)	(242,569)	(266,679)	(214,126)	(267,524)	(225,016)	(355,249)	(244,829)	(247,598)	(229,734)	(280,141)	(3,169,288)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	887	3,169	5,204	4,345	3,455	444	225	-	674	-	-	(1,573)	16,830
Mains expenses - Expense Labor Transfer In 8560-01013	0	0	1,750	-	-	-	-	-	-	-	-	-	1,750
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	(887)	(26,344)	(8,402)	(4,345)	(1,196)	(444)	(225)	-	(674)	-	-	1,573	(40,943)
Mains expenses - Expense Labor Transfer Out 8560-01014	0	0	(1,750)	-	-	-	-	-	-	-	-	-	(1,750)
Labor	422,006	399,880	401,004	475,674	408,675	454,949	507,277	404,706	389,859	438,735	397,202	406,569	5,106,536
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	58,168	51,339	53,922	65,264	56,402	59,319	70,035	54,990	53,150	59,998	54,263	55,914	692,764
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	86,054	75,291	79,604	96,969	83,748	87,744	103,607	79,009	77,067	87,209	78,727	81,530	1,016,559
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	78,245	69,297	72,594	87,641	75,760	79,799	94,211	74,816	72,059	81,267	73,551	75,641	934,882
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	166	593	1,302	813	647	83	42	-	126	-	-	(294)	3,478
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	18,480	16,292	17,126	20,746	17,927	18,845	22,250	17,406	16,842	19,018	17,196	17,731	219,860
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	45	159	338	211	168	22	11	-	33	-	-	(76)	909
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	200	176	186	226	195	204	241	185	180	204	184	190	2,372
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	0	2	3	2	2	0	0	-	0	-	-	(1)	9
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	2,038	1,794	1,888	2,290	1,979	2,079	2,454	1,908	1,850	2,090	1,889	1,950	24,210
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	1	3	8	5	4	0	0	-	1	-	-	(2)	20
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	2,106	1,868	1,954	2,357	2,037	2,147	2,536	2,024	1,946	2,194	1,986	2,041	25,194
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	5	17	37	23	18	2	1	-	4	-	-	(8)	98
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	3,756	3,325	3,485	4,209	3,638	3,831	4,523	3,585	3,455	3,897	3,526	3,628	44,857
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	8	27	60	37	30	4	2	-	6	-	-	(14)	160
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	125	445	977	611	485	62	32	-	95	-	-	(221)	2,610
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	191	683	1,499	936	745	96	48	-	145	-	-	(339)	4,004

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	17	60	132	83	66	8	4	-	13	-	-	(30)	353
Benefits	249,605	221,371	235,114	282,423	243,851	254,246	299,998	233,923	226,971	255,878	231,322	237,639	2,972,341
Mains expenses - Uniforms 8560-07443	1,844	677	1,259	187	63	178	250	-	-	-	-	-	4,459
Distribution-Operation supervi - Uniforms 8700-07443	0	0	0	0	0	0	0	0	101	250	-	-	351
Mains and Services Expenses - Uniforms 8740-07443	492	375	740	426	471	250	467	1,195	554	320	730	375	6,395
Meter and house regulator expe - Uniforms 8780-07443	127	-	-	-	-	66	-	95	-	-	-	-	288
Customer accounts-Meter readin - Uniforms 9020-07443	385	93	138	106	242	-	112	125	129	250	-	-	1,579
A&G-Employee pensions and bene - Uniforms 9260-07443	27,432	3,798	8,921	4,387	3,084	1,340	714	3,284	1,123	1,095	1,085	2,057	58,320
Customer accounts-Meter readin - Uniforms Capitalized 9020-07444	(240)	(54)	(79)	(47)	(120)	2	(56)	(78)	(72)	(156)	-	-	(900)
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	(16,935)	(2,432)	(5,284)	(2,428)	(1,704)	(763)	(313)	(1,957)	(689)	(616)	(652)	(1,243)	(35,017)
Mains expenses - Uniforms Capitalized 8560-07444	(393)	(76)	(87)	(21)	(6)	(19)	(29)	-	-	-	-	-	(632)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	0	0	0	0	0	0	0	0	(51)	(144)	-	-	(195)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	(293)	(218)	(436)	(251)	(276)	(147)	(269)	(732)	(313)	(117)	(433)	(237)	(3,721)
Meter and house regulator expe - Uniforms Capitalized 8780-07444	(82)	-	-	-	-	(39)	-	(39)	-	-	-	-	(160)
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	0	0	0	0	0	0	0	0	0	0	909	8,983	9,892
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	0	0	0	0	0	0	0	0	0	0	877	849	1,727
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	0	0	0	0	0	0	0	0	0	0	189	183	372
Customer accounts-Meter readin - Misc Employee Welfare Exp 9020-07499	0	18	-	-	-	-	-	48	-	-	-	-	66
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	36	-	256	32	101	102	99	81	36	-	37	-	780
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	0	0	30	15	-	-	-	-	-	29	-	-	74
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	0	526	613	25	691	208	621	249	-	81	92	182	3,287
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	3,490	3,381	2,669	3,281	3,597	3,127	3,118	3,930	5,472	4,234	3,350	4,473	44,121
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	628	39	90	47	105	282	90	-	134	72	170	467	2,125
Mains and Services Expenses - Misc Employee Welfare Exp 8740-07499	0	0	130	65	65	779	2,497	672	576	201	-	-	4,985
Meter and house regulator expe - Misc Employee Welfare Exp 8780-07499	0	100	-	-	-	-	-	-	-	-	-	-	100
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	0	30	93	-	-	-	-	-	-	-	148	49	320
Employee Welfare	16,490	6,258	9,053	5,824	6,313	5,365	7,301	6,873	7,000	5,499	6,503	16,136	98,616
A&G-Property insurance - Blueflame Property Insurance 9240-04069	27,950	27,950	27,950	29,178	29,178	28,523	29,233	29,290	29,234	29,236	29,231	29,234	346,190
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	0	0	1,670	204	102	715	-	102	-	-	1,568	4,360
A&G-Property insurance - Insurance Capitalized 9240-04072	(15,239)	(15,514)	(15,508)	(16,416)	(15,677)	(13,832)	(15,563)	(16,434)	(16,583)	(16,601)	(16,910)	(17,606)	(191,883)
Customer service-Operating inf - Damages 9090-07111	0	0	0	0	0	0	0	0	0	0	831	-	831
Mains and Services Expenses - Damages 8740-07111	0	0	0	0	2,996	-	-	-	-	-	-	-	2,996
A&G-Employee pensions and bene - Environmental & Safety 9260-07120	0	0	0	0	0	0	0	0	0	0	0	592	592
Distribution-Operation supervi - Environmental & Safety 8700-07120	0	0	0	0	0	0	0	0	0	0	0	630	630
Mains and Services Expenses - Environmental & Safety 8740-07120	535	-	430	599	1,345	236	623	-	542	61	631	-	5,004
Insurance	13,246	12,436	12,872	15,031	18,046	15,029	15,009	12,856	13,296	12,696	13,783	14,419	168,719
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(136)	(9)	-	(54)	(7)	-	(9)	(40)	(353)	-	82	(125)	(652)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(41,370)	(46,214)	(38,460)	(38,004)	(37,029)	(35,254)	(36,739)	(37,500)	(42,787)	(41,382)	(43,451)	(41,706)	(479,897)
A&G-Rents - Building Lease/Rents Capitalized 9310-04580	0	0	0	0	0	0	0	0	(102,968)	-	-	-	(102,968)
Storage well royalties - Building Lease/Rents 8250-04581	637	82	-	489	74	-	80	170	1,025	-	(182)	565	2,941
Distribution-Rents - Building Lease/Rents 8810-04581	67,464	75,392	63,906	68,537	65,923	64,879	68,362	61,283	69,283	65,483	66,626	65,543	802,683
A&G-Rents - Building Lease/Rents 9310-04581	2,686	2,686	2,686	3,698	2,939	2,939	3,175	3,680	125,045	3,680	3,299	4,060	160,574
Customer accounts-Customer rec - Building Maintenance 9030-04582	0	0	0	0	9	-	-	-	-	-	-	-	9
Customer service-Operating inf - Building Maintenance 9090-04582	0	0	0	14	-	-	-	-	-	-	-	-	14
Storage-Maintenance of structu - Building Maintenance 8310-04582	0	2,527	-	179	-	-	-	-	-	497	-	-	3,203
Distribution-Operation supervi - Building Maintenance 8700-04582	0	375	28	282	1,003	-	558	-	-	-	-	475	2,720
Mains and Services Expenses - Building Maintenance 8740-04582	143	58	58	58	138	77	77	182	77	129	269	4,655	5,922
Distribution-Measuring and reg - Building Maintenance 8750-04582	260	-	280	-	-	-	430	570	391	1,185	6,468	616	10,200
Distribution-Measuring and reg - Building Maintenance 8770-04582	320	-	90	-	-	-	-	320	800	395	480	-	2,405
Meter and house regulator expe - Building Maintenance 8780-04582	162	116	64	-	-	-	-	-	-	-	-	-	342
Distribution-Other expenses - Building Maintenance 8800-04582	0	185	521	-	-	3,841	5	229	487	47	294	87	5,695
Distribution-Rents - Building Maintenance 8810-04582	14,803	13,309	11,544	26,336	14,829	13,439	17,169	22,017	14,261	25,585	15,061	67,086	255,438
Distribution-Maintenance of st - Building Maintenance 8860-04582	119	954	283	296	103	-	984	107	354	54	2,012	3,994	9,260
Maintenance of measuring and r - Building Maintenance 8910-04582	0	0	0	0	0	0	0	0	0	0	0	4	4
Mains and Services Expenses - Railroad easements and crossings 8740-04585	0	0	0	0	0	660	-	-	-	-	-	-	660
A&G-Franchise requirements - Utilities 9270-04590	0	0	0	0	0	135	-	-	-	-	-	-	135
Distribution-Rents - Utilities 8810-04590	991	836	773	1,002	186	1,405	1,060	630	1,243	1,230	1,004	1,016	11,376
Customer accounts-Customer rec - Utilities 9030-04590	525	87	311	288	-	404	33	85	528	105	41	270	2,676
Transmission-Measuring and reg - Utilities 8570-04590	566	671	711	868	517	603	540	569	561	624	779	490	7,499
Lines expenses - Utilities 8170-04590	111	111	71	124	140	118	121	161	124	126	66	106	1,379
Compressor station expenses - Utilities 8180-04590	60	57	75	74	77	84	33	89	108	86	19	41	805
Compressor station fuel and po - Utilities 8190-04590	56	63	-	129	66	71	67	67	38	59	62	62	740
Storage-Measuring and regulati - Utilities 8200-04590	73	113	147	172	211	183	176	58	182	90	89	86	1,580
Storage-Purification expenses - Utilities 8210-04590	114	145	129	159	189	160	157	214	184	162	71	75	1,739
Distribution-Operation supervi - Utilities 8700-04590	7,413	6,599	5,893	6,060	7,908	7,312	6,027	3,714	6,266	8,906	9,832	7,591	83,322
Distribution load dispatching - Utilities 8710-04590	19	19	19	40	22	55	19	37	19	40	40	-	329
Mains and Services Expenses - Utilities 8740-04590	2,977	2,433	2,598	4,606	2,629	3,524	2,608	2,506	3,803	3,222	3,557	2,845	37,309
Distribution-Measuring and reg - Utilities 8750-04590	81	88	69	81	78	80	72	-	160	96	89	89	983
Distribution-Measuring and reg - Utilities 8770-04590	440	70	250	584	56	347	536	77	482	463	310	235	3,849
Meter and house regulator expe - Utilities 8780-04590	1,118	876	886	1,592	925	1,453	1,106	2,267	3,734	1,362	1,318	1,287	17,945
Distribution-Other expenses - Utilities 8800-04590	0	0	0	0	0	0	0	0	0	0	123	-	123
Storage-Other expenses - Utilities 8240-04590	19	19	-	27	25	21	21	21	20	19	19	20	232
Storage well royalties - Utilities 8250-04590	194	255	773	1,090	1,957	1,223	963	360	288	125	130	62	7,418
Mains expenses - Utilities 8560-04590	1,451	1,396	1,200	1,708	1,195	1,629	1,478	1,027	2,332	1,477	1,845	1,303	18,041
Distribution-Operation supervi - Misc Rents 8700-04592	0	0	0	0	0	0	0	0	0	0	150	-	150
Distribution-Maintenance of st - Misc Rents 8860-04592	0	0	0	0	0	54	-	-	-	-	-	-	54
Distribution-Other expenses - Capitalized Utility Costs 8800-04599	0	(124)	(299)	-	-	(2,180)	(2)	(142)	(316)	(27)	(268)	(54)	(3,413)
Distribution-Rents - Capitalized Utility Costs 8810-04599	(9,648)	(8,985)	(7,650)	(16,659)	(8,646)	(8,260)	(9,117)	(13,692)	(9,106)	(16,284)	(9,864)	(45,292)	(163,402)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(4,688)	(4,421)	(3,791)	(3,606)	(5,279)	(4,116)	(3,475)	(2,248)	(3,790)	(5,567)	(6,203)	(5,248)	(52,433)
Mains expenses - Capitalized Utility Costs 8560-04599	(836)	(809)	(662)	(909)	(638)	(803)	(695)	(598)	(1,299)	(835)	(1,073)	(759)	(9,917)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(51)	(48)	(63)	(63)	(65)	(72)	(28)	(76)	(92)	(73)	(16)	(35)	(683)
Rent, Maint., & Utilities	45,873	48,913	42,439	59,199	49,532	54,012	55,792	45,144	71,064	51,098	52,881	69,442	646,388
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	58,452	55,821	65,929	62,932	47,394	73,692	66,656	47,722	65,172	25,149	71,325	30,856	671,099

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Mains expenses - Capitalized transportation costs 8560-03003	(2)	(3)	(7)	(13)	(52)	(1)	-	(2)	-	-	(45)	-	(125)
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(82)	(379)	(197)	(199)	(568)	(202)	(213)	(206)	725	(90)	(142)	(112)	(1,666)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(98,853)	(84,315)	(90,269)	(80,934)	(77,023)	(93,704)	(106,259)	(101,764)	(94,357)	(75,127)	(95,737)	(68,197)	(1,066,536)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	(6)	(11)	-	-	(291)	-	(27)	(16)	-	-	-	-	(351)
Meter and house regulator expe - Capitalized transportation costs 8780-03003	(239)	(173)	(73)	(17)	(222)	(80)	(14)	(74)	(11)	(33)	(103)	(184)	(1,222)
Customer accounts-Meter readin - Capitalized transportation costs 9020-03003	(14)	-	-	-	(58)	(6)	(197)	-	(104)	(119)	-	(87)	(585)
Mains expenses - Vehicle Expense 8560-03004	8	30	103	114	551	10	-	8	-	-	100	-	924
Distribution-Operation supervi - Vehicle Expense 8700-03004	146	572	313	390	1,481	362	427	346	(1,506)	147	238	241	3,156
Mains and Services Expenses - Vehicle Expense 8740-03004	110,599	89,231	91,832	85,602	97,625	103,916	153,933	133,966	97,810	111,929	91,045	81,380	1,248,866
Distribution-Measuring and reg - Vehicle Expense 8750-03004	12	18	-	-	663	-	59	68	-	-	-	-	820
Meter and house regulator expe - Vehicle Expense 8780-03004	368	259	110	27	361	162	24	180	17	51	145	260	1,963
Customer accounts-Meter readin - Vehicle Expense 9020-03004	21	-	-	-	100	10	402	-	186	202	-	134	1,054
Mains and Services Expenses - Equipment Lease 8740-04301	23,763	25,543	29,198	22,054	22,378	24,461	24,107	25,218	25,163	37,942	28,248	27,726	315,801
Distribution-Maintenance of ot - Heavy Equipment 8940-04302	0	0	0	0	0	3	-	-	531	-	-	-	534
Mains and Services Expenses - Heavy Equipment 8740-04302	17,001	15,546	10,209	14,505	15,086	11,335	20,706	15,519	10,566	22,037	12,569	9,542	174,621
Distribution-Measuring and reg - Heavy Equipment 8750-04302	0	0	0	0	0	44	-	-	-	-	-	-	44
Meter and house regulator expe - Heavy Equipment 8780-04302	6	205	-	-	-	-	-	-	-	-	-	-	211
Mains expenses - Heavy Equipment 8560-04302	2,716	3,275	128	2,214	392	1,811	540	70	336	1,134	922	835	14,373
Transmission-Maintenance of ma - Heavy Equipment 8630-04302	48	-	-	-	-	-	-	-	-	-	-	-	48
Distribution-Operation supervi - Heavy Equipment 8700-04302	0	2	-	19	60	8	459	4	61	863	15	4	1,495
Wells expenses - Heavy Equipment 8160-04302	0	0	0	0	0	0	0	0	158	53	-	-	211
Lines expenses - Heavy Equipment 8170-04302	0	0	0	0	0	0	0	0	218	-	-	-	218
Compressor station expenses - Heavy Equipment 8180-04302	0	0	0	0	0	0	905	914	170	-	-	-	1,989
Maintenance of compressor stat - Heavy Equipment 8340-04302	0	0	0	0	0	0	0	0	0	601	-	-	601
Mains and Services Expenses - Use 03004 Licenses & Permits, Tax 8740-04305	0	0	0	0	0	0	117	-	-	-	-	-	117
Meter and house regulator expe - Use 03004 Licenses & Permits, Tax 8780-04305	0	0	0	0	0	0	30	-	-	-	-	-	30
Mains expenses - Heavy Equipment Capitalized 8560-04307	(2,662)	(3,210)	(125)	(2,170)	(384)	(1,775)	(529)	(68)	(330)	(1,111)	(904)	(819)	(14,086)
Transmission-Maintenance of ma - Heavy Equipment Capitalized 8630-04307	(47)	-	-	-	-	-	-	-	-	-	-	-	(47)
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	0	(2)	-	(19)	(59)	(8)	(450)	(4)	(60)	(845)	(15)	(4)	(1,465)
Wells expenses - Heavy Equipment Capitalized 8160-04307	0	0	0	0	0	0	0	0	(155)	(52)	-	-	(207)
Lines expenses - Heavy Equipment Capitalized 8170-04307	0	0	0	0	0	0	0	0	(213)	-	-	-	(213)
Compressor station expenses - Heavy Equipment Capitalized 8180-04307	0	0	0	0	0	0	(887)	(896)	(167)	-	-	-	(1,950)
Maintenance of compressor stat - Heavy Equipment Capitalized 8340-04307	0	0	0	0	0	0	0	0	0	(589)	-	-	(589)
Distribution-Maintenance of ot - Heavy Equipment Capitalized 8940-04307	0	0	0	0	0	(3)	-	-	(520)	-	-	-	(523)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(39,949)	(40,268)	(36,619)	(35,828)	(36,714)	(35,080)	(43,917)	(39,923)	(35,014)	(58,779)	(40,001)	(36,523)	(480,613)
Distribution-Measuring and reg - Heavy Equipment Capitalized 8750-04307	0	0	0	0	0	(43)	-	-	-	-	-	-	(43)
Meter and house regulator expe - Heavy Equipment Capitalized 8780-04307	(6)	(201)	-	-	-	-	-	-	-	-	-	-	(207)
Vehicles & Equip	71,280	61,942	68,532	68,578	70,718	84,912	115,873	81,063	68,675	63,362	67,661	45,053	867,750
Mains expenses - Inventory Materials 8560-02001	0	1,889	144	-	-	4,162	-	697	-	2,093	-	-	8,986
Distribution-Operation supervi - Inventory Materials 8700-02001	0	0	0	0	0	653	-	-	561	-	-	-	1,214
Mains and Services Expenses - Inventory Materials 8740-02001	8,228	8,412	9,523	7,282	6,236	13,690	19,112	13,373	16,847	16,520	17,003	13,246	149,472
Mains expenses - Warehouse Loading Charge 8560-02004	0	76	6	-	-	167	-	26	-	84	-	-	359
Distribution-Operation supervi - Warehouse Loading Charge 8700-02004	0	0	0	0	0	26	-	-	22	-	-	-	49
Mains and Services Expenses - Warehouse Loading Charge 8740-02004	329	336	381	291	249	548	764	535	674	661	680	530	5,979
Odorization - Non-Inventory Supplies 8711-02005	0	0	0	1,286	-	2,505	150	-	-	-	-	3,027	6,968
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	13,827	9,812	9,780	16,281	12,717	14,635	12,250	15,119	15,768	15,682	12,031	13,023	160,924
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	201	4,363	2,022	2,311	1,065	983	5,094	8,527	1,431	6,138	2,088	5,487	39,708
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	71	129	-	-	12	15	196	-	-	-	-	-	422
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	673	413	736	6,588	2,871	2,101	1,971	9,161	(1,925)	7,872	16,578	8,219	55,258
Meter and house regulator expe - Non-Inventory Supplies 8780-02005	542	137	215	86	392	450	95	336	21	195	247	1,080	3,796
Customer installations expense - Non-Inventory Supplies 8790-02005	184	57	55	243	59	111	151	73	115	101	81	92	1,323
Distribution-Other expenses - Non-Inventory Supplies 8800-02005	69	765	168	375	783	309	137	95	28	-	174	569	3,471
Distribution-Rents - Non-Inventory Supplies 8810-02005	181	85	633	7	-	1,174	9	(9)	444	204	4	11	2,744
Distribution-Maint of mains - Non-Inventory Supplies 8870-02005	0	0	0	0	0	0	0	0	0	0	161	482	643
Maintenance of measuring and r - Non-Inventory Supplies 8890-02005	2,709	-	-	-	-	-	-	283	-	-	-	-	2,992
Maintenance of measuring and r - Non-Inventory Supplies 8900-02005	0	0	0	0	2,409	89	-	1,505	7,844	249	909	55	13,061
Maintenance of measuring and r - Non-Inventory Supplies 8910-02005	0	0	1,828	-	-	-	-	2,065	108	137	4,626	623	9,386
Maintenance of meters and hous - Non-Inventory Supplies 8930-02005	0	0	0	0	0	0	0	0	1,367	-	-	-	1,367
Distribution-Maintenance of ot - Non-Inventory Supplies 8940-02005	2,198	1,178	982	862	183	1,624	1,087	757	740	1,595	1,808	5,832	18,846
Customer accounts-Meter readin - Non-Inventory Supplies 9020-02005	44	34	8	(24)	41	121	2,621	9,897	168	40	95	-	13,045
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	(14)	-	-	137	-	13	499	66	-	-	18	-	719
Sales-Supervision - Non-Inventory Supplies 9110-02005	0	0	0	0	0	0	0	0	0	0	0	19	19
A&G-Employee pensions and bene - Non-Inventory Supplies 9260-02005	0	0	0	0	0	0	78	-	-	73	-	-	151
Miscellaneous general expenses - Non-Inventory Supplies 9302-02005	0	0	0	0	0	0	0	0	0	0	0	106	106
Wells expenses - Non-Inventory Supplies 8160-02005	283	1,257	260	473	179	-	2,551	-	-	941	46	39	6,028
Lines expenses - Non-Inventory Supplies 8170-02005	165	-	-	9	156	-	307	-	-	-	-	-	637
Compressor station expenses - Non-Inventory Supplies 8180-02005	1,114	444	373	210	77	103	518	651	372	244	491	600	5,196
Storage-Measuring and regulati - Non-Inventory Supplies 8200-02005	0	0	0	0	130	-	-	403	260	(139)	-	-	653
Storage-Purification expenses - Non-Inventory Supplies 8210-02005	0	101	247	122	737	-	1,506	-	-	-	200	-	2,912
Storage-Maintenance of structu - Non-Inventory Supplies 8310-02005	0	0	0	0	0	0	0	0	211	-	-	-	211
Maintenance of compressor stat - Non-Inventory Supplies 8340-02005	0	21	17	-	-	-	-	-	108	83	-	-	228
Maintenance of measuring and r - Non-Inventory Supplies 8350-02005	0	0	0	0	0	0	0	0	0	10	-	-	10
Processing-Maintenance of puri - Non-Inventory Supplies 8360-02005	0	42	-	2	-	-	-	-	400	62	-	-	506
Mains expenses - Non-Inventory Supplies 8560-02005	2,086	1,444	1,807	2,270	1,188	1,175	3,198	997	269	758	947	605	16,742
Transmission-Measuring and reg - Non-Inventory Supplies 8570-02005	793	251	840	593	148	505	1,106	1,637	476	16	-	-	6,366
Transmission-Maintenance of ma - Non-Inventory Supplies 8630-02005	0	261	-	-	-	-	-	-	-	-	-	150	411
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	0	111	95	-	-	-	-	5	28	-	-	-	238
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	455	472	1,013	1,337	2,145	1,373	1,504	604	3,313	1,059	1,154	10,062	24,491
Customer accounts-Customer rec - Purchasing Card Charges 9030-02006	0	0	0	0	0	48	(48)	0	0	0	0	0	-
Distribution-Maintenance of ot - Office Supplies 8940-05010	0	90	-	-	-	-	-	-	-	-	-	-	90
Customer accounts-Operation su - Office Supplies 9010-05010	0	0	0	0	29	-	-	-	-	-	-	-	29
Customer accounts-Meter readin - Office Supplies 9020-05010	0	0	0	0	0	0	0	0	18	-	-	-	18
Customer accounts-Customer rec - Office Supplies 9030-05010	288	1,122	396	763	585	419	349	172	524	388	431	285	5,722
Customer service-Operating inf - Office Supplies 9090-05010	0	0	0	24	-	6	116	-	-	-	37	112	296
Sales-Supervision - Office Supplies 9110-05010	224	-	131	61	-	-	-	-	-	12	-	-	429
Sales-Demonstrating and sellin - Office Supplies 9120-05010	0	0	0	0	0	0	0	0	190	-	-	-	190

Atmos Energy Corporation

Operation & Maintenance Expenses

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	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Sales-Advertising expenses - Office Supplies 9130-05010	0	0	131	-	-	-	-	-	-	-	-	-	131
A&G-Office supplies & expense - Office Supplies 9210-05010	0	0	27	12	6	-	-	-	11	-	-	-	56
A&G-Employee pensions and bene - Office Supplies 9260-05010	26	-	-	-	-	-	-	-	-	-	-	-	26
A&G-Regulatory commission expe - Office Supplies 9280-05010	0	0	0	0	0	0	0	519	136	-	-	463	1,119
Mains expenses - Office Supplies 8560-05010	0	0	0	0	0	0	0	126	-	-	-	-	126
Transmission-Measuring and reg - Office Supplies 8570-05010	0	0	0	0	0	0	0	0	0	0	48	-	48
Distribution-Operation supervi - Office Supplies 8700-05010	5,517	4,143	4,519	7,498	5,680	2,432	5,408	5,406	2,745	5,524	7,253	10,358	66,483
Mains and Services Expenses - Office Supplies 8740-05010	974	705	312	1,580	692	737	204	439	1,649	609	1,209	1,362	10,472
Distribution-Measuring and reg - Office Supplies 8750-05010	0	0	0	0	0	0	0	22	-	-	-	18	39
Meter and house regulator expe - Office Supplies 8780-05010	2,355	1,370	966	1,358	1,327	540	671	337	321	615	948	1,916	12,723
Distribution-Other expenses - Office Supplies 8800-05010	0	0	127	223	296	117	200	200	116	26	31	-	1,336
Distribution-Rents - Office Supplies 8810-05010	0	0	0	0	1	-	-	-	-	-	-	-	1
Materials & Supplies	43,522	39,518	37,741	52,262	40,390	50,831	61,804	74,024	55,360	61,850	69,300	78,371	664,974
Storage-Operation supervision - Software Maintenance 8140-04201	541	-	-	-	-	-	-	-	-	-	-	-	541
Distribution-Operation supervi - Software Maintenance 8700-04201	0	200	-	12	-	-	-	-	-	-	-	-	211
Distribution-Operation supervi - IT Equipment 8700-04212	3,926	570	570	570	570	570	-	-	-	-	-	-	6,775
Information Technologies	4,466	770	570	582	570	570	-	-	-	-	-	-	7,528
													-
Distribution-Operation supervi - Monthly Lines and service 8700-05310	5,583	5,663	5,064	5,254	5,664	6,597	15,195	10,660	10,454	11,404	11,268	10,988	103,794
Distribution-Operation supervi - Long Distance 8700-05312	131	335	134	81	50	368	446	466	1,098	191	223	174	3,697
Mains and Services Expenses - Long Distance 8740-05312	0	0	0	0	0	27	-	-	-	-	-	-	27
Distribution-Other expenses - Long Distance 8800-05312	0	0	0	0	0	0	13	-	-	-	-	-	13
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	4,774	5,986	5,999	5,409	6,450	6,596	6,924	6,957	6,724	3,497	4,397	4,114	67,828
Meter and house regulator expe - Measurement & Meter Reading 8780-05323	0	491	-	-	-	-	-	-	-	-	-	-	491
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	468	182	109	150	291	148	400	212	190	192	132	282	2,754
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	1,337	1,150	314	1,730	1,095	1,142	1,141	1,163	1,150	1,101	527	1,246	13,094
Sales-Supervision - Cellular, radio, pager charges 9110-05364	42	-	-	-	-	-	-	-	-	-	-	-	42
Distribution-Maintenance of ot - Cellular, radio, pager charges 8940-05364	0	130	133	265	-	97	196	128	124	236	82	398	1,788
Mains and Services Expenses - Cellular, radio, pager charges 8740-05364	0	0	0	70	45	-	101	24	-	13	-	-	253
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	5,118	5,292	9,946	21,163	24	11,215	21,132	10,800	72	22,011	5,434	15,756	127,961
Distribution-Operation supervi - Cell service for data uses 8700-05376	1,566	3,332	4,620	9,092	227	4,596	9,379	3,340	1,660	6,240	4,896	7,912	56,861
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	61	183	101	270	154	105	657	478	58	412	1,149	967	4,595
Mains expenses - Cell phone equipment and accessories 8560-05377	0	105	-	11	-	15	42	-	-	-	-	-	173
Sales-Supervision - Cell phone equipment and accessories 9110-05377	0	0	117	-	-	16	-	18	8	19	-	-	177
Mains and Services Expenses - Cell phone equipment and accessories 8740-05377	148	37	42	-	-	24	32	72	3	126	162	-	647
Distribution-Measuring and reg - Cell phone equipment and accessories 8750-05377	0	0	0	0	0	0	0	0	0	0	0	32	32
Meter and house regulator expe - Cell phone equipment and accessories 8780-05377	40	42	73	-	29	75	21	-	-	-	11	98	388
Distribution-Maintenance of ot - Capitalized Telecom Costs 8940-05399	0	(72)	(74)	(141)	-	(47)	(101)	(72)	(70)	(134)	(47)	(227)	(986)
Sales-Supervision - Capitalized Telecom Costs 9110-05399	(23)	-	(65)	-	-	(8)	-	(10)	(5)	(11)	-	-	(121)
Distribution-Other expenses - Capitalized Telecom Costs 8800-05399	0	0	0	0	0	0	(7)	-	-	-	-	-	(7)
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(81)	(21)	(24)	(37)	(24)	(25)	(69)	(54)	(2)	(79)	(94)	-	(508)
Distribution-Measuring and reg - Capitalized Telecom Costs 8750-05399	0	0	0	0	0	0	0	0	0	0	0	(18)	(18)
Meter and house regulator expe - Capitalized Telecom Costs 8780-05399	(22)	(23)	(41)	-	(15)	(36)	(11)	-	-	-	(6)	(56)	(210)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(7,346)	(8,412)	(10,793)	(19,425)	(3,761)	(11,041)	(23,911)	(14,364)	(7,487)	(22,506)	(13,147)	(20,473)	(162,666)
Telecom	11,797	14,400	15,656	23,891	10,228	19,864	31,579	19,819	13,977	22,710	14,985	21,192	220,099
Customer service-Operating inf - Safety, Newspaper 9090-04001	0	0	0	0	0	0	816	-	-	-	-	-	816
Distribution-Operation supervi - Safety, Newspaper 8700-04001	0	0	0	0	0	663	-	-	-	-	-	-	663
Distribution-Measuring and reg - Required By Law, Safety 8750-04002	0	0	0	50	-	-	-	-	-	-	-	-	50
Mains and Services Expenses - Required By Law, Safety 8740-04002	0	0	0	0	0	0	0	43	-	-	-	-	43
A&G-Injuries & damages - Safety 9250-04018	0	0	0	0	0	0	326	20	-	-	165	-	511
A&G-Employee pensions and bene - Safety 9260-04018	0	0	0	0	0	127	-	-	-	-	-	-	127
Distribution-Operation supervi - Safety 8700-04018	0	0	0	0	0	60	-	-	-	-	-	-	60
Distribution-Measuring and reg - Promo Other, Misc 8750-04021	0	50	-	-	-	-	-	-	-	-	-	-	50
Sales-Demonstrating and sellin - Promo Other, Misc 9120-04021	260	55	-	391	229	293	81	129	-	-	63	-	1,501
Customer service-Operating inf - Community Rel&Trade Shows 9090-04040	0	0	0	0	303	18	-	-	-	-	-	306	627
Sales-Supervision - Community Rel&Trade Shows 9110-04040	23	956	215	340	237	74	-	35	-	1,505	-	-	3,384
Sales-Demonstrating and sellin - Community Rel&Trade Shows 9120-04040	65	2,036	240	1,967	129	780	675	537	250	1,040	799	1,212	9,729
Sales-Advertising expenses - Community Rel&Trade Shows 9130-04040	450	-	-	248	-	-	611	1,039	18	-	-	-	2,366
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	0	0	0	0	0	0	0	0	0	0	2,000	80	2,080
Sales-Advertising expenses - Advertising 9130-04044	1,690	823	-	1,738	1,431	1,169	1,207	100	427	1,891	1,265	285	12,025
Customer service-Operating inf - Customer Relations & Assist 9090-04046	7,841	4,199	14	-	-	-	-	-	55	467	40	-	12,615
Sales-Supervision - Customer Relations & Assist 9110-04046	765	27	6	2,049	658	105	-	405	-	-	-	476	4,491
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	2,671	14,579	18,194	7,491	3,567	2,641	1,727	8,319	3,275	3,716	3,823	4,128	74,132
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	0	0	0	0	0	0	0	338	-	-	-	338
Distribution-Operation supervi - Customer Relations & Assist 8700-04046	0	0	0	545	125	-	-	-	-	-	-	-	670
Marketing	13,764	22,725	18,668	14,818	6,679	5,930	5,443	10,626	4,363	8,620	8,156	6,487	126,279
Distribution-Other expenses - Public Relations 8800-04146	27	-	-	-	-	-	-	-	-	-	-	-	27
Meter and house regulator expe - Public Relations 8780-04146	0	0	20	-	-	-	-	-	-	-	-	-	20
Mains and Services Expenses - Public Relations 8740-04146	0	0	20	-	-	-	-	-	-	-	-	-	20
Distribution-Operation supervi - Public Relations 8700-04146	0	0	0	106	-	-	-	-	-	-	-	-	106
Directors & Shareholders &PR	27	-	40	106	-	-	-	-	-	-	-	-	173
Distribution-Operation supervi - Membership Fees 8700-05415	0	0	0	0	0	0	0	0	150	-	-	-	150
Mains and Services Expenses - Membership Fees 8740-05415	0	0	0	0	0	300	-	-	410	-	-	-	710
Distribution-Measuring and reg - Membership Fees 8750-05415	0	0	0	0	300	-	-	-	-	-	-	-	300
Distribution-Other expenses - Membership Fees 8800-05415	0	0	0	0	750	90	-	78	-	-	-	-	918
Customer service-Operating inf - Membership Fees 9090-05415	0	0	0	0	100	-	-	-	-	-	-	100	200
A&G-Office supplies & expense - Membership Fees 9210-05415	0	0	0	0	0	0	0	101	125	44	-	-	269
Miscellaneous general expenses - Membership Fees 9302-05416	0	0	0	0	0	0	0	250	-	-	-	-	250
Miscellaneous general expenses - Club Dues - Deductible 9302-05417	0	0	50	-	-	-	-	-	-	-	-	-	50
Distribution-Operation supervi - Association Dues 8700-07510	0	0	0	0	0	0	19	-	-	-	-	50	69
Miscellaneous general expenses - Association Dues 9302-07510	30	825	2,310	13,952	1,570	-	3,250	630	10,975	11,800	970	-	46,312
Sales-Demonstrating and sellin - Association Dues 9120-07510	255	-	-	-	-	-	-	250	355	310	395	-	1,565
Distribution-Other expenses - Donations 8800-07520	0	0	0	0	0	0	0	0	0	0	0	250	250

Atmos Energy Corporation

Operation & Maintenance Expenses

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	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Distribution-Operation supervi - Donations 8700-07520	0	0	0	0	0	0	0	0	0	0	0	250	250
Dues & Donations	285	825	2,360	13,952	2,720	390	3,269	1,309	12,015	12,154	1,365	650	51,293
Mains expenses - Postage/Delivery Services 8560-05111	0	0	0	18	-	-	-	-	-	32	-	-	50
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	166	623	368	208	154	81	380	183	232	355	736	330	3,817
Mains and Services Expenses - Postage/Delivery Services 8740-05111	103	20	135	511	232	114	40	307	89	287	78	56	1,972
Meter and house regulator expe - Postage/Delivery Services 8780-05111	71	-	-	-	-	-	3	-	-	-	-	-	74
Customer installations expense - Postage/Delivery Services 8790-05111	0	0	0	0	0	0	0	46	-	-	-	-	46
Distribution-Maintenance super - Postage/Delivery Services 8850-05111	65	287	218	142	259	154	214	236	31	175	117	421	2,319
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	171	651	234	1,022	371	191	256	343	21	434	119	122	3,934
Sales-Supervision - Postage/Delivery Services 9110-05111	0	0	0	0	0	0	0	0	0	0	12	-	12
Sales-Demonstrating and sellin - Postage/Delivery Services 9120-05111	0	0	0	0	0	0	0	0	0	83	-	-	83
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	0	9	-	-	-	-	14	-	14	-	-	-	36
A&G-Employee pensions and bene - Postage/Delivery Services 9260-05111	12	-	-	-	-	-	-	-	-	-	-	-	12
A&G-Regulatory commission expe - Postage/Delivery Services 9280-05111	0	0	0	0	0	0	0	73	2,540	167	162	589	3,531
Print & Postages	587	1,590	954	1,902	1,016	540	908	1,188	2,927	1,533	1,223	1,517	15,885
Transmission-Operation supervi - Meals and Entertainment 8500-05411	0	0	0	0	0	184	-	-	-	-	-	-	184
Mains expenses - Meals and Entertainment 8560-05411	15	410	679	238	-	-	-	-	-	-	-	-	1,342
Distribution-Operation supervi - Meals and Entertainment 8700-05411	4,276	5,191	2,553	4,763	6,689	4,714	4,475	4,547	6,631	5,836	12,606	10,131	72,432
Mains and Services Expenses - Meals and Entertainment 8740-05411	605	280	111	202	641	565	432	247	871	350	315	728	5,348
Distribution-Measuring and reg - Meals and Entertainment 8750-05411	322	179	21	1,687	74	229	540	851	316	601	600	346	5,966
Distribution-Measuring and reg - Meals and Entertainment 8770-05411	21	-	-	-	-	-	-	-	-	-	-	-	21
Meter and house regulator expe - Meals and Entertainment 8780-05411	145	23	252	107	-	76	160	185	673	288	18	169	2,095
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	458	74	187	985	-	691	-	-	2,395
Distribution-Maintenance super - Meals and Entertainment 8850-05411	47	25	-	-	-	-	-	-	-	-	-	-	73
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	58	-	-	7	240	110	254	346	75	149	49	211	1,500
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	34	21	106	276	181	-	101	-	-	316	61	1,096
Customer service-Operating inf - Meals and Entertainment 9090-05411	0	232	805	286	97	181	85	263	240	90	80	137	2,495
Sales-Supervision - Meals and Entertainment 9110-05411	263	235	1,041	755	440	530	328	444	468	341	407	821	6,073
Sales-Demonstrating and sellin - Meals and Entertainment 9120-05411	0	0	0	0	0	0	0	0	0	257	-	-	257
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	27	223	504	105	25	40	28	80	-	88	94	2	1,217
A&G-Injuries & damages - Meals and Entertainment 9250-05411	0	0	0	0	0	0	46	-	-	-	-	-	46
A&G-Regulatory commission expe - Meals and Entertainment 9280-05411	0	0	0	0	0	230	307	13	32	-	-	-	581
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	56	78	-	-	38	-	18	93	-	28	18	46	374
Mains and Services Expenses - Spousal & Dependent Travel 8740-05412	0	0	0	0	0	0	0	0	0	0	292	-	292
Meter and house regulator expe - Spousal & Dependent Travel 8780-05412	0	0	0	0	0	0	0	0	0	0	11	13	24
Distribution-Maintenance super - Spousal & Dependent Travel 8850-05412	84	-	-	-	-	-	-	-	-	-	-	-	84
Customer accounts-Customer rec - Spousal & Dependent Travel 9030-05412	0	0	20	-	-	-	-	-	-	-	-	-	20
Sales-Supervision - Spousal & Dependent Travel 9110-05412	0	2	-	-	-	12	-	-	-	-	-	-	14
A&G-Office supplies & expense - Transportation 9210-05413	17	15	67	-	-	14	-	459	-	-	453	1,015	2,040
A&G-Regulatory commission expe - Transportation 9280-05413	0	0	0	0	0	625	753	114	-	-	-	-	1,393
Mains expenses - Transportation 8560-05413	0	0	0	0	0	0	0	171	-	-	-	-	171
Transmission-Measuring and reg - Transportation 8570-05413	0	0	0	0	0	0	0	175	-	-	-	-	175
Distribution-Operation supervi - Transportation 8700-05413	39	434	2,790	2,125	770	522	1,243	184	929	1,660	1,554	2,902	15,153
Mains and Services Expenses - Transportation 8740-05413	0	0	297	167	-	-	-	-	-	-	345	-	810
Meter and house regulator expe - Transportation 8780-05413	0	0	959	105	-	526	-	-	162	-	-	-	1,752
Distribution-Other expenses - Transportation 8800-05413	0	0	0	0	0	1,863	-	-	-	-	-	-	1,863
Customer accounts-Meter readin - Transportation 9020-05413	0	0	114	-	925	62	-	-	-	-	-	-	1,102
Customer accounts-Customer rec - Transportation 9030-05413	0	0	887	93	171	670	644	184	-	-	241	-	2,889
Customer service-Operating inf - Transportation 9090-05413	0	900	556	730	627	692	702	737	1,734	827	-	2,020	9,526
Sales-Supervision - Transportation 9110-05413	4,432	3,014	2,289	2,280	2,955	2,774	3,293	3,409	3,123	2,532	4,093	3,981	38,175
Customer service-Operating inf - Lodging 9090-05414	0	260	216	254	345	318	364	447	1,315	-	-	568	4,087
Sales-Supervision - Lodging 9110-05414	1,161	535	1,161	332	299	1,055	934	1,292	1,561	542	634	1,225	10,730
A&G-Office supplies & expense - Lodging 9210-05414	197	792	137	-	-	-	-	377	-	-	524	193	2,221
A&G-Regulatory commission expe - Lodging 9280-05414	0	0	0	0	0	247	-	518	-	-	-	-	765
Wells expenses - Lodging 8160-05414	0	813	-	-	-	-	-	-	-	-	-	-	813
Transmission-Operation supervi - Lodging 8500-05414	0	0	0	0	0	110	-	-	-	-	-	-	110
Mains expenses - Lodging 8560-05414	871	465	2,714	1,130	-	-	-	149	-	-	-	-	5,330
Transmission-Measuring and reg - Lodging 8570-05414	0	0	0	0	0	0	0	153	-	-	-	-	153
Distribution-Operation supervi - Lodging 8700-05414	3,091	2,902	631	939	2,676	3,286	3,322	3,286	7,000	4,998	7,619	6,297	46,046
Mains and Services Expenses - Lodging 8740-05414	564	1,248	53	396	934	961	-	-	553	918	1,589	2,443	9,657
Distribution-Measuring and reg - Lodging 8750-05414	1,087	-	124	-	-	942	449	124	-	309	-	511	3,545
Meter and house regulator expe - Lodging 8780-05414	429	-	628	-	-	766	-	-	300	124	247	1,179	3,673
Distribution-Other expenses - Lodging 8800-05414	0	0	0	0	0	619	628	188	-	1,403	175	-	3,012
Customer accounts-Meter readin - Lodging 9020-05414	463	-	-	-	559	-	722	-	-	516	-	-	2,281
Customer accounts-Customer rec - Lodging 9030-05414	0	0	0	0	0	1,050	-	653	-	-	-	175	1,878
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	0	139	-	-	-	-	-	-	-	-	-	-	139
A&G-Injuries & damages - Misc Employee Expense 9250-05419	0	0	0	0	0	0	0	0	0	0	0	214	214
A&G-Employee pensions and bene - Misc Employee Expense 9260-05419	0	0	39	-	-	-	-	-	-	-	-	-	39
A&G-Regulatory commission expe - Misc Employee Expense 9280-05419	0	0	0	0	0	167	10	175	-	-	-	-	352
Mains expenses - Misc Employee Expense 8560-05419	140	-	58	-	-	-	-	-	-	77	-	58	333
Transmission-Measuring and reg - Misc Employee Expense 8570-05419	0	0	0	0	0	0	0	0	0	58	-	-	58
Distribution-Operation supervi - Misc Employee Expense 8700-05419	171	13,140	2,738	778	162	13,436	14,361	48,756	(1,681)	7,513	1,419	1,354	102,147
Mains and Services Expenses - Misc Employee Expense 8740-05419	0	274	-	120	121	58	30	522	174	166	58	1,320	2,842
Distribution-Measuring and reg - Misc Employee Expense 8750-05419	0	0	0	0	0	0	0	0	22	-	-	-	22
Sales-Supervision - Misc Employee Expense 9110-05419	0	0	0	0	0	0	0	0	0	0	0	6	6
Travel & Entertainment	18,605	31,843	22,468	17,926	19,521	37,792	34,315	70,227	24,495	30,360	33,756	38,124	379,432
Distribution-Operation supervi - Employee Development 8700-05420	0	0	0	0	150	150	-	-	-	-	-	-	300
Customer accounts-Customer rec - Employee Development 9030-05420	0	0	0	0	0	0	0	140	-	-	-	-	140
Sales-Supervision - Employee Development 9110-05420	49	-	-	-	-	-	-	-	-	-	-	-	49
Sales-Demonstrating and sellin - Employee Development 9120-05420	0	0	0	0	0	285	-	-	-	-	-	-	285
A&G-Office supplies & expense - Employee Development 9210-05420	0	0	0	0	0	0	0	9	-	-	-	-	9
Distribution-Operation supervi - Training 8700-05421	0	0	0	0	150	-	200	2,900	-	200	-	(1,500)	1,950
Mains and Services Expenses - Training 8740-05421	0	155	-	-	212	279	-	-	-	-	-	-	646
Distribution-Measuring and reg - Training 8750-05421	0	0	0	0	150	-	-	-	-	-	-	-	150

Atmos Energy Corporation

Operation & Maintenance Expenses

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	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Meter and house regulator expe - Training 8780-05421	0	0	0	0	0	73	150	-	-	-	-	-	223
Distribution-Other expenses - Training 8800-05421	0	0	0	0	0	0	0	37	-	-	-	68	105
A&G-Office supplies & expense - Training 9210-05421	0	0	53	-	-	-	-	-	-	-	-	-	53
A&G-Employee pensions and bene - Training 9260-05421	0	0	0	0	0	0	196	-	-	-	-	-	196
Distribution-Operation supervi - Books & Manuals 8700-05424	0	0	0	0	0	0	75	4	-	-	-	-	79
Distribution-Operation supervi - Safety Training 8700-05426	1,000	-	-	-	-	-	-	28	-	384	-	-	1,412
Mains and Services Expenses - Safety Training 8740-05426	0	0	0	0	15	16	47	-	15	27	-	-	120
Distribution-Other expenses - Safety Training 8800-05426	0	0	0	0	0	0	0	0	0	0	53	29	82
A&G-Injuries & damages - Safety Training 9250-05426	0	0	0	0	0	0	0	8	-	-	-	-	8
Distribution-Operation supervi - Technical (Job Skills) Training 8700-05427	0	0	0	0	0	0	0	0	119	-	-	-	119
Mains and Services Expenses - Technical (Job Skills) Training 8740-05427	0	0	0	0	0	0	0	0	0	549	-	-	549
Distribution-Other expenses - Technical (Job Skills) Training 8800-05427	0	0	0	0	150	313	-	-	-	-	-	-	463
A&G-Employee pensions and bene - Technical (Job Skills) Training 9260-05427	28	-	-	-	150	228	5	380	214	-	-	335	1,339
Distribution-Operation supervi - Work Environment Training 8700-05429	0	0	0	0	0	0	0	0	350	-	-	-	350
Mains and Services Expenses - Work Environment Training 8740-05429	0	0	0	0	0	0	0	0	350	-	-	-	350
Training	1,077	155	53	-	977	1,344	673	3,506	1,047	1,159	53	(1,068)	8,976
A&G-Injuries & damages - Settlement 9250-05418	1,278	1,485	3,336	170	-	2,776	1,240	1,903	-	-	-	85	12,272
Distribution-Operation supervi - Settlement 8700-05418	0	0	0	0	0	0	0	0	0	4,997	-	-	4,997
A&G-Outside services employed - Gas Supplies Services 9230-05430	4,801	4,801	4,801	4,801	4,801	4,801	4,801	4,801	4,801	4,801	4,801	4,801	57,612
Distribution-Other expenses - Contract Labor 8800-06111	0	0	0	0	0	0	0	0	0	0	118	-	118
Distribution-Maint of mains - Contract Labor 8870-06111	0	0	0	0	0	0	0	0	0	35,000	-	-	35,000
Customer accounts-Meter readin - Contract Labor 9020-06111	78,969	86,916	70,526	93,703	74,805	105,431	95,137	76,504	69,420	97,963	96,806	67,522	1,013,704
Customer accounts-Customer rec - Contract Labor 9030-06111	0	0	0	0	0	0	8,716	-	-	-	-	-	8,716
A&G-Employee pensions and bene - Contract Labor 9260-06111	11,957	66	-	22	-	-	-	-	-	-	-	-	12,045
A&G-Regulatory commission expe - Contract Labor 9280-06111	0	0	0	0	7,051	14,839	22,919	24,348	6,834	-	-	1,802	77,793
Wells expenses - Contract Labor 8160-06111	6,919	18,838	11,200	-	195	525	-	-	12,000	-	-	-	49,677
Compressor station expenses - Contract Labor 8180-06111	0	0	0	330	-	-	-	500	-	-	-	863	1,693
Storage-Measuring and regulati - Contract Labor 8200-06111	0	0	0	0	0	0	0	0	0	0	0	14,000	14,000
Storage-Purification expenses - Contract Labor 8210-06111	0	0	0	0	225	-	475	-	-	-	607	-	1,307
Storage-Maintenance of structu - Contract Labor 8310-06111	0	0	0	1,685	-	-	80	-	-	-	-	-	1,765
Mains expenses - Contract Labor 8560-06111	1,598	1,200	113,279	4,077	2,227	3,196	1,598	1,598	1,598	1,598	1,598	95,889	229,458
Transmission-Measuring and reg - Contract Labor 8570-06111	0	0	255	-	-	-	-	157	-	-	720	-	1,132
Transmission-Maintenance of ma - Contract Labor 8630-06111	0	0	1,465	-	-	-	-	-	-	-	-	-	1,465
Distribution-Operation supervi - Contract Labor 8700-06111	0	0	40,000	65	-	-	-	-	-	-	-	48,628	88,693
Mains and Services Expenses - Contract Labor 8740-06111	33,169	35,253	26,098	24,007	30,412	35,816	32,002	28,378	35,361	106,554	62,770	75,115	524,736
Distribution-Measuring and reg - Contract Labor 8750-06111	0	0	0	0	0	0	3,668	-	-	-	-	6,880	10,548
Distribution-Measuring and reg - Contract Labor 8770-06111	0	0	0	0	0	0	0	2,500	1,004	-	22,080	14,830	40,414
Customer accounts-Customer rec - Collection Fees 9030-06112	37	242	1	302	-	-	-	-	-	-	-	-	582
A&G-Regulatory commission expe - Legal 9280-06121	0	0	0	0	0	0	0	0	22,274	-	-	-	22,274
Distribution-Measuring and reg - Legal 8750-06121	0	0	0	0	0	0	0	0	0	0	0	17	17
A&G-Outside services employed - Legal 9230-06121	7,772	17,759	13,775	5,021	5,483	25,967	6,517	2,150	10,000	325	5,000	6,312	106,080
Outside Services	146,501	166,560	284,736	134,182	125,198	193,152	177,153	142,839	163,293	251,239	194,501	336,744	2,316,099
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	21,597	26,207	34,035	38,921	32,234	29,565	22,674	20,307	106,094	18,534	18,287	145,099	513,554
Provision for Bad Debt	21,597	26,207	34,035	38,921	32,234	29,565	22,674	20,307	106,094	18,534	18,287	145,099	513,554
Distribution-Operation supervi - Land Rights 8700-04889	0	0	0	0	0	0	0	1	-	-	-	-	1
Customer accounts-Meter readin - Misc General Expense 9020-07590	0	0	13	-	-	-	-	-	-	355	-	90	458
Customer service-Operating inf - Misc General Expense 9090-07590	497	-	-	-	-	-	-	-	-	-	-	-	497
A&G-Office supplies & expense - Misc General Expense 9210-07590	0	0	0	9	-	-	-	-	-	-	-	-	9
A&G-Employee pensions and bene - Misc General Expense 9260-07590	0	0	0	767	-	-	-	-	75	60	-	-	902
A&G-Franchise requirements - Misc General Expense 9270-07590	67	123	690	335	1,029	-	-	-	616	-	3,007	-	5,868
A&G-Regulatory commission expe - Misc General Expense 9280-07590	15,275	15,275	15,275	15,275	15,275	15,275	15,275	15,793	52,694	4,656	(2,385)	-	178,088
Storage-Operation supervision - Misc General Expense 8140-07590	(270)	(299)	(279)	(279)	(279)	(448)	(279)	(299)	(279)	(279)	(299)	(345)	(3,633)
Wells expenses - Misc General Expense 8160-07590	(298)	(398)	(318)	(318)	(318)	(932)	(318)	(398)	(318)	(318)	(398)	(661)	(5,193)
Compressor station expenses - Misc General Expense 8180-07590	0	0	0	0	0	0	33	-	-	-	-	-	33
Storage well royalties - Misc General Expense 8250-07590	16	61	123	159	192	168	146	176	32	8	10	10	1,100
Mains expenses - Misc General Expense 8560-07590	0	0	0	0	0	188	-	-	-	-	-	-	188
Distribution-Operation supervi - Misc General Expense 8700-07590	621	78	288	1,116	238	518	1,124	9,369	122	5,755	32,901	(31,938)	20,192
Mains and Services Expenses - Misc General Expense 8740-07590	537	198	70	859	13,127	1,012	14,376	45	915	94	1,537	(5,358)	27,412
Distribution-Measuring and reg - Misc General Expense 8750-07590	0	0	0	0	50	-	-	-	-	640	-	9,800	10,490
Meter and house regulator expe - Misc General Expense 8780-07590	0	0	0	0	0	230	-	-	-	-	-	-	230
Distribution-Other expenses - Misc General Expense 8800-07590	0	0	0	0	0	0	314	-	-	-	-	-	314
A&G-Office supplies & expense - Vendor Comp Sales Tax 9210-07592	(1,298)	(1,347)	(1,483)	(1,457)	(1,500)	(1,500)	(1,455)	(1,499)	(1,500)	(51)	(25)	(50)	(13,165)
Distribution-Operation supervi - Reimbursements 8700-09911	(916)	-	-	(2,142)	-	-	(4,161)	-	-	(2,073)	-	-	(9,292)
Mains and Services Expenses - Reimbursements 8740-09911	0	0	0	0	0	0	0	0	0	(1,423)	9	816	(598)
Distribution-Maintenance of ot - Reimbursements 8940-09911	0	0	0	0	0	0	0	0	0	(637)	-	64	(574)
Miscellaneous	14,230	13,693	14,379	14,324	27,815	14,510	25,055	23,189	52,557	6,989	34,357	(27,773)	213,325
Total O&M Expenses Before Allocations	1,094,961	1,069,085	1,200,673	1,219,694	1,054,483	1,223,000	1,364,123	1,152,598	1,212,993	1,242,417	1,145,336	1,388,601	14,377,966

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Distribution-Maint of mains - Non-project Labor 8870-01000	4,722	10,536	2,991	3,294	2,140	1,488	1,778	3,014	3,148	2,846	6,943	3,266	46,165
Maintenance of services - Non-project Labor 8920-01000	1,726	1,149	1,533	1,572	475	1,323	1,062	914	1,098	1,029	850	340	13,071
Maintenance of meters and hous - Non-project Labor 8930-01000	7,309	4,449	3,086	2,679	7,461	10,229	5,387	8,472	5,811	8,098	8,924	6,685	78,591
Customer accounts-Meter readin - Non-project Labor 9020-01000	38,392	57,971	36,088	30,902	37,601	35,769	32,533	47,169	10,306	20,829	14,620	16,307	378,488
Customer accounts-Customer rec - Non-project Labor 9030-01000	18,951	27,721	17,980	18,505	30,040	26,605	32,237	52,887	29,468	24,615	24,635	22,564	326,208
Customer service-Operating inf - Non-project Labor 9090-01000	7,437	11,397	7,598	7,598	7,598	7,598	7,598	11,397	7,598	7,598	7,598	7,598	98,610
Sales-Supervision - Non-project Labor 9110-01000	12,401	18,960	12,648	12,656	12,648	12,604	12,398	18,735	12,502	12,502	12,739	12,162	162,955
A&G-Administrative & general s - Non-project Labor 9200-01000	10,962	16,758	11,232	11,172	11,184	11,172	11,172	16,758	11,181	11,172	11,172	11,172	145,109
Wells expenses - Non-project Labor 8160-01000	3,919	8,459	6,199	5,627	8,461	5,022	4,090	5,471	3,588	4,354	4,989	2,689	62,868
Lines expenses - Non-project Labor 8170-01000	1,282	3,154	5,005	3,159	7,573	4,154	3,602	4,017	3,324	3,883	2,550	1,308	43,012
Compressor station expenses - Non-project Labor 8180-01000	2,807	2,384	491	348	427	561	1,428	2,478	933	443	1,015	1,244	14,559
Storage-Measuring and regulati - Non-project Labor 8200-01000	0	312	-	1,079	1,854	190	156	124	-	-	95	-	3,609
Storage-Purification expenses - Non-project Labor 8210-01000	357	158	3,975	10,193	7,629	4,049	1,181	-	463	-	-	-	28,005
Maintenance of compressor stat - Non-project Labor 8340-01000	631	49	63	-	98	-	817	345	885	854	126	-	3,868
Maintenance of measuring and r - Non-project Labor 8350-01000	0	0	0	0	0	0	0	190	1,218	-	-	-	1,408
Processing-Maintenance of puri - Non-project Labor 8360-01000	126	190	443	-	-	98	-	-	-	-	1,771	-	2,627
Mains expenses - Non-project Labor 8560-01000	20,231	25,685	13,229	12,088	9,100	10,883	15,906	22,432	10,705	10,987	9,954	19,439	180,640
Transmission-Measuring and reg - Non-project Labor 8570-01000	3,835	4,841	5,915	8,364	4,149	5,065	2,983	9,874	5,026	3,541	2,547	2,329	58,569
Transmission-Maintenance of ma - Non-project Labor 8630-01000	1,368	6,656	-	-	63	1,274	-	377	126	190	-	949	11,003
Transmission-Maintenance of me - Non-project Labor 8650-01000	0	0	0	0	0	0	0	253	-	-	-	-	253
Distribution-Operation supervi - Non-project Labor 8700-01000	58,446	88,608	66,538	65,486	55,912	57,461	55,079	86,182	54,472	50,683	50,167	56,420	745,453
Mains and Services Expenses - Non-project Labor 8740-01000	84,594	139,634	95,109	111,413	119,885	101,455	89,448	121,217	88,948	93,199	94,210	99,242	1,238,355
Distribution-Measuring and reg - Non-project Labor 8750-01000	24,516	35,021	17,997	29,036	32,394	14,373	20,605	40,334	25,772	25,713	20,433	23,331	309,525
Distribution-Measuring and reg - Non-project Labor 8760-01000	3,440	6,521	932	1,019	2,926	4,658	3,493	1,164	2,038	3,930	4,279	2,624	37,223
Distribution-Measuring and reg - Non-project Labor 8770-01000	440	6,363	2,572	5,481	5,516	3,178	-	1,222	245	-	-	-	25,019
Meter and house regulator expe - Non-project Labor 8780-01000	69,030	102,109	73,410	72,597	66,196	61,485	66,658	100,245	65,156	69,873	68,537	70,892	886,190
Customer installations expense - Non-project Labor 8790-01000	332	717	1,562	638	488	319	574	-	-	-	-	-	4,630
Distribution-Other expenses - Non-project Labor 8800-01000	2,736	8,168	2,170	5,218	12,336	11,509	9,516	9,143	2,405	7,813	4,305	8,860	84,180
Distribution-Operation supervi - Capital Labor 8700-01001	479,946	712,396	473,399	468,549	449,280	472,268	481,758	729,433	527,752	521,188	537,985	508,256	6,362,212
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(480,609)	(716,337)	(470,638)	(470,996)	(448,379)	(470,501)	(476,545)	(725,865)	(527,293)	(520,909)	(537,264)	(507,658)	(6,352,994)
Mains expenses - O&M Project Labor and Contra 8560-01006	0	0	0	0	0	500	-	-	-	4,153	4,867	520	10,040
Mains and Services Expenses - Expense Labor Accrual 8740-01008	17,571	(35,943)	10,016	22,418	4,236	(4,142)	2,341	(37,938)	6,482	15,255	5,166	12,440	17,901
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	4,512	(11,325)	462	8,219	1,679	(8,292)	5,488	(6,671)	1,009	3,839	(1,354)	3,782	1,349
Distribution-Measuring and reg - Expense Labor Accrual 8760-01008	344	(1,321)	(761)	183	953	1,099	(291)	(2,077)	417	1,157	371	(445)	(370)
Distribution-Measuring and reg - Expense Labor Accrual 8770-01008	(222)	753	(160)	1,840	18	(1,010)	(1,748)	204	(130)	(73)	-	-	(530)
Meter and house regulator expe - Expense Labor Accrual 8780-01008	15,415	(31,303)	8,675	10,605	(3,201)	719	9,511	(26,620)	2,840	11,895	2,826	8,266	9,629
Customer installations expense - Expense Labor Accrual 8790-01008	(174)	(113)	427	(228)	(75)	(69)	198	(373)	-	-	-	-	(406)
Distribution-Other expenses - Expense Labor Accrual 8800-01008	(5,376)	(554)	(602)	1,849	3,559	162	(144)	(4,662)	(802)	2,794	(1,363)	3,164	(1,975)
Distribution-Maint of mains - Expense Labor Accrual 8870-01008	1,325	(1,549)	(709)	600	(577)	(251)	337	(654)	442	336	2,191	(1,512)	(21)
Maintenance of services - Expense Labor Accrual 8920-01008	(337)	(1,017)	345	249	(549)	490	(37)	(538)	177	134	(38)	(221)	(1,341)
Maintenance of meters and hous - Expense Labor Accrual 8930-01008	1,418	(4,375)	339	259	2,391	1,895	(2,125)	(2,089)	331	1,901	818	(451)	313
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	12,145	(17,212)	2,969	2,820	3,350	872	1,473	(13,285)	(4,770)	6,281	(2,063)	2,474	(4,945)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	3,930	(8,645)	1,873	2,959	5,767	(387)	6,321	(12,139)	26	2,237	1,241	1,221	4,202
Customer service-Operating inf - Expense Labor Accrual 9090-01008	1,188	(3,306)	760	1,140	-	380	760	(3,039)	380	1,140	380	760	541
Sales-Supervision - Expense Labor Accrual 9110-01008	1,975	(5,521)	1,267	1,901	(4)	608	1,127	(4,936)	628	1,875	743	928	591
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(16,313)	(4,880)	1,138	1,655	6	553	1,117	(4,469)	561	1,673	559	1,117	(17,283)
Wells expenses - Expense Labor Accrual 8160-01008	1,056	(1,333)	760	644	1,417	(1,468)	(104)	(1,747)	165	883	536	(882)	(74)
Lines expenses - Expense Labor Accrual 8170-01008	131	(371)	1,226	(172)	2,207	(1,502)	57	(1,672)	328	750	(473)	(490)	19
Compressor station expenses - Expense Labor Accrual 8180-01008	1,516	(1,568)	(226)	2	40	95	619	(515)	(133)	(61)	308	239	298
Storage-Measuring and regulati - Expense Labor Accrual 8200-01008	0	52	(52)	539	288	(723)	(3)	(81)	(21)	0	47	(47)	-
Storage-Purification expenses - Expense Labor Accrual 8210-01008	152	(224)	1,365	3,705	(1,282)	(1,587)	(1,460)	(767)	139	(139)	-	-	(98)
Maintenance of compressor stat - Expense Labor Accrual 8340-01008	441	(433)	14	(22)	49	(49)	531	(473)	208	119	(321)	(63)	-
Maintenance of measuring and r - Expense Labor Accrual 8350-01008	0	0	0	0	0	0	0	32	334	(365)	0	0	-
Processing-Maintenance of puri - Expense Labor Accrual 8360-01008	88	(57)	123	(155)	0	54	(54)	0	0	0	885	(885)	-
Mains expenses - Expense Labor Accrual 8560-01008	4,814	(9,881)	349	1,414	(1,494)	1,436	4,354	(6,600)	(527)	1,733	33	6,687	2,316
Transmission-Measuring and reg - Expense Labor Accrual 8570-01008	489	(1,878)	1,263	2,112	(2,108)	711	(847)	(276)	(154)	86	(320)	124	(798)
Transmission-Maintenance of ma - Expense Labor Accrual 8630-01008	(886)	152	(1,109)	-	32	669	(701)	63	(25)	47	(85)	569	(1,274)
Transmission-Maintenance of me - Expense Labor Accrual 8650-01008	0	0	0	0	0	0	0	42	(42)	0	0	0	-
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	10,878	(26,144)	8,520	9,455	(4,787)	3,648	4,197	(21,438)	1,978	6,466	2,276	8,768	3,817
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	271,987	375,222	286,064	291,255	252,478	256,741	264,832	400,466	287,988	281,734	268,508	271,931	3,509,204
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(271,324)	(371,281)	(288,824)	(288,808)	(253,379)	(258,506)	(270,045)	(404,034)	(288,447)	(282,013)	(269,229)	(272,529)	(3,518,422)
Mains expenses - Expense Labor Transfer In 8560-01013	0	0	0	0	0	0	0	0	0	4,153	4,867	520	9,540
Mains expenses - Expense Labor Transfer Out 8560-01014	0	0	0	0	0	(500)	-	-	-	(4,153)	(4,867)	(520)	(10,040)
Labor	436,074	419,976	426,837	494,117	455,865	386,434	410,619	411,795	358,258	428,246	369,689	415,682	5,011,593
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	48,102	45,900	46,643	54,032	49,865	42,215	44,861	44,990	38,895	46,329	39,837	45,361	547,030
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	78,662	73,833	75,006	86,997	80,335	67,847	72,112	72,323	62,443	74,461	63,978	72,925	880,923
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	84,259	80,842	82,157	95,134	87,781	74,371	79,028	79,255	68,546	81,619	70,199	79,905	963,095
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	0	0	0	0	0	0	0	0	0	804	942	101	1,846
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	24,549	23,234	23,608	27,363	25,260	21,359	22,700	22,766	19,669	23,441	20,148	22,954	277,047
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	0	0	0	0	0	0	0	0	0	230	270	29	529
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	3,515	3,300	3,353	3,889	3,591	3,033	3,224	3,233	2,791	3,329	2,860	3,260	39,377
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	0	0	0	0	0	0	0	0	0	19	22	2	44
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	2,633	2,484	2,524	2,926	2,702	2,283	2,427	2,434	2,102	2,506	2,154	2,454	29,629
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	0	0	0	0	0	0	0	0	0	23	27	3	53
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	2,180	2,100	2,134	2,471	2,279	1,932	2,053	2,059	1,781	2,120	1,824	2,076	25,010
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	0	0	0	0	0	0	0	0	0	22	26	3	51
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	3,489	3,360	3,415	3,953	3,647	3,091	3,285	3,294	2,850	3,393	2,919	3,321	40,016
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	0	0	0	0	0	0	0	0	0	32	37	4	73
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	0	0	0	0	0	0	0	0	0	458	537	57	1,052
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	0	0	0	0	0	0	0	0	0	742	869	93	1,704
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	0	0	0	0	0	0	0	0	0	115	135	14	264
Benefits	247,388	235,053	238,838	276,765	255,460	216,131	229,689	230,354	199,078	239,643	206,785	232,582	2,807,746
Mains expenses - Uniforms 8560-07443	0	0	375	-	80	-	290	-	-	126	-	297	1,167

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Distribution-Operation supervi - Uniforms 8700-07443	0	159	-	-	150	-	106	187	135	150	-	150	1,037
Mains and Services Expenses - Uniforms 8740-07443	505	971	1,915	3,068	895	882	824	647	450	97	1,054	470	11,779
Distribution-Measuring and reg - Uniforms 8750-07443	0	0	0	0	99	85	-	-	-	139	-	-	323
Meter and house regulator expe - Uniforms 8780-07443	111	389	-	341	-	-	150	-	-	-	-	-	991
Customer accounts-Meter readin - Uniforms 9020-07443	250	250	317	2,176	199	166	-	286	484	-	-	658	4,787
A&G-Employee pensions and bene - Uniforms 9260-07443	5,176	10,303	12,315	17,796	3,248	2,266	1,136	2,935	1,426	229	731	872	58,433
Customer accounts-Meter readin - Uniforms Capitalized 9020-07444	(152)	(144)	(179)	(1,166)	(103)	(86)	-	(149)	(333)	-	-	(382)	(2,692)
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	(3,159)	(6,061)	(6,858)	(9,193)	(1,614)	(1,246)	(681)	(1,781)	(880)	(140)	(471)	(543)	(32,628)
Mains expenses - Uniforms Capitalized 8560-07444	0	0	(30)	-	(2)	-	(51)	-	-	(41)	-	(47)	(171)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	0	(60)	-	-	(74)	-	(42)	(98)	(54)	(74)	-	(101)	(503)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	(277)	(518)	(1,030)	(1,542)	(349)	(430)	(468)	(344)	(289)	(50)	(652)	(259)	(6,209)
Distribution-Measuring and reg - Uniforms Capitalized 8750-07444	0	0	0	0	(36)	(32)	-	-	-	(68)	-	-	(136)
Meter and house regulator expe - Uniforms Capitalized 8780-07444	(67)	(225)	-	(181)	-	-	(84)	-	-	-	-	-	(557)
A&G-Employee pensions and bene - Non-Qual Retirment Exp 9260-07449	117	-	-	-	-	-	-	-	-	-	-	-	117
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	714	892	922	922	833	922	892	6,373	1,379	2,610	850	1,080	18,387
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	877	849	877	877	793	877	849	1,086	871	900	900	871	10,628
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	189	223	237	237	214	237	229	237	229	237	237	229	2,735
Customer accounts-Meter readin - Misc Employee Welfare Exp 9020-07499	0	0	0	0	0	0	0	105	-	-	-	50	155
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	0	0	137	411	-	-	-	-	-	49	147	-	744
Sales-Supervision - Misc Employee Welfare Exp 9110-07499	0	0	0	28	-	-	-	-	-	-	-	-	28
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	0	0	0	0	0	0	69	-	-	-	-	-	69
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	6	597	-	-	-	140	8	269	41	601	512	288	2,462
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	4,558	4,888	2,692	4,471	4,278	5,930	3,533	4,750	4,293	3,802	4,030	3,604	50,830
Miscellaneous general expenses - Misc Employee Welfare Exp 9302-07499	0	0	0	0	0	0	0	0	178	-	-	-	178
Storage-Rents - Misc Employee Welfare Exp 8260-07499	0	0	0	0	8	-	-	-	-	-	-	-	8
Mains expenses - Misc Employee Welfare Exp 8560-07499	102	6	809	350	-	-	-	-	93	-	-	-	1,360
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	546	35	358	252	465	45	113	-	222	652	625	-	3,332
Mains and Services Expenses - Misc Employee Welfare Exp 8740-07499	0	146	30	673	-	-	130	247	255	-	-	-	1,481
Distribution-Measuring and reg - Misc Employee Welfare Exp 8750-07499	0	0	0	0	0	150	-	-	-	-	-	-	150
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	0	0	0	0	0	0	25	-	-	-	-	-	25
Employee Welfare	9,496	12,703	12,887	19,522	9,103	9,907	7,028	14,750	8,500	9,217	7,962	7,237	128,311
A&G-Property insurance - Blueflame Property Insurance 9240-04069	29,234	29,234	45,826	30,652	30,652	31,111	31,111	31,111	31,111	31,111	31,111	31,111	383,376
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	0	0	1,138	-	102	407	-	-	100	733	102	2,582
A&G-Property insurance - Insurance Capitalized 9240-04072	(16,610)	(16,222)	(25,425)	(16,832)	(16,015)	(17,380)	(17,751)	(17,569)	(18,341)	(18,263)	(18,969)	(18,299)	(217,675)
Distribution-Operation supervi - Environmental & Safety 8700-07120	0	0	0	0	0	0	0	0	0	0	2,500	-	2,500
Mains and Services Expenses - Environmental & Safety 8740-07120	1,525	-	549	2,834	303	-	1,868	607	240	588	144	788	9,446
Insurance	14,150	13,012	20,950	17,793	14,941	13,833	15,635	14,149	13,010	13,536	15,519	13,701	180,230
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(41)	(7)	-	(29)	(2)	-	(14)	(29)	(151)	(59)	-	(5)	(336)
Transmission-Maintenance super - Building Lease/Rents Capitalized 8610-04580	0	0	0	(27)	-	-	-	-	-	-	-	-	(27)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(39,019)	(38,097)	(38,988)	(39,091)	(37,577)	(41,057)	(91,733)	(39,460)	(42,958)	(37,063)	(43,274)	(41,875)	(530,191)
Storage well royalties - Building Lease/Rents 8250-04581	637	82	-	457	74	-	80	170	563	183	-	30	2,275
Transmission-Maintenance super - Building Lease/Rents 8610-04581	0	0	0	46	-	-	-	-	-	-	-	-	46
Distribution-Rents - Building Lease/Rents 8810-04581	66,094	66,932	67,635	70,426	71,516	71,116	149,869	67,725	68,475	60,657	68,705	70,240	899,390
A&G-Rents - Building Lease/Rents 9310-04581	1,189	1,189	1,189	1,189	1,189	1,189	1,189	1,206	1,206	1,206	1,206	1,206	14,355
Compressor station expenses - Building Maintenance 8180-04582	0	0	10	-	-	-	-	-	-	-	-	-	10
Storage-Maintenance of structu - Building Maintenance 8310-04582	0	88	-	352	600	-	-	-	-	-	-	-	1,040
Distribution-Operation supervi - Building Maintenance 8700-04582	0	0	233	10,769	-	277	185	-	-	2,900	175	9,239	23,777
Mains and Services Expenses - Building Maintenance 8740-04582	25	77	77	77	288	173	51	129	262	2,180	155	77	3,571
Distribution-Measuring and reg - Building Maintenance 8750-04582	654	-	235	-	-	-	298	520	-	520	1,090	-	3,317
Distribution-Measuring and reg - Building Maintenance 8770-04582	640	-	90	-	-	-	-	350	350	350	175	175	2,130
Distribution-Other expenses - Building Maintenance 8800-04582	36	210	31	-	97	164	100	222	2,962	3,410	2,460	500	10,182
Distribution-Rents - Building Maintenance 8810-04582	22,259	13,511	13,409	18,546	14,287	12,050	12,221	20,630	19,911	14,584	9,281	20,240	190,928
Distribution-Maintenance of st - Building Maintenance 8860-04582	17	249	32	956	618	77	32	32	62	127	32	151	2,385
Maintenance of measuring and r - Building Maintenance 8910-04582	0	0	31	-	-	-	-	-	-	175	-	-	206
Mains and Services Expenses - Railroad easements and crossings 8740-04585	0	0	0	0	0	0	0	0	581	-	-	-	581
Distribution-Rents - Railroad easements and crossings 8810-04585	0	0	0	0	0	0	0	0	0	(200)	-	-	(200)
A&G-Rents - Utilities 9310-04590	5,400	-	-	-	-	-	-	-	-	-	-	-	5,400
Distribution-Rents - Utilities 8810-04590	1,572	510	1,595	1,640	1,081	950	965	1,380	1,263	1,279	1,248	3,350	16,832
Customer accounts-Customer rec - Utilities 9030-04590	20	208	83	126	-	281	81	-	-	-	79	-	878
Transmission-Measuring and reg - Utilities 8570-04590	528	478	661	671	604	487	899	465	515	906	430	468	7,112
Lines expenses - Utilities 8170-04590	128	91	91	150	143	153	150	147	145	143	79	259	1,678
Compressor station expenses - Utilities 8180-04590	177	45	35	126	33	83	65	96	94	37	90	111	993
Compressor station fuel and po - Utilities 8190-04590	78	-	137	71	82	76	72	79	2	74	-	161	833
Storage-Measuring and regulati - Utilities 8200-04590	101	34	448	363	305	252	197	152	105	101	100	34	2,191
Storage-Purification expenses - Utilities 8210-04590	139	25	142	165	267	188	207	328	215	194	48	131	2,050
Distribution-Operation supervi - Utilities 8700-04590	8,501	6,255	7,091	6,750	7,611	6,806	7,514	7,767	5,834	8,639	8,355	9,042	90,165
Distribution load dispatching - Utilities 8710-04590	59	43	23	20	42	43	22	61	22	20	44	41	438
Mains and Services Expenses - Utilities 8740-04590	3,167	2,812	3,650	4,017	3,152	3,468	3,321	3,518	3,198	3,352	3,107	4,418	41,180
Distribution-Measuring and reg - Utilities 8750-04590	89	89	87	90	97	87	81	75	81	100	101	87	1,064
Distribution-Measuring and reg - Utilities 8760-04590	0	0	0	0	0	0	0	0	0	0	135	-	135
Distribution-Measuring and reg - Utilities 8770-04590	87	93	489	647	73	389	346	645	146	81	81	805	3,881
Meter and house regulator expe - Utilities 8780-04590	1,284	826	1,423	1,243	1,353	1,308	941	1,447	1,293	974	949	2,465	15,508
Distribution-Other expenses - Utilities 8800-04590	0	0	0	0	81	-	-	-	-	-	-	240	320
Storage-Other expenses - Utilities 8240-04590	22	-	69	23	33	26	26	19	24	19	50	22	334
Storage well royalties - Utilities 8250-04590	80	-	1,260	802	4,457	2,658	1,263	464	162	104	244	152	11,647
Mains expenses - Utilities 8560-04590	2,235	1,365	1,745	1,786	1,762	1,671	1,515	1,773	1,450	1,662	1,714	1,971	20,848
Distribution-Other expenses - Misc Rents 8800-04592	0	0	0	0	0	52	-	-	-	-	-	-	52
Distribution-Rents - Misc Rents 8810-04592	0	0	0	52	180	-	-	-	-	-	-	-	232
Distribution-Other expenses - Capitalized Utility Costs 8800-04599	(21)	(125)	(18)	-	(97)	(87)	(56)	(136)	(1,850)	(2,091)	(1,560)	(474)	(6,516)
Distribution-Rents - Capitalized Utility Costs 8810-04599	(14,434)	(8,292)	(8,633)	(11,487)	(8,919)	(7,745)	(7,689)	(13,211)	(14,025)	(9,505)	(6,832)	(15,115)	(125,886)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(5,209)	(3,681)	(4,357)	(9,827)	(4,266)	(4,240)	(4,628)	(4,639)	(3,688)	(7,202)	(5,477)	(11,766)	(68,981)
Mains expenses - Capitalized Utility Costs 8560-04599	(1,237)	(700)	(946)	(915)	(889)	(1,008)	(821)	(930)	(900)	(985)	(1,123)	(1,171)	(11,624)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(148)	(38)	(30)	(107)	(28)	(71)	(55)	(82)	(80)	(32)	(76)	(95)	(842)
Rent, Maint., & Utilities	55,107	44,270	49,030	60,075	58,247	50,005	76,693	50,915	45,269	46,841	41,792	55,116	633,360

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	74,608	65,513	79,347	74,178	73,340	69,730	61,223	70,643	76,103	45,274	80,116	51,387	821,462
Customer accounts-Meter readin - Vehicle Lease Payments 9020-03002	0	0	0	0	0	0	0	0	24	-	-	-	24
Lines expenses - Capitalized transportation costs 8170-03003	0	0	(1)	-	-	-	-	-	-	-	-	-	(1)
Mains expenses - Capitalized transportation costs 8560-03003	(66)	-	(1)	(1)	(1)	(4)	(39)	(2)	(229)	(3)	(408)	(7)	(761)
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(37)	(80)	(195)	(55)	(104)	(337)	(90)	(51)	(248)	(34)	(72)	(233)	(1,537)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(108,407)	(87,561)	(92,067)	(90,131)	(76,724)	(93,514)	(137,616)	(97,274)	(103,898)	(97,895)	(114,636)	(98,731)	(1,198,454)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	0	0	0	0	(13)	(33)	(55)	(5)	-	-	-	-	(106)
Meter and house regulator expe - Capitalized transportation costs 8780-03003	0	(65)	(197)	(97)	(114)	(72)	(148)	(129)	(161)	(250)	(764)	(877)	(2,894)
Customer accounts-Meter readin - Capitalized transportation costs 9020-03003	(1,185)	-	-	-	-	(27)	-	-	(17)	-	-	(27)	(1,255)
Lines expenses - Vehicle Expense 8170-03004	0	0	19	-	-	-	-	-	-	-	-	-	19
Mains expenses - Vehicle Expense 8560-03004	1,024	-	10	13	36	30	223	15	852	9	1,451	41	3,704
Distribution-Operation supervi - Vehicle Expense 8700-03004	65	163	348	100	215	681	141	105	584	63	128	466	3,059
Mains and Services Expenses - Vehicle Expense 8740-03004	123,495	88,607	93,669	98,993	80,657	103,051	175,103	104,573	98,184	127,343	107,473	115,621	1,316,770
Distribution-Measuring and reg - Vehicle Expense 8750-03004	0	0	0	0	21	88	101	13	-	-	-	-	223
Meter and house regulator expe - Vehicle Expense 8780-03004	0	105	326	173	190	112	240	200	301	407	1,159	1,330	4,542
Customer accounts-Meter readin - Vehicle Expense 9020-03004	1,929	-	-	-	-	52	-	-	-	-	-	41	2,022
Mains and Services Expenses - Equipment Lease 8740-04301	29,433	28,634	32,154	28,623	28,393	28,383	29,486	33,340	32,556	29,610	35,415	37,105	373,132
Distribution-Maintenance of ot - Heavy Equipment 8940-04302	0	0	0	0	0	0	0	0	0	343	5	-	349
Mains and Services Expenses - Heavy Equipment 8740-04302	22,284	18,811	20,447	8,667	1,418	8,349	20,900	14,023	15,682	11,495	10,262	14,550	166,889
Meter and house regulator expe - Heavy Equipment 8780-04302	0	0	0	203	276	-	-	-	31	-	71	-	580
Mains expenses - Heavy Equipment 8560-04302	3,168	1,310	921	3,214	1,893	-	-	165	-	-	1,154	236	12,060
Distribution-Operation supervi - Heavy Equipment 8700-04302	200	32	157	923	63	-	56	191	315	443	66	17	2,463
Wells expenses - Heavy Equipment 8160-04302	0	0	0	0	0	0	0	341	(19)	-	-	-	322
Compressor station expenses - Heavy Equipment 8180-04302	1,825	-	-	-	-	-	-	-	-	-	-	-	1,825
Mains expenses - Heavy Equipment Capitalized 8560-04307	(3,105)	(1,284)	(902)	(3,150)	(1,865)	-	-	(162)	-	-	(1,131)	(231)	(11,819)
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	(196)	(31)	(154)	(905)	(62)	-	(55)	(187)	(309)	(434)	(64)	(16)	(2,414)
Wells expenses - Heavy Equipment Capitalized 8160-04307	0	0	0	0	0	0	0	(334)	19	-	-	-	(315)
Compressor station expenses - Heavy Equipment Capitalized 8180-04307	(1,789)	-	-	-	-	-	-	-	-	-	-	-	(1,789)
Distribution-Maintenance of ot - Heavy Equipment Capitalized 8940-04307	0	0	0	0	0	0	0	0	0	(336)	(5)	-	(342)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(50,682)	(46,496)	(51,549)	(36,544)	(29,215)	(35,997)	(49,378)	(46,416)	(47,274)	(40,263)	(44,763)	(49,694)	(528,292)
Meter and house regulator expe - Heavy Equipment Capitalized 8780-04307	0	0	0	(199)	(270)	-	-	-	(30)	-	(69)	-	(568)
Vehicles & Equip	92,564	67,657	82,330	84,008	78,144	80,493	100,090	79,048	72,445	75,751	75,388	70,978	958,897
Distribution-Maintenance of ot - Inventory Materials 8940-02001	0	0	0	0	0	0	0	0	0	158	-	-	158
Mains expenses - Inventory Materials 8560-02001	0	0	0	0	0	0	0	0	0	0	971	-	971
Transmission-Maintenance of ma - Inventory Materials 8630-02001	0	0	0	0	0	0	0	0	130	-	-	-	130
Distribution-Operation supervi - Inventory Materials 8700-02001	0	54	-	-	-	-	-	-	-	-	-	-	54
Mains and Services Expenses - Inventory Materials 8740-02001	14,293	8,000	10,501	7,573	5,935	10,780	13,597	25,332	15,329	14,522	2,255	11,166	139,281
Distribution-Measuring and reg - Inventory Materials 8750-02001	0	0	0	0	0	0	0	0	0	0	371	-	371
Customer installations expense - Inventory Materials 8790-02001	0	0	0	0	0	0	0	229	-	-	-	-	229
Mains expenses - Warehouse Loading Charge 8560-02004	0	0	0	0	0	0	0	0	0	0	97	-	97
Transmission-Maintenance of ma - Warehouse Loading Charge 8630-02004	0	0	0	0	0	0	0	0	13	-	-	-	13
Distribution-Operation supervi - Warehouse Loading Charge 8700-02004	0	2	-	-	-	-	-	-	-	-	-	-	2
Mains and Services Expenses - Warehouse Loading Charge 8740-02004	572	320	420	303	356	647	1,088	2,027	1,533	1,452	226	1,340	10,282
Distribution-Measuring and reg - Warehouse Loading Charge 8750-02004	0	0	0	0	0	0	0	0	0	0	37	-	37
Customer installations expense - Warehouse Loading Charge 8790-02004	0	0	0	0	0	0	0	18	-	-	-	-	18
Distribution-Maintenance of ot - Warehouse Loading Charge 8940-02004	0	0	0	0	0	0	0	0	0	16	-	-	16
Distribution load dispatching - Non-Inventory Supplies 8710-02005	0	0	0	0	0	6,633	-	2,616	(148)	-	-	-	9,100
Odorization - Non-Inventory Supplies 8711-02005	2,971	191	-	-	9,019	947	-	-	-	-	-	-	13,127
Distribution-Compressor statio - Non-Inventory Supplies 8720-02005	0	0	0	0	0	0	0	30	-	-	-	-	30
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	14,367	7,177	10,848	15,355	12,378	12,899	11,123	15,906	12,753	12,288	11,851	10,748	147,692
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	1,101	1,691	788	3,391	871	4,576	2,365	1,403	22,525	2,208	2,856	3,156	46,932
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	55	86	-	-	430	-	595	13	901	375	56	3	2,513
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	6,864	-	818	9,463	2,498	704	4,233	938	3,868	16,079	5,298	1,360	52,121
Meter and house regulator expe - Non-Inventory Supplies 8780-02005	358	401	154	1,482	198	167	447	1,019	264	288	21	509	5,306
Customer installations expense - Non-Inventory Supplies 8790-02005	1,148	96	95	90	151	-	94	20	94	98	22	206	2,115
Distribution-Other expenses - Non-Inventory Supplies 8800-02005	47	50	276	286	307	104	982	136	165	132	475	155	3,114
Distribution-Rents - Non-Inventory Supplies 8810-02005	82	-	32	-	13	-	40	-	-	140	-	28	334
Distribution-Maintenance of st - Non-Inventory Supplies 8860-02005	54	-	-	-	-	-	-	-	-	-	-	-	54
Distribution-Maint of mains - Non-Inventory Supplies 8870-02005	0	0	0	0	0	0	0	0	0	0	0	5,692	5,692
Maintenance of measuring and r - Non-Inventory Supplies 8890-02005	0	0	0	680	-	91	-	-	185	466	644	-	2,065
Maintenance of measuring and r - Non-Inventory Supplies 8900-02005	0	2,640	-	3,131	1,916	-	-	-	-	-	-	(3,305)	4,382
Maintenance of measuring and r - Non-Inventory Supplies 8910-02005	419	-	91	1,575	625	647	-	-	-	-	-	-	3,356
Maintenance of services - Non-Inventory Supplies 8920-02005	0	0	0	0	0	0	0	0	0	0	0	504	504
Distribution-Maintenance of ot - Non-Inventory Supplies 8940-02005	4,215	1,730	699	2,576	1,082	1,838	1,162	2,777	938	2,739	1,462	2,328	23,546
Customer accounts-Meter readin - Non-Inventory Supplies 9020-02005	184	39	2	41	72	74	4	-	149	22	-	49	637
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	456	-	65	57	-	-	32	163	27	-	-	-	799
A&G-Employee pensions and bene - Non-Inventory Supplies 9260-02005	0	0	0	0	0	0	0	0	0	0	78	-	78
Wells expenses - Non-Inventory Supplies 8160-02005	585	730	236	4,003	179	281	1,257	-	-	48	1,133	697	9,148
Lines expenses - Non-Inventory Supplies 8170-02005	0	59	-	23	110	24	49	416	828	217	-	-	1,726
Compressor station expenses - Non-Inventory Supplies 8180-02005	364	581	395	460	32	720	559	1,155	550	3,342	1,143	3,201	12,502
Storage-Measuring and regulati - Non-Inventory Supplies 8200-02005	0	46	-	-	-	-	-	-	-	-	-	-	46
Storage-Purification expenses - Non-Inventory Supplies 8210-02005	556	2,814	1,095	3,910	51	1,894	1,655	190	42	14	5	-	12,226
Storage-Maintenance of structu - Non-Inventory Supplies 8310-02005	0	0	0	10	-	-	-	42	-	-	-	-	52
Maintenance of compressor stat - Non-Inventory Supplies 8340-02005	469	64	32	23	-	-	7	52	367	49	-	-	1,062
Maintenance of measuring and r - Non-Inventory Supplies 8350-02005	0	0	0	0	0	0	0	0	21	-	-	-	21
Processing-Maintenance of puri - Non-Inventory Supplies 8360-02005	9	-	-	-	272	-	-	-	-	-	249	-	530
Maintenance of other equipment - Non-Inventory Supplies 8370-02005	0	0	0	0	0	0	0	0	0	0	19	-	19
Communication system expenses - Non-Inventory Supplies 8520-02005	0	0	0	0	0	0	0	0	0	0	228	21	249
Mains expenses - Non-Inventory Supplies 8560-02005	1,054	1,233	793	1,105	11,583	2,349	1,733	661	1,153	2,462	2,294	1,436	27,857
Transmission-Measuring and reg - Non-Inventory Supplies 8570-02005	181	130	313	95	-	487	1,110	206	290	291	279	952	4,333
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	1,669	571	158	162	787	642	519	639	1,288	311	317	291	7,354
Customer accounts-Meter readin - Office Supplies 9020-05010	44	-	-	-	-	69	-	-	-	-	-	-	114
Customer accounts-Customer rec - Office Supplies 9030-05010	845	824	212	1,328	386	1,279	791	343	1,630	339	773	571	9,322
Customer service-Operating inf - Office Supplies 9090-05010	0	100	25	57	-	374	26	-	-	-	-	-	583
Sales-Supervision - Office Supplies 9110-05010	52	5	12	-	-	-	-	-	-	-	-	36	103
Sales-Demonstrating and sellin - Office Supplies 9120-05010	0	161	-	-	6	-	-	-	-	-	-	-	167

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
A&G-Employee pensions and bene - Office Supplies 9260-05010	0	0	0	0	0	0	0	0	136	-	-	-	136
A&G-Regulatory commission expe - Office Supplies 9280-05010	0	0	0	66	98	-	-	-	-	-	-	-	164
Compressor station expenses - Office Supplies 8180-05010	0	0	23	-	-	-	-	-	-	-	-	-	23
Distribution-Operation supervi - Office Supplies 8700-05010	5,844	5,597	6,028	5,816	6,783	6,246	6,860	7,635	4,501	9,970	6,306	4,177	75,764
Mains and Services Expenses - Office Supplies 8740-05010	352	1,645	2,533	506	481	978	317	100	172	1,163	1,132	2,722	12,102
Distribution-Measuring and reg - Office Supplies 8750-05010	0	0	0	0	0	0	0	0	0	0	13	-	13
Meter and house regulator expe - Office Supplies 8780-05010	1,165	892	765	1,560	1,573	1,538	115	893	411	731	1,105	387	11,136
Customer installations expense - Office Supplies 8790-05010	0	0	113	-	-	-	54	-	50	-	-	-	216
Distribution-Other expenses - Office Supplies 8800-05010	30	57	15	59	142	116	59	41	-	-	99	44	663
Materials & Supplies	60,401	37,986	37,539	65,188	58,336	57,102	50,870	65,000	70,162	69,917	41,815	48,474	662,789
Storage-Operation supervision - Software Maintenance 8140-04201	500	30	-	-	-	-	-	-	-	-	-	541	1,071
Distribution-Operation supervi - IT Equipment 8700-04212	3,284	-	-	42	-	-	-	-	-	-	-	3,283	6,609
Information Technologies	3,784	30	-	42	-	-	-	-	-	-	-	3,824	7,680
Distribution-Operation supervi - Monthly Lines and service 8700-05310	11,145	11,687	10,796	11,730	11,264	9,840	8,623	9,763	11,152	10,877	12,653	11,752	131,303
Distribution-Operation supervi - Long Distance 8700-05312	259	433	669	488	1,530	-	1,666	713	867	553	620	731	8,530
Sales-Supervision - Long Distance 9110-05312	0	0	0	0	6	-	-	-	5	-	-	-	10
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	3,980	5,380	5,996	4,930	6,841	6,642	-	5,547	6,209	4,340	4,958	5,261	59,087
Distribution-Maintenance of ot - Measurement & Meter Reading 8940-05323	0	0	3,231	-	-	-	-	-	-	-	-	-	3,231
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	255	138	148	201	225	158	262	291	163	210	319	563	2,935
Sales-Supervision - WAN/LAN/Internet Service 9110-05331	0	0	0	0	5	-	-	-	-	-	-	-	5
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	324	345	1,578	1,264	407	494	660	646	636	384	1,116	592	8,444
Customer accounts-Meter readin - AMI Tower Rent 9020-05351	0	0	0	0	0	0	0	0	0	0	0	525	525
Distribution-Maintenance of ot - Cellular, radio, pager charges 8940-05364	32	148	178	-	80	116	253	176	-	279	114	120	1,497
Mains and Services Expenses - Cellular, radio, pager charges 8740-05364	105	242	-	-	35	-	-	-	33	3	-	-	418
Distribution-Measuring and reg - Cellular, radio, pager charges 8750-05364	0	95	-	-	-	-	-	-	-	-	-	-	95
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	57	11,225	24,988	58	13,745	11,708	17,643	11,678	5,919	17,068	11,812	12,050	137,951
Distribution-Operation supervi - Cell service for data uses 8700-05376	287	4,786	9,284	287	2,913	5,048	11,182	4,878	1,613	8,080	4,864	4,790	58,009
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	498	333	564	21	1,245	819	568	42	-	1,028	206	90	5,415
Mains expenses - Cell phone equipment and accessories 8560-05377	0	0	32	-	-	90	-	-	16	14	-	-	152
Customer accounts-Meter readin - Cell phone equipment and accessories 9020-05377	0	16	-	-	-	-	-	-	-	-	-	-	16
Sales-Supervision - Cell phone equipment and accessories 9110-05377	0	0	0	0	0	0	0	0	0	39	-	-	39
Mains and Services Expenses - Cell phone equipment and accessories 8740-05377	78	212	-	58	130	16	16	64	53	231	106	127	1,082
Distribution-Measuring and reg - Cell phone equipment and accessories 8750-05377	0	50	-	-	-	-	-	-	-	-	-	-	50
Meter and house regulator expe - Cell phone equipment and accessories 8780-05377	6	26	32	-	112	11	-	-	-	21	-	64	272
Transmission-Measuring and reg - Cell phone equipment and accessories 8570-05377	0	0	0	0	32	-	-	-	-	-	-	-	32
Distribution-Maintenance of ot - Capitalized Telecom Costs 8940-05399	(18)	(82)	(99)	-	(42)	(65)	(143)	(100)	-	(163)	(68)	(70)	(849)
Customer accounts-Meter readin - Capitalized Telecom Costs 9020-05399	0	(9)	-	-	-	-	-	-	-	-	-	-	(9)
Sales-Supervision - Capitalized Telecom Costs 9110-05399	0	0	0	0	(6)	-	-	-	(3)	(23)	-	-	(31)
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(104)	(252)	-	(31)	(86)	(9)	(9)	(30)	(51)	(137)	(63)	(75)	(846)
Distribution-Measuring and reg - Capitalized Telecom Costs 8750-05399	0	(81)	-	-	-	-	-	-	-	-	-	-	(81)
Meter and house regulator expe - Capitalized Telecom Costs 8780-05399	(4)	(15)	(18)	-	(59)	(6)	-	-	-	(12)	-	(37)	(150)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(6,917)	(15,170)	(25,212)	(7,001)	(15,355)	(15,113)	(21,122)	(14,921)	(11,304)	(21,355)	(17,919)	(16,455)	(187,843)
Telecom	9,983	19,507	32,168	12,006	23,023	19,749	19,800	18,758	14,309	21,438	18,718	20,029	229,287
Customer service-Operating inf - Safety 9090-04018	0	0	0	0	0	0	0	0	0	2,500	-	-	2,500
A&G-Injuries & damages - Safety 9250-04018	0	0	0	127	-	165	10	-	-	-	-	-	302
Mains and Services Expenses - Safety 8740-04018	0	0	0	0	0	0	0	0	0	0	0	25	25
Distribution-Operation supervi - Promo Other, Misc 8700-04021	0	0	0	0	0	0	0	0	0	0	0	500	500
Customer service-Operating inf - Promo Other, Misc 9090-04021	0	0	0	0	0	0	0	0	0	0	0	4,639	4,639
Sales-Demonstrating and sellin - Promo Other, Misc 9120-04021	83	58	728	184	190	281	-	374	33	80	11	262	2,285
Customer service-Operating inf - Community Rel&Trade Shows 9090-04040	0	0	2,894	-	-	-	-	-	-	-	-	-	2,894
Sales-Supervision - Community Rel&Trade Shows 9110-04040	98	335	-	322	115	91	-	659	310	176	-	1,486	3,592
Sales-Demonstrating and sellin - Community Rel&Trade Shows 9120-04040	3,869	125	1,624	1,545	1,153	300	1,199	241	238	2,713	75	1,559	14,541
Sales-Advertising expenses - Community Rel&Trade Shows 9130-04040	0	1,148	43	395	-	-	1,345	275	-	-	100	1,917	5,223
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	0	0	0	0	0	0	0	0	0	0	120	-	120
Customer accounts-Customer rec - Community Rel&Trade Shows 9030-04040	0	0	0	0	0	0	0	0	0	0	0	10	10
Customer service-Supervision - Advertising 9070-04044	0	0	0	0	0	0	0	0	34	-	-	-	34
Sales-Demonstrating and sellin - Advertising 9120-04044	0	0	0	0	0	0	0	319	-	-	-	-	319
Sales-Advertising expenses - Advertising 9130-04044	2,178	4,360	1,215	1,899	125	1,544	144	2,412	1,065	970	1,790	477	18,180
Distribution-Operation supervi - Advertising 8700-04044	0	0	0	0	0	0	476	-	-	-	-	-	476
Customer service-Operating inf - Customer Relations & Assist 9090-04046	0	4,026	-	-	-	-	-	-	-	-	-	-	4,026
Sales-Supervision - Customer Relations & Assist 9110-04046	29	1,840	1,000	-	-	125	-	217	-	218	83	961	4,473
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	9,854	6,664	9,706	5,464	4,196	3,681	4,479	10,076	4,880	2,900	2,778	8,932	73,610
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	0	0	0	0	302	18	3,959	1,500	764	-	-	6,543
Distribution-Operation supervi - Customer Relations & Assist 8700-04046	0	0	0	545	104	-	-	-	-	74	-	-	723
Marketing	16,111	18,555	17,110	10,482	5,882	6,489	7,671	18,532	8,060	10,395	4,957	20,770	145,014
Distribution-Operation supervi - Membership Fees 8700-05415	0	0	0	413	-	-	-	-	-	1,960	-	240	2,613
Meter and house regulator expe - Membership Fees 8780-05415	0	0	0	0	150	-	-	-	-	-	-	-	150
Distribution-Other expenses - Membership Fees 8800-05415	87	-	-	-	-	-	-	-	-	-	-	-	87
Customer service-Operating inf - Membership Fees 9090-05415	0	0	0	0	100	-	-	-	-	-	-	-	100
Sales-Supervision - Membership Fees 9110-05415	0	0	0	0	0	35	-	130	-	35	-	-	200
Distribution-Operation supervi - Association Dues 8700-07510	0	0	0	0	0	0	0	0	0	0	10,250	-	10,250
Distribution-Other expenses - Association Dues 8800-07510	0	0	0	0	0	0	0	0	0	0	0	140	140
Miscellaneous general expenses - Association Dues 9302-07510	3,325	12,050	730	6,955	5,595	325	8,275	20	9,590	1,000	4,112	405	52,382
Sales-Supervision - Association Dues 9110-07510	0	0	385	-	-	-	-	-	-	-	-	-	385
Sales-Demonstrating and sellin - Association Dues 9120-07510	630	255	1,100	1,220	300	-	-	240	(395)	-	-	-	3,350
Distribution-Operation supervi - Donations 8700-07520	0	0	0	0	0	0	0	0	(250)	-	-	-	(250)
Dues & Donations	4,042	12,305	2,215	8,588	6,145	360	8,275	390	8,945	2,995	14,362	785	69,407
Compressor station expenses - Postage/Delivery Services 8180-05111	6	3	9	-	-	-	-	-	-	34	-	-	51
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	931	277	918	204	359	203	1,218	388	282	1,157	243	851	7,032
Mains and Services Expenses - Postage/Delivery Services 8740-05111	84	50	422	29	182	131	197	95	105	41	52	118	1,507
Distribution-Measuring and reg - Postage/Delivery Services 8750-05111	0	0	0	0	0	0	0	25	-	-	-	-	25
Meter and house regulator expe - Postage/Delivery Services 8780-05111	0	0	0	0	0	0	0	83	-	-	10	-	93

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Distribution-Other expenses - Postage/Delivery Services 8800-05111	0	46	-	-	-	-	-	-	-	84	-	-	130
Distribution-Maintenance super - Postage/Delivery Services 8850-05111	72	125	148	20	174	38	91	174	279	-	195	41	1,356
Customer accounts-Meter readin - Postage/Delivery Services 9020-05111	0	0	0	18	-	2,633	-	-	-	-	-	-	2,652
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	43	122	58	122	113	24	11	6	49	-	101	220	868
Customer service-Operating inf - Postage/Delivery Services 9090-05111	0	0	0	0	0	0	0	0	0	4	-	-	4
Sales-Supervision - Postage/Delivery Services 9110-05111	0	0	0	0	131	-	-	-	-	-	73	171	374
Sales-Demonstrating and sellin - Postage/Delivery Services 9120-05111	0	0	95	-	-	-	-	-	-	-	-	-	95
A&G-Regulatory commission expe - Postage/Delivery Services 9280-05111	739	-	555	68	153	221	-	-	164	49	-	-	1,950
Print & Postages	1,875	623	2,205	462	1,112	3,250	1,517	771	879	1,369	674	1,400	16,137
Mains expenses - Meals and Entertainment 8560-05411	0	0	0	0	0	0	0	0	0	294	382	154	830
Transmission-Measuring and reg - Meals and Entertainment 8570-05411	0	0	0	0	0	0	0	0	0	0	0	50	50
Distribution-Operation supervi - Meals and Entertainment 8700-05411	4,324	5,063	8,840	2,731	6,969	10,969	6,452	5,620	8,291	6,567	5,356	10,875	82,058
Mains and Services Expenses - Meals and Entertainment 8740-05411	367	256	442	62	392	584	1,116	931	709	876	102	506	6,342
Distribution-Measuring and reg - Meals and Entertainment 8750-05411	146	-	-	223	85	217	-	187	69	325	-	74	1,326
Distribution-Measuring and reg - Meals and Entertainment 8770-05411	0	43	-	-	-	-	-	-	-	-	-	-	43
Meter and house regulator expe - Meals and Entertainment 8780-05411	0	35	124	105	203	176	46	210	62	412	343	370	2,087
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	0	0	172	-	-	-	53	-	225
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	173	387	309	170	167	132	177	71	-	195	241	133	2,156
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	694	145	101	19	254	151	1,048	742	-	523	310	183	4,169
Customer service-Operating inf - Meals and Entertainment 9090-05411	397	445	109	74	181	422	-	-	293	597	439	108	3,065
Sales-Supervision - Meals and Entertainment 9110-05411	764	418	277	287	734	668	630	436	1,040	778	277	412	6,722
Sales-Demonstrating and sellin - Meals and Entertainment 9120-05411	0	0	600	-	95	-	-	(452)	-	-	-	-	243
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	0	12	74	-	82	37	16	-	112	-	-	77	408
A&G-Employee pensions and bene - Meals and Entertainment 9260-05411	0	0	0	0	486	-	-	-	-	-	-	-	486
A&G-Regulatory commission expe - Meals and Entertainment 9280-05411	0	197	823	1,336	-	-	-	-	-	-	-	-	2,358
Miscellaneous general expenses - Meals and Entertainment 9302-05411	0	0	0	0	0	0	0	0	0	120	-	240	360
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	0	0	457	-	-	-	-	-	-	-	-	-	457
Customer accounts-Customer rec - Spousal & Dependent Travel 9030-05412	0	0	0	0	0	0	0	0	0	0	5	-	5
Sales-Supervision - Spousal & Dependent Travel 9110-05412	13	-	5	-	-	-	114	-	-	-	-	-	133
A&G-Office supplies & expense - Transportation 9210-05413	582	1,416	715	-	1,850	1,285	498	-	-	-	801	1,259	8,406
A&G-Regulatory commission expe - Transportation 9280-05413	1,213	3,926	2,763	5,565	120	-	-	-	-	-	-	-	13,587
Mains expenses - Transportation 8560-05413	0	0	174	-	-	-	-	-	-	-	-	-	174
Transmission-Measuring and reg - Transportation 8570-05413	0	0	176	-	-	-	-	-	-	-	-	-	176
Distribution-Operation supervi - Transportation 8700-05413	590	486	594	1,474	862	504	2,517	2,706	707	2,742	910	2,598	16,688
Mains and Services Expenses - Transportation 8740-05413	0	0	240	-	-	-	-	-	78	506	-	-	824
Meter and house regulator expe - Transportation 8780-05413	0	0	1,015	-	-	-	-	-	-	655	-	897	2,568
Distribution-Other expenses - Transportation 8800-05413	0	0	0	0	0	0	0	0	0	0	198	-	198
Customer accounts-Meter readin - Transportation 9020-05413	0	0	636	-	-	-	-	-	-	251	725	1,041	2,653
Customer accounts-Customer rec - Transportation 9030-05413	89	-	299	292	-	99	-	126	-	108	295	-	1,308
Customer service-Operating inf - Transportation 9090-05413	0	1,169	845	587	1,142	1,749	-	-	1,347	1,664	907	1,138	10,546
Sales-Supervision - Transportation 9110-05413	2,794	2,495	3,300	2,382	4,065	2,072	3,672	1,436	3,382	1,992	2,592	4,167	34,371
Customer service-Operating inf - Lodging 9090-05414	0	0	635	307	558	412	-	-	833	773	134	146	3,798
Sales-Supervision - Lodging 9110-05414	727	515	1,404	330	1,661	641	1,110	758	1,332	786	518	663	10,444
A&G-Office supplies & expense - Lodging 9210-05414	209	371	499	-	873	682	294	-	-	-	-	950	3,877
A&G-Regulatory commission expe - Lodging 9280-05414	411	781	1,025	5,177	743	-	-	-	-	-	-	-	8,137
Mains expenses - Lodging 8560-05414	0	0	0	0	0	0	0	0	255	267	763	270	1,555
Distribution-Operation supervi - Lodging 8700-05414	938	4,006	7,287	714	3,692	8,332	5,431	5,030	4,116	6,650	5,973	7,686	59,855
Mains and Services Expenses - Lodging 8740-05414	0	478	405	-	411	1,170	1,608	2,066	1,127	1,782	127	584	9,757
Distribution-Measuring and reg - Lodging 8750-05414	0	0	0	0	0	211	-	417	-	-	-	-	628
Meter and house regulator expe - Lodging 8780-05414	0	0	1,152	-	-	61	211	59	-	973	-	-	2,455
Distribution-Other expenses - Lodging 8800-05414	0	0	0	0	0	0	0	0	0	0	630	-	630
Customer accounts-Meter readin - Lodging 9020-05414	516	1,032	1,720	-	316	-	547	517	-	-	852	852	6,351
Customer accounts-Customer rec - Lodging 9030-05414	372	-	-	-	-	-	-	166	-	-	1,585	-	2,123
A&G-Injuries & damages - Misc Employee Expense 9250-05419	0	(214)	-	-	-	-	-	-	-	-	-	-	(214)
A&G-Employee pensions and bene - Misc Employee Expense 9260-05419	0	0	0	22	-	-	-	-	-	-	-	-	22
A&G-Regulatory commission expe - Misc Employee Expense 9280-05419	215	252	618	1,299	10	-	-	-	-	-	-	-	2,394
Mains expenses - Misc Employee Expense 8560-05419	187	-	-	-	-	-	-	-	-	-	-	-	187
Distribution-Operation supervi - Misc Employee Expense 8700-05419	565	9,165	-	1,373	610	-	-	(1,624)	138	275	395	215	11,112
Mains and Services Expenses - Misc Employee Expense 8740-05419	249	-	316	233	297	-	351	143	249	300	75	315	2,528
Meter and house regulator expe - Misc Employee Expense 8780-05419	0	0	0	0	0	40	-	-	-	62	-	50	152
Customer service-Operating inf - Misc Employee Expense 9090-05419	0	0	0	0	0	0	816	-	-	-	-	-	816
Sales-Supervision - Misc Employee Expense 9110-05419	24	-	-	-	17	-	-	13	-	-	-	-	54
Travel & Entertainment	16,559	32,877	37,980	24,762	26,894	30,613	26,827	19,561	24,139	30,474	24,985	36,011	331,683
Distribution-Operation supervi - Employee Development 8700-05420	0	0	0	0	0	0	0	350	894	435	-	-	1,679
Mains and Services Expenses - Employee Development 8740-05420	0	0	0	0	810	-	-	-	-	-	-	-	810
Meter and house regulator expe - Employee Development 8780-05420	0	0	0	150	-	-	-	-	-	-	-	-	150
Customer accounts-Customer rec - Employee Development 9030-05420	894	-	-	-	-	-	-	-	-	-	-	-	894
Sales-Supervision - Employee Development 9110-05420	0	0	0	0	0	0	10	-	134	-	-	-	144
Sales-Demonstrating and sellin - Employee Development 9120-05420	0	0	0	0	0	0	225	-	-	-	-	-	225
Distribution-Operation supervi - Training 8700-05421	0	0	0	378	23	-	300	-	-	-	-	-	701
Mains and Services Expenses - Training 8740-05421	25	-	-	500	200	36	150	-	-	150	-	-	1,060
Distribution-Measuring and reg - Training 8750-05421	0	0	0	150	-	-	-	50	-	-	-	-	200
Distribution-Other expenses - Training 8800-05421	0	0	0	0	900	-	32	12	-	-	-	-	944
Distribution-Operation supervi - Books & Manuals 8700-05424	16	-	-	-	-	2,092	-	-	-	-	-	213	2,322
Distribution-Operation supervi - Safety Training 8700-05426	0	0	1,133	-	-	-	-	-	-	-	500	500	2,133
Mains and Services Expenses - Safety Training 8740-05426	0	0	0	0	10	7	-	-	-	34	-	24	75
Distribution-Other expenses - Safety Training 8800-05426	0	0	0	0	0	0	0	0	15	-	-	-	15
Mains and Services Expenses - Technical (Job Skills) Training 8740-05427	0	0	0	0	0	0	0	0	0	0	89	5	94
Distribution-Other expenses - Technical (Job Skills) Training 8800-05427	0	0	0	500	-	-	510	-	-	-	-	-	1,010
A&G-Employee pensions and bene - Technical (Job Skills) Training 9260-05427	0	0	0	0	150	-	-	-	-	-	-	-	150
Training	935	-	1,133	1,678	2,093	2,135	1,227	412	1,043	619	589	742	12,606
A&G-Injuries & damages - Settlement 9250-05418	0	664	16,150	-	23,576	4,212	1,191	6,032	8,019	6,540	11,341	4,935	82,659
Distribution-Other expenses - Contract Labor 8800-06111	0	0	0	0	0	0	0	0	0	0	0	8,798	8,798
Distribution-Rents - Contract Labor 8810-06111	0	0	0	0	0	0	475	330	-	-	-	-	805

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Distribution-Maint of mains - Contract Labor 8870-06111	596	-	-	-	-	-	-	-	-	-	-	-	596
Customer accounts-Meter readin - Contract Labor 9020-06111	92,630	63,581	77,352	86,594	66,001	108,135	81,349	109,840	94,623	74,195	89,756	133,974	1,078,030
A&G-Outside services employed - Contract Labor 9230-06111	0	0	0	0	0	0	0	0	0	0	0	30,000	30,000
A&G-Regulatory commission expe - Contract Labor 9280-06111	2,907	2,655	12,277	21,338	12,503	590	-	-	3,659	-	-	-	55,929
Production and gathering-Other - Contract Labor 7590-06111	0	0	0	0	0	0	0	0	5,000	-	-	-	5,000
Wells expenses - Contract Labor 8160-06111	3,263	-	-	16,916	660	-	-	-	-	-	4,288	9,800	33,927
Lines expenses - Contract Labor 8170-06111	0	0	0	0	0	0	0	0	315	-	-	-	315
Storage-Purification expenses - Contract Labor 8210-06111	0	0	330	-	360	990	330	-	-	282	-	-	2,292
Storage-Maintenance of structu - Contract Labor 8310-06111	0	0	0	0	0	0	0	0	0	0	300	375	675
Maintenance of compressor stat - Contract Labor 8340-06111	0	0	0	0	0	0	0	525	-	-	-	-	525
Mains expenses - Contract Labor 8560-06111	1,598	1,598	1,598	3,758	2,042	3,748	1,598	2,798	1,598	12,398	1,598	26,129	60,463
Distribution-Operation supervi - Contract Labor 8700-06111	0	0	0	975	2,248	150	-	701	-	-	-	-	4,074
Mains and Services Expenses - Contract Labor 8740-06111	48,673	31,488	30,383	34,548	42,299	33,181	29,826	63,542	63,546	72,307	69,085	52,488	571,368
Distribution-Measuring and reg - Contract Labor 8750-06111	0	0	0	0	0	0	0	8,100	-	4,034	-	-	12,134
Distribution-Measuring and reg - Contract Labor 8770-06111	0	0	0	0	480	-	-	4,300	-	2,800	-	-	7,580
A&G-Regulatory commission expe - Legal 9280-06121	0	0	33,478	-	175,808	-	-	5,225	-	3,556	-	-	218,067
A&G-Outside services employed - Legal 9230-06121	5,000	6,762	5,689	1,085	7,765	10,062	5,000	-	15	15,071	-	10,148	66,597
Outside Services	**154,667**	**106,748**	**177,257**	**164,214**	**333,742**	**161,068**	**119,770**	**201,393**	**176,776**	**191,184**	**176,368**	**276,647**	**2,239,833**
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	19,435	24,917	31,563	37,743	83,430	66,165	20,780	94,146	120,424	18,549	17,614	544,342	1,079,108
Provision for Bad Debt	**19,435**	**24,917**	**31,563**	**37,743**	**83,430**	**66,165**	**20,780**	**94,146**	**120,424**	**18,549**	**17,614**	**544,342**	**1,079,108**
Distribution-Maint of mains - Misc General Expense 8870-07590	0	0	0	0	0	0	0	0	0	0	30,000	-	30,000
Customer accounts-Meter readin - Misc General Expense 9020-07590	0	0	0	0	0	0	0	0	6	21	36	10	73
Customer service-Operating inf - Misc General Expense 9090-07590	0	0	133	-	-	-	-	-	33	-	-	-	165
Sales-Advertising expenses - Misc General Expense 9130-07590	0	0	0	0	0	0	449	-	-	-	-	-	449
A&G-Employee pensions and bene - Misc General Expense 9260-07590	131	97	-	-	-	-	-	6	75	-	36	-	345
A&G-Franchise requirements - Misc General Expense 9270-07590	0	0	0	0	211	-	-	120	1,462	-	-	-	1,793
A&G-Regulatory commission expe - Misc General Expense 9280-07590	0	84	529	-	-	-	-	-	-	-	-	-	614
Miscellaneous general expenses - Misc General Expense 9302-07590	0	0	0	0	0	0	0	0	97	-	-	-	97
Storage-Operation supervision - Misc General Expense 8140-07590	(283)	(283)	(283)	(304)	(283)	(283)	(283)	(304)	(283)	(283)	(304)	(283)	(3,462)
Wells expenses - Misc General Expense 8160-07590	(329)	(329)	(329)	(544)	(435)	(435)	(435)	(544)	(435)	(435)	(544)	(435)	(5,230)
Storage well royalties - Misc General Expense 8250-07590	0	0	441	266	355	275	192	108	28	12	9	-	1,687
Mains expenses - Misc General Expense 8560-07590	0	0	0	0	0	0	0	0	0	0	116	-	116
Distribution-Operation supervi - Misc General Expense 8700-07590	443	885	1,127	644	1,157	823	466	607	401	650	623	1,315	9,141
Odorization - Misc General Expense 8711-07590	0	149	-	-	-	-	-	-	-	-	-	-	149
Mains and Services Expenses - Misc General Expense 8740-07590	(102)	-	927	1,983	-	-	481	2,004	2,861	261	657	52	9,124
Distribution-Measuring and reg - Misc General Expense 8750-07590	149	-	-	-	-	-	-	-	-	-	-	-	149
Distribution-Measuring and reg - Misc General Expense 8770-07590	17	-	1,473	-	-	-	-	-	-	-	-	-	1,490
Meter and house regulator expe - Misc General Expense 8780-07590	0	0	279	-	-	275	-	-	-	-	-	-	554
Distribution-Other expenses - Misc General Expense 8800-07590	0	0	0	0	0	125	78	-	-	-	-	-	203
Distribution-Rents - Misc General Expense 8810-07590	0	14	-	-	475	-	-	-	-	-	-	-	489
A&G-Office supplies & expense - Vendor Comp Sales Tax 9210-07592	432	(50)	(50)	(51)	(50)	(50)	(35)	(36)	(50)	(43)	(50)	(50)	(82)
Distribution-Operation supervi - Reimbursements 8700-09911	(1,115)	-	-	(2,754)	-	-	(5,779)	-	-	(1,742)	-	-	(11,390)
Mains and Services Expenses - Reimbursements 8740-09911	0	0	132	-	-	88	-	-	-	-	-	88	307
Distribution-Maintenance of ot - Reimbursements 8940-09911	0	0	255	-	-	(221)	(603)	-	(2,106)	(1,346)	476	(16)	(3,560)
Miscellaneous	**(656)**	**567**	**4,633**	**(760)**	**1,428**	**597**	**(5,469)**	**1,961**	**2,088**	**(2,905)**	**31,056**	**680**	**33,220**
Total O&M Expenses Before Allocations	1,141,915	1,046,788	1,174,674	1,276,684	1,413,846	1,104,331	1,090,823	1,221,935	1,121,387	1,157,271	1,048,270	1,748,978	14,546,900

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Distribution-Maint of mains - Non-project Labor 8870-01000	3,147	1,371	1,260	2,601	2,989	4,485	2,216	5,386	2,033	673	2,429	4,386	32,976
Maintenance of services - Non-project Labor 8920-01000	736	-	162	90	-	255	271	158	-	-	534	-	2,205
Maintenance of meters and hous - Non-project Labor 8930-01000	3,777	2,491	2,102	1,687	7,441	6,837	5,972	8,983	8,059	9,668	11,474	6,148	74,637
Customer accounts-Meter readin - Non-project Labor 9020-01000	36,271	22,106	24,298	25,372	24,415	20,040	27,385	35,881	25,725	13,070	16,689	16,529	287,783
Customer accounts-Customer rec - Non-project Labor 9030-01000	34,414	17,690	18,327	16,392	17,188	22,680	26,153	49,357	28,557	26,792	22,055	21,398	301,002
Customer service-Operating inf - Non-project Labor 9090-01000	11,602	7,826	7,826	7,826	7,826	7,826	7,826	11,739	7,826	7,826	7,826	7,826	101,597
Sales-Supervision - Non-project Labor 9110-01000	19,539	12,429	12,429	12,429	12,429	12,429	12,429	18,643	12,432	12,429	12,429	12,429	162,472
A&G-Administrative & general s - Non-project Labor 9200-01000	17,106	11,558	11,558	11,570	11,570	11,558	11,479	16,217	9,662	9,902	9,918	9,904	142,002
Wells expenses - Non-project Labor 8160-01000	4,019	5,354	4,480	3,889	5,169	7,272	5,603	4,396	1,934	2,868	1,063	2,290	48,337
Lines expenses - Non-project Labor 8170-01000	2,490	1,817	2,675	2,819	4,336	6,441	2,965	3,022	1,853	2,072	940	1,492	32,924
Compressor station expenses - Non-project Labor 8180-01000	3,888	1,652	1,341	553	809	1,105	2,097	3,054	379	982	552	702	17,314
Storage-Measuring and regulati - Non-project Labor 8200-01000	0	100	196	447	-	390	241	-	-	-	-	427	1,802
Storage-Purification expenses - Non-project Labor 8210-01000	551	2,863	416	4,048	1,655	7,497	641	120	63	-	-	-	17,655
Maintenance of compressor stat - Non-project Labor 8340-01000	426	-	1,839	285	1,080	349	285	-	379	-	-	-	4,642
Maintenance of measuring and r - Non-project Labor 8350-01000	0	0	0	0	0	664	-	-	379	-	112	-	1,155
Processing-Maintenance of puri - Non-project Labor 8360-01000	0	126	-	-	-	-	-	126	-	-	-	-	253
Other storage expenses-Operati - Non-project Labor 8410-01000	7,807	7,272	12,097	14,123	6,649	4,078	9,153	13,386	12,141	12,239	11,386	7,504	117,836
Mains expenses - Non-project Labor 8560-01000	26,065	12,194	5,714	12,388	13,924	11,605	13,360	12,592	7,846	9,087	11,851	18,822	155,449
Transmission-Measuring and reg - Non-project Labor 8570-01000	3,810	2,292	1,022	630	1,248	4,405	1,462	3,395	2,017	1,356	57	321	22,015
Transmission-Other expenses - Non-project Labor 8590-01000	0	0	0	0	0	0	0	0	0	0	0	886	886
Transmission-Maintenance of ma - Non-project Labor 8630-01000	4,231	196	-	-	-	-	126	845	-	827	786	425	7,436
Transmission-Maintenance of me - Non-project Labor 8650-01000	0	0	99	-	-	-	-	2,423	506	-	-	-	3,028
Distribution-Operation supervi - Non-project Labor 8700-01000	91,009	58,018	69,771	72,284	57,109	53,987	59,152	73,488	48,490	52,298	43,417	53,047	732,069
Distribution-Compressor statio - Non-project Labor 8720-01000	55	-	-	-	-	-	-	-	-	-	-	-	55
Mains and Services Expenses - Non-project Labor 8740-01000	150,627	95,897	87,745	107,574	107,003	136,909	108,355	143,055	101,670	91,441	99,529	94,584	1,324,488
Distribution-Measuring and reg - Non-project Labor 8750-01000	45.147	28,866	17,811	21,756	21,610	31,287	16,982	49,689	25,772	26,685	19,976	19,420	325,001
Distribution-Measuring and reg - Non-project Labor 8760-01000	1.164	600	-	1,439	3,243	2,185	480	960	-	2,399	4,258	4,078	20,805
Distribution-Measuring and reg - Non-project Labor 8770-01000	2,104	2,606	2,730	5,540	4,853	2,970	2,482	1,737	-	729	1,365	1,489	28,603
Meter and house regulator expe - Non-project Labor 8780-01000	112,902	102,863	87,617	82,125	63,713	69,672	67,645	91,724	62,129	65,636	61,251	69,929	937,407
Customer installations expense - Non-project Labor 8790-01000	0	0	0	0	0	0	0	0	0	0	0	247	247
Distribution-Other expenses - Non-project Labor 8800-01000	15,636	6,261	1,998	7,199	15,502	14,690	19,717	30,775	11,498	14,872	11,909	10,098	160,158
Distribution-Operation supervi - Capital Labor 8700-01001	782,131	528,961	532,313	491,685	501,044	471,864	492,270	754,517	519,393	527,449	562,656	567,807	6,732,110
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(779,756)	(526,543)	(528,251)	(489,838)	(494,283)	(470,431)	(491,550)	(755,980)	(521,080)	(530,667)	(569,454)	(563,892)	(6,721,726)
Mains expenses - O&M Project Labor and Contra 8560-01006	2,850	8,222	800	-	-	-	-	1,429	-	-	817	384	14,502
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	0	0	0	0	0	0	868	-	938	-	(1,826)	45	45
Mains and Services Expenses - Expense Labor Accrual 8740-01008	(34,441)	(1,105)	11,099	18,689	(266)	28,644	(6,297)	(52,006)	11,742	10,136	9,021	6,738	1,934
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	(6,474)	(308)	(92)	3,754	(73)	7,967	(6,885)	(3,606)	739	4,322	(2,355)	1,636	(1,376)
Distribution-Measuring and reg - Expense Labor Accrual 8760-01008	(1,500)	(44)	(150)	720	902	(311)	(975)	(176)	(160)	1,199	1,142	309	956
Distribution-Measuring and reg - Expense Labor Accrual 8770-01008	351	301	440	1,678	(343)	(644)	(45)	(1,448)	(290)	365	386	217	968
Meter and house regulator expe - Expense Labor Accrual 8780-01008	(23,718)	6,899	9,331	6,016	(9,206)	9,946	5,549	(32,064)	6,458	11,173	770	11,766	2,919
Customer installations expense - Expense Labor Accrual 8790-01008	0	0	0	0	0	0	0	0	0	0	0	161	161
Distribution-Other expenses - Expense Labor Accrual 8800-01008	(2,710)	(1,041)	(766)	2,800	4,151	1,063	4,988	(8,672)	(1,105)	3,412	(886)	13	1,247
Distribution-Maint of mains - Expense Labor Accrual 8870-01008	(1,435)	(182)	161	796	194	1,197	(1,139)	(654)	(186)	(375)	1,000	1,514	891
Maintenance of services - Expense Labor Accrual 8920-01008	(81)	(123)	65	(20)	(45)	153	36	(163)	(26)	-	294	(294)	(204)
Maintenance of meters and hous - Expense Labor Accrual 8930-01008	(3,382)	(7)	218	3	2,877	382	78	(2,683)	1,323	2,013	1,476	(2,314)	(15)
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	(3,739)	(519)	4,193	2,967	(478)	(183)	7,146	(13,190)	3,024	(2,469)	2,644	1,565	960
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(7,803)	(1,313)	2,908	865	398	5,014	4,699	(10,081)	1,769	3,401	(1,266)	1,779	371
Customer service-Operating inf - Expense Labor Accrual 9090-01008	(2,625)	23	1,174	783	-	783	783	(3,522)	783	1,174	391	783	528
Sales-Supervision - Expense Labor Accrual 9110-01008	(4,041)	(149)	1,864	1,243	-	1,243	1,243	(5,593)	1,244	1,863	621	1,243	781
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(3,852)	39	1,734	1,162	0	1,150	1,101	(5,333)	679	1,569	504	983	(266)
Wells expenses - Expense Labor Accrual 8160-01008	(943)	669	453	153	640	1,779	(441)	(3,189)	(56)	757	(849)	903	(125)
Lines expenses - Expense Labor Accrual 8170-01008	(370)	39	616	339	759	1,697	(1,789)	(1,572)	145	387	(519)	453	185
Compressor station expenses - Expense Labor Accrual 8180-01008	(99)	(185)	74	(260)	128	258	805	(959)	(376)	358	(187)	153	(290)
Storage-Measuring and regulati - Expense Labor Accrual 8200-01008	0	25	54	145	(224)	234	(66)	(169)	0	0	0	278	278
Storage-Purification expenses - Expense Labor Accrual 8210-01008	82	624	(549)	1,858	(1,197)	3,671	(4,050)	(429)	2	(22)	0	0	(0)
Maintenance of compressor stat - Expense Labor Accrual 8340-01008	71	(71)	736	(593)	398	(331)	(10)	(199)	133	(133)	0	0	-
Maintenance of measuring and r - Expense Labor Accrual 8350-01008	0	0	0	0	0	398	(398)	0	133	(133)	62	(62)	-
Processing-Maintenance of puri - Expense Labor Accrual 8360-01008	0	32	(32)	0	0	0	0	21	(21)	0	0	0	-
Other storage expenses-Operati - Expense Labor Accrual 8410-01008	1,301	517	3,021	2,223	(3,737)	(878)	3,960	(4,176)	2,018	1,870	143	(1,385)	4,878
Mains expenses - Expense Labor Accrual 8560-01008	(7,320)	(1,296)	(763)	3,908	768	1	2,389	(7,253)	647	1,797	1,974	5,717	571
Transmission-Measuring and reg - Expense Labor Accrual 8570-01008	(762)	(62)	(164)	(93)	309	2,019	(1,620)	(457)	140	(28)	(647)	178	(1,189)
Transmission-Other expenses - Expense Labor Accrual 8590-01008	0	0	0	0	0	0	0	0	0	0	0	576	576
Transmission-Maintenance of ma - Expense Labor Accrual 8630-01008	136	(666)	(49)	-	-	-	89	52	(141)	413	19	(156)	(293)
Transmission-Maintenance of me - Expense Labor Accrual 8650-01008	0	0	40	(40)	0	0	0	404	(227)	(177)	0	0	-
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	(18,684)	(664)	13,404	8,233	(7,588)	3,838	9,118	(28,982)	4,444	9,795	(2,460)	10,515	950
Distribution-Compressor statio - Expense Labor Accrual 8720-01008	9	(9)	0	0	0	0	0	0	0	0	0	0	-
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	409,107	267,946	309,163	301,857	244,774	234,825	273,454	391,342	273,011	276,691	280,064	312,323	3,574,578
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(411,482)	(270,384)	(313,245)	(303,704)	(251,535)	(236,259)	(274,174)	(389,879)	(271,323)	(273,473)	(273,266)	(316,237)	(3,584,962)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	0	0	0	0	0	0	1,036	1,678	938	1,234	(4,886)	539	539
Mains expenses - Expense Labor Transfer In 8560-01013	2,850	8,222	800	-	-	-	-	1,429	-	-	817	384	14,502
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	0	0	0	0	0	0	(868)	-	(938)	-	1,826	(45)	(45)
Mains expenses - Expense Labor Transfer Out 8560-01014	(2,850)	(8,222)	(800)	-	-	-	-	(1,429)	-	-	(817)	(384)	(14,502)
Labor	**479,357**	**414,405**	**425,329**	**472,394**	**380,107**	**510,703**	**423,777**	**398,162**	**405,125**	**417,951**	**358,994**	**408,571**	**5,094,875**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	41,363	35,257	36,841	41,009	32,988	44,342	36,690	34,294	35,092	36,174	31,514	35,389	440,953
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	61,998	52,828	55,134	61,490	49,387	66,549	54,946	51,407	52,650	54,227	47,216	53,069	660,900
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	83,720	71,361	74,571	83,001	66,772	89,744	74,264	69,410	71,023	73,216	63,784	71,626	892,492
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	500	1,443	140	-	-	-	182	545	165	217	(714)	162	2,640
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	18,544	15,806	16,517	18,385	14,789	19,879	16,449	15,374	15,732	16,218	14,128	15,866	197,686
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	112	324	32	-	-	-	41	122	37	49	(160)	36	593
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	940	801	836	932	749	1,009	833	779	798	822	716	804	10,018
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	6	7	1	-	-	-	1	3	1	1	(4)	1	17
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	1,483	1,265	1,327	1,468	1,187	1,583	1,319	1,229	1,254	1,296	1,131	1,267	15,807
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	11	25	2	-	-	-	3	9	3	4	(12)	3	48
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	2,383	2,031	2,123	2,362	1,901	2,554	2,114	1,975	2,021	2,084	1,815	2,038	25,399

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	15	44	4	-	-	-	5	16	5	7	(22)	5	80
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	3,812	3,249	3,396	3,779	3,041	4,086	3,382	3,160	3,234	3,334	2,905	3,261	40,639
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	22	63	6	-	-	-	8	24	7	10	(31)	7	116
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	272	717	70	-	-	-	90	271	82	108	(355)	80	1,335
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	423	1,083	105	-	-	-	136	409	123	162	(536)	122	2,029
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	77	220	21	-	-	-	28	83	25	33	(109)	25	404
Benefits	215,681	186,523	191,126	212,427	170,813	229,745	190,492	179,112	182,251	187,959	161,265	183,762	2,291,156
Mains expenses - Uniforms 8560-07443	349	508	648	351	-	-	150	-	-	-	-	-	2,006
Distribution-Operation supervi - Uniforms 8700-07443	0	0	0	0	0	106	150	36	-	-	150	-	442
Mains and Services Expenses - Uniforms 8740-07443	406	836	3,268	1,674	828	904	305	438	150	298	683	293	10,084
Meter and house regulator expe - Uniforms 8780-07443	0	111	318	-	-	291	272	111	-	-	-	-	1,103
Distribution-Maint of mains - Uniforms 8870-07443	0	0	58	-	-	-	-	-	-	-	-	-	58
Maintenance of services - Uniforms 8920-07443	0	0	151	-	-	-	-	-	-	-	-	-	151
Customer accounts-Meter readin - Uniforms 9020-07443	(386)	256	183	150	-	300	24	150	-	-	-	292	969
Customer accounts-Customer rec - Uniforms 9030-07443	0	0	0	0	0	0	85	-	-	-	-	-	85
A&G-Employee pensions and bene - Uniforms 9260-07443	5,594	5,344	17,456	14,081	6,328	4,293	2,620	1,667	1,757	859	3,015	1,404	64,416
Customer accounts-Meter readin - Uniforms Capitalized 9020-07444	208	(124)	(97)	(95)	-	(160)	(13)	(80)	-	-	-	(189)	(550)
Customer accounts-Customer rec - Uniforms Capitalized 9030-07444	0	0	0	0	0	0	(46)	-	-	-	-	-	(46)
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	(3,253)	(3,196)	(10,790)	(7,621)	(4,061)	(2,435)	(1,401)	(1,036)	(1,124)	(540)	(2,008)	(814)	(38,279)
Mains expenses - Uniforms Capitalized 8560-07444	(61)	(98)	(166)	(18)	-	-	(8)	-	-	-	-	-	(352)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	0	0	0	0	0	(38)	(67)	(21)	-	-	(81)	-	(206)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	(250)	(430)	(1,661)	(880)	(323)	(450)	(152)	(255)	(103)	(181)	(433)	(176)	(5,294)
Meter and house regulator expe - Uniforms Capitalized 8780-07444	0	(54)	(169)	-	-	(155)	(150)	(59)	-	-	-	-	(587)
Distribution-Maint of mains - Uniforms Capitalized 8870-07444	0	0	(30)	-	-	-	-	-	-	-	-	-	(30)
Maintenance of services - Uniforms Capitalized 8920-07444	0	0	(80)	-	-	-	-	-	-	-	-	-	(80)
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	1,038	-	1,038	1,038	938	1,038	1,005	3,190	1,269	9,133	-	1,005	20,692
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	900	-	900	900	813	900	871	1,074	884	2,711	-	871	10,823
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	237	-	144	144	130	144	139	144	139	425	-	280	1,925
Customer accounts-Meter readin - Misc Employee Welfare Exp 9020-07499	0	0	0	0	18	-	7	-	-	105	-	-	130
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	38	100	-	27	27	27	27	784	81	224	111	29	1,473
A&G-Office supplies & expense - Misc Employee Welfare Exp 9210-07499	0	0	0	0	0	0	0	0	0	0	0	13	13
A&G-Outside services employed - Misc Employee Welfare Exp 9230-07499	0	0	0	0	0	0	0	0	0	0	107	-	107
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	107	266	500	-	354	64	51	177	176	837	805	1,958	5,296
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	5,348	3,120	3,439	3,932	5,374	5,409	4,512	6,737	2,882	3,027	3,013	4,361	51,154
A&G-Regulatory commission expe - Misc Employee Welfare Exp 9280-07499	0	1,361	-	-	-	-	-	-	-	-	-	-	1,361
Storage-Purification expenses - Misc Employee Welfare Exp 8210-07499	0	0	0	0	0	0	0	0	0	0	0	150	150
Other storage expenses-Operati - Misc Employee Welfare Exp 8410-07499	0	0	0	0	60	-	-	-	-	-	-	30	90
Mains expenses - Misc Employee Welfare Exp 8560-07499	0	0	0	0	112	7	-	-	-	-	-	-	119
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	885	-	90	993	25	613	50	370	1,020	74	340	208	4,667
Mains and Services Expenses - Misc Employee Welfare Exp 8740-07499	63	22	-	-	497	686	-	-	-	335	-	170	1,773
Distribution-Measuring and reg - Misc Employee Welfare Exp 8750-07499	0	0	0	16	-	-	-	150	-	-	-	-	166
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	15	-	-	-	-	-	-	-	40	-	80	-	135
Employee Welfare	11,238	8,021	15,199	14,693	11,118	11,542	8,430	13,576	7,171	17,310	5,782	9,884	133,962
A&G-Property insurance - Blueflame Property Insurance 9240-04069	31,111	31,111	31,111	31,111	31,111	31,531	31,531	31,531	31,531	31,531	31,531	31,531	376,269
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	0	0	937	204	548	-	-	(200)	835	-	102	2,424
A&G-Property insurance - Insurance Capitalized 9240-04072	(17,690)	(17,336)	(17,779)	(17,597)	(17,774)	(16,961)	(17,735)	(17,756)	(18,566)	(18,703)	(18,848)	(18,958)	(215,703)
Distribution-Operation supervi - Damages 8700-07111	0	0	0	0	0	5	-	-	-	-	-	-	5
Maintenance of measuring and r - Damages 8890-07111	0	0	500	-	-	-	-	-	-	-	-	-	500
Other storage expenses-Operati - Damages 8410-07111	0	0	0	0	0	0	0	0	0	0	446	-	446
Distribution-Operation supervi - Environmental & Safety 8700-07120	0	0	9,491	-	700	-	-	-	-	-	1,429	-	11,620
Mains and Services Expenses - Environmental & Safety 8740-07120	668	119	-	-	2,331	269	428	-	505	411	26	865	5,622
Insurance	14,089	13,894	23,323	14,451	16,572	15,391	14,224	13,775	13,270	14,073	14,583	13,539	181,183
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(112)	-	(21)	(23)	(10)	-	(4)	(40)	(168)	4	-	(1)	(375)
Distribution-Measuring and reg - Building Lease/Rents Capitalized 8750-04580	0	0	0	(5,303)	5,590	-	-	-	-	-	-	-	287
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(39,603)	(39,556)	(41,091)	(39,874)	(38,596)	(34,366)	(37,334)	(38,449)	(40,522)	(41,382)	(42,545)	(42,500)	(475,818)
Storage well royalties - Building Lease/Rents 8250-04581	637	-	82	457	74	-	80	170	556	(15)	-	15	2,056
Distribution-Measuring and reg - Building Lease/Rents 8750-04581	0	0	0	10,000	(10,000)	0	0	0	0	0	0	0	-
Distribution-Rents - Building Lease/Rents 8810-04581	67,404	67,837	69,009	71,253	65,467	65,955	65,292	66,469	66,119	66,275	66,075	69,175	806,327
A&G-Rents - Building Lease/Rents 9310-04581	1,206	1,206	1,206	1,206	1,206	1,206	1,219	1,206	1,219	1,269	1,262	1,262	14,673
Distribution-Operation supervi - Building Maintenance 8700-04582	0	16,549	(7,178)	333	11,980	185	1,840	-	6,195	1,747	6,875	4,235	42,762
Distribution load dispatching - Building Maintenance 8710-04582	0	0	0	0	0	867	-	-	-	-	-	-	867
Mains and Services Expenses - Building Maintenance 8740-04582	511	13	173	31	-	64	-	133	38	135	2,779	25	3,901
Distribution-Measuring and reg - Building Maintenance 8750-04582	591	277	-	-	-	-	160	570	696	-	2,031	-	4,325
Distribution-Measuring and reg - Building Maintenance 8770-04582	430	25	-	-	-	-	-	-	-	-	-	-	455
Distribution-Other expenses - Building Maintenance 8800-04582	63	192	90	19	144	129	-	48	80	-	-	-	775
Distribution-Rents - Building Maintenance 8810-04582	16,326	13,872	25,465	27,943	19,567	21,195	21,580	38,278	22,205	34,076	40,989	66,127	347,621
Distribution-Maintenance of st - Building Maintenance 8860-04582	32	260	83	171	259	11,627	8	622	221	89	41	32	13,446
Maintenance of measuring and r - Building Maintenance 8910-04582	0	0	0	0	0	0	0	0	0	0	280	-	280
Mains and Services Expenses - Railroad easements and crossings 8740-04585	0	0	20,000	-	-	664	-	-	-	-	-	-	20,664
Distribution-Rents - Utilities 8810-04590	1,901	481	1,139	1,562	577	906	1,244	656	811	801	1,049	1,818	12,946
Customer accounts-Customer rec - Utilities 9030-04590	0	0	0	0	79	-	-	-	-	-	-	-	79
Transmission-Measuring and reg - Utilities 8570-04590	602	344	719	507	483	853	688	471	599	505	681	673	7,126
Lines expenses - Utilities 8170-04590	81	126	126	135	180	112	124	113	90	119	72	96	1,376
Compressor station expenses - Utilities 8180-04590	93	30	103	71	73	70	82	49	102	76	126	39	914
Compressor station fuel and po - Utilities 8190-04590	79	73	78	84	78	88	80	78	3	82	83	79	884
Storage-Measuring and regulati - Utilities 8200-04590	124	134	204	252	278	301	201	118	94	95	87	87	1,975
Storage-Purification expenses - Utilities 8210-04590	120	144	149	169	271	211	232	69	394	224	30	85	2,099
Distribution-Operation supervi - Utilities 8700-04590	10,177	5,601	7,875	5,205	4,895	7,299	9,301	5,998	7,745	6,436	11,138	8,424	90,094
Distribution load dispatching - Utilities 8710-04590	23	67	176	44	18	45	20	22	41	41	22	38	556
Mains and Services Expenses - Utilities 8740-04590	4,424	2,380	4,523	3,226	6,060	4,305	3,587	3,508	3,573	5,420	4,400	4,204	49,610
Distribution-Measuring and reg - Utilities 8750-04590	99	80	93	79	82	93	82	77	86	1,536	155	1,398	3,858
Distribution-Measuring and reg - Utilities 8770-04590	472	79	549	82	146	2,047	409	131	179	158	167	85	4,503
Meter and house regulator expe - Utilities 8780-04590	1,218	844	1,356	1,398	5,089	970	1,350	874	616	712	749	980	16,154
Distribution-Other expenses - Utilities 8800-04590	0	0	0	0	171	90	-	90	-	-	-	-	351

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Storage-Other expenses - Utilities 8240-04590	52	22	22	24	54	26	25	25	53	20	-	-	322
Storage well royalties - Utilities 8250-04590	214	571	1,119	1,799	1,947	2,188	828	177	294	132	106	120	9,493
Other fuel & power for compres - Utilities 8550-04590	0	0	0	0	0	0	0	0	0	0	30	30	60
Mains expenses - Utilities 8560-04590	1,912	1,600	1,819	1,547	1,314	2,388	2,102	1,872	2,029	2,553	1,685	1,776	22,597
Distribution-Rents - Misc Rents 8810-04592	0	0	0	0	0	0	0	0	0	0	11	-	11
Distribution-Maintenance of st - Misc Rents 8860-04592	0	0	0	0	0	0	32	-	-	-	-	-	32
Distribution-Other expenses - Capitalized Utility Costs 8800-04599	(43)	(113)	(48)	(13)	(177)	(128)	-	(79)	(50)	-	-	-	(651)
Distribution-Rents - Capitalized Utility Costs 8810-04599	(11,315)	(8,952)	(16,676)	(17,408)	(12,325)	(12,973)	(13,233)	(23,424)	(14,383)	(22,124)	(27,833)	(45,256)	(225,901)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(6,242)	(11,103)	(2,006)	(3,344)	(10,741)	(4,188)	(6,572)	(3,638)	(8,801)	(5,240)	(11,925)	(8,214)	(82,013)
Mains expenses - Capitalized Utility Costs 8560-04599	(1,163)	(985)	(1,126)	(903)	(779)	(1,440)	(1,180)	(1,106)	(1,223)	(1,619)	(1,072)	(1,136)	(13,733)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(79)	(25)	(87)	(61)	(62)	(60)	(70)	(42)	(87)	(64)	(113)	(34)	(783)
Rent, Maint., & Utilities	**50,233**	**52,072**	**67,925**	**60,665**	**53,392**	**70,729**	**52,171**	**55,043**	**48,814**	**52,061**	**57,434**	**63,663**	**684,204**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	66,739	97,239	77,893	80,822	92,369	84,607	77,068	86,115	83,240	90,363	99,843	84,645	1,020,942
Field measuring and regulating - Capitalized transportation costs 7560-03003	0	0	0	0	0	(1)	-	-	-	-	-	-	(1)
Storage-Purification expenses - Capitalized transportation costs 8210-03003	0	0	0	0	0	(0)	-	-	-	-	-	-	(0)
Storage-Other expenses - Capitalized transportation costs 8240-03003	0	0	0	0	(1)	-	-	-	-	-	-	-	(1)
Mains expenses - Capitalized transportation costs 8560-03003	(40)	-	-	-	(313)	(230)	(556)	(72)	-	-	(14)	-	(1,225)
Transmission-Maintenance of me - Capitalized transportation costs 8650-03003	0	0	0	0	0	0	0	(2)	-	-	-	-	(2)
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(90)	(65)	(2,414)	94	(207)	(79)	(303)	(128)	(35)	(27)	(31)	(67)	(3,353)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(104,134)	(109,114)	(96,621)	(96,079)	(101,126)	(86,152)	(109,056)	(88,349)	(97,937)	(115,074)	(116,698)	(112,377)	(1,232,716)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	0	(40)	-	(8)	-	-	(313)	(392)	-	-	(8)	-	(761)
Meter and house regulator expe - Capitalized transportation costs 8780-03003	(329)	(50)	(611)	(171)	(146)	(143)	(39)	(129)	(297)	(517)	(224)	(973)	(3,629)
Customer accounts-Meter readin - Capitalized transportation costs 9020-03003	0	(6)	(8)	-	-	(179)	(44)	-	-	-	-	-	(237)
Field measuring and regulating - Vehicle Expense 7560-03004	0	0	0	0	0	48	-	-	-	-	-	-	48
Storage-Purification expenses - Vehicle Expense 8210-03004	0	0	0	0	0	16	-	-	-	-	-	-	16
Storage-Other expenses - Vehicle Expense 8240-03004	0	0	0	0	8	-	-	-	-	-	-	-	8
Mains expenses - Vehicle Expense 8560-03004	226	-	-	-	2,399	7,802	10,442	307	-	-	61	-	21,238
Transmission-Maintenance of me - Vehicle Expense 8650-03004	0	0	0	0	0	0	0	8	-	-	-	-	8
Distribution-Operation supervi - Vehicle Expense 8700-03004	187	136	3,679	(144)	488	181	599	252	61	43	44	108	5,633
Mains and Services Expenses - Vehicle Expense 8740-03004	117,469	93,873	88,270	99,567	84,106	84,359	123,988	71,942	78,400	99,310	88,741	101,235	1,131,261
Distribution-Measuring and reg - Vehicle Expense 8750-03004	0	99	-	18	-	-	717	906	-	-	15	-	1,755
Meter and house regulator expe - Vehicle Expense 8780-03004	538	78	915	297	228	239	65	204	451	801	339	1,445	5,600
Customer accounts-Meter readin - Vehicle Expense 9020-03004	0	10	15	-	-	310	71	-	-	-	-	-	406
Mains and Services Expenses - Equipment Lease 8740-04301	36,682	34,609	38,002	33,524	35,668	36,456	35,980	36,405	34,636	36,423	43,903	39,121	441,409
Miscellaneous general expenses - Heavy Equipment 9302-04302	52	-	-	-	-	-	-	-	-	-	-	-	52
Distribution-Maintenance of ot - Heavy Equipment 8940-04302	0	0	0	0	113	-	-	-	-	-	-	-	113
Mains and Services Expenses - Heavy Equipment 8740-04302	27,147	12,388	8,952	7,706	10,495	16,017	20,952	19,426	11,247	12,606	9,093	14,809	170,838
Distribution-Measuring and reg - Heavy Equipment 8750-04302	0	0	0	0	0	0	0	0	0	0	0	41	41
Distribution-Measuring and reg - Heavy Equipment 8770-04302	0	0	0	104	-	-	-	-	-	-	-	-	104
Meter and house regulator expe - Heavy Equipment 8780-04302	0	101	-	-	-	-	-	-	-	-	-	-	101
Mains expenses - Heavy Equipment 8560-04302	2,150	-	-	2,805	-	225	112	5,469	-	-	-	1,377	12,138
Distribution-Operation supervi - Heavy Equipment 8700-04302	10	20	-	-	546	51	22	269	-	-	171	13	1,101
Maintenance of compressor stat - Heavy Equipment 8340-04302	0	0	21	-	-	-	-	-	-	-	-	-	21
Mains expenses - Heavy Equipment Capitalized 8560-04307	(2,107)	-	-	(2,749)	-	(220)	(110)	(5,359)	-	-	-	(1,349)	(11,895)
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	(10)	(20)	-	-	(535)	(50)	(21)	(263)	-	-	(167)	(13)	(1,079)
Maintenance of compressor stat - Heavy Equipment Capitalized 8340-04307	0	0	(21)	-	-	-	-	-	-	-	-	-	(21)
Miscellaneous general expenses - Heavy Equipment Capitalized 9302-04307	(51)	-	-	-	-	-	-	-	-	-	-	-	(51)
Distribution-Maintenance of ot - Heavy Equipment Capitalized 8940-04307	0	0	0	0	(111)	-	-	-	-	-	-	-	(111)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(62,552)	(46,057)	(46,014)	(40,406)	(45,240)	(51,424)	(56,794)	(54,714)	(44,966)	(48,049)	(51,937)	(52,851)	(600,002)
Distribution-Measuring and reg - Heavy Equipment Capitalized 8750-04307	0	0	0	0	0	0	0	0	0	0	0	(40)	(40)
Distribution-Measuring and reg - Heavy Equipment Capitalized 8770-04307	0	0	0	(102)	-	-	-	-	-	-	-	-	(102)
Meter and house regulator expe - Heavy Equipment Capitalized 8780-04307	0	(99)	-	-	-	-	-	-	-	-	-	-	(99)
Vehicles & Equip	**81,886**	**83,104**	**72,058**	**85,277**	**78,743**	**91,832**	**103,780**	**71,894**	**64,801**	**75,879**	**73,131**	**75,125**	**957,510**
Maintenance of measuring and r - Inventory Materials 8900-02001	0	0	0	0	0	0	0	0	0	75	-	-	75
Mains expenses - Inventory Materials 8560-02001	3,133	2,038	1,683	-	178	2,384	-	588	-	-	-	2,788	12,792
Transmission-Measuring and reg - Inventory Materials 8570-02001	0	0	0	0	0	0	0	0	0	0	0	5,220	5,220
Mains and Services Expenses - Inventory Materials 8740-02001	13,591	9,144	9,459	8,243	21,208	8,363	13,362	14,524	22,227	37,075	13,738	15,541	186,476
Distribution-Measuring and reg - Inventory Materials 8750-02001	0	0	0	0	0	254	-	-	-	-	-	-	254
Distribution-Measuring and reg - Inventory Materials 8760-02001	0	0	0	0	0	0	0	541	2,309	-	-	-	2,850
Distribution-Measuring and reg - Inventory Materials 8770-02001	0	0	0	0	0	0	0	0	0	2,765	140	-	2,904
Mains expenses - Warehouse Loading Charge 8560-02004	376	245	202	-	21	286	-	71	-	-	-	558	1,758
Transmission-Measuring and reg - Warehouse Loading Charge 8570-02004	0	0	0	0	0	0	0	0	0	0	0	1,044	1,044
Mains and Services Expenses - Warehouse Loading Charge 8740-02004	1,631	1,097	1,135	989	2,545	1,004	1,603	1,743	3,334	7,415	2,748	3,108	28,352
Distribution-Measuring and reg - Warehouse Loading Charge 8750-02004	0	0	0	0	0	31	-	-	-	-	-	-	31
Distribution-Measuring and reg - Warehouse Loading Charge 8760-02004	0	0	0	0	0	0	0	65	346	-	-	-	411
Distribution-Measuring and reg - Warehouse Loading Charge 8770-02004	0	0	0	0	0	0	0	0	0	553	28	-	581
Maintenance of measuring and r - Warehouse Loading Charge 8900-02004	0	0	0	0	0	0	0	0	0	15	-	-	15
Odorization - Non-Inventory Supplies 8711-02005	135	-	5,869	16,366	-	-	-	-	5,986	-	-	-	28,357
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	11,767	8,567	17,618	13,459	17,129	17,188	12,293	19,881	16,651	14,886	12,920	43,071	205,431
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	7,574	558	4,193	1,727	935	582	1,520	7,430	3,634	6,344	2,971	(148)	37,319
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	0	48	-	-	231	57	230	1,423	186	59	685	487	3,406
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	8,556	229	4,324	83	8,921	66	521	4,074	7,320	18,589	19,344	450	72,478
Meter and house regulator expe - Non-Inventory Supplies 8780-02005	607	1,939	823	1,161	795	238	893	1,286	198	1,048	770	457	10,216
Customer installations expense - Non-Inventory Supplies 8790-02005	27	110	91	98	-	-	90	-	94	239	-	-	749
Distribution-Other expenses - Non-Inventory Supplies 8800-02005	152	53	-	200	1,082	469	1,029	357	140	869	241	1,975	6,567
Distribution-Rents - Non-Inventory Supplies 8810-02005	0	0	64	-	-	80	-	21	143	-	-	-	307
Distribution-Maint of mains - Non-Inventory Supplies 8870-02005	342	352	-	-	-	885	-	-	60	214	-	-	1,853
Maintenance of measuring and r - Non-Inventory Supplies 8890-02005	771	1,201	164	-	-	183	177	-	-	-	3,405	81	5,983
Maintenance of measuring and r - Non-Inventory Supplies 8900-02005	8,946	-	303	3,504	-	-	458	4,685	488	251	-	(2,852)	15,784
Maintenance of measuring and r - Non-Inventory Supplies 8910-02005	610	-	-	-	-	-	6,515	1,049	670	15	-	67	8,925
Maintenance of services - Non-Inventory Supplies 8920-02005	0	0	0	0	0	0	345	-	-	-	-	-	345
Maintenance of meters and hous - Non-Inventory Supplies 8930-02005	0	0	0	0	0	0	0	182	-	-	-	-	182
Distribution-Maintenance of ot - Non-Inventory Supplies 8940-02005	971	733	1,895	1,910	1,715	2,338	2,785	1,718	6,044	3,902	1,201	4,352	29,564
Customer accounts-Meter readin - Non-Inventory Supplies 9020-02005	53	36	26	116	-	117	-	26	2	54	4	37	470
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	0	153	-	-	-	74	21	-	-	129	32	21	430

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Sales-Supervision - Non-Inventory Supplies 9110-02005	0	149	-	-	-	-	-	-	-	-	-	-	149
Wells expenses - Non-Inventory Supplies 8160-02005	866	447	1,577	28	655	101	653	681	-	171	1,783	2,147	9,108
Lines expenses - Non-Inventory Supplies 8170-02005	0	0	0	496	11	87	2,765	-	-	-	45	155	3,558
Compressor station expenses - Non-Inventory Supplies 8180-02005	1,148	1,028	756	515	1,144	737	1,956	1,084	(279)	1,202	1,112	191	10,595
Storage-Purification expenses - Non-Inventory Supplies 8210-02005	144	874	1,938	84	367	715	1,742	-	-	223	-	466	6,553
Storage-Other expenses - Non-Inventory Supplies 8240-02005	0	0	0	0	0	626	6	-	-	-	-	-	631
Storage-Maintenance of structu - Non-Inventory Supplies 8310-02005	0	0	74	-	62	-	-	-	-	-	-	-	136
Maintenance of compressor stat - Non-Inventory Supplies 8340-02005	0	130	1,176	2,283	418	-	380	958	-	-	-	-	5,345
Maintenance of measuring and r - Non-Inventory Supplies 8350-02005	0	0	0	0	0	0	0	0	24	-	-	-	24
Other storage expenses-Operati - Non-Inventory Supplies 8410-02005	0	86	-	1	11	-	-	-	-	-	-	318	416
Mains expenses - Non-Inventory Supplies 8560-02005	1,178	839	823	890	725	1,336	1,207	752	1,601	3,307	987	2,912	16,658
Transmission-Measuring and reg - Non-Inventory Supplies 8570-02005	304	-	14	562	197	217	14	88	1,795	13	-	-	3,203
Transmission-Other expenses - Non-Inventory Supplies 8590-02005	0	0	0	0	0	0	0	0	0	0	0	38	38
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	0	0	0	0	1,504	-	-	30	-	-	-	-	1,534
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	918	444	2,612	2,674	1,403	825	1,730	666	608	1,478	408	1,225	14,991
Mains and Services Expenses - Parts 8740-04306	0	0	0	0	0	0	0	0	0	302	17	-	319
Distribution-Maintenance of ot - Office Supplies 8940-05010	0	0	0	0	0	0	33	233	-	-	-	-	266
Customer accounts-Operation su - Office Supplies 9010-05010	0	0	0	0	0	0	0	0	0	0	0	40	40
Customer accounts-Meter readin - Office Supplies 9020-05010	0	0	0	0	0	30	-	-	-	-	-	-	30
Customer accounts-Customer rec - Office Supplies 9030-05010	654	1,802	1,119	1,906	1,140	962	468	609	1,235	1,520	925	1,331	13,673
Customer service-Operating inf - Office Supplies 9090-05010	0	0	0	121	-	119	-	105	-	61	133	-	539
Sales-Supervision - Office Supplies 9110-05010	0	0	0	25	-	-	42	-	-	130	-	-	198
Mains expenses - Office Supplies 8560-05010	0	0	0	210	-	-	-	-	-	-	-	-	210
Distribution-Operation supervi - Office Supplies 8700-05010	7,564	6,590	10,908	12,404	4,272	4,781	5,301	649	230	6,613	4,000	6,149	69,460
Mains and Services Expenses - Office Supplies 8740-05010	1,205	282	1,191	483	929	165	902	1,769	811	1,261	634	1,410	11,041
Distribution-Measuring and reg - Office Supplies 8750-05010	0	0	86	-	-	-	-	-	-	21	-	-	107
Meter and house regulator expe - Office Supplies 8780-05010	943	730	934	1,330	1,523	2,546	778	1,861	892	250	1,539	740	14,066
Distribution-Other expenses - Office Supplies 8800-05010	0	172	-	116	38	34	212	-	74	-	-	-	646
Distribution-Rents - Office Supplies 8810-05010	0	0	0	0	0	21	-	-	-	-	52	51	124
Materials & Supplies	74,164	40,077	71,058	72,084	69,156	47,902	60,034	69,147	76,823	111,050	69,861	93,431	854,787
Distribution-Operation supervi - IT Equipment 8700-04212	0	0	0	0	0	0	0	0	0	0	0	4,349	4,349
Information Technologies	0	0	0	0	0	0	0	0	0	0	0	4,349	4,349
Distribution-Operation supervi - Monthly Lines and service 8700-05310	13,765	9,331	10,991	15,897	16,373	11,711	13,007	11,376	10,164	12,875	13,310	12,816	151,617
Distribution-Operation supervi - Long Distance 8700-05312	297	391	1,065	160	549	929	650	332	432	339	267	218	5,628
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	4,590	7,305	7,119	5,921	6,988	6,761	7,432	5,176	5,775	5,458	4,871	3,945	71,343
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	236	63	181	246	247	546	712	201	12	-	-	-	2,444
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	851	477	606	922	535	466	893	494	522	625	741	490	7,623
Customer accounts-Meter readin - AMI Tower Rent 9020-05351	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	12,600
Customer accounts-Meter readin - AMI Tower Fees 9020-05352	0	0	0	0	0	0	40	56	6	42	46	44	234
Customer accounts-Meter readin - Cellular, radio, pager charges 9020-05364	0	0	0	0	0	0	0	0	0	0	37	-	37
Distribution-Maintenance of ot - Cellular, radio, pager charges 8940-05364	148	114	120	146	142	116	161	118	123	123	37	52	1,401
Mains and Services Expenses - Cellular, radio, pager charges 8740-05364	0	0	42	-	-	64	-	74	-	-	79	35	294
Distribution-Measuring and reg - Cellular, radio, pager charges 8750-05364	0	0	0	53	-	-	-	76	-	-	-	-	129
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	11,563	12,064	11,932	11,712	11,816	11,660	11,822	11,791	10,956	11,400	11,563	11,720	140,000
Distribution-Operation supervi - Cell service for data uses 8700-05376	4,635	4,868	4,824	4,929	4,824	5,008	4,931	6,603	5,147	5,203	4,895	5,189	61,055
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	336	-	471	21	127	651	660	20	788	424	1,680	758	5,937
Mains expenses - Cell phone equipment and accessories 8560-05377	120	-	-	32	-	-	-	32	-	-	-	-	183
Sales-Supervision - Cell phone equipment and accessories 9110-05377	0	0	0	0	0	0	0	0	0	0	0	25	25
Mains and Services Expenses - Cell phone equipment and accessories 8740-05377	48	73	30	-	74	229	171	61	45	106	450	410	1,696
Distribution-Measuring and reg - Cell phone equipment and accessories 8750-05377	0	0	0	0	0	42	-	-	-	-	68	-	110
Meter and house regulator expe - Cell phone equipment and accessories 8780-05377	5	-	-	-	42	285	11	-	42	-	53	11	449
Distribution-Maintenance of ot - Capitalized Telecom Costs 8940-05399	(84)	(64)	(69)	(80)	(81)	(61)	(90)	(67)	(73)	(71)	(22)	(31)	(793)
Customer accounts-Meter readin - Capitalized Telecom Costs 9020-05399	0	0	0	0	0	0	0	0	0	0	(22)	-	(22)
Sales-Supervision - Capitalized Telecom Costs 9110-05399	0	0	0	0	0	0	0	0	0	0	0	(15)	(15)
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(27)	(41)	(41)	-	(30)	(155)	(96)	(76)	(26)	(61)	(316)	(266)	(1,136)
Distribution-Measuring and reg - Capitalized Telecom Costs 8750-05399	0	0	0	(29)	-	(22)	-	(43)	-	-	(40)	-	(134)
Meter and house regulator expe - Capitalized Telecom Costs 8780-05399	(3)	-	-	-	(24)	(151)	(6)	-	(25)	-	(32)	(6)	(247)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(16,959)	(14,591)	(15,915)	(18,043)	(18,585)	(15,212)	(17,106)	(16,711)	(16,024)	(17,300)	(18,875)	(18,200)	(203,522)
Telecom	20,573	21,040	22,407	22,936	24,048	23,916	24,242	20,564	18,913	20,212	19,840	18,243	256,934
Meter and house regulator expe - Required By Law, Safety 8780-04002	0	0	50	-	-	-	-	-	-	-	-	-	50
Distribution-Operation supervi - Required By Law, Safety 8700-04002	0	0	3,887	-	-	-	-	-	-	-	1,161	-	5,048
A&G-Employee pensions and bene - Safety 9260-04018	0	0	0	0	0	0	0	0	0	0	95	-	95
Mains and Services Expenses - Safety 8740-04018	0	68	(45)	30	20	-	210	13	-	-	-	-	295
Meter and house regulator expe - Safety 8780-04018	0	0	28	2	-	-	-	-	-	-	-	-	29
Distribution-Operation supervi - Promo Other, Misc 8700-04021	(500)	-	530	-	-	-	-	-	-	-	-	-	30
Customer service-Operating inf - Promo Other, Misc 9090-04021	0	700	42	-	-	-	-	-	-	-	-	-	742
Sales-Supervision - Promo Other, Misc 9110-04021	0	0	0	0	42	-	-	-	-	-	-	32	74
Sales-Demonstrating and sellin - Promo Other, Misc 9120-04021	0	76	369	110	187	584	-	110	242	-	138	1,072	2,889
Miscellaneous general expenses - Community Rel&Trade Shows 9302-04040	0	0	0	0	0	0	0	0	264	-	-	-	264
Sales-Supervision - Community Rel&Trade Shows 9110-04040	569	175	-	327	1,036	-	650	75	-	-	977	59	3,868
Sales-Demonstrating and sellin - Community Rel&Trade Shows 9120-04040	1,324	732	100	1,959	837	1,624	-	350	-	-	756	1,400	9,080
Sales-Advertising expenses - Community Rel&Trade Shows 9130-04040	146	1,978	48	395	2,572	1,193	350	1,664	9	-	393	2,000	10,747
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	0	0	0	0	0	40	-	-	-	-	-	-	40
Customer service-Miscellaneous - Advertising 9100-04044	0	0	0	0	0	0	0	0	0	0	85	-	85
Sales-Supervision - Advertising 9110-04044	0	0	0	0	0	0	0	0	495	575	-	-	1,070
Sales-Demonstrating and sellin - Advertising 9120-04044	0	0	0	0	0	0	0	736	2,299	4,142	1,595	-	8,772
Sales-Advertising expenses - Advertising 9130-04044	736	1,611	1,270	5,644	3,425	326	1,550	1,080	1,187	1,209	865	625	19,528
Customer service-Operating inf - Customer Relations & Assist 9090-04046	271	-	-	-	-	-	-	-	-	-	-	-	271
Sales-Supervision - Customer Relations & Assist 9110-04046	900	211	1,000	326	517	7,787	2,260	5,281	400	1,500	1,750	295	22,226
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	10,792	3,664	2,738	14,764	4,885	2,630	2,655	2,021	470	1,439	4,191	17,908	68,156
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	0	0	0	1,000	-	417	-	-	-	449	783	2,649
Distribution-Operation supervi - Customer Relations & Assist 8700-04046	890	-	-	-	-	-	-	-	-	-	-	(690)	200
Marketing	15,128	9,213	10,017	23,556	14,521	14,183	8,091	11,330	5,386	8,864	12,455	23,484	156,208

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Distribution-Operation supervi - Membership Fees 8700-05415	0	0	0	0	500	-	-	-	-	150	-	-	650
Mains and Services Expenses - Membership Fees 8740-05415	0	0	34	-	-	-	-	-	-	-	300	-	334
Customer service-Operating inf - Membership Fees 9090-05415	0	0	0	0	0	100	(100)	350	-	-	-	-	350
Sales-Supervision - Membership Fees 9110-05415	0	0	0	0	0	130	-	-	-	-	-	-	130
Miscellaneous general expenses - Membership Fees 9302-05415	75	-	-	-	-	-	-	-	-	-	200	-	275
Miscellaneous general expenses - Club Dues - Deductible 9302-05417	295	-	-	-	-	-	-	-	250	-	900	-	1,445
Distribution-Operation supervi - Association Dues 8700-07510	2,000	-	-	-	-	-	-	-	-	-	10,250	-	12,250
Miscellaneous general expenses - Association Dues 9302-07510	350	650	15,545	7,360	4,375	2,044	8,530	350	120	3,425	10,000	125	52,874
A&G-Maintenance of general pla - Association Dues 9320-07510	0	0	0	0	0	0	0	0	1,248	-	-	-	1,248
Sales-Supervision - Association Dues 9110-07510	100	(100)	0	0	0	0	0	0	0	0	0	0	-
Distribution-Other expenses - Donations 8800-07520	0	100	-	-	-	-	-	-	-	-	-	-	100
Miscellaneous general expenses - Donations 9302-07520	0	0	0	0	0	0	0	0	0	0	0	388	388
Sales-Supervision - Donations 9110-07520	0	0	0	0	0	0	9	-	-	-	-	-	9
Dues & Donations	2,820	650	15,579	7,360	4,875	2,274	8,439	700	1,618	3,575	21,650	513	70,053
Mains expenses - Postage/Delivery Services 8560-05111	0	0	344	-	60	-	-	-	-	-	-	-	404
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	290	166	226	28	304	449	223	104	86	323	149	833	3,179
Mains and Services Expenses - Postage/Delivery Services 8740-05111	67	72	88	66	310	38	238	175	124	727	448	176	2,527
Meter and house regulator expe - Postage/Delivery Services 8780-05111	0	0	0	73	-	12	-	-	50	21	-	-	156
Distribution-Other expenses - Postage/Delivery Services 8800-05111	0	0	0	0	17	-	-	-	6	-	-	-	24
Distribution-Maintenance super - Postage/Delivery Services 8850-05111	0	14	143	150	143	37	185	185	140	-	304	384	1,684
Customer accounts-Operation su - Postage/Delivery Services 9010-05111	0	0	0	0	0	0	0	0	0	0	0	102	102
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	223	11	100	49	549	-	33	2	220	71	-	28	1,285
Sales-Supervision - Postage/Delivery Services 9110-05111	0	0	159	-	10	-	-	-	-	-	-	40	210
Sales-Demonstrating and sellin - Postage/Delivery Services 9120-05111	9	-	-	-	-	-	-	-	-	-	-	-	9
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	0	0	0	0	0	0	13	-	-	-	-	-	13
A&G-Regulatory commission expe - Postage/Delivery Services 9280-05111	0	0	0	0	64	-	-	-	-	-	-	-	64
Print & Postages	588	263	1,061	366	1,457	536	692	465	625	1,142	900	1,563	9,656
Other storage expenses-Operati - Meals and Entertainment 8410-05411	0	48	-	-	54	-	58	-	-	-	-	-	160
Mains expenses - Meals and Entertainment 8560-05411	50	605	-	-	-	-	-	46	-	-	-	-	701
Distribution-Operation supervi - Meals and Entertainment 8700-05411	5,879	6,390	7,677	7,134	9,095	6,329	7,226	7,111	9,212	7,529	6,858	10,966	91,406
Mains and Services Expenses - Meals and Entertainment 8740-05411	905	405	212	1,421	1,152	1,468	1,368	1,320	898	1,331	975	511	11,965
Distribution-Measuring and req - Meals and Entertainment 8750-05411	175	48	-	70	264	112	212	38	-	286	-	502	1,708
Meter and house regulator expe - Meals and Entertainment 8780-05411	104	44	103	120	475	518	226	51	157	698	1,290	1,193	4,980
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	621	-	-	-	-	33	-	-	72	-	-	725
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	139	782	-	-	1,133	1,968	187	-	300	456	73	1,194	6,233
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	526	261	402	-	447	460	781	1,196	1,285	64	318	196	5,937
Customer service-Operating inf - Meals and Entertainment 9090-05411	30	975	162	-	38	780	111	240	67	-	483	331	3,215
Sales-Supervision - Meals and Entertainment 9110-05411	220	798	212	400	2,142	343	704	444	372	332	402	587	6,957
Sales-Demonstrating and sellin - Meals and Entertainment 9120-05411	0	0	0	0	1,104	-	-	-	-	-	-	-	1,104
Sales-Advertising expenses - Meals and Entertainment 9130-05411	0	0	21	-	-	-	-	-	-	-	-	-	21
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	0	9	65	-	-	-	-	-	67	-	44	117	302
A&G-Employee pensions and bene - Meals and Entertainment 9260-05411	0	0	0	97	112	-	41	-	-	-	-	-	251
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	0	8	95	-	11	-	3	100	-	12	33	8	269
Mains and Services Expenses - Spousal & Dependent Travel 8740-05412	0	41	-	-	-	-	-	-	-	-	-	-	41
Meter and house regulator expe - Spousal & Dependent Travel 8780-05412	0	0	0	0	0	0	0	0	0	35	-	44	79
Customer accounts-Customer rec - Spousal & Dependent Travel 9030-05412	0	0	36	-	-	-	-	-	-	-	-	-	36
Customer service-Operating inf - Spousal & Dependent Travel 9090-05412	0	10	-	-	-	35	-	-	-	-	-	-	45
A&G-Office supplies & expense - Transportation 9210-05413	706	53	141	-	-	563	-	-	99	-	254	1,277	3,081
Other storage expenses-Operati - Transportation 8410-05413	0	309	-	-	-	-	-	-	-	-	-	-	309
Distribution-Operation supervi - Transportation 8700-05413	900	4,394	285	3,341	617	1,785	1,987	2,881	3,150	1,625	1,370	2,122	24,438
Mains and Services Expenses - Transportation 8740-05413	42	254	-	981	-	1,358	2,214	1,390	1,964	107	-	385	8,695
Meter and house regulator expe - Transportation 8780-05413	0	109	-	-	-	-	294	2,344	154	302	2,617	746	6,564
Distribution-Other expenses - Transportation 8800-05413	0	368	-	-	-	639	-	-	-	-	-	-	1,007
Customer accounts-Meter readin - Transportation 9020-05413	0	525	36	-	158	8,694	948	475	1,683	5,581	1,659	2,488	22,248
Customer accounts-Customer rec - Transportation 9030-05413	240	854	68	398	-	-	327	-	600	-	-	169	2,656
Customer service-Operating inf - Transportation 9090-05413	800	1,180	1,301	-	820	2,460	921	1,225	811	-	1,958	1,081	12,557
Sales-Supervision - Transportation 9110-05413	3,142	3,302	2,504	2,392	2,295	3,001	3,073	3,122	3,732	2,908	2,682	3,491	35,644
Customer service-Operating inf - Lodging 9090-05414	0	609	276	-	-	1,152	473	281	206	-	900	214	4,110
Sales-Supervision - Lodging 9110-05414	664	1,340	840	170	897	1,038	1,283	1,157	1,188	924	1,261	1,095	11,856
A&G-Office supplies & expense - Lodging 9210-05414	0	198	322	-	-	-	411	-	393	-	44	97	1,464
A&G-Employee pensions and bene - Lodging 9260-05414	124	-	-	-	-	92	-	-	-	-	-	-	215
Other storage expenses-Operati - Lodging 8410-05414	0	590	-	-	110	209	338	-	182	-	-	240	1,669
Mains expenses - Lodging 8560-05414	0	1,486	-	-	-	-	-	230	-	-	-	-	1,715
Distribution-Operation supervi - Lodging 8700-05414	3,903	8,926	4,497	1,542	5,943	9,794	8,654	3,896	8,780	3,487	5,863	3,705	68,991
Mains and Services Expenses - Lodging 8740-05414	496	1,235	-	1,515	996	3,222	4,205	3,710	2,101	920	724	378	19,500
Distribution-Measuring and req - Lodging 8750-05414	0	0	0	0	0	327	348	-	-	-	-	-	675
Meter and house regulator expe - Lodging 8780-05414	0	0	0	0	327	1,406	819	-	-	428	7,143	5,817	15,941
Distribution-Other expenses - Lodging 8800-05414	0	1,195	-	-	-	-	-	-	-	-	-	-	1,195
Customer accounts-Meter readin - Lodging 9020-05414	0	2,343	-	-	-	-	4,686	-	-	2,797	3,252	370	13,447
Customer accounts-Customer rec - Lodging 9030-05414	0	273	144	-	247	-	-	478	2,037	-	-	-	3,179
A&G-Office supplies & expense - Misc Employee Expense 9210-05419	0	0	0	0	0	0	0	0	0	0	0	1	1
A&G-Employee pensions and bene - Misc Employee Expense 9260-05419	0	0	0	0	0	0	0	41	-	-	-	-	41
Production and gathering-Other - Misc Employee Expense 7590-05419	0	0	0	688	-	-	-	-	-	-	-	-	688
Distribution-Operation supervi - Misc Employee Expense 8700-05419	27	60	-	-	74	-	4,340	2,125	2,025	-	479	7,158	16,285
Mains and Services Expenses - Misc Employee Expense 8740-05419	174	60	58	171	343	600	67	-	251	509	56	2,808	5,119
Meter and house regulator expe - Misc Employee Expense 8780-05419	0	0	50	-	-	-	-	-	-	10	-	-	60
Customer service-Operating inf - Misc Employee Expense 9090-05419	0	0	19	-	-	-	816	-	-	-	-	-	835
Travel & Entertainment	19,246	40,706	19,524	20,437	28,854	48,343	47,154	33,899	41,715	30,413	40,739	49,289	420,322
Distribution-Operation supervi - Employee Development 8700-05420	0	0	0	0	150	-	-	430	-	-	-	399	979
Mains and Services Expenses - Employee Development 8740-05420	0	0	0	150	26	-	-	-	-	-	-	-	176
Sales-Supervision - Employee Development 9110-05420	0	0	0	0	0	0	0	0	218	-	-	-	218
A&G-Office supplies & expense - Employee Development 9210-05420	0	0	0	0	0	1,000	-	-	-	-	-	-	1,000
Distribution-Operation supervi - Training 8700-05421	0	0	0	1,350	-	-	-	-	-	-	-	-	1,350
Mains and Services Expenses - Training 8740-05421	0	0	0	195	50	-	-	603	48	98	-	-	993

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Distribution-Operation supervi - Operator Qualifications Training 8700-05422	0	0	0	0	0	0	0	817	49	-	-	-	866
Distribution-Operation supervi - Books & Manuals 8700-05424	13	-	-	-	-	-	-	-	-	-	-	-	13
Customer service-Operating inf - Books & Manuals 9090-05424	0	0	0	0	0	0	0	0	0	0	69	-	69
Mains and Services Expenses - Safety Training 8740-05426	0	0	29	144	-	-	-	-	-	-	-	127	300
Distribution-Operation supervi - Technical (Job Skills) Training 8700-05427	0	0	0	0	83	-	-	-	-	-	-	-	83
Mains and Services Expenses - Technical (Job Skills) Training 8740-05427	0	0	0	525	-	-	-	-	-	-	-	-	525
A&G-Employee pensions and bene - Technical (Job Skills) Training 9260-05427	0	0	0	0	0	0	880	-	-	-	-	-	880
Mains and Services Expenses - Work Environment Training 8740-05429	0	0	0	0	2,100	-	-	-	-	-	-	-	2,100
Training	13	-	29	2,364	2,409	1,000	880	1,850	315	98	69	526	9,552
A&G-Injuries & damages - Settlement 9250-05418	98,618	-	3,322	3,340	10,717	304	114,633	4,449	-	3,888	917	58,384	298,573
Distribution-Rents - Contract Labor 8810-06111	0	0	0	0	0	0	150	-	590	5,400	2,902	175	9,217
Distribution-Maint of mains - Contract Labor 8870-06111	5,000	2,162	12,650	-	-	-	-	-	185	3,600	-	-	23,597
Maintenance of measuring and r - Contract Labor 8910-06111	0	0	0	0	0	0	0	0	0	5,800	-	-	5,800
Distribution-Maintenance of ot - Contract Labor 8940-06111	0	0	0	0	0	0	0	0	16,750	-	6,650	-	23,400
Customer accounts-Meter readin - Contract Labor 9020-06111	120,917	65,021	106,020	98,368	82,378	59,892	80,392	82,721	83,036	93,593	72,730	78,229	1,025,297
Sales-Supervision - Contract Labor 9110-06111	0	0	12,581	-	-	-	-	-	-	-	-	-	12,581
A&G-Office supplies & expense - Contract Labor 9210-06111	0	0	0	0	0	0	0	0	750	-	-	-	750
A&G-Outside services employed - Contract Labor 9230-06111	(10)	-	-	-	-	-	-	-	10,000	-	-	50,000	59,990
Wells expenses - Contract Labor 8160-06111	0	0	0	18,568	-	-	13,808	-	-	-	12,704	6,308	51,386
Compressor station expenses - Contract Labor 8180-06111	0	21	-	360	-	-	-	546	-	-	-	-	927
Storage-Purification expenses - Contract Labor 8210-06111	0	0	0	0	0	330	-	-	-	-	14,600	-	14,930
Storage-Maintenance of structu - Contract Labor 8310-06111	300	675	-	1,300	375	600	-	750	-	300	600	-	4,900
Mains expenses - Contract Labor 8560-06111	63,731	5,195	2,122	1,598	4,221	-	15,476	1,800	15,538	1,128	27,914	5,286	144,011
Transmission-Measuring and reg - Contract Labor 8570-06111	0	4,200	-	-	140	-	-	-	-	-	-	-	4,340
Transmission-Maintenance of co - Contract Labor 8640-06111	246	103	-	-	-	-	-	-	-	-	-	-	350
Distribution-Operation supervi - Contract Labor 8700-06111	44,277	(21,065)	(10,570)	638	-	85	-	-	(6,980)	82	45,959	37,235	89,660
Distribution load dispatching - Contract Labor 8710-06111	0	0	0	0	0	0	0	0	0	0	0	3,245	3,245
Mains and Services Expenses - Contract Labor 8740-06111	70,771	56,513	28,148	62,547	56,882	48,466	80,795	90,304	100,517	81,702	75,452	114,934	857,032
Distribution-Measuring and reg - Contract Labor 8750-06111	313	-	-	-	-	-	-	5,000	-	-	-	-	5,313
Distribution-Measuring and reg - Contract Labor 8760-06111	0	0	0	0	0	0	800	-	-	-	-	-	800
Distribution-Measuring and reg - Contract Labor 8770-06111	0	0	0	0	0	0	0	500	4,125	-	-	-	4,625
Customer accounts-Customer rec - Collection Fees 9030-06112	0	0	0	231	-	-	624	-	-	-	164	271	1,290
Meter and house regulator expe - Bill Print Fees 8780-06116	0	0	0	0	0	5	-	-	-	-	-	-	5
A&G-Regulatory commission expe - Legal 9280-06121	0	0	0	0	0	0	0	4,257	2,300	-	-	-	6,556
A&G-Outside services employed - Legal 9230-06121	722	10,040	5,000	5,089	5,000	5,000	16,506	15,128	16,698	28,801	17,476	27,579	153,039
Outside Services	404,886	122,866	161,271	182,039	159,713	114,681	323,185	205,455	243,509	224,294	278,069	381,647	2,801,613
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	23,858	27,656	37,521	42,878	33,739	116,325	24,247	19,571	175,706	19,482	19,404	506,812	1,047,199
Provision for Bad Debt	23,858	27,656	37,521	42,878	33,739	116,325	24,247	19,571	175,706	19,482	19,404	506,812	1,047,199
Mains and Services Expenses - Land Rights 8740-04889	0	0	0	0	0	0	0	0	0	0	0	2,000	2,000
Distribution-Maint of mains - Misc General Expense 8870-07590	0	5,000	-	-	-	-	495	2,457	-	-	-	-	7,953
Customer accounts-Meter readin - Misc General Expense 9020-07590	0	0	0	0	0	0	0	0	0	0	0	5,620	5,620
Customer service-Operating inf - Misc General Expense 9090-07590	0	0	106	-	-	-	-	42	-	-	-	-	148
A&G-Franchise requirements - Misc General Expense 9270-07590	200	-	-	-	-	-	321	-	-	-	-	-	521
A&G-Regulatory commission expe - Misc General Expense 9280-07590	10,373	44,848	3,024	4,247	-	(259)	-	-	-	-	-	-	62,234
Miscellaneous general expenses - Misc General Expense 9302-07590	0	0	87	-	-	-	-	-	-	-	100	-	187
Storage-Operation supervision - Misc General Expense 8140-07590	0	(591)	(285)	-	(591)	(285)	-	-	-	-	-	-	(1,752)
Wells expenses - Misc General Expense 8160-07590	0	(988)	(439)	-	(988)	(439)	-	-	-	-	-	-	(2,855)
Storage well royalties - Misc General Expense 8250-07590	22	74	171	229	250	280	156	48	17	13	7	7	1,274
Distribution-Operation supervi - Misc General Expense 8700-07590	314	218	1,865	133	319	407	1,372	216	1,224	848	565	187	7,669
Mains and Services Expenses - Misc General Expense 8740-07590	366	169	123	960	501	-	5,376	(1,623)	295	18,693	49	467	25,376
Distribution-Measuring and reg - Misc General Expense 8750-07590	0	0	0	0	0	0	0	0	0	70	-	-	70
Meter and house regulator expe - Misc General Expense 8780-07590	0	0	99	-	275	-	-	-	-	-	-	-	374
Distribution-Other expenses - Misc General Expense 8800-07590	97	-	-	-	-	-	-	-	-	-	-	-	97
A&G-Office supplies & expense - Vendor Comp Sales Tax 9210-07592	(50)	(48)	(50)	(57)	(50)	(50)	(50)	(50)	(50)	(51)	(50)	(42)	(597)
Distribution-Operation supervi - Reimbursements 8700-09911	(1,012)	-	-	(2,189)	-	-	(4,228)	-	-	(1,496)	-	-	(8,924)
Mains and Services Expenses - Reimbursements 8740-09911	0	0	44	-	-	-	-	-	-	-	-	-	44
Distribution-Maintenance of ot - Reimbursements 8940-09911	0	0	64	-	-	(3,332)	387	204	(334)	-	2	(189)	(3,198)
Miscellaneous	10,309	48,682	4,809	3,324	(285)	(3,678)	3,830	1,295	1,152	18,078	673	8,050	96,240
Total O&M Expenses Before Allocations	1,424,070	1,069,173	1,138,235	1,237,253	1,049,232	1,295,425	1,293,666	1,095,840	1,287,173	1,202,440	1,134,850	1,842,450	15,069,806

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 009)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Distribution-Maint of mains - Non-project Labor 8870-01000	4,230	1,618	2,003	1,336	9,187
Maintenance of services - Non-project Labor 8920-01000	1,013	1,136	-	-	2,149
Maintenance of meters and hous - Non-project Labor 8930-01000	13,016	7,468	5,939	3,054	29,477
Customer accounts-Meter readin - Non-project Labor 9020-01000	32,358	26,511	23,741	26,414	109,024
Customer accounts-Customer rec - Non-project Labor 9030-01000	63,795	28,627	27,983	26,569	146,973
Customer service-Operating inf - Non-project Labor 9090-01000	11,905	8,021	8,021	8,021	35,969
Sales-Supervision - Non-project Labor 9110-01000	18,865	12,690	12,690	12,690	56,935
A&G-Administrative & general s - Non-project Labor 9200-01000	15,164	10,493	10,273	10,264	46,194
Wells expenses - Non-project Labor 8160-01000	4,519	4,556	3,280	2,738	15,092
Lines expenses - Non-project Labor 8170-01000	1,845	2,960	2,748	2,976	10,528
Compressor station expenses - Non-project Labor 8180-01000	3,648	1,999	1,226	719	7,591
Storage-Measuring and regulati - Non-project Labor 8200-01000	0	0	0	161	161
Storage-Purification expenses - Non-project Labor 8210-01000	0	918	2,521	2,315	5,754
Maintenance of compressor stat - Non-project Labor 8340-01000	0	710	-	-	710
Other storage expenses-Operati - Non-project Labor 8410-01000	9,896	6,153	8,996	11,939	36,984
Mains expenses - Non-project Labor 8560-01000	28,229	12,934	10,174	12,128	63,464
Transmission-Measuring and reg - Non-project Labor 8570-01000	258	867	1,958	1,886	4,970
Transmission-Maintenance of ma - Non-project Labor 8630-01000	2,791	1,631	97	-	4,519
Distribution-Operation supervi - Non-project Labor 8700-01000	65,635	32,005	40,100	50,064	187,805
Mains and Services Expenses - Non-project Labor 8740-01000	151,970	97,568	97,874	80,060	427,473
Distribution-Measuring and reg - Non-project Labor 8750-01000	42,277	31,306	30,120	34,406	138,109
Distribution-Measuring and reg - Non-project Labor 8760-01000	737	186	-	-	923
Distribution-Measuring and reg - Non-project Labor 8770-01000	3,002	-	1,266	4,406	8,674
Meter and house regulator expe - Non-project Labor 8780-01000	118,370	89,741	81,320	84,766	374,197
Distribution-Other expenses - Non-project Labor 8800-01000	12,004	11,266	4,381	9,769	37,419
Distribution-Operation supervi - Capital Labor 8700-01001	851,850	543,710	562,673	532,364	2,490,598
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(848,743)	(542,930)	(557,721)	(532,119)	(2,481,514)
Mains expenses - O&M Project Labor and Contra 8560-01006	51	-	-	-	51
Mains and Services Expenses - Expense Labor Accrual 8740-01008	(36,151)	3,942	14,773	(4,013)	(21,449)
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	(5,577)	2,346	4,162	3,649	4,580
Distribution-Measuring and reg - Expense Labor Accrual 8760-01008	(2,528)	(67)	(56)	-	(2,651)
Distribution-Measuring and reg - Expense Labor Accrual 8770-01008	(467)	(500)	570	1,633	1,235
Meter and house regulator expe - Expense Labor Accrual 8780-01008	(25,725)	7,194	9,672	5,789	(3,071)
Customer installations expense - Expense Labor Accrual 8790-01008	(161)	-	-	-	(161)
Distribution-Other expenses - Expense Labor Accrual 8800-01008	(4,563)	1,379	(1,409)	2,913	(1,679)
Distribution-Maint of mains - Expense Labor Accrual 8870-01008	(2,146)	(220)	416	(233)	(2,183)
Maintenance of services - Expense Labor Accrual 8920-01008	169	172	(341)	0	-
Maintenance of meters and hous - Expense Labor Accrual 8930-01008	(1,827)	71	432	(1,146)	(2,469)
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	(5,351)	2,560	2,730	2,524	2,463
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(7,477)	2,156	4,004	692	(625)
Customer service-Operating inf - Expense Labor Accrual 9090-01008	(3,103)	422	1,203	401	(1,076)
Sales-Supervision - Expense Labor Accrual 9110-01008	(4,934)	663	1,904	635	(1,734)
A&G-Administrative & general s - Expense Labor Accrual 9200-01008	(3,910)	621	1,475	509	(1,306)
Wells expenses - Expense Labor Accrual 8160-01008	(735)	614	109	(107)	(119)
Lines expenses - Expense Labor Accrual 8170-01008	(663)	580	349	251	518
Compressor station expenses - Expense Labor Accrual 8180-01008	152	(8)	(48)	(192)	(97)
Storage-Measuring and regulati - Expense Labor Accrual 8200-01008	(278)	-	-	81	(197)
Storage-Purification expenses - Expense Labor Accrual 8210-01008	0	276	859	23	1,157
Maintenance of compressor stat - Expense Labor Accrual 8340-01008	0	213	(213)	0	-
Other storage expenses-Operati - Expense Labor Accrual 8410-01008	(3,229)	196	2,202	1,922	1,092
Mains expenses - Expense Labor Accrual 8560-01008	(7,530)	(825)	698	1,485	(6,171)
Transmission-Measuring and reg - Expense Labor Accrual 8570-01008	(166)	217	621	62	734
Transmission-Other expenses - Expense Labor Accrual 8590-01008	(576)	-	-	-	(576)
Transmission-Maintenance of ma - Expense Labor Accrual 8630-01008	189	24	(446)	(44)	(276)
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	(23,846)	(1,246)	7,990	7,333	(9,769)
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	481,483	312,369	333,184	340,331	1,467,367
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(484,590)	(313,149)	(338,136)	(340,576)	(1,476,451)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	99	719	(768)	-	49
Mains expenses - Expense Labor Transfer In 8560-01013	51	-	-	-	51
Mains expenses - Expense Labor Transfer Out 8560-01014	(51)	-	-	-	(51)
Labor	**465,245**	**412,864**	**427,597**	**410,849**	**1,716,554**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	38,553	36,117	37,531	36,004	148,205
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	23,585	22,094	22,954	22,024	90,658
A&G-Employee pensions and bene - Employer 401K Expense 9260-01239	(1,642)	-	1,642	0	-
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	81,708	76,551	79,558	76,310	314,126
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	27	134	(143)	-	18
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	17,968	16,833	17,492	16,780	69,073
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	6	30	(32)	-	4
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	440	412	428	411	1,691
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	0	1	(1)	-	0
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	1,805	1,692	1,761	1,686	6,944
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	1	3	(3)	-	0
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	2,199	2,061	2,142	2,054	8,456
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	1	4	(4)	-	1
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	3,519	3,297	3,427	3,287	13,530
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	1	5	(6)	-	1
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	13	63	(68)	-	9
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	16	39	(45)	-	9
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	4	18	(20)	-	3
Benefits	**168,204**	**159,354**	**166,614**	**158,557**	**652,729**
Mains expenses - Uniforms 8560-07443	0	150	2,504	2,336	4,990
Distribution-Operation supervi - Uniforms 8700-07443	218	-	-	-	218
Mains and Services Expenses - Uniforms 8740-07443	521	1,667	3,796	1,481	7,466

Atmos Energy Corporation

Operation & Maintenance Expenses

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	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Distribution-Measuring and reg - Uniforms 8750-07443	0	277	209	355	841
Meter and house regulator expe - Uniforms 8780-07443	301	290	1,630	335	2,556
Customer accounts-Meter readin - Uniforms 9020-07443	0	571	502	150	1,224
A&G-Employee pensions and bene - Uniforms 9260-07443	17,325	5,222	8,109	6,998	37,654
Customer accounts-Meter readin - Uniforms Capitalized 9020-07444	0	(332)	(316)	(82)	(730)
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	(11,280)	(3,276)	(4,932)	(4,204)	(23,692)
Mains expenses - Uniforms Capitalized 8560-07444	0	(23)	(314)	(254)	(591)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	(143)	-	-	-	(143)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	(278)	(978)	(2,187)	(836)	(4,280)
Distribution-Measuring and reg - Uniforms Capitalized 8750-07444	0	(130)	(103)	(179)	(412)
Meter and house regulator expe - Uniforms Capitalized 8780-07444	(171)	(172)	(1,017)	(192)	(1,550)
A&G-Employee pensions and bene - Non-Qual Retirment Exp 9260-07449	0	0	46	-	46
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	910	880	910	910	3,609
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	914	884	914	914	3,625
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	144	180	153	153	630
Customer accounts-Meter readin - Misc Employee Welfare Exp 9020-07499	0	0	204	-	204
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	333	1,050	106	119	1,608
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	402	398	1,288	55	2,143
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	6,495	3,621	4,852	3,619	18,588
Storage-Rents - Misc Employee Welfare Exp 8260-07499	0	0	0	400	400
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	885	208	25	250	1,367
Mains and Services Expenses - Misc Employee Welfare Exp 8740-07499	2,184	3,226	1,497	61	6,968
Distribution-Rents - Misc Employee Welfare Exp 8810-07499	0	0	120	-	120
Employee Welfare	**18,760**	**13,714**	**17,995**	**12,390**	**62,860**
A&G-Property Insurance - Blueflame Property Insurance 9240-04069	31,531	31,531	31,531	31,531	126,122
A&G-Office supplies & expense - Insurance-Other 9210-04070	0	0	0	937	937
A&G-Property Insurance - Insurance Capitalized 9240-04072	(18,216)	(17,786)	(18,142)	(18,234)	(72,378)
A&G-Employee pensions and bene - Environmental & Safety 9260-07120	0	0	287	-	287
Distribution-Operation supervi - Environmental & Safety 8700-07120	25	-	630	169	824
Mains and Services Expenses - Environmental & Safety 8740-07120	1,650	79	-	1,310	3,038
Insurance	**14,990**	**13,824**	**14,306**	**15,712**	**58,831**
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(19)	-	(10)	(50)	(79)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(39,928)	(40,662)	(39,120)	(46,135)	(165,845)
Storage well royalties - Building Lease/Rents 8250-04581	149	-	82	457	688
Distribution-Rents - Building Lease/Rents 8810-04581	66,914	68,923	69,856	70,997	276,690
A&G-Rents - Building Lease/Rents 9310-04581	1,262	1,262	1,262	17	3,803
Distribution-Operation supervi - Building Maintenance 8700-04582	42	5,830	208	3,662	9,743
Mains and Services Expenses - Building Maintenance 8740-04582	3,799	-	2,737	198	6,734
Distribution-Measuring and reg - Building Maintenance 8750-04582	0	-	-	-	0
Distribution-Rents - Building Maintenance 8810-04582	24,456	21,595	21,922	28,879	96,851
Distribution-Maintenance of st - Building Maintenance 8860-04582	212	32	1,485	264	1,993
Maintenance of measuring and r - Building Maintenance 8910-04582	0	0	195	-	195
Distribution-Rents - Utilities 8810-04590	1,370	341	1,172	1,779	4,663
Transmission-Measuring and reg - Utilities 8570-04590	678	492	1,513	1,483	4,165
Wells expenses - Utilities 8160-04590	0	0	0	533	533
Lines expenses - Utilities 8170-04590	111	60	77	156	404
Compressor station expenses - Utilities 8180-04590	148	80	38	197	463
Compressor station fuel and po - Utilities 8190-04590	86	86	-	96	268
Storage-Measuring and regulati - Utilities 8200-04590	89	135	140	173	536
Storage-Purification expenses - Utilities 8210-04590	172	59	188	170	590
Distribution-Operation supervi - Utilities 8700-04590	8,423	8,061	6,525	7,285	30,294
Distribution load dispatching - Utilities 8710-04590	44	48	49	44	184
Mains and Services Expenses - Utilities 8740-04590	5,111	2,857	3,770	3,666	15,405
Distribution-Measuring and reg - Utilities 8750-04590	177	110	96	119	501
Distribution-Measuring and reg - Utilities 8770-04590	366	319	112	427	1,223
Meter and house regulator expe - Utilities 8780-04590	985	873	928	882	3,668
Storage well royalties - Utilities 8250-04590	178	362	414	997	1,952
Other fuel & power for compres - Utilities 8550-04590	31	30	32	33	125
Mains expenses - Utilities 8560-04590	1,698	1,186	1,671	1,984	6,539
Distribution-Rents - Capitalized Utility Costs 8810-04599	(16,771)	(13,378)	(15,532)	(18,251)	(63,933)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(5,259)	(8,623)	(4,318)	(6,841)	(25,041)
Mains expenses - Capitalized Utility Costs 8560-04599	(1,050)	(688)	(1,012)	(1,152)	(3,901)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(123)	(68)	(32)	(96)	(319)
Rent, Maint., & Utilities	**53,352**	**49,323**	**54,447**	**51,970**	**209,092**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	100,749	100,986	103,459	80,643	385,837
Compressor station expenses - Capitalized transportation costs 8180-03003	0	0	0	(11)	(11)
Mains expenses - Capitalized transportation costs 8560-03003	0	(5)	-	(46)	(51)
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(71)	(57)	(72)	(58)	(257)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(85,493)	(124,218)	(107,344)	(87,660)	(404,715)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	0	(37)	-	-	(37)
Meter and house regulator expe - Capitalized transportation costs 8780-03003	(120)	(365)	(537)	(159)	(1,180)
Distribution-Maintenance of ot - Capitalized transportation costs 8940-03003	0	0	0	(21)	(21)
Customer accounts-Meter readin - Capitalized transportation costs 9020-03003	0	0	0	(14)	(14)
Compressor station expenses - Vehicle Expense 8180-03004	0	0	0	100	100
Mains expenses - Vehicle Expense 8560-03004	0	34	-	425	459
Distribution-Operation supervi - Vehicle Expense 8700-03004	219	30	338	94	682
Mains and Services Expenses - Vehicle Expense 8740-03004	79,979	70,764	74,669	70,681	296,093
Distribution-Measuring and reg - Vehicle Expense 8750-03004	40	37	-	-	77
Meter and house regulator expe - Vehicle Expense 8780-03004	189	582	820	257	1,847
Distribution-Maintenance of ot - Vehicle Expense 8940-03004	0	0	0	36	36
Customer accounts-Meter readin - Vehicle Expense 9020-03004	0	0	0	25	25
Mains and Services Expenses - Equipment Lease 8740-04301	46,007	42,095	50,100	43,076	181,276
Distribution-Maint of mains - Heavy Equipment 8870-04302	1,456	-	-	-	1,456
Mains and Services Expenses - Heavy Equipment 8740-04302	22,041	16,169	16,046	13,477	67,733

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Meter and house regulator expe - Heavy Equipment 8780-04302	0	119	-	-	119
Mains expenses - Heavy Equipment 8560-04302	0	1,760	379	2,152	4,291
Distribution-Operation supervi - Heavy Equipment 8700-04302	144	117	-	30	291
Mains expenses - Heavy Equipment Capitalized 8560-04307	0	(1,725)	(371)	(2,109)	(4,205)
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	(141)	(114)	-	(30)	(285)
Distribution-Maint of mains - Heavy Equipment Capitalized 8870-04307	(1,427)	-	-	-	(1,427)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(66,686)	(57,099)	(64,823)	(55,421)	(244,029)
Meter and house regulator expe - Heavy Equipment Capitalized 8780-04307	0	(116)	-	-	(116)
Vehicles & Equip	**96,884**	**48,956**	**72,665**	**65,468**	**283,973**
Maintenance of measuring and r - Inventory Materials 8890-02001	170	-	-	-	170
Mains and Services Expenses - Inventory Materials 8740-02001	12,321	10,963	11,438	6,310	41,033
Mains and Services Expenses - Warehouse Loading Charge 8740-02004	2,464	2,193	2,288	757	7,702
Maintenance of measuring and r - Warehouse Loading Charge 8890-02004	34	-	-	-	34
Odorization - Non-Inventory Supplies 8711-02005	137	-	3,037	2,988	6,161
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	16,718	13,361	10,077	12,493	52,649
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	3,574	4,529	856	2,061	11,021
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	297	-	-	-	297
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	6,804	-	-	-	6,804
Meter and house regulator expe - Non-Inventory Supplies 8780-02005	488	446	470	147	1,551
Customer Installations expense - Non-Inventory Supplies 8790-02005	6	-	-	-	6
Distribution-Other expenses - Non-Inventory Supplies 8800-02005	139	870	1,630	35	2,673
Distribution-Maint of mains - Non-Inventory Supplies 8870-02005	448	-	-	-	448
Maintenance of measuring and r - Non-Inventory Supplies 8890-02005	2,241	270	-	742	3,253
Maintenance of measuring and r - Non-Inventory Supplies 8900-02005	101	165	314	-	581
Maintenance of measuring and r - Non-Inventory Supplies 8910-02005	0	0	0	2,322	2,322
Maintenance of services - Non-Inventory Supplies 8920-02005	5	-	-	-	5
Maintenance of meters and hous - Non-Inventory Supplies 8930-02005	91	-	-	-	91
Distribution-Maintenance of ot - Non-Inventory Supplies 8940-02005	1,331	399	384	1,395	3,510
Customer accounts-Meter readin - Non-Inventory Supplies 9020-02005	0	12	1	35	49
Customer accounts-Customer rec - Non-Inventory Supplies 9030-02005	0	0	32	-	32
Wells expenses - Non-Inventory Supplies 8160-02005	374	1,189	345	15	1,923
Lines expenses - Non-Inventory Supplies 8170-02005	18	787	-	419	1,223
Compressor station expenses - Non-Inventory Supplies 8180-02005	2,582	518	2,840	126	6,067
Storage-Purification expenses - Non-Inventory Supplies 8210-02005	317	447	2,832	74	3,670
Storage-Maintenance of structu - Non-Inventory Supplies 8310-02005	0	735	424	325	1,483
Maintenance of compressor stat - Non-Inventory Supplies 8340-02005	0	0	40	-	40
Other storage expenses-Operati - Non-Inventory Supplies 8410-02005	0	0	0	18	18
Mains expenses - Non-Inventory Supplies 8560-02005	3,719	1,030	1,910	567	7,227
Transmission-Measuring and reg - Non-Inventory Supplies 8570-02005	0	0	96	723	819
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	20	-	-	-	20
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	435	459	1,986	83	2,964
Customer accounts-Customer rec - Office Supplies 9030-05010	667	1,056	434	687	2,844
Customer service-Operating inf - Office Supplies 9090-05010	477	-	-	-	477
Sales-Supervision - Office Supplies 9110-05010	0	112	28	41	181
A&G-Regulatory commission expe - Office Supplies 9280-05010	0	629	-	42	671
Storage-Operation supervision - Office Supplies 8140-05010	0	0	0	84	84
Distribution-Operation supervi - Office Supplies 8700-05010	5,254	4,645	4,724	4,501	19,124
Mains and Services Expenses - Office Supplies 8740-05010	368	1,316	91	1,502	3,278
Distribution-Measuring and reg - Office Supplies 8750-05010	55	-	-	45	100
Meter and house regulator expe - Office Supplies 8780-05010	1,508	960	1,630	888	4,985
Materials & Supplies	**63,165**	**47,092**	**47,906**	**39,427**	**197,589**
Distribution-Operation supervi - Software Maintenance 8700-04201	0	0	0	5,835	5,835
Information Technologies	**0**	**0**	**0**	**5,835**	**5,835**
Distribution-Operation supervi - Monthly Lines and service 8700-05310	12,583	12,353	12,344	12,348	49,628
Distribution-Operation supervi - Long Distance 8700-05312	13	570	419	355	1,358
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	3,832	6,120	6,074	5,689	21,715
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	1,102	719	741	725	3,287
Customer accounts-Meter readin - AMI Tower Rent 9020-05351	1,050	1,050	1,050	1,050	4,200
Customer accounts-Meter readin - AMI Tower Fees 9020-05352	43	32	25	29	129
Distribution-Maintenance of ot - Cellular, radio, pager charges 8940-05364	0	0	32	-	32
Mains and Services Expenses - Cellular, radio, pager charges 8740-05364	21	-	-	-	21
Distribution-Measuring and reg - Cellular, radio, pager charges 8770-05364	64	-	-	-	64
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	11,184	11,159	10,222	4,943	37,508
Distribution-Operation supervi - Cell service for data uses 8700-05376	5,272	5,060	5,088	5,021	20,441
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	511	68	157	164	900
Mains expenses - Cell phone equipment and accessories 8560-05377	0	99	-	-	99
Mains and Services Expenses - Cell phone equipment and accessories 8740-05377	20	11	-	167	197
Distribution-Measuring and reg - Cell phone equipment and accessories 8750-05377	0	0	42	-	42
Meter and house regulator expe - Cell phone equipment and accessories 8780-05377	89	11	-	-	100
Distribution-Maintenance of ot - Capitalized Telecom Costs 8940-05399	0	0	(18)	-	(18)
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(24)	(6)	-	(94)	(123)
Distribution-Measuring and reg - Capitalized Telecom Costs 8750-05399	0	0	(24)	-	(24)
Distribution-Measuring and reg - Capitalized Telecom Costs 8770-05399	(37)	-	-	-	(37)
Meter and house regulator expe - Capitalized Telecom Costs 8780-05399	(52)	(6)	-	-	(58)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(17,356)	(16,239)	(15,953)	(12,776)	(62,324)
Telecom	**18,316**	**21,000**	**20,199**	**17,621**	**77,136**
Meter and house regulator expe - Required By Law, Safety 8780-04002	0	50	-	-	50
Mains and Services Expenses - Required By Law, Safety 8740-04002	0	0	0	479	479
A&G-Injuries & damages - Safety 9250-04018	0	175	-	-	175
Sales-Demonstrating and sellin - Promo Other, Misc 9120-04021	166	61	204	341	773
Sales-Supervision - Community Rel&Trade Shows 9110-04040	599	132	105	325	1,161
Sales-Demonstrating and sellin - Community Rel&Trade Shows 9120-04040	0	1,518	1,576	846	3,939
Sales-Advertising expenses - Community Rel&Trade Shows 9130-04040	0	417	370	-	787

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Customer accounts-Customer rec - Community Rel&Trade Shows 9030-04040	25	-	-	-	25
Customer accounts-Customer rec - Advertising 9030-04044	0	0	198	-	198
Sales-Advertising expenses - Advertising 9130-04044	4,279	-	1,457	2,017	7,753
Customer service-Operating inf - Customer Relations & Assist 9090-04046	189	2,979	-	-	3,169
Sales-Supervision - Customer Relations & Assist 9110-04046	558	2,649	-	2,709	5,915
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	4,940	6,784	2,613	3,226	17,564
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	1,545	376	-	-	1,921
Marketing	**12,301**	**15,141**	**6,524**	**9,943**	**43,909**
Mains and Services Expenses - Membership Fees 8740-05415	0	0	0	25	25
Distribution-Other expenses - Membership Fees 8800-05415	0	87	291	-	378
Customer service-Operating inf - Membership Fees 9090-05415	0	117	-	-	117
Miscellaneous general expenses - Membership Fees 9302-05415	0	50	-	-	50
Distribution-Operation supervi - Club Dues - Nondeductible 8700-05416	0	21	-	-	21
Distribution-Operation supervi - Club Dues - Deductible 8700-05417	0	0	165	-	165
Distribution-Other expenses - Association Dues 8800-07510	0	0	0	775	775
Miscellaneous general expenses - Association Dues 9302-07510	3,000	13,400	1,830	5,980	24,210
Sales-Supervision - Association Dues 9110-07510	0	0	256	-	256
Sales-Demonstrating and sellin - Association Dues 9120-07510	715	200	1,015	500	2,430
Dues & Donations	**3,715**	**13,875**	**3,557**	**7,280**	**28,427**
Mains expenses - Postage/Delivery Services 8560-05111	0	1,245	-	-	1,245
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	414	201	371	126	1,112
Mains and Services Expenses - Postage/Delivery Services 8740-05111	113	262	96	94	565
Distribution-Maintenance super - Postage/Delivery Services 8850-05111	98	476	26	40	640
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	161	-	511	-	672
Sales-Supervision - Postage/Delivery Services 9110-05111	1,345	184	55	-	1,584
Sales-Demonstrating and sellin - Postage/Delivery Services 9120-05111	0	0	98	-	98
A&G-Regulatory commission expe - Postage/Delivery Services 9280-05111	0	0	1,690	210	1,900
Print & Postages	**2,131**	**2,367**	**2,847**	**470**	**7,815**
Distribution-Operation supervi - Meals and Entertainment 8700-05411	3,657	7,319	5,974	7,219	24,169
Mains and Services Expenses - Meals and Entertainment 8740-05411	295	1,120	986	340	2,741
Distribution-Measuring and reg - Meals and Entertainment 8750-05411	295	972	136	156	1,559
Meter and house regulator expe - Meals and Entertainment 8780-05411	861	158	209	195	1,423
Customer accounts-Meter readin - Meals and Entertainment 9020-05411	1,113	-	-	-	1,113
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	1,602	480	267	280	2,630
Customer service-Operating inf - Meals and Entertainment 9090-05411	338	113	193	-	645
Sales-Supervision - Meals and Entertainment 9110-05411	731	473	284	482	1,970
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	0	74	135	-	209
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	43	-	18	430	491
Customer accounts-Customer rec - Spousal & Dependent Travel 9030-05412	0	0	0	325	325
Customer service-Operating inf - Spousal & Dependent Travel 9090-05412	120	-	34	-	154
Sales-Supervision - Spousal & Dependent Travel 9110-05412	28	-	38	-	66
A&G-Office supplies & expense - Transportation 9210-05413	0	28	87	-	115
Distribution-Operation supervi - Transportation 8700-05413	1,521	2,510	701	1,371	6,102
Mains and Services Expenses - Transportation 8740-05413	772	1,826	1,209	-	3,807
Meter and house regulator expe - Transportation 8780-05413	167	715	-	1,384	2,266
Customer accounts-Meter readin - Transportation 9020-05413	1,692	-	-	-	1,692
Customer accounts-Customer rec - Transportation 9030-05413	0	374	-	149	523
Customer service-Operating inf - Transportation 9090-05413	857	777	999	-	2,632
Sales-Supervision - Transportation 9110-05413	3,240	2,611	1,591	2,630	10,072
Customer service-Operating inf - Lodging 9090-05414	668	-	243	-	910
Sales-Supervision - Lodging 9110-05414	2,133	1,179	629	333	4,273
A&G-Office supplies & expense - Lodging 9210-05414	0	366	361	-	728
Other storage expenses-Operati - Lodging 8410-05414	372	-	-	-	372
Distribution-Operation supervi - Lodging 8700-05414	6,843	3,579	4,935	2,211	17,568
Mains and Services Expenses - Lodging 8740-05414	0	1,960	1,357	153	3,470
Distribution-Measuring and reg - Lodging 8750-05414	743	-	153	-	896
Meter and house regulator expe - Lodging 8780-05414	160	-	2,914	-	3,073
Customer accounts-Meter readin - Lodging 9020-05414	11,186	-	-	-	11,186
Customer accounts-Customer rec - Lodging 9030-05414	442	293	-	-	735
Distribution-Operation supervi - Misc Employee Expense 8700-05419	23,912	(93)	1,021	(1,995)	22,845
Mains and Services Expenses - Misc Employee Expense 8740-05419	6,272	344	-	715	7,331
Meter and house regulator expe - Misc Employee Expense 8780-05419	0	0	0	123	123
Customer accounts-Meter readin - Misc Employee Expense 9020-05419	0	0	63	-	63
Travel & Entertainment	**70,063**	**27,178**	**24,535**	**16,501**	**138,277**
Distribution-Operation supervi - Employee Development 8700-05420	0	275	-	-	275
Mains and Services Expenses - Employee Development 8740-05420	0	0	88	150	238
Distribution-Measuring and reg - Employee Development 8750-05420	0	0	0	2,250	2,250
Mains and Services Expenses - Training 8740-05421	0	0	45	120	165
Distribution-Other expenses - Training 8800-05421	1,915	45	56	-	2,016
Sales-Demonstrating and sellin - Training 9120-05421	595	-	-	-	595
Mains and Services Expenses - Operator Qualifications Training 8740-05422	755	-	-	-	755
Mains and Services Expenses - Books & Manuals 8740-05424	0	0	0	143	143
Distribution-Other expenses - Books & Manuals 8800-05424	55	-	-	-	55
Training	**3,320**	**320**	**189**	**2,663**	**6,492**
A&G-Injuries & damages - Settlement 9250-05418	2,361	574	3,237	8,823	14,996
Distribution-Maint of mains - Contract Labor 8870-06111	0	0	2,100	-	2,100
Customer accounts-Meter readin - Contract Labor 9020-06111	91,807	85,941	87,729	77,382	342,859
Customer accounts-Customer rec - Contract Labor 9030-06111	10	-	-	-	10
A&G-Office supplies & expense - Contract Labor 9210-06111	0	0	641	-	641
A&G-Employee pensions and bene - Contract Labor 9260-06111	1,414	(1,414)	0	0	-
A&G-Regulatory commission expe - Contract Labor 9280-06111	1,321	12,359	11,136	607	25,423
Wells expenses - Contract Labor 8160-06111	0	0	0	15,368	15,368

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Compressor station expenses - Contract Labor 8180-06111	0	0	0	360	360
Storage-Purification expenses - Contract Labor 8210-06111	0	0	2,901	-	2,901
Storage-Maintenance of structu - Contract Labor 8310-06111	300	675	5,103	675	6,753
Mains expenses - Contract Labor 8560-06111	2,389	17,646	2,580	1,598	24,213
Distribution-Operation supervi - Contract Labor 8700-06111	0	(615)	-	-	(615)
Mains and Services Expenses - Contract Labor 8740-06111	78,372	70,260	78,281	49,712	276,625
Distribution-Measuring and reg - Contract Labor 8770-06111	0	1,925	-	-	1,925
Customer accounts-Customer rec - Collection Fees 9030-06112	104	-	-	-	104
A&G-Regulatory commission expe - Legal 9280-06121	0	0	0	26,121	26,121
A&G-Outside services employed - Legal 9230-06121	13,626	15,728	23,235	28,668	81,256
Outside Services	**191,704**	**203,079**	**216,942**	**209,313**	**821,039**
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	23,960	28,399	37,427	44,559	134,345
Provision for Bad Debt	**23,960**	**28,399**	**37,427**	**44,559**	**134,345**
Customer accounts-Customer rec - Misc General Expense 9030-07590	0	0	0	87	87
A&G-Regulatory commission expe - Misc General Expense 9280-07590	0	0	106,663	-	106,663
Storage well royalties - Misc General Expense 8250-07590	19	42	86	133	280
Distribution-Operation supervi - Misc General Expense 8700-07590	463	-	257	2,308	3,028
Mains and Services Expenses - Misc General Expense 8740-07590	1,992	318	4,327	199	6,836
Meter and house regulator expe - Misc General Expense 8780-07590	0	0	502	-	502
A&G-Office supplies & expense - Vendor Comp Sales Tax 9210-07592	(55)	(32)	(34)	(50)	(171)
Distribution-Operation supervi - Reimbursements 8700-09911	(910)	-	-	(1,566)	(2,476)
Mains and Services Expenses - Reimbursements 8740-09911	0	(520)	52	28	(439)
Distribution-Maintenance of ot - Reimbursements 8940-09911	(1,412)	-	258	-	(1,154)
Miscellaneous	**97**	**(192)**	**112,110**	**1,139**	**113,155**
Total O&M Expenses Before Allocations	**1,206,207**	**1,056,292**	**1,225,861**	**1,069,697**	**4,558,058**

Atmos Energy Corporation
Kentucky / Mid-States Division
Kentucky Operations

	Base	Test	Difference		Explanation
Labor	$ 4,929,596.88	$ 4,927,623.32	$ (1,973.56)	-0.04%	Change between base and test period is (0.04%) variance and immaterial.
Benefits	$ 2,093,177.11	$ 2,114,994.17	$ 21,817.06	1.04%	Change between base and test period is 1.04% variance and immaterial.
Employee Welfare	$ 115,988.53	$ 82,353.92	$ (33,634.61)	-29.00%	Test year based on FY 2016 budget where assumption of normal (100% of target) incentive payout is anticipated. Incentive compensation is removed from revenue requirement as a ratemaking adjustment. Various miscellanous employee welfare expenses (ex. flu shots, newspapers, etc.) are budgeted at the General Office rate division (091) but coded to the state specific rate division when applicable.
Insurance	$ 89,947.10	$ 8,633.00	$ (81,314.10)	-90.40%	Insurance is budgeted at the General Office rate division (091). As insurance expenses are incurred, they are coded to the state specific rate division. As such, the test period is largely based on the FY 2016 budget.
Rent, Maint., & Utilities	$ 621,710.18	$ 564,851.24	$ (56,858.94)	-9.15%	Rent expense is no longer incurred for the Paducah and Campbellsville offices . The Company built new offices in these locations which are owned and not leased.
Vehicles & Equip	$ 999,843.41	$ 1,063,544.96	$ 63,701.55	6.37%	Primary driver is the replacement of leased vehicles in accordance with our company vehicle replacement guidelines.
Materials & Supplies	$ 773,591.78	$ 708,550.70	$ (65,041.08)	-8.41%	Items such as odorant and office supplies are budgeted at the general Office rate division (091). As these expenses are incurred, they are coded to the state specific rate division.
Information Technologies	$ 50.00	$ -	$ (50.00)	-100.00%	Change between base and test period is $50.00 and immaterial.
Telecom	$ 165,304.88	$ 77,442.84	$ (87,862.04)	-53.15%	Some telecom expenses are budgeted at the General Office rate division (091). As actual expenses are incurred, they are coded to the state specific rate division where applicable. As such, the test period is largely based on the FY 2016 budget.
Marketing	$ 130,353.51	$ 126,741.29	$ (3,612.22)	-2.77%	Change between base and test period is (2.77%) variance and immaterial.
Directors & Shareholders &PR	$ -	$ -	$ -	0.00%	N/A
Dues & Donations	$ 61,617.48	$ 44,701.20	$ (16,916.28)	-27.45%	Dues and Donations are primarily budgeted at the General Office rate division (091). As actual expenses are incurred, they are coded to the state specific rate division when applicable. As such, the test period is largely based on the FY 2016 budget.
Print & Postages	$ 10,070.29	$ 11,278.50	$ 1,208.21	12.00%	Change between base and test period is $1,208.21 and immaterial.
Travel & Entertainment	$ 434,610.81	$ 398,830.78	$ (35,780.03)	-8.23%	Expect less traveling of Kentucky operation employeees.
Training	$ 8,310.15	$ 10,216.40	$ 1,906.25	22.94%	Change between base and test period is $1,906.25 and immaterial.
Outside Services	$ 2,553,017.34	$ 2,367,320.00	$ (185,697.34)	-7.27%	Legal is budgeted at the General Office rate division (091). As legal expenses are incurred, they are coded to the state specific rate division. As such, the test period is largely based on the FY 2016 budget.
Provision for Bad Debt	$ 564,321.71	$ 313,426.18	$ (250,895.53)	-44.46%	Company reviews the bad debt balances on a quarterly basis and makes any necessary true-up provision entries. Provision entries were made in March and June 2015 which are reflected in the base period.
Miscellaneous	$ 25,714.40	$ 5,500.00	$ (20,214.40)	-78.61%	Company incurred charges for station painting in July '15 that should have been coded to outside services.
Total O&M Expenses	$ 13,577,225.56	$ 12,826,008.50	$ (751,217.06)		

REQUEST:

Please refer to electronic workpaper "Att30- O&M for KY- Fall 2015 case_updated" provided in response to Staff 1-59 and the tab entitled "Div 91 forecast."

a. Please provide the actual data in the same level of detail and in the same format for each month from October 2011 through the most recent month available in electronic format with all formulas intact

b. Please provide a variance analysis for each category of expense (labor, benefits, employee welfare, etc.) that identifies and describes all reasons for the change projected in the test year compared to the base year. In addition, provide all documents, including studies and/or other analyses developed by the Company to support the change projected in the test year compared to the base year.

RESPONSE:

a) While the Company does not believe that data from two years prior to the Company's most recent general case (Case No. 2013-00148) should have any relevance in determining the revenue requirement in this case, the Company is nonetheless providing the requested data. Please see Attachment 1.

b) Please see Attachment 2.

ATTACHMENTS:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-08_Att1 - Div 091 O&M Oct11-Jan16.xlsx, 16 Pages.

ATTACHMENT 2 - Atmos Energy Corporation, AG_1-08_Att2 - Div 091 Variance.xlsx, 1 Page.

Respondent: Greg Waller

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Customer accounts-Meter readin - Non-project Labor 9020-01000	0	0	0	674	-	-	-	-	-	-	-	-	674
Customer accounts-Customer rec - Non-project Labor 9030-01000	6,731	5,205	7,807	5,205	5,205	5,205	5,205	5,205	7,807	5,205	5,205	5,205	69,189
Other storage-Maintenance of s - Non-project Labor 8432-01000	0	0	0	0	0	0	0	0	0	0	1,985	-	1,985
Distribution-Operation supervi - Non-project Labor 8700-01000	138,012	143,024	212,737	142,807	140,148	138,850	135,748	131,914	202,336	133,861	135,580	135,231	1,790,249
Mains and Services Expenses - Non-project Labor 8740-01000	0	0	279	316	-	-	2,071	1,877	5,307	3,107	-	2,718	15,675
Distribution-Measuring and reg - Non-project Labor 8750-01000	1,247	1,269	1,903	1,560	1,414	1,269	1,269	1,269	2,898	1,269	-	-	15,366
Distribution-Measuring and reg - Non-project Labor 8760-01000	1,292	1,314	1,971	1,314	1,314	1,314	1,314	1,314	1,971	1,314	-	-	14,432
Meter and house regulator expe - Non-project Labor 8780-01000	0	852	-	-	476	-	-	-	-	-	-	-	1,328
Distribution-Other expenses - Non-project Labor 8800-01000	316	321	481	379	321	327	598	1,114	1,657	1,615	321	839	8,288
Distribution-Operation supervi - Capital Labor 8700-01001	303,818	303,411	412,231	292,284	296,045	298,889	298,940	314,937	460,831	304,490	323,379	313,735	3,922,990
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(250,710)	(261,176)	(348,595)	(245,030)	(236,691)	(244,500)	(237,596)	(247,910)	(358,310)	(251,390)	(252,646)	(239,909)	(3,174,462)
Mains expenses - O&M Project Labor and Contra 8560-01006	508	-	1,521	71	2,334	2,476	1,167	979	1,026	1,450	-	-	11,531
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	2,211	1,117	3,552	674	4,428	4,690	3,269	1,862	3,104	2,111	-	598	27,617
Mains and Services Expenses - Expense Labor Accrual 8740-01008	0	0	47	64	(110)	0	1,139	175	(430)	203	(1,087)	1,359	1,359
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	3	139	(507)	229	20	69	63	190	(405)	(39)	(444)	-	(683)
Distribution-Measuring and reg - Expense Labor Accrual 8760-01008	76	144	(526)	131	66	131	66	197	(591)	131	(460)	-	(635)
Meter and house regulator expe - Expense Labor Accrual 8780-01008	0	554	(554)	0	191	(191)	0	0	0	0	0	0	-
Distribution-Other expenses - Expense Labor Accrual 8800-01008	19	35	(128)	52	(4)	35	165	451	(504)	289	(405)	259	264
Customer accounts-Meter readin - Expense Labor Accrual 9020-01008	0	0	0	236	(236)	0	0	0	0	0	0	0	-
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(186)	(319)	(2,082)	520	260	520	260	781	(2,342)	520	781	-	(1,286)
Customer service-Operating inf - Expense Labor Accrual 9090-01008	(4,713)	-	-	-	-	-	-	-	-	-	-	-	(4,713)
Other storage-Maintenance of s - Expense Labor Accrual 8432-01008	0	0	0	0	0	0	0	0	0	0	992	(992)	-
Mains expenses - Expense Labor Accrual 8560-01008	-	-	-	-	-	-	-	(314)	314	-	-	-	-
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	11,445	17,814	(58,298)	14,550	5,469	13,154	6,176	17,649	(58,643)	13,169	20,953	(474)	2,965
Distribution-Operation supervi - PTO Accrual 8700-01010	0	0	17,074	-	-	-	-	-	8,274	-	-	(105,931)	(80,583)
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	191,225	194,136	286,854	193,034	183,617	193,670	193,005	196,266	295,478	205,798	207,869	204,718	2,545,668
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(244,333)	(236,371)	(360,489)	(240,288)	(242,970)	(248,060)	(254,349)	(263,292)	(397,999)	(258,898)	(278,602)	(278,545)	(3,294,197)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	2,010	2,111	2,690	331	2,607	3,104	3,269	1,821	2,773	2,069	-	-	22,785
Mains expenses - Expense Labor Transfer In 8560-01013	508	-	1,521	71	2,334	2,476	1,167	531	1,026	1,450	-	-	11,083
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	(2,211)	(1,117)	(3,552)	(674)	(4,428)	(4,690)	(3,269)	(1,862)	(3,104)	(2,111)	-	(598)	(27,617)
Mains expenses - Expense Labor Transfer Out 8560-01014	(508)	-	(1,521)	(71)	(2,334)	(2,476)	(1,167)	(979)	(1,026)	(1,450)	-	-	(11,531)
Labor	156,759	172,461	184,415	168,437	159,475	166,264	158,511	164,174	171,447	164,164	163,421	38,214	1,867,743
A&G-Employee pensions and bene - Other Benefits Load 9260-01200	71,783	79,912	(849,381)	40,582	857,169	38,502	37,286	39,043	38,489	38,866	39,548	34,738	466,536
A&G-Injuries & damages - Other Benefits Variance 9250-01201	43,182	40,499	(83,779)	35,294	(3,154)	(38,840)	(1,446)	(7,160)	(2,671)	(3,255)	1,516	(3,176)	(22,992)
A&G-Employee pensions and bene - Other Benefits Variance 9260-01201	(18,811)	(47,883)	(399,672)	117,163	(42,548)	(28,942)	(31,482)	(2,362)	16,189	18,741	31,394	80,392	(307,839)
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	0	0	383,353	15,595	(325,734)	14,796	14,329	15,004	14,791	14,936	15,198	13,350	175,619
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	0	0	541,619	21,968	(460,272)	20,842	20,164	21,135	20,835	21,039	21,408	18,805	247,562
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	0	0	129,125	(174,818)	171,432	52,401	28,295	9,165	19,287	20,011	85,344	29,556	369,799
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	0	0	361,941	24,933	(82,174)	76,763	56,109	25,488	42,220	43,824	136,063	56,278	741,445
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	24,091	25,329	25,457	24,960	22,138	23,776	22,347	23,700	22,023	22,968	21,622	13,799	272,210
A&G-Employee pensions and bene - Other Benefits Projects 9260-01290	1,151	981	1,958	97	1,196	1,350	1,074	569	919	852	-	-	10,147
A&G-Injuries & damages - Other Benefits Projects 9250-01290	46	40	80	8	94	106	84	45	72	67	-	-	642
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	0	0	0	37	460	519	413	219	353	327	-	-	2,328
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	0	0	0	53	647	731	581	308	498	461	-	-	3,279
Benefits	121,442	98,879	110,701	105,872	139,256	162,004	147,771	125,132	173,006	178,837	352,093	243,742	1,958,735
A&G-Employee pensions and bene - Service Awards 9260-07421	14,008	14,367	8,407	6,191	11,301	6,076	3,214	21,789	10,723	6,699	9,002	8,632	120,408
Distribution-Operation supervi - Uniforms 8700-07443	238	-	-	-	-	-	-	-	-	-	-	-	238
Mains and Services Expenses - Uniforms 8740-07443	0	125	-	-	-	-	-	125	-	125	-	-	375
Distribution-Other expenses - Uniforms 8800-07443	0	0	0	0	0	252	-	-	-	-	-	-	252
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	(111)	-	-	-	-	-	-	-	-	-	-	-	(111)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	0	(52)	-	-	-	-	-	(66)	-	(68)	-	-	(205)
Distribution-Other expenses - Uniforms Capitalized 8800-07444	0	0	0	0	0	(130)	-	-	-	-	-	-	(130)
A&G-Employee pensions and bene - Capitalized Restricted Stock 9260-07450	(10,925)	(11,083)	(11,130)	(11,114)	(10,462)	(11,333)	(11,377)	(17,272)	(22,640)	(11,351)	(11,797)	(31,576)	(172,059)
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	113,000	161,679	192,733	249,000	211,000	64,756	10,854	-	-	-	-	619,362	1,622,385
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	(59,000)	(84,000)	(99,770)	(129,000)	(110,000)	(32,625)	(6,305)	-	-	-	-	(325,662)	(846,361)
A&G-Employee pensions and bene - Restricted Stock - Management Incent 9260-07457	832	895	-	-	-	-	-	-	-	-	-	-	1,726
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	7,612	7,366	7,612	7,612	7,121	7,820	7,367	14,138	9,981	9,578	9,578	20,618	116,404
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	11,318	10,953	11,318	11,318	10,589	11,853	10,955	14,481	28,657	9,517	9,517	24,775	165,250
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	1,542	2,633	3,080	3,080	2,881	3,147	2,981	3,080	2,980	2,178	2,178	17,874	47,634
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	910	910	910	910	910	910	910	201	683	683	683	683	9,303
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	14,836	14,836	14,836	14,836	14,836	14,836	14,836	14,836	14,836	14,836	14,836	14,836	178,036
A&G-Employee pensions and bene - SERP Capitalized 9260-07490	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(4,197)	(50,364)
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	1,692	1,204	1,705	1,266	5,412	1,940	1,142	1,605	2,158	714	5,000	1,357	25,196
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	16	2,030	715	514	-	273	875	752	11	32	116	-	5,334
Mains and Services Expenses - Misc Employee Welfare Exp 8740-07499	0	0	0	0	0	0	0	0	0	0	0	715	715
Distribution-Other expenses - Misc Employee Welfare Exp 8800-07499	0	0	0	0	0	0	4	-	-	-	-	-	4
Employee Welfare	91,771	117,667	126,221	150,416	139,391	63,578	31,258	49,452	43,193	28,748	34,917	347,417	1,224,029
A&G-Property Insurance - Blueflame Property Insurance 9240-04069	910	910	910	927	927	927	927	927	927	927	950	950	11,118
A&G-Property Insurance - Insurance-Other 9240-04070	1,148	3,013	2,142	2,142	2,142	2,142	1,445	1,445	1,445	1,445	1,493	1,493	21,493
A&G-Property insurance - Insurance Capitalized 9240-04072	(1,081)	(2,033)	(1,557)	(1,578)	(1,649)	(1,658)	(1,279)	(1,305)	(1,315)	(1,315)	(1,302)	(1,405)	(17,477)
A&G-Injuries & damages - Insurance Reserve 9250-07116	0	0	0	0	0	0	0	0	0	0	0	10,917	10,917
Distribution-Operation supervi - Environmental & Safety 8700-07120	995	6,244	6,980	4,871	4,787	-	2,272	3,151	627	154	8,429	15,115	53,625
A&G-Injuries & damages - Environmental & Safety 9250-07120	0	0	0	0	0	0	0	0	0	0	194	12	205
Insurance	1,972	8,134	8,475	6,362	6,206	1,411	3,365	4,217	1,684	1,210	9,764	27,082	79,882
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(131)	-	-	(84)	(49)	-	(1,181)	(944)	(260)	(33)	(91)	-	(2,772)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(36,291)	(36,182)	(35,984)	(36,082)	(36,475)	(36,387)	(32,911)	(66,060)	(14,297)	(13,714)	(176,104)	(48,201)	(568,688)
A&G-Rents - Building Lease/Rents Capitalized 9310-04580	(425)	(512)	(424)	(442)	(398)	(388)	(398)	(371)	(420)	(301)	(474)	(377)	(4,931)
Storage well royalties - Building Lease/Rents 8250-04581	772	-	-	376	217	-	2,619	2,622	694	137	300	-	7,737
Distribution-Rents - Building Lease/Rents 8810-04581	60,869	60,869	60,869	60,871	60,871	60,871	54,263	105,938	23,840	23,214	268,698	74,098	915,274
A&G-Rents - Building Lease/Rents 9310-04581	1,351	1,351	1,351	1,351	1,351	1,351	1,351	1,351	1,351	1,351	1,351	1,351	16,216
A&G-Rents - Building Maintenance 9310-04582	66	62	126	94	78	75	85	80	91	78	74	74	983

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Distribution-Operation supervi - Building Maintenance 8700-04582	0	0	0	0	0	782	-	-	684	-	-	-	1,466
Distribution-Rents - Building Maintenance 8810-04582	3,266	3,255	2,803	2,218	2,659	9,647	2,405	3,463	4,166	4,893	3,144	3,106	45,025
Maintenance of meters and hous - Utilities 8930-04590	0	14	-	-	-	-	-	-	-	-	-	-	14
Transmission-Measuring and reg - Utilities 8570-04590	187	210	184	195	250	194	119	178	207	83	90	82	1,979
Lines expenses - Utilities 8170-04590	155	163	155	129	135	159	88	122	142	42	45	41	1,376
Compressor station expenses - Utilities 8180-04590	337	300	314	388	328	325	49	301	340	292	314	288	3,576
Compressor station fuel and po - Utilities 8190-04590	5,235	355	82	177	291	(455)	10	-	2	-	3	-	5,699
Storage-Measuring and regulati - Utilities 8200-04590	56	56	56	59	58	56	57	56	57	-	-	-	513
Storage-Purification expenses - Utilities 8210-04590	88	187	264	475	327	198	172	-	12	5	108	101	1,937
Distribution-Operation supervi - Utilities 8700-04590	3,722	686	2,925	3,015	2,681	3,588	3,415	2,670	1,149	4,222	4,470	4,058	36,601
Mains and Services Expenses - Utilities 8740-04590	1,009	410	536	452	467	451	464	528	419	439	462	631	6,269
Storage-Other expenses - Utilities 8240-04590	0	0	17	64	621	26	5	-	4	-	3	3	744
Storage well royalties - Utilities 8250-04590	517	1,048	1,815	3,851	1,814	1,459	510	59	348	78	299	365	12,165
Mains expenses - Utilities 8560-04590	486	448	391	454	409	498	54	462	448	375	403	370	4,800
Distribution-Rents - Misc Rents 8810-04592	0	0	0	2,980	314	-	-	-	-	-	-	-	3,294
Distribution-Rents - Capitalized Utility Costs 8810-04599	(2,769)	(2,127)	(2,314)	(1,876)	(2,256)	(8,165)	(2,026)	(2,917)	(3,525)	(4,106)	(2,644)	(2,480)	(37,207)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(2,603)	(575)	(1,921)	(2,042)	(1,833)	(2,923)	(2,397)	(1,774)	(1,548)	(2,855)	(3,143)	(2,838)	(26,452)
Mains expenses - Capitalized Utility Costs 8560-04599	(330)	(291)	(272)	(292)	(324)	(266)	1	(280)	(305)	(318)	(342)	(315)	(3,335)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(257)	(227)	(212)	(227)	(252)	(207)	8	(218)	(232)	(247)	(266)	(245)	(2,581)
Rent, Maint., & Utilities	**35,311**	**29,504**	**30,764**	**36,104**	**31,284**	**30,892**	**26,762**	**45,263**	**13,369**	**13,635**	**96,700**	**30,114**	**419,703**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	7,846	7,842	7,850	7,890	10,145	2,601	12,307	10,323	11,230	11,644	1,559	(4,145)	87,092
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(104)	(94)	(83)	(114)	(765)	(241)	(88)	(92)	(168)	(180)	(149)	(164)	(2,240)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(10,382)	(10,133)	(10,919)	(10,903)	(12,871)	(10,933)	(15,373)	(15,115)	(15,075)	(12,618)	(5,261)	(3,828)	(133,411)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	0	0	0	0	0	(468)	-	(1,126)	-	-	-	-	(1,594)
Distribution-Operation supervi - Vehicle Expense 8700-03004	164	140	91	187	895	326	97	105	183	1,419	193	219	4,019
Mains and Services Expenses - Vehicle Expense 8740-03004	9,554	9,137	10,364	9,617	11,410	12,001	12,013	12,660	11,979	8,742	10,464	9,764	127,693
Distribution-Measuring and reg - Vehicle Expense 8760-03004	0	0	0	0	0	1,000	-	2,407	-	-	-	-	3,407
Mains and Services Expenses - Equipment Lease 8740-04301	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	14,630
Mains and Services Expenses - Heavy Equipment 8740-04302	811	443	9,295	291	1,913	736	72	3,458	316	484	4,043	202	22,064
Distribution-Operation supervi - Heavy Equipment 8700-04302	0	0	0	0	0	0	0	0	0	0	0	133	133
Maintenance of other equipment - Heavy Equipment 8370-04302	0	0	0	0	10	-	-	-	-	-	-	-	10
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	0	0	0	0	0	0	0	0	0	0	0	(130)	(130)
Maintenance of other equipment - Heavy Equipment Capitalized 8370-04307	0	0	0	0	(10)	-	-	-	-	-	-	-	(10)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(1,990)	(1,629)	(10,304)	(1,480)	(3,069)	(1,916)	(1,265)	(4,584)	(1,504)	(1,669)	(5,157)	(1,393)	(35,960)
Vehicles & Equip	**7,119**	**6,924**	**7,514**	**6,708**	**8,875**	**4,324**	**8,983**	**9,255**	**8,181**	**9,041**	**6,901**	**1,878**	**85,704**
Sales-Demonstrating and sellin - Inventory Materials 9120-02001	0	0	0	0	0	0	0	0	0	0	0	(200)	(200)
Distribution-Operation supervi - Inventory Materials 8700-02001	0	0	0	0	1,176	-	-	-	-	-	-	-	1,176
Odorization - Inventory Materials 8711-02001	0	0	3,671	-	-	-	-	1,971	-	-	-	-	5,641
Sales-Demonstrating and sellin - Warehouse Loading Charge 9120-02004	0	0	0	0	0	0	0	0	0	0	0	961	961
Distribution-Operation supervi - Warehouse Loading Charge 8700-02004	0	0	0	0	165	-	-	-	74	-	-	-	239
Odorization - Warehouse Loading Charge 8711-02004	0	0	514	-	-	-	-	79	-	-	-	-	593
Odorization - Non-Inventory Supplies 8711-02005	5,538	11,037	-	9,804	3,685	(2,251)	3,732	16,232	116	-	-	1,551	49,446
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	1,289	-	107	10	-	-	29	21	52	193	1,300	7	3,008
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	6,030	2,392	546	1,302	5,914	2,885	4,887	3,888	7,428	5,640	10,630	9,853	61,395
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	228	1,537	380	170	955	15	671	1,254	451	853	98	-	6,611
Storage-Measuring and regulati - Non-Inventory Supplies 8200-02005	2	-	-	-	-	-	-	-	-	-	-	-	2
Mains expenses - Non-Inventory Supplies 8560-02005	6	-	-	67	-	-	43	447	143	-	170	47	922
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	22	22	-	23	23	23	14	15	14	14	15	29	214
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	2,009	4,149	1,977	5,664	410	4,455	4,847	3,123	7,098	1,316	3,223	4,279	42,548
Distribution-Operation supervi - Parts 8700-04306	0	0	0	0	0	98	98	-	-	-	-	-	197
Sales-Supervision - Office Supplies 9110-05010	0	0	0	48	-	-	-	-	-	-	-	-	48
A&G-Office supplies & expense - Office Supplies 9210-05010	34	-	-	-	-	-	-	-	-	-	-	-	34
Miscellaneous general expenses - Office Supplies 9302-05010	0	0	0	0	198	12	-	-	-	-	-	-	210
Distribution-Operation supervi - Office Supplies 8700-05010	3,938	7,800	6,347	8,163	4,909	8,908	5,554	6,327	4,868	5,177	6,403	4,197	72,589
Mains and Services Expenses - Office Supplies 8740-05010	50	50	-	100	50	450	-	-	-	-	-	-	700
Distribution-Measuring and reg - Office Supplies 8760-05010	0	0	64	346	260	19	-	-	-	-	-	-	688
Distribution-Other expenses - Office Supplies 8800-05010	64	-	-	-	94	-	-	-	-	-	-	-	158
Materials & Supplies	**19,208**	**26,988**	**13,604**	**25,698**	**17,838**	**14,814**	**19,875**	**33,356**	**20,244**	**13,193**	**21,838**	**20,724**	**247,181**
Distribution-Operation supervi - Software Maintenance 8700-04201	10,299	8,279	5,909	12,225	12,711	32,103	905	995	4,020	1,243	11,666	2,298	102,652
Mains and Services Expenses - Software Maintenance 8740-04201	0	0	0	0	65	-	-	-	-	-	-	-	65
Distribution-Other expenses - Software Maintenance 8800-04201	0	0	0	368	-	-	-	-	-	-	-	-	368
Distribution-Operation supervi - IT Equipment 8700-04212	124	-	-	7,371	120	1,396	9,869	905	514	356	1,466	2,020	24,141
Information Technologies	**10,424**	**8,279**	**5,909**	**19,964**	**12,895**	**33,499**	**10,774**	**1,900**	**4,534**	**1,599**	**13,132**	**4,318**	**127,226**
Mains and Services Expenses - Monthly Lines and service 8740-05310	40	40	40	40	40	37	39	39	39	39	39	39	470
Distribution-Operation supervi - Monthly Lines and service 8700-05310	860	3,147	922	9,861	1,784	3,238	1,866	2,934	878	2,303	2,643	1,772	32,206
Distribution-Operation supervi - Long Distance 8700-05312	489	468	465	391	521	508	475	523	502	551	430	505	5,829
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	156	120	153	155	170	171	170	178	177	170	162	168	1,949
Distribution-Operation supervi - Telecom Maintenance & Repair 8700-05316	1,038	510	1,198	-	1,842	858	717	3,045	1,625	1,416	630	1,181	14,058
Distribution-Operation supervi - Telephone Directory 8700-05317	12,997	7,655	25,217	6,499	14,211	9,957	-	20,937	8,670	7,553	8,577	8,546	130,817
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	1,146	2,172	2,139	2,233	2,249	2,095	2,419	2,305	2,888	2,400	1,833	1,326	25,202
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	24,842	24,849	24,842	25,020	25,182	23,571	24,428	23,739	21,054	25,027	19,926	19,905	282,387
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	489	8,050	5,770	7,917	5,855	8,294	3,047	14,148	3,211	14,826	34,569	9,287	115,465
Distribution-Operation supervi - Cell service for data uses 8700-05376	2,259	30,148	15,619	12,964	30,597	13,836	6,331	37,714	4,861	5,063	18,738	21,789	199,920
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	27	299	1,658	36	579	2,240	(1,634)	1,689	(957)	2,772	2,394	645	9,729
Mains and Services Expenses - Cell phone equipment and accessories 8740-05377	11	-	-	-	-	-	-	-	-	-	-	-	11
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(26)	(21)	(20)	(21)	(22)	(20)	(21)	(21)	(21)	(21)	(21)	(22)	(258)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(15,841)	(35,026)	(25,828)	(28,970)	(35,757)	(28,476)	(19,094)	(46,195)	(17,380)	(28,911)	(42,764)	(31,782)	(356,022)
Telecom	**28,486**	**42,411**	**52,174**	**36,128**	**47,251**	**36,309**	**18,743**	**61,013**	**25,547**	**33,187**	**47,156**	**33,358**	**461,762**
Distribution-Operation supervi - Required By Law, Safety 8700-04002	11	62,596	836	76,565	4,373	15,020	4,908	18,561	10,328	287	23,946	5,496	222,927
Distribution-Operation supervi - Safety 8700-04018	0	0	0	0	120	119	-	67	24	-	-	-	329
Distribution-Operation supervi - Promo Other, Misc 8700-04021	0	0	0	0	0	0	0	0	30	-	-	-	30
Sales-Advertising expenses - Promo Other, Misc 9130-04021	0	0	0	2,013	-	-	-	-	-	-	-	268	2,281

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
Distribution-Operation supervi - Natural Gas Vehicle Demo 8700-04038	0	0	0	0	0	0	0	0	70	-	-	-	70
Customer service-Operating ass - Community Rel&Trade Shows 9080-04040	0	0	2,000	-	-	-	-	-	-	-	-	-	2,000
Customer service-Operating inf - Community Rel&Trade Shows 9090-04040	0	0	0	0	0	0	539	20,293	-	120	623	17,762	39,337
A&G-Office supplies & expense - Community Rel&Trade Shows 9210-04040	0	0	0	0	534	-	-	-	322	(10)	-	-	846
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	0	0	0	0	300	-	-	-	40	-	-	-	340
Mains and Services Expenses - Community Rel&Trade Shows 8740-04040	0	0	0	1,700	924	55	-	-	-	-	-	-	2,680
Distribution-Operation supervi - Advertising 8700-04044	0	0	0	0	0	595	-	-	-	-	-	-	595
Customer service-Miscellaneous - Customer Relations & Assist 9100-04046	86	88	-	-	176	-	-	-	186	263	79	145	1,023
Sales-Supervision - Customer Relations & Assist 9110-04046	0	0	0	(750)	-	-	-	-	-	-	-	-	(750)
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	0	0	0	0	0	0	0	0	0	0	0	24,697	24,697
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	0	0	0	0	0	0	0	0	0	0	2,121	2,121
Marketing	97	62,684	2,836	79,528	6,427	15,790	5,447	38,921	10,999	661	24,648	50,488	298,526
Distribution-Operation supervi - Membership Fees 8700-05415	250	672	8,131	295	1,645	12	400	693	400	400	145	1,725	14,767
Sales-Demonstrating and sellin - Membership Fees 9120-05415	0	0	0	0	0	0	0	0	0	0	0	240	240
Miscellaneous general expenses - Membership Fees 9302-05415	0	0	0	0	0	0	0	0	0	0	0	2,880	2,880
Distribution-Operation supervi - Club Dues - Deductible 8700-05417	640	-	-	249	50	-	249	-	-	-	-	-	1,188
Distribution-Operation supervi - Association Dues 8700-07510	0	0	6,000	-	50	-	-	-	-	250	-	-	6,300
Miscellaneous general expenses - Association Dues 9302-07510	8,050	8,050	19,600	8,569	8,569	8,569	8,569	8,569	16,569	18,569	7,299	7,299	128,278
Distribution-Operation supervi - Donations 8700-07520	0	0	0	0	0	0	0	44	-	-	-	-	44
Dues & Donations	8,940	8,722	33,731	9,112	10,314	8,581	9,217	9,305	16,969	19,219	7,444	12,144	153,697
Mains expenses - Postage/Delivery Services 8560-05111	0	0	0	0	0	53	-	-	-	-	-	-	53
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	1,773	1,203	2,083	3,485	664	1,080	1,348	3,832	903	1,134	904	997	19,405
Mains and Services Expenses - Postage/Delivery Services 8740-05111	90	107	4	-	14	-	-	-	-	-	-	-	215
Distribution-Measuring and reg - Postage/Delivery Services 8760-05111	35	79	-	-	-	-	-	-	-	-	-	-	114
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	11	35	-	-	-	-	-	-	-	-	-	-	46
Print & Postages	1,908	1,424	2,087	3,485	678	1,133	1,348	3,832	903	1,134	904	997	19,832
Transmission-Operation supervi - Meals and Entertainment 8500-05411	0	0	0	525	17	127	321	-	-	80	-	-	1,069
Mains expenses - Meals and Entertainment 8560-05411	0	0	0	0	0	2	-	-	-	-	-	-	2
Transmission-Other expenses - Meals and Entertainment 8590-05411	0	0	0	0	0	0	0	0	0	35	-	-	35
Distribution-Operation supervi - Meals and Entertainment 8700-05411	3,753	9,984	7,624	9,133	12,936	8,899	6,993	10,222	5,900	5,066	6,073	9,004	95,589
Mains and Services Expenses - Meals and Entertainment 8740-05411	0	0	0	0	0	0	0	0	0	0	49	-	49
Distribution-Measuring and reg - Meals and Entertainment 8750-05411	0	0	0	15	-	-	129	-	-	216	-	-	360
Distribution-Measuring and reg - Meals and Entertainment 8760-05411	0	0	0	16	-	-	134	-	-	224	-	-	373
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	194	-	-	-	-	-	-	-	194
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	65	151	31	8	18	-	-	-	-	-	-	-	273
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	68	44	287	125	393	-	83	-	339	40	29	-	1,408
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	0	609	242	180	156	15	70	142	24	7	50	141	1,636
A&G-Office supplies & expense - Transportation 9210-05413	817	611	850	2,423	1,287	306	1,966	-	1,775	852	1,337	-	12,223
Transmission-Operation supervi - Transportation 8500-05413	0	0	0	0	0	267	30	496	-	-	-	-	793
Mains expenses - Transportation 8560-05413	0	0	0	0	0	240	446	-	-	-	-	-	686
Distribution-Operation supervi - Transportation 8700-05413	13,751	21,493	9,451	6,786	13,495	7,936	21,138	9,772	11,785	14,719	9,040	17,547	156,914
Distribution-Other expenses - Transportation 8800-05413	0	0	0	0	215	-	-	-	-	-	-	-	215
Customer accounts-Customer rec - Transportation 9030-05413	278	627	195	158	92	-	-	-	-	-	-	-	1,351
A&G-Office supplies & expense - Lodging 9210-05414	75	79	403	424	99	-	368	-	738	178	-	-	2,364
Transmission-Operation supervi - Lodging 8500-05414	0	0	346	255	-	-	474	291	-	-	-	-	1,365
Mains expenses - Lodging 8560-05414	0	0	0	0	0	334	271	-	-	-	-	-	605
Distribution-Operation supervi - Lodging 8700-05414	6,910	15,340	8,632	7,678	11,989	9,428	10,356	10,836	12,106	7,068	9,390	11,268	120,999
Distribution-Measuring and reg - Lodging 8750-05414	0	0	0	0	0	0	183	-	-	309	-	-	492
Distribution-Measuring and reg - Lodging 8760-05414	0	0	0	0	0	0	190	-	-	320	-	-	510
Distribution-Other expenses - Lodging 8800-05414	0	0	0	0	501	-	-	-	-	-	-	-	501
Customer accounts-Customer rec - Lodging 9030-05414	214	688	98	113	-	-	-	-	-	-	-	-	1,112
Transmission-Operation supervi - Misc Employee Expense 8500-05419	154	-	-	-	-	495	387	-	-	1,282	11	-	2,328
Mains expenses - Misc Employee Expense 8560-05419	0	0	0	0	0	64	62	-	-	-	-	-	126
Distribution-Operation supervi - Misc Employee Expense 8700-05419	20	12	45	156	223	114	180	146	33	33	27	601	1,591
Travel & Entertainment	26,105	49,637	28,205	27,993	41,616	28,229	43,780	31,905	32,700	30,427	26,006	38,561	405,165
Distribution-Operation supervi - Employee Development 8700-05420	0	20	990	119	2,777	1,702	750	200	20	475	-	1,884	8,937
Distribution-Operation supervi - Training 8700-05421	0	1,295	1,275	1,100	1,126	384	8	2,310	146	1,868	-	197	9,707
Mains and Services Expenses - Training 8740-05421	0	0	0	0	0	0	0	0	1,824	-	-	-	1,824
Distribution-Operation supervi - Operator Qualifications Training 8700-05422	0	0	0	0	0	375	-	-	-	-	-	-	375
Distribution-Operation supervi - Books & Manuals 8700-05424	0	158	-	913	-	359	-	654	61	-	-	-	2,145
Distribution-Operation supervi - Regulatory Compliance Training 8700-05425	0	0	0	0	0	0	0	0	300	-	2,125	-	2,425
Distribution-Operation supervi - Safety Training 8700-05426	1,000	1,943	-	9,631	1,926	2,824	6,626	6,974	1,518	2,863	1,477	3,881	40,665
A&G-Employee pensions and bene - Safety Training 9260-05426	0	0	0	0	0	0	0	0	928	-	-	-	928
Distribution-Operation supervi - Technical (Job Skills) Training 8700-05427	1,000	-	-	-	-	-	-	-	-	-	-	-	1,000
Distribution-Other expenses - Technical (Job Skills) Training 8800-05427	0	0	0	0	1,391	-	-	-	-	-	-	-	1,391
Distribution-Operation supervi - Work Environment Training 8700-05429	0	0	0	0	0	15	-	15	-	-	30	15	75
Training	2,000	3,416	2,265	11,763	7,220	5,659	7,383	10,153	4,797	5,206	3,632	5,977	69,472
Distribution-Rents - Contract Labor 8810-06111	490	490	607	90	490	1,122	499	-	-	-	-	-	3,787
A&G-Outside services employed - Contract Labor 9230-06111	0	0	1,668	-	211	-	-	-	-	3,866	716	5,128	11,589
A&G-Employee pensions and bene - Contract Labor 9260-06111	0	3,180	-	-	-	-	-	-	-	-	-	-	3,180
Transmission-Operation supervi - Contract Labor 8500-06111	0	0	0	0	0	0	0	0	0	0	0	3,100	3,100
Mains expenses - Contract Labor 8560-06111	0	0	0	3,100	-	-	-	-	-	-	-	-	3,100
Distribution-Operation supervi - Contract Labor 8700-06111	503	364	6,074	1,551	2,948	8,089	9,931	7,055	6,980	2,811	1,267	3,861	51,434
Mains and Services Expenses - Contract Labor 8740-06111	0	0	0	0	0	500	-	1,171	-	-	-	-	1,671
Customer accounts-Customer rec - Collection Fees 9030-06112	102,933	119,004	70,392	151,070	122,269	116,569	94,955	102,476	115,276	65,587	123,198	96,300	1,280,031
Customer accounts-Customer rec - Bill Print Fees 9030-06116	241,868	201,168	221,312	238,143	254,708	225,297	226,814	220,892	249,613	201,633	205,481	144,952	2,631,880
A&G-Outside services employed - Legal 9230-06121	0	26,084	9,070	-	4,171	6,749	5,312	11,993	9,950	37	7,330	15,427	96,122
Outside Services	345,794	350,289	309,123	393,954	384,797	358,326	337,512	343,587	381,821	273,932	337,992	268,767	4,085,895
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	0	0	0	0	0	0	0	0	0	53,144	-	(261)	52,883
Provision for Bad Debt	0	0	0	0	0	0	0	0	0	53,144	-	(261)	52,883

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Total Fiscal 2012
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(3,595)	(3,158)	(3,139)	(5,107)	(5,012)	(4,314)	(4,486)	(5,064)	(4,515)	(3,491)	(3,438)	(2,717)	(48,034)
A&G-Office supplies & expense - Misc General Expense 9210-07590	0	0	0	0	6,250	-	-	-	-	235,607	-	-	241,857
Mains expenses - Misc General Expense 8560-07590	0	1,270	-	-	-	-	-	-	-	-	-	-	1,270
Distribution-Operation supervi - Misc General Expense 8700-07590	0	40	447	90	376	-	384	686	250	(93,281)	13	-	(90,992)
Mains and Services Expenses - Misc General Expense 8740-07590	0	1,304	(1,304)	1,157	(1,157)	1,712	(1,712)	0	0	0	1,254	(1,254)	-
Distribution-Measuring and reg - Misc General Expense 8750-07590	0	0	0	235	(232)	-	-	-	-	-	-	-	2
A&G-Office supplies & expense - Use only for HR exp default ***Forme 9210-09195	0	7,797	4,885	(11,921)	-	-	-	-	-	-	-	-	761
Miscellaneous	(3,595)	7,253	889	(15,546)	225	(2,602)	(5,813)	(4,376)	(4,265)	138,835	(2,171)	(3,971)	104,864
Total O&M Expenses Before Allocations	853,739	994,672	918,913	1,065,979	1,013,748	928,009	824,916	927,090	905,130	913,028	1,144,379	1,119,811	11,609,415

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Customer accounts-Customer rec - Non-project Labor 9030-01000	5,205	11,239	6,810	8,764	7,057	7,807	2,776	7,807	5,205	5,205	5,205	5,205	80,384
Distribution-Operation supervi - Non-project Labor 8700-01000	140,754	211,430	140,235	138,014	137,223	138,864	141,909	225,659	147,579	149,161	153,212	152,051	1,876,092
Mains and Services Expenses - Non-project Labor 8740-01000	1,489	518	3,414	1,456	453	-	-	-	-	-	-	-	7,330
Distribution-Measuring and reg - Non-project Labor 8750-01000	0	0	0	307	1,294	-	-	-	-	-	-	-	1,602
Meter and house regulator expe - Non-project Labor 8780-01000	0	779	-	-	-	-	-	-	-	-	-	-	779
Distribution-Other expenses - Non-project Labor 8800-01000	2,701	1,812	502	1,489	5,273	2,174	2,018	1,999	1,736	-	-	-	19,703
Distribution-Operation supervi - Capital Labor 8700-01001	314,817	459,119	293,627	291,476	297,389	319,740	253,912	333,850	231,547	227,575	218,310	205,605	3,446,967
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(257,205)	(379,562)	(251,887)	(246,968)	(248,601)	(268,625)	(232,501)	(309,589)	(215,153)	(217,740)	(209,734)	(200,941)	(3,038,506)
Mains expenses - O&M Project Labor and Contra 8560-01006	0	1,996	2,661	148	2,957	444	887	1,035	1,589	1,552	74	-	13,343
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	4,257	17,551	2,662	-	4,199	5,258	5,926	695	(836)	(3,665)	(3,050)	1,347	34,343
Mains and Services Expenses - Expense Labor Accrual 8740-01008	(392)	(881)	938	(369)	(451)	(204)	-	-	-	-	-	-	(1,359)
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	0	0	0	138	444	(582)	0	0	0	0	0	0	-
Meter and house regulator expe - Expense Labor Accrual 8780-01008	0	130	(130)	0	0	0	0	0	0	0	0	0	-
Distribution-Other expenses - Expense Labor Accrual 8800-01008	1,336	(1,453)	(152)	519	1,703	(1,286)	124	(878)	101	(434)	-	-	(419)
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	781	(1,510)	800	1,271	(766)	(573)	(937)	(365)	-	781	520	260	260
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	23,806	(56,152)	8,009	19,126	(2,089)	5,908	12,247	(40,649)	70	23,538	17,001	4,756	15,571
Distribution-Operation supervi - PTO Accrual 8700-01010	0	0	26,802	-	-	(134,839)	-	-	83,075	-	-	(6,830)	(29,792)
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	210,588	305,554	201,896	206,462	203,473	211,725	206,903	288,402	200,743	203,249	195,066	187,303	2,621,363
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(268,201)	(385,112)	(243,636)	(250,970)	(252,260)	(262,839)	(228,313)	(312,663)	(217,137)	(213,084)	(203,642)	(191,966)	(3,029,824)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	3,691	60,201	4,856	-	348	304	1,738	174	1,130	-	-	-	72,442
Mains expenses - Expense Labor Transfer In 8560-01013	0	1,996	2,661	148	2,957	444	887	1,035	1,589	1,552	74	-	13,343
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	(4,257)	(17,551)	(2,662)	-	(4,199)	(5,258)	(5,926)	(695)	836	3,665	3,050	(1,347)	(34,343)
Mains expenses - Expense Labor Transfer Out 8560-01014	0	(1,996)	(2,661)	(148)	(2,957)	(444)	(887)	(1,035)	(1,589)	(1,552)	(74)	-	(13,343)
Labor	179,371	228,106	196,845	170,863	153,445	18,016	160,763	194,782	240,484	179,803	176,011	155,443	2,055,935
A&G-Employee pensions and bene - Other Benefits Variance 9260-01201	(270,025)	-	-	270,025	0	0	0	0	0	0	0	0	-
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	24,691	29,407	23,226	24,071	20,627	20,749	21,707	27,294	21,772	25,099	24,807	22,880	286,330
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	37,825	45,049	35,580	36,875	31,599	31,785	33,253	41,812	33,255	38,362	38,002	35,051	438,447
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(22,711)	(28,718)	(2,501)	(20,632)	23,737	20,295	12,048	45,351	32,131	14,226	17,614	24,301	115,142
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(76,529)	(86,230)	(49,316)	(74,433)	(7,695)	(14,142)	(25,498)	29,059	8,940	(18,125)	(11,548)	(6,766)	(332,282)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	(2,823)	(5,979)	(2,458)	(5,769)	1,486	628	(62)	6,776	3,685	897	1,334	202,554	200,269
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	30,540	28,503	27,452	31,925	27,197	29,192	26,626	24,044	21,566	24,844	23,569	23,171	318,628
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	32,746	39,001	30,803	31,924	27,356	27,518	28,789	36,198	28,911	33,318	32,900	30,345	379,809
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(16,852)	(113,810)	105,865	(352,735)	(142)	(47,980)	(98,153)	17,674	(32,779)	(42,150)	15,800	(133,000)	(698,268)
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	691	11,643	1,407	28	619	140	491	226	509	291	14	-	16,059
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	7,880	9,395	7,412	7,682	6,583	6,622	6,928	8,711	6,946	8,008	7,917	7,302	91,377
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	(10,219)	(15,185)	(8,966)	(9,529)	(1,086)	(922)	(2,536)	(241)	(4,777)	(5,334)	(5,160)	(6,004)	(69,959)
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	185	3,122	365	7	161	36	128	59	132	75	4	-	4,275
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	88	104	82	85	73	74	77	97	77	89	88	81	1,015
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	2,178	(669)	(433)	8,147	808	814	(1,234)	(13,077)	11,985	(825)	(506)	(474)	6,714
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	2	31	4	0	2	0	1	1	1	1	0	-	43
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	876	1,043	824	854	731	736	770	968	771	889	880	811	10,152
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	(4,816)	(3,851)	(3,996)	(3,939)	(3,556)	(3,711)	(3,433)	(1,323)	(2,445)	(2,882)	(2,650)	(2,469)	(39,070)
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	4	68	8	0	4	1	3	1	3	2	0	-	94
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	876	1,043	824	854	731	736	770	968	773	891	880	811	10,156
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	(422)	(638)	244	(292)	(259)	1,196	852	734	1,566	932	1,054	(3,469)	1,499
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	20	330	40	1	18	4	14	6	14	8	0	-	455
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	1,576	1,877	1,482	1,536	1,317	1,324	1,386	1,742	1,391	1,603	1,583	1,460	18,279
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(2,142)	(2,438)	(965)	(2,872)	(2,732)	466	29	(490)	1,442	298	543	(7,211)	(16,069)
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	32	535	65	1	28	6	23	10	23	13	1	-	738
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	519	8,739	1,056	21	464	105	369	170	382	218	10	-	12,053
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	798	13,403	1,620	32	712	161	566	260	586	335	16	-	18,487
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	70	1,182	143	3	63	14	50	23	52	29	1	-	1,630
Benefits	(264,943)	(63,049)	169,867	(56,132)	128,844	75,846	3,958	227,054	136,914	81,111	147,153	189,377	776,001
A&G-Employee pensions and bene - Service Awards 9260-07421	9,200	13,452	3,653	1,919	-	3,738	3,095	12,247	13,526	6,682	7,466	3,963	78,942
Distribution-Operation supervi - Service Awards 8700-07421	141	-	30,592	640	-	-	-	-	-	-	-	-	31,372
Distribution-Operation supervi - Uniforms 8700-07443	0	250	-	-	-	-	-	-	-	-	-	-	250
Mains and Services Expenses - Uniforms 8740-07443	125	125	-	-	-	-	-	-	-	-	-	-	250
A&G-Employee pensions and bene - Uniforms 9260-07443	0	0	0	0	118	-	-	-	-	-	-	-	118
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	0	0	0	0	(43)	-	-	-	-	-	-	-	(43)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	0	(138)	-	-	-	-	-	-	-	-	-	-	(138)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	(81)	(69)	-	-	-	-	-	-	-	-	-	-	(150)
A&G-Employee pensions and bene - Capitalized Restricted Stock 9260-07450	(8,300)	(10,004)	(6,944)	(9,150)	(22,217)	(8,200)	(35,688)	(10,990)	(17,782)	(10,686)	(10,690)	(63,327)	(213,978)
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	98,000	169,804	190,000	405,813	275,811	-	-	-	-	-	-	938,570	2,077,998
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	(53,000)	(90,029)	(103,000)	(202,000)	(150,185)	-	-	-	-	-	-	(509,818)	(1,108,032)
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	1,299	7,003	7,226	7,502	7,429	7,502	32,602	11,190	18,647	12,075	12,075	118,923	243,472
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	8,724	8,443	8,712	8,724	19,588	7,932	36,549	10,451	16,358	9,034	9,034	8,742	152,291
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	1,063	8,616	1,070	1,075	5,728	791	765	791	765	791	791	765	23,009
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	683	683	683	683	683	683	683	(6,891)	707	707	707	707	920
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	16,354	16,354	16,354	16,354	16,354	16,354	16,566	16,566	16,566	16,566	16,566	16,566	197,517
A&G-Employee pensions and bene - SERP Capitalized 9260-07490	(5,538)	(5,538)	(5,538)	(5,538)	(5,538)	(5,538)	(5,655)	(5,655)	(5,655)	(5,655)	(5,655)	(5,655)	(67,159)
Customer accounts-Customer rec - Misc Employee Welfare Exp 9030-07499	0	659	-	-	-	-	-	-	-	-	-	-	659
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	0	0	0	0	0	0	0	0	0	0	377	-	377
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	1,626	1,763	1,081	1,507	2,550	1,107	1,462	2,019	911	1,838	1,652	1,642	19,179
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	409	(25)	1,356	5,221	432	61	137	1,649	25	136	141	109	9,652
Employee Welfare	72,706	121,370	143,245	232,749	150,708	24,429	50,517	31,577	44,068	31,486	32,464	511,188	1,446,507
A&G-Property insurance - Blueflame Property Insurance 9240-04069	950	950	950	731	731	715	733	734	733	733	733	733	9,425
A&G-Property insurance - Insurance-Other 9240-04070	1,493	1,493	1,493	2,089	1,493	1,493	1,751	1,738	1,738	1,738	1,738	1,738	19,993
A&G-Property insurance - Insurance Capitalized 9240-04072	(1,332)	(1,356)	(1,355)	(1,501)	(1,187)	(1,067)	(1,290)	(1,387)	(1,396)	(1,403)	(1,429)	(1,412)	(16,115)
A&G-Injuries & damages - Insurance Reserve 9250-07115	0	0	0	(10,917)	-	-	-	-	-	-	-	-	(10,917)
Distribution-Operation supervi - Environmental & Safety 8700-07120	506	-	-	92	113	-	110	2,561	-	15,067	117	10,919	29,483
A&G-Injuries & damages - Environmental & Safety 9250-07120	0	0	0	0	83	-	-	-	-	-	-	-	83
Insurance	1,617	1,087	1,087	(9,506)	1,233	1,141	1,303	3,646	1,074	16,134	1,158	11,977	31,951

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(158)	-	-	(42)	(24)	-	(308)	(607)	(239)	-	(187)	(22)	(1,586)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(7,131)	(10,907)	(9,026)	(10,821)	(37,561)	(38,782)	(30,678)	(39,337)	(39,300)	(39,124)	(39,135)	(38,757)	(340,560)
A&G-Rents - Building Lease/Rents Capitalized 9310-04580	(301)	(1,970)	(1,931)	(1,947)	(1,845)	(1,703)	(1,984)	(1,906)	(1,982)	(1,895)	(1,936)	(1,866)	(21,268)
Storage well royalties - Building Lease/Rents 8250-04581	739	-	-	376	221	-	2,642	2,607	694	-	414	98	7,792
Distribution-Rents - Building Lease/Rents 8810-04581	12,490	19,890	16,778	19,703	59,170	62,194	49,714	64,604	63,357	63,357	63,736	63,357	558,350
A&G-Rents - Building Lease/Rents 9310-04581	1,351	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	74,685
A&G-Rents - Building Maintenance 9310-04582	59	3	3	4	4	4	4	4	4	4	4	4	99
Distribution-Operation supervi - Building Maintenance 8700-04582	0	0	0	0	0	3,438	-	-	-	1,352	-	-	4,789
Mains and Services Expenses - Building Maintenance 8740-04582	82	-	-	-	-	-	-	-	-	-	-	-	82
Distribution-Rents - Building Maintenance 8810-04582	2,068	5,040	3,519	2,223	2,646	813	3,700	5,366	1,702	5,095	4,153	2,000	38,327
Transmission-Measuring and reg - Utilities 8570-04590	81	69	69	72	78	80	72	-	160	86	89	89	944
Lines expenses - Utilities 8170-04590	41	34	34	36	39	40	36	-	80	43	45	44	472
Compressor station expenses - Utilities 8180-04590	284	241	241	250	273	278	252	-	561	302	313	311	3,305
Compressor station fuel and po - Utilities 8190-04590	1,286	769	38	-	637	740	3	-	309	-	3	796	4,579
Storage-Purification expenses - Utilities 8210-04590	103	259	265	80	970	454	326	236	229	128	3	59	3,114
Distribution-Operation supervi - Utilities 8700-04590	2,408	1,534	2,868	2,948	2,495	3,257	2,698	5,320	803	1,493	4,349	3,244	33,416
Mains and Services Expenses - Utilities 8740-04590	457	395	419	385	398	372	370	457	407	406	502	471	5,038
Storage-Other expenses - Utilities 8240-04590	3	3	7	55	60	79	-	-	34	4	4	3	253
Storage well royalties - Utilities 8250-04590	571	792	1,651	2,838	2,331	3,382	848	74	2,413	443	329	282	15,955
Mains expenses - Utilities 8560-04590	365	309	309	322	350	358	323	-	722	388	403	400	4,250
Distribution-Rents - Misc Rents 8810-04592	0	0	0	2,980	314	-	-	-	-	-	-	-	3,294
Distribution-Rents - Capitalized Utility Costs 8810-04599	(1,755)	(4,276)	(2,706)	(1,886)	(2,245)	(690)	(3,125)	(4,528)	(1,444)	(4,323)	(3,509)	(1,697)	(32,184)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(1,503)	(1,295)	(1,936)	(1,866)	(1,501)	(4,559)	(1,800)	(3,507)	(577)	(2,140)	(2,950)	(2,086)	(25,721)
Mains expenses - Capitalized Utility Costs 8560-04599	(310)	(263)	(263)	(273)	(297)	(304)	(274)	-	(612)	(329)	(342)	(339)	(3,606)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(241)	(204)	(204)	(212)	(231)	(236)	(213)	-	(476)	(256)	(266)	(264)	(2,804)
Rent, Maint., & Utilities	**10,989**	**17,091**	**16,801**	**21,891**	**32,947**	**35,880**	**29,271**	**35,448**	**33,514**	**31,700**	**32,691**	**32,794**	**331,016**
Distribution-Operation supervi - Vehicle Depreciation Capitalized 8700-03001	0	0	0	0	0	10	-	-	-	-	-	-	10
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	10,843	8,563	9,566	8,871	9,875	9,987	(10,683)	5,669	8,624	9,249	9,171	2,032	81,748
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(54)	(94)	(28)	(29)	(219)	(99)	(8)	(142)	(169)	(442)	(95)	(135)	(1,512)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(15,924)	(12,734)	(11,856)	(10,648)	(13,557)	(12,095)	4,206	(10,412)	(9,486)	(11,747)	(11,489)	(7,408)	(123,157)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	0	(84)	-	-	(45)	-	-	-	-	-	-	-	(129)
Distribution-Operation supervi - Vehicle Expense 8700-03004	65	148	54	50	285	116	16	193	188	844	183	193	2,336
Mains and Services Expenses - Vehicle Expense 8740-03004	12,596	9,837	7,625	8,100	10,953	8,593	9,540	9,141	5,225	8,143	7,435	7,903	105,091
Distribution-Measuring and reg - Vehicle Expense 8750-03004	0	168	-	-	95	-	-	-	-	-	-	-	263
Mains and Services Expenses - Equipment Lease 8740-04301	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	14,630
Mains and Services Expenses - Heavy Equipment 8740-04302	70	1,342	2,140	2,476	282	480	3,323	58	1,574	1,073	3,134	1,392	17,342
Distribution-Operation supervi - Heavy Equipment 8700-04302	0	91	-	-	-	-	-	-	-	-	-	-	91
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	0	(89)	-	-	-	-	-	-	-	-	-	-	(89)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(1,263)	(2,510)	(3,292)	(3,621)	(1,471)	(1,665)	(4,452)	(1,251)	(2,737)	(2,246)	(4,266)	(2,559)	(31,332)
Vehicles & Equip	**7,554**	**5,857**	**5,428**	**6,417**	**7,417**	**6,527**	**3,164**	**4,473**	**4,429**	**6,094**	**5,291**	**2,639**	**65,289**
Distribution-Rents - Inventory Materials 8810-02001	0	0	0	0	0	200	-	-	-	-	-	-	200
Sales-Demonstrating and sellin - Inventory Materials 9120-02001	200	-	-	-	-	-	-	-	-	-	-	-	200
Distribution-Operation supervi - Inventory Materials 8700-02001	0	811	64	-	-	-	407	-	-	-	-	-	1,281
Odorization - Inventory Materials 8711-02001	(553)	-	-	-	-	-	-	-	-	-	-	-	(553)
Sales-Demonstrating and sellin - Warehouse Loading Charge 9120-02004	8	-	-	-	-	-	-	-	-	-	-	-	8
Distribution-Operation supervi - Warehouse Loading Charge 8700-02004	0	32	3	-	-	-	16	-	-	-	-	-	51
Odorization - Warehouse Loading Charge 8711-02004	(22)	-	-	-	-	-	-	-	-	-	-	-	(22)
Distribution-Rents - Warehouse Loading Charge 8810-02004	0	0	0	0	0	8	-	-	-	-	-	-	8
Odorization - Non-Inventory Supplies 8711-02005	6,684	-	25,605	15,277	1,508	3,225	6,699	15,486	-	-	2,521	20,879	97,883
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	1,576	-	-	48	44	-	327	-	-	-	986	647	3,627
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	8,064	2,405	3,965	3,790	3,203	8,596	3,973	2,653	730	1,237	825	4,111	43,551
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	33	799	64	414	347	661	-	2,627	-	-	-	-	4,944
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	0	20	-	-	-	-	-	-	-	-	-	97,586	97,606
A&G-Office supplies & expense - Non-Inventory Supplies 9210-02005	0	0	0	0	0	0	0	0	0	0	0	317	317
Mains expenses - Non-Inventory Supplies 8560-02005	276	-	274	48	-	-	3	-	-	-	-	-	602
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	0	1,473	14	-	-	-	2,046	-	512	31	15	15	4,107
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	2,063	2,171	1,526	449	380	-	411	175	244	-	1,278	1,093	9,791
Customer accounts-Customer rec - Office Supplies 9030-05010	0	0	0	0	0	47	-	-	-	-	-	-	47
Sales-Demonstrating and sellin - Office Supplies 9120-05010	0	0	0	0	0	0	42	-	-	-	-	-	42
Distribution-Operation supervi - Office Supplies 8700-05010	5,198	4,027	5,021	6,343	7,142	4,891	5,772	5,007	4,043	6,028	9,265	24,549	87,286
Mains and Services Expenses - Office Supplies 8740-05010	59	-	-	-	600	-	-	-	-	-	-	-	659
Distribution-Measuring and reg - Office Supplies 8760-05010	0	84	46	-	-	-	-	-	-	-	-	-	130
Distribution-Operation supervi - Use 05010 Copier 8700-05211	0	0	0	0	(1,818)	(208)	-	-	-	-	-	-	(2,027)
Materials & Supplies	**23,585**	**11,822**	**36,582**	**26,368**	**11,405**	**17,420**	**19,696**	**25,947**	**5,528**	**7,296**	**14,891**	**149,196**	**349,737**
A&G-Maintenance of general pla - Offsite Storage 9320-04065	0	0	178	162	-	423	-	-	-	-	-	-	763
Distribution-Operation supervi - Software Maintenance 8700-04201	977	905	7,321	4,823	905	35,176	1,168	8,058	953	7,824	905	4,274	73,287
Mains and Services Expenses - Software Maintenance 8740-04201	0	0	0	0	0	65	-	-	-	-	-	-	65
Distribution-Operation supervi - IT Equipment 8700-04212	91	5,536	11,786	1,248	11,340	360	1,455	2,414	356	852	321	6,964	42,723
Information Technologies	**1,068**	**6,441**	**19,284**	**6,233**	**12,245**	**36,023**	**2,622**	**10,473**	**1,309**	**8,676**	**1,226**	**11,238**	**116,838**
Mains and Services Expenses - Monthly Lines and service 8740-05310	39	39	41	41	39	39	33	36	36	36	38	38	452
Distribution-Operation supervi - Monthly Lines and service 8700-05310	912	1,776	1,479	2,903	1,775	1,774	1,848	4,988	1,848	4,323	2,051	3,292	28,970
Distribution-Operation supervi - Long Distance 8700-05312	440	431	426	326	551	444	461	496	587	410	436	433	5,441
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	167	152	166	150	131	128	119	131	131	131	130	131	1,668
Distribution-Operation supervi - Telecom Maintenance & Repair 8700-05316	787	3,306	1,897	2,307	1,392	695	2,764	777	4,876	653	117	-	19,571
Distribution-Operation supervi - Telephone Directory 8700-05317	8,952	11,687	7,451	3,952	7,746	4,247	7,101	3,359	5,426	6,695	3,459	4,575	74,649
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	1,159	1,088	1,241	1,237	1,113	1,222	1,249	1,125	610	4,121	7,896	18,495	40,556
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	20,015	20,276	18,454	18,385	7,272	28,970	21,813	15,975	16,897	16,188	14,191	18,349	216,784
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	1,594	5,853	7,955	9,051	8,488	8,962	5,046	16,047	6,834	5,286	6,202	9,830	91,149
Distribution-Operation supervi - Cell service for data uses 8700-05376	3,425	13,994	16,057	14,855	22,685	17,619	7,099	40,577	24,185	5,555	28,482	25,179	219,712
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	509	945	1,188	659	1,355	1,955	906	552	987	1,036	397	911	11,400
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(21)	(22)	(23)	(22)	(21)	(19)	(17)	(20)	(20)	(20)	(22)	(21)	(247)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(15,184)	(25,939)	(26,423)	(25,883)	(23,290)	(29,258)	(20,815)	(44,629)	(31,850)	(19,069)	(30,085)	(33,224)	(325,650)
Telecom	**22,794**	**33,566**	**29,909**	**27,962**	**29,237**	**36,778**	**27,605**	**39,413**	**30,546**	**25,345**	**33,291**	**47,988**	**384,454**

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total Fiscal 2013
Distribution-Operation supervi - Required By Law, Safety 8700-04002	52,705	-	356	12,679	64,038	6,056	6,318	53,001	765	-	60,623	(11,413)	245,028
Distribution-Operation supervi - Safety 8700-04018	0	0	123	-	-	-	125	-	-	-	-	-	248
Distribution-Operation supervi - Promo Other, Misc 8700-04021	0	70	-	-	-	-	-	-	-	-	-	-	70
Sales-Advertising expenses - Promo Other, Misc 9130-04021	0	0	0	0	268	-	-	-	-	-	-	4,465	4,733
Customer service-Operating ass - Community Rel&Trade Shows 9080-04040	0	0	0	2,000	-	-	-	-	-	-	-	-	2,000
Sales-Supervision - Community Rel&Trade Shows 9110-04040	0	0	0	500	-	-	-	-	-	-	-	-	500
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	89	60	-	-	400	24	192	453	89	-	20,878	1,106	23,291
Mains and Services Expenses - Community Rel&Trade Shows 8740-04040	0	0	0	0	0	0	0	0	35	-	-	-	35
Customer service-Miscellaneous - Customer Relations & Assist 9100-04046	13	80	7	161	153	94	92	88	7	-	-	799	1,496
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	(205)	-	-	-	-	-	-	-	-	-	-	2,294	2,088
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	0	0	0	0	0	0	0	0	0	0	4,861	4,861
Marketing	52,601	210	486	15,241	64,859	6,174	6,727	53,543	896	-	81,501	2,111	284,349
Distribution-Operation supervi - Membership Fees 8700-05415	500	-	-	455	255	270	460	310	11,920	143	147	1,190	15,650
Miscellaneous general expenses - Membership Fees 9302-05415	0	0	0	0	0	0	0	0	0	0	0	4,400	4,400
Distribution-Operation supervi - Club Dues - Deductible 8700-05417	548	-	-	-	-	-	498	-	-	-	-	-	1,045
Distribution-Operation supervi - Association Dues 8700-07510	0	6,000	-	-	-	-	270	-	-	-	169	250	6,689
Miscellaneous general expenses - Association Dues 9302-07510	28,816	7,265	7,266	7,517	7,517	7,517	6,403	13,903	6,403	7,653	6,403	16,403	123,071
Dues & Donations	29,865	13,265	7,266	7,972	7,772	7,787	7,631	14,213	18,323	7,796	6,719	22,243	150,854
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	881	1,280	1,739	1,536	1,185	717	868	1,450	240	432	778	466	11,571
Mains and Services Expenses - Postage/Delivery Services 8740-05111	0	0	119	-	-	-	-	-	-	-	-	-	119
Distribution-Measuring and reg - Postage/Delivery Services 8760-05111	0	0	17	-	-	32	-	-	-	-	-	-	49
Distribution-Other expenses - Postage/Delivery Services 8800-05111	0	0	0	0	0	0	0	0	0	0	0	19	19
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	0	0	0	0	15	26	14	-	-	-	-	122	178
Print & Postages	881	1,280	1,875	1,536	1,200	775	882	1,450	240	432	778	606	11,935
Transmission-Operation supervi - Meals and Entertainment 8500-05411	42	-	-	-	-	-	-	-	-	105	-	-	147
Distribution-Operation supervi - Meals and Entertainment 8700-05411	5,579	9,353	7,102	7,796	9,707	15,428	11,932	20,537	4,247	4,333	8,826	19,105	123,947
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	42	-	-	-	101	-	-	-	143
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	12	185	132	147	348	138	-	-	17	-	-	978
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	0	21	66	-	-	-	32	-	-	-	-	24	143
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	20	13	211	758	149	387	-	530	93	-	10	185	2,357
A&G-Office supplies & expense - Transportation 9210-05413	0	444	27	-	514	-	1,559	-	-	-	330	751	3,625
Transmission-Operation supervi - Transportation 8500-05413	0	0	0	0	0	0	521	-	-	-	-	-	521
Mains expenses - Transportation 8560-05413	0	0	0	0	0	0	471	-	-	-	-	-	471
Distribution-Operation supervi - Transportation 8700-05413	5,894	12,726	12,753	11,307	19,186	16,326	14,970	14,863	12,859	13,666	12,140	22,402	169,091
Distribution-Other expenses - Transportation 8800-05413	0	0	180	-	41	-	20	-	-	-	-	-	241
Customer accounts-Customer rec - Transportation 9030-05413	0	191	186	709	2,785	1,634	95	419	-	842	-	-	6,861
A&G-Office supplies & expense - Lodging 9210-05414	0	223	-	-	-	-	683	-	-	-	-	1,259	2,165
Transmission-Operation supervi - Lodging 8500-05414	327	-	-	-	-	-	286	-	-	-	-	-	613
Mains expenses - Lodging 8560-05414	0	0	0	0	0	0	281	-	-	-	-	-	281
Distribution-Operation supervi - Lodging 8700-05414	5,970	8,618	5,014	7,230	12,687	19,545	22,829	11,481	11,884	8,549	13,887	19,815	147,508
Distribution-Other expenses - Lodging 8800-05414	0	0	0	0	153	-	-	291	206	-	175	-	825
Customer accounts-Customer rec - Lodging 9030-05414	0	144	554	1,574	836	1,861	422	-	-	281	-	-	5,673
Distribution-Operation supervi - Misc Employee Expense 8700-05419	266	1,758	502	499	173	967	563	1,284	145	19	756	36	6,966
Distribution-Other expenses - Misc Employee Expense 8800-05419	0	0	0	2,250	-	-	-	-	-	-	-	-	2,250
Travel & Entertainment	18,097	33,503	26,780	32,255	46,420	56,496	54,802	49,405	29,535	27,812	36,124	63,577	474,806
Distribution-Operation supervi - Employee Development 8700-05420	450	760	495	510	954	-	11,155	825	1,012	850	845	2,785	20,642
Mains expenses - Training 8560-05421	0	0	0	0	0	0	1,600	-	-	-	-	-	1,600
Distribution-Operation supervi - Training 8700-05421	0	225	1,569	502	505	-	1,950	1,100	150	1,220	-	-	7,220
Miscellaneous general expenses - Training 9302-05421	0	0	0	0	0	0	0	0	0	0	0	795	795
Distribution-Operation supervi - Books & Manuals 8700-05424	163	-	610	-	737	356	-	-	-	-	-	-	1,866
Distribution-Operation supervi - Safety Training 8700-05426	0	4,263	1,557	4,867	1,674	3,317	523	1,051	853	1,056	2,492	3,531	25,183
Distribution-Operation supervi - Technical (Job Skills) Training 8700-05427	0	0	0	0	0	0	0	125	-	-	-	-	125
Distribution-Operation supervi - Work Environment Training 8700-05429	15	-	-	-	-	-	-	300	-	-	-	8	323
Training	628	5,248	4,231	5,879	3,869	3,673	15,229	3,401	2,015	3,126	3,337	7,119	57,754
A&G-Outside services employed - Contract Labor 9230-06111	0	0	0	0	935	117	101	4,886	1,312	1,158	351	1,936	10,794
A&G-Regulatory commission expe - Contract Labor 9280-06111	0	0	0	0	0	0	9,395	-	-	-	-	-	9,395
Mains expenses - Contract Labor 8560-06111	0	200	-	-	-	-	-	-	-	-	-	-	200
Transmission-Maintenance of me - Contract Labor 8650-06111	0	0	0	0	0	0	0	0	7,425	7,150	-	-	14,575
Transmission-Maintenance of st - Contract Labor 8670-06111	0	0	0	0	0	0	0	0	825	-	-	-	825
Distribution-Operation supervi - Contract Labor 8700-06111	871	1,809	2,143	5,945	4,042	1,304	3,932	1,721	4,779	1,708	1,325	20,174	49,754
Mains and Services Expenses - Contract Labor 8740-06111	0	0	0	4,651	-	-	-	900	-	-	-	-	5,551
Customer accounts-Customer rec - Collection Fees 9030-06112	95,260	87,924	96,931	109,284	141,821	84,778	130,240	58,686	58,055	51,219	102,566	46,808	1,061,572
Customer accounts-Customer rec - Bill Print Fees 9030-06116	179,131	166,887	155,266	189,105	175,829	184,093	242,025	116,440	119,985	130,646	122,931	127,088	1,909,435
A&G-Outside services employed - Legal 9230-06121	8,619	9,418	4,673	8,874	7,384	7,886	12,225	-	42,824	192,400	(191,897)	12,121	114,526
Outside Services	283,882	266,238	259,013	317,858	330,010	278,177	397,919	180,633	235,215	384,280	35,276	208,126	3,175,626
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	0	0	0	0	0	0	0	0	0	0	0	(4,630)	(4,630)
Provision for Bad Debt	0	0	0	0	0	0	0	0	0	0	0	(4,630)	(4,630)
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(5,148)	(5,490)	(10,219)	(3,906)	(2,970)	(3,621)	(4,806)	(4,547)	5,870	(3,807)	(2,165)	(2,325)	(43,233)
Distribution-Operation supervi - Land Rights 8700-04889	0	0	0	5	-	-	-	-	-	-	-	-	5
A&G-Office supplies & expense - Misc General Expense 9210-07590	0	0	0	0	0	0	(1,013)	-	-	-	-	-	(1,013)
A&G-Employee pensions and bene - Misc General Expense 9260-07590	0	0	0	663	8	-	-	-	-	-	-	-	670
Distribution-Operation supervi - Misc General Expense 8700-07590	129	1,203	123	6,991	369	87	1,459	408	(626)	(35)	(128)	7,486	17,464
Mains and Services Expenses - Misc General Expense 8740-07590	4,908	(4,908)	2,797	(2,797)	252	2,999	(3,250)	2,794	2,932	(5,727)	0	(2)	(2)
A&G-Office supplies & expense - Use only for HR exp default ***Forme 9210-09195	0	0	847	-	-	-	(847)	0	0	0	0	0	-
Distribution-Operation supervi - Taxes Other Than Inc Tax 8700-09345	0	0	0	0	0	0	0	400	-	-	-	-	400
Distribution-Operation supervi - Reimbursements 8700-09911	0	0	0	0	(116,908)	780	-	-	-	-	-	-	(116,128)
Miscellaneous	(112)	(9,195)	(6,452)	956	(119,229)	245	(8,457)	(945)	8,176	(9,669)	(2,293)	5,159	(141,817)
Total O&M Expenses Before Allocations	440,584	572,862	914,246	808,541	862,382	605,386	773,632	874,512	792,265	801,424	605,619	1,420,781	9,572,235

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Customer accounts-Customer rec - Non-project Labor 9030-01000	10,662	21,916	14,417	14,611	14,182	14,531	13,431	19,664	12,146	12,387	13,416	13,109	174,471
Sales-Supervision - Non-project Labor 9110-01000	2,773	8,343	5,562	5,562	5,562	5,562	5,562	8,343	5,562	5,562	5,562	5,562	69,517
Distribution-Operation supervi - Non-project Labor 8700-01000	140,454	192,089	129,662	130,487	132,537	133,670	137,416	206,425	136,485	133,562	136,058	138,231	1,747,096
Distribution-Measuring and reg - Non-project Labor 8750-01000	0	0	0	0	0	0	0	0	0	101	-	-	101
Distribution-Other expenses - Non-project Labor 8800-01000	0	0	0	0	0	0	0	333	-	-	-	-	333
Distribution-Operation supervi - Capital Labor 8700-01001	231,464	354,918	233,115	237,358	237,910	233,967	238,807	352,937	240,488	236,734	237,806	241,034	3,076,538
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(224,710)	(325,546)	(226,033)	(229,418)	(226,686)	(223,748)	(229,487)	(344,756)	(228,785)	(225,687)	(228,500)	(230,876)	(2,944,231)
Mains expenses - O&M Project Labor and Contra 8560-01006	0	538	2,076	1,076	-	692	77	77	-	77	-	-	4,613
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	1,446	(2,135)	1,401	452	1,401	362	1,401	1,853	4,655	2,124	(7,318)	1,220	6,862
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	0	0	0	0	0	0	0	0	0	46	(46)	0	-
Distribution-Other expenses - Expense Labor Accrual 8800-01008	0	0	0	0	0	0	0	56	(56)	0	0	0	-
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	4,601	(3,811)	1,394	2,259	(214)	901	738	(5,453)	367	1,930	1,134	1,158	5,003
Sales-Supervision - Expense Labor Accrual 9110-01008	1,941	(551)	556	834	-	278	556	(2,225)	278	834	278	556	3,337
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	14,418	(64,694)	12,422	19,961	1,025	7,747	14,731	(54,320)	6,103	19,526	7,815	15,072	(193)
Distribution-Operation supervi - PTO Accrual 8700-01010	0	0	17,879	-	-	-	-	-	(16,501)	-	-	2,819	4,197
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	208,951	298,522	208,789	211,402	210,386	207,870	212,315	318,999	211,614	210,685	213,190	214,725	2,727,448
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(215,705)	(327,894)	(215,871)	(219,342)	(221,610)	(218,090)	(221,635)	(327,180)	(223,316)	(221,733)	(222,496)	(224,883)	(2,859,755)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	0	1,446	407	316	633	813	136	1,130	271	362	271	813	6,598
Mains expenses - Expense Labor Transfer In 8560-01013	0	538	2,076	1,076	-	1,192	77	77	-	77	-	-	5,112
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	(1,446)	2,135	(1,401)	(452)	(1,401)	(362)	(1,401)	(1,853)	(4,655)	(2,124)	7,318	(1,220)	(6,862)
Mains expenses - Expense Labor Transfer Out 8560-01014	0	(538)	(2,076)	(1,076)	-	(692)	(77)	(77)	-	(77)	-	-	(4,613)
Labor	**174,850**	**155,277**	**184,375**	**175,106**	**153,724**	**164,694**	**172,647**	**174,030**	**144,655**	**174,406**	**164,489**	**177,321**	**2,015,573**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	19,233	16,862	18,041	19,108	16,840	17,896	18,968	19,011	17,697	19,136	18,064	19,106	219,963
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	31,298	27,439	29,358	31,095	27,403	29,121	30,866	30,935	28,798	31,140	29,395	31,090	357,940
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(6,516)	6,784	3,303	(8,237)	8,364	12,793	9,563	(18,708)	9,409	3,733	8,365	6,092	34,945
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(56,833)	(38,680)	(43,130)	(64,725)	(37,982)	(27,144)	(34,651)	(67,879)	(29,766)	(42,499)	(30,792)	(37,198)	(511,279)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	743	68	(660)	(3,604)	493	1,667	682	(6,097)	1,006	(585)	678	58	(5,551)
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	27,876	25,924	26,288	30,955	27,020	23,758	25,572	25,666	23,147	26,432	23,232	25,177	311,047
Customer accounts-Customer rec - SERP Regulated Asset O&M 9030-01228	794	-	-	-	-	-	-	-	-	-	-	-	794
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	33,746	29,586	31,655	33,527	29,547	31,399	33,280	33,355	31,061	33,576	31,694	33,522	385,936
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(33,083)	(56,371)	(27,399)	(59,034)	(41,378)	(34,349)	(34,798)	(43,842)	(8,649)	1,682	(21,841)	(20,725)	(379,786)
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	0	384	480	269	122	388	41	234	52	85	52	157	2,266
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	9,792	8,584	9,185	9,728	8,573	9,111	9,656	9,678	9,010	9,742	9,196	9,727	111,981
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	(19,161)	(14,501)	(16,400)	(19,092)	(18,838)	(10,735)	(16,520)	(21,323)	(13,993)	(12,598)	(10,414)	(15,814)	(189,389)
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	0	110	138	77	35	111	12	67	15	24	15	45	650
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	1,399	1,226	1,312	1,390	1,225	1,302	1,379	1,383	1,287	1,392	1,314	1,389	15,997
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	(8,044)	(7,473)	(7,582)	809	(7,657)	(6,868)	(7,351)	(7,703)	(6,733)	(7,985)	(6,716)	(7,243)	(80,565)
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	0	9	11	6	3	9	1	6	1	2	1	4	54
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	1,049	920	984	1,042	919	976	1,035	1,037	965	1,044	985	1,042	11,998
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	(4,053)	(2,215)	(3,474)	(4,035)	(3,064)	(2,653)	(2,814)	(1,968)	(2,222)	(2,567)	(2,057)	(2,363)	(33,486)
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	0	11	14	8	4	11	1	7	2	2	2	5	66
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	874	766	820	869	765	813	862	864	804	870	821	868	9,998
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	(154)	393	270	(239)	(2,407)	723	546	(666)	(2,433)	291	544	(602)	(3,734)
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	0	11	13	7	3	11	1	6	1	2	1	4	62
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	1,399	1,226	1,312	1,390	1,225	1,302	1,379	1,383	1,287	1,392	1,314	1,390	15,997
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(923)	(72)	(262)	(1,123)	(4,207)	463	144	(1,628)	(1,243)	(247)	193	(1,533)	(10,438)
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	0	15	19	11	5	15	2	9	2	3	2	6	90
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	0	219	274	154	70	221	23	133	30	48	30	90	1,292
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	0	354	443	249	113	358	38	216	48	78	48	145	2,091
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	0	55	69	39	18	56	6	33	8	12	8	23	324
Benefits	**(563)**	**1,635**	**25,084**	**(29,355)**	**7,214**	**50,735**	**37,922**	**(45,792)**	**59,582**	**64,207**	**54,135**	**44,463**	**269,265**
A&G-Employee pensions and bene - Service Awards 9260-07421	15,708	7,265	1,884	1,135	12,647	6,430	13,770	9,535	15,094	8,035	7,455	12,649	111,607
Distribution-Operation supervi - Service Awards 8700-07421	0	0	98	-	-	-	-	-	-	-	-	-	98
Distribution-Operation supervi - Uniforms 8700-07443	0	0	193	44	-	-	25	26	26	-	-	-	315
Mains and Services Expenses - Uniforms 8740-07443	0	0	0	0	0	0	0	0	0	148	-	-	148
A&G-Employee pensions and bene - Uniforms 9260-07443	0	0	0	106	-	-	-	-	-	-	-	-	106
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	0	0	0	(70)	-	-	-	-	-	-	-	-	(70)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	0	0	(69)	(16)	-	-	(23)	(9)	(10)	-	-	-	(127)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	0	0	0	0	0	0	0	0	0	(71)	-	-	(71)
A&G-Employee pensions and bene - Capitalized Restricted Stock 9260-07450	(9,629)	(10,956)	(11,283)	(11,299)	(10,190)	(11,270)	(24,745)	(56,717)	(28,352)	(10,560)	(10,543)	(11,950)	(207,493)
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	132,000	194,017	282,741	371,000	133,878	46,244	905,726	-	-	-	(141)	-	2,065,466
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	(72,000)	(102,000)	(153,700)	(202,000)	(73,853)	(23,294)	(494,258)	-	-	-	-	-	(1,121,105)
A&G-Employee pensions and bene - Restricted Stock - Long Term Incentl 9260-07458	9,691	12,005	12,405	12,405	11,204	12,405	41,289	61,741	47,870	8,116	10,678	13,686	253,493
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	9,034	8,742	9,034	9,034	8,159	9,034	8,742	56,248	9,226	9,534	9,534	9,226	155,546
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	791	901	890	890	804	890	861	890	861	890	890	861	10,418
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	707	707	707	707	707	707	707	707	707	(10,925)	849	849	(2,865)
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	18,124	18,124	18,124	18,124	18,124	18,124	18,124	18,124	18,124	18,124	18,124	18,124	217,492
A&G-Employee pensions and bene - SERP Capitalized 9260-07490	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(5,727)	(68,719)
A&G-Outside services employed - Misc Employee Welfare Exp 9230-07499	(25)	-	-	-	-	-	-	-	-	-	-	-	(25)
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	0	0	0	172	-	-	-	-	-	-	-	-	172
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	1,511	936	1,474	1,744	1,183	1,458	1,808	2,216	1,605	1,074	1,843	1,615	18,467
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	483	125	1,930	5,502	835	55	496	700	231	501	-	268	11,125
Employee Welfare	**100,668**	**124,140**	**158,701**	**201,751**	**97,771**	**55,056**	**466,796**	**87,733**	**59,658**	**19,140**	**32,960**	**39,601**	**1,443,976**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	733	733	1,148	768	768	644	644	644	644	644	644	644	8,657
A&G-Injuries & damages - Insurance-Other 9250-04070	0	0	0	0	0	0	0	15,702	1,808	1,808	1,808	1,808	22,933
A&G-Property insurance - Insurance-Other 9240-04070	1,759	1,759	3,278	1,759	1,759	1,759	1,759	(13,830)	0	0	0	0	-
A&G-Property insurance - Insurance Capitalized 9240-04072	(1,416)	(1,382)	(2,456)	(1,338)	(1,320)	(1,338)	(1,353)	(1,421)	(1,445)	(1,434)	(1,460)	(1,437)	(17,601)
Distribution-Operation supervi - Environmental & Safety 8700-07120	7,814	-	191	750	-	25	1,186	958	-	5,865	4,372	12,785	33,946
Insurance	**8,890**	**1,109**	**2,162**	**1,939**	**1,207**	**1,090**	**2,236**	**2,053**	**1,006**	**6,882**	**5,363**	**13,799**	**47,735**
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(51)	-	-	(72)	(4)	-	(461)	(415)	(186)	(44)	(84)	(229)	(1,547)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(41,928)	(42,812)	(42,070)	(42,325)	(41,142)	(39,262)	(39,303)	(29,492)	(38,053)	(38,164)	(37,752)	(37,783)	(470,086)

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Storage well royalties - Building Lease/Rents 8250-04581	788	-	-	1,149	163	-	2,626	2,461	694	137	300	1,441	9,759
Distribution-Rents - Building Lease/Rents 8810-04581	70,403	70,024	70,051	70,051	68,983	64,190	64,764	49,153	62,139	62,286	62,414	62,414	776,870
A&G-Rents - Building Maintenance 9310-04582	4	4	4	4	-	4	4	5	4	10	5	-	48
Distribution-Operation supervi - Building Maintenance 8700-04582	0	0	0	0	0	0	113	239	30	-	25	-	406
Distribution-Rents - Building Maintenance 8810-04582	3,175	3,527	2,503	2,788	2,056	4,259	3,401	4,877	3,285	3,583	5,667	5,574	44,695
Mains and Services Expenses - Railroad easements and crossings 8740-04585	0	0	0	0	0	87	-	-	-	-	-	-	87
Distribution-Rents - Utilities 8810-04590	(28)	-	-	-	-	-	-	-	-	-	-	-	(28)
Transmission-Measuring and reg - Utilities 8570-04590	89	49	77	80	87	87	81	75	81	90	91	87	973
Lines expenses - Utilities 8170-04590	45	39	38	40	43	43	41	38	40	45	45	43	501
Compressor station expenses - Utilities 8180-04590	312	275	269	279	303	304	284	264	282	313	318	303	3,508
Compressor station fuel and po - Utilities 8190-04590	5,775	1,412	78	32	976	592	486	78	14	110	799	4,427	14,780
Storage-Purification expenses - Utilities 8210-04590	93	105	463	662	1,026	974	665	240	170	141	22	4	4,565
Distribution-Operation supervi - Utilities 8700-04590	3,954	3,210	3,656	3,304	3,180	3,125	3,417	3,351	2,338	3,833	4,697	3,845	41,910
Mains and Services Expenses - Utilities 8740-04590	410	406	403	417	416	384	396	490	422	390	432	411	4,976
Storage-Other expenses - Utilities 8240-04590	4	21	38	-	124	136	44	-	24	5	4	4	403
Storage well royalties - Utilities 8250-04590	340	1,070	2,102	2,772	4,606	3,851	2,583	1,435	272	414	396	361	20,201
Mains expenses - Utilities 8560-04590	401	290	346	359	389	391	366	339	362	403	409	390	4,446
Transmission-Measuring and reg - Misc Rents 8570-04592	0	0	0	0	0	0	0	29	-	-	-	-	29
Distribution-Rents - Misc Rents 8810-04592	0	0	0	2,980	314	-	-	-	-	-	-	-	3,294
Distribution-Rents - Capitalized Utility Costs 8810-04599	(2,651)	(2,979)	(2,099)	(2,368)	(1,747)	(3,618)	(2,889)	(4,109)	(2,756)	(3,044)	(3,826)	(2,996)	(35,083)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(2,789)	(2,146)	(2,550)	(2,127)	(2,081)	(2,211)	(2,427)	(2,493)	(1,479)	(2,567)	(3,507)	(2,741)	(29,119)
Mains expenses - Capitalized Utility Costs 8560-04599	(337)	(298)	(294)	(305)	(331)	(333)	(311)	(288)	(308)	(342)	(348)	(331)	(3,823)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(262)	(234)	(228)	(237)	(257)	(259)	(242)	(224)	(239)	(266)	(270)	(257)	(2,976)
Rent, Maint., & Utilities	**37,748**	**31,964**	**32,786**	**37,481**	**37,105**	**32,746**	**33,619**	**26,052**	**27,135**	**27,331**	**29,837**	**34,965**	**388,769**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	9,509	8,278	8,414	8,405	8,089	7,796	9,804	8,702	8,350	(901)	9,029	9,466	94,940
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(113)	(56)	(128)	(38)	(187)	(100)	(170)	(145)	(2,497)	(47)	(4,986)	(155)	(8,624)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(11,780)	(11,892)	(11,150)	(11,068)	(9,030)	(11,018)	(13,533)	(11,049)	(10,970)	(6,860)	(14,412)	(12,466)	(135,226)
Distribution-Measuring and reg - Capitalized transportation costs 8750-03003	(18)	-	-	-	-	-	-	-	-	-	-	(14)	(31)
Distribution-Operation supervi - Vehicle Expense 8700-03004	201	67	175	64	247	144	186	196	5,350	69	5,852	309	12,860
Mains and Services Expenses - Vehicle Expense 8740-03004	8,348	8,859	8,472	7,896	4,992	8,193	9,709	7,201	7,379	10,047	11,881	9,019	102,095
Distribution-Measuring and reg - Vehicle Expense 8750-03004	37	-	-	-	-	-	-	-	-	-	-	29	67
Mains and Services Expenses - Equipment Lease 8740-04301	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	1,219	16	16	3,625	14,630
Mains and Services Expenses - Heavy Equipment 8740-04302	228	80	148	4,316	167	289	293	1,482	399	304	575	218	8,501
Distribution-Operation supervi - Heavy Equipment 8700-04302	0	0	0	0	0	0	31	-	-	-	-	-	31
Distribution-Operation supervi - Heavy Equipment Capitalized 8700-04307	0	0	0	0	0	0	(30)	-	-	-	-	-	(30)
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(1,418)	(1,273)	(1,340)	(5,425)	(1,359)	(1,478)	(1,482)	(2,848)	(1,585)	(314)	(579)	(3,767)	(22,668)
Vehicles & Equip	**6,214**	**5,281**	**5,811**	**5,371**	**4,137**	**5,046**	**6,026**	**4,959**	**7,644**	**2,314**	**7,476**	**6,265**	**68,543**
Distribution-Operation supervi - Inventory Materials 8700-02001	0	55	-	-	-	-	-	-	-	-	-	-	55
Distribution-Operation supervi - Warehouse Loading Charge 8700-02004	0	2	-	-	-	-	-	-	-	-	-	-	2
Odorization - Non-Inventory Supplies 8711-02005	7,491	-	2,230	-	128	12,449	-	13,953	-	1,028	12,216	2,990	52,486
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	192	-	-	-	1,505	540	1,519	176	137	860	1,226	2,165	8,321
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	1,839	538	513	1,026	2,284	9,142	7,552	11,222	3,505	6,835	4,917	3,507	52,880
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	0	1,382	-	-	-	-	-	-	-	-	-	-	1,382
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	1,817	17,164	-	-	141	-	-	287	17	3,346	(32)	-	22,741
Meter and house regulator expe - Non-Inventory Supplies 8780-02005	0	184	-	-	-	-	-	-	-	-	-	-	184
Distribution-Maint of mains - Non-Inventory Supplies 8870-02005	0	0	791	-	-	-	-	-	-	-	-	-	791
Distribution-Maintenance of ot - Non-Inventory Supplies 8940-02005	0	0	0	0	0	58	-	64	-	-	18	-	140
Mains expenses - Non-Inventory Supplies 8560-02005	0	0	65	-	-	-	166	-	-	-	73	-	303
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	0	15	15	15	27	27	-	-	-	-	16	15	130
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	39	62	579	31	381	4,079	105	2,668	311	199	63	125	8,642
Distribution-Operation supervi - Office Supplies 8700-05010	9,906	4,625	5,221	7,499	6,634	9,020	6,276	2,775	9,102	7,286	9,685	7,639	85,869
Mains and Services Expenses - Office Supplies 8740-05010	0	0	600	-	-	-	-	32	-	-	-	-	632
Meter and house regulator expe - Office Supplies 8780-05010	0	20	-	-	120	-	20	-	-	5	-	-	164
Distribution-Other expenses - Office Supplies 8800-05010	0	0	0	0	0	0	0	113	-	-	-	-	113
Materials & Supplies	**21,283**	**24,247**	**10,014**	**8,571**	**11,221**	**35,316**	**15,638**	**31,290**	**13,073**	**19,560**	**28,181**	**16,442**	**234,835**
A&G-Maintenance of general pla - Software Maintenance 9320-04201	0	0	0	0	0	0	0	0	394	-	-	-	394
Distribution-Operation supervi - Software Maintenance 8700-04201	1,178	1,218	4,065	10,011	14,621	14,201	5,151	414	4,602	593	320	6,883	63,256
Distribution-Operation supervi - IT Equipment 8700-04212	0	365	69	9,956	-	1,466	760	525	-	1,957	1,002	917	17,016
Customer accounts-Customer rec - IT Equipment 9030-04212	0	0	0	0	0	0	0	0	16	-	-	-	16
Information Technologies	**1,178**	**1,583**	**4,134**	**19,967**	**14,621**	**15,667**	**5,910**	**939**	**5,012**	**2,550**	**1,321**	**7,800**	**80,683**
Mains and Services Expenses - Monthly Lines and service 8740-05310	36	36	36	36	36	33	5	53	7	53	7	57	395
Distribution-Operation supervi - Monthly Lines and service 8700-05310	1,813	3,416	1,809	4,190	1,747	2,258	2,698	3,650	2,740	1,916	3,645	3,689	33,571
Distribution-Operation supervi - Long Distance 8700-05312	733	403	335	287	465	369	415	391	483	355	430	438	5,105
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	214	131	131	130	132	131	131	130	131	130	129	130	1,649
Distribution-Operation supervi - Telecom Maintenance & Repair 8700-05316	1,827	-	188	719	-	1,609	693	-	8,149	4,662	4,379	(949)	21,278
Distribution-Operation supervi - Telephone Directory 8700-05317	9,716	4,657	5,614	4,143	-	3,590	6,059	3,900	4,365	14,122	-	8,656	64,823
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	5,504	5,374	5,231	9,716	2,906	2,674	2,723	2,643	2,967	1,378	1,491	1,367	43,975
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	16,304	18,831	16,556	16,490	17,772	16,368	13,997	17,259	17,123	16,052	15,748	16,804	199,306
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	69	9,606	11,099	-	14,635	2,835	14,657	7,398	7,747	7,340	5,535	9,274	90,194
Distribution-Operation supervi - Cell service for data uses 8700-05376	(2,262)	15,884	18,408	9,363	26,803	5,040	35,616	14,623	13,757	11,288	10,428	12,941	171,888
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	1,302	1,441	528	360	222	126	441	355	199	1,176	899	757	7,807
Sales-Supervision - Cell phone equipment and accessories 9110-05377	0	0	53	-	-	-	-	-	-	-	-	70	123
Sales-Supervision - Capitalized Telecom Costs 9110-05399	0	0	(29)	-	-	-	-	-	-	-	-	(41)	(71)
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(20)	(20)	(20)	(19)	(19)	(18)	(3)	(30)	(4)	(31)	(4)	(33)	(222)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(11,364)	(27,585)	(27,204)	(16,699)	(32,277)	(16,001)	(38,662)	(24,737)	(29,671)	(25,126)	(24,538)	(25,258)	(299,122)
Telecom	**23,873**	**32,175**	**32,715**	**28,716**	**32,423**	**19,014**	**38,771**	**25,635**	**27,994**	**33,337**	**18,148**	**27,901**	**340,700**
Mains and Services Expenses - Required By Law, Safety 8740-04002	0	0	0	0	0	0	0	210	-	-	-	-	210
Distribution-Operation supervi - Required By Law, Safety 8700-04002	(1,607)	37,716	5	37,673	45,978	6,851	4,841	48,024	26	47,015	58,278	2,771	287,770
Distribution-Operation supervi - Safety 8700-04018	0	27	-	-	-	-	-	-	-	-	-	-	27
Sales-Advertising expenses - Promo Other, Misc 9130-04021	0	0	0	1,745	-	-	-	-	-	-	-	1,581	3,327
Sales-Supervision - Community Rel&Trade Shows 9110-04040	0	0	0	0	0	0	0	22	-	-	-	-	22
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	47	-	385	1,700	-	-	334	1,169	108	31	5,278	389	9,439

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total Fiscal 2014
Sales-Advertising expenses - Advertising 9130-04044	0	0	0	0	770	-	1,739	870	-	1,022	-	-	4,401
Customer service-Miscellaneous - Customer Relations & Assist 9100-04046	117	6	155	7	(2)	76	5	79	79	153	7	155	841
Sales-Supervision - Customer Relations & Assist 9110-04046	0	0	0	0	0	0	0	0	0	0	0	500	500
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	215	-	-	-	1,050	-	-	-	-	-	-	2,378	3,642
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	0	0	0	0	379	213	134	521	-	-	2,916	4,163
Marketing	(1,228)	37,749	545	41,326	47,796	7,308	7,132	50,507	735	48,221	63,563	10,689	314,343
Distribution-Operation supervi - Membership Fees 8700-05415	308	400	99	758	700	506	84	694	964	684	25	730	5,951
Miscellaneous general expenses - Membership Fees 9302-05415	0	0	0	0	0	50	-	-	-	-	-	4,400	4,450
Customer accounts-Customer rec - Club Dues - Deductible 9030-05417	0	0	0	0	0	0	0	0	150	-	-	-	150
Distribution-Operation supervi - Club Dues - Deductible 8700-05417	0	0	0	0	0	0	498	-	-	-	-	-	498
Distribution-Other expenses - Club Dues - Deductible 8800-05417	498	-	-	-	-	-	-	-	-	-	-	-	498
Distribution-Operation supervi - Association Dues 8700-07510	0	0	0	0	0	0	0	0	0	0	50	-	50
Miscellaneous general expenses - Association Dues 9302-07510	6,527	6,527	6,527	6,772	6,772	6,772	6,772	14,272	6,772	6,772	16,772	6,772	98,025
Dues & Donations	7,332	6,927	6,626	7,530	7,472	7,327	7,353	14,966	7,886	7,456	16,847	11,901	109,622
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	299	295	1,068	903	852	729	467	573	1,122	978	1,682	1,815	10,782
Distribution-Other expenses - Postage/Delivery Services 8800-05111	89	-	-	-	-	-	-	-	-	-	-	-	89
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	0	0	29	22	-	9	-	-	-	-	-	-	60
Customer service-Miscellaneous - Postage/Delivery Services 9100-05111	0	0	0	0	27	-	-	-	-	-	-	-	27
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	0	0	0	0	0	0	0	0	0	78	-	-	78
Print & Postages	388	295	1,097	924	878	737	467	573	1,122	1,055	1,682	1,815	11,035
Transmission-Operation supervi - Meals and Entertainment 8500-05411	0	0	0	0	0	34	-	-	-	-	-	-	34
Mains expenses - Meals and Entertainment 8560-05411	0	0	11	55	-	8	-	-	-	-	-	-	74
Distribution-Operation supervi - Meals and Entertainment 8700-05411	1,818	7,143	14,164	22,168	4,477	10,193	7,025	12,279	5,932	12,793	10,967	20,092	129,050
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	27	-	-	7	-	139	36	-	-	-	209
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	0	0	0	0	0	0	0	36	-	-	62	97
Sales-Supervision - Meals and Entertainment 9110-05411	0	0	1,052	-	455	1,575	-	920	-	-	-	1,059	5,061
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	0	0	0	0	31	-	-	-	-	145	-	-	176
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	488	376	456	12	-	124	42	-	-	-	445	577	2,520
Sales-Supervision - Spousal & Dependent Travel 9110-05412	0	0	17	-	-	-	-	13	-	-	-	-	30
A&G-Office supplies & expense - Transportation 9210-05413	0	0	0	0	1,429	-	-	-	504	140	-	-	2,072
Transmission-Operation supervi - Transportation 8500-05413	0	0	448	-	-	-	-	-	-	-	-	-	448
Mains expenses - Transportation 8560-05413	0	0	448	36	-	-	-	-	-	-	-	-	484
Distribution-Operation supervi - Transportation 8700-05413	5,447	8,513	14,398	8,944	13,174	12,691	17,337	9,595	6,577	10,742	11,141	14,381	132,939
Distribution-Other expenses - Transportation 8800-05413	0	0	0	0	0	83	77	428	113	80	-	-	780
Customer accounts-Customer rec - Transportation 9030-05413	0	0	448	-	218	-	-	-	1,117	-	320	1,340	3,444
Sales-Supervision - Transportation 9110-05413	0	0	2,154	-	-	2,661	-	2,506	-	-	-	3,708	11,030
Sales-Supervision - Lodging 9110-05414	0	0	965	-	-	1,109	-	2,504	-	-	-	2,161	6,738
A&G-Office supplies & expense - Lodging 9210-05414	0	0	0	0	333	-	-	182	-	182	-	-	697
Mains expenses - Lodging 8560-05414	0	0	0	336	-	513	-	-	-	-	-	-	848
Distribution-Operation supervi - Lodging 8700-05414	4,191	6,339	11,725	17,522	6,249	10,691	11,725	12,631	6,103	11,882	10,291	13,118	122,466
Mains and Services Expenses - Lodging 8740-05414	0	124	-	-	-	103	-	-	-	-	-	-	227
Distribution-Other expenses - Lodging 8800-05414	0	0	349	-	-	206	-	687	-	-	-	-	1,243
Customer accounts-Customer rec - Lodging 9030-05414	0	0	0	0	288	-	-	-	113	-	270	288	959
Distribution-Operation supervi - Misc Employee Expense 8700-05419	126	7	727	53	148	987	15	400	17,122	60	26	10	19,681
Sales-Supervision - Misc Employee Expense 9110-05419	0	0	0	0	0	17	-	-	-	-	-	-	17
Travel & Entertainment	12,070	22,501	47,391	49,125	26,801	41,002	36,220	42,285	37,652	36,022	33,460	56,794	441,325
Distribution-Operation supervi - Employee Development 8700-05420	0	488	-	26	2,470	263	2,138	973	2,845	350	2,395	1,520	13,467
Distribution-Operation supervi - Training 8700-05421	0	0	1,939	150	402	-	125	1,929	-	-	-	1,526	6,071
Miscellaneous general expenses - Training 9302-05421	1,350	-	-	-	-	-	-	-	-	-	-	2,145	3,495
Distribution-Operation supervi - Books & Manuals 8700-05424	0	0	10	95	57	-	-	408	-	-	-	-	571
Distribution-Operation supervi - Regulatory Compliance Training 8700-05425	0	0	0	0	0	0	245	-	-	-	-	-	245
Distribution-Operation supervi - Safety Training 8700-05426	127	-	532	7,269	2,531	3,980	1,335	4,438	2,769	677	4,054	1,022	28,734
Sales-Supervision - Technical (Job Skills) Training 9110-05427	0	0	0	0	0	0	0	1,780	-	-	-	-	1,780
Training	1,477	488	2,480	7,539	5,460	4,243	3,843	9,528	5,614	1,027	6,449	6,213	54,362
Customer accounts-Customer rec - Contract Labor 9030-06111	0	0	0	0	0	0	0	0	87	-	-	37	124
A&G-Outside services employed - Contract Labor 9230-06111	0	1,002	559	138	58	2,812	-	-	547	-	2,292	4,840	12,248
Distribution-Operation supervi - Contract Labor 8700-06111	679	2,639	697	5,195	1,581	1,240	679	679	679	1,428	1,096	2,183	18,775
Distribution-Measuring and reg - Contract Labor 8770-06111	0	0	0	0	0	0	0	30	-	-	-	-	30
Customer accounts-Customer rec - Collection Fees 9030-06112	59,781	70,218	66,250	80,043	89,818	84,992	79,571	88,713	82,433	75,917	81,369	107,787	966,895
Customer accounts-Customer rec - Bill Print Fees 9030-06116	142,484	122,724	131,882	146,556	154,802	144,505	156,961	149,489	136,678	161,248	158,895	118,723	1,724,946
A&G-Outside services employed - Legal 9230-06121	0	0	10,335	6,271	6,553	19,324	3,900	15,856	7,800	9,814	3,578	20,664	104,095
Outside Services	202,944	196,583	209,724	238,204	252,812	252,872	241,112	254,768	228,224	248,407	247,229	254,234	2,827,113
Customer accounts-Uncollectibl - Cust Uncol Acct-Write Off 9040-09927	0	0	0	0	0	0	0	0	0	0	0	(17)	(17)
Provision for Bad Debt	0	0	0	0	0	0	0	0	0	0	0	(17)	(17)
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(4,020)	(3,611)	(4,407)	(4,944)	(4,209)	(7,214)	(5,086)	(3,387)	(5,771)	(4,873)	(5,608)	(5,056)	(58,186)
Customer accounts-Customer rec - Misc General Expense 9030-07590	0	0	0	0	0	0	0	0	0	0	75	-	75
A&G-Office supplies & expense - Misc General Expense 9210-07590	0	0	0	0	0	0	0	0	0	0	0	97,404	97,404
Distribution-Operation supervi - Misc General Expense 8700-07590	806	-	66	-	231	428	-	-	435	(114)	63	843	2,758
Mains and Services Expenses - Misc General Expense 8740-07590	5,671	1,378	(7,049)	2	306	(306)	2,381	(417)	(1,964)	2,417	1,482	(3,899)	2
Distribution-Measuring and reg - Misc General Expense 8750-07590	0	0	0	0	0	0	0	0	0	7,471	-	-	7,471
Distribution-Measuring and reg - Misc General Expense 8770-07590	0	0	0	0	0	0	0	0	38	-	-	-	38
Distribution-Operation supervi - Reimbursements 8700-09911	0	0	0	(60)	-	-	-	-	-	-	-	-	(60)
Miscellaneous	2,456	(2,233)	(11,390)	(5,003)	(3,671)	(7,092)	(2,705)	(3,803)	(7,263)	4,901	(3,988)	89,293	49,500
Total O&M Expenses Before Allocations	599,581	639,721	712,254	789,192	696,970	685,762	1,072,987	675,722	619,729	696,814	707,150	799,479	8,695,362

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Customer accounts-Customer rec - Non-project Labor 9030-01000	18,012	11,495	11,495	11,495	11,496	11,495	11,495	17,242	11,495	11,495	11,495	10,456	149,163
Sales-Supervision - Non-project Labor 9110-01000	9,991	7,301	7,169	7,169	7,169	7,270	7,169	10,767	7,169	7,246	7,183	7,236	92,838
Distribution-Operation supervi - Non-project Labor 8700-01000	224,698	145,850	146,974	148,067	146,183	145,820	146,650	221,051	153,189	145,771	142,571	144,944	1,911,768
Distribution-Operation supervi - Capital Labor 8700-01001	368,871	238,152	236,540	243,459	231,298	232,064	231,596	365,239	309,824	234,253	239,861	223,383	3,154,539
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(360,969)	(231,678)	(233,914)	(240,538)	(230,599)	(229,639)	(233,396)	(366,149)	(310,981)	(232,001)	(230,244)	(217,637)	(3,117,945)
Mains expenses - O&M Project Labor and Contra 8560-01006	317	-	1,279	959	-	560	-	-	-	-	-	80	3,196
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	1,260	(118)	517	1,777	2,369	5,231	(2,282)	2,517	49	1,097	(4,484)	3,849	11,782
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(4,864)	(128)	1,724	1,149	-	1,149	1,149	(5,173)	1,149	1,724	575	474	(1,069)
Sales-Supervision - Expense Labor Accrual 9110-01008	(1,672)	160	1,042	717	(0)	778	656	(3,224)	715	1,114	328	753	1,366
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	(45,291)	(953)	22,245	15,190	(1,707)	12,886	19,672	(68,284)	14,204	21,710	5,566	15,812	11,070
Distribution-Operation supervi - PTO Accrual 8700-01010	0	0	21,089	-	-	4,426	-	-	(14,566)	-	-	(4,987)	5,962
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	334,622	213,718	216,114	222,739	215,662	214,621	218,422	343,511	295,144	216,867	211,847	202,858	2,906,123
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(342,523)	(220,192)	(218,741)	(225,659)	(216,360)	(217,045)	(216,622)	(342,601)	(293,987)	(219,119)	(221,464)	(208,403)	(2,942,717)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	983	235	282	1,480	543	1,184	691	296	49	99	1,135	3,158	10,137
Mains expenses - Expense Labor Transfer In 8560-01013	317	-	1,279	959	-	560	-	-	-	-	-	80	3,196
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	(1,260)	118	(517)	(1,777)	(2,369)	(5,231)	2,282	(2,517)	(49)	(1,097)	4,484	(3,849)	(11,782)
Mains expenses - Expense Labor Transfer Out 8560-01014	(317)	-	(1,279)	(959)	-	(560)	-	-	-	-	-	(80)	(3,196)
Labor	**202,174**	**163,959**	**213,298**	**186,227**	**163,683**	**185,568**	**187,482**	**172,695**	**173,404**	**189,160**	**168,853**	**177,928**	**2,184,431**
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	17,476	14,244	16,586	15,989	14,193	15,608	16,251	14,999	15,618	16,448	14,591	15,632	187,636
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	26,515	21,612	25,166	24,260	21,534	23,681	24,656	22,757	23,697	24,956	22,139	23,717	284,689
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(19,987)	5,417	4,466	3,679	10,328	1,405	2,279	4,409	(596)	(2,255)	2,971	(85)	12,032
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(66,791)	(35,411)	(40,460)	(40,785)	(25,826)	(47,037)	(37,202)	(36,619)	(40,016)	(44,506)	(33,538)	(38,952)	(487,143)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	(3,127)	(5,554)	(3,287)	(97,927)	(348)	(6,710)	(12,651)	(2,549)	(2,979)	(4,269)	47,459	(3,394)	(95,336)
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	29,021	24,880	26,867	27,699	22,668	30,126	24,726	24,696	24,755	26,346	23,054	24,227	309,065
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	35,354	28,815	33,554	32,346	28,713	31,574	32,675	30,342	31,596	33,275	29,518	31,623	379,586
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(45,854)	1,879	24,577	460	(11,569)	(9,096)	27,176	(22,492)	3,244	21,451	6,879	(8,998)	(12,343)
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	230	41	274	428	95	306	121	52	9	17	199	568	2,341
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	7,834	6,385	7,435	7,168	6,362	6,997	7,265	6,724	7,001	7,373	6,541	7,007	84,113
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	(5,540)	(128)	2,976	1,434	127	1,648	(7)	(667)	(716)	300	276	1,791	1,293
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	53	9	62	96	21	69	27	12	2	4	45	126	527
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	402	327	381	368	326	359	374	345	359	378	335	359	4,313
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	(2,223)	(1,781)	(2,037)	16,963	(1,747)	(1,717)	(2,001)	(1,856)	(1,909)	(2,249)	(1,861)	(1,880)	(4,298)
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	3	0	1	2	0	2	1	0	0	0	1	3	13
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	603	491	572	551	489	536	560	517	539	567	503	539	6,470
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	1,060	846	816	784	702	796	646	2,622	764	776	997	934	11,744
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	5	1	5	7	2	5	2	1	0	0	3	10	41
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	1,004	819	953	919	816	897	934	862	898	945	839	898	10,784
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	(897)	528	433	(549)	864	366	(1,030)	468	256	(1,391)	451	(1,319)	(1,820)
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	7	1	8	13	3	9	4	2	0	1	6	17	71
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	1,607	1,310	1,525	1,470	1,305	1,435	1,494	1,379	1,436	1,512	1,342	1,437	17,254
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(2,122)	80	(99)	(1,741)	622	(305)	(1,609)	(0)	(320)	(2,904)	(8)	(2,761)	(11,368)
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	10	2	12	19	4	13	5	2	0	1	9	25	103
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	123	20	136	213	47	152	60	26	4	9	99	282	1,172
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	190	31	206	321	71	230	91	39	7	13	149	426	1,775
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	35	6	42	65	15	47	19	8	1	3	30	87	358
Benefits	**(25,010)**	**64,871**	**101,174**	**(5,746)**	**69,819**	**51,396**	**84,886**	**45,878**	**63,648**	**76,801**	**123,031**	**52,323**	**703,072**
A&G-Employee pensions and bene - Service Awards 9260-07421	7,535	9,821	5,160	3,899	7,526	5,763	6,017	10,149	9,356	10,085	15,451	1,931	92,693
Distribution-Operation supervi - Service Awards 8700-07421	0	0	260	-	-	-	-	-	-	-	215	-	476
Distribution-Operation supervi - Uniforms 8700-07443	150	-	-	-	-	-	-	-	-	248	98	-	496
Mains and Services Expenses - Uniforms 8740-07443	150	150	-	-	-	-	-	-	1,300	4,414	93	-	6,107
A&G-Employee pensions and bene - Uniforms 9260-07443	334	238	-	150	-	116	192	-	150	-	-	-	1,181
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	(157)	(127)	-	(70)	-	(105)	(174)	-	(103)	-	-	-	(737)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	(70)	-	-	-	-	-	-	-	-	(224)	(88)	-	(383)
Mains and Services Expenses - Uniforms Capitalized 8740-07444	(136)	(137)	-	-	-	-	-	-	(560)	(1,732)	(84)	-	(2,649)
A&G-Employee pensions and bene - Capitalized Restricted Stock 9260-07450	(12,471)	(20,902)	(24,743)	(10,937)	(10,416)	(11,533)	(11,177)	(50,359)	(13,169)	(77,492)	-	-	(243,199)
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	94,000	110,047	225,859	152,000	139,000	123,000	105,000	457,679	135,061	1,258,767	-	-	2,800,413
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	(53,000)	(60,000)	(125,816)	(85,000)	(78,000)	(69,000)	(59,000)	(256,676)	(75,639)	(703,822)	-	-	(1,565,952)
A&G-Employee pensions and bene - Restricted Stock - Long Term Incenti 9260-07458	14,405	14,945	14,405	14,405	13,011	14,405	13,940	44,181	17,601	126,689	-	-	287,986
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	9,534	8,355	26,696	7,763	7,798	8,634	8,355	49,893	8,723	26,750	-	-	162,501
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	890	21,378	5,901	(269)	2	-	-	-	-	-	-	-	27,901
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	849	849	849	849	849	849	849	849	849	849	100	435	9,021
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	17,479	17,479	17,479	17,479	17,479	17,479	17,479	17,479	17,479	17,479	17,479	17,479	209,745
A&G-Employee pensions and bene - SERP Capitalized 9260-07490	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(5,842)	(70,100)
Distribution-Operation supervi - Employee Broadcast and Publication 8700-07495	0	0	0	0	0	0	0	0	0	0	2,873	(694)	2,179
Sales-Supervision - Misc Employee Welfare Exp 9110-07499	0	0	0	0	0	0	0	65	-	-	-	-	65
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	0	0	0	0	0	0	78	-	-	-	-	-	78
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	1,700	1,082	2,278	1,272	1,679	1,772	1,353	1,932	1,194	1,345	1,468	1,397	18,473
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	333	-	2,992	343	300	-	204	293	302	-	190	69	5,026
Mains and Services Expenses - Misc Employee Welfare Exp 8740-07499	0	0	0	0	0	0	0	435	-	-	-	-	435
Employee Welfare	**75,682**	**97,336**	**145,477**	**96,042**	**93,385**	**85,537**	**77,273**	**270,077**	**96,702**	**657,513**	**31,954**	**14,775**	**1,741,754**
A&G-Property insurance - Blueflame Property Insurance 9240-04069	644	644	644	644	644	611	611	611	611	611	611	611	7,493
A&G-Injuries & damages - Insurance-Other 9250-04070	1,808	1,808	1,808	1,808	1,808	1,808	1,947	1,894	1,894	1,894	1,894	1,894	22,265
A&G-Property insurance - Insurance Capitalized 9240-04072	(1,394)	(1,366)	(1,401)	(1,346)	(1,391)	(1,279)	(1,438)	(1,411)	(1,484)	(1,448)	(1,497)	(1,501)	(16,957)
Distribution-Operation supervi - Environmental & Safety 8700-07120	0	0	195	735	410	1,968	1,146	1,275	345	12,420	1,247	15,098	34,840
Distribution-Maintenance of st - Environmental & Safety 8660-07120	0	0	0	0	500	-	-	-	-	-	-	-	500
Insurance	**1,058**	**1,085**	**1,246**	**1,840**	**1,970**	**3,107**	**2,265**	**2,369**	**1,366**	**13,478**	**2,255**	**16,101**	**48,141**
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(138)	307	-	(19)	(21)	-	(140)	(578)	(319)	(33)	(68)	-	(1,010)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(37,389)	(37,315)	(37,289)	(37,260)	(37,159)	(37,890)	(39,725)	(32,932)	(36,249)	(37,119)	(42,146)	(41,941)	(454,413)
Storage well royalties - Building Lease/Rents 8250-04581	788	(360)	-	376	163	-	2,626	2,461	1,055	124	300	-	7,532
Distribution-Rents - Building Lease/Rents 8810-04581	62,374	62,374	62,374	62,374	62,374	63,457	66,853	55,082	60,180	60,220	67,544	67,544	752,749
A&G-Rents - Building Maintenance 9310-04582	10	5	5	5	5	12	5	5	5	5	5	5	73

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Distribution-Rents - Building Maintenance 8810-04582	1,412	4,324	2,938	4,050	4,698	972	4,956	3,582	5,770	4,612	4,472	3,998	45,786
Distribution-Rents - Utilities 8810-04590	(36)	-	-	-	-	-	-	-	-	-	-	-	(36)
Transmission-Measuring and reg - Utilities 8570-04590	88	80	82	79	82	82	82	77	75	83	86	96	992
Lines expenses - Utilities 8170-04590	44	40	41	40	41	41	41	38	38	41	43	48	496
Compressor station expenses - Utilities 8160-04590	309	280	288	277	286	289	286	268	263	290	300	336	3,472
Compressor station fuel and po - Utilities 8190-04590	2,928	588	380	198	277	880	553	1,521	5	-	5	702	8,037
Storage-Purification expenses - Utilities 8210-04590	126	180	187	553	204	778	213	119	151	139	16	129	2,796
Distribution-Operation supervi - Utilities 8700-04590	4,479	3,421	4,474	2,965	3,045	3,519	3,207	3,391	3,252	4,065	5,221	3,870	44,910
Mains and Services Expenses - Utilities 8740-04590	414	474	361	383	424	374	353	435	385	418	471	552	5,043
Storage-Other expenses - Utilities 8240-04590	4	16	163	4	69	58	40	15	5	-	-	3	377
Storage well royalties - Utilities 8250-04590	465	1,230	2,226	3,056	2,328	2,558	1,288	517	273	198	312	255	14,706
Mains expenses - Utilities 8560-04590	397	360	370	356	368	371	368	345	339	373	385	431	4,464
Distribution-Operation supervi - Misc Rents 8700-04592	75	-	-	-	-	-	-	-	-	-	-	-	75
Distribution-Rents - Misc Rents 8810-04592	0	0	0	2,980	314	-	-	-	-	-	-	-	3,294
Distribution-Rents - Capitalized Utility Costs 8810-04599	(1,178)	(3,678)	(2,499)	(3,446)	(3,996)	(627)	(4,216)	(3,048)	(4,909)	(3,924)	(4,016)	(3,401)	(39,137)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(3,164)	(2,361)	(3,206)	(2,031)	(2,099)	(2,378)	(2,199)	(2,218)	(2,058)	(2,736)	(3,694)	(2,672)	(30,815)
Mains expenses - Capitalized Utility Costs 8560-04599	(335)	(306)	(315)	(303)	(313)	(316)	(313)	(294)	(288)	(318)	(346)	(367)	(3,814)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(261)	(238)	(245)	(235)	(243)	(246)	(244)	(228)	(224)	(247)	(269)	(285)	(2,966)
Rent, Maint., & Utilities	31,412	29,420	30,336	34,401	30,845	31,737	34,035	28,559	27,748	26,194	28,622	29,303	362,612
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	10,323	7,995	9,493	9,484	9,454	9,475	9,457	9,458	9,441	11,085	5,296	10,150	111,112
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	(179)	(49)	(218)	(27)	(410)	(93)	(43)	(393)	(413)	(25)	(85)	(63)	(1,999)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(13,146)	(11,406)	(12,729)	(11,183)	(8,912)	(10,511)	(12,804)	(10,226)	(10,889)	(13,121)	(8,242)	(13,828)	(136,998)
Sales-Supervision - Capitalized transportation costs 9110-03003	0	0	0	0	0	0	0	0	(15)	-	-	-	(15)
Distribution-Operation supervi - Vehicle Expense 8700-03004	289	77	362	44	500	153	72	733	471	39	110	97	2,965
Mains and Services Expenses - Vehicle Expense 8740-03004	10,100	9,365	9,616	7,799	4,200	6,764	10,347	6,339	7,091	8,909	8,894	10,953	100,378
Sales-Supervision - Vehicle Expense 9110-03004	0	0	0	0	0	0	0	0	63	-	-	-	63
Mains and Services Expenses - Equipment Lease 8740-04301	1,219	1,219	1,219	1,219	1,219	1,219	16	16	16	16	16	16	7,411
Mains and Services Expenses - Heavy Equipment 8740-04302	3,339	792	5,344	440	306	7,444	39	72	353	496	(50)	413	18,990
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(4,467)	(1,971)	(6,432)	(1,626)	(1,495)	(8,489)	(54)	(87)	(361)	(502)	33	(420)	(25,873)
Vehicles & Equip	7,477	6,022	6,675	6,151	4,862	5,961	7,030	5,914	5,756	6,898	5,972	7,317	76,035
Distribution-Operation supervi - Inventory Materials 8700-02001	0	0	13	-	87	-	-	-	-	-	510	19	629
Odorization - Inventory Materials 8711-02001	0	0	0	0	8,560	-	12,254	-	-	-	-	2,981	23,795
Distribution-Operation supervi - Warehouse Loading Charge 8700-02004	0	0	2	-	10	-	-	-	-	-	102	4	118
Odorization - Warehouse Loading Charge 8711-02004	0	0	0	0	1,027	-	1,470	-	-	-	-	596	3,094
Odorization - Non-Inventory Supplies 8711-02005	0	17,861	156	5,982	-	7,998	3,121	-	157	-	4,310	14,416	54,000
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	1,579	2,194	1,154	1,747	144	774	368	1,214	525	553	577	195	11,023
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	3,774	1,038	511	402	197	271	517	1,497	2,584	292	6,783	1,366	19,234
Distribution-Measuring and reg - Non-Inventory Supplies 8760-02005	0	0	0	0	0	0	0	0	720	-	-	-	720
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	0	2,041	15	16	251	572	16	15	16	-	-	-	2,940
Distribution-Maintenance of ot - Non-Inventory Supplies 8940-02005	67	-	-	5	4	-	-	-	-	-	-	-	77
Mains expenses - Non-Inventory Supplies 8560-02005	27	-	-	-	-	-	-	-	-	-	87	1,213	1,327
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	0	15	-	-	-	-	-	-	-	-	16	-	31
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	156	560	386	98	1,239	125	691	158	155	192	1,314	89	5,162
Sales-Supervision - Office Supplies 9110-05010	4	-	-	-	-	-	-	13	16	-	-	13	47
Distribution-Operation supervi - Office Supplies 8700-05010	5,212	5,667	9,269	13,358	6,470	5,380	7,073	4,845	6,680	5,791	4,248	6,475	80,470
Mains and Services Expenses - Office Supplies 8740-05010	0	0	0	600	-	-	-	-	-	-	-	-	600
Materials & Supplies	10,820	29,377	11,506	22,208	17,990	15,119	25,510	7,743	10,852	6,828	17,946	27,368	203,267
Sales-Supervision - Software Maintenance 9110-04201	0	0	0	327	-	-	-	-	-	-	-	-	327
Distribution-Operation supervi - Software Maintenance 8700-04201	463	1,750	3,718	285	878	6,235	11,222	16,036	14,799	5,176	889	23,900	85,351
Distribution-Operation supervi - IT Equipment 8700-04212	0	258	4,103	1,448	178	288	1,899	38	678	13,639	569	544	23,642
Information Technologies	463	2,008	7,821	2,059	1,056	6,523	13,121	16,075	15,477	18,815	1,458	24,444	109,320
													-
Mains and Services Expenses - Monthly Lines and service 8740-05310	29	29	29	31	7	29	53	31	31	29	29	29	356
Distribution-Operation supervi - Monthly Lines and service 8700-05310	2,010	2,019	3,023	3,250	2,234	2,366	2,148	3,740	1,227	3,222	1,269	3,141	29,648
Distribution-Operation supervi - Long Distance 8700-05312	435	400	358	278	432	814	332	351	428	368	359	296	4,852
Sales-Supervision - Long Distance 9110-05312	0	0	13	-	-	-	24	-	-	-	-	-	37
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	164	162	151	129	133	130	147	130	129	168	189	185	1,816
Distribution-Operation supervi - Telecom Maintenance & Repair 8700-05316	9,180	63	-	-	-	-	-	6,135	845	-	-	128	16,351
Distribution-Operation supervi - Telephone Directory 8700-05317	0	5,571	1,468	4,321	5,030	3,626	5,599	376	4,707	4,987	2,128	20,325	58,139
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	2,945	2,901	2,944	3,167	4,333	4,329	4,348	4,429	4,604	5,462	5,471	5,379	50,312
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	16,222	14,223	17,909	16,413	13,595	14,217	15,783	19,046	16,805	17,047	16,446	17,925	195,630
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	5,061	7,704	7,586	7,375	3,207	7,805	9,789	11,251	4,312	6,321	5,340	6,877	82,628
Distribution-Operation supervi - Cell service for data uses 8700-05376	4,824	25,427	11,902	24,081	5,025	15,820	21,535	22,373	6,904	17,171	14,322	8,658	178,041
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	505	773	882	804	577	1,113	6,210	950	7,010	1,203	218	1,487	21,734
Sales-Supervision - Capitalized Telecom Costs 9110-05399	0	0	(7)	-	-	-	(13)	-	-	-	-	-	(21)
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(17)	(16)	(17)	(17)	(4)	(15)	(30)	(17)	(18)	(17)	(17)	(17)	(202)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(21,836)	(28,292)	(23,893)	(28,733)	(14,304)	(22,348)	(31,467)	(36,026)	(22,317)	(26,294)	(22,801)	(23,192)	(301,502)
Telecom	19,523	30,964	22,347	31,099	20,264	27,886	34,458	32,768	24,667	29,669	22,954	41,220	337,819
Mains and Services Expenses - Required By Law, Safety 8740-04002	0	0	0	316	-	-	-	-	-	-	-	-	316
Distribution-Operation supervi - Required By Law, Safety 8700-04002	166	41,490	9,356	37,987	62,321	34,322	6,624	24,045	8,014	36,546	1,815	55,803	318,490
Sales-Advertising expenses - Promo Other, Misc 9130-04021	0	0	0	0	0	0	0	2,109	-	-	-	1,581	3,690
Sales-Demonstrating and sellin - Community Rel&Trade Shows 9120-04040	0	0	0	0	0	139	-	-	-	-	-	-	139
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	0	0	1,055	-	2,576	-	-	258	2,037	-	750	300	6,976
Sales-Advertising expenses - Advertising 9130-04044	0	0	0	0	0	0	0	212	-	-	-	-	212
Customer accounts-Operation su - Advertising 9010-04044	0	0	0	0	0	0	0	5,000	-	-	-	-	5,000
Customer service-Miscellaneous - Customer Relations & Assist 9100-04046	81	7	408	81	81	81	7	-	-	61	73	251	1,129
Sales-Supervision - Customer Relations & Assist 9110-04046	0	0	0	(500)	-	-	-	-	-	-	-	-	(500)
Sales-Demonstrating and sellin - Customer Relations & Assist 9120-04046	0	0	0	0	0	0	0	0	0	0	0	2,721	2,721
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	440	8	-	-	-	-	-	-	150	-	-	-	597
Marketing	686	41,504	10,819	37,884	64,977	34,542	6,631	31,625	10,201	36,607	2,638	60,655	338,770
Distribution-Operation supervi - Printing/Slides/Graphics 8700-04145	0	0	0	0	192	-	-	-	-	-	-	20	212
Directors & Shareholders &PR	0	0	0	0	192	-	-	-	-	-	-	20	212

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total Fiscal 2015
Distribution-Operation supervi - Membership Fees 8700-05415	0	0	89	298	833	-	692	11,564	323	149	451	93	14,491
Miscellaneous general expenses - Membership Fees 9302-05415	0	0	0	0	0	0	0	700	-	-	-	4,400	5,100
Customer accounts-Customer rec - Club Dues - Deductible 9030-05417	0	0	0	0	0	0	0	150	-	-	-	-	150
Distribution-Operation supervi - Club Dues - Deductible 8700-05417	498	-	-	-	-	-	-	995	-	-	-	-	1,493
Distribution-Operation supervi - Association Dues 8700-07510	0	0	0	0	0	0	0	0	79	-	-	-	79
Miscellaneous general expenses - Association Dues 9302-07510	6,772	6,772	6,772	7,228	7,228	7,323	7,244	14,744	7,244	7,244	7,244	7,244	93,055
Distribution-Operation supervi - Donations 8700-07520	0	0	0	0	0	0	0	100	-	-	-	-	100
Dues & Donations	7,269	6,772	6,861	7,525	8,061	7,323	7,935	28,253	7,646	7,393	7,695	11,737	114,468
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	724	1,162	658	(1,143)	678	399	1,660	1,403	559	634	831	953	8,518
Customer accounts-Customer rec - Postage/Delivery Services 9030-05111	0	44	-	11	-	-	-	-	-	-	-	-	55
Sales-Supervision - Postage/Delivery Services 9110-05111	0	0	22	-	-	-	12	-	-	-	-	13	47
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	0	14	-	-	-	-	20	-	46	-	-	-	80
Print & Postages	724	1,219	680	(1,131)	678	399	1,692	1,403	605	634	831	966	8,700
Transmission-Operation supervi - Meals and Entertainment 8500-05411	0	0	0	0	8	-	-	-	-	-	-	-	8
Distribution-Operation supervi - Meals and Entertainment 8700-05411	6,230	14,991	7,607	7,101	7,310	8,453	8,730	6,644	9,874	6,229	8,211	21,992	113,371
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	0	0	0	0	10	-	-	-	-	10
Customer accounts-Customer rec - Meals and Entertainment 9030-05411	0	0	0	0	0	0	0	51	-	-	-	-	51
Sales-Supervision - Meals and Entertainment 9110-05411	314	121	1,369	9	40	8	876	384	1,048	186	605	751	5,610
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	0	0	49	-	-	-	2	294	-	-	-	-	345
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	578	142	30	106	-	-	164	678	-	927	69	93	2,787
Sales-Supervision - Spousal & Dependent Travel 9110-05412	0	0	49	-	-	-	77	-	-	-	-	9	135
A&G-Office supplies & expense - Spousal & Dependent Travel 9210-05412	0	0	0	0	0	0	0	64	-	-	-	-	64
A&G-Office supplies & expense - Transportation 9210-05413	0	1,132	-	-	-	-	558	-	-	-	-	-	1,690
Transmission-Operation supervi - Transportation 8500-05413	0	0	0	248	27	-	-	-	-	-	-	-	275
Mains expenses - Transportation 8560-05413	0	0	0	250	-	-	-	-	-	-	-	-	250
Distribution-Operation supervi - Transportation 8700-05413	10,519	9,345	4,585	6,940	6,100	7,845	10,063	10,590	9,775	20,735	12,147	17,594	126,237
Distribution-Other expenses - Transportation 8800-05413	0	190	-	-	-	-	-	-	-	-	-	-	190
Customer accounts-Customer rec - Transportation 9030-05413	641	493	480	-	-	-	-	216	178	187	-	181	2,377
Sales-Supervision - Transportation 9110-05413	288	110	1,551	816	89	89	2,010	428	5,224	459	1,531	3,306	15,900
Sales-Supervision - Lodging 9110-05414	111	137	2,257	-	-	-	1,067	113	1,635	146	313	1,992	7,771
Transmission-Operation supervi - Lodging 8500-05414	0	0	0	0	303	-	-	-	-	-	-	-	303
Mains expenses - Lodging 8560-05414	0	0	0	288	-	-	-	-	-	-	-	-	288
Distribution-Operation supervi - Lodging 8700-05414	9,428	25,837	8,239	15,636	7,939	9,683	9,973	9,769	13,687	10,501	13,306	21,919	155,917
Distribution-Other expenses - Lodging 8800-05414	0	0	0	0	363	-	-	494	-	-	-	-	857
Customer accounts-Customer rec - Lodging 9030-05414	0	0	0	0	0	0	0	175	371	-	-	-	546
Distribution-Operation supervi - Misc Employee Expense 8700-05419	156	70	640	20	375	103	-	21	425	100	20,663	36	22,609
Sales-Supervision - Misc Employee Expense 9110-05419	0	0	30	-	-	-	-	-	-	-	-	-	30
Travel & Entertainment	28,264	52,568	26,886	31,413	22,555	26,180	33,519	29,932	42,217	39,470	56,744	67,872	457,620
Distribution-Operation supervi - Employee Development 8700-05420	0	0	89	1,898	249	1,025	520	-	2,288	-	490	1,975	8,533
Mains and Services Expenses - Employee Development 8740-05420	0	0	0	0	0	0	0	0	0	0	0	1,074	1,074
Sales-Supervision - Employee Development 9110-05420	0	0	0	0	0	0	60	-	-	-	-	250	310
Distribution-Operation supervi - Training 8700-05421	564	3	1,443	9	158	250	774	566	86	2,790	750	750	8,141
Mains and Services Expenses - Training 8740-05421	0	0	0	0	0	0	0	1,088	-	-	-	-	1,088
Miscellaneous general expenses - Training 9302-05421	0	0	0	0	0	0	0	520	-	-	-	-	520
Distribution-Operation supervi - Books & Manuals 8700-05424	0	0	0	17	-	-	-	-	-	-	-	-	17
Mains and Services Expenses - Books & Manuals 8740-05424	0	0	0	0	0	0	0	0	0	0	0	577	577
Distribution-Operation supervi - Regulatory Compliance Training 8700-05425	0	0	0	0	0	245	-	-	-	-	-	-	245
Distribution-Operation supervi - Safety Training 8700-05426	5,439	2,573	983	1,640	82	-	3,118	3,820	1,619	4,142	-	2,168	25,585
Distribution-Operation supervi - Technical (Job Skills) Training 8700-05427	0	0	0	0	0	0	0	0	0	0	610	-	610
Customer service-Miscellaneous - Technical (Job Skills) Training 9100-05427	0	0	0	0	0	0	0	0	0	0	0	1,580	1,580
Distribution-Operation supervi - Computer Skills & Systems Training 8700-05428	0	0	0	0	909	-	-	-	-	-	-	-	909
Distribution-Operation supervi - Work Environment Training 8700-05429	0	0	0	0	0	0	0	0	0	0	15	-	15
Training	6,003	2,576	2,515	3,564	1,397	1,520	4,471	5,994	3,993	6,932	1,865	8,374	49,204
Customer accounts-Customer rec - Contract Labor 9030-06111	0	0	0	0	0	0	0	99	-	-	-	50	149
A&G-Office supplies & expense - Contract Labor 9210-06111	0	0	0	410,000	-	-	-	-	-	2,250	-	68,000	480,250
A&G-Outside services employed - Contract Labor 9230-06111	0	1,575	1,306	4,209	188	888	166	1,561	2,766	-	1,605	895	15,158
Transmission-Maintenance of co - Contract Labor 8640-06111	0	185	-	-	-	-	-	-	-	-	-	-	185
Distribution-Operation supervi - Contract Labor 8700-06111	29,911	2,722	3,429	940	9,570	5,229	2,832	11,327	3,501	2,013	487	40	72,001
Mains and Services Expenses - Contract Labor 8740-06111	0	0	0	0	0	0	333	(333)	616	-	-	-	616
Distribution-Measuring and reg - Contract Labor 8770-06111	0	0	0	0	0	0	0	0	3,575	-	-	-	3,575
Customer accounts-Customer rec - Collection Fees 9030-06112	87,966	91,415	85,790	83,138	97,003	102,591	95,876	89,875	94,504	77,408	81,837	87,214	1,074,618
Customer accounts-Customer rec - Bill Print Fees 9030-06116	143,175	137,569	139,550	152,831	149,676	145,915	154,070	132,810	131,541	131,877	127,011	127,376	1,673,401
Distribution-Operation supervi - Legal 8700-06121	0	0	0	0	0	0	0	0	0	0	0	16	16
A&G-Outside services employed - Legal 9230-06121	0	37,762	8,878	5,139	21,915	21,680	12,088	14,292	7,069	-	15,105	21,056	164,985
Outside Services	261,053	271,228	238,953	656,257	278,353	276,302	265,366	249,632	243,572	213,548	226,044	304,645	3,484,953
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(6,918)	(3,790)	(4,507)	(5,684)	(5,333)	(4,567)	(4,657)	(5,150)	(4,164)	(4,789)	(3,965)	(3,757)	(57,282)
Sales-Supervision - Misc General Expense 9110-07590	0	0	31	-	-	-	-	-	-	-	-	-	31
A&G-Office supplies & expense - Misc General Expense 9210-07590	(97,404)	-	-	-	-	-	-	-	-	-	(1)	-	(97,405)
Distribution-Operation supervi - Misc General Expense 8700-07590	36	7	236	-	-	540	635	(19)	27	(36)	678	1,937	4,041
Mains and Services Expenses - Misc General Expense 8740-07590	0	5,814	2,235	(8,049)	915	604	3,925	(3,976)	(2,227)	1,262	2,236	(3,498)	(759)
Distribution-Operation supervi - Reimbursements 8700-09911	0	0	0	(128)	-	-	-	-	-	-	-	-	(128)
Miscellaneous	(104,286)	2,031	(2,006)	(13,861)	(4,418)	(3,424)	(96)	(9,145)	(6,365)	(3,562)	(1,052)	(5,318)	(151,502)
Total O&M Expenses Before Allocations	523,311	802,941	824,587	1,095,933	775,668	755,678	785,560	919,771	721,490	1,326,377	697,810	839,729	10,068,875

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Customer accounts-Customer rec - Non-project Labor 9030-01000	15,310	9,596	11,170	11,844	47,920
Sales-Supervision - Non-project Labor 9110-01000	11,019	7,435	7,435	7,435	33,324
Distribution-Operation supervi - Non-project Labor 8700-01000	225,338	136,979	136,475	134,345	633,138
Distribution-Measuring and reg - Non-project Labor 8750-01000	3,216	5,592	6,127	6,005	20,940
Distribution-Operation supervi - Capital Labor 8700-01001	354,475	240,051	238,466	229,604	1,062,596
Distribution-Operation supervi - Capital Labor Contra 8700-01002	(354,313)	(239,317)	(236,427)	(224,486)	(1,054,543)
Mains expenses - O&M Project Labor and Contra 8560-01006	162	82	-	-	245
Distribution-Operation supervi - O&M Project Labor and Contra 8700-01006	3,162	363	(255)	924	4,195
Distribution-Measuring and reg - Expense Labor Accrual 8750-01008	536	1,142	1,080	245	3,003
Customer accounts-Customer rec - Expense Labor Accrual 9030-01008	(4,245)	327	2,148	896	(874)
Sales-Supervision - Expense Labor Accrual 9110-01008	(2,867)	394	1,115	372	(986)
Distribution-Operation supervi - Expense Labor Accrual 8700-01008	(56,233)	3,915	20,151	5,241	(26,926)
Distribution-Operation supervi - PTO Accrual 8700-01010	0	0	24,994	-	24,994
Distribution-Operation supervi - Capital Labor Transfer In 8700-01011	331,254	221,637	220,478	208,537	981,906
Distribution-Operation supervi - Capital Labor Transfer Out 8700-01012	(331,416)	(222,371)	(222,517)	(213,655)	(989,959)
Distribution-Operation supervi - Expense Labor Transfer In 8700-01013	1,474	1,026	-	257	2,757
Mains expenses - Expense Labor Transfer In 8560-01013	162	82	-	-	245
Distribution-Operation supervi - Expense Labor Transfer Out 8700-01014	(3,162)	(363)	255	(924)	(4,195)
Mains expenses - Expense Labor Transfer Out 8560-01014	(162)	(82)	-	-	(245)
Labor	193,711	166,488	210,694	166,641	737,533
A&G-Employee pensions and bene - Pension Benefits Load 9260-01202	16,903	14,553	16,342	14,642	62,439
A&G-Employee pensions and bene - OPEB Benefits Load 9260-01203	10,372	8,930	10,028	8,985	38,315
A&G-Employee pensions and bene - Pension Benefits Variance 9260-01206	(14,923)	(7,896)	(14,881)	(6,042)	(43,742)
A&G-Employee pensions and bene - OPEB Benefits Variance 9260-01207	(18,231)	(14,253)	(18,337)	(13,274)	(64,094)
A&G-Injuries & damages - Workers Comp Benefits Variance 9250-01208	(6,970)	(7,429)	(8,196)	28,183	5,588
A&G-Injuries & damages - Workers Comp Benefits Load 9250-01221	26,111	24,780	25,940	24,445	101,276
A&G-Employee pensions and bene - Employer 401K Expense 9260-01239	(9,229)	-	9,229	0	-
A&G-Employee pensions and bene - Medical Benefits Load 9260-01251	35,726	30,760	34,540	30,947	131,974
A&G-Employee pensions and bene - Medical Benefits Variance 9260-01252	(34,938)	(2,749)	679	(26,010)	(63,018)
A&G-Employee pensions and bene - Medical Benefits Projects 9260-01253	301	207	-	48	556
A&G-Employee pensions and bene - ESOP Benefits Load 9260-01257	7,875	6,781	7,614	6,822	29,091
A&G-Employee pensions and bene - ESOP Benefits Variance 9260-01258	(2,100)	(1,756)	(903)	(1,451)	(6,210)
A&G-Employee pensions and bene - ESOP Benefits Projects 9260-01259	67	46	-	11	124
A&G-Employee pensions and bene - HSA Benefits Load 9260-01260	192	165	186	166	709
A&G-Employee pensions and bene - HSA Benefits Variance 9260-01261	(1,003)	(925)	(982)	18,191	15,282
A&G-Employee pensions and bene - HSA Benefits Projects 9260-01262	2	1	-	0	4
A&G-Employee pensions and bene - RSP FACC Benefits Load 9260-01263	768	662	743	666	2,838
A&G-Employee pensions and bene - RSP FACC Benefits Variance 9260-01264	2,202	1,014	685	1,191	5,093
A&G-Employee pensions and bene - RSP FACC Benefits Projects 9260-01265	6	4	-	1	12
A&G-Employee pensions and bene - Life Benefits Load 9260-01266	960	827	929	832	3,548
A&G-Employee pensions and bene - Life Benefits Variance 9260-01267	(17)	396	(58)	(2,431)	(2,110)
A&G-Employee pensions and bene - Life Benefits Projects 9260-01268	9	6	-	1	16
A&G-Employee pensions and bene - LTD Benefits Load 9260-01269	1,537	1,323	1,486	1,331	5,676
A&G-Employee pensions and bene - LTD Benefits Variance 9260-01270	(822)	(186)	(875)	(4,196)	(6,079)
A&G-Employee pensions and bene - LTD Benefits Projects 9260-01271	12	8	-	2	23
A&G-Employee pensions and bene - Pension Benefits Projects 9260-01291	144	98	-	23	264
A&G-Employee pensions and bene - OPEB Benefits Projects 9260-01292	113	59	-	14	186
A&G-Injuries & damages - Workers Comp Benefits Projects 9250-01293	42	28	-	7	77
Benefits	15,111	55,457	64,167	83,101	217,836
A&G-Employee pensions and bene - Service Awards 9260-07421	3,399	3,543	8,109	2,010	17,062
Distribution-Operation supervi - Uniforms 8700-07443	150	150	-	122	422
A&G-Employee pensions and bene - Uniforms 9260-07443	335	-	-	-	335
A&G-Employee pensions and bene - Uniforms Capitalized 9260-07444	(157)	-	-	-	(157)
Distribution-Operation supervi - Uniforms Capitalized 8700-07444	(70)	(140)	-	(113)	(323)
A&G-Employee pensions and bene - Capitalized Restricted Stock 9260-07450	(10,842)	(16,707)	(10,874)	(10,870)	(49,294)
A&G-Employee pensions and bene - Variable Pay & Mgmt Incentive Plans 9260-07452	127,000	172,358	184,000	239,000	722,358
A&G-Employee pensions and bene - VPP & MIP - Capital Credit 9260-07454	(73,000)	(95,810)	(105,000)	(137,000)	(410,810)
A&G-Employee pensions and bene - Restricted Stock - Long Term Incentl 9260-07458	12,614	12,207	12,614	12,614	50,048
A&G-Employee pensions and bene - RSU-Long Term Incentive Plan - Time 9260-07460	9,014	8,723	9,014	9,014	35,764
A&G-Employee pensions and bene - RSU-Managment Incentive Plan 9260-07463	0	15,638	-	-	15,638
A&G-Employee pensions and bene - COLI CSV & Premiums 9260-07487	435	435	435	435	1,738
A&G-Employee pensions and bene - NQ Retirement Cost 9260-07489	12,926	12,926	12,926	12,926	51,703
A&G-Employee pensions and bene - SERP Capitalized 9260-07490	(5,270)	(5,270)	(5,270)	(5,270)	(21,080)
A&G-Injuries & damages - Misc Employee Welfare Exp 9250-07499	0	579	-	-	579
A&G-Employee pensions and bene - Misc Employee Welfare Exp 9260-07499	1,713	867	1,451	1,463	5,494
Distribution-Operation supervi - Misc Employee Welfare Exp 8700-07499	621	(25)	1,557	2,423	4,576
Employee Welfare	78,866	109,474	108,960	126,753	424,053
A&G-Property insurance - Blueflame Property Insurance 9240-04069	611	611	611	611	2,442
A&G-Injuries & damages - Insurance-Other 9250-04070	1,894	1,894	1,894	2,718	8,401
A&G-Property insurance - Insurance Capitalized 9240-04072	(1,447)	(1,413)	(1,441)	(1,869)	(6,171)
Distribution-Operation supervi - Environmental & Safety 8700-07120	735	-	45	620	1,400
Insurance	1,793	1,092	1,109	2,079	6,073
Storage well royalties - Building Lease/Rents Capitalized 8250-04580	(102)	-	(2)	(123)	(227)
Distribution-Operation supervi - Building Lease/Rents Capitalized 8700-04580	0	(294)	-	-	(294)
Distribution-Rents - Building Lease/Rents Capitalized 8810-04580	(41,948)	(42,622)	(42,312)	(41,006)	(167,888)
Storage well royalties - Building Lease/Rents 8250-04581	788	-	13	1,136	1,937
Distribution-Operation supervi - Building Lease/Rents 8700-04581	0	608	-	-	608
Distribution-Rents - Building Lease/Rents 8810-04581	67,544	67,544	67,544	67,544	270,176
Distribution-Operation supervi - Building Maintenance 8700-04582	579	-	19	-	598
Distribution-Rents - Building Maintenance 8810-04582	4,729	6,069	1,613	3,605	16,015
Distribution-Rents - Utilities 8810-04590	(51)	-	-	-	(51)

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
Transmission-Measuring and reg - Utilities 8570-04590	94	86	84	86	351
Lines expenses - Utilities 8170-04590	47	43	42	43	175
Compressor station expenses - Utilities 8180-04590	331	301	295	300	1,227
Compressor station fuel and po - Utilities 8190-04590	3,572	5	481	277	4,334
Storage-Purification expenses - Utilities 8210-04590	119	123	129	216	587
Distribution-Operation supervi - Utilities 8700-04590	4,266	3,285	3,318	3,280	14,150
Mains and Services Expenses - Utilities 8740-04590	436	409	450	448	1,743
Storage well royalties - Utilities 8250-04590	301	597	628	1,338	2,864
Mains expenses - Utilities 8560-04590	425	388	380	386	1,578
Transmission-Maintenance of me - Misc Rents 8650-04592	0	0	35	-	35
Distribution-Rents - Misc Rents 8810-04592	0	0	2,980	-	2,980
Distribution-Rents - Capitalized Utility Costs 8810-04599	(3,978)	(5,167)	(1,374)	(3,069)	(13,588)
Distribution-Operation supervi - Capitalized Utility Costs 8700-04599	(3,162)	(2,087)	(2,297)	(2,260)	(9,807)
Mains expenses - Capitalized Utility Costs 8560-04599	(359)	(330)	(323)	(328)	(1,341)
Compressor station expenses - Capitalized Utility Costs 8180-04599	(280)	(257)	(252)	(255)	(1,043)
Rent, Maint., & Utilities	**33,352**	**28,702**	**31,453**	**31,615**	**125,121**
Mains and Services Expenses - Vehicle Lease Payments 8740-03002	9,945	9,929	11,360	3,712	34,946
Distribution-Operation supervi - Capitalized transportation costs 8700-03003	0	(280)	(491)	(72)	(843)
Mains and Services Expenses - Capitalized transportation costs 8740-03003	(6)	(21,876)	(15,061)	(7,764)	(44,708)
Distribution-Operation supervi - Vehicle Expense 8700-03004	324	195	959	124	1,602
Mains and Services Expenses - Vehicle Expense 8740-03004	7,925	5,558	10,317	6,138	29,937
Mains and Services Expenses - Equipment Lease 8740-04301	16	16	16	16	64
Mains and Services Expenses - Heavy Equipment 8740-04302	437	2,321	55	116	2,928
Mains and Services Expenses - Heavy Equipment Capitalized 8740-04307	(444)	(2,290)	(70)	(129)	(2,932)
Vehicles & Equip	**18,196**	**(6,427)**	**7,085**	**2,140**	**20,994**
Mains and Services Expenses - Non-Inventory Supplies 8740-02005	1,733	936	344	233	3,246
Distribution-Measuring and reg - Non-Inventory Supplies 8750-02005	1,160	2,175	946	1,017	5,299
Distribution-Measuring and reg - Non-Inventory Supplies 8770-02005	0	907	54	-	961
Transmission-Measuring and reg - Non-Inventory Supplies 8570-02005	0	0	0	18	18
Transmission-Maintenance of me - Non-Inventory Supplies 8650-02005	0	0	17	-	17
Distribution-Operation supervi - Non-Inventory Supplies 8700-02005	1,742	27	-	233	2,001
Sales-Supervision - Office Supplies 9110-05010	0	0	60	-	60
A&G-Office supplies & expense - Office Supplies 9210-05010	107	-	-	-	107
Distribution-Operation supervi - Office Supplies 8700-05010	6,882	5,626	5,640	6,214	24,361
Mains and Services Expenses - Office Supplies 8740-05010	0	0	600	-	600
Materials & Supplies	**11,624**	**9,670**	**7,661**	**7,715**	**36,671**
Distribution-Operation supervi - Software Maintenance 8700-04201	3,113	3,004	3,513	4,387	14,016
Distribution-Operation supervi - IT Equipment 8700-04212	0	185	1,903	491	2,578
Information Technologies	**3,113**	**3,188**	**5,415**	**4,877**	**16,594**
Mains and Services Expenses - Monthly Lines and service 8740-05310	29	7	27	58	122
Distribution-Operation supervi - Monthly Lines and service 8700-05310	3,384	1,212	3,252	2,342	10,189
Distribution-Operation supervi - Long Distance 8700-05312	380	330	284	263	1,256
Distribution-Operation supervi - Toll Free Long Distance 8700-05314	188	182	185	184	740
Distribution-Operation supervi - Telephone Directory 8700-05317	5,365	-	10,906	4,224	20,496
Distribution-Operation supervi - Measurement & Meter Reading 8700-05323	6,806	5,445	6,813	6,378	25,442
Distribution-Operation supervi - WAN/LAN/Internet Service 8700-05331	15,360	21,272	13,105	15,369	65,106
Distribution-Operation supervi - Cellular, radio, pager charges 8700-05364	8,571	8,956	2,888	7,322	27,737
Distribution-Operation supervi - Cell service for data uses 8700-05376	22,806	17,088	7,164	26,853	73,911
Distribution-Operation supervi - Cell phone equipment and accessories 8700-05377	1,052	3,460	523	1,071	6,105
Mains and Services Expenses - Capitalized Telecom Costs 8740-05399	(17)	(4)	(16)	(33)	(69)
Distribution-Operation supervi - Capitalized Telecom Costs 8700-05399	(29,891)	(29,614)	(15,766)	(29,991)	(105,263)
Telecom	**34,033**	**28,333**	**29,366**	**34,039**	**125,771**
Distribution-Operation supervi - Required By Law, Safety 8700-04002	1,559	42,730	4,382	19,052	67,723
Sales-Advertising expenses - Promo Other, Misc 9130-04021	0	0	191	-	191
Distribution-Operation supervi - Community Rel&Trade Shows 8700-04040	200	-	-	-	200
Customer service-Miscellaneous - Customer Relations & Assist 9100-04046	16	50	60	86	213
Sales-Supervision - Customer Relations & Assist 9110-04046	0	500	-	-	500
Sales-Advertising expenses - Customer Relations & Assist 9130-04046	0	525	3,223	-	3,748
Marketing	**1,776**	**43,805**	**7,856**	**19,138**	**72,575**
Distribution-Operation supervi - Printing/Slides/Graphics 8700-04145	0	9	-	-	9
Directors & Shareholders &PR	**0**	**9**	**-**	**-**	**9**
Distribution-Operation supervi - Membership Fees 8700-05415	100	-	2	185	287
Customer accounts-Customer rec - Club Dues - Deductible 9030-05417	0	0	165	-	165
Distribution-Operation supervi - Association Dues 8700-07510	0	0	1,000	-	1,000
Miscellaneous general expenses - Association Dues 9302-07510	7,266	7,266	7,266	-	21,797
Dues & Donations	**7,366**	**7,266**	**8,433**	**185**	**23,249**
Distribution-Operation supervi - Postage/Delivery Services 8700-05111	779	1,162	849	1,018	3,808
Odorization - Postage/Delivery Services 8711-05111	0	0	0	142	142
Mains and Services Expenses - Postage/Delivery Services 8740-05111	0	13	-	-	13
A&G-Office supplies & expense - Postage/Delivery Services 9210-05111	16	-	-	10	26
Print & Postages	**795**	**1,174**	**849**	**1,170**	**3,988**
Transmission-Operation supervi - Meals and Entertainment 8500-05411	62	-	-	-	62
Distribution-Operation supervi - Meals and Entertainment 8700-05411	5,688	5,042	3,810	10,008	24,548
Distribution-Measuring and reg - Meals and Entertainment 8750-05411	166	166	219	-	551
Distribution-Other expenses - Meals and Entertainment 8800-05411	0	0	0	40	40
Sales-Supervision - Meals and Entertainment 9110-05411	136	-	1,842	-	1,978
A&G-Office supplies & expense - Meals and Entertainment 9210-05411	0	89	-	-	89
Distribution-Operation supervi - Spousal & Dependent Travel 8700-05412	212	31	237	-	480

Atmos Energy Corporation

Operation & Maintenance Expenses

Atmos Energy-KY/Mid-States (Div 091)

	Oct-15	Nov-15	Dec-15	Jan-16	Total YTD Fiscal 2016
A&G-Office supplies & expense - Transportation 9210-05413	0	394	-	-	394
Distribution-Operation supervi - Transportation 8700-05413	7,809	10,631	8,731	7,165	34,337
Distribution-Other expenses - Transportation 8800-05413	0	0	0	169	169
Sales-Supervision - Transportation 9110-05413	(114)	-	2,073	63	2,022
Sales-Supervision - Lodging 9110-05414	888	-	1,763	-	2,651
A&G-Office supplies & expense - Lodging 9210-05414	0	0	267	-	267
Distribution-Operation supervi - Lodging 8700-05414	11,343	6,231	6,201	12,987	36,762
Distribution-Measuring and reg - Lodging 8750-05414	868	1,212	158	-	2,238
Distribution-Other expenses - Lodging 8800-05414	0	0	0	639	639
Distribution-Operation supervi - Misc Employee Expense 8700-05419	56	12	-	67	135
Mains and Services Expenses - Misc Employee Expense 8740-05419	0	58	-	-	58
Travel & Entertainment	**27,112**	**23,866**	**25,302**	**31,139**	**107,419**
Distribution-Operation supervi - Employee Development 8700-05420	0	549	394	-	943
Distribution-Measuring and reg - Employee Development 8750-05420	0	0	0	1,200	1,200
Sales-Supervision - Employee Development 9110-05420	0	0	98	-	98
Distribution-Operation supervi - Training 8700-05421	0	0	0	1,500	1,500
Distribution-Operation supervi - Safety Training 8700-05426	210	417	67	-	694
Distribution-Operation supervi - Technical (Job Skills) Training 8700-05427	(610)	-	-	-	(610)
Distribution-Operation supervi - Work Environment Training 8700-05429	0	4	-	-	4
Training	**(400)**	**970**	**559**	**2,700**	**3,829**
A&G-Office supplies & expense - Contract Labor 9210-06111	0	0	(68,000)	-	(68,000)
A&G-Outside services employed - Contract Labor 9230-06111	909	3,824	1,792	1,367	7,891
Distribution-Operation supervi - Contract Labor 8700-06111	266	126	126	126	643
Mains and Services Expenses - Contract Labor 8740-06111	0	0	5,754	-	5,754
Customer accounts-Customer rec - Collection Fees 9030-06112	85,728	85,366	81,183	79,702	331,979
Customer accounts-Customer rec - Bill Print Fees 9030-06116	132,548	137,111	129,081	136,795	535,535
A&G-Outside services employed - Legal 9230-06121	14,827	11,255	10,755	10,498	47,336
Outside Services	**234,278**	**237,681**	**160,691**	**228,487**	**861,137**
A&G-Administrative & general s - A&G Overhead Clearing 9200-04863	(4,222)	(3,431)	(13,270)	(5,966)	(26,889)
Distribution-Operation supervi - Misc General Expense 8700-07590	127	325	(8)	-	444
Mains and Services Expenses - Misc General Expense 8740-07590	1,995	774	(2,769)	1,455	1,455
Distribution-Operation supervi - Reimbursements 8700-09911	0	0	(2,467)	(562)	(3,029)
Miscellaneous	**(2,101)**	**(2,332)**	**(18,514)**	**(5,072)**	**(28,019)**
Total O&M Expenses Before Allocations	658,625	708,414	651,086	736,708	2,754,832

Atmos Energy Corporation
Kentucky / Mid-States Division
Kentucky Operations
Case No. 2015-00343
AG 1 - 8 Part B

	Base	Test	Difference		Explanation
Labor	$ 1,167,647.53	$ 1,309,001.78	$ 141,354.24	12.11%	The increase is primarily driven by: 1.) assumed merit increase of 3% in FY16 budget and additional 3% for October '16 to May '17 (FY17 Budget). 2.) The average labor expense percentage for the actual months of March '15 to August '15 (base period) is 40%. The budgeted FY16 expense rate for the general office is 44%. The test period is largely based on the FY 2016 budget.
Benefits	$ 542,524.58	$ 735,823.04	$ 193,298.46	35.63%	The actual months of the base period include a positive benefit variance (actual claims paid were less than the budgeted benefits load factor). Positive or negative load factor variances are not assumed in the budget (test year)
Employee Welfare	$ 889,407.15	$ 584,207.06	$ (305,200.09)	-34.32%	Test year based on FY 2016 budget where assumption of normal (100% of target) incentive payout is anticipated. Incentive compensation is removed from revenue requirement as a ratemaking adjustment.
Insurance	$ 121,590.19	$ 215,431.02	$ 93,840.83	77.18%	Insurance is budgeted at the General Office rate division (091). As insurance expenses are incurred, they are coded to the state specific rate division. As such, the test period is largely based on the FY 2016 budget.
Rent, Maint., & Utilities	$ 180,109.42	$ 192,090.96	$ 11,981.54	6.65%	Increase due to extension of lease at division office headquarters.
Vehicles & Equip	$ 37,854.85	$ 39,269.62	$ 1,414.76	3.74%	Change between base and test period is $1,414.76 and immaterial.
Materials & Supplies	$ 106,611.69	$ 136,815.31	$ 30,203.62	28.33%	Items such as odorant and office supplies are budgeted at the general Office rate division (091). As these expenses are incurred, they are coded to the state specific rate division when applicable.
Information Technologies	$ 54,539.05	$ 50,940.64	$ (3,598.41)	-6.60%	Change between base and test period is $3,598.41 and immaterial.
Telecom	$ 232,457.84	$ 305,604.56	$ 73,146.72	31.47%	Some telecom expenses are budgeted at the General Office rate division (091). As actual expenses are incurred, they are coded to the state specific rate division where applicable. As such, the test period is largely based on the FY 2016 budget.
Marketing	$ 179,954.10	$ 213,259.53	$ 33,305.43	18.51%	Marketing expenses are largely budgeted at the General Office rate division (091). As actual expenses are incurred, they are coded to the state specific rate division where applicable. As such, the test period is largely based on the FY 2016 budget.
Directors & Shareholders &PR	$ 1,043.27	$ 2,503.61	$ 1,460.35	139.98%	Change between base and test period is $1,460.35 and immaterial.
Dues & Donations	$ 77,659.70	$ 93,301.05	$ 15,641.34	20.14%	Dues and Donations are primarily budgeted at the General Office rate division (091). As actual expenses are incurred, they are coded to the state specific rate division when applicable. As such, the test period is largely based on the FY 2016 budget.
Print & Postages	$ 6,015.18	$ 6,050.64	$ 35.47	0.59%	Change between base and test period is $35.47 and immaterial.
Travel & Entertainment	$ 267,182.86	$ 291,375.00	$ 24,192.13	9.05%	Increase in Division representation on Enterprise teams and associated travel costs.
Training	$ 32,540.63	$ 43,467.15	$ 10,926.52	33.58%	Expected increase in registration costs for attending various conferences (i.e. Safety, Compliance, Rates, Human Resources, etc.)
Outside Services	$ 1,615,040.10	$ 1,853,658.34	$ 238,618.24	14.77%	Legal is budgeted at the General Office rate division (091). As legal expenses are incurred, they are coded to the state specific rate division. As such, the test period is largely based on the FY 2016 budget.
Provision for Bad Debt	$ -	$ -	$ -	0.00%	N/A
Miscellaneous	$ (14,309.35)	$ (2,742.68)	$ 11,566.66	-80.83%	Change in A&G overhead clearing 9200-04863.
Total O&M Expenses	$ 5,497,868.79	$ 6,070,056.61	$ 572,187.81		

REQUEST:

Please refer to Exhibit GKW-2, which shows base year and test year allocated amounts by division and cost element and the difference in the test year compared to the base year.

a. Please identify and describe all reasons why the "Labor" and "Benefits" for the "Division General Office" show cost increases of 12% and 36%, respectively, while the "Employee Welfare" costs, which includes incentive compensation costs, shows a decrease of 34%.

b. Please refer to electronic workpaper "Att30 - O&M for KY - Fall 2015 case_ updated" provided in response to Staff 1-59 supporting Exhibit GKW -2 and the tab entitled "final summary," which shows the amount of incentive compensation in the test year compared to the base year. Please identify and describe all reasons for the change in incentive compensation expense in the test year compared to the base year for each division.

c. Please confirm that the Company removed *all* incentive compensation expense from the test year revenue requirement, including "short-term cash incentive awards," as shown on page 3 of the Atmos 2015 proxy statement. Please indicate if "short term cash incentive awards" are shown on Schedule F -10 and, if so, indicate which lines include these amounts and provide the amounts that are included.

RESPONSE:

a) Please see the Company's response to AG DR No. 1-08 subpart (b).

b) The Company has removed all incentive compensation from this filing consistent with the final Order from Case No. 2013-00148 and is not seeking recovery of the referenced expenses.

c) Confirm. The Company has removed all incentive compensation from this filing consistent with the final Order from Case No. 2013-00148. "Short-term cash incentive awards" as referenced in the request are within the VPP and MIP plans listed on Schedule F-10.

Respondent: Greg Waller

REQUEST:

Please provide a copy of the summary pages for all Cash Working Capital lead/lag studies submitted in other rate proceedings in other jurisdictions over the last five years and identify the states and case citations for each.

RESPONSE:

Please see the following summary of Cash Working Capital lead/lag studies Atmos Energy has submitted in jurisdictions other than Kentucky between CY 2010 and CY 2015. Please see Attachment 1 for the related summary pages from these studies.

Colorado	Docket No. 13AL-0496G Docket No. 14AL-0300G Docket No. 15AL-0299G
Mid-Tex	GUD 10170 (2012)
Tennessee	Docket No. 12-00064 Docket No. 14-00146
Virginia	Case No. PUE-2015-00119
West Texas	GUD 10174 (2012) 2013 Statement of Intent (city-level)

ATTACHMENT:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-10_Att1 - Atmos Energy CWC Summary Pages.pdf, 12 Pages.

Respondent: Greg Waller

Schedule CWC1

Atmos Energy Corporation - Colorado Service Area
Cash-Basis Cash Working Capital Analysis
Test Year Ended December 31, 2012

Line No.	Description	Amount	CWC Factor	Cash Working Capital
	(a)	(b)	(c)	(d)
1	Gas Purchased	51,775,138	(0.029452)	(1,524,881)
2				
3	O&M Expense:			
4	Labor O&M	5,665,015	0.029014	164,365
5	Other O&M	8,134,548	0.007644	62,180
6				
7	Franchise Tax	2,711,555	(0.042082)	(114,108)
8	Sales Tax	3,172,923	(0.010932)	(34,686)
9				
10	State Income Tax	480,387	(0.017205)	(8,265)
11	Federal Income Tax	3,463,319	(0.017205)	(59,586)
12	Other Taxes	2,265,142	(0.555260)	(1,257,743)
13				
14	Total	$77,668,027		($2,772,724)

Schedule CWC1

Atmos Energy Corporation - Colorado Service Area
Cash-Basis Cash Working Capital Analysis
Test Year Ended December 31, 2013

Line No.	Description	Amount	CWC Factor	Cash Working Capital
	(a)	(b)	(c)	(d)
1	Gas Purchased	74,284,446	(0.030548)	(2,269,241)
2				
3	O&M Expense:			
4	Labor O&M	5,835,949	0.026411	154,133
5	Other O&M	9,947,637	(0.012000)	(119,372)
6				
7	Franchise Tax	3,041,301	(0.046082)	(140,149)
8	Sales Tax	3,507,592	(0.013808)	(48,433)
9				
10	State Income Tax	501,673	(0.020082)	(10,075)
11	Federal Income Tax	3,616,781	(0.020082)	(72,632)
12	Other Taxes	2,354,754	(0.564877)	(1,330,147)
13				
14	Total	$103,090,133		(3,835,915)

Schedule CWC1

Atmos Energy Corporation - Colorado Service Area
Cash-Basis Cash Working Capital Analysis
Test Year Ended December 31, 2014

Line No.	Description	Amount	CWC Factor	Cash Working Capital
	(a)	(b)	(c)	(d)
1	Gas Purchased	$ 76,248,824	(0.019726)	$(1,504,084)
2				
3	O&M Expense:			
4	Labor O&M	5,935,506	0.045205	268,315
5	Other O&M	8,624,556	0.039041	336,711
6				
7	Franchise Tax	3,484,729	(0.026301)	(91,652)
8	Sales Tax	4,043,314	(0.002712)	(10,965)
9				
10	State Income Tax	580,197	(0.008301)	(4,816)
11	Federal Income Tax	4,182,892	(0.008301)	(34,722)
12	Other Taxes	2,622,760	(0.585918)	(1,536,722)
13				
14	Total	$ 105,722,777		$(2,577,936)

Mid-Tex GUD 10170 (2012)

Atmos Energy Corporation-Mid Tex
Cash Working Capital Lead/Lag Analysis
For Test Period Twelve Months Ended September 30, 2011

Line No.	Description	Test Year Expenses	Average Daily Expense (b) / 365 days		Revenue Lag		Expense Lag	Net Lag (d) - (e)	CWC Requirement (c) x (f)
	(a)	(b)	(c)		(d)		(e)	(f)	(g)
1	Gas Supply Expense								
2	Purchased Gas	588,359,610	1,611,944	*Sch 2*	36.25	*Sch 3*	40.40	(4.15)	(6,688,880)
3	Upstream Gas	144,363,267	395,516	*Sch 2*	36.25	*Sch 3*	38.20	(1.95)	(771,256)
4	Total Gas Expense	732,722,877	2,007,460						(7,460,136)
5									
6	Operation and Maintenance Expense								
7	O&M, Labor	56,457,085	154,677	*Sch 2*	36.25	*Sch 4*	25.71	10.54	1,630,295
8	O&M, Non-Labor	96,063,392	263,187	*Sch 2*	36.25	*Sch 5*	28.73	7.52	1,979,169
9	Total O&M Expense	152,520,477	417,864						3,609,464
10									
11									
12	Taxes Other Than Income [1]								
13	Ad Valorem	21,129,326	57,889	*Sch 2*	36.25	*Sch 6*	213.50	(177.25)	(10,260,748)
14	Payroll Taxes	2,722,791	7,460	*Sch 2*	36.25	*Sch 6*	31.61	4.64	34,613
15	Local Gross Receipts Tax	28,034,548	76,807	*Sch 2*	36.25	*Sch 6*	99.24	(62.99)	(4,838,256)
16	Railroad Commission Fee	63,120	173	*Sch 2*	36.25	*Sch 6*	94.84	(58.59)	(10,132)
17									
18	Allocated Taxes-Shared Services								
19	Ad Valorem	278,713	764	*Sch 2*	36.25	*Sch 6*	213.50	(177.25)	(135,348)
20	Payroll Taxes	1,715,908	4,701	*Sch 2*	36.25	*Sch 6*	31.61	4.64	21,813
21	Total Taxes Other Than Income	53,944,406	147,793						(15,188,058)
22									
23	Franchise Tax/State Margin Tax	4,684,638	12,835	*Sch 2*	36.25	*Sch 7*	(47.00)	83.25	1,068,483
24									
25	Federal Income Tax								
26	Current Taxes	0	0	*Sch 2*	36.25	*Sch 8*	36.75	(0.50)	0
27									
28	Interest on Customer Deposits	26,170	72	*Sch 2*	36.25	*Sch 9*	331.83	(295.58)	(21,193)
29									
30	TOTAL	943,898,568	2,586,023						(17,991,440)

[1] Excludes DOT tax, State Gross Receipts Tax and Prepaid Local Gross Receipts Tax.

Tennessee Docket No. 12-00064

Atmos Energy Corporation-Tennessee
Cash Working Capital Lead/Lag Analysis
For Attrition Period Ended November 30, 2013

Line No.	Description		Test Year Expenses	Average Daily Expense (b) / 365 days		Revenue Lag		Expense Lag	Net Lag (d) - (e)	CWC Requirement (c) x (f)
	(a)		(b)	(c)		(d)		(e)	(f)	(g)
1	Gas Supply Expense									
2	Purchased Gas		69,266,324	189,771	*Sch 2*	36.48	*Sch 3*	39.46	(2.98)	(565,518)
3										
4	Operation and Maintenance Expense									
5	O&M, Labor		7,362,569	20,171	*Sch 2*	36.48	*Sch 4*	14.14	22.34	450,620
6	O&M, Non-Labor		13,507,187	37,006	*Sch 2*	36.48	*Sch 5*	22.78	13.70	506,982
7	Total O&M Expense		20,869,756							957,602
8										
9										
10	Taxes Other Than Income									
11	Ad Valorem		3,318,150	9,091	*Sch 2*	36.48	*Sch 6*	241.50	(205.02)	(1,863,837)
12	State Gross Receipts Tax		1,228,602	3,366	*Sch 2*	36.48	*Sch 6*	(151.50)	187.98	632,741
13	Payroll Taxes		280,781	769	*Sch 2*	36.48	*Sch 6*	19.19	17.29	13,298
14	Franchise Tax		602,000	1,649	*Sch 2*	36.48	*Sch 6*	37.00	(0.52)	(857)
15	TRA Inspection Fee		433,803	1,189	*Sch 2*	36.48	*Sch 6*	272.50	(236.02)	(280,628)
16	DOT		18,035	49	*Sch 2*	36.48	*Sch 6*	60.00	(23.52)	(1,152)
17										
18	Allocated Taxes-Shared Services									
19	Ad Valorem	21%	60,510	166	*Sch 2*	36.48	*Sch 6*	241.50	(205.02)	(34,033)
20	Payroll Taxes	79%	227,633	624	*Sch 2*	36.48	*Sch 6*	19.19	17.29	10,791
21										
22	Allocated Taxes-Business Unit									
23	Ad Valorem	45%	42,039	115	*Sch 2*	36.48	*Sch 6*	241.50	(205.02)	(23,577)
24	Payroll Taxes	55%	51,381	141	*Sch 2*	36.48	*Sch 6*	19.19	17.29	2,438
25	Total Taxes Other Than Income		6,262,934							(1,544,818)
26										
27	Federal Income Tax		*6,345,272*							
28	Current Taxes		1,938,704	5,312	*Sch 2*	36.48	*Sch 7*	37.00	(0.52)	(2,762)
29	Deferred Taxes		4,406,568	12,073	*Sch 2*	36.48	*Sch 7*	0.00	36.48	440,423
30										
31	State Excise Tax		*1,260,891*							
32	Current Taxes		385,246	1,055	*Sch 2*	36.48	*Sch 8*	37.00	(0.52)	(549)
33	Deferred Taxes		875,644	2,399	*Sch 2*	36.48	*Sch 8*	0.00	36.48	87,516
34										
35	Depreciation		10,620,298	29,097	*Sch 2*	36.48		0	36.48	1,061,459
36										
37	Interest on Customer Deposits		129,748	355	*Sch 2*	36.48		15.5	20.98	7,448
38										
39	Interest Expense - LTD		6,426,760	17,608	*Sch 2*	36.48	*Sch 9*	91.19	(54.71)	(963,251)
40										
41	Interest Expense - STD		41,732	114	*Sch 2*	36.48	*Sch 10*	24.05	12.43	1,417
42										
43	Return on Equity		11,760,772	32,221	*Sch 2*	36.48		0	36.48	1,175,422
44										
45										
46	TOTAL		132,984,486							652,972

Tennessee Docket No. 12-00064

Atmos Energy Corporation-Tennessee
Cash Working Capital Lead/Lag Analysis
For Test Year Ended March 31, 2012

Line No.	Description		Test Year Expenses	Average Daily Expense (b) / 365 days		Revenue Lag		Expense Lag	Net Lag (d) - (e)	CWC Requirement (c) x (f)
	(a)		(b)	(c)		(d)		(e)	(f)	(g)
1	Gas Supply Expense									
2	Purchased Gas		69,266,324	189,771	*Sch 2*	36.48	*Sch 3*	39.46	(2.98)	(565,517)
3										
4	Operation and Maintenance Expense									
5	O&M, Labor		6,792,433	18,609	*Sch 2*	36.48	*Sch 4*	14.14	22.34	415,734
6	O&M, Non-Labor		10,521,682	28,827	*Sch 2*	36.48	*Sch 5*	22.78	13.70	394,923
7	Total O&M Expense		17,314,115							810,658
8										
9										
10	Taxes Other Than Income									
11	Ad Valorem		3,045,257	8,343	*Sch 2*	36.48	*Sch 6*	241.50	(205.02)	(1,710,517)
12	State Gross Receipts Tax		1,554,329	4,258	*Sch 2*	36.48	*Sch 6*	(151.50)	187.98	800,501
13	Payroll Taxes		267,597	733	*Sch 2*	36.48	*Sch 6*	19.19	17.29	12,678
14	Franchise Tax		527,019	1,444	*Sch 2*	36.48	*Sch 6*	37.00	(0.52)	(751)
15	TRA Inspection Fee		460,103	1,261	*Sch 2*	36.48	*Sch 6*	272.50	(236.02)	(297,517)
16	DOT		36,570	100	*Sch 2*	36.48	*Sch 6*	60.00	(23.52)	(2,357)
17										
18	Allocated Taxes-Shared Services									
19	Ad Valorem	21%	54,203	149	*Sch 2*	36.48	*Sch 6*	241.50	(205.02)	(30,445)
20	Payroll Taxes	79%	203,905	559	*Sch 2*	36.48	*Sch 6*	19.19	17.29	9,660
21										
22	Allocated Taxes-Business Unit									
23	Ad Valorem	45%	34,194	94	*Sch 2*	36.48	*Sch 6*	241.50	(205.02)	(19,207)
24	Payroll Taxes	55%	41,792	114	*Sch 2*	36.48	*Sch 6*	19.19	17.29	1,980
25	Total Taxes Other Than Income		6,224,968							(1,235,973)
26										
27	Federal Income Tax		*5,971,359*							
28	Current Taxes		2,841,794	7,786	*Sch 2*	36.48	*Sch 7*	37.00	(0.52)	(4,049)
29	Deferred Taxes		3,129,565	8,574	*Sch 2*	36.48	*Sch 7*	0.00	36.48	312,785
30										
31	State Excise Tax		*1,188,769*							
32	Current Taxes		565,740	1,550	*Sch 2*	36.48	*Sch 8*	37.00	(0.52)	(806)
33	Deferred Taxes		623,029	1,707	*Sch 2*	36.48	*Sch 8*	0.00	36.48	62,269
34										
35	Depreciation		10,216,011	27,989	*Sch 2*	36.48		0	36.48	1,021,041
36										
37	Interest on Customer Deposits		123,809	339	*Sch 2*	36.48		15.5	20.98	7,116
38										
39	Interest Expense - LTD		6,059,162	16,600	*Sch 2*	36.48	*Sch 10*	91.19	(54.71)	(908,133)
40										
41	Interest Expense - STD		39,345	108	*Sch 2*	36.48	*Sch 10*	24.05	12.43	1,343
42										
43	Return on Equity		11,086,445	30,374	*Sch 2*	36.48		0	36.48	1,108,037
44										
45										
46	TOTAL		127,490,307							607,429

Tennessee Docket No. 14-00146

Atmos Energy Corporation-Tennessee
Cash Working Capital Lead/Lag Analysis
For Attrition Period Ended May 31, 2016

Line No.	Description		Test Year Expenses	Average Daily Expense (b) / 366 days		Revenue Lag		Expense Lag	Net Lag (d) - (e)	CWC Requirement (c) x (f)
	(a)		(b)	(c)		(d)		(e)	(f)	(g)
1	Gas Supply Expense									
2	Purchased Gas		87,478,439	239,012	*CWC2*	37.50	*CWC3*	39.33	(1.83)	(437,392)
3										
4	Operation and Maintenance Expense									
5	O&M, Labor		7,915,572	21,627	*CWC2*	37.50	*CWC4*	14.07	23.43	506,721
6	O&M, Non-Labor		12,100,932	33,063	*CWC2*	37.50	*CWC5*	29.40	8.10	267,810
7	Total O&M Expense		20,016,504							774,531
8										
9										
10	Taxes Other Than Income									
11	Ad Valorem		3,801,021	10,385	*CWC2*	37.50	*CWC6*	241.50	(204.00)	(2,118,540)
12	State Gross Receipts Tax		1,241,962	3,393	*CWC2*	37.50	*CWC6*	(151.50)	189.00	641,277
13	Payroll Taxes		272,080	743	*CWC2*	37.50	*CWC6*	16.55	20.95	15,569
14	Franchise Tax		622,004	1,699	*CWC2*	37.50	*CWC6*	37.50	0.00	0
15	TRA Inspection Fee		530,084	1,448	*CWC2*	37.50	*CWC6*	272.50	(235.00)	(340,280)
16	DOT		0	0	*CWC2*	37.50	*CWC6*	59.00	(21.50)	0
17										
18	Allocated Taxes-Shared Services									
19	Ad Valorem	16%	49,974	137	*CWC2*	37.50	*CWC6*	241.50	(204.00)	(27,948)
20	Payroll Taxes	84%	255,485	698	*CWC2*	37.50	*CWC6*	16.55	20.95	14,626
21										
22	Allocated Taxes-Business Unit									
23	Ad Valorem	46%	48,815	133	*CWC2*	37.50	*CWC6*	241.50	(204.00)	(27,132)
24	Payroll Taxes	54%	57,959	158	*CWC2*	37.50	*CWC6*	16.55	20.95	3,311
25	Total Taxes Other Than Income		6,879,384							(1,839,117)
26										
27	Federal Income Tax		*8,128,108*							
28	Current Taxes		2,864,727	7,827	*CWC2*	37.50	*CWC7*	37.50	0.00	0
29	Deferred Taxes		5,263,381	14,381	*CWC2*	37.50	*CWC7*	0.00	37.50	539,288
30										
31	State Excise Tax		*1,614,444*							
32	Current Taxes		569,006	1,555	*CWC2*	37.50	*CWC8*	37.50	0.00	0
33	Deferred Taxes		1,045,438	2,856	*CWC2*	37.50	*CWC8*	0.00	37.50	107,100
34										
35	Depreciation		12,468,039	34,066	*CWC2*	37.50		0	37.50	1,277,475
36										
37	Interest on Customer Deposits		118,049	323	*CWC2*	37.50		182.5	(145.00)	(46,835)
38										
39	Interest Expense - LTD		6,623,097	18,096	*CWC2*	37.50	*CWC9*	91.25	(53.75)	(972,660)
40										
41	Return on Equity		15,166,903	41,440	*CWC2*	37.50		0	37.50	1,554,000
42										
43										
44	TOTAL		158,492,968							956,389

Tennessee Docket No. 14-00146

Atmos Energy Corporation-Tennessee
Cash Working Capital Lead/Lag Analysis
For Test Year Ended June 30, 2014

Line No.	Description		Test Year Expenses	Average Daily Expense (b) / 365 days		Revenue Lag		Expense Lag	Net Lag (d) - (e)	CWC Requirement (c) x (f)
	(a)		(b)	(c)		(d)		(e)	(f)	(g)
1	Gas Supply Expense									
2	Purchased Gas		87,478,439	239,667	*CWC2*	37.50	*Sch 3*	39.33	(1.83)	(438,591)
3										
4	Operation and Maintenance Expense									
5	O&M, Labor		7,652,390	20,965	*CWC2*	37.50	*Sch 4*	14.07	23.43	491,221
6	O&M, Non-Labor		12,983,102	35,570	*CWC2*	37.50	*Sch 5*	29.40	8.10	288,118
7	Total O&M Expense		20,635,493							779,339
8										
9										
10	Taxes Other Than Income									
11	Ad Valorem		3,498,394	9,585	*CWC2*	37.50	*CWC6*	241.50	(204.00)	(1,955,267)
12	State Gross Receipts Tax		1,084,335	2,971	*CWC2*	37.50	*CWC6*	(151.50)	189.00	561,478
13	Payroll Taxes		257,296	705	*CWC2*	37.50	*CWC6*	16.55	20.95	14,771
14	Franchise Tax		618,254	1,694	*CWC2*	37.50	*CWC6*	37.50	0.00	0
15	TRA Inspection Fee		425,046	1,165	*CWC2*	37.50	*CWC6*	272.50	(235.00)	(273,660)
16	DOT		19,392	53	*CWC2*	37.50	*CWC6*	59.00	(21.50)	(1,142)
17										
18	Allocated Taxes-Shared Services									
19	Ad Valorem	0%	0	0	*CWC2*	37.50	*CWC6*	241.50	(204.00)	0
20	Payroll Taxes	100%	247,649	678	*CWC2*	37.50	*CWC6*	16.55	20.95	14,217
21										
22	Allocated Taxes-Business Unit									
23	Ad Valorem	10%	6,231	17	*CWC2*	37.50	*CWC6*	241.50	(204.00)	(3,482)
24	Payroll Taxes	90%	55,697	153	*CWC2*	37.50	*CWC6*	16.55	20.95	3,198
25	Total Taxes Other Than Income		6,212,295							(1,639,888)
26										
27	Federal Income Tax		*7,465,832*							
28	Current Taxes		0	0	*CWC2*	37.50	*CWC7*	37.50	0.00	0
29	Deferred Taxes		7,465,832	20,454	*CWC2*	37.50	*CWC7*	0.00	37.50	767,038
30										
31	State Excise Tax		*1,483,046*							
32	Current Taxes		0	0	*CWC2*	37.50	*CWC8*	37.50	0.00	0
33	Deferred Taxes		1,483,046	4,063	*CWC2*	37.50	*CWC8*	0.00	37.50	152,368
34										
35	Depreciation		10,700,686	29,317	*CWC2*	37.50		0	37.50	1,099,386
36										
37	Interest on Customer Deposits		110,242	302	*CWC2*	37.50		182.5	(145.00)	(43,795)
38										
39	Interest Expense - LTD		6,084,048	16,669	*CWC2*	37.50	*CWC9*	91.25	(53.75)	(895,939)
40										
41	Return on Equity		13,927,092	38,156	*CWC2*	37.50		0	37.50	1,430,866
42										
43										
44	TOTAL		154,097,173							1,210,783

Exhibit No. GKW3
Witness: Waller
Schedule 27
Sheet 2

Atmos Energy Corporation-Virginia
Lead / Lag Cash Working Capital Calculation - Total Company Per Books (GAAP)
TME: September 30, 2015
Case No. PUE-2015-00119

Line No.	Cost Category (1)	Per Books Expense (2)	Daily Amount (3)=(2)/365	Rev Lag Days (4)	Expense Lead Days (5)	Reference (6)	Net Lag Days (7)=(4)-(5)	Working Capital Req. (8)=(3)*(7)
1	OPERATING EXPENSES:							
2	Purchased Gas Expense	$ 1,043,550,773	$ 2,859,043	40.93	39.63	Sheet 4	1.30	$ 3,706,847
3	Deferred Gas Expense	(63,125,790)	(172,947)	40.93	40.93	Note 3	0.00	-
4	Stored Gas Expense	48,197,347	132,048	40.93	0.00	Note 1	40.93	5,404,725
5	Prepaid Insurance Expense	12,457,311	34,130	40.93	0.00	Note 1	40.93	1,396,941
6	Payroll Costs	178,828,231	489,940	40.93	14.10	Sheet 5	26.83	13,145,090
7	Employee Benefits Expense	35,591,227	97,510	40.93	0.00	Note 1	40.93	3,991,084
8	Incentive Compensation Exp	34,408,040	94,269	40.93	0.00	Note 1	40.93	3,858,430
9	Pension and RIP Expense	25,899,122	70,956	40.93	0.00	Note 1	40.93	2,904,229
10	OPEB Expense	12,871,162	35,263	40.93	63.41	Sheet 6	(22.48)	(792,676)
11	Other O & M Costs:							
12	Accrued Vacation	(4,370,892)	(11,975)	40.93	0.00	Note 1	40.93	(490,137)
13	Uncollectible Expense	15,904,325	43,573	40.93	459.53	Sheet 7	(418.60)	(18,239,459)
14	Injuries and Damage Expense	26,254,702	71,931	40.93	0.00	Note 1	40.93	2,944,136
15	Other	181,279,089	496,655	40.93	36.70	Sheet 8	4.23	2,100,851
16	Depreciation and Amort Exp	281,102,498	770,144	40.93	0.00	Note 1	40.93	31,521,994
17								
18	TAXES OTHER THAN INCOME:							
19	Payroll Tax Expense	13,874,044	38,011	40.93	19.25	Sheet 9	21.68	824,032
20	Property Tax Expense	93,719,214	256,765	40.93	100.03	Sheet 10	(59.10)	(15,175,930)
21	Other Taxes	123,369,644	337,999	40.93	31.96	Sheet 11	8.97	3,032,213
22	TOTAL OPERATING EXP & OTH TAX	2,059,810,047						
23	INCOME TAXES:							
24	Current (including state)	(9,898,087)	(27,118)	40.93	37.50	Sheet 12	3.43	(93,015)
25	Deferred FIT Included in RB	194,351,594	532,470	40.93	0.00	Note 1	40.93	21,793,997
26	TOTAL INCOME TAX EXP	184,453,507						
27	OTHER EXPENSES:							
28	Charitable Donations	3,456,343	9,469	40.93	40.93	Note 2	0.00	-
29	Interest on Customer Deposits	665,643	1,824	40.93	182.50	Sheet 13	(141.57)	(258,224)
30	Interest Expense on LT Debt	144,874,613	396,917	40.93	91.25	Sheet 14	(50.32)	(19,972,863)
31	AFUDC	(2,374,770)	(6,506)	40.93	40.93	Note 2	0.00	-
32	Other Income	(14,974,677)	(41,027)	40.93	40.93	Note 2	0.00	-
33	TOTAL OTHER INCOME	131,647,153						
34	Income Avail for Common Eq	299,475,209	820,480	40.93	40.93	Note 2	0.00	-
35	Subtotal		-					41,602,265
36	Customer Utility Taxes	707,783	1,939	40.93	27.76	Sheet 15	13.17	25,537
37	State & Local Consumption Taxes	366,594	1,004	40.93	32.71	Sheet 16	8.22	8,248
38	Plus: Balance Sheet Analysis					Schedule 28		(374,367)
39		TOTAL CASH WORKING CAPITAL REQUIREMENT/(SOURCE)						41,261,683

Note 5: 0 Net Lead days assigned in compliance with Staff Report
Note 1: Item is included in the Balance Sheet Analysis; therefore, 0 lead days assigned.
Note 2: 0 Net Lead days assigned in compliance with the Staff in Case No. PUE950033.
Note 3: Per Case No. PUE950033, 0 Cash Working Capital used due to a timing difference between deferred gas expense and the average defer

Virginia Case No. PUE-2015-00119

Exhibit No. GKW3
Witness: Waller
Schedule 27
Sheet 2a

Atmos Energy Corporation-Virginia
Lead / Lag Cash Working Capital Calculation - Jurisdictional Per Books (GAAP)
TME: September 30, 2015
Case No. PUE-2015-00119

Line No.	Cost Category (1)	Alloc Factor Ref (2)	Alloc Factor % (3)	Jurisdictional Per Books Expense (4)	Allocated Per Books Expense (5)=(3)*(4)	Juris. Daily Amount (6)=(5)/365	Rev Lag Days (7)	Expense Lead Days (8)	Ref (9)	Net Lag Days (10)=(7)-(8)	Jurisdictional CWC Requirement (11)=(10)*(6)
1	**OPERATING EXPENSES:**										
2	Purchased Gas Expense	WP 40-1 "V"	90.270%	$ 23,490,569	$ 21,204,936	$ 58,096	40.93	39.63	Sheet 4	1.30	$ 75,323
3	Deferred Gas Expense	WP 40-1 "V"	90.270%	-	-	-	40.93	40.93	Note 3	0.00	-
4	Stored Gas Expense	WP 40-1 "AA"	86.980%	844,857	734,856	2,013	40.93	0.00	Note 1	40.93	82,392
5	Prepaid Insurance Expense	WP 40-1 "V"	90.270%	5,238	4,728	13	40.93	0.00	Note 1	40.93	532
6	Payroll costs	WP 40-1 "V"	90.270%	976,858	881,809	2,416	40.93	14.10	Sheet 5	26.83	64,821
7	Employee Benefits Expense	WP 40-1 "V"	90.270%	226,415	204,385	560	40.93	0.00	Note 1	40.93	22,921
8	Incentive Compensation	WP 40-1 "S"	89.880%	144,593	129,960	356	40.93	0.00	Note 1	40.93	14,571
9	Pension and RIP expense	WP 40-1 "V"	90.270%	84,239	76,043	208	40.93	0.00	Note 1	40.93	8,513
10	OPEB expense	WP 40-1 "V"	90.270%	121,932	110,068	302	40.93	63.41	Sheet 6	(22.48)	(6,789)
11	Other O & M Costs:										
12	Accrued Vacation	WP 40-1 "V"	90.270%	(411,103)	(371,103)	(1,017)	40.93	0.00	Note 1	40.93	(41,626)
13	Uncollectible Expense	WP 40-1 "V"	90.270%	115,921	104,642	287	40.93	459.53	Sheet 7	(418.60)	(120,137)
14	Injuries and Damage Expense	WP 40-1 "V"	90.270%	3,418	3,086	8	40.93	0.00	Note 1	40.93	327
15	Other	WP 40-1 "V"	90.270%	804,089	725,851	1,989	40.93	36.70	Sheet 8	4.23	8,413
16	Depreciation and Amort Exp	WP 40-1 "V"	90.270%	2,300,769	2,076,904	5,690	40.93	0.00	Note 1	40.93	232,892
17											
18	**TAXES OTHER THAN INCOME**										
19	Payroll Tax Expense	WP 40-1 "V"	90.270%	130,025	117,373	322	40.93	19.25	Sheet 9	21.68	6,981
20	Property Tax Expense	WP 40-1 "V"	90.270%	456,800	412,353	1,130	40.93	100.03	Sheet 10	(59.10)	(66,788)
21	Other Taxes	WP 40-1 "V"	90.270%	92,692	83,673	229	40.93	31.96	Sheet 11	8.97	2,054
22	TOTAL OPERATING EXP	WP 40-1 "V"	90.270%	29,387,311		72,602					
23	**INCOME TAXES:**										
24	Current (including state)	WP 40-1 "AE"	88.630%	2,830,952	2,509,073	6,874	40.93	37.50	Sheet 12	3.43	23,578
25	Deferred FIT Included in RB	WP 40-1 "AE"	88.630%	(430,209)	(381,294)	(1,045)	40.93	0.00	Note 1	40.93	(42,772)
26	TOTAL INCOME TAX EXP			2,400,743	-	5,829					
27	**OTHER EXPENSES:**										
28	Charitable Donations		100.000%	16,913	16,913	46	40.93	40.93	Note 2	0.00	-
29	Interest on Customer Deposits	WP 40-1 "F"	96.820%	559	541	1	40.93	182.50	Sheet 13	(141.57)	(142)
30	Interest Expense on LT Debt	WP 40-1 "V"	90.270%	1,032,753	932,266	2,554	40.93	91.25	Sheet 14	(50.32)	(128,517)
31	AFUDC	WP 40-1 "V"	90.270%	206	186	1	40.93	40.93	Note 2	0.00	-
33	TOTAL OTHER INCOME			1,050,431		2,602					
34	Income Avail for Common Eq	Sch 40b; p. 1		4,677,085		12,814	40.93	40.93	Note 2	0.00	-
35	Subtotal			42,192,655		93,847					136,547
36	Customer Utility Taxes	WP 40-1 "V"	90.270%	707,783		1,939	40.93	27.76	Sheet 15	13.17	25,537
37	State & Local Consumption Taxes	WP 40-1 "V"	90.270%	366,594		1,004	40.93	32.71	Sheet 16	8.22	8,248
38	Plus: Balance Sheet Analysis	Sch 28							Schedule 28		(338,127)
39						TOTAL CASH WORKING CAPITAL REQUIREMENT/(SOURCE)					$ (167,795)

Note 1: Item is included in the Balance Sheet Analysis; therefore, 0 lead days assigned.
Note 2: 0 Net Lead days assigned in compliance with the Staff in Case No. PUE950033
Note 3: Per Case No. PUE950033, 0 Cash Working Capital used due to a timing difference.

West Texas GUD 10174 (2012)

THP-CWC1

Atmos Energy Corporation - West Texas
Cash Working Capital Lead/ Lag Analysis
For Test Period Twelve Months Ended September 30, 2011

Line No.	Description	Test Year Expenses	Average Daily Expense	Revenue Lag Ref.	Revenue Lag Days	Expense Lag Ref.	Expense Lag Days	Net Lag	CWC Requiremen
	(a)	(b)	(c) = (b)/365		(d)		(e)	(f) = (d) - (e)	(g) = (c) x (f)
1	Gas Supply Expense								
2	Purchased Gas	137,507,303	376,732	*CWC 2*	39.03	*CWC3*	41.41	(2.38)	(896,623)
3									
4	Operation and Maintenance Expense								
5	O&M, Labor	11,585,306	31,741	*CWC 2*	39.03	*CWC 4*	28.22	10.81	343,115
6	O&M, Non-Labor	21,695,928	59,441	*CWC 2*	39.03	*CWC 5*	32.80	6.23	370,317
7	Total O&M Expense	33,281,234	91,181						713,432
8									
9									
10	Taxes Other Than Income [1]								
11	Ad Valorem	3,659,051	10,025	*CWC 2*	39.03	*CWC 6*	213.50	(174.47)	(1,749,027)
12	Payroll Taxes	534,370	1,464	*CWC 2*	39.03	*CWC 6*	33.96	5.07	7,423
13	Local Franchise Tax	2,868,088	7,858	*CWC 2*	39.03	*CWC 6*	66.28	(27.25)	(214,104)
14	State Gas Transportation	1,576	4	*CWC 2*	39.03	*CWC 6*	94.69	(55.66)	(240)
15									
16	Allocated Taxes								
17	Ad Valorem	79,904	219	*CWC 2*	39.03	*CWC 6*	213.50	(174.47)	(38,194)
18	Payroll Taxes	348,509	955	*CWC 2*	39.03	*CWC 6*	33.96	5.07	4,841
19	Total Taxes Other Than Income	7,491,498	20,525						(1,989,302)
20									
21	Franchise Tax/State Margin Tax	933,185	2,557	*CWC 2*	39.03	*CWC 7*	(47.00)	86.03	219,950
22									
23	Federal Income Tax								
24	Current Taxes	0	0	*CWC 2*	39.03	*CWC 8*	36.75	2.28	0
25									
26	Interest on Customer Deposits	6,115	17	*CWC 2*	39.03	*CWC 9*	331.83	(292.80)	(4,905)
27									
28	TOTAL	179,219,334	491,012						(1,957,448)

[1] Excludes DOT tax and State Gross Receipts Tax.

THP-CWC1

Atmos Energy Corporation - West Texas
Cash Working Capital Lead/ Lag Analysis
For Test Period Twelve Months Ended June 30, 2013

Line No.	Description	Test Year Expenses	Average Daily Expense	Revenue Lag *Ref.*	Revenue Lag Days	Expense Lag *Ref.*	Expense Lag Days	Net Lag	CWC Requiremen
	(a)	(b)	(c) = (b)/365		(d)		(e)	(f) = (d) - (e)	(g) = (c) x (f)
1	Gas Supply Expense								
2	Purchased Gas	115,600,453	316,714	*CWC 2*	38.54	*CWC3*	41.65	(3.11)	(984,979)
3									
4	Operation and Maintenance Expense								
5	O&M, Labor	11,904,423	32,615	*CWC 2*	38.54	*CWC 4*	29.29	9.25	301,687
6	O&M, Non-Labor	22,671,849	62,115	*CWC 2*	38.54	*CWC 5*	33.37	5.17	321,133
7	Total O&M Expense	34,576,272	94,730						622,820
8									
9									
10	Taxes Other Than Income [1]								
11	Ad Valorem	4,133,461	11,325	*CWC 2*	38.54	*CWC 6*	213.50	(174.96)	(1,981,344)
12	Payroll Taxes	474,451	1,300	*CWC 2*	38.54	*CWC 6*	34.49	4.05	5,264
13	Allocated Taxes								
14	Ad Valorem and other	89,188	244	*CWC 2*	38.54	*CWC 6*	213.50	(174.96)	(42,752)
15	Payroll Taxes	509,122	1,395	*CWC 2*	38.54	*CWC 6*	34.49	4.05	5,649
16	Total Taxes Other Than Income	5,206,223	14,264						(2,013,182)
17									
18	Revenue Taxes [1]								
19	Local Franchise Tax	8,536,899	23,389	*CWC 2*	38.54	*CWC 6*	65.68	(27.14)	(634,833)
20	State Gas Transportation	1,762	5	*CWC 2*	38.54	*CWC 6*	94.73	(56.19)	(271)
21									
22	State Gross Margin Tax	1,000,916	2,742	*CWC 2*	38.54	*CWC 7*	(46.50)	85.04	233,200
23									
24	Federal Income Tax								
25	Current Taxes	8,736,560	23,936	*CWC 2*	38.54	*CWC 8*	37.50	1.04	24,893
26									
27	Interest on Customer Deposits	5,432	15	*CWC 2*	38.54	*CWC 9*	331.83	(293.29)	(4,365)
28									
29	TOTAL	173,664,518	452,400						(2,756,717)

[1] Excludes DOT tax and State Gross Receipts Tax.

REQUEST:

Please explain why the Company did not submit a lead/lag study to support the level of Cash Working Capital in this proceeding and provide authoritative citations in support of the explanation.

RESPONSE:

The Company did not submit a lead/lag study and instead elected Cash Working Capital to be 1/8th of O&M, consistent with the Company's last two approved rate cases in Case Nos. 2013-00148 and 2009-00354 (while Case 2009-00354 was settled, Case No. 2013-00148 was fully litigated. In both cases, the detail underlying the revenue requirement included the 1/8th O&M method for estimating Cash Working Capital). In addition, the 1/8th O&M method for Cash Working Capital has been affirmatively approved by the Commission in other cases, such as in Case Nos. 99-176 for Delta Natural Gas and 2000-439 for Kentucky Utilities Company.

Respondent: Greg Waller

REQUEST:

Please refer to Schedule J-1 showing the 13 month average capital structure for the base and projected test periods. Please explain all reasons for the proposed increase in the common equity ratio from 52.99% in the base year to 55.32% in the test year. Provide a copy of all documents, including studies and/or other analyses developed by the Company to support this assumption. If none, then please so state. In addition, please indicate whether, and if so, how, the Company relied on each such document in developing this assumption.

RESPONSE:

Please see Attachment 10 to the Company's response to Staff DR No. 1-59 for the workpaper on which the capital structure for the base and test periods are calculated. This workpaper is linked directly to the revenue requirement model ("Fall 2015 KY Rev Req Model - Final Copy - External Links to 1-59 WPs.xlsx"). Please also see Mr. Waller's testimony at page 36, line 13 through page 37, line 8 and the Company's response to AG DR No. 1-13.

Respondent: Greg Waller

REQUEST:

Please refer to the Company's response to Staff 1-03, which provides the components of the capital structure for Atmos Energy Corporation for the last ten calendar years using ending balances and daily average balances of short term debt. Please identifY and describe all reasons why the Company increased the common equity ratio to 53.3% in 2014 from 50.0% or less in prior years by issuing a significant amount of common equity. Provide a copy of all documents, including studies and/or other analyses developed by the Company to support the issuance of such a significant amount of common equity. In addition, explain why the Company did not issue long term debt in lieu of some or all of the issuance of common equity.

RESPONSE:

In the Company's Form 10-K filed with the Securities and Exchange Commission on November 6, 2015, we disclosed, "We (Atmos) regularly evaluate our funding strategy and capital structure to ensure that we (i) have sufficient liquidity for our short-term and long-term needs in a cost-effective manner and (ii) maintain a balanced capital structure with a debt-to-capitalization ratio in a target range of 45 to 55 percent." In order to maintain a balanced capital structure we must issue debt and equity from time to time. It is important to note at the time of the equity offering in 2014, we had issued $500 million Unsecured 4.15% Senior Notes on January 11, 2013. These notes replaced our $250 million Unsecured 5.125% Senior Notes that matured in January 2013. Additionally, we had additional debt maturing of $500 million on October 15, 2014. That is a total of $1 billion of debt financing needs within approximately one year before and after the equity offering. Frequent issuances of long-term debt could impact our debt ratings and debt investor interest which would both unfavorably impact our cost of debt financing. In Fitch's May 21, 2014 ratings update (where we were placed on positive watch and later upgraded) they noted, "Atmos has completed, or will have completed within Fitch's rating horizon, several measures that reduce leverage and lower the cost of debt. In February 2014, Atmos raised $390 million of new equity, substantially meeting the equity component of its large five-year capital investment program. The equity raise improves Atmos capitalization..." Since the equity offering in 2014, we have received a two notch upgrade from Moody's (Baa1 to A2), a one notch upgrade from Fitch, and been placed on positive watch by Standard and Poor's. As our bond ratings have improved following the equity offering, our debt costs have fallen such that our overall required return on rate base is lower even if a constant allowed ROE is assumed. Equity is not typically raised in small amounts due to cost, and as such large amounts must be raised that can move the capital structure. Based on that fact, we have historically been infrequent equity issuers with issue before 2014 coming in December of 2006. See table below outlining the major external financings completed since 2006:

Offering Type	Offering Date	Notional Issued	Interest Rate if Applicable
Debt	10/7/2014	$500 million	4.125%
Equity	2/12/2014	9.2 million shares	
Debt	1/9/2013	$500 million	4.15%
Debt	6/7/2011	$400 million	5.50%
Debt	3/24/2009	$450 million	8.50%
Debt	6/13/2007	$250 million	6.35%
Equity	12/18/2006	6.3 million shares	

In support, please see Confidential Attachment 1 for a copy of the Company's annual Financing Plan for fiscal year 2014.

ATTACHMENT:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-13_Att1 - 2014 Financing Plan (CONFIDENTIAL).pdf, 4 Pages.

Respondent: Greg Waller

REQUEST:

Please refer to page 9 of the Direct Testimony of Mr. Waller related to the Pipe Replacement Program ("PRP") established in Case No. 2009-00354.

a. Please explain how the current PRP surcharge is accounted for in base period revenues and provide citations for the schedules in which the PRP surcharge is included as part of the filing. If the PRP surcharge revenues are not distinguished in some way in the filing, please explain why.

b. Please refer to the billing notice provided as part of Filing Requirement 17(4) which indicates that PRP charges were included as part of present rates. Please provide a breakout of present rates which shows the PRP surcharge separately for each customer class as well as the components of the average monthly bills.

c. Please provide all components (all rate base components, operating expense components, and revenue components) related to the PRP surcharge revenue requirement that are included in the base year. Source each such amount to the appropriate schedule in the filing.

d. Please provide all components (all rate base components, operating expense components, and revenue components) related to the PRP surcharge revenue requirement that are included in the test year base revenue requirement. Source each such amount to the appropriate schedule in the filing.

e. Please provide an accounting of the PRP costs that are included with all other costs in the forecast test year.

RESPONSE:

a) Please see the Company's response to AG DR No. 1-03 subpart (b).

b) Please see "Rate Design" tab of Attachment 41 to the Company's response to Staff DR No. 1-59.

c) All PRP cost of service items and revenue at present rates have been incorporated into the cost of service components and revenue at present rates of this filing as described in the Direct Testimony of Greg Waller and required by the Company's PRP tariff. For the components of the Company's PRP cost of service and rates, please see the revenue requirement calculation and supporting materials in Case No. 2015-00272.

d) Please see the response to subpart (c).

e) Please see the response to subpart (c).

Respondents: Greg Waller and Gary Smith

REQUEST:

Please refer to the confidential response attachment to Staff 1-43 (a) (9). The question asked for the most recent federal and state income tax returns. The Company responded by providing copies of the 2013 income tax returns, including all supporting schedules. Please provide copies of the 2014 federal and state income tax returns that were due to be filed by September 15, 2015, including all supporting schedules. If they have not yet been filed with the federal and/or state governments, then please provide the estimated date(s) for the filing(s) and supplement this response when they are filed.

RESPONSE:

The 2013 tax returns provided in the Company's response to Staff DR No. 1-47 are the most recently filed tax returns. Atmos Energy operates on a fiscal year ending on September 30. The 2014 federal and state tax returns relating to fiscal year ending September 30, 2015, have not yet been filed. The federal tax return is due June 15, 2016 and the state tax returns are due on various dates throughout June, July and August of 2016.

Respondent: Pace McDonald

REQUEST:

Please indicate whether Atmos Energy Corporation, Inc. filed a consolidated federal tax return for all years 2008 through 2015.

RESPONSE:

The Company has filed consolidated federal tax returns for years 2008 through 2013. Please see the Company's response to AG DR No. 1-15. The 2014 federal consolidated tax return has not yet been filed but is due to be filed on or before June 15, 2016.

Respondent: Pace McDonald

REQUEST:

Please identify each of the affiliates/subsidiaries of Atmos Energy Corporation, Inc. that comprise the affiliate group included in the Company's consolidated federal tax retum.

RESPONSE:

- Atmos Energy Corporation, Inc.
- Atmos Power Systems, Inc.
- UCG Storage, Inc.
- WKG Storage, Inc.
- Trans Louisiana Gas Storage, Inc.
- Phoenix Gas Gathering Company
- Trans Louisiana Gas Pipeline, Inc.
- Atmos Exploration & Production, Inc.
- Atmos Energy Holdings, Inc. & Subsidiaries (includes the following LLCs)
    - Atmos Energy Marketing, LLC
    - Atmos Energy Services, LLC
    - Egasco, LLC
    - Atmos Pipeline and Storage, LLC
    - Atmos Gathering Company, LLC
    - Fort Necessity Gas Storage, LLC

Respondent: Pace McDonald

REQUEST:

Please provide a schedule showing the history of the taxable income and losses for AEC in total and separated into utility, nonregulated, and other for each fiscal year since 2006. Show the taxable income or loss in each fiscal year; the loss carrybacks, if any, to the year carried back; the carryforward balance at the beginning of the fiscal year, if any; and the related carryforward ADIT at the end of the fiscal year, if any. In addition, please further separate the utility amounts into the Kentucky/Mid-States division, the Kentucky division/jurisdiction, and all other utility divisions. Provide all calculations, assumptions, data, and electronic spreadsheets with formulas intact. In addition, please provide all documents, including studies and/or other analyses developed by the Company to support the calculations each year.

RESPONSE:

The Company does not file tax returns or calculate federal taxable income at a Kentucky/Mid-States standalone basis. All utility operations are included in one single legal entity, Atmos Energy Corporation. In preparing the consolidated tax return, a separate calculation of taxable income for each legal entity is made. A taxable income calculation for a single division of Atmos Energy Corporation, such as Kentucky/Mid States, is not performed in the normal course of preparing the Company's tax returns.

Please see Attachment 1 (Federal NOL Roll Forward - Utility and Non-Reg 9-30-15) for a schedule that shows the NOL position by year for both the utility and the consolidated operations.

Please see Attachment 2 (Fed NOL_9_30_14) for a schedule that shows the NOL carryforward/carryback by year for both the utility and the consolidated operations.

Please see Attachment 3 (FY06-FY14 Consol 1120 Selected Pages) for schedules that show the NOL calculation by year for both the utility and the consolidated operations.

Please see Attachment 4 (FY05-FY07 Form 4549-B) that explains changes to taxable income made by the IRS.

Please see Attachment 5 (FY04-FY07) for IRS audit adjustment summaries.

ATTACHMENTS:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-18_Att1 - Federal NOL Roll Forward - Utility and Non-Reg 9-30-15 (CONFIDENTIAL).xlsx, 1 Page.

ATTACHMENT 2 - Atmos Energy Corporation, AG_1-18_Att2 - Fed NOL_09_30_2014 (CONFIDENTIAL).xlsx, 1 Page.

ATTACHMENT 3 - Atmos Energy Corporation, AG_1-18_Att3 - FY06-FY14 Consol 1120 Selected Pages (CONFIDENTIAL).pdf, 32 Pages.

ATTACHMENT 4 - Atmos Energy Corporation, AG_1-18_Att4 - FY05-FY07 Form 4549-B (CONFIDENTIAL).pdf, 6 Pages.

ATTACHMENT 5 - Atmos Energy Corporation, AG_1-18_Att5 - FY04-FY07 Audit Adjustment Summary (CONFIDENTIAL).xlsx, 4 Pages.

Respondent: Pace McDonald

REQUEST:

Refer to Schedule E, Computation of State & Federal Income Tax.

a. Please confirm that by using Operating Income before Income Tax & Interest, the Company's methodology assumes full normalization for income tax expense. If the Company cannot confirm this, then provide a detailed explanation as to why this is not correct.

b. Please disaggregate the income tax expense included in the base year and in the test year as shown on Schedule E into current income tax expense and deferred income tax expense. Provide all supporting data, assumptions, and calculations, including all electronic workpapers with formulas intact.

RESPONSE:

a) Confirm.

b) Because the Company is in a taxable loss position and owes no current taxes, all tax expense in the filing is deferred income tax expense.

Respondent: Pace McDonald

REQUEST:

Refer to Schedule A.1 lines 6 - 8.

a. Please confirm that the gross-up of the operating income deficiency by the gross revenue conversion factor reflects full normalization for income tax expense. If the Company cannot confirm this, then provide a detailed explanation as to why this is not correct.

b. Please confirm that the difference between lines 8 and 6 is the income tax expense in addition to that shown on Schedule E resulting from and included in the Company's requested rate increase.

c. Please confi1m that the difference between lines 8 and 6 reflects the increase in current income tax expense and that there is no effect on deferred tax expense. If that is not correct, then please disaggregate this difference into current income tax expense and deferred income tax expense. Provide all supporting data, assumptions, and calculations, including all electronic workpapers with formulas intact.

RESPONSE:

a) Confirm.

b) The difference between line 8 and 6 is $1,300,638. It represents the amount necessary to gross up the Operating Income Deficiency on line 6 to account for the 4 components in the gross-up factor (Uncollectible Accounts, PSC Fees, State Income Taxes and Federal Income Taxes). The four components are included in the calculation of the gross up factor on Schedule H.1 and the dollar amounts associated with each component are itemized on Schedule C.1 in the column labeled "Proposed Increase" and summarized below. They are in addition to the amounts on Schedule E and are included in the requested rate increase as shown on Schedule C.1.

Uncollectible Accounts Expense (recorded as Other O&M Expenses on C.1)	$ 16,538
PSC Fees (recorded as Taxes Other Than Income on C.1)	$ 6,288
State and Federal Income Taxes	$ 1,277,811
Total	$ 1,300,638

c) Because the Company is in a taxable loss position and owes no current taxes, all tax expense in the filing is deferred income tax expense

Respondents: Greg Waller and Pace McDonald

REQUEST:

Please refer to electronic workpaper "Att2 - ADIT for KY - Fall 2015" provided in response to Staff 1-59. Refer further to cell rows 105, 106 and 107 on worksheet tab "Division 002" that provide the account 190 ADIT amounts for "FD-NOL Credit Carryforward - Non Reg", "FD-NOL Credit Carryforward - Utility", and "FD-NOL Credit Carryforward- Other", respectively.

a. Please provide a detailed description of the methodology used to disaggregate or separately determine the actual and projected NOL carryforward amounts for utility, nonregulated, and other.

b. Please provide copies of all supporting documentation used to quantify the actual NOL carryforward amounts in fiscal years 2013, 2014, 2015, the base year, and the test year.

c. Balances in these lines changed on a quarterly basis until the last month of actual data provided in June 2015. Please explain how those quarterly changes in the NOL carryforward amounts are determined separately for the utility and nonregulated.

d. Please provide the actual balances for utility and nonregulated NOL carryforward amounts as of September 30, 2015 and December 31, 2015 and provide copies of all supporting documentation used to quantify the balances.

RESPONSE:

a) Actual NOL carryforward amounts are derived from the Company's tax filings. Atmos files a consolidated tax return, which includes both utility and non-regulated operations. The utility NOL represents that portion of the consolidated net operating loss resulting from utility operations. Utility operations are all included in one single legal entity, Atmos Energy Corporation. In preparing the consolidated tax return, a separate calculation of taxable income for each legal entity is made. Therefore it is possible to isolate the amount of losses generated by the utility operations by referring to the taxable income of Atmos Energy Corporation.

GAAP reporting requirements differ from tax return calculations of the NOL Carryforward ("NOLC"). These differences result in both increases and decreases to the Company's NOLC deferred tax asset recorded on the Company's books. Several such differences have resulted in a net decrease to the Company's NOLC deferred tax asset recorded on its books. This net decrease is reflected as Book/Tax Differences NOL on the NOL Carryforward

Schedule and titled FD-NOL Credit Carryforward - Other in the referenced workpaper. This decrease has no impact on the Company's tax filings.

The Company has projected net operating losses for the period included in this filing. To the extent that the Company's deferred tax liabilities exceed income tax expense computed at the composite rate in the filing, the Company has projected additional net operating loss carryforward.

b) Please see Confidential Attachment 1 through Confidential Attachment 4.

c) Total federal and state tax expense is estimated at a quarter-end using projected fiscal year pre-tax book income for each business unit. Total federal expense is calculated using the statutory rate of 35%. Total state tax expense is calculated using current state tax rates and the most recent apportionment data calculated for each legal entity. The deferred taxes recorded at a quarter-end are estimates based on a high level analysis conducted at a business unit level. Current federal and state tax expense is calculated as the difference between total tax expense and deferred tax expense.

Since the Company is in a federal net operating loss position, no current federal liability or receivable should be recorded. The net operating loss carryforward is debited or credited at non-year end quarters to offset any calculated federal payable or receivable. Since the large losses the Company experiences are due to utility operations, the Company applies the statutory rate to nonregulated pre-tax book income and records this as a decrease to the net operating loss carryforward. The balance of the adjustment to the NOL is recorded to utility operations.

A full and detailed calculation of taxable income by legal entity is prepared at year end and the resulting generation or utilization of NOL Carryforward by utility and nonregulated operations is recorded to the financial statements.

d) Please see the response to subpart (c).

<u>ATTACHMENTS:</u>

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-21_Att1 - NOL Carryforward Schedule (CONFIDENTIAL).xlsx, 1 Page.

ATTACHMENT 2 - Atmos Energy Corporation, AG_1-21_Att2 - Selected Pages Atmos 1120 FY13 - FY14 (CONFIDENTIAL).pdf, 7 Pages.

ATTACHMENT 3 - Atmos Energy Corporation, AG_1-21_Att3 - FY15 September Provision (CONFIDENTIAL).xlsx, 1 Page.

ATTACHMENT 4 - Atmos Energy Corporation, AG_1-21_Att4 - FY16 December Provision (CONFIDENTIAL).xlsx, 9 Pages.

Respondent: Pace McDonald

REQUEST:

Refer to page 19 of32 of the request for PLR included in Exhibit PM-I wherein it states:

"The type of ratemaking for the DT A claimed by the regulators in PLR 201418024 is not practiced (or even claimed to be practiced) by the regulators in Kentucky."

a. Please describe the party and the manner, and identify the forum, in which each such party would have "claimed" that the KPSC practiced the "type of ratemaking for the DTA claimed by the regulators in PLR 20 1418024," for both rate base and income tax. expense purposes. Provide a copy of all documentation relied on for your response.

b. Please provide a copy of PLR 201418024.

c. Please confi1m that the "rate making for the DT A claimed by the regulators in PLR 20 1418024" is described in that PLR as follows:

   i. Taxpayer filed a general rate case on Date A (Case). The test year used in the Case was the 12 month period ending on Date B. In establishing the income tax expense element of its cost of service, the tax benefits attributable to accelerated depreciation were normalized in accordance with Commission policy and were not flowed through to ratepayers. In establishing the rate base on which Taxpayer was to be allowed to earn a return Commission generally offsets rate base by Taxpayer's plant based ADIT balance, using a 13-month average of the month-end balances of the relevant accounts. Taxpayer argued that the ADIT balance should be reduced by the amounts that Taxpayer calculates did not actually defer tax due to the presence of NOLCs or the AMT. Commission, in an order issued on Date C, did not use the mnounts that Taxpayer calculates did not defer tax due to NOLCs or AMT but only the amount in the ADIT account. Taxpayer filed a petition for reconsideration based on the normalization implications of the order. On Date D, Commission rejected Taxpayer's request. Taxpayer again requested reconsideration and the Commission denied that request on Date E. Commission asserts that, in setting rates it includes a provision for deferred taxes based on the entire difference between accelerated tax and regulatory depreciation, including situations in which a utility has, such as this case, an NOLC or AMT. Thus, Commission asse1is that it has already recognized the effects of the NOLC in setting rates and there is no need to reduce the ADIT by the other amounts due to NOLCs or AMT.

d. Please confirm that the "ratemaking for the DTA" in KPSC Case No. 2013-00148 is identical to that claimed by the regulator in PLR 201418024, except that the KPSC used the DTA to reduce the DTL while the regulator in PLR 201418024 did not do so. If the Company cannot confi1m this, then please identify and describe all differences the Company believes exist, and in particular, all differences in the calculation of income tax expense, if any.

e. Please confirm that the KPSC reflected full income tax normalization in the income tax expense allowed in Case No. 2013-00148, meaning that it included the deferred income tax expense debit related to accelerated tax depreciation with no reduction for any deferred income tax expense credit related to an NOL. Cite to the Order and all other record evidence that supports your response.

f. Please confi1m that the regulators in PLR 201418024 did not reduce the DTL by the DTA related to the NOL and that the PLR found this was not a violation of the normalization requirements of the IRC or Treasury Regulations.

g. Please identify who drafted the referenced statement in the Atmos Request for PLR.

h. Please provide a copy of all support and analysis relied upon for the referenced statement in the Atmos Request for PLR.

i. Please indicate whether Mr. McDonald believes today that the referenced statement is accurate and correct with respect to the income tax expense allowed in Case No. 2013-00148. If so, then please provide all support and analysis relied upon to reach this conclusion. In addition, please provide all support relied upon to reach the conclusion that the deferred income tax expense allowed in Case No. 2013-00148 was reduced by a credit deferred income tax expense related to an NOL. Finally, provide all schedules that demonstrate and quantify the credit deferred income tax expense related to an NOL.

<u>RESPONSE:</u>

a. The type of ratemaking for deferred taxes and tax expense claimed by the regulators in PLR 201418024 would be presented in Kentucky in the form of a rate case. Atmos Energy is not aware of any case past or present in which the Kentucky PSC has ruled that balance of deferred taxes and tax provision should be calculated in a manner consistent with PLR 20148024.

b. See Attachment 1.

c. The section of PLR 201418024 cited above along with the following section cited below is the IRS summary of the ratemaking for the DTA claimed by the regulators in PLR 201418024:

"Commission has stated that, in setting rates it includes a provision for deferred taxes based on the entire difference between accelerated tax and regulatory depreciation, including situations in which a utility has an NOLC or MTCC. Such a provision allows a utility to collect amounts from ratepayers equal to income taxes that would have been due absent the NOLC and MTCC. Thus, Commission has already taken the NOLC and MTCC into account in setting rates."

d. The Company cannot confirm because the statement is incomplete. The ratemaking for tax provision and ADIT in KPSC Case No. 2013-00148 is not identical to that claimed by the regulator in PLR 201418024. The question as stated notes only one difference between PLR 201418024 and KPSC Case No. 2013-00148 when, in fact, there are two.

The first difference, as identified in the question, is in PLR 201418024 the Commission did not reduce the DTL by the NOLC DTA. However there is a second critical difference not noted as an exception in the question.

In setting the provision (or tax expense) for deferred taxes in the case, the Commission in PLR 201418024 took into account the entire difference between accelerated tax and regulatory depreciation. It did not adjust the deferred tax provision for the establishment of an NOLC DTA.

Unlike PLR 201418024, the provision for deferred taxes in KPSC 2013-00148 was impacted by both the entire difference between accelerated tax and regulatory depreciation AND the recording of an NOLC DTA. If the Company's NOLs had been excluded from the deferred tax provision, the Company's provision for income taxes would have been higher than a tax provision included in the filing.

This is a critical difference and central to why the IRS reached a different conclusion in the PLR issued to the Company.

e. The Company cannot confirm because the statement is incomplete. The Company did reflect full income tax normalization but the meaning of full income tax normalization as described in the question is incorrect. Full income tax normalization would result in a provision for income taxes which includes the debit (increase) related to accelerated tax depreciation AND a credit (decrease) related to the recording of an NOL. While not specifically addressed in the order, deferred income tax expense in KPSC Case No. 2013-00148 was calculated in this manner.

f. The Company cannot confirm because the statement is incomplete. In PLR 201418024, the IRS found the rate making as represented by the regulators was not in violation of the normalization requirements. This conclusion was reached because the regulators in that case represented that the NOL had already been taken into account by not reflecting its effect in the provision for deferred taxes and thereby necessarily recording a higher deferred tax provision than would have been the case had its effect been recognized. Since the NOL had been taken into account in this manner, it was permissible to not reduce the DTL by the NOLC DTA.

g. The Atmos Request for PLR was jointly drafted by Mr. James Warren of Miller Chevalier and Mr. Pace McDonald of Atmos Energy.

h. The support of the statement is the filing and resulting order received in KPSC Case No. 2013-00148. Furthermore, the Commission issued a letter dated December 15, 2014 to Atmos Energy in which it found the Atmos Request for PLR to be adequate and complete.

i. Mr. McDonald believes the statement to be correct.

The calculation of the tax provision in Case No. 2013-00148 was made with a composite tax rate of 38.9%. This rate is the combined federal and state rate. Applying a composite rate to the revenue requirement results in the accrual of all taxes that will be owed for the revenue requirement. It is the total tax burden regardless of whether it is currently paid or deferred to a future period. Since the composite rate accrues all taxes, including all deferred taxes, it therefore includes the deferred taxes associated with both accelerated depreciation and NOLs.

If the Company's NOLs had been excluded from the deferred tax provision, the Company's provision for income taxes would have been higher than a tax provision calculated using a composite tax rate.

<u>ATTACHMENT:</u>

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-22_Att1 - PLR 201418024.pdf, 7 Pages.

Respondent: Pace McDonald

Internal Revenue Service

Number: **201418024**
Release Date: 5/2/2014
Index Number: 167.22-01

Department of the Treasury
Washington, DC 20224

Third Party Communication: None
Date of Communication: Not Applicable

Person To Contact:
, ID No.

Telephone Number:

Refer Reply To:
CC:PSI:B06
PLR-133813-13

Date:
January 27, 2014

LEGEND:

Taxpayer =

Parent =

State =
Commission =
Year A =
Year B =
Year C =
Year D =
Year E =
X =
Y =
Date A =
Date B =
Date C =
Date D =
Date E =
Case =
Director =

Dear . :

This letter responds to the request, dated July 30, 2013, of Taxpayer for a ruling on whether the Commission's treatment of Taxpayer's Accumulated Deferred Income

Tax (ADIT) account balance in the context of a rate case is consistent with the requirements of the normalization provisions of the Internal Revenue Code.

The representations set out in your letter follow.

Taxpayer is a regulated public utility incorporated in State. It is wholly owned by Parent. Taxpayer distributes and sells natural gas to customers in State. Taxpayer is subject to the regulatory jurisdiction of Commission with respect to terms and conditions of service and particularly the rates it may charge for the provision of service. Taxpayer takes accelerated depreciation where available and, for the period beginning in Year A and ending in Year E, Taxpayer has, in the aggregate, produced more net operating losses (NOL) than taxable income. After application of the carryback and carryforward rules, Taxpayer represents that it has net operating loss carryforward (NOLC), produced in Year C and Year E, of $X as of the end of Year E. The amount of claimed accelerated depreciation in Year C and Year E exceeded the amount of the NOLCs for those years. In Year D, Taxpayer produced regular taxable income as well as alternative minimum taxable income (AMTI); the regular taxable income was offset by the NOLCs from Year B and year C but could not offset the entire alternative minimum tax (AMT) liability due to the limitation in § 56(d). Taxpayer paid $Y of AMT in Year D and had a minimum tax credit carryforward (MTCC) as of the end of year E of $Y.

On its regulatory books of account, Taxpayer "normalizes" the differences between regulatory depreciation and tax depreciation. This means that, where accelerated depreciation reduces taxable income, the taxes that a taxpayer would have paid if regulatory depreciation (instead of accelerated tax depreciation) were claimed constitute "cost-free capital" to the taxpayer. A taxpayer that normalizes these differences, like Taxpayer, maintains a reserve account showing the amount of tax liability that is deferred as a result of the accelerated depreciation. This reserve is the accumulated deferred income tax (ADIT) account. Taxpayer maintains an ADIT account and also maintains an offsetting series of entries that reflect that portion of those 'tax losses' which, while due to accelerated depreciation, did not actually defer tax because of the existence of an NOLC. With respect to the $Y AMT liability from Year D, Taxpayer carried that amount as an offset to the ADIT because the AMT increased the payment of tax.

Taxpayer filed a general rate case on Date A (Case). The test year used in the Case was the 12 month period ending on Date B. In establishing the income tax expense element of its cost of service, the tax benefits attributable to accelerated depreciation were normalized in accordance with Commission policy and were not flowed thru to ratepayers. In establishing the rate base on which Taxpayer was to be allowed to earn a return Commission generally offsets rate base by Taxpayer's plant based ADIT balance, using a 13-month average of the month-end balances of the relevant accounts. Taxpayer argued that the ADIT balance should be reduced by the amounts that Taxpayer calculates did not actually defer tax due to the presence of

NOLCs or the AMT. Commission, in an order issued on Date C, did not use the amounts that Taxpayer calculates did not defer tax due to NOLCs or AMT but only the amount in the ADIT account. Taxpayer filed a petition for reconsideration based on the normalization implications of the order. On Date D, Commission rejected Taxpayer's request. Taxpayer again requested reconsideration and the Commission denied that request on Date E. Commission asserts that, in setting rates it includes a provision for deferred taxes based on the entire difference between accelerated tax and regulatory depreciation, including situations in which a utility has, such as in this case, an NOLC or AMT. Thus, Commission asserts that it has already recognized the effects of the NOCL in setting rates and there is no need to reduce the ADIT by the other amounts due to NOLCs or AMT.

Taxpayer requests that we rule as follows:

Under the circumstances described above, the reduction of Taxpayer's rate base by the full amount of its ADIT account without regard to the balances in its NOLC-related account and its MTCC-related account was consistent with the requirements of § 168(i)(9) and § 1.167(l)-1 of the Income Tax regulations.

Law and Analysis

Section 168(f)(2) of the Code provides that the depreciation deduction determined under section 168 shall not apply to any public utility property (within the meaning of section 168(i)(10)) if the taxpayer does not use a normalization method of accounting.

In order to use a normalization method of accounting, section 168(i)(9)(A)(i) of the Code requires the taxpayer, in computing its tax expense for establishing its cost of service for ratemaking purposes and reflecting operating results in its regulated books of account, to use a method of depreciation with respect to public utility property that is the same as, and a depreciation period for such property that is not shorter than, the method and period used to compute its depreciation expense for such purposes. Under section 168(i)(9)(A)(ii), if the amount allowable as a deduction under section 168 differs from the amount that-would be allowable as a deduction under section 167 using the method, period, first and last year convention, and salvage value used to compute regulated tax expense under section 168(i)(9)(A)(i), the taxpayer must make adjustments to a reserve to reflect the deferral of taxes resulting from such difference.

Section 168(i)(9)(B)(i) of the Code provides that one way the requirements of section 168(i)(9)(A) will not be satisfied is if the taxpayer, for ratemaking purposes, uses a procedure or adjustment which is inconsistent with such requirements. Under section 168(i)(9)(B)(ii), such inconsistent procedures and adjustments include the use of an estimate or projection of the taxpayer's tax expense, depreciation expense, or reserve for deferred taxes under section 168(i)(9)(A)(ii), unless such estimate or projection is also used, for ratemaking purposes, with respect to all three of these items and with respect to the rate base.

Former section 167(l) of the Code generally provided that public utilities were entitled to use accelerated methods for depreciation if they used a "normalization method of accounting." A normalization method of accounting was defined in former section 167(l)(3)(G) in a manner consistent with that found in section 168(i)(9)(A). Section 1.167(1)-1(a)(1) of the Income Tax Regulations provides that the normalization requirements for public utility property pertain only to the deferral of federal income tax liability resulting from the use of an accelerated method of depreciation for computing the allowance for depreciation under section 167 and the use of straight-line depreciation for computing tax expense and depreciation expense for purposes of establishing cost of services and for reflecting operating results in regulated books of account. These regulations do not pertain to other book-tax timing differences with respect to state income taxes, F.I.C.A. taxes, construction costs, or any other taxes and items.

Section 1.167(l)-1(h)(1)(i) provides that the reserve established for public utility property should reflect the total amount of the deferral of federal income tax liability resulting from the taxpayer's use of different depreciation methods for tax and ratemaking purposes.

Section 1.167(1)-1(h)(1)(iii) provides that the amount of federal income tax liability deferred as a result of the use of different depreciation methods for tax and ratemaking purposes is the excess (computed without regard to credits) of the amount the tax liability would have been had the depreciation method for ratemaking purposes been used over the amount of the actual tax liability. This amount shall be taken into account for the taxable year in which the different methods of depreciation are used. If, however, in respect of any taxable year the use of a method of depreciation other than a subsection (1) method for purposes of determining the taxpayer's reasonable allowance under section 167(a) results in a net operating loss carryover to a year succeeding such taxable year which would not have arisen (or an increase in such carryover which would not have arisen) had the taxpayer determined his reasonable allowance under section 167(a) using a subsection (1) method, then the amount and time of the deferral of tax liability shall be taken into account in such appropriate time and manner as is satisfactory to the district director.

Section 1.167(1)-1(h)(2)(i) provides that the taxpayer must credit this amount of deferred taxes to a reserve for deferred taxes, a depreciation reserve, or other reserve account. This regulation further provides that, with respect to any account, the aggregate amount allocable to deferred tax under section 167(1) shall not be reduced except to reflect the amount for any taxable year by which Federal income taxes are greater by reason of the prior use of different methods of depreciation. That section also notes that the aggregate amount allocable to deferred taxes may be reduced to reflect the amount for any taxable year by which federal income taxes are greater by reason of the prior use of different methods of depreciation under section 1.167(1)-1(h)(1)(i) or to reflect asset retirements or the expiration of the period for depreciation used for determining the allowance for depreciation under section 167(a).

Section 1.167(1)-(h)(6)(i) provides that, notwithstanding the provisions of subparagraph (1) of that paragraph, a taxpayer does not use a normalization method of regulated accounting if, for ratemaking purposes, the amount of the reserve for deferred taxes under section 167(l) which is excluded from the base to which the taxpayer's rate of return is applied, or which is treated as no-cost capital in those rate cases in which the rate of return is based upon the cost of capital, exceeds the amount of such reserve for deferred taxes for the period used in determining the taxpayer's expense in computing cost of service in such ratemaking.

Section 1.167(1)-(h)(6)(ii) provides that, for the purpose of determining the maximum amount of the reserve to be excluded from the rate base (or to be included as no-cost capital) under subdivision (i), above, if solely an historical period is used to determine depreciation for Federal income tax expense for ratemaking purposes, then the amount of the reserve account for that period is the amount of the reserve (determined under section 1.167(1)-1(h)(2)(i)) at the end of the historical period. If such determination is made by reference both to an historical portion and to a future portion of a period, the amount of the reserve account for the period is the amount of the reserve at the end of the historical portion of the period and a pro rata portion of the amount of any projected increase to be credited or decrease to be charged to the account during the future portion of the period.

Section 55 of the Code imposes an alternative minimum tax on certain taxpayers, including corporations. Adjustments in computing alternative minimum taxable income are provided in § 56. Section 56(a)(1) provides for the treatment of depreciation in computing alternative minimum taxable income. Section 56(a)(1)(D) provides that, with respect to public utility property the Secretary shall prescribe the requirements of a normalization method of accounting for that section.

Section 1.167(l)-1(h) requires that a utility must maintain a reserve reflecting the total amount of the deferral of federal income tax liability resulting from the taxpayer's use of different depreciation methods for tax and ratemaking purposes. Taxpayer has done so. Section 1.167(1)-(h)(6)(i) provides that a taxpayer does not use a normalization method of regulated accounting if, for ratemaking purposes, the amount of the reserve for deferred taxes which is excluded from the base to which the taxpayer's rate of return is applied, or which is treated as no-cost capital in those rate cases in which the rate of return is based upon the cost of capital, exceeds the amount of such reserve for deferred taxes for the period used in determining the taxpayer's expense in computing cost of service in such ratemaking. Section 56(a)(1)(D) provides that, with respect to public utility property the Secretary shall prescribe the requirements of a normalization method of accounting for that section.

In the rate case at issue, Commission has excluded from the base to which the Taxpayer's rate of return is applied the reserve for deferred taxes, unmodified by the accounts which Taxpayer has designed to calculate the effects of the NOLCs and MTCC. There is little guidance on exactly how an NOLC or MTCC must be taken into account in calculating the reserve for deferred taxes under §§ 1.167(1)-1(h)(1)(iii) and 56(a)(1)(D). However, it is clear that both must be taken into account in calculating the amount of the reserve for deferred taxes (ADIT) for the period used in determining the taxpayer's expense in computing cost of service in such ratemaking.

Both Commission and Taxpayer have intended, at all relevant times, to comply with the normalization requirements. Commission has stated that, in setting rates it includes a provision for deferred taxes based on the entire difference between accelerated tax and regulatory depreciation, including situations in which a utility has an NOLC or MTCC. Such a provision allows a utility to collect amounts from ratepayers equal to income taxes that would have been due absent the NOLC and MTCC. Thus, Commission has already taken the NOLC and MTCC into account in setting rates. Because the NOLC and MTCC have been taken into account, Commission's decision to not reduce the amount of the reserve for deferred taxes by these amounts does not result in the amount of that reserve for the period being used in determining the taxpayer's expense in computing cost of service exceeding the proper amount of the reserve and violate the normalization requirements. We therefore conclude that the reduction of Taxpayer's rate base by the full amount of its ADIT account without regard to the balances in its NOLC-related account and its MTCC-related account was consistent with the requirements of § 168(i)(9) and § 1.167(l)-1 of the Income Tax regulations.

This ruling is based on the representations submitted by Taxpayer and is only valid if those representations are accurate.

Except as specifically determined above, no opinion is expressed or implied concerning the Federal income tax consequences of the matters described above. In particular, while we accept as true for purposes of this ruling Commission's assertions that it includes a provision for deferred taxes based on the entire difference between accelerated tax and regulatory depreciation, including situations in which a utility has an NOLC or AMT, we do not conclude that it has done so and those assertions are subject to verification on audit.

This ruling is directed only to the taxpayer who requested it. Section 6110(k)(3) of the Code provides it may not be used or cited as precedent. In accordance with the power of attorney on file with this office, a copy of this letter is being sent to your authorized representative. We are also sending a copy of this letter ruling to the Director.

Sincerely,

Peter C. Friedman
Senior Technician Reviewer, Branch 6
(Passthroughs & Special Industries)

cc:

REQUEST:

Refer to page 19 of 32 of the request for PLR included in Exhibit PM-I wherein it states:

> "In Taxpayer's context, if the NOLC-related DTA is not included in the calculation of rate base, then it is not "taken into account" at all."

a. Please identify who drafted the referenced statement in the Atmos Request for PLR.

b. Please provide a copy of all support and analysis relied upon for the referenced statement in the Atmos Request for PLR.

c. Please confirm that i) the IRS found in PLR 201418024 that there was no normalization violation where the NOLC-related DTA was not used to reduce the DTL if the income tax expense allowed the "utility to collect amounts from ratepayers equal to income taxes that would have been due absent the NOLC and MTCC" and ii) cited and relied on the regulators' statement that "in setting rates it includes a provision for deferred taxes based on the entire difference between accelerated tax and regulatory depreciation, including situation in which a utility has an NOLC or MTCC." If the Company cannot confirm either statement, then please provide a detailed explanation why each statement does not accurately reflect the dete1mination and facts as set forth in the PLR.

d. Please confi1m that the IRS dete1mined that the "Commission has already taken the NOLC and MTCC into account in setting rates" through the deferred income tax expense allowance included in the revenue requirement. If the Company cam1ot confirm this statement, then please provide a detailed explanation why it does not accurately reflect the dete1mination as set forth in the PLR.

e. Please indicate if Mr. McDonald believes that the KPSC "has already taken the NOLC and MTCC into account in setting rates" through the deferred income tax expense allowance included in the revenue requirement. If not, then please provide all facts that differentiate the KPSC calculation of the Company's income tax expense allowance in Case No. 2013-00148 from the calculation of the taxpayer's income tax expense allowance in PLR 201418024.

RESPONSE:

a. The Atmos Request for PLR was jointly drafted by Mr. James Warren of Miller Chevalier and Mr. Pace McDonald of Atmos Energy.

b. The support of the statement is the filing and resulting order received in KPSC Case No. 2013-00148.

c. Confirm.

d. The Company cannot confirm because the statement is incomplete. The IRS did not determine that the Commission had already taken the NOLC and MTCC into account in setting rates. Instead the Commission represented that it had and the IRS based its ruling off such representation. The IRS made no findings of fact or determination as to whether this representation was accurate or true. The IRS even went so far as to add this language in the PLR to highlight that it was not ruling on whether the Commission had in fact taken the NOLC into account as represented:

"Except as specifically determined above, no opinion is expressed or implied concerning the Federal income tax consequences of the matters described above. In particular, while we accept as true for purposes of this ruling Commission's assertions that it includes a provision for deferred taxes based on the entire difference between accelerated tax and regulatory depreciation, including situations in which a utility has an NOLC or AMT, we do not conclude that it has done so and those assertions are subject to verification on audit."

e. In Case No. 2013-00148, Mr. McDonald believes the Commission correctly included the credit related to the NOL in the deferred income tax provision and included the DTA for NOLC in the balance of deferred taxes applied to rate base. This approach is widely accepted ratemaking. Numerous jurisdictions set rates using this approach and it is based first and foremost on sound ratemaking principles. Failure to make the adjustments the Commission did in Case No. 2013-00148 would result in a rate base and an associated return requested from rate payers that would not be reflective of the economic realities embodied in the Company's tax filings and associated cash flow. Furthermore, had the Commission not accepted these NOL-related adjustment to the tax provision in Case No. 2013-00148, the result would have been a higher tax charge to ratepayers than the one that was actually included in cost of service.

Please see the response to 22(d) for a description of the difference between PLR 201418024 and Case No. 2013-00148.

Respondent: Pace McDonald

REQUEST:

Refer to page 19 of 32 of the request for PLR included in Exhibit PM-1 wherein it states:

"Under these circumstances, the Service ruled that the DTA did not have to be included in the ADIT calculation because it had already been 'taken into account' in computing tax expense."

a. Please indicate if Mr. McDonald believes that statement is accurate and correct with respect to PLR 201418024.

b. Please indicate if Mr. McDonald believes that statement is accurate and correct if it were to be applied to Atmos in this proceeding. If not, then provide all facts that differentiate Atmos from the utility taxpayer in PLR 201418024. Provide a copy of all support relied on for your response.

RESPONSE:

a. The statement is a direct quote from the Company's ruling request. For context, it is important to include the preceding sentence. The statement would then read:

"The way in which the regulators asserted that they "took it into account" was by imposing on customers a deferred tax charge on the entire difference between book and tax depreciation whether or not the deduction created an NOLC. Under these circumstances, the Service ruled that the DTA did not have to be included in the ADIT calculation because it had already been 'taken into account' in computing tax expense."

With the context of the preceding sentence, it is accurate and complete.

b. Mr. McDonald does not believe that statement would be accurate or correct in this proceeding. The filing in this proceeding does not impose on customers a deferred tax charge on the entire difference between book and tax depreciation whether or not the deduction created an NOLC. The deferred charge imposed in this proceeding includes a credit related to the NOL.

Respondent: Pace McDonald

REQUEST:

Refer to PLR 201436037.

a. Please indicate if Mr. James Warren drafted and/or signed the Request for the referenced PLR.

b. Please indicate whether Mr. Warren relied in any way upon the Request for the referenced PLR when drafting the Request for PLR on behalf of Atmos. If so, please describe what he relied upon and how this was reflected in the Request on behalf of Atmos.

c. Please provide a copy of the Request for the referenced PLR and all related documentation filed with the IRS.

RESPONSE:

a. The Company does not know who drafted and/or signed the Request for the referenced PLR. Such information is confidential to the taxpayer requesting the ruling unless otherwise disclosed by the taxpayer. The Company does not know what taxpayer requested the ruling and whether the taxpayer has disclosed the request to the public.

b. The Company does not know if Mr. Warren participated in or would have had access to the Request for the referenced PLR. A ruling request is confidential taxpayer information.

c. The Company does not possess a copy of the Request. The request filed with the IRS is confidential and not released publically by the IRS. The Company does not know what taxpayer requested the ruling and whether the taxpayer has disclosed the request to the public.

Respondent: Pace McDonald

REQUEST:

Refer to PLR 201436038.

a. Please indicate if Mr. James Warren drafted and signed the Request for the referenced PLR.

b. Please indicate whether Mr. Warren relied in any way upon the Request for the referenced PLR when drafting the Request for PLR on behalf of Atmos. If so, please describe what he relied upon and how this was reflected in the Request on behalf of Atmos.

c. Please provide a copy of the Request for the referenced PLR and all related documentation filed with the IRS.

RESPONSE:

a. The Company does not know who drafted and/or signed the Request for the referenced PLR. Such information is confidential to the taxpayer requesting the ruling unless otherwise disclosed by the taxpayer. The Company does not know what taxpayer requested the ruling and whether the taxpayer has disclosed the request to the public.

b. The Company does not know if Mr. Warren participated in or would have had access to the Request for the referenced PLR. A ruling request is confidential taxpayer information.

c. The Company does not possess a copy of the Request. The request filed with the IRS is confidential and not released publically by the IRS. The Company does not know what taxpayer requested the ruling and whether the taxpayer has disclosed the request to the public.

Respondent: Pace McDonald

REQUEST:

Please refer to page 8, lines 8-15 of Mr. Martin's Direct Testimony wherein he states that since the last rate case in 2013, "Atmos Energy has undertaken substantial investments in technology and process improvements to ensure that it provides the best and most efficient customer service possible" and how this will enable the Company "to be more productive."

a. Please identify, describe and quantify each of the substantial investments in technology and process improvements that have occurred since the last rate case in 2013 and those that are projected and included in the test year. Provide this information for all such investments, not only those related specifically to customer service. Provide this information by project if it is available.

b. Please provide a copy of the capital expenditure authorizations/justifications, including all economic analyses developed and reviewed by management for each of the substantial investments identified in response to part (a) of this question, by project if it is available.

c. Identify all rate base and operating expense impacts for the base period and forecasted test period, along with all other assumptions, which reflect the impact of reductions in employees, expenses and costs related to improvements in efficiency and productivity, including, but not limited to, those investments identified and described in response to part (a) of this question. Provide the historical costs (by account number and description) before the related efficiency/productivity and compare this to the reduced costs (by account number and description), and identify the difference related to cost savings from efficiency/productivity.

RESPONSE:

a) In addition to the investment in WMR, the Company has invested in the following:

- Several "CSS Enhancement" projects. Each of these are a collective of functional enhancements that improve operations within the customer contact centers handling customer calls, billing & payment processing, collections, service order dispatching and/or field service order automation.

  - Project No. 010.25524 - CSS Q3 release, approximately $251,000, in service July 2015

  - Project No. 010.25933 - CSS Q3 release, approximately $461,000, in service November 2015

  - Project No. 010.20959 - CSS Miscellaneous Enhancements, approximately $1,750,000, in service September 2014

- Click Schedule Upgrade and Click Roster Implementation for dispatching processes.

  - Project No. 010.22040 - Click Upgrade and Roster, approximately $819,000, in service June 2015

- Cash Forecasting. Better automation for Treasury functions.

  - Project No. 010.21252 - Cash Forecasting for Treasury, approximately $1,573,000, in service June 2015

- Image Capture and Automation. Automation of back office accounting processes.

  - Project No. 010.21251 : Image Capture and Automation, approximately, $1,007,000, in service December 2014

b) Projects are proposed within the annual budgeting cycle. Each project is reviewed by a governance team and the items listed in subpart (a) were approved due to their importance. The authorizations/approvals are processed within the Company's PowerPlant system. Please see Attachment 1 for a flow chart of the process.

c) The Company strives to operate effectively and efficiently throughout its normal course of business. To the extent efficiency and productivity gains were achieved and/or expected from any of the initiatives cited above or through the Company's normal course of business, those adjustments would be reflected in the actual results and budgeted amounts that became the basis for the forward looking level of operating expenses in this case. The actual costs of the projects listed above are included in Plant in Service (and therefore rate base) from the time they were put into service.

<u>ATTACHMENT:</u>

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-27_Att1 - Process Chart.pdf, 1 Page.

Respondent: Mark Martin

Prioritization Process

ATMOS energy

Multiple groups generate, scope, and prioritize project opportunities across all areas of the business ▶ ***Leaders from each group organize, consolidate, prioritize and propose recommendations*** ▶ ***Business leadership reviews, refines, and confirms prioritization for input into enterprise budgeting & planning***

Utility Operations

CSO / Utility Marketing

Gas Control / Pipeline

Gas Supply/ Complex Billing

Shared Services

IT Infrastructure

IT Capital Project Opportunities →

Enterprise IT Project Review Committee

- **Chairperson from each Business Advisory Committee**
  - Phillip Murdock
  - Craig White
  - Steve Easley
  - Jason Schneider
  - Ron Acker
- **IT Leadership**
  - Shared Services IT
  - Representative BU IT Managers
- Richard Mitschke (Facilitator)

IT Capital Spending Recommendation →

Enterprise IT Steering Committee (ITSC)

- **Divisional Presidents**
  - Kevin Akers
  - David Gates
  - Gary Gregory
  - Tom Hawkins
  - John Paris
  - David Park
  - Dick Erskine
- **AEH**
  - Ron Bahr
- **At Large Members**
  - Conrad Gruber
  - Chris Forsythe
  - Clay Cash
  - Kenny Malter
  - Kevin Dobbs
  - Gary Rehm
  - Rich Gius (Facilitator)

→ **Enterprise Budgeting Process**

- Final decisions made in context of overall capital and budgeting process

Iterative feedback loops

REQUEST:

Please provide all of Dr. Vander Weide's workpapers and supporting documentation for his Direct Testimony and exhibits. Please provide all spreadsheets with cell formulas intact.

RESPONSE:

Please see Attachment 54 to the Company's response to Staff DR No. 1-54 for Dr. Vander Weide's Exhibit JVW-1 and supporting documentation in Excel format. Also, please see Attachment 1.

ATTACHMENT:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-28_Att1 - Vander Weide VL Workpapers.pdf, 17 Pages.

Respondent: Dr. James Vander Weide

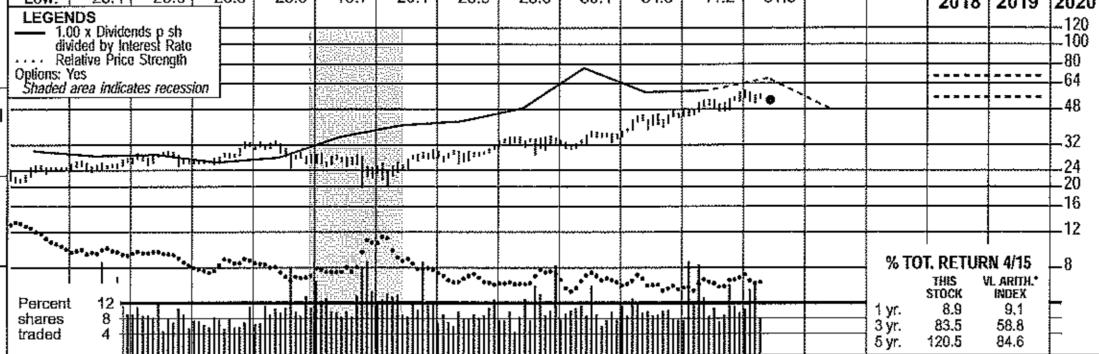
ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE 53.20 | P/E RATIO 17.5 (Trailing: 17.8; Median: 15.0) | RELATIVE P/E RATIO 0.92 | DIV'D YLD 3.0% | VALUE LINE

TIMELINESS **2** Raised 3/13/15
SAFETY **1** Raised 6/6/14
TECHNICAL **4** Lowered 5/22/15
BETA .85 (1.00 = Market)

High:	27.6	30.0	33.1	33.5	29.3	30.3	32.0	35.6	37.3	47.4	58.2	59.3
Low:	23.4	25.0	25.5	23.9	19.7	20.1	25.9	28.5	30.4	34.9	44.2	51.3

Target Price Range 2018 | 2019 | 2020



% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	8.9	9.1
3 yr.	83.5	58.8
5 yr.	120.5	84.6

2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	70	(+30%)	*10%*
Low	55	(+5%)	*4%*

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	1	1	0	1	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	128	141	133
to Sell	139	120	142
Hld's(000)	69353	69403	68718

Atmos Energy's history dates back to 1906 in the Texas Panhandle. Over the years, through various mergers, it became part of Pioneer Corporation, and, in 1981, Pioneer named its gas distribution division Energas. In 1983, Pioneer organized Energas as a separate subsidiary and distributed the outstanding shares of Energas to Pioneer shareholders. Energas changed its name to Atmos in 1988. Atmos acquired Trans Louisiana Gas in 1986, Western Kentucky Gas Utility in 1987, Greeley Gas in 1993, United Cities Gas in 1997, and others.

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
61.75	75.27	66.03	79.52	53.69	53.12	48.15	38.10	42.88	49.22	*43.15*	*46.35*	Revenues per sh A	*54.15*
3.90	4.26	4.14	4.19	4.29	4.64	4.72	4.76	5.14	5.42	*5.55*	*5.75*	"Cash Flow" per sh	*6.60*
1.72	2.00	1.94	2.00	1.97	2.16	2.26	2.10	2.50	2.96	*3.00*	*3.20*	Earnings per sh A B	*3.80*
1.24	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.40	1.48	*1.56*	*1.64*	Div'ds Decl'd per sh C■	*1.90*
4.14	5.20	4.39	5.20	5.51	6.02	6.90	8.12	9.32	8.32	*9.05*	*8.90*	Cap'l Spending per sh	*9.40*
19.90	20.16	22.01	22.60	23.52	24.16	24.98	26.14	28.47	30.74	*31.85*	*32.70*	Book Value per sh	*36.65*
80.54	81.74	89.33	90.81	92.55	90.16	90.30	90.24	90.64	100.39	*105.00*	*110.00*	Common Shs Outst'g D	*120.00*
16.1	13.5	15.9	13.6	12.5	13.2	14.4	15.9	15.9	16.1	*Bold figures are*	*Value Line estimates*	Avg Ann'l P/E Ratio	*16.5*
.86	.73	.84	.82	.83	.84	.90	1.01	.89	.84			Relative P/E Ratio	*1.05*
4.5%	4.7%	4.2%	4.8%	5.3%	4.7%	4.2%	4.1%	3.5%	3.1%			Avg Ann'l Div'd Yield	*3.0%*
4973.3	6152.4	5898.4	7221.3	4969.1	4789.7	4347.6	3438.5	3886.3	4940.9	*4530*	*5100*	Revenues ($mill) A	*6500*
135.8	162.3	170.5	180.3	179.7	201.2	199.3	192.2	230.7	289.8	*315*	*350*	Net Profit ($mill)	*460*
37.7%	37.6%	35.8%	38.4%	34.4%	38.5%	36.4%	33.8%	38.2%	39.2%	*39.5%*	*39.5%*	Income Tax Rate	*40.0%*
2.7%	2.6%	2.9%	2.5%	3.6%	4.2%	4.6%	5.6%	5.9%	5.9%	*7.0%*	*6.9%*	Net Profit Margin	*7.1%*
57.7%	57.0%	52.0%	50.8%	49.9%	45.4%	49.4%	45.3%	48.8%	44.3%	*44.5%*	*45.0%*	Long-Term Debt Ratio	*45.0%*
42.3%	43.0%	48.0%	49.2%	50.1%	54.6%	50.6%	54.7%	51.2%	55.7%	*55.5%*	*55.0%*	Common Equity Ratio	*55.0%*
3785.5	3828.5	4092.1	4172.3	4346.2	3987.9	4461.5	4315.5	5036.1	5542.2	*6030*	*6540*	Total Capital ($mill)	*8000*
3374.4	3629.2	3836.8	4136.9	4439.1	4793.1	5147.9	5475.6	6030.7	6725.9	*7500*	*8100*	Net Plant ($mill)	*10200*
5.3%	6.1%	5.9%	5.9%	5.9%	6.9%	6.1%	6.1%	5.9%	6.4%	*6.5%*	*6.5%*	Return on Total Cap'l	*7.0%*
8.5%	9.8%	8.7%	8.8%	8.3%	9.2%	8.8%	8.1%	8.9%	9.4%	*9.5%*	*9.5%*	Return on Shr. Equity	*10.5%*
8.5%	9.8%	8.7%	8.8%	8.3%	9.2%	8.8%	8.1%	8.9%	9.4%	*9.5%*	*9.5%*	Return on Com Equity	*10.5%*
2.3%	3.6%	3.0%	3.1%	2.7%	3.5%	3.3%	2.8%	4.0%	4.7%	*4.5%*	*4.5%*	Retained to Com Eq	*5.5%*
73%	63%	65%	65%	68%	62%	62%	65%	56%	51%	*52%*	*52%*	All Div'ds to Net Prof	*50%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $2680.2 mill. **Due in 5 Yrs** $950.0 mill.
LT Debt $2455.2 mill. **LT Interest** $145.0 mill.
(LT interest earned: 4.7x; total interest coverage: 4.7x)
Leases, Uncapitalized Annual rentals $16.7 mill.
Pfd Stock None
Pension Assets-9/14 $434.8 mill. **Oblig.** $493.6 mill.
Common Stock 101,018,788 shs. as of 5/1/15
MARKET CAP: $5.4 billion (Large Cap)

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	66.2	42.3	95.5
Other	617.1	733.5	722.1
Current Assets	683.3	775.8	817.6
Accts Payable	241.6	311.6	295.6
Debt Due	368.0	196.7	225.0
Other	368.9	402.4	497.9
Current Liab.	978.5	910.7	1018.5
Fix. Chg. Cov.	537%	637%	645%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	.5%	-8.0%	*4.0%*
"Cash Flow"	5.0%	4.0%	*4.5%*
Earnings	5.0%	5.0%	*7.0%*
Dividends	1.5%	2.0%	*5.0%*
Book Value	6.0%	4.5%	*4.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	1084.0	1225.5	576.4	552.6	3438.5
2013	1034.2	1309.0	857.9	685.2	3886.3
2014	1255.1	1964.3	942.7	778.8	4940.9
2015	1258.8	1540.1	*955*	*776.1*	*4530*
2016	*1300*	*2000*	*1000*	*800*	*5100*

Fiscal Year Ends	EARNINGS PER SHARE A B E Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	.68	1.12	.31	--	2.10
2013	.85	1.23	.36	.08	2.50
2014	.95	1.38	.45	.23	2.96
2015	.96	1.35	*.47*	*.22*	*3.00*
2016	*1.00*	*1.45*	*.51*	*.24*	*3.20*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.34	.34	.34	.345	1.37
2012	.345	.345	.345	.35	1.39
2013	.35	.35	.35	.37	1.42
2014	.37	.37	.37	.39	1.50
2015	.39	.39			

BUSINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to more than three million customers through six regulated natural gas utility operations: Louisiana Division, West Texas Division, Mid-Tex Division, Mississippi Division, Colorado-Kansas Division, and Kentucky/Mid-States Division. Gas sales breakdown for 2014: 65%, residential; 30%, commercial; 3%, industrial; and 2% other. 2014 depreciation rate 3.0%. Has around 4,760 employees. Officers and directors own 1.6% of common stock (12/14 Proxy). President and Chief Executive Officer: Kim R. Cocklin. Incorporated: Texas. Address: Three Lincoln Centre, Suite 1800, 5430 LBJ Freeway, Dallas, Texas 75240. Telephone: 972-934-9227. Internet: www.atmosenergy.com.

Atmos Energy had a tough time making progress on the earnings-per-share front in the first two quarters of fiscal 2015. (Years end on September 30th.) The nonregulated segment experienced a drop in realized margins, reflecting lower natural gas price volatility. During the same period in fiscal 2014, strong demand in the natural gas market caused by substantially colder-than-normal weather led to a more attractive business environment. It should also be noted that the weighted number of diluted shares outstanding was higher. But the natural gas distribution unit benefited partly from higher rates, particularly in the Mid-Tex, Kentucky/Mid-States, Colorado-Kansas, and West Texas divisions. Greater transportation revenues and higher revenue-related taxes helped here, too. Finally, the performance of the regulated pipeline operation enjoyed the benefits of the Gas Reliability Infrastructure Program (GRIP) filings approved in 2014 and 2015.

We anticipate more of the same during the second half. Consequently, the bottom line might be about $3.00 a share for the year as a whole. That would be slightly above the fiscal 2014 figure. Regarding fiscal 2016, however, share net may advance to $3.20, assuming that operating margins expand further.

Meanwhile, there has been much activity in the rate-filing arena. In fact, through the first six months of this fiscal year, the Dallas-headquartered company completed seven regulatory proceedings resulting in a $14.4 million increase in annual operating income. What's more, at the time of this writing, there were 10 rate-making initiatives in progress seeking an additional $114.4 million of annual operating income. Of course, there are no guarantees that Atmos will receive everything it desires.

Various investors should find something to like here. The equity offers a decent amount of current dividend income that's well covered by corporate profits. Future, steady increases in the payout are probable, also. Moreover, the Timeliness rank sits at 2 (Above Average). Other appealing qualities include the 1 (Highest) rank for Safety and excellent score for Price Stability.

Frederick L. Harris, III *June 5, 2015*

(A) Fiscal year ends Sept. 30th. (B) Diluted shrs. Excl. nonrec. items: '06, d18¢; '07, d2¢; '09, 12¢; '10, 5¢; '11, (1¢). Excludes discontinued operations: '11, 10¢; '12, 27¢; '13, 14¢. Next egs. rpt. due early Aug.
(C) Dividends historically paid in early March, June, Sept., and Dec. ■ Div. reinvestment plan. Direct stock purchase plan avail.
(D) In millions.
(E) Qtrs may not add due to change in shrs outstanding.

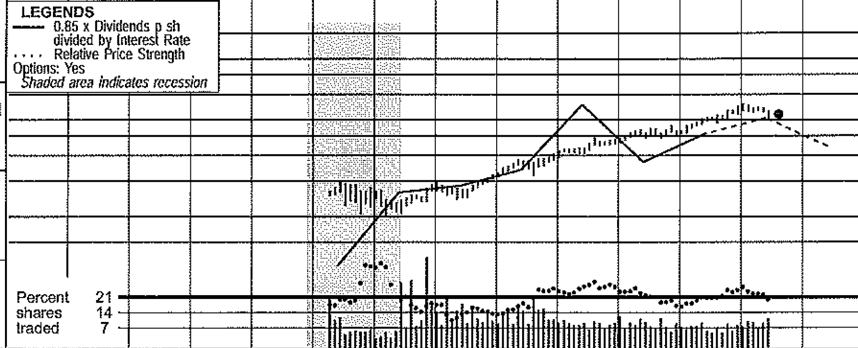
Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	75
Earnings Predictability	90

AMERICAN WATER NYSE-AWK

RECENT PRICE **51.08** | P/E RATIO **19.6** (Trailing: 20.9, Median: NMF) | RELATIVE P/E RATIO **1.03** | DIV'D YLD **2.7%** | VALUE LINE

TIMELINESS 2 Lowered 7/10/15
SAFETY 3 New 7/25/08
TECHNICAL 2 Raised 7/3/15
BETA .70 (1.00 = Market)

	2008	2009	2010	2011	2012	2013	2014	2015
High:	23.7	23.0	25.8	32.8	39.4	45.1	56.2	57.5
Low:	16.5	16.2	19.4	25.2	31.3	37.0	41.1	48.4



Target Price Range 2018 | 2019 | 2020

2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	80	(+55%)	14%
Low	50	(Nil)	3%

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	0	0	0	0	0	0	0	0	0
Options	4	0	0	3	0	0	2	5	0
to Sell	6	0	0	3	0	0	2	5	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	206	223	213
to Sell	189	201	222
Hld's(000)	146606	143322	147193

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	0.8	3.2
3 yr.	53.4	64.2
5 yr.	172.3	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008E	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
--	--	--	--	--	--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	*17.25*	*18.50*	Revenues per sh	*21.40*
--	--	--	--	--	--	--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	*4.65*	*5.10*	"Cash Flow" per sh	*6.15*
--	--	--	--	--	--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	*2.60*	*2.80*	Earnings per sh A	*3.25*
--	--	--	--	--	--	--	--	--	.40	.82	.86	.90	1.21	.84	1.21	*1.33*	*1.42*	Div'd Decl'd per sh B■	*1.70*
--	--	--	--	--	--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	*5.55*	*5.55*	Cap'l Spending per sh	*6.25*
--	--	--	--	--	--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	*27.60*	*29.00*	Book Value per sh D	*34.55*
--	--	--	--	--	--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	*179.50*	*179.50*	Common Shs Outst'g C	*185.00*
--	--	--	--	--	--	--	--	--	18.9	15.6	14.6	16.8	16.7	19.9	20.0	*Bold figures are*		Avg Ann'l P/E Ratio	*20.0*
--	--	--	--	--	--	--	--	--	1.14	1.04	.93	1.05	1.06	1.12	1.05	*Value Line*		Relative P/E Ratio	*1.25*
--	--	--	--	--	--	--	--	--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	*estimates*		Avg Ann'l Div'd Yield	*2.6%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $6034.5 mil. **Due in 5 Yrs** $1294.5 mil.
LT Debt $5428.9 mil. **LT Interest** $278.0 mil.
(52% of Cap'l)

Leases, Uncapitalized: Annual rentals $14.0 mill.
Pension Assets 12/14 $1428.2 mill
Oblig. $1746.5 mill.
Pfd Stock $14.3 mill. **Pfd Div'd** $.5 mill

Common Stock 179,962,233 shs.
as of 4/30/2015

MARKET CAP: $9.2 billion (Large Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
--	2093.1	2214.2	2336.9	2440.7	2710.7	2666.2	2876.9	2901.9	3011.3	*3100*	*3325*	Revenues ($mill)	*3960*
--	d155.8	d342.3	187.2	209.9	267.8	304.9	374.3	369.3	429.8	*465*	*505*	Net Profit ($mill)	*600*
--	--	--	37.4%	37.9%	40.4%	39.5%	40.7%	39.1%	39.4%	*39.5%*	*38.5%*	Income Tax Rate	*37.5%*
--	--	--	--	--	--	--	6.2%	5.1%	1.4%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*6.0%*
--	56.1%	50.9%	53.1%	56.9%	56.8%	55.7%	53.9%	52.4%	52.4%	*53.5%*	*53.0%*	Long-Term Debt Ratio	*55.0%*
--	43.9%	49.1%	46.9%	43.1%	43.2%	44.2%	46.1%	47.6%	47.4%	*46.5%*	*47.0%*	Common Equity Ratio	*45.0%*
--	8692.8	9245.7	8750.2	9289.0	9561.3	9580.3	9635.5	9940.7	10364	*10955*	*11500*	Total Capital ($mill)	*13300*
--	8720.6	9318.0	9991.8	10524	11059	11021	11739	12391	12900	*13600*	*14250*	Net Plant ($mill)	*15000*
--	NMF	NMF	3.7%	3.8%	4.4%	4.8%	5.4%	5.1%	5.5%	*5.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
--	NMF	NMF	4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	*8.5%*	*8.5%*	Return on Shr. Equity	*9.0%*
--	NMF	NMF	4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	*8.5%*	*8.5%*	Return on Com Equity	*9.0%*
--	NMF	NMF	3.0%	1.8%	2.8%	3.5%	3.6%	4.7%	4.3%	*4.0%*	*4.5%*	Retained to Com Eq	*4.5%*
--	--	--	34%	65%	56%	52%	57%	40%	50%	*53%*	*51%*	All Div'ds to Net Prof	*51%*

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	27.0	23.1	24.3
Other	523.3	638.3	704.7
Current Assets	550.3	661.4	729.0
Accts Payable	264.1	285.8	203.4
Debt Due	644.5	511.1	605.6
Other	326.9	444.1	418.5
Current Liab.	1235.5	1241.0	1227.5
Fix. Chg. Cov.	307%	300%	302%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	--	3.0%	4.5%
"Cash Flow"	--	20.5%	6.0%
Earnings	--	NMF	7.5%
Dividends	--	21.5%	8.0%
Book Value	--	.5%	5.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	618.5	745.6	831.8	681.0	2876.9
2013	636.1	724.3	829.2	712.3	2901.9
2014	679.0	754.8	846.1	731.4	3011.3
2015	698.1	*755*	*880*	*766.9*	*3100*
2016	*735*	*840*	*920*	*830*	*3325*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.28	.66	.87	.30	2.11
2013	.32	.57	.84	.33	2.06
2014	.39	.62	.86	.52	2.39
2015	.44	*.70*	*1.00*	*.46*	*2.60*
2016	*.50*	*.75*	*1.05*	*.50*	*2.80*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.22	.23	.23	.23	.91
2012	.23	.23	.25	.50	1.21
2013	--	.28	.28	.28	.84
2014	.28	.31	.31	.31	1.21
2015	.31	.34			

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in over 47 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 88.8% of 2014 revenues. New Jersey is its largest market accounting for 22.7% of regulated revenues. Has roughly 6,400 employees. BlackRock, Inc., owns 10.0% of outstanding shares; Vanguard, 6.3%; officers & directors, less than 1.0%. (3/15 Proxy). Pres. & CEO: Susan Story. Chairman: George Mackenzie. Addr.: 1025 Laurel Oak Road, Voorhees, NJ 08043. Tel.: 856-346-8200. Internet: www.amwater.com.

Income-oriented investors may find American Water Works of interest. In the second quarter, the water utility raised its dividend almost 10%, a rate much higher than other companies in the industry. Moreover, we expect this trend to continue through late decade. Too, yields on equities in this group are currently trading in a very narrow range, meaning a premium water utility is cheap on a relative basis.

Short-term accounts should be interested, as well. Our proprietary system believes American Water's stock will outperform the broader market averages in the year ahead.

Controlling costs and making small acquisitions may be the twin pillars of the utility's long-term strategy. Size matters in the water utility industry. The EPA reports that there are over 50,000 water systems that serve 300 million Americans. (The figure swells to over 150,000 when the districts providing water to less than 3,300 are included.) Many of these smaller municipally-owned authorities are being faced with the task of installing expensive new pipelines and facilities. Not only is American Water the largest presence in the U.S. market, it accounts for about half of the groups's combined market capitalization. With the expertise, purchasing power, and access to funds, the company can buy many of these systems, eliminate the cost redundancies, and improve margins dramatically.

Earnings prospect are bright. Due, in part, to American Water's operating philosophy discussed in the above paragraph, we expect its share earnings to post increases of 9% in 2015 and 8% in 2016.

The budget for capital expenditures should remain high. The company plans on spending roughly $1 billion annually over the next three- to five-year period, replacing outdated pipelines and improving its infrastructure.

American Water's finances are only average. Internally generated funds will not be sufficient to accommodate both the generous dividend-paying policy and the large capital outlays required through late decade. As a result, the company will likely have to tap the capital markets to make up the difference.

James A. Flood *July 17, 2015*

(A) Diluted earnings. Excludes nonrecurring losses: '08, $4.62; '09, $2.63; '11, $0.07. Discontinued operations: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due early Aug. Quarterly earnings may not sum due to rounding. (B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available. Two payments made in 4th quarter of 2012. (C) In millions. (D) Includes intangibles. In 2014: $1.21 billion, $6.73/share. (E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	25

CASE NO. 2015-00343
ATTACHMENT 1
TO AG DR NO. 1-28

AMER. STATES WATER NYSE-AWR

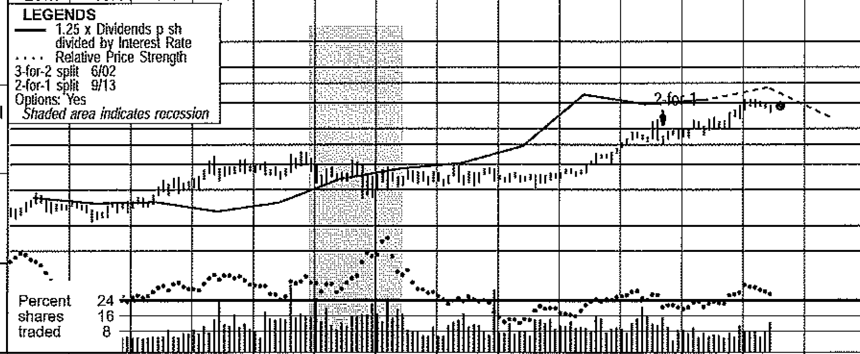
RECENT PRICE **38.79** | P/E RATIO **24.2** (Trailing: 24.1 / Median: 20.0) | RELATIVE P/E RATIO **1.27** | DIV'D YLD **2.3%** | **VALUE LINE**

TIMELINESS 2 Raised 6/5/15
SAFETY 2 Raised 7/20/12
TECHNICAL 2 Raised 7/3/15
BETA .70 (1.00 = Market)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	13.4	17.3	21.9	23.1	21.0	19.4	19.8	18.2	24.1	33.1	38.7	41.7
Low:	10.4	12.2	15.1	16.8	13.5	14.9	15.6	15.3	17.0	24.0	27.0	35.9

Target Price Range
2018 | 2019 | 2020

LEGENDS
— 1.25 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 6/02
2-for-1 split 9/13
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+30%)	9%
Low	35	(-10%)	*Nil*

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	1	0	1	0	1	0
to Sell	0	1	0	3	0	1	0	1	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	81	99	86
to Sell	86	87	93
Hld's(000)	23032	23380	23637

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	15.2	3.2
3 yr.	105.0	64.2
5 yr.	160.3	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
6.45	6.08	6.53	6.89	6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	*12.35*	*13.35*	Revenues per sh	*15.35*
1.13	1.10	1.26	1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	*2.70*	*2.80*	"Cash Flow" per sh	*3.70*
.60	.64	.67	.67	.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	*1.60*	*1.65*	Earnings per sh A	*2.15*
.43	.43	.43	.44	.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	*.88*	*.93*	Div'd Decl'd per sh B■	*1.12*
2.15	1.51	1.59	1.34	1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	*2.05*	*2.10*	Cap'l Spending per sh	*2.40*
5.91	6.37	6.61	7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	*13.80*	*14.25*	Book Value per sh	*15.45*
26.87	30.24	30.24	30.36	30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	*38.00*	*37.50*	Common Shs Outst'g C	*37.50*
17.1	15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	*Bold figures are*		Avg Ann'l P/E Ratio	*20.5*
.97	1.03	.86	1.00	1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	*Value Line*		Relative P/E Ratio	*1.30*
4.2%	4.2%	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	*estimates*		Avg Ann'l Div'd Yield	*2.5%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $326.0 mill. **Due in 5 Yrs** $41.6 mill.
LT Debt $325.7 mill. **LT Interest** $21.5 mill.
(40% of Cap'l)

Leases, Uncapitalized: Annual rentals $0.4 mill.
Pension Assets-12/14 $140.6 mill.
Oblig. $185.2 mill.

Pfd Stock None.

Common Stock 37,779,984 shs.
as of 5/1/15

MARKET CAP: $1.5 billion (Mid Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
236.2	268.6	301.4	318.7	361.0	398.9	419.3	466.9	472.1	465.8	*470*	*500*	Revenues ($mill)	*575*
22.5	23.1	28.0	26.8	29.5	41.4	42.0	54.1	62.7	61.1	*61.0*	*62.5*	Net Profit ($mill)	*80.0*
47.0%	40.5%	42.6%	37.8%	38.9%	43.2%	41.7%	39.9%	36.3%	38.4%	*38.5%*	*38.0%*	Income Tax Rate	*38.0%*
--	12.2%	8.5%	6.9%	3.2%	5.8%	2.0%	2.5%	2.5%	.5%	*.5%*	*1.0%*	AFUDC % to Net Profit	*2.0%*
50.4%	48.6%	46.9%	46.2%	45.9%	44.3%	45.4%	42.2%	39.8%	39.1%	*41.0%*	*43.0%*	Long-Term Debt Ratio	*42.0%*
49.6%	51.4%	53.1%	53.8%	54.1%	55.7%	54.6%	57.8%	60.2%	60.9%	*59.0%*	*57.0%*	Common Equity Ratio	*58.0%*
532.5	551.6	569.4	577.0	665.0	677.4	749.1	787.0	818.4	832.6	*890*	*935*	Total Capital ($mill)	*1070*
713.2	750.6	776.4	825.3	866.4	855.0	896.5	917.8	981.5	1003.5	*1060*	*1120*	Net Plant ($mill)	*1240*
5.4%	6.0%	6.7%	6.4%	5.9%	7.6%	7.1%	8.3%	8.9%	8.6%	*9.0%*	*8.5%*	Return on Total Cap'l	*8.5%*
8.5%	8.1%	9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	*11.5%*	*11.5%*	Return on Shr. Equity	*13.0%*
8.5%	8.1%	9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	*11.5%*	*11.5%*	Return on Com Equity	*13.0%*
2.8%	2.7%	3.9%	3.1%	3.2%	5.8%	5.3%	6.6%	6.8%	5.7%	*5.0%*	*5.0%*	Retained to Com Eq	*6.0%*
67%	67%	58%	64%	61%	47%	49%	45%	47%	53%	*55%*	*56%*	All Div'ds to Net Prof	*52%*

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	38.2	76.0	74.7
Other	153.4	133.5	114.7
Current Assets	191.6	209.5	189.4
Accts Payable	49.8	41.9	37.0
Debt Due	6.3	.3	.3
Other	44.8	57.1	59.4
Current Liab.	100.9	99.3	96.7
Fix. Chg. Cov.	531%	533%	545%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	6.0%	5.5%	*4.0%*
"Cash Flow"	8.5%	9.0%	*6.0%*
Earnings	11.0%	14.0%	*6.5%*
Dividends	5.5%	8.5%	*8.0%*
Book Value	6.0%	6.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	107.6	114.3	133.5	111.5	466.9
2013	110.6	120.7	130.9	109.9	472.1
2014	102.0	115.6	138.3	109.9	465.8
2015	100.9	*117.1*	*140*	*112*	*470*
2016	*105*	*125*	*150*	*120*	*500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.27	.40	.49	.26	1.41
2013	.35	.43	.53	.30	1.61
2014	.28	.39	.54	.36	1.57
2015	.32	*.44*	*.54*	*.30*	*1.60*
2016	*.31*	*.46*	*.57*	*.31*	*1.65*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.13	.14	.14	.14	.55
2012	.14	.14	.1775	.1775	.64
2013	.1775	.1775	.2025	.2025	.76
2014	.2025	.2025	.213	.213	.83
2015	.213	.213			

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden States Water Company, it supplies water to 258,191 customers in 75 communities and 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to 23,716 customers in the city of Big Bear Lake and in areas of San Bernardino County. Sold Chaparral City Water of Arizona (6/11). Has 707 employees. Blackrock, Inc., owns 9.8% of out. shares; Vanguard, 8.5%; off. & dir. 1.5%. (4/15 Proxy). Chairman: Lloyd Ross. President & CEO: Robert J. Sprowls. Inc: CA. Addr: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water's main subsidiary should not be impacted by the ongoing drought in California. As is the case with two other water utilities in this group, the company's main business is located in the Golden State. Governor Jerry Brown implemented mandatory restrictions on water usage aimed at reducing demand about 25%. A decline in consumption used to have a negative impact on a utility's bottom line. This has not been the case for the last few years, as the California Public Utility Commission (CPUC) changed the way companies operating under its jurisdiction calculated net income. Based on the new structure, utilities' income is more of a fixed rate charge (similar to a service fee) rather than one determined by the quantity of water sold.

Earnings growth probably will not be too impressive over the next two years. One reason is that American States is close to the allowed return on equity that is set by the CPUC. All told, we expect the company's share earnings to only rise 2% in 2015, followed by a 3% gain in 2016.

American States' balance sheet is strong for a water utility. Of the nine members in this industry, only one of the company's peers can match its A Financial Strength rating. Indeed, American States was the only regulated company to end last year with an equity-to-total capital ratio over the 60% level. Like the rest of the industry, the company has a large projected capital budget through late in the decade. And even though certain of its financial metrics will decline through that time, American States should remain in sound financial condition.

Short-term and technical-investors may find these shares of interest. Early last month, our proprietary system raised the ranking of American States' stock one notch to 2 (Above Average) for year-ahead relative price performance. On July 3rd, the Technical rank was also raised to 2.

On the other hand, long-term investors may want to wait on the sidelines for now. Total return prospects for American Water shares through 2018-2020 are subpar, as they are already trading within our projected Target Price Range.

James A. Flood *July 17, 2015*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢) '11, 10¢. Next earnings report due mid-August. Quarterly earnings may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for splits.

Company's Financial Strength	A
Stock's Price Stability	85
Price Growth Persistence	75
Earnings Predictability	85

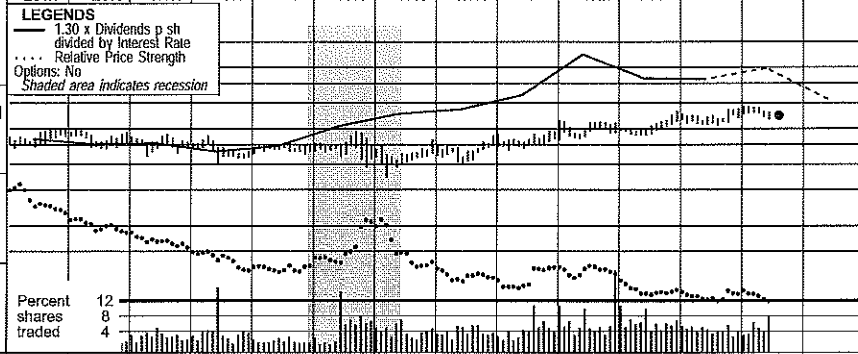
CONNECTICUT WATER NDQ-CTWS

RECENT PRICE 34.88 | P/E RATIO 17.4 (Trailing: 18.1, Median: 21.0) | RELATIVE P/E RATIO 0.92 | DIV'D YLD 3.1% | VALUE LINE

TIMELINESS 3 Lowered 11/21/14
SAFETY 3 New 1/18/13
TECHNICAL 3 Raised 5/29/15
BETA .70 (1.00 = Market)

High:	29.8	28.2	27.7	25.6	29.0	26.4	27.9	29.1	32.8	36.4	37.5	38.6	
Low:	23.8	21.9	20.3	22.4	19.3	17.3	20.0	23.3	26.2	27.8	31.0	33.2	

Target Price Range 2018 | 2019 | 2020



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+45%)	12%
Low	35	(Nil)	3%

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	50	36	37
to Sell	34	46	40
Hld's(000)	4299	4296	4289

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	3.8	3.2
3 yr.	29.2	64.2
5 yr.	91.4	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
5.87	5.70	5.93	5.77	5.91	6.04	5.81	5.68	7.05	7.24	6.93	7.65	7.93	9.47	8.29	8.45	*8.65*	*9.00*	Revenues per sh	*12.50*
1.65	1.73	1.78	1.78	1.89	1.91	1.62	1.52	1.90	1.95	1.93	2.04	2.11	2.64	2.63	2.97	*3.20*	*3.35*	"Cash Flow" per sh	*3.60*
1.03	1.09	1.13	1.12	1.15	1.16	.88	.81	1.05	1.11	1.19	1.13	1.13	1.53	1.66	1.92	*2.00*	*2.10*	Earnings per sh A	*2.25*
.79	.79	.80	.81	.83	.84	.85	.86	.87	.88	.90	.92	.94	.96	.98	1.01	*1.05*	*1.09*	Div'd Decl'd per sh B■	*1.30*
1.42	1.43	1.86	1.98	1.49	1.58	1.96	1.96	2.24	2.44	3.28	3.06	2.61	2.79	3.02	4.11	*4.60*	*4.15*	Cap'l Spending per sh	*2.85*
8.61	8.92	9.25	10.06	10.46	10.94	11.52	11.60	11.95	12.23	12.67	13.05	13.50	20.95	17.92	18.83	*20.10*	*21.15*	Book Value per sh D	*24.15*
7.26	7.28	7.65	7.94	7.97	8.04	8.17	8.27	8.38	8.46	8.57	8.68	8.76	8.85	11.04	11.12	*11.20*	*11.35*	Common Shs Outst'g C	*12.00*
18.2	18.2	21.5	24.3	23.5	22.9	28.6	29.0	23.0	22.2	18.4	20.7	23.0	19.4	18.4	17.5	*Bold figures are*		Avg Ann'l P/E Ratio	*19.0*
1.04	1.18	1.10	1.33	1.34	1.21	1.52	1.57	1.22	1.34	1.23	1.32	1.44	1.23	1.03	.92	*Value Line*		Relative P/E Ratio	*1.20*
4.2%	4.0%	3.3%	3.0%	3.0%	3.1%	3.4%	3.6%	3.6%	3.6%	4.1%	3.9%	3.6%	3.2%	3.2%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*2.8%*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
	47.5	46.9	59.0	61.3	59.4	66.4	69.4	83.8	91.5	94.0	*97.0*	*102*	Revenues ($mill)	*150*
	7.2	6.7	8.8	9.4	10.2	9.8	9.9	13.6	18.3	21.3	*23.0*	*24.0*	Net Profit ($mill)	*27.0*
	--	23.5%	32.4%	27.2%	19.5%	35.2%	41.3%	32.0%	28.0%	14.4%	*18.0%*	*19.5%*	Income Tax Rate	*30.0%*
	--	--	--	1.7%	--	--	--	1.7%	2.0%	2.4%	*2.5%*	*2.5%*	AFUDC % to Net Profit	*2.0%*
	44.9%	44.4%	47.8%	46.9%	50.6%	49.5%	53.2%	49.0%	46.9%	45.7%	*45.5%*	*47.5%*	Long-Term Debt Ratio	*47.5%*
	54.6%	55.1%	51.8%	52.7%	49.1%	50.2%	46.5%	50.8%	52.9%	54.1%	*54.5%*	*52.5%*	Common Equity Ratio	*52.5%*
	172.3	174.1	193.2	196.5	221.3	225.6	254.2	364.6	373.6	386.8	*420*	*455*	Total Capital ($mill)	*550*
	247.7	268.1	284.3	302.3	325.2	344.2	362.4	447.9	471.9	506.9	*535*	*560*	Net Plant ($mill)	*675*
	5.0%	4.9%	5.5%	5.9%	5.5%	5.4%	4.9%	4.8%	5.9%	6.4%	*6.5%*	*6.5%*	Return on Total Cap'l	*6.0%*
	7.5%	6.9%	8.7%	9.0%	9.3%	8.6%	8.3%	7.3%	9.2%	10.1%	*10.0%*	*10.0%*	Return on Shr. Equity	*9.5%*
	7.6%	7.0%	8.7%	9.1%	9.4%	8.7%	8.3%	7.3%	9.2%	10.2%	*10.0%*	*10.0%*	Return on Com Equity	*9.5%*
	.3%	NMF	1.6%	1.9%	2.3%	1.6%	1.4%	2.8%	3.8%	4.8%	*4.5%*	*4.5%*	Retained to Com Eq	*4.0%*
	95%	105%	82%	79%	76%	81%	83%	62%	59%	53%	*53%*	*52%*	All Div'ds to Net Prof	*58%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $185.6 mill. **Due in 5 Yrs** $19.3 mill.
LT Debt $177.7 mill. **LT Interest** $7.0 mill.
(46% of Cap'l)

Leases, Uncapitalized: Annual rentals $.1 mill.
Pension Assets-12/14 $61.6 mill.
Oblig. $79.8 mill.

Pfd Stock $0.8 mill. **Pfd Divd** NMF

Common Stock 11,152,145 shs.
as of 4/30/15
MARKET CAP: $400 million (Small Cap)

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	18.4	2.5	2.3
Accounts Receivable	12.3	12.0	11.4
Other	16.2	21.7	22.5
Current Assets	46.9	36.2	36.2
Accts Payable	10.8	10.0	7.2
Debt Due	4.1	4.4	7.9
Other	7.8	9.2	10.0
Current Liab.	22.7	23.6	25.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	4.0%	4.5%	6.0%
"Cash Flow"	4.0%	7.5%	4.5%
Earnings	4.0%	9.0%	4.5%
Dividends	2.0%	2.0%	5.0%
Book Value	6.5%	9.5%	4.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	18.5	21.3	24.5	19.5	83.8
2013	19.7	22.6	27.6	21.6	91.5
2014	20.3	25.4	27.6	20.7	94.0
2015	20.0	*26.5*	*29.0*	*21.5*	*97.0*
2016	*22.5*	*27.5*	*30.0*	*22.0*	*102.0*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.22	.47	.67	.17	1.53
2013	.24	.39	.86	.17	1.66
2014	.27	.67	.76	.22	1.92
2015	.28	*.67*	*.80*	*.25*	*2.00*
2016	*.36*	*.62*	*.85*	*.27*	*2.10*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.233	.233	.238	.238	.942
2012	.238	.238	.2425	.2425	.962
2013	.2425	.2425	.2475	.2475	.98
2014	.2475	.2475	.2575	.2575	1.01
2015	.2575	.2575			

BUSINESS: Connecticut Water Service, Inc. is a non-operating holding company, whose income is derived from earnings of its wholly-owned subsidiary companies (regulated water utilities). In 2014, 93% of net income was derived from these activities. Provides water services to 400,000 people in 77 municipalities throughout Connecticut and Maine. Acquired The Maine Water Company, January, 2012; Biddeford and Saco Water, December, 2012. Incorporated: Connecticut. Has 265 employees. Chairman/President/Chief Executive Officer: Eric W. Thornburg. Officers and directors own 2.3% of the common stock; BlackRock, Inc. 7.0%; (4/15 proxy). Address: 93 West Main Street, Clinton, CT 06413. Telephone: (860) 669-8636. Internet: www.ctwater.com.

Connecticut Water Service should record decent bottom-line results over the next two years. Following a very successful 2014, we think the company will be able to post increases in share net of 4% in 2015, and 5% in 2016. Higher rates being permitted in Maine, an IRS tax rebate, and cost savings, will all contribute to the gains.

Dividend growth prospects have improved. The utility has only been able to increase its annual payout an average of 2% annually over both the last five- and 10 year-periods. In 2014, the trend was broken, as the dividend was hiked 3%. Moreover, when the board meets in September, the quarterly dividend could be boosted another $0.01 a share, to around $0.2675. This would be a 4% increase, which would put the utility closer, but still below, the industry norm.

The company has been successful in expanding the business. Unless located in a service area experiencing strong economic growth, it can be hard for a utility to grow its customer base. Over the past several years, Connecticut Water has made two decent size acquisitions, and has been able to improve margins by wringing duplicate costs from the consolidated operations. Moreover, the utility will be expanding the pipeline infrastructure to supply the University of Connecticut and the greater Mansfield area. A key permit was approved in late May and construction should take around 18 months to complete.

Connecticut Water might not be big, but it is solid. With a market capitalization of only $400 million, the utility is on the small side. Still, the balance sheet is healthy, and should remain so for the foreseeable future. This is very positive in light of the larger amounts that have to be spent to replace an aging distribution system. (The industry is in the midst of a major refurbishing program.)

Shares of Connecticut Water are expected to perform in line with the broader market averages in the year ahead. The dividend yield is 100 basis points above that of the typical stock in the *Value Line* universe. Potential total return through 2018-2020 is lower than the average equity, however.

James A. Flood *July 17, 2015*

(A) Diluted earnings. Next earnings report due mid-August. Quarterly earnings do not add in 2012 due to rounding.
(B) Dividends historically paid in mid-March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. In 2014: $31.7 million/$2.85 a share.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	50
Earnings Predictability	85

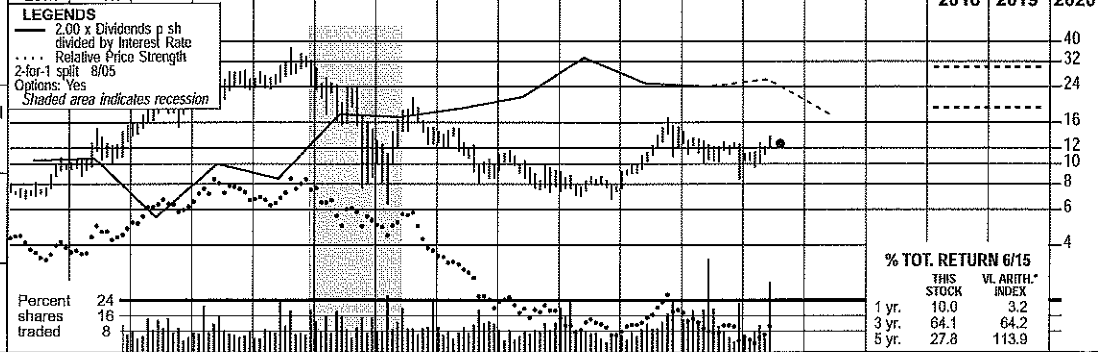
CONSOL. WATER CO. NDQ-CWCO

RECENT PRICE 12.61 | P/E RATIO 21.0 (Trailing: 23.8; Median: 28.0) | RELATIVE P/E RATIO 1.11 | DIV'D YLD 2.4% | VALUE LINE

TIMELINESS 4 Lowered 3/27/15
SAFETY 3 New 1/17/14
TECHNICAL 2 Raised 7/17/15
BETA .85 (1.00 = Market)

High:	15.5	22.5	31.8	37.5	29.8	21.3	15.1	11.7	9.2	16.9	14.5	13.8			Target Price Range	
Low:	8.7	13.6	19.8	23.3	7.6	6.4	8.1	7.3	6.7	7.5	8.4	9.6			2018 | 2019 | 2020	

LEGENDS
— 2.00 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 8/05
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+140%)	25%
Low	19	(+50%)	12%

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	1	0	0	4	0
to Sell	0	0	0	0	1	0	0	3	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	32	28	21
to Sell	31	28	28
Hld's(000)	6127	5703	6010

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	10.0	3.2
3 yr.	64.1	64.2
5 yr.	27.8	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
1.25	1.24	1.41	1.52	1.68	2.02	1.12	2.71	3.41	4.52	3.99	3.49	3.79	4.49	4.35	4.46	*4.40*	*4.65*	Revenues per sh	*5.95*
.43	.46	.52	.50	.63	.77	.37	.87	1.20	.95	1.18	.86	.83	1.17	.96	.80	*1.00*	*1.10*	"Cash Flow" per sh	*1.60*
.31	.34	.35	.32	.42	.49	.23	.59	.79	.50	.74	.43	.42	.64	.58	.42	*.60*	*.65*	Earnings per sh A	*1.10*
.08	.17	.20	.21	.21	.23	.12	.24	.20	.33	.28	.30	.30	.30	.30	.30	*.30*	*.30*	Div'd Decl'd per sh B■	*.40*
.24	.30	.24	.39	.19	.24	.77	1.83	.54	.46	.18	.09	.96	.31	.29	.32	*.60*	*.60*	Cap'l Spending per sh	*.60*
1.96	2.30	2.45	2.64	3.89	4.20	2.54	7.49	8.21	8.36	8.53	8.69	8.83	9.20	9.44	9.58	*9.85*	*10.20*	Book Value per sh	*13.65*
6.38	7.73	7.84	7.99	11.37	11.51	23.46	14.13	14.40	14.53	14.54	14.55	14.57	14.59	14.69	14.72	*14.75*	*15.00*	Common Shs Outst'g C	*16.00*
11.7	10.4	13.9	21.6	19.3	23.1	NMF	43.0	35.4	37.8	19.0	26.9	22.4	12.4	20.0	28.3	*Bold figures are*		Avg Ann'l P/E Ratio	*21.0*
.67	.68	.71	1.18	1.10	1.22	NMF	2.32	1.88	2.27	1.27	1.71	1.41	.79	1.12	1.49	*Value Line*		Relative P/E Ratio	*1.30*
2.2%	4.9%	4.2%	3.1%	2.6%	2.0%	.7%	.9%	.7%	1.7%	2.0%	2.6%	3.2%	3.8%	2.6%	2.5%	*estimates*		Avg Ann'l Div'd Yield	*1.6%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $8.5 mill. Due in 5 Yrs $8.5 mill.
LT Debt None LT Interest None

Leases, Uncapitalized: Annual rentals $.7 mill.

No Defined Benefit Pension Plan

Pfd Stock NMF 36,840 shares out. Div'd NMF

Common Stock 14,734,272 shs. as of 5/4/14

MARKET CAP: $175 million (Small Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
26.2	38.2	49.2	65.7	58.0	50.7	55.2	65.5	63.8	65.6	*65.0*	*70.0*	Revenues ($mill)	*95.0*
5.5	7.5	11.4	7.2	10.8	6.3	6.1	9.3	8.6	6.3	*9.0*	*10.0*	Net Profit ($mill)	*17.5*
--	--	--	--	--	--	--	--	--	--	*NMF*	*NMF*	Income Tax Rate	*NMF*
--	--	--	--	--	--	4.0%	--	--	--	*NMF*	*NMF*	AFUDC % to Net Profit	*NMF*
24.5%	18.2%	15.9%	14.8%	13.8%	11.8%	5.1%	3.7%	3.7%	--	*Nil*	*Nil*	Long-Term Debt Ratio	*Nil*
75.4%	81.8%	84.1%	85.2%	86.2%	88.2%	94.9%	96.3%	99.8%	100%	*100%*	*100%*	Common Equity Ratio	*100%*
78.9	129.3	140.7	142.7	143.9	143.3	135.6	139.4	138.9	141.2	*145*	*153*	Total Capital ($mill)	*205*
44.8	63.6	65.0	65.1	61.2	56.2	64.3	61.6	58.6	56.4	*60.0*	*65.0*	Net Plant ($mill)	*100.0*
7.5%	6.5%	8.8%	5.7%	8.1%	4.9%	5.0%	7.0%	6.2%	4.4%	*6.0%*	*6.5%*	Return on Total Cap'l	*8.5%*
9.3%	7.1%	9.6%	5.9%	8.7%	5.0%	4.7%	6.9%	6.2%	4.4%	*6.0%*	*6.5%*	Return on Shr. Equity	*8.5%*
9.2%	7.1%	9.6%	5.9%	8.7%	5.0%	4.7%	6.9%	6.2%	4.4%	*6.0%*	*6.5%*	Return on Com Equity	*8.5%*
4.6%	4.2%	6.5%	2.8%	4.6%	1.5%	1.0%	3.6%	3.0%	1.2%	*3.0%*	*3.5%*	Retained to Com Eq	*5.0%*
50%	41%	33%	52%	46%	69%	79%	48%	51%	73%	*50%*	*46%*	All Div'ds to Net Prof	*36%*

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	42.2	40.7	36.8
Accts Receivable	18.9	11.8	12.5
Other	6.5	6.9	11.4
Current Assets	67.6	59.4	60.7
Accts Payable	7.2	6.0	4.9
Debt Due	5.2	9.0	8.5
Other	11.2	1.2	1.4
Current Liab.	23.6	16.2	14.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	10.0%	2.0%	*5.0%*
"Cash Flow"	4.5%	-2.5%	*7.0%*
Earnings	3.0%	-4.0%	*10.5%*
Dividends	3.5%	2.5%	*4.0%*
Book Value	10.0%	2.5%	*6.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	16.7	16.2	15.8	16.8	65.5
2013	16.6	16.6	15.4	15.2	63.8
2014	16.3	16.9	17.0	15.4	65.6
2015	14.7	*17.0*	*17.5*	*15.8*	*65.0*
2016	*17.0*	*18.5*	*18.0*	*16.5*	*70.0*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.17	.13	.09	.25	.64
2013	.26	.19	.06	.07	.58
2014	.04	.19	.13	.06	.42
2015	.13	*.20*	*.15*	*.12*	*.60*
2016	*.18*	*.24*	*.17*	*.06*	*.65*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.075	.075	.075	.075	.30
2012	.075	.075	.075	.075	.30
2013	.075	.075	.075	.075	.30
2014	.075	.075	.075	.075	.30
2015	.075	.075			

BUSINESS: Consolidated Water Co. Ltd. develops and operates seawater desalination plants and water distribution systems in areas where naturally occurring supplies of potable water are scarce or nonexistent. Its desalination process involves reverse osmosis tech. It provides water in the Cayman Islands, Belize, the Bahamas, the British Virgin Islands, and Bali. At 12/31/14, it operated 14 plants with a capacity of 26.5 million gallons per day. Inc.: Cayman Isl. Has 119 employees. Pres./CEO: Frederick McTaggart. Off./dir. own 3.3% of stock; Thomson, Horstmann, & Bryant, 6.2% (4/15 proxy). Address: Regatta Office Park Windward Three, 4th Floor, West Bay Road P.O. Box 1114 Grand Cayman, KYI-1102, Cayman Islands. Tel.: (345) 945-4277. Int.: www.cwco.com.

Consolidated Water is very different from the other companies in this industry. Of the nine water utilities we follow, this company's future is heavily tied to nonregulated businesses. Therefore, the upside is much higher, but so is the risk.

The company is well positioned to benefit from the shortage of potable water in Bali. As a developer and operator of saltwater desalination plants, the water utility opened the Nusa Dua facility in the Indonesian island of Bali last year. Considered a high-end tourist destination, there are a large number of four- and five-star hotels. Because the industry is experiencing strong growth, the native population is also expanding. Demand for fresh-drinking water should increase at a robust pace, in management's opinion. Nusa Dua is not operating at a profit right now, due to costs associated with ramping up the project. We expect this situation to change as more customers are added and the daily output of the desalination plants rises.

The groundwork has been set for a promising desalination facility in Mexico, too. Most of the required administrative work has been completed to construct a $600-million plant in Mexico. Consolidated would maintain a 12% stake and operate the million-gallon-per-day project. No customers have been signed up yet. Since the targeted markets of San Diego and Tijuana are so water hungry, though, we expect to see progress here in the near future. Moreover, the building and operating costs will be much lower with the plant being located south of the border.

Ironically, Consolidated's regulated utilities offer some risk. With major facilities in the Bahamas and the British Virgin Islands, the government regulators and the company have not always seen eye-to-eye on rates and valuation of assets. Still, the water utility expects the next long-term contract to be renewed upon expiration in 2017.

These untimely shares are only for those that can live with some risk. On the positive side, Consolidated has tapped into a market that has gained global prominence, in part to California's historic drought. Conversely, the company is very small, and its earnings prospects are not bright for the next two years.

James A. Flood *July 17, 2015*

(A) Fully diluted earnings. Next earnings report due mid-August.
(B) Dividends historically paid in late January, April, July and October. ■ Dividend reinvestment plan available.
(C) In millions adjusted for stock split.

Company's Financial Strength	B+
Stock's Price Stability	30
Price Growth Persistence	10
Earnings Predictability	50

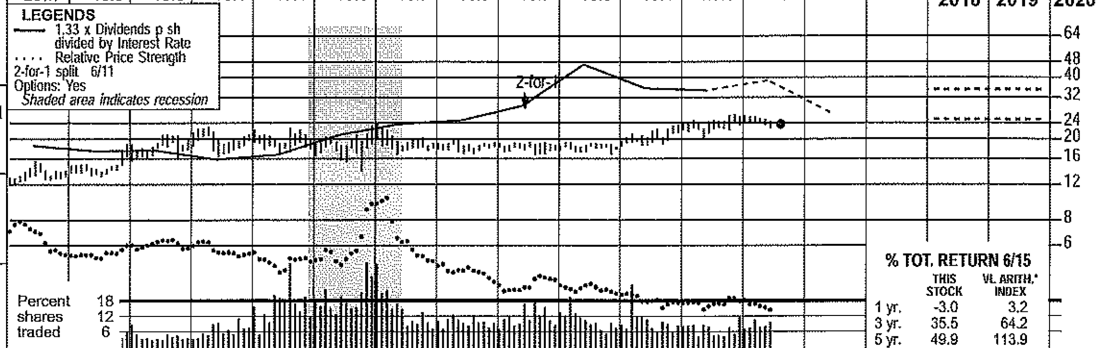
CALIFORNIA WATER NYSE-CWT

RECENT PRICE 23.70 | P/E RATIO 19.0 (Trailing: 17.8 / Median: 20.0) | RELATIVE P/E RATIO 1.00 | DIV'D YLD 2.9% | VALUE LINE

TIMELINESS 3 Raised 6/20/14
SAFETY 3 Lowered 7/27/07
TECHNICAL 2 Raised 7/3/15
BETA .75 (1.00 = Market)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	19.0	21.1	22.9	22.7	23.3	24.1	19.8	19.4	19.3	23.4	26.4	26.0
Low:	13.0	15.6	16.4	17.1	13.8	16.7	16.9	16.7	16.8	18.4	20.3	22.6

Target Price Range 2018 | 2019 | 2020



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+50%)	*12%*
Low	25	(+5%)	*4%*

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	0	0	0	0	0	0	0	0	0
Options	1	0	0	0	0	0	0	3	0
to Sell	0	0	0	3	2	0	0	2	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	53	81	79
to Sell	53	59	67
Hld's(000)	29552	29654	29379

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-3.0	3.2
3 yr.	35.5	64.2
5 yr.	49.9	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
7.98	8.08	8.13	8.67	8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	*12.80*	*13.25*	Revenues per sh	*16.80*
1.37	1.26	1.10	1.32	1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	*2.60*	*2.65*	"Cash Flow" per sh	*3.20*
.77	.66	.47	.63	.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	*1.25*	*1.25*	Earnings per sh A	*1.55*
.54	.55	.56	.56	.56	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	*.67*	*.69*	Div'd Decl'd per sh B ■	*.97*
1.72	1.23	2.04	2.91	2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	*2.50*	*2.60*	Cap'l Spending per sh	*3.10*
6.71	6.45	6.48	6.56	7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	*13.75*	*14.25*	Book Value per sh C	*16.00*
25.87	30.29	30.36	30.36	33.86	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	*48.00*	*48.00*	Common Shs Outst'g D	*50.00*
17.8	19.6	27.1	19.8	22.1	20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	*Bold figures are*		Avg Ann'l P/E Ratio	*20.0*
1.01	1.27	1.39	1.08	1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	*Value Line*		Relative P/E Ratio	*1.25*
4.0%	4.3%	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	*estimates*		Avg Ann'l Div'd Yield	*3.2%*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
	320.7	334.7	367.1	410.3	449.4	460.4	501.8	560.0	584.1	597.5	*615*	*635*	Revenues ($mill) E	*840*
	27.2	25.6	31.2	39.8	40.6	37.7	36.1	42.6	47.3	56.7	*57.5*	*57.5*	Net Profit ($mill)	*77.5*
	42.4%	37.4%	39.9%	37.7%	40.3%	39.5%	40.5%	37.5%	30.3%	33.0%	*28.5%*	*29.5%*	Income Tax Rate	*36.0%*
	3.3%	10.6%	8.3%	8.6%	7.6%	4.2%	7.6%	8.0%	4.3%	2.7%	*2.0%*	*4.5%*	AFUDC % to Net Profit	*5.0%*
	48.3%	43.5%	42.9%	41.6%	47.1%	52.4%	51.7%	47.8%	41.6%	40.1%	*43.0%*	*43.5%*	Long-Term Debt Ratio	*41.5%*
	51.1%	55.9%	56.6%	58.4%	52.9%	47.6%	48.3%	52.2%	58.4%	59.9%	*57.0%*	*56.5%*	Common Equity Ratio	*58.5%*
	568.1	670.1	674.9	690.4	794.9	914.7	931.5	908.2	1024.9	1045.9	*1160*	*1215*	Total Capital ($mill)	*1370*
	862.7	941.5	1010.2	1112.4	1198.1	1294.3	1381.1	1457.1	1515.8	1590.4	*1660*	*1730*	Net Plant ($mill)	*1820*
	6.3%	5.2%	5.9%	7.1%	6.5%	5.5%	5.5%	6.3%	6.0%	6.3%	*6.5%*	*6.0%*	Return on Total Cap'l	*7.0%*
	9.3%	6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	*9.0%*	*8.5%*	Return on Shr. Equity	*9.5%*
	9.3%	6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	*9.0%*	*8.5%*	Return on Com Equity	*9.5%*
	2.1%	1.0%	1.8%	3.8%	3.8%	3.0%	2.3%	3.4%	3.4%	4.1%	*4.0%*	*3.5%*	Retained to Com Eq	*3.5%*
	78%	86%	77%	61%	60%	66%	71%	62%	56%	55%	*56%*	*58%*	All Div'ds to Net Prof	*63%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $534.7 mill. Due in 5 Yrs $165.8 mill.
LT Debt $419.0 mill. LT Interest $20.0 mill.
(40% of Cap'l)

Pension Assets-12/14 $306.3 mill.
Oblig. $390.6 mill.

Pfd Stock None

Common Stock 47,880,233 shs.
as of 4/27/15

MARKET CAP: $1.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	27.5	19.6	33.3
Other	112.0	134.5	126.0
Current Assets	139.5	154.1	159.3
Accts Payable	55.1	59.4	57.7
Debt Due	54.7	85.7	115.7
Other	56.8	72.6	80.5
Current Liab.	166.6	217.7	253.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	4.0%	5.0%	*5.0%*
"Cash Flow"	6.0%	5.5%	*5.5%*
Earnings	5.0%	4.0%	*7.5%*
Dividends	1.5%	2.0%	*7.0%*
Book Value	5.5%	5.0%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.)E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	116.8	143.6	178.1	121.5	560.0
2013	111.4	154.6	184.4	133.7	584.1
2014	110.5	158.4	191.2	137.4	597.5
2015	122.0	*160*	*193*	*140*	*615*
2016	*120*	*170*	*200*	*145*	*635*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	.03	.31	.56	.12	1.02
2013	.01	.28	.61	.12	1.02
2014	d.11	.36	.70	.24	1.19
2015	.03	*.35*	*.72*	*.15*	*1.25*
2016	*.03*	*.35*	*.72*	*.15*	*1.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.154	.154	.154	.154	.62
2012	.1575	.1575	.1575	.1575	.63
2013	.16	.16	.16	.16	.64
2014	.1625	.1625	.1625	.1625	.65
2015	.1675	.1675			

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 477,900 customers in 85 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '14: residential, 68%; business, 19%; industrial, 5%; public authorities, 3%; other 5%. '14 reported depreciation rate: 4.0%. Has 1,105 employees. President, Chairman, and CEO: Peter C. Nelson. Inc.: DE. Address: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

The state's historic drought should result in a sharp decline in demand by California Water's customers. In response to the lack of rainfall, Governor Brown mandated a 25% reduction in urban, potable water use. The new regulations are established to achieve water use decreases of between 8% and 36%, compared to the amount consumed in 2013. Surcharges will be assigned to those who fail to meet the new regulations.

The conservation measures should not have a major impact on the company. In order to cut water usage, California established mechanisms that changed how water utilities make a profit. According to the new methodology, revenues and earnings were switched from a "quantity based" to a "fixed-rate charge" system. Basically, a water company will not be penalized if demand falls. Revenues are now constructed to be more like a service fee.

We expect earnings to increase by a decent amount this year and be flat in 2016. As a result of a petition for higher rates filed in 2012, California Water was allowed to institute higher rates in the second half of 2014. This should enable share earnings to rise 5%, to $1.25, in 2015, and remain unchanged in 2016.

A new rate case was recently filed. California water utilities are required to file rate cases every three years. California Water is seeking hikes of $95 million in 2017, $23 million in 2018, and $23 million in 2019. Like most of its peers, the utility is spending to upgrade and modernize its pipeline infrastructure. A final decision by regulators (the CPUC) is expected in 2017.

California regulators have generally been constructive in dealing with water utilities. One of the most important factors affecting a utility is how a state treats companies under its jurisdiction. The CPUC realizes that maintenance work on water infrastructure has been neglected in the past and more money must be spent to improve services.

These shares' total return potential through late decade is slightly below average. Still, conservative investors willing to accept less of a payoff in exchange for low volatility might find this stock suitable.

James A. Flood *July 17, 2015*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (4¢); '01, 2¢; '02, 4¢; '11, 4¢. Next earnings report due mid-Aug. (B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available. (C) Incl. intangible assets. In '14 : $7.3 mill., $0.15/sh. (D) In millions, adjusted for splits. (E) Excludes non-reg. rev.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	85

LACLEDE GROUP NYSE-LG

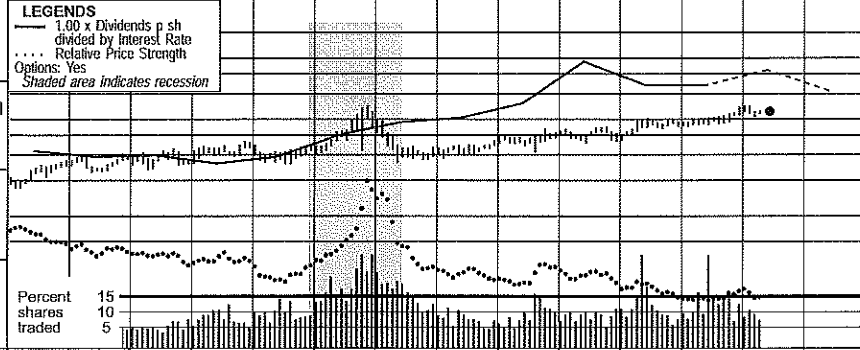
RECENT PRICE 52.49 | P/E RATIO 16.4 (Trailing: 16.2; Median: 14.0) | RELATIVE P/E RATIO 0.86 | DIV'D YLD 3.5% | VALUE LINE

TIMELINESS 3 Raised 2/27/15
SAFETY 2 Raised 6/20/03
TECHNICAL 4 Lowered 5/22/15
BETA .70 (1.00 = Market)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	32.5	34.3	37.5	36.0	55.8	48.3	37.8	42.8	44.0	48.5	55.2	55.8
Low:	26.0	26.9	29.1	28.8	31.9	29.3	30.8	32.9	36.5	37.4	44.0	49.1

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 1.00 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+45%)	12%
Low	55	(+5%)	5%

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	2	0	0	0	0	0	0
to Sell	0	2	2	0	0	0	0	0	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	125	113	85
to Sell	53	67	99
Hld's(000)	32190	34204	34804

Percent shares traded 15 / 10 / 5

% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	13.6	9.1
3 yr.	48.1	58.8
5 yr.	86.9	84.6

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
26.04	29.99	53.08	39.84	54.95	59.59	75.43	93.51	93.40	100.44	85.49	77.83	71.48	49.90	31.10	37.68	*51.15*	*55.80*	Revenues per sh A	*60.00*
2.56	2.68	3.00	2.56	3.15	2.79	2.98	3.81	3.87	4.22	4.56	4.11	4.62	4.58	3.12	3.87	*5.00*	*5.30*	"Cash Flow" per sh	*6.35*
1.47	1.37	1.61	1.18	1.82	1.82	1.90	2.37	2.31	2.64	2.92	2.43	2.86	2.79	2.02	2.35	*3.15*	*3.30*	Earnings per sh A B	*4.20*
1.34	1.34	1.34	1.34	1.34	1.35	1.37	1.40	1.45	1.49	1.53	1.57	1.61	1.66	1.70	1.76	*1.84*	*1.92*	Div'ds Decl'd per sh C■	*2.20*
2.58	2.77	2.51	2.80	2.67	2.45	2.84	2.97	2.72	2.57	2.36	2.56	3.02	4.83	4.00	3.96	*4.20*	*4.40*	Cap'l Spending per sh	*5.55*
14.96	14.99	15.26	15.07	15.65	16.96	17.31	18.85	19.79	22.12	23.32	24.02	25.56	26.67	32.00	34.93	*36.20*	*39.80*	Book Value per sh D	*48.10*
18.88	18.88	18.88	18.96	19.11	20.98	21.17	21.36	21.65	21.99	22.17	22.29	22.43	22.55	32.70	43.18	*43.00*	*43.00*	Common Shs Outst'g E	*45.00*
15.8	14.9	14.5	20.0	13.6	15.7	16.2	13.6	14.2	14.3	13.4	13.7	13.0	14.5	21.3	19.8	*Bold figures are*		Avg Ann'l P/E Ratio	*15.5*
.90	.97	.74	1.09	.78	.83	.86	.73	.75	.86	.89	.87	.82	.92	1.20	1.04	*Value Line*		Relative P/E Ratio	*.95*
5.8%	6.6%	5.7%	5.7%	5.4%	4.7%	4.4%	4.3%	4.4%	3.9%	3.9%	4.7%	4.3%	4.1%	4.0%	3.8%	*estimates*		Avg Ann'l Div'd Yield	*3.5%*
						1597.0	1997.6	2021.6	2209.0	1895.2	1735.0	1603.3	1125.5	1017.0	1627.2	*2200*	*2400*	Revenues ($mill) A	*2700*
						40.1	50.5	49.8	57.6	64.3	54.0	63.8	62.6	52.8	84.6	*135*	*140*	Net Profit ($mill)	*190*
						34.1%	32.5%	33.4%	31.3%	33.6%	33.4%	31.4%	29.6%	25.0%	27.6%	*29.0%*	*30.0%*	Income Tax Rate	*30.0%*
						2.5%	2.5%	2.5%	2.6%	3.4%	3.1%	4.0%	5.6%	5.2%	5.2%	*6.2%*	*5.9%*	Net Profit Margin	*7.0%*
						48.1%	49.5%	45.3%	44.4%	42.9%	40.5%	38.9%	36.1%	46.6%	55.1%	*54.0%*	*53.0%*	Long-Term Debt Ratio	*51.0%*
						51.8%	50.4%	54.6%	55.5%	57.1%	59.5%	61.1%	63.9%	53.4%	44.9%	*46.0%*	*47.0%*	Common Equity Ratio	*49.0%*
						707.9	798.9	784.5	876.1	906.3	899.9	937.7	941.0	1959.0	3359.4	*3400*	*3645*	Total Capital ($mill)	*4400*
						679.5	763.8	793.8	823.2	855.9	884.1	928.7	1019.3	1776.6	2759.7	*2895*	*3045*	Net Plant ($mill)	*3520*
						7.6%	8.4%	8.5%	8.1%	8.7%	7.4%	8.1%	7.9%	3.3%	3.1%	*4.5%*	*4.5%*	Return on Total Cap'l	*5.0%*
						10.9%	12.5%	11.6%	11.8%	12.4%	10.1%	11.1%	10.4%	5.0%	5.6%	*8.5%*	*8.5%*	Return on Shr. Equity	*8.5%*
						10.9%	12.5%	11.6%	11.8%	12.4%	10.1%	11.1%	10.4%	5.0%	5.6%	*8.5%*	*8.5%*	Return on Com Equity	*8.5%*
						3.1%	5.1%	4.3%	5.2%	5.9%	3.6%	4.9%	4.3%	1.0%	1.5%	*3.5%*	*3.5%*	Retained to Com Eq	*4.0%*
						72%	59%	63%	56%	53%	64%	56%	59%	81%	73%	*58%*	*58%*	All Div'ds to Net Prof	*52%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $2063.9 mill. **Due in 5 Yrs** $100.0 mill.
LT Debt $1736.3 mill. **LT Interest** $70.0 mill.
(Total interest coverage: 4.7x)

Leases, Uncapitalized Annual rentals $12.0 mill.
Pension Assets-9/14 $506.6 mill. **Oblig.** $692.5 mill.

Pfd Stock None
Common Stock 43,318,933 shs. as of 4/30/15

MARKET CAP: $2.3 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	53.0	16.1	46.9
Other	422.9	588.8	790.3
Current Assets	475.9	604.9	837.2
Accts Payable	140.2	176.7	247.6
Debt Due	74.0	287.1	327.6
Other	139.0	319.0	278.5
Current Liab.	353.2	782.8	853.7
Fix. Chg. Cov.	337%	423%	477%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	-2.5%	-15.5%	7.0%
"Cash Flow"	3.0%	-2.0%	8.5%
Earnings	4.0%	-2.0%	10.0%
Dividends	2.5%	3.0%	4.5%
Book Value	7.0%	7.5%	7.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.)A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	410.9	358.2	186.9	169.5	1125.5
2013	307.0	397.6	165.3	147.1	1017.0
2014	468.6	694.5	241.8	222.3	1627.2
2015	619.6	877.4	*360*	*343*	*2200*
2016	*675*	*950*	*400*	*375*	*2400*

Fiscal Year Ends	EARNINGS PER SHARE A B F Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	1.12	1.32	.38	d.03	2.79
2013	1.14	1.34	.25	d.30	2.02
2014	1.09	1.59	.33	d.35	2.35
2015	1.09	2.18	*.20*	*d.32*	*3.15*
2016	*1.15*	*1.90*	*.30*	*d.25*	*3.30*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.405	.405	.405	.405	1.62
2012	.415	.415	.415	.415	1.66
2013	.425	.425	.425	.425	1.70
2014	.44	.44	.44	.44	1.76
2015	.46	.46			

BUSINESS: Laclede Group, Inc., is a holding company for Laclede Gas, which distributes natural gas across Missouri, including the cities of St. Louis and Kansas City. Has roughly 1.6 million customers. Purchased SM&P Utility Resources, 1/02; divested, 3/08. Acquired Missouri Gas 9/13, Alabama Gas Co 9/14. Utility therms sold and transported in fiscal 2014: 2.0 bill. Revenue mix for regulated operations: residential, 66%; commercial and industrial, 24%; transportation, 2%; other, 8%. Has around 3,152 employees. Officers and directors own 3.2% of common shares (1/15 proxy). Chairman: William E. Nasser; CEO: Suzanne Sitherwood. Inc.: Missouri. Address: 720 Olive Street, St. Louis, Missouri 63101. Telephone: 314-342-0500. Internet: www.thelacledegroup.com.

Laclede reported solid fiscal second-quarter results (ended March 31st). Indeed, earnings per share reached $2.18, aided by contributions from the Alagasco merger and synergies being realized through combination efforts with Missouri Gas. Too, cooler-than-usual winter weather played a role in the outstanding results. The second half of the fiscal year appears likely to be weaker than our original projections, as a warmer April and the timing of expenses, including increased maintenance costs, should hamper second-half results. Still, given the latest performance, we raised our 2015 share-net estimate by a nickel, to $3.15.

The longer-term picture is favorable for Laclede. Rates cases have been filed for an increase in infrastructure replacement, including $5.5 million at Laclede and $2.9 million at Missouri Gas. This should lead to decent earnings growth, as the company would benefit from increased pipeline reliability. The integration of Alagasco appears to be on the right track, and further synergies look to be achieved going forward. All told, we think Laclede can earn $4.20 a share by 2018-2020.

Finances appear to be in decent shape. Although like many industry peers, Laclede's long-term debt constitutes more than 50% of total capital, this is at a fairly manageble level. Too, a good portion of the debt is fixed-rate, which means interest expenses don't fluctuate much. This, in turn, helps to add some stability to earnings.

The dividend is a top draw. The payout is well covered by earnings, and the yield is attractive. We expect the dividend to rise at a decent clip over the next few years, although the payout ratio will likely be well below historical highs.

This issue has moderate appeal at this time. Indeed, long-term appreciation potential is below average, and the prospects for payout growth are modest. Nonetheless, when factoring the Above-Average Safety rank and a lower-than-market Beta, Laclede shares offer reasonable total return possibilities on a risk-adjusted basis. This issue should appeal to those with an income objective, though waiting for a price dip appears to be prudent at this juncture.

John E. Seibert III *June 5, 2015*

(A) Fiscal year ends Sept. 30th. (B) Based on diluted shares outstanding. Excludes nonrecurring loss: '06, 7¢. Excludes gain from discontinued operations: '08, 94¢. Next earnings report due late July. (C) Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan available. (D) Incl. deferred charges. In '14: $383.8 mill., $8.85/sh. (E) In millions. (F) Qtly. egs. may not sum due to rounding or change in shares outstanding.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	40
Earnings Predictability	85

MIDDLESEX WATER NDQ-MSEX

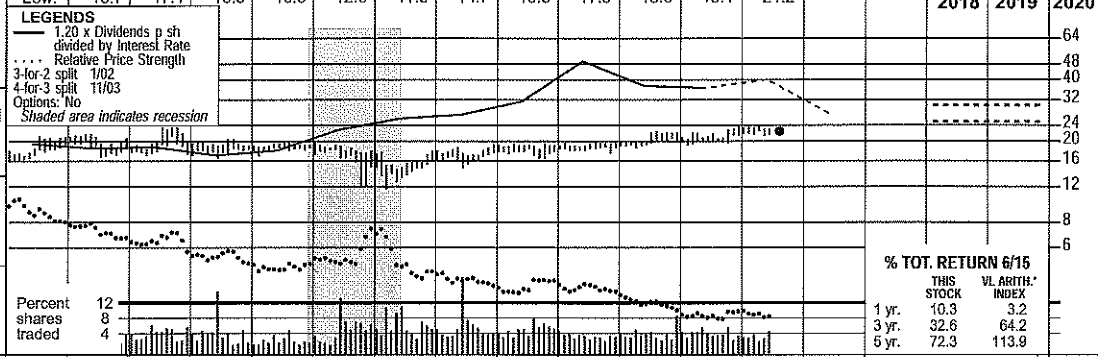
RECENT PRICE **22.46** | P/E RATIO **19.5** (Trailing: 19.5, Median: 21.0) | RELATIVE P/E RATIO **1.03** | DIV'D YLD **3.5%** | VALUE LINE

TIMELINESS **3** Lowered 4/11/14
SAFETY **2** New 10/21/11
TECHNICAL **2** Raised 7/17/15
BETA .75 (1.00 = Market)

High:	21.8	23.5	20.5	20.2	19.8	17.9	19.3	19.4	19.6	22.5	23.7	23.8	
Low:	16.7	17.1	16.5	16.9	12.0	11.6	14.7	16.5	17.5	18.6	19.1	21.2	

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 1.20 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 1/02
4-for-3 split 11/03
Options: No
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+35%)	11%
Low	25	(+10%)	4%

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	0	1	0	1	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	1	0	0	0	1	0	0	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	32	39	40
to Sell	40	37	38
Hld's(000)	6339	6372	6413

Percent shares traded 12 / 8 / 4

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	10.3	3.2
3 yr.	32.6	64.2
5 yr.	72.3	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
5.35	5.39	5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	*7.40*	*7.70*	Revenues per sh	*9.10*
1.19	.99	1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	*1.95*	*2.00*	"Cash Flow" per sh	*2.25*
.76	.51	.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	*1.15*	*1.20*	Earnings per sh A	*1.35*
.60	.61	.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	*.77*	*.78*	Div'd Decl'd per sh B■	*.85*
2.33	1.32	1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	*1.80*	*2.00*	Cap'l Spending per sh	*2.00*
6.95	6.98	7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	*12.75*	*13.25*	Book Value per sh	*14.30*
10.00	10.11	10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	*16.25*	*16.25*	Common Shs Outst'g C	*17.00*
17.6	28.7	24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	*Bold figures are*		Avg Ann'l P/E Ratio	*20.5*
1.00	1.87	1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.98	*Value Line*		Relative P/E Ratio	*1.30*
4.4%	4.2%	3.8%	3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	*estimates*		Avg Ann'l Div'd Yield	*3.1%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $158.9 mill. **Due in 5 Yrs** $49.8 mill.
LT Debt $137.8 mill. **LT Interest** $4.6 mill.
(41% of Cap'l)

Pension Assets-12/14 $51.6 mill. **Oblig.** $75.0 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.2 mill.

Common Stock 16,141,954 shs. as of 4/30/15

MARKET CAP: $375 million (Small Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
74.6	81.1	86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	*120*	*125*	Revenues ($mill)	*155*
8.5	10.0	11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	*18.6*	*18.6*	Net Profit ($mill)	*23.0*
27.6%	33.4%	32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	*34.5%*	*34.0%*	Income Tax Rate	*34.0%*
--	--	--	--	--	6.8%	6.1%	3.4%	1.9%	1.7%	*1.0%*	*1.5%*	AFUDC % to Net Profit	*2.5%*
55.3%	49.5%	49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	*40.5%*	*42.0%*	Long-Term Debt Ratio	*43.5%*
41.3%	47.5%	49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	*58.5%*	*57.5%*	Common Equity Ratio	*56.5%*
231.7	264.0	268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.8	*350*	*375*	Total Capital ($mill)	*430*
288.0	317.1	333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	*485*	*505*	Net Plant ($mill)	*550*
5.0%	5.1%	5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	*6.5%*	*6.0%*	Return on Total Cap'l	*6.5%*
8.2%	7.5%	8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	*9.0%*	*9.0%*	Return on Shr. Equity	*9.5%*
8.6%	7.8%	8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	*9.0%*	*9.0%*	Return on Com Equity	*9.5%*
.6%	1.3%	1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	*3.0%*	*3.0%*	Retained to Com Eq	*3.5%*
94%	84%	79%	78%	98%	75%	87%	83%	73%	67%	*67%*	*65%*	All Div'ds to Net Prof	*63%*

CURRENT POSITION ($MILL.)

	2013	2014	3/31/15
Cash Assets	4.8	2.7	5.0
Other	21.0	20.2	20.6
Current Assets	25.8	22.9	25.6
Accts Payable	6.3	6.4	7.0
Debt Due	33.8	24.9	15.5
Other	12.6	12.6	21.1
Current Liab.	52.7	43.9	43.6

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	1.5%	1.5%	*6.5%*
"Cash Flow"	3.5%	3.0%	*5.5%*
Earnings	4.0%	4.5%	*5.0%*
Dividends	1.5%	1.5%	*2.0%*
Book Value	4.5%	3.0%	*2.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	23.5	27.4	32.4	27.1	110.4
2013	27.0	29.1	31.3	27.4	114.8
2014	27.1	29.2	32.7	28.1	117.1
2015	28.8	*30.0*	*33.0*	*28.2*	*120*
2016	*29.0*	*31.0*	*35.0*	*30.0*	*125*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.11	.24	.38	.17	.90
2013	.20	.28	.36	.19	1.03
2014	.20	.29	.42	.22	1.13
2015	.22	*.30*	*.43*	*.20*	*1.15*
2016	*.22*	*.32*	*.45*	*.21*	*1.20*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.183	.183	.183	.185	.73
2012	.185	.185	.185	.1875	.74
2013	.1875	.1875	.1875	.19	.75
2014	.19	.19	.19	.1925	.76
2015	.1925	.1925			

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 60,000 retail customers, primarily in Middlesex County, New Jersey. In 2014, the Middlesex System accounted for 60% of operating revenues. At 12/31/14, the company had 282 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 6.6% (4/15 proxy). Add.: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.

Middlesex Water has the highest dividend yield in the water utility group. The average yield for the nine member industry is about 2.6%, versus the company's 3.5%.

Generous yields are not necessarily a positive. The reason investors demand a premium from Middlesex is due to its subpar dividend growth prospects. Indeed, over the past 10 years, payout hikes have increased only 1.5% annually. On the positive side, the company's earnings have been rising at a faster pace, which is reflected in an improved payout ratio.

We believe there are better options available for accounts seeking to own shares in a water utility. Historically, utility stocks with lower yields and better distributions prospects, outperform equities that have above-average yields and below-average dividend growth prospects.

We are sticking with our previous earnings estimates. Mostly as a result of rate relief, Middlesex's first-quarter share earnings came in at a solid $0.22, versus our $0.21 forecast. All told, we expect the bottom line to increase a modest $0.02 a share this year, to $1.15 a share. For 2016, we are anticipating a rise in share earnings of $0.05, to $1.20.

The utility has petitioned state regulars for a rate hike. Earlier this year, a request was filed in New Jersey to raise customers' bills by $9.5 million, or 13.5%. As is the case with most water companies, Middlesex needs to allocate more funds to repair and upgrade its pipeline infrastructure. Thanks to a relatively reasonable existing price structure, the size of the proposed rate increase is not as burdensome as it may sound. If the regulators allow the request to be implemented, the average bill of a residential customer would only go up by about $25 a quarter. Predicting when a decision will be finalized is difficult, but it could take well more than a year. A very positive ruling by mid-2016, however, would most likely cause us to up our full-year earnings estimate.

Finances are in good shape. Based on its $375 million market capitalization, Middlesex is a small entity. Still, using most financial metrics, the company's balance sheet compares favorably to most in this group.

James A. Flood *July 17, 2015*

(A) Diluted earnings. May not sum due to rounding. Next earnings report due mid-August.
(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.
(C) In millions, adjusted for splits.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	40
Earnings Predictability	80

NEW JERSEY RES. NYSE-NJR

RECENT PRICE 29.84 | P/E RATIO 17.0 (Trailing: 18.3 Median: 16.0) | RELATIVE P/E RATIO 0.89 | DIV'D YLD 3.1% | VALUE LINE

TIMELINESS 3 Lowered 10/31/14
SAFETY 1 Raised 9/15/06
TECHNICAL 4 Lowered 5/22/15
BETA .80 (1.00 = Market)

High:	14.9	16.4	17.7	18.8	20.6	21.2	22.0	25.2	25.1	23.8	32.1	33.7		
Low:	12.2	13.6	13.8	15.2	12.3	15.0	16.7	19.8	19.3	19.5	21.9	28.7		

Target Price Range 2018 | 2019 | 2020

2018-20 PROJECTIONS

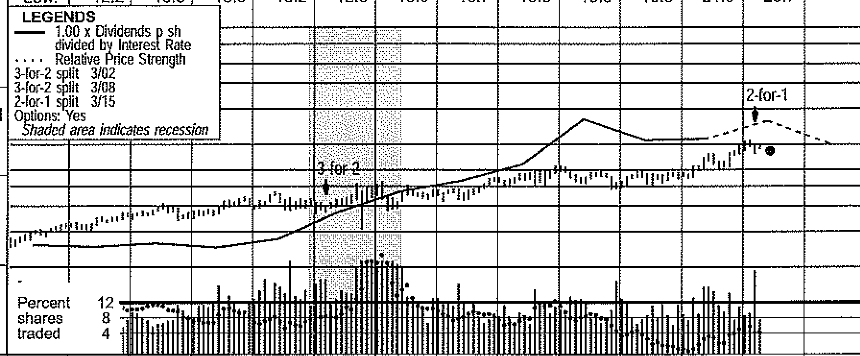
	Price	Gain	Ann'l Total Return
High	30	(Nil)	3%
Low	25	(-15%)	-1%

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	1	0	0	0	0	0	0	0
Options	0	0	0	6	0	2	0	0	0
to Sell	0	0	0	0	0	3	0	0	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	117	92	107
to Sell	80	112	99
Hld's(000)	52088	50964	51530



% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	26.7	9.1
3 yr.	56.7	58.8
5 yr.	92.3	84.6

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
11.33	14.71	25.61	22.06	31.14	30.44	38.10	39.81	36.31	45.37	31.17	32.05	36.30	27.08	38.38	44.40	*40.60*	*41.75*	Revenues per sh A	*45.65*
.93	1.00	1.06	1.07	1.19	1.25	1.31	1.37	1.22	1.81	1.58	1.63	1.70	1.86	1.93	2.73	*2.20*	*2.50*	"Cash Flow" per sh	*2.65*
.55	.60	.65	.70	.79	.85	.88	.93	.78	1.35	1.20	1.23	1.29	1.36	1.37	2.10	*1.75*	*1.80*	Earnings per sh B	*1.85*
.37	.38	.39	.40	.41	.43	.45	.48	.51	.56	.62	.68	.72	.77	.81	.86	*.92*	*.94*	Div'ds Decl'd per sh C■	*.98*
.60	.62	.55	.51	.57	.72	.64	.64	.73	.86	.90	1.05	1.13	1.26	1.33	1.52	*.95*	*.95*	Cap'l Spending per sh	*.95*
3.79	4.14	4.40	4.35	5.13	5.62	5.30	7.50	7.75	8.64	8.29	8.81	9.36	9.80	10.65	11.47	*12.30*	*13.20*	Book Value per sh D	*15.65*
79.83	79.17	79.99	83.00	81.70	83.22	82.64	82.88	83.22	84.12	83.17	82.35	82.89	83.05	83.32	84.20	*85.00*	*85.00*	Common Shs Outst'g E	*85.00*
15.2	14.7	14.2	14.7	14.0	15.3	16.8	16.1	21.6	12.3	14.9	15.0	16.8	16.8	16.0	11.6	Bold figures are		Avg Ann'l P/E Ratio	*14.0*
.87	.96	.73	.80	.80	.81	.89	.87	1.15	.74	.99	.95	1.05	1.07	.90	.60	Value Line		Relative P/E Ratio	*.90*
4.5%	4.4%	4.2%	3.9%	3.7%	3.3%	3.1%	3.2%	3.0%	3.3%	3.5%	3.7%	3.3%	3.4%	3.7%	3.5%	estimates		Avg Ann'l Div'd Yield	*3.5%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $881.5 mill. Due in 5 Yrs $315.2 mill.
LT Debt $699.2 mill. LT Interest $16.3 mill.
Incl. $57.9 mill. capitalized leases.
(LT interest earned: 7.5x; total interest coverage: 7.5x)
Pension Assets-9/14 $268.6 mill. Oblig. $355.5 mill.
Pfd Stock None
Common Stock 85,581,223 shs. as of 5/5/15
MARKET CAP: $2.6 billion (Mid Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
3148.3	3299.6	3021.8	3816.2	2592.5	2639.3	3009.2	2248.9	3198.1	3738.2	*3450*	*3550*	Revenues ($mill) A	*3940*
74.4	78.5	65.3	113.9	101.0	101.8	106.5	112.4	113.7	176.9	*135*	*155*	Net Profit ($mill)	*155*
39.1%	38.9%	38.8%	37.8%	27.1%	41.4%	30.2%	7.1%	25.4%	35.0%	*35.0%*	*35.0%*	Income Tax Rate	*35.0%*
2.4%	2.4%	2.2%	3.0%	3.9%	3.9%	3.5%	5.0%	3.6%	4.7%	*4.0%*	*4.0%*	Net Profit Margin	*4.0%*
42.0%	34.8%	37.3%	38.5%	39.8%	37.2%	35.5%	39.2%	36.6%	38.2%	*32.5%*	*31.0%*	Long-Term Debt Ratio	*27.5%*
58.0%	65.2%	62.7%	61.5%	60.2%	62.8%	64.5%	60.8%	63.4%	61.8%	*67.5%*	*69.0%*	Common Equity Ratio	*72.5%*
755.3	954.0	1028.0	1182.1	1144.8	1154.4	1203.1	1339.0	1400.3	1564.4	*1545*	*1620*	Total Capital ($mill)	*1830*
905.1	934.9	970.9	1017.3	1064.4	1135.7	1295.9	1484.9	1643.1	1884.1	*1920*	*1960*	Net Plant ($mill)	*2080*
11.2%	9.6%	7.7%	10.7%	9.7%	9.7%	9.7%	9.2%	9.0%	12.5%	*9.5%*	*10.5%*	Return on Total Cap'l	*9.5%*
17.0%	12.6%	10.1%	15.7%	14.6%	14.0%	13.7%	13.8%	12.8%	18.3%	*12.5%*	*13.5%*	Return on Shr. Equity	*12.0%*
17.0%	12.6%	10.1%	15.7%	14.6%	14.0%	13.7%	13.8%	12.8%	18.3%	*12.5%*	*13.5%*	Return on Com Equity	*12.0%*
8.5%	6.3%	3.6%	9.5%	7.2%	6.7%	6.2%	6.2%	5.2%	11.0%	*5.5%*	*7.0%*	Retained to Com Eq	*5.5%*
50%	50%	64%	40%	50%	52%	55%	55%	59%	40%	*59%*	*52%*	All Div'ds to Net Prof	*54%*

CURRENT POSITION ($MILL.)

	2013	2014	3/31/15
Cash Assets	3.0	2.2	103.3
Other	742.9	680.5	642.3
Current Assets	745.9	682.7	745.6
Accts Payable	332.8	330.3	329.5
Debt Due	434.2	335.5	182.3
Other	84.8	125.3	143.3
Current Liab.	851.8	791.1	655.1
Fix. Chg. Cov.	700%	700%	700%

ANNUAL RATES

of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '11-'13 to '18-'20
Revenues	2.5%	-3.5%	3.5%
"Cash Flow"	5.0%	4.5%	3.5%
Earnings	6.5%	5.5%	2.5%
Dividends	6.5%	8.5%	3.0%
Book Value	8.0%	4.5%	6.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	642.4	612.9	425.1	568.5	2248.9
2013	736.0	960.9	767.5	733.7	3198.1
2014	878.4	1579.6	688.3	591.9	3738.2
2015	824.1	1013.1	*825*	*787.8*	*3450*
2016	*850*	*1060*	*835*	*805*	*3550*

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	.55	.90	.05	d.14	1.36
2013	.43	.82	.12	d.01	1.37
2014	.47	1.81	.05	d.23	2.10
2015	.65	1.16	*.10*	*d.16*	*1.75*
2016	*.66*	*1.17*	*.11*	*d.14*	*1.80*

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.18	.18	.18	.18	.72
2012	.19	.19	.19	.40	.97
2013	--	.20	.20	.20	.60
2014	.21	.21	.21	.23	.86
2015	.23	.23			

BUSINESS: New Jersey Resources Corp. is a holding company providing retail/wholesale energy svcs. to customers in New Jersey, and in states from the Gulf Coast to New England, and Canada. New Jersey Natural Gas had about 504,300 customers at 9/30/14 in Monmouth and Ocean Counties, and other N.J. Counties. Fiscal 2014 volume: 260 bill. cu. ft. (4% interruptible, 27% residential and commercial and electric utility, 69% incentive programs). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas and related energy svcs. 2014 dep. rate: 3.0%. Has 968 empls. Off./dir. own about 1.4% of common (12/14 Proxy). Chrmn., CEO & Pres.: Laurence M. Downes. Inc.: NJ Addr.: 1415 Wyckoff Road, Wall, NJ 07719. Tel.: 732-938-1480. Web: www.njresources.com.

New Jersey Resources posted mixed financial results for its March quarter. Indeed, revenues declined almost 36%, on a year-to-year basis. This downturn reflected a 46.1% drop in the nonutility business, and to a lesser extent a 5% fall in utility volumes. On the upside, the majority of the reduced revenues are stemming from the downturn in commodity fuel prices. This is evident in NJR's system throughput, which increased 21%, to 297.8 billion cubic feet. On the profitability front, the diminished top line weighed on both fixed- and variable-cost absorption and, consequently, operating expenses rose 740 basis points as a percentage of revenues. After excluding losses on derivative instruments, tax adjustments, and the effect of economic hedging, the company's net financial earnings declined about 36%, to $1.16 a share. This was better than our earlier expectation.

As a result, we have raised our 2015 bottom-line estimate by $0.20, to $1.75 a share. This would still represent an annual earnings decline of more than 15%. Nonetheless, it does fall more in line with management's recently raised guidance range of $1.65-$1.75. The main detractor to this year's results will likely be lower energy services income. That said, NJR continues to benefit from the New Jersey Natural Gas division, which added 4,079 new customer accounts so far this year; about half of those came from newly constructed homes in its service territory. The company anticipates adding 15,000-17,000 new accounts in 2015 and 2016, combined.

Capital expenditures augur well for New Jersey Resources' prospects. It continues to focus on updating its regulated utility infrastructure, in an effort to raise system safety, reliability, and integrity. The Southern Reliability Link is a 28-mile, 30-inch main transmission pipeline that is in the planning and approval phase. Finally, the company recently completed its 20mw Carroll Area Wind Farm, and continues to work on the 48mw Alexander Wind Farm in Kansas. All told, these projects represent about $500 million-$600 million in capital projects.

Still, at this juncture, these shares do not stand out. NJR's dividend yield is below average for a utility.

Bryan J. Fong *June 5, 2015*

(A) Fiscal year ends Sept. 30th.
(B) Diluted earnings. Qtly egs may not sum to total due to change in shares outstanding. Next earnings report due late July.
(C) Dividends historically paid in early Jan., April, July, and October. 1Q '13 div'd paid in 4Q '12. ■ Dividend reinvestment plan available.
(D) Includes regulatory assets in 2014: $377.6 million, $4.48/share.
(E) In millions, adjusted for splits.

Company's Financial Strength	A+
Stock's Price Stability	90
Price Growth Persistence	55
Earnings Predictability	60

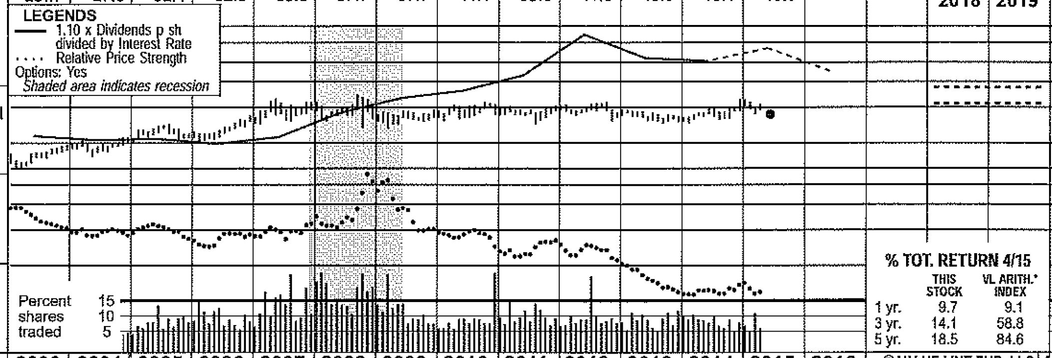
N.W. NAT'L GAS NYSE-NWN

RECENT PRICE 44.45 | P/E RATIO 23.4 (Trailing: 20.9; Median: 18.0) | RELATIVE P/E RATIO 1.23 | DIV'D YLD 4.2% | VALUE LINE

TIMELINESS 3 Raised 5/15/15
SAFETY 1 Raised 3/18/05
TECHNICAL 4 Lowered 5/15/15
BETA .70 (1.00 = Market)

High:	34.1	39.6	43.7	52.8	55.2	46.5	50.9	49.0	50.8	46.6	52.6	52.3
Low:	27.5	32.4	32.8	39.8	37.7	37.7	41.1	39.6	41.0	40.0	40.1	43.8

Target Price Range 2018 | 2019 | 2020



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+35%)	11%
Low	50	(+10%)	7%

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	1	1	0	0	3
to Sell	0	0	0	0	1	2	2	0	4

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	84	79	79
to Sell	53	65	66
Hld's(000)	16493	16110	16761

% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	9.7	9.1
3 yr.	14.1	58.8
5 yr.	18.5	84.6

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
18.17	21.09	25.78	25.07	23.57	25.69	33.01	37.20	39.13	39.16	38.17	30.56	31.72	27.14	28.02	27.64	28.35	29.55	Revenues per sh	31.25
3.72	3.68	3.86	3.65	3.85	3.92	4.34	4.76	5.41	5.31	5.20	5.18	5.00	4.94	5.04	5.05	4.75	5.25	"Cash Flow" per sh	6.45
1.70	1.79	1.88	1.62	1.76	1.86	2.11	2.35	2.76	2.57	2.83	2.73	2.39	2.22	2.24	2.16	1.90	2.30	Earnings per sh A	3.30
1.23	1.24	1.25	1.26	1.27	1.30	1.32	1.39	1.44	1.52	1.60	1.68	1.75	1.79	1.83	1.85	1.87	1.91	Div'ds Decl'd per sh B■	2.10
4.78	3.46	3.23	3.11	4.90	5.52	3.48	3.56	4.48	3.92	5.09	9.35	3.76	4.91	5.13	4.40	5.80	6.15	Cap'l Spending per sh	6.80
17.12	17.93	18.56	18.88	19.52	20.64	21.28	22.01	22.52	23.71	24.88	26.08	26.70	27.23	27.77	28.12	28.85	29.95	Book Value per sh D	33.85
25.09	25.23	25.23	25.59	25.94	27.55	27.58	27.24	26.41	26.50	26.53	26.58	26.76	26.92	27.08	27.28	27.50	27.75	Common Shs Outst'g C	28.00
14.5	12.4	12.9	17.2	15.8	16.7	17.0	15.9	16.7	18.1	15.2	17.0	19.0	21.1	19.4	20.7	Bold figures are		Avg Ann'l P/E Ratio	17.0
.83	.81	.66	.94	.90	.88	.91	.86	.89	1.09	1.01	1.08	1.19	1.34	1.09	1.09	Value Line		Relative P/E Ratio	1.05
5.0%	5.6%	5.1%	4.5%	4.6%	4.2%	3.7%	3.7%	3.1%	3.3%	3.7%	3.6%	3.9%	3.8%	4.2%	4.1%	estimates		Avg Ann'l Div'd Yield	3.3%

CAPITAL STRUCTURE as of 3/31/15
Total Debt $827.9 mill. Due in 5 Yrs $360.0 mill.
LT Debt $621.7 mill. LT Interest $45.0 mill.

(Total interest coverage: 2.5x)

Pension Assets-12/14 $279.2 mill. Oblig. $487.3 mill.

Pfd Stock None

Common Stock 27,332,671 shares as of 4/24/15

MARKET CAP $1.2 billion (Mid Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
910.5	1013.2	1033.2	1037.9	1012.7	812.1	848.8	730.6	758.5	754.0	780	820	Revenues ($mill)	875
58.1	65.2	74.5	68.5	75.1	72.7	63.9	59.9	60.5	58.7	78.0	82.0	Net Profit ($mill)	92.5
36.0%	36.3%	37.2%	36.9%	38.3%	40.5%	40.4%	42.4%	40.8%	41.5%	40.0%	40.0%	Income Tax Rate	38.0%
6.4%	6.4%	7.2%	6.6%	7.4%	8.9%	7.5%	8.2%	8.0%	7.8%	6.7%	7.8%	Net Profit Margin	10.6%
47.0%	46.3%	46.3%	44.9%	47.7%	46.1%	47.3%	48.5%	47.6%	44.8%	44.5%	44.5%	Long-Term Debt Ratio	44.0%
53.0%	53.7%	53.7%	55.1%	52.3%	53.9%	52.7%	51.5%	52.4%	55.2%	55.5%	55.5%	Common Equity Ratio	56.0%
1108.4	1116.5	1106.8	1140.4	1261.8	1284.8	1356.2	1424.7	1433.6	1389.0	1435	1495	Total Capital ($mill)	1685
1373.4	1425.1	1495.9	1549.1	1670.1	1854.2	1893.9	1973.6	2062.9	2121.6	2205	2295	Net Plant ($mill)	2580
6.5%	7.1%	8.5%	7.7%	7.3%	7.0%	6.2%	5.7%	5.8%	5.8%	5.0%	5.5%	Return on Total Cap'l	6.5%
9.9%	10.9%	12.5%	10.9%	11.4%	10.5%	8.9%	8.2%	8.1%	7.6%	6.5%	7.5%	Return on Shr. Equity	10.0%
9.9%	10.9%	12.5%	10.9%	11.4%	10.5%	8.9%	8.2%	8.1%	7.6%	6.5%	7.5%	Return on Com Equity	10.0%
3.7%	4.5%	6.0%	4.5%	5.0%	4.0%	2.4%	1.6%	1.5%	1.1%	Nil	1.5%	Retained to Com Eq	3.5%
63%	59%	52%	59%	56%	61%	73%	80%	81%	85%	98%	83%	All Div'ds to Net Prof	64%

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	9.5	9.5	5.2
Other	321.0	353.1	286.8
Current Assets	330.5	362.6	292.0
Accts Payable	96.1	91.4	62.9
Debt Due	248.2	274.7	206.2
Other	88.5	103.3	101.6
Current Liab.	432.8	469.4	370.7
Fix. Chg. Cov.	316%	321%	251%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	1.0%	-6.5%	2.0%
"Cash Flow"	3.0%	-1.0%	4.5%
Earnings	2.5%	-4.0%	7.0%
Dividends	3.5%	3.5%	2.5%
Book Value	3.5%	3.0%	3.5%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	309.6	104.0	87.5	229.5	730.6
2013	277.9	131.7	88.2	260.7	758.5
2014	293.4	133.1	87.2	240.3	754.0
2015	261.7	148.3	100	270	780
2016	280	150	105	285	820

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	1.51	.05	d.39	1.05	2.22
2013	1.40	.08	d.31	1.07	2.24
2014	1.40	.04	d.32	1.04	2.16
2015	1.04	.10	d.30	1.06	1.90
2016	1.40	.10	d.30	1.10	2.30

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.435	.435	.435	.445	1.75
2012	.445	.445	.445	.455	1.79
2013	.455	.455	.455	.460	1.83
2014	.460	.460	.460	.465	1.85
2015	.465	.465			

BUSINESS: Northwest Natural Gas Co. distributes natural gas to 90 communities, 704,000 customers, in Oregon (89% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.5 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system. Owns local underground storage. Rev. breakdown: residential, 35%; commercial, 22%; industrial, gas transportation, and other, 43%. Employs 1,092. BlackRock Inc. owns 9.2% of shares; officers and directors, 2.1% (4/15 proxy). CEO: Gregg S. Kantor. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Telephone: 503-226-4211. Internet: www.nwnatural.com.

Warmer-than-usual winter weather caused underwhelming results at Northwest Natural Gas. Too, the company had a negative outcome from Oregon regulators, which caused a pretax charge of $15 million for disallowed environmental remediation expense recoveries. These together caused earnings to fall to $1.04 a share. Though we think the rest of the year will show improvement, we are lowering our 2015 per-share estimate by $0.50, to $1.90.

Northwest Natural Gas continues to show signs of growth. The customer growth rate in the Portland area was 1.3%, and employment there continues to improve. We think 2016 should show a sizable jump in earnings, assuming improvements come from more normal weather and increased returns from capital investments. We think that 2015 is the last year of declining earnings and that $2.30 a share is likely in 2016.

The Mist plant expansion appears to be headed forward. Indeed, it received approval from Portland General Electric and will provide storage to the natural gas-fired plants in Port Westward. This will provide up to 2.5 billion cubic feet of storage and will likely cost around $125 million, with a potential in-service date in the 2018-2019 winter season. This long-term project should allow for ample growth once completed. We are assuming it comes in on time. Construction and permitting can take longer than expected at times, though the Mist underground storage facility and related pipelines should increase revenues.

The dividend is a top draw. The slide in the share price has allowed the yield to top 4.2%, which is above average for a natural gas utility. Given the payout ratio remains high when compared to historical levels, we expect dividend expansion will be somewhat muted over the coming years.

This issue does not stand out for Timeliness (3). Shares of Northwest Natural Gas have recently declined 10% in price, hurt by a lackluster earnings report. Also, this issue sports a decent yield and 3- to 5-year total return potential, and carries our Highest mark for Safety. This issue should appeal to conservative income-seekers, at this juncture.

John E. Seibert III *June 5, 2015*

(A) Diluted earnings per share. Excludes nonrecurring items: '00, $0.11; '06, ($0.06); '08, ($0.03); '09, 6¢; May not sum due to rounding. Next earnings report due in early August.
(B) Dividends historically paid in mid-February, May, August, and November.
■ Dividend reinvestment plan available.
(C) In millions.
(D) Includes intangibles. In 2014: $368.9 million, $13.52/share.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	100

CASE NO. 2015-00343
ATTACHMENT 1
TO AG DR NO. 1-28

PIEDMONT NAT'L. GAS NYSE-PNY

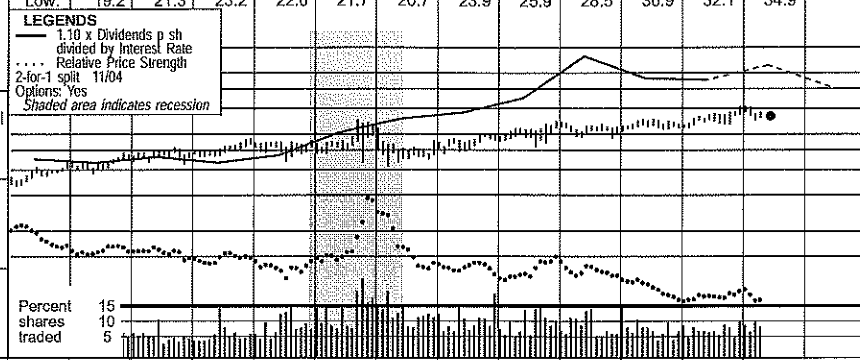
RECENT PRICE 36.78 | P/E RATIO 19.5 (Trailing: 20.9 / Median: 19.0) | RELATIVE P/E RATIO 1.03 | DIV'D YLD 3.6% | VALUE LINE

TIMELINESS 4 Lowered 12/5/14
SAFETY 2 New 7/27/90
TECHNICAL 4 Lowered 6/5/15
BETA .80 (1.00 = Market)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	24.3	25.8	28.4	28.0	35.3	32.0	30.1	34.7	34.6	35.5	41.0	41.1
Low:	19.2	21.3	23.2	22.0	21.7	20.7	23.9	25.9	28.5	30.9	32.1	34.9

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 11/04
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+20%)	8%
Low	30	(-20%)	-1%

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	1	0	0	0	0	0	1	0	1

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	99	107	111
to Sell	72	82	94
Hld's(000)	39611	40379	41698

Percent shares traded 15 10 5

% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	8.3	9.1
3 yr.	35.8	58.8
5 yr.	61.0	84.6

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
10.97	13.01	17.06	12.57	18.14	19.95	22.96	25.80	23.37	28.52	22.36	21.48	19.83	15.54	17.07	18.87	*19.25*	*19.55*	Revenues per sh A	*21.10*
1.70	1.77	1.81	1.81	2.04	2.31	2.43	2.51	2.64	2.77	3.01	2.91	2.99	3.09	3.29	3.37	*3.45*	*3.55*	"Cash Flow" per sh	*3.65*
.93	1.01	1.01	.95	1.11	1.27	1.32	1.28	1.40	1.49	1.67	1.55	1.57	1.66	1.78	1.84	*1.85*	*2.00*	Earnings per sh AB	*2.10*
.68	.72	.76	.80	.82	.85	.91	.95	.99	1.03	1.07	1.11	1.15	1.19	1.23	1.27	*1.31*	*1.35*	Div'ds Decl'd per sh C■	*1.47*
1.58	1.65	1.29	1.21	1.16	1.85	2.50	2.74	1.85	2.47	1.76	2.75	3.37	7.33	8.01	5.91	*6.10*	*6.00*	Cap'l Spending per sh	*5.95*
7.86	8.26	8.63	8.91	9.36	11.15	11.53	11.83	11.99	12.11	12.67	13.35	13.79	14.21	15.87	16.80	*17.40*	*18.35*	Book Value per sh D	*20.40*
62.59	63.83	64.93	66.18	67.31	76.67	76.70	74.61	73.23	73.26	73.27	72.28	72.32	72.25	74.88	77.88	*78.00*	*79.00*	Common Shs Outst'g E	*80.00*
17.7	14.3	16.7	18.4	16.7	16.6	17.9	19.2	18.7	18.2	15.4	17.1	18.9	19.2	18.5	18.9	*Bold figures are*		Avg Ann'l P/E Ratio	*18.0*
1.01	.93	.86	1.01	.95	.88	.95	1.04	.99	1.10	1.03	1.09	1.19	1.22	1.04	1.04	*Value Line*		Relative P/E Ratio	*1.13*
4.1%	5.0%	4.5%	4.6%	4.4%	4.1%	3.8%	3.9%	3.8%	3.8%	4.1%	4.2%	3.9%	3.7%	3.7%	3.7%	*estimates*		Avg Ann'l Div'd Yield	*3.9%*
						1761.1	1924.6	1711.3	2089.1	1638.1	1552.3	1433.9	1122.8	1278.2	1469.9	*1500*	*1545*	Revenues ($mill) A	*1690*
						101.3	97.2	104.4	110.0	122.8	111.8	113.6	119.8	134.4	143.8	*145*	*160*	Net Profit ($mill)	*170*
						33.7%	34.2%	33.0%	36.3%	28.5%	23.4%	24.6%	29.7%	32.6%	25.0%	*25.0%*	*25.0%*	Income Tax Rate	*25.0%*
						5.8%	5.0%	6.1%	5.3%	7.5%	7.2%	7.9%	10.7%	10.5%	9.8%	*10.0%*	*10.0%*	Net Profit Margin	*10.0%*
						41.4%	48.3%	48.4%	47.2%	44.1%	41.0%	40.4%	48.7%	49.7%	52.1%	*48.0%*	*46.0%*	Long-Term Debt Ratio	*43.0%*
						58.6%	51.7%	51.6%	52.8%	55.9%	59.0%	59.6%	51.3%	50.3%	47.9%	*52.0%*	*54.0%*	Common Equity Ratio	*56.5%*
						1509.2	1707.9	1703.3	1681.5	1660.5	1636.9	1671.9	2002.0	2363.5	2733.0	*2610*	*2700*	Total Capital ($mill)	*2885*
						1939.1	2075.3	2141.5	2240.8	2304.4	2437.7	2627.3	3105.1	3634.5	3989.4	*4050*	*4100*	Net Plant ($mill)	*4250*
						8.2%	7.2%	7.8%	8.2%	9.1%	8.4%	8.2%	7.0%	6.8%	6.4%	*7.5%*	*7.5%*	Return on Total Cap'l	*7.5%*
						11.5%	11.0%	11.9%	12.4%	13.2%	11.6%	11.4%	11.7%	11.3%	11.0%	*11.0%*	*11.0%*	Return on Shr. Equity	*10.5%*
						11.5%	11.0%	11.9%	12.4%	13.2%	11.6%	11.4%	11.7%	11.3%	11.0%	*11.0%*	*11.0%*	Return on Com Equity	*10.5%*
						3.6%	2.8%	3.5%	3.9%	4.8%	3.3%	3.1%	3.3%	3.6%	3.4%	*3.5%*	*3.5%*	Retained to Com Eq	*3.0%*
						68%	74%	70%	69%	64%	72%	73%	72%	69%	69%	*69%*	*68%*	All Div'ds to Net Prof	*69%*

CAPITAL STRUCTURE as of 1/31/15
Total Debt $1904.4 mill. **Due in 5 Yrs** $175.0 mill.
LT Debt $1424.4 mill. **LT Interest** $61.6 mill.
(LT interest earned: 4.1x; total interest coverage: 3.4x)

Pension Assets-10/14 $364.2 mill.
Oblig. $346.4 mill.
Pfd Stock None

Common Stock 78,778,900 shs.
as of 2/27/15
MARKET CAP: $2.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2013	2014	1/31/15
Cash Assets	8.1	9.6	19.9
Other	340.0	338.4	475.6
Current Assets	348.1	348.0	495.5
Accts Payable	140.1	139.7	159.8
Debt Due	500.0	355.0	480.0
Other	76.6	127.3	143.1
Current Liab.	716.7	622.0	782.9
Fix. Chg. Cov.	325%	325%	325%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	1.0%	-7.5%	*3.5%*
"Cash Flow"	5.0%	3.5%	*2.0%*
Earnings	5.0%	3.5%	*3.0%*
Dividends	4.0%	3.5%	*3.0%*
Book Value	5.0%	4.0%	*4.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year
2012	471.8	308.4	161.2	181.4	1122.8
2013	515.9	399.4	162.9	200.0	1278.2
2014	657.7	462.2	164.2	185.8	1469.9
2015	607.3	*455*	*210*	*227.7*	*1500*
2016	*620*	*465*	*225*	*235*	*1545*

Fiscal Year Ends	EARNINGS PER SHARE AB Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year
2012	1.05	.70	d.06	d.03	1.66
2013	1.18	.74	d.03	d.11	1.78
2014	1.26	.80	d.09	d.13	1.84
2015	1.18	*.82*	*d.05*	*d.10*	*1.85*
2016	*1.22*	*.86*	*d.02*	*d.06*	*2.00*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.28	.29	.29	.29	1.15
2012	.29	.30	.30	.60	1.49
2013	--	.31	.31	.31	.93
2014	.31	.32	.32	.32	1.27
2015	.32	.33			

BUSINESS: Piedmont Natural Gas Company is primarily a regulated natural gas distributor, serving over 992,551 customers in North Carolina, South Carolina, and Tennessee. 2014 revenue mix: residential (46%), commercial (27%), industrial (14%), other (13%). Principal suppliers: Transco and Tennessee Pipeline. Gas costs: 51.4% of revenues. '14 deprec. rate: 2.7%. Estimated plant age: 10 years. Non-regulated operations: sale of gas-powered heating equipment; natural gas brokering; propane sales. Has about 1,879 employees. Off./dir. own about 1.1% of common stock, BlackRock; 8.6% (1/15 proxy). Chrmn., CEO, & Pres.: Thomas E. Skains. Inc.: NC. Addr.: 4720 Piedmont Row Drive, Charlotte, NC 28210. Telephone: 704-364-3120. Internet: www.piedmontng.com.

Piedmont Natural Gas posted mixed financial results for the January quarter. Indeed, the company's revenues declined 7.7%, to $607.3 million. This was modestly higher than our earlier call, thanks to the benefits of the higher rates in North Carolina and Tennessee, new customer additions of approximately 4,900, and a rise in overall system throughput of 2.7%. On the downside, the year-over-year decline in natural gas pricing was a key detractor to the top line. On the profitability front, cost of goods sold decreased 470 basis points as a percentage of revenues. This benefit was partially offset by a 290-basis-point rise in operating expenses. After accounting for lower income from equity investments, higher interest costs, and a steadily rising share count, first-quarter earnings fell 6.3%, to $1.18 a share. This was lower than our earlier expectation.

Consequently, we have shaved a nickel off our 2015 bottom-line estimate, to $1.85 a share. This would represent a relatively unchanged earnings figure when compared to fiscal 2014 and falls in line with management's recently reiterated guidance range of $1.82-$1.92 per share. We continue to look for a low single-digit revenue increase this year, thanks to new customer accounts and rising system throughput. Alternatively, the company did file for rate reductions in North and South Carolina in an effort to pass through price reductions on wholesale natural gas to its end-use customers.

The balance sheet is in decent shape and improving. Indeed, PNY's cash reserves doubled during the first quarter of 2015, to almost $20 million. At the same time, the long-term debt load has remained constant. Although it does represent a somewhat high 50% of total capital, this figure is acceptable for a utility company, and has not proven to be problematic in the past. Finally, the board recently approved a 3% hike in the quarterly dividend, to $0.33 a share. Despite that increase, the stock's yield is below average when compared to the rest of the industry.

At this juncture, these untimely shares do not stand out. The stock's total return potential is subpar.

Bryan J. Fong *June 5, 2015*

(A) Fiscal year ends October 31st.
(B) Diluted earnings. Excl. extraordinary item: '00, 8¢. Excl. nonrecurring gains (losses): '10, 41¢. Next earnings report due mid-July.
Quarters may not add to total due to change in shares outstanding.
(C) Dividends historically paid early-January, April, July, October. 2013 Q1 dividend paid in Q4 of 2012. ■ Div'd reinvest. plan available; 5% discount. (D) Includes deferred charges. In 2014: $809.5 million, $10.30/share.
(E) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	45
Earnings Predictability	95

SOUTH JERSEY INDS. NYSE-SJI

RECENT PRICE 26.31 | P/E RATIO 15.9 (Trailing: 18.5, Median: 17.0) | RELATIVE P/E RATIO 0.84 | DIV'D YLD 4.0% | VALUE LINE

TIMELINESS 3 Raised 4/10/15
SAFETY 2 Lowered 1/4/91
TECHNICAL 3 Lowered 5/1/15
BETA .85 (1.00 = Market)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	13.3	16.2	17.1	20.6	20.3	20.4	27.1	29.0	29.0	31.1	30.6	30.4
Low:	9.8	12.5	12.8	15.6	12.6	16.0	18.6	21.4	22.9	25.3	25.9	25.4

Target Price Range 2018 | 2019 | 2020

2018-20 PROJECTIONS

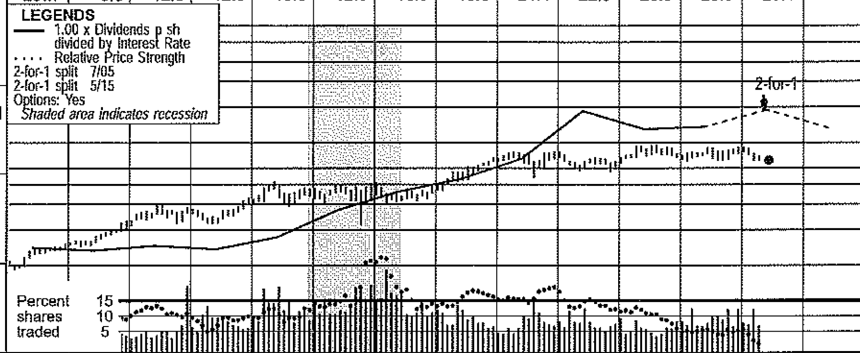
	Price	Gain	Ann'l Total Return
High	40	(+50%)	15%
Low	30	(+15%)	8%

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	1	2	0	0	0	0	0	1
Options	0	0	0	0	0	0	0	0	0
to Sell	1	1	0	0	0	0	0	0	1

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	78	90	97
to Sell	73	67	60
Hld's(000)	41346	41708	42328



% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-5.0	9.1
3 yr.	18.3	58.8
5 yr.	36.8	84.6

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
8.80	11.22	17.65	10.35	13.17	14.75	15.89	15.88	16.15	16.18	14.19	15.48	13.71	11.16	11.18	12.98	13.85	14.95	Revenues per sh	18.40
.92	.97	.95	1.06	1.12	1.22	1.25	1.75	1.60	1.74	1.86	2.10	2.23	2.34	2.48	2.67	2.70	2.90	"Cash Flow" per sh	4.00
.50	.54	.57	.61	.68	.79	.86	1.23	1.05	1.14	1.19	1.35	1.45	1.52	1.52	1.57	1.65	1.80	Earnings per sh A	2.50
.36	.37	.37	.38	.39	.41	.43	.46	.51	.56	.61	.68	.75	.83	.90	.96	1.02	1.10	Div'ds Decl'd per sh B ■	1.35
1.09	1.11	1.41	1.74	1.18	1.34	1.60	1.26	.94	1.04	1.83	2.79	3.20	4.01	4.84	5.01	3.55	3.80	Cap'l Spending per sh	4.60
3.37	3.62	3.91	4.84	5.63	6.20	6.75	7.55	8.12	8.67	9.12	9.54	10.33	11.63	12.64	13.65	15.00	15.95	Book Value per sh C	18.40
44.61	46.00	47.44	48.83	52.92	55.52	57.96	58.65	59.22	59.46	59.59	59.75	60.43	63.31	65.43	68.33	70.00	72.00	Common Shs Outst'g D	76.00
13.3	13.0	13.6	13.5	13.3	14.1	16.6	11.9	17.2	15.9	15.0	16.8	18.4	16.9	18.9	18.0	Bold figures are		Avg Ann'l P/E Ratio	14.0
.76	.85	.70	.74	.76	.74	.88	.64	.91	.96	1.00	1.07	1.15	1.08	1.06	.95	Value Line		Relative P/E Ratio	.90
5.4%	5.2%	4.7%	4.6%	4.3%	3.7%	3.0%	3.2%	2.8%	3.1%	3.4%	3.0%	2.8%	3.2%	3.1%	3.4%	estimates		Avg Ann'l Div'd Yield	3.9%

CAPITAL STRUCTURE as of 3/31/15
Total Debt $1281.8 mill. **Due in 5 Yrs** $838.9 mill.
LT Debt $859.5 mill. **LT Interest** $23.0 mill.
(Total interest coverage: 4.9x)

Leases, Uncapitalized Annual rentals $.7 mill.
Pension Assets-12/14 $180.5 mill. **Oblig.** $265.4 mill.

Pfd Stock None

Common Stock 68,456,764 shs.
as of 5/1/15, adj. for 2-for-1 split

MARKET CAP: $1.8 billion (Mid Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
921.0	931.4	956.4	962.0	845.4	925.1	828.6	706.3	731.4	887.0	970	1075	Revenues ($mill)	1400
48.6	72.0	61.8	67.7	71.3	81.0	87.0	93.3	97.1	104.0	120	135	Net Profit ($mill)	195
41.5%	41.3%	41.9%	47.7%	23.0%	15.2%	22.4%	10.8%	10.8%	20.0%	25.0%	25.0%	Income Tax Rate	25.0%
5.3%	7.7%	6.5%	7.0%	8.4%	8.8%	10.5%	13.2%	13.3%	11.7%	12.4%	12.6%	Net Profit Margin	13.9%
44.9%	44.7%	42.7%	39.2%	36.5%	37.4%	40.5%	45.0%	45.1%	48.0%	47.0%	46.5%	Long-Term Debt Ratio	47.0%
55.1%	55.3%	57.3%	60.8%	63.5%	62.6%	59.5%	55.0%	54.9%	52.0%	53.0%	53.5%	Common Equity Ratio	53.0%
710.3	801.1	839.0	848.0	856.4	910.1	1048.3	1337.6	1507.4	1791.9	1975	2150	Total Capital ($mill)	2650
877.3	920.0	948.9	982.6	1073.1	1193.3	1352.4	1578.0	1859.1	2134.1	2250	2350	Net Plant ($mill)	2750
8.3%	10.1%	8.6%	8.9%	9.0%	9.5%	8.9%	7.4%	6.8%	6.4%	6.5%	7.0%	Return on Total Cap'l	8.0%
12.4%	16.3%	12.8%	13.1%	13.1%	14.2%	13.9%	12.7%	11.7%	11.2%	11.5%	11.5%	Return on Shr. Equity	14.0%
12.4%	16.3%	12.8%	13.1%	13.1%	14.2%	13.9%	12.7%	11.7%	11.2%	11.5%	11.5%	Return on Com Equity	14.0%
6.2%	10.2%	6.7%	6.7%	6.4%	7.1%	6.7%	5.8%	4.8%	4.3%	4.5%	5.0%	Retained to Com Eq	6.5%
50%	37%	48%	49%	51%	50%	52%	55%	59%	61%	60%	59%	All Div'ds to Net Prof	53%

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	3.8	4.2	7.2
Other	479.1	562.5	573.0
Current Assets	482.9	566.7	580.2
Accts Payable	259.8	273.0	221.2
Debt Due	374.9	395.6	422.3
Other	130.3	181.6	178.1
Current Liab.	765.0	850.2	821.6
Fix. Chg. Cov.	370%	432%	455%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	-1.0%	-5.5%	7.5%
"Cash Flow"	8.0%	7.5%	8.0%
Earnings	8.0%	6.5%	8.5%
Dividends	8.5%	10.0%	7.0%
Book Value	8.5%	8.0%	6.5%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	274.8	121.9	112.0	197.6	706.3
2013	255.6	122.6	128.8	224.4	731.4
2014	350.2	133.3	122.4	281.1	887.0
2015	383.0	155	145	287	970
2016	415	175	165	320	1075

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	.83	.14	.07	.49	1.52
2013	.76	.16	d.02	.62	1.52
2014	1.01	.15	d.05	.47	1.57
2015	.86	.16	.03	.60	1.65
2016	.93	.18	.04	.65	1.80

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	--	.183	.183	.384	.75
2012	--	.202	.202	.423	.83
2013	--	.222	.222	.458	.90
2014	--	.237	.237	.488	.96
2015	--	.251			

BUSINESS: South Jersey Industries, Inc. is a holding company. Its subsidiary, South Jersey Gas Co., distributes natural gas to 366,854 customers in New Jersey's southern counties. Gas revenue mix '14: residential, 43%; commercial, 19%; cogeneration and electric generation, 17%; industrial, 21%. Non-utility operations include: South Jersey Energy, South Jersey Resources Group, South Jersey Exploration, Marina Energy, South Jersey Energy Service Plus, and SJI Midstream. Has about 700 employees. Off./dir. own .8% of common shares; BlackRock, Inc., 9.5%; The Vanguard Group, Inc., 6.9% (3/15 proxy). Chrmn. & CEO: Edward Graham. Inc.: NJ. Addr.: 1 South Jersey Plaza, Folsom, NJ 08037. Tel.: 609-561-9000. Web: www.sjindustries.com.

South Jersey Industries completed a 2-for-1 stock split in early May. As a result, the number of shares outstanding rose to just under 69 million. The company cited healthy operating performance and favorable growth prospects as factors supporting the decision to effect the split. Our per-share figures have been adjusted accordingly.

The company reported mixed results for the March quarter. The top line advanced roughly 9%, on a year-over-year basis. This was the result of impressive growth at the utility operation, which more than offset lower revenues from the nonutility side. Operating expenses also increased, however, and earnings per share of $0.86 were no match for the prior-year tally.

We expect favorable comparisons in the coming quarters, and higher revenues and share earnings for full-year 2015. The utility ought to be an important performance driver going forward. South Jersey Gas should continue to experience healthy customer growth, as natural gas remains the fuel of choice within its service territory. This business will likely continue to gain from customer conversions to natural gas, given its cost effectiveness compared to alternatives. On the non-utility side, the company's wholesale and retail commodity businesses should also post solid results, driven by demand for fuel management services from four large gas-fired merchant generating facilities, and SJI's portfolio of transportation assets. The energy services business ought to benefit from the healthy performance of its energy production portfolio, too.

This stock is neutrally ranked for year-ahead relative price performance. Looking further out, we expect healthy growth in revenues and share earnings for the company from 2016 onward. On top of that, South Jersey Industries earns high marks for Safety, Financial Strength, Price Stability, and Earnings Predictability. All things considered, this good-quality stock offers solid risk-adjusted total return potential for the pull to late decade. Conservative, income-oriented investors may find something to like here. Dividend growth looks to be a strong point here.

Michael Napoli, CFA *June 5, 2015*

(A) Based on GAAP egs. through 2006, economic egs. thereafter. GAAP EPS: '07, $1.05; '08, $1.29; '09, $0.97; '10, $1.11; '11, $1.49; '12, $1.49; '13, $1.28; '14, $1.46. Excl. nonrecur. gain (loss): '01, $0.07; '08, $0.16; '09, ($0.22); '10, ($0.24); '11, $0.04; '12, ($0.03); '13, ($0.24); '14, ($0.11). Earnings may not sum due to rounding. Next egs. report due in August. (B) Div'ds paid early April, July, Oct., and late Dec. ■ Div. reinvest. plan avail. (C) Incl. reg. assets. In 2014: $357.2 mill., $5.23 per shr. (D) In mill., adj. for split.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	60
Earnings Predictability	95

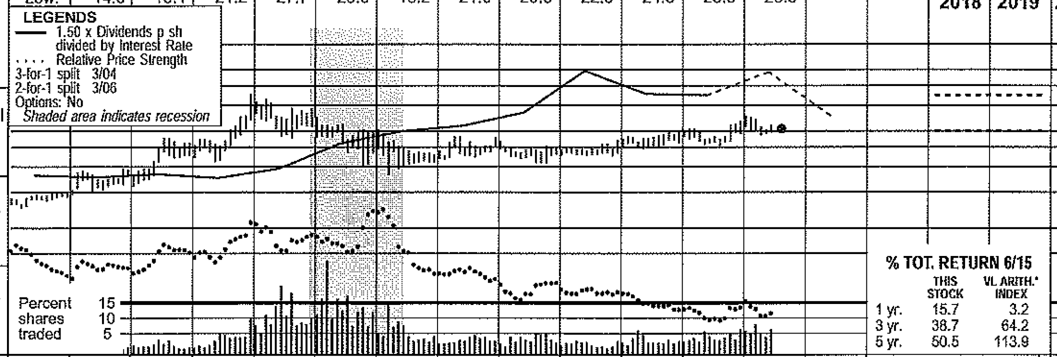
SJW CORP. NYSE-SJW

RECENT PRICE 30.82 | P/E RATIO 21.3 (Trailing: 11.3 Median: 24.0) | RELATIVE P/E RATIO 1.12 | DIV'D YLD 2.6% | VALUE LINE

TIMELINESS 3 Raised 5/8/15
SAFETY 3 New 4/22/11
TECHNICAL 3 Lowered 7/10/15
BETA .80 (1.00 = Market)

High:	19.6	27.8	45.3	43.0	35.1	30.4	28.2	26.8	26.9	30.1	33.7	35.7		
Low:	14.6	16.1	21.2	27.7	20.0	18.2	21.6	20.9	22.6	24.5	25.5	28.6		

Target Price Range 2018 | 2019 | 2020



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+45%)	12%
Low	30	(-5%)	2%

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	1	1	0	0	2	0	1	3	0
Options	0	0	0	1	0	0	0	0	0
to Sell	0	1	0	1	0	0	1	0	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	38	49	61
to Sell	45	47	47
Hld's(000)	10784	10867	10898

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	15.7	3.2
3 yr.	38.7	64.2
5 yr.	50.5	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
6.40	6.74	7.45	7.97	8.20	9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	*14.40*	*14.30*	Revenues per sh	*17.60*
1.43	1.23	1.49	1.55	1.75	1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	*3.50*	*3.60*	"Cash Flow" per sh	*3.90*
.87	.58	.77	.78	.91	.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	*1.45*	*1.45*	Earnings per sh A	*1.75*
.40	.41	.43	.46	.49	.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	*.78*	*.81*	Div'd Decl'd per sh B■	*1.05*
1.77	1.89	2.63	2.06	3.41	2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	*5.00*	*4.95*	Cap'l Spending per sh	*4.90*
7.88	7.90	8.17	8.40	9.11	10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	*18.30*	*19.05*	Book Value per sh	*21.30*
18.27	18.27	18.27	18.27	18.27	18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	*20.50*	*21.00*	Common Shs Outst'g C	*23.00*
15.5	33.1	18.5	17.3	15.4	19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	Bold figures are		Avg Ann'l P/E Ratio	*22.0*
.88	2.15	.95	.94	.88	1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	Value Line		Relative P/E Ratio	*1.40*
3.0%	2.1%	3.0%	3.4%	3.5%	3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	estimates		Avg Ann'l Div'd Yield	*2.8%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $396.5 mill. Due in 5 Yrs $21.2 mill.
LT Debt $384.2 mill. LT Interest $18.1 mill. (52% of Cap'l)

Leases, Uncapitalized: Annual rentals $5.5 mill.

Pension Assets-12/14 $91.4 mill. Oblig. $128.7 mill.

Pfd Stock None.

Common Stock 20,341,489 shs. as of 4/22/15

MARKET CAP: $625 million (Small Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
180.1	189.2	206.6	220.3	216.1	215.6	239.0	261.5	276.9	319.7	*295*	*300*	Revenues ($mill)	*405*
20.7	22.2	19.3	20.2	15.2	15.8	20.9	22.3	23.5	51.8	*29.5*	*30.0*	Net Profit ($mill)	*40.0*
41.6%	40.8%	39.4%	39.5%	40.4%	38.8%	41.1%	41.1%	38.7%	32.5%	*37.0%*	*36.0%*	Income Tax Rate	*38.0%*
1.6%	2.1%	2.7%	2.3%	2.0%	--	--	--	2.0%	1.0%	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.5%*
42.6%	41.8%	47.7%	46.0%	49.4%	53.7%	56.6%	55.0%	51.1%	51.6%	*51.0%*	*50.0%*	Long-Term Debt Ratio	*53.5%*
57.4%	58.2%	52.3%	54.0%	50.6%	46.3%	43.4%	45.0%	48.9%	48.4%	*49.0%*	*50.0%*	Common Equity Ratio	*46.5%*
341.2	391.8	453.2	470.9	499.6	550.7	607.9	610.2	656.2	744.5	*775*	*805*	Total Capital ($mill)	*1025*
484.8	541.7	645.5	684.2	718.5	785.5	756.2	831.6	898.7	963.0	*1000*	*1055*	Net Plant ($mill)	*1200*
7.6%	7.0%	5.7%	5.8%	4.4%	4.3%	4.9%	5.0%	5.0%	8.3%	*5.0%*	*5.0%*	Return on Total Cap'l	*5.5%*
10.6%	9.7%	8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	*7.5%*	*8.0%*	Return on Shr. Equity	*8.0%*
10.6%	9.7%	8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	*7.5%*	*8.0%*	Return on Com Equity	*8.0%*
5.6%	5.2%	3.5%	3.3%	1.2%	1.2%	3.1%	3.3%	2.8%	10.2%	*3.0%*	*3.5%*	Retained to Com Eq	*3.5%*
47%	46%	57%	59%	80%	80%	61%	59%	62%	29%	*54%*	*56%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	2.3	2.4	5.4
Other	37.4	65.7	57.7
Current Assets	39.7	68.1	63.1
Accts Payable	12.6	7.0	11.8
Debt Due	23.0	13.8	12.3
Other	23.6	23.9	24.6
Current Liab.	59.2	44.7	48.7
Fix. Chg. Cov.	268%	270%	286%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	5.5%	4.5%	4.0%
"Cash Flow"	7.0%	8.0%	4.5%
Earnings	6.5%	10.5%	6.5%
Dividends	4.0%	3.0%	5.5%
Book Value	6.0%	3.5%	5.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	51.1	65.6	82.4	62.4	261.5
2013	50.1	74.2	85.2	67.4	276.9
2014	54.6	70.4	125.4	69.3	319.7
2015	62.1	*73.0*	*89.0*	*70.9*	*295*
2016	*60.0*	*75.0*	*90.0*	*75.0*	*300*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.06	.28	.53	.31	1.18
2013	.07	.37	.44	.24	1.12
2014	.04	.34	1.88	.28	2.54
2015	.23	*.37*	*.53*	*.32*	*1.45*
2016	*.09*	*.41*	*.57*	*.38*	*1.45*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.173	.173	.173	.173	.69
2012	.1775	.1775	.1775	.1775	.71
2013	.1825	.1825	.1825	.1825	.73
2014	.1875	.1875	.1875	.1875	.75
2015	.1950	.195			

BUSINESS: SJW Corporation engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 229,000 connections that serve a population of approximately one million people in the San Jose area and 12,000 connections that serve approximately 36,000 residents in a service area in the region between San Antonio and Austin, Texas. The company offers nonregulated water-related services. Also owns and operates commercial real estate investments. Has about 395 employees. Officers & directors (including Nancy O. Moss) own 27.9% of outstanding shares. Chrm.: Charles J. Toeniskoetter. Inc.: CA. Address: 110 W. Taylor Street, San Jose, CA 95110. Tel.: (408) 279-7800. Int: www.sjwater.com.

A new pricing structure will most surely have an impact on the amount of water consumed by SJW's customers. Faced with the ongoing drought, California's governor established rules aimed at reducing water usage approximately 25%. The mandatory program, which went into effect on June 1st, also contains other restrictions and fines.

Water utilities operating in the state should not be affected, however. The California Public Utility Commission had already instituted policies that changed the methodology of how water companies generate profits. Now, SJW can promote conservation and not see its net income decline.

SJW's bottom line should do well this year. First-quarter results were considerably above expectations as the company benefited from an unusual one-time gain and an earlier decision to extend rate relief into 2015. For the full year, we think SJW's share net will reach $1.45. If last year's profits weren't impacted by a one-time gain, the comparison would appear better.

Capital spending will remain at relatively high levels out to late decade. All of the regulated utilities we cover are in the midst of extensive programs intended to replace antiquated pipes and related structures. The industry had been deferring these expenditures until the past few years because companies weren't sure that any investments made would be recouped. Once states, such as California, began working closer with water companies, more capital began to be spent on improving systems.

Earnings momentum should stall in 2016. This will be partially due to there not being any unforeseen one-time gains in our estimate, as has been the case in 2014 and 2015. Another factor adding some uncertainty is how much surface water will be available. Should supplies remain tight, more-expensive options, including drilling and buying on the open market, would be required.

Shares of SJW do not have much appeal at this juncture. Over the pull to 2018-2020, the stock's total return potential is lower than the typical stock in our universe.

James A. Flood *July 17, 2015*

(A) Diluted earnings. Excludes nonrecurring losses : '03, $1.97; '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. Next earnings report due mid-August. Quarterly earnings may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for stock splits.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	30
Earnings Predictability	55

UGI CORP. NYSE-UGI

RECENT PRICE 36.56 | P/E RATIO 18.4 (Trailing: 19.4 Median: 14.0) | RELATIVE P/E RATIO 0.97 | DIV'D YLD 2.5% | VALUE LINE

TIMELINESS 2 Raised 3/27/15
SAFETY 2 Raised 9/17/04
TECHNICAL 4 Lowered 5/22/15
BETA .95 (1.00 = Market)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	13.8	20.0	19.3	19.8	19.2	18.3	21.7	22.4	22.4	28.8	39.7	38.6
Low:	10.0	12.8	13.5	15.2	12.5	14.1	15.9	16.0	17.3	21.9	26.8	31.5

Target Price Range 2018 | 2019 | 2020

2018-20 PROJECTIONS

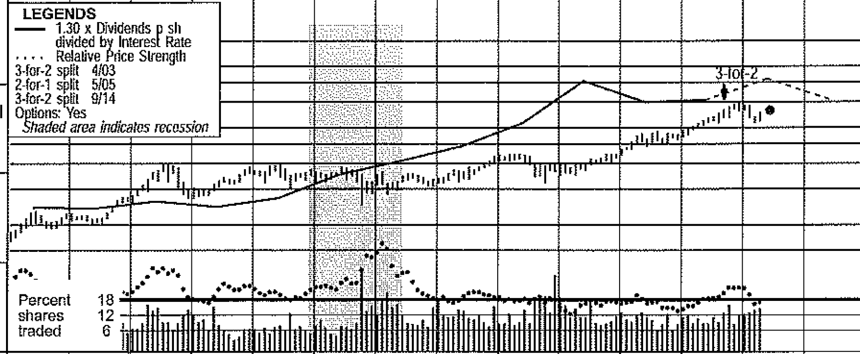
	Price	Gain	Ann'l Total Return
High	35	(-5%)	1%
Low	25	(-30%)	-6%

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	0	0	0	0	1	0	0	0
Options	0	5	0	0	0	3	1	1	0
to Sell	0	6	2	0	0	3	0	1	0

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	150	154	181
to Sell	135	156	152
Hld's(000)	136174	134645	133925



80 60 50 40 30 25 20 15 10 7.5

% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	14.6	9.1
3 yr.	95.1	58.8
5 yr.	122.1	84.6

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
11.27	14.50	20.09	17.76	23.62	24.63	31.10	33.01	34.24	41.27	35.25	34.01	36.31	38.56	42.10	47.92	41.55	45.60	Revenues per sh A	51.30
1.08	1.16	1.32	1.36	1.59	1.63	2.09	2.05	2.26	2.48	2.82	2.87	2.75	3.05	3.75	4.05	4.15	4.30	"Cash Flow" per sh	4.95
.30	.35	.47	.60	.76	.81	1.15	1.10	1.18	1.33	1.57	1.59	1.37	1.17	1.59	1.92	1.95	2.10	Earnings per sh AB	2.65
.33	.34	.35	.36	.38	.40	.43	.46	.48	.50	.52	.60	.68	.71	.74	.79	.88	.92	Div'ds Decl'd per sh C ■	1.01
.57	.58	.64	.76	.79	.87	1.01	1.21	1.39	1.44	1.85	2.11	2.15	2.01	2.84	2.64	2.80	2.90	Cap'l Spending per sh	3.05
2.03	2.04	2.08	2.55	4.45	5.43	6.35	6.95	8.26	8.80	9.78	11.10	11.79	13.21	14.59	15.39	16.90	18.40	Book Value per sh D	23.25
122.72	121.47	122.83	124.66	128.10	153.63	157.20	158.18	159.97	161.09	162.78	164.38	167.75	169.06	170.88	172.73	177.00	180.00	Common Shs Outst'g E	180.00
15.9	13.6	12.1	11.4	12.6	13.4	13.8	14.0	15.1	13.3	10.3	10.9	15.0	16.4	15.4	15.8	Bold figures are		Avg Ann'l P/E Ratio	12.0
.91	.88	.62	.62	.72	.71	.73	.76	.80	.80	.69	.69	.94	1.04	.87	.83	Value Line		Relative P/E Ratio	.75
6.9%	7.0%	6.2%	5.3%	3.9%	3.7%	2.7%	3.0%	2.7%	2.9%	3.2%	3.5%	3.3%	3.7%	3.0%	2.6%	estimates		Avg Ann'l Div'd Yield	3.1%

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
4888.7	5221.0	5476.9	6648.2	5737.8	5591.4	6091.3	6519.2	7194.7	8277.3	7350	8200	Revenues ($mill) A	9230
182.0	176.2	191.8	215.5	258.5	261.0	232.9	199.4	278.1	337.2	345	380	Net Profit ($mill)	480
39.5%	30.5%	23.8%	30.6%	29.4%	32.0%	29.8%	34.8%	27.6%	30.6%	30.0%	30.0%	Income Tax Rate	30.0%
3.7%	3.4%	3.5%	3.2%	4.5%	4.7%	3.8%	3.1%	3.9%	4.1%	4.3%	4.6%	Net Profit Margin	5.2%
58.3%	64.1%	60.7%	58.4%	56.2%	44.0%	51.6%	60.0%	58.7%	56.4%	54.0%	52.0%	Long-Term Debt Ratio	46.0%
41.7%	35.9%	39.3%	41.6%	43.8%	56.0%	48.4%	40.0%	41.3%	43.6%	46.0%	48.0%	Common Equity Ratio	54.0%
2390.1	3064.6	3360.7	3405.0	3630.0	3256.7	4088.0	5580.7	6034.7	6092.7	6485	6860	Total Capital ($mill)	7735
1802.7	2214.7	2397.4	2449.5	2903.6	3053.2	3204.5	4233.1	4480.2	4543.7	4610	4675	Net Plant ($mill)	4875
9.8%	7.5%	7.4%	7.9%	8.9%	10.1%	7.4%	5.6%	6.6%	7.5%	5.5%	5.5%	Return on Total Cap'l	6.0%
18.2%	16.0%	14.5%	15.2%	16.2%	14.3%	11.8%	8.9%	11.2%	12.7%	11.5%	11.5%	Return on Shr. Equity	11.5%
18.2%	16.0%	14.5%	15.2%	16.2%	14.3%	11.8%	8.9%	11.2%	12.7%	11.5%	11.5%	Return on Com Equity	11.5%
11.5%	9.4%	8.7%	9.5%	10.9%	8.9%	6.0%	3.6%	6.1%	7.6%	6.5%	6.5%	Retained to Com Eq	7.5%
37%	41%	40%	38%	33%	38%	49%	60%	45%	40%	45%	42%	All Div'ds to Net Prof	34%

CAPITAL STRUCTURE as of 3/31/15
Total Debt $3518.6 mill. **Due in 5 Yrs** $1379 mill.
LT Debt $2958.2 mill. **LT Interest** $237 mill.
(Total interest coverage: 4.2x)

Leases, Uncapitalized Annual rentals $72.6 mill.
Pension Assets-9/14 $472 mill. **Oblig.** $595 mill.

Pfd Stock None

Common Stock 172,497,596 shares as of 4/30/15

MARKET CAP: $6.3 bill. (Mid. Cap)

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	389.3	419.5	445.5
Other	1238.0	1243.5	1513.5
Current Assets	1627.3	1663.0	1959.0
Accts Payable	472.3	459.8	440.8
Debt Due	295.1	288.0	560.4
Other	657.5	683.1	848.5
Current Liab.	1424.9	1430.9	1849.7
Fix. Chg. Cov.	338%	338%	340%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	7.0%	3.0%	3.0%
"Cash Flow"	9.0%	7.5%	5.5%
Earnings	8.0%	3.0%	9.0%
Dividends	7.0%	8.0%	5.0%
Book Value	13.5%	10.0%	8.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	1690	2427	1277	1125	6519.2
2013	2018	2542	1374	1259	7194.7
2014	2316	3163	1486	1311	8277.3
2015	2005	2456	1510	1379	7350
2016	2055	3175	1560	1410	8200

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	.51	.79	d.04	d.09	1.17
2013	.60	.99	.09	d.09	1.59
2014	.70	1.23	.10	d.11	1.92
2015	.66	1.23	.15	d.09	1.95
2016	.70	1.29	.17	d.06	2.10

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.17	.17	.17	.17	.68
2012	.175	.175	.18	.18	.71
2013	.18	.18	.19	.19	.74
2014	.19	.19	.20	.22	.80
2015	.22	.22			

BUSINESS: UGI Corp. operates six business segments: AmeriGas Propane (accounted for 18.7% of net income in 2014), International Propane (14.3%), Gas Utility (35.2%), Midstream & Marketing (34.9%), and Corp. & Other less than -3%. UGI Utilities distributes natural gas and electricity to over 600,000 customers mainly in Pennsylvania; 26%-owned AmeriGas Partners is the largest U.S. propane marketer, serving about 1.3 million users in 50 states. Acquired remaining 80% interest in Antargaz (3/04); Energy Transfer Partners (1/12). Wellington Management Co. holds 10.8% of stock; officers/directors, 2.4% (12/14 proxy). Has 8,400 empls. CEO: John L. Walsh. Inc.: PA. Address: 460 N. Gulph Rd., King of Prussia, PA 19406. Telephone: 610-337-1000. Internet: www.ugicorp.com.

UGI Corp.'s financial results could certainly be better this year. Indeed, the company's March-period top line declined more than 22%. This downturn reflected lower contributions from the AmeriGas Propane, UGI International, Gas Utility, and Midstream & Marketing segments. The weak revenues can largely be attributed to the year-over-year decline in propane and natural gas pricing as well as from reduced retail gallons sold at the AmeriGas Propane unit. On the profitability front, operating & administrative costs increased 340 basis points as a percentage of the top line. This was largely offset by the sharp reduction in cost of sales. On balance, UGI's bottom line remained unchanged when compared to 2014's figure, at $1.23 a share. This was relatively in line with our earlier call.

Consequently, we have left our 2015 and 2016 share-net estimates unchanged for the time being. In fiscal 2015 (ends September 30th) this would represent a modest 1.5% annual increase. This ought to be supported by the regulated gas utility division, which has added approximately 11,000 new heating customers over the first six months of fiscal 2015.

A number of capital projects and an acquisition augur well for long-term prospects. The PennEast pipeline project is progressing nicely through the FERC preapproval process. That 100-plus-mile expansion will link the Northeast, PA Marcellus region with major customer markets in Pennsylvania and New Jersey. Meanwhile, UGI recently announced plans for a 1,000-megawatt plant in Sunbury, PA and a 1,300-megawatt plant in Jessup, PA, know as Sunbury and Invenergy, respectively. All of those facilities are expected to be operational in late 2017. Too, the $400 million-$450 million (EUR) purchase of the Total LPG Distribution business in France (Totalgaz) received final regulatory approval from the French Competition Authority. This deal should help to grow UGI's geographic footprint.

These shares are ranked to outpace the broader market averages. However, the dividend yield is somewhat below average for a utility, and the equity is trading above our Target Price Range, thus limiting appreciation potential.

Bryan J. Fong — *June 5, 2015*

(A) Fiscal year ends Sept. 30. Quarterly sales and earnings may not sum to total due to rounding and/or change in share count. (B) Diluted earnings. Excludes nonrecur. items: '99, 13¢; '01, d1¢; '03, 22¢; '04, d6¢; '05, 3¢; '06, 5¢; '07, 12¢. Next egs. report due late July. (C) Dividends historically paid in early Jan., April, July, and Oct. ■ Div. reinvest. plan available. (D) Incl. intang. At 9/14: $3,409.5 mill., $19.73/sh. (E) In mill., adjusted for stock splits.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	75
Earnings Predictability	75

CASE NO. 2015-00343
ATTACHMENT 1
TO AG DR NO. 1-28

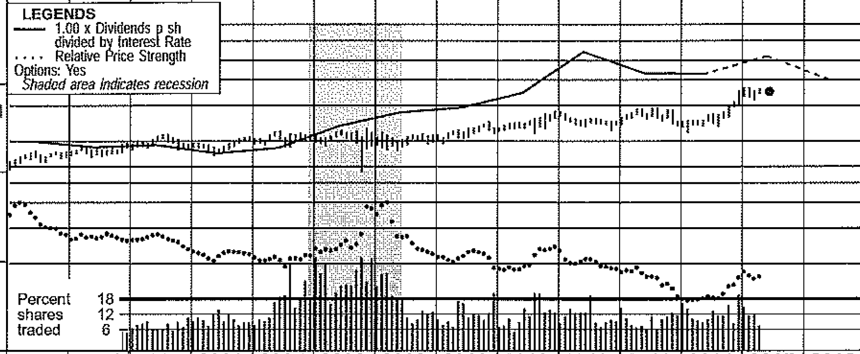
WGL HOLDINGS NYSE-WGL

RECENT PRICE 56.17 | P/E RATIO 19.2 (Trailing: 18.5 Median: 15.0) | RELATIVE P/E RATIO 1.01 | DIV'D YLD 3.3% | VALUE LINE

TIMELINESS 3 Raised 3/27/15
SAFETY 1 Raised 4/2/93
TECHNICAL 4 Lowered 5/15/15
BETA .80 (1.00 = Market)

High:	31.4	34.8	33.6	35.9	37.1	35.5	40.0	45.0	45.0	47.0	56.8	59.1		
Low:	26.7	28.8	27.0	29.8	22.4	28.6	31.0	34.7	36.0	38.0	35.4	50.9		

Target Price Range 2018 | 2019 | 2020



120, 100, 80, 64, 48, 32, 24, 20, 16, 12, 8

2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(Nil)	3%
Low	45	(-20%)	-1%

Insider Decisions

	J	A	S	O	N	D	J	F	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	1
to Sell	0	1	0	0	0	2	0	1	1

Institutional Decisions

	2Q2014	3Q2014	4Q2014
to Buy	93	99	94
to Sell	86	84	116
Hld's(000)	34353	34118	31806

% TOT. RETURN 4/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	43.4	9.1
3 yr.	52.9	58.8
5 yr.	85.7	84.6

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
20.92	22.19	29.80	32.63	42.45	42.93	44.94	53.96	53.51	52.65	53.98	53.60	53.75	47.07	47.70	53.73	*53.00*	*54.00*	Revenues per sh A	*59.00*
2.74	3.20	3.24	2.63	4.00	3.87	3.97	3.84	3.89	4.34	4.44	4.11	4.01	4.53	4.29	4.83	*5.00*	*5.20*	"Cash Flow" per sh	*5.60*
1.47	1.79	1.88	1.14	2.30	1.98	2.13	1.94	2.09	2.44	2.53	2.27	2.25	2.68	2.31	2.68	*2.90*	*3.00*	Earnings per sh B	*3.35*
1.22	1.24	1.26	1.27	1.28	1.30	1.32	1.35	1.37	1.41	1.47	1.50	1.55	1.59	1.66	1.72	*1.85*	*1.87*	Div'ds Decl'd per sh C■	*1.99*
3.42	2.67	2.68	3.34	2.65	2.33	2.32	3.27	3.33	2.70	2.77	2.57	3.94	4.87	6.04	7.63	*5.00*	*5.00*	Cap'l Spending per sh	*5.00*
14.72	15.31	16.24	15.78	16.25	16.95	17.80	18.86	19.83	20.99	21.89	22.82	23.49	24.64	24.65	24.08	*24.30*	*25.40*	Book Value per sh D	*29.20*
46.47	46.47	48.54	48.56	48.63	48.67	48.65	48.89	49.45	49.92	50.14	50.54	51.20	51.52	51.70	51.76	*50.00*	*50.00*	Common Shs Outst'g E	*50.00*
17.3	14.6	14.7	23.1	11.1	14.2	14.7	15.5	15.6	13.7	12.6	15.1	17.0	15.3	18.2	15.2	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
.99	.95	.75	1.26	.63	.75	.78	.84	.83	.82	.84	.96	1.07	.97	1.02	.80	*Value Line*		Relative P/E Ratio	*.95*
4.8%	4.8%	4.6%	4.8%	5.0%	4.6%	4.2%	4.5%	4.2%	4.2%	4.6%	4.4%	4.1%	3.9%	3.9%	4.2%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $1170.5 mill. Due in 5 Yrs $95.0 mill.
LT Debt $950.5 mill. LT Interest $37.7 mill.
(LT interest earned: 6.2x; total interest coverage: 5.7x) (42% of Total Capital)
Pension Assets-9/14 $1,244.3 mill. Oblig. $1,260.3 mill.
Preferred Stock $28.2 mill. Pfd. Div'd $1.3 mill.

Common Stock 49,728,662 shs. as of 4/30/15

MARKET CAP: $2.8 billion (Mid Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
2186.3	2637.9	2646.0	2628.2	2706.9	2708.9	2751.5	2425.3	2466.1	2780.9	*2650*	*2700*	Revenues ($mill) A	*2950*
104.8	96.0	102.9	122.9	128.7	115.0	115.5	138.4	119.7	139.0	*145*	*150*	Net Profit ($mill)	*170*
37.4%	39.0%	39.1%	37.1%	39.1%	38.7%	42.4%	40.1%	30.2%	29.0%	*39.0%*	*39.0%*	Income Tax Rate	*39.0%*
4.8%	3.6%	3.9%	4.7%	4.8%	4.2%	4.2%	5.7%	4.9%	5.0%	*5.4%*	*5.5%*	Net Profit Margin	*5.7%*
39.5%	37.8%	37.9%	35.9%	33.3%	33.4%	32.3%	31.2%	28.7%	34.8%	*32.5%*	*31.5%*	Long-Term Debt Ratio	*29.0%*
58.6%	60.4%	60.3%	62.4%	65.0%	65.0%	66.2%	67.3%	69.8%	63.8%	*66.0%*	*67.0%*	Common Equity Ratio	*70.0%*
1478.1	1526.1	1625.4	1679.5	1687.7	1774.4	1818.1	1886.9	1826.8	1954.0	*1845*	*1900*	Total Capital ($mill)	*2090*
1969.7	2067.9	2150.4	2208.3	2269.1	2346.2	2489.9	2667.4	2907.5	3314.4	*3850*	*4470*	Net Plant ($mill)	*7000*
8.5%	7.6%	7.6%	8.5%	8.8%	7.6%	7.5%	8.3%	7.5%	8.1%	*9.0%*	*9.0%*	Return on Total Cap'l	*9.0%*
11.7%	10.1%	10.2%	11.4%	11.4%	9.7%	9.4%	10.7%	9.2%	10.9%	*12.0%*	*12.0%*	Return on Shr. Equity	*11.5%*
12.0%	10.3%	10.4%	11.6%	11.6%	9.9%	9.5%	10.8%	9.3%	11.0%	*12.0%*	*12.0%*	Return on Com Equity	*11.5%*
4.6%	3.2%	3.5%	5.0%	5.0%	3.3%	3.4%	4.8%	2.6%	4.3%	*4.5%*	*4.5%*	Retained to Com Eq	*4.5%*
62%	69%	66%	57%	57%	67%	64%	56%	72%	62%	*64%*	*62%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	3.5	8.8	9.3
Other	816.5	826.7	915.0
Current Assets	820.0	835.5	924.3
Accts Payable	270.7	313.2	324.1
Debt Due	440.1	473.5	220.0
Other	239.3	233.6	357.0
Current Liab.	950.1	1020.3	901.1
Fix. Chg. Cov.	535%	535%	535%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	2.5%	-1.5%	*3.0%*
"Cash Flow"	2.5%	1.5%	*3.5%*
Earnings	3.5%	1.5%	*4.5%*
Dividends	2.5%	3.0%	*3.0%*
Book Value	4.0%	3.0%	*3.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	727.7	839.4	438.3	419.8	2425.3
2013	686.7	891.4	478.1	409.9	2466.1
2014	680.5	1174.0	467.5	458.9	2780.9
2015	749.2	1001.7	*475*	*424.1*	*2650*
2016	*765*	*1015*	*485*	*435*	*2700*

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2012	1.13	1.58	.08	d.11	2.68
2013	1.14	1.75	d.03	d.55	2.31
2014	.99	1.84	.02	d.17	2.68
2015	1.16	2.02	*Nil*	*d.28*	*2.90*
2016	*1.18*	*2.04*	*.03*	*d.25*	*3.00*

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.378	.39	.39	.39	1.55
2012	.39	.40	.40	.40	1.59
2013	.40	.42	.42	.42	1.66
2014	.42	.44	.44	.44	1.74
2015	.463	.463			

BUSINESS: WGL Holdings, Inc. is the parent of Washington Gas Light, a natural gas distributor in Washington, D.C. and adjacent areas of VA and MD to resident'l and comm'l users (1,117,043 meters). Hampshire Gas, a federally regulated sub., operates an underground gas-storage facility in WV. Non-regulated subs.: Wash. Gas Energy Svcs. sells and delivers natural gas and provides energy-related products in the D.C. metro area; Wash. Gas Energy Sys. designs/installs comm'l heating, ventilating, and air cond. systems. American Century owns 9.4% of common stock; Off./dir. less than 1% (1/15 proxy). Chrmn. & CEO: Terry D. McCallister. Inc.: D.C. and VA. Addr.: 101 Const. Ave., N.W., Washington, D.C. 20080. Tel.: 202-624-6410. Internet: www.wglholdings.com.

WGL Holdings posted mixed financial results for its fiscal second quarter. On the downside, revenues declined 14.7% on a year-over-year basis, to about $1.0 billion. This reflected a downturn in utility and nonutility volumes of 13.6% and 16.3%, respectively. The bulk of this reduction stemmed from the lower natural gas and fuel prices when compared to the prior-year figure. On balance, wider margins were sufficient enough to offset the reduced volumes, and WGL's bottom line advanced 10%, to $2.02 a share. This was higher than our earlier expectation.

As a result, we have added a dime to our fiscal 2015 earnings estimate, to $2.90 a share. This would represent an annual profit increase of about 8%. WGL's regulated utility operations have added about 12,800 active customer meters over the past year. Additional benefits should stem from healthy gains at the Retail Energy Marketing division as overall economic factors aid that unit's performance this year. Alternatively, the Commercial Energy Systems and Midstream Energy Services segments have been facing a difficult operating environment of late and will likely remain a drag on overall operations for the immediate future.

A recently announced supply agreement could provide customers with cost savings. WGL is in the process of investing $126 million with Energy Corporation of America (ECA) to acquire natural gas reserves through some of ECA's currently producing wells in PA. The pending deal needs to be approved by the Virginia State Corporation Commission. However, assuming it goes through, the deal should help to reduce gas prices and related volatility over the next 20 years.

Capital projects augur well for prospects. Some of the more noteworthy ones currently in the works are the Constitution Pipeline, Central Penn Line, and Mountain Valley Pipeline. These projects should widen the company's geographic reach and boost overall capacity.

All told, these shares offer modest appeal to conservative, income-seeking accounts. Meantime, they are ranked to mirror the broader market averages in the year ahead. And there is little 3- to 5-year appreciation potential.

Bryan J. Fong *June 5, 2015*

(A) Fiscal years end Sept. 30th.
(B) Based on diluted shares. Excludes non-recurring losses: '01, (13¢); '02, (34¢); '07, (4¢); '08, (14¢) discontinued operations: '06, (15¢). Qtly egs. may not sum to total, due to change in shares outstanding. Next earnings report due late July.
(C) Dividends historically paid early February, May, August, and November. ■ Dividend reinvestment plan available.
(D) Includes deferred charges and intangibles. '14: $720.5 million, $14.49/sh.
(E) In millions.

Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	50
Earnings Predictability	80

AQUA AMERICA NYSE-WTR

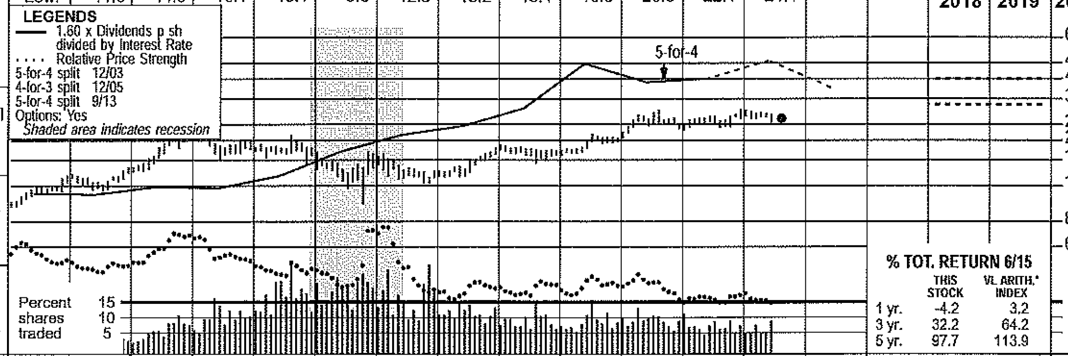
RECENT PRICE **25.64** | P/E RATIO **20.5** (Trailing: 20.7; Median: 23.0) | RELATIVE P/E RATIO **1.08** | DIV'D YLD **2.8%** | VALUE LINE

TIMELINESS **3** Lowered 5/24/13
SAFETY **2** Raised 4/20/12
TECHNICAL **3** Raised 6/12/15
BETA .75 (1.00 = Market)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	14.8	23.4	23.8	21.3	17.6	17.2	18.4	19.0	21.5	28.1	28.2	28.1
Low:	11.3	14.0	16.1	15.1	9.8	12.3	13.2	15.4	16.8	20.6	22.4	24.4

Target Price Range 2018 | 2019 | 2020

LEGENDS
— 1.60 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
5-for-4 split 12/03
4-for-3 split 12/05
5-for-4 split 9/13
Options: Yes
Shaded area indicates recession



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	(+55%)	14%
Low	30	(+15%)	7%

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	0	0	0	0	0	0	0	0	0
Options	1	0	0	2	1	1	0	0	0
to Sell	2	1	2	5	2	2	1	1	1

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	139	137	153
to Sell	126	140	133
Hld's(000)	80311	81382	81133

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-4.2	3.2
3 yr.	32.2	64.2
5 yr.	97.7	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
1.93	1.97	2.16	2.28	2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	*4.55*	*4.70*	Revenues per sh	*5.70*
.58	.61	.69	.76	.77	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	*2.35*	*2.50*	"Cash Flow" per sh	*3.05*
.33	.37	.41	.43	.46	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	*1.25*	*1.30*	Earnings per sh A	*1.65*
.22	.23	.24	.26	.28	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	*.71*	*.77*	Div'd Decl'd per sh B■	*.98*
.72	.93	.87	.96	1.06	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	*1.95*	*2.00*	Cap'l Spending per sh	*2.00*
2.74	3.08	3.32	3.49	4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	*9.65*	*10.05*	Book Value per sh	*11.40*
133.50	139.78	142.47	141.49	154.31	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	*176.50*	*175.00*	Common Shs Outst'g C	*170.00*
21.2	18.2	23.6	23.6	24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	*Bold figures are*		Avg Ann'l P/E Ratio	*21.5*
1.21	1.18	1.21	1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.10	*Value Line*		Relative P/E Ratio	*1.35*
3.0%	3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	*estimates*		Avg Ann'l Div'd Yield	*3.1%*

CAPITAL STRUCTURE as of 3/31/15
Total Debt $1675.1 mill. Due in 5 Yrs $437.0 mill.
LT Debt $1595.0 mill. LT Interest $70.0 mill. (49% of Cap'l)

Pension Assets-12/14 232.4 mill. Oblig. $281.2 mill.

Pfd Stock None

Common Stock 177,069,729 shares as of 4/23/15

MARKET CAP: $4.5 billion (Mid Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
496.8	533.5	602.5	627.0	670.5	726.1	712.0	757.8	768.6	779.9	*805*	*825*	Revenues ($mill)	*970*
91.2	92.0	95.0	97.9	104.4	124.0	144.8	153.1	205.0	213.9	*225*	*230*	Net Profit ($mill)	*280*
38.4%	39.6%	38.9%	39.7%	39.4%	39.2%	32.9%	39.0%	10.0%	10.5%	*18.0%*	*20.0%*	Income Tax Rate	*27.0%*
--	--	--	--	--	--	--	--	1.1%	2.4%	*2.0%*	*2.5%*	AFUDC % to Net Profit	*3.0%*
52.0%	51.6%	55.4%	54.1%	55.6%	56.6%	52.7%	52.7%	48.9%	48.5%	*49.5%*	*50.0%*	Long-Term Debt Ratio	*50.0%*
48.0%	48.4%	44.6%	45.9%	44.4%	43.4%	47.3%	47.3%	51.1%	51.5%	*50.5%*	*50.0%*	Common Equity Ratio	*50.0%*
1690.4	1904.4	2191.4	2306.6	2495.5	2706.2	2646.8	2929.7	3003.6	3216.0	*3370*	*3505*	Total Capital ($mill)	*3955*
2280.0	2506.0	2792.8	2997.4	3227.3	3469.3	3612.9	3936.2	4167.3	4402.0	*4550*	*4700*	Net Plant ($mill)	*5000*
6.9%	6.4%	5.9%	5.7%	5.6%	5.9%	6.9%	6.6%	8.0%	7.8%	*8.0%*	*7.5%*	Return on Total Cap'l	*8.5%*
11.2%	10.0%	9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	*13.0%*	*13.0%*	Return on Shr. Equity	*14.5%*
11.2%	10.0%	9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	*13.0%*	*13.0%*	Return on Com Equity	*14.5%*
4.9%	3.7%	3.2%	2.8%	2.7%	3.7%	4.6%	4.3%	6.7%	6.1%	*5.5%*	*5.5%*	Retained to Com Eq	*6.0%*
56%	63%	67%	70%	72%	65%	60%	61%	50%	52%	*57%*	*53%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	5.1	4.1	9.3
Receivables	95.4	97.0	95.4
Inventory (AvgCst)	11.4	12.8	12.6
Other	59.8	38.6	46.9
Current Assets	171.7	152.5	164.2
Accts Payable	65.8	60.0	34.7
Debt Due	123.0	70.0	80.1
Other	78.1	95.3	90.3
Current Liab.	266.9	225.3	205.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	5.5%	3.0%	4.5%
"Cash Flow"	8.0%	8.0%	9.5%
Earnings	8.5%	13.0%	8.0%
Dividends	7.5%	7.0%	9.0%
Book Value	7.5%	6.5%	5.5%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	164.0	191.7	214.6	187.5	757.8
2013	180.0	195.7	204.3	188.6	768.6
2014	182.7	195.3	210.5	191.4	779.9
2015	190.3	*200*	*215*	*199.7*	*805*
2016	*190*	*205*	*220*	*210*	*825*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	.15	.24	.29	.19	.87
2013	.26	.30	.36	.24	1.16
2014	.24	.31	.38	.27	1.20
2015	.27	*.32*	*.39*	*.27*	*1.25*
2016	*.26*	*.33*	*.41*	*.30*	*1.30*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.124	.124	.124	.132	.50
2012	.132	.132	.132	.14	.54
2013	.14	.14	.152	.152	.58
2014	.152	.152	.165	.165	.63
2015	.165	.165			

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Has 1,617 employees. Acquired AquaSource, 7/03; Consumers Water, 4/99; and others. Water supply revenues '14: residential, 68%; commercial, 17%; industrial & other, 15%. Officers and directors own .8% of the common stock; Vangurad Group, 6.6%; State Street Capital Corp., 6.3%; Blackrock, Inc, 6.1% (4/14 Proxy). Chairman: Nicholas DeBenedictis. CEO: Christopher Franklin. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Tel.: 610-525-1400. Internet: www.aquaamerica.com.

We expect Aqua America to raise the dividend at least 7% in the third quarter. The water utility should maintain its tradition of hiking the annual payout by more than the industry average.

We think earnings gains will be modest through 2016. Aqua had a better-than-expected first quarter, but we are sticking with our 2015 earnings estimate of a $0.05 gain to $1.25, followed next year by a similar nickel increase to $1.30. Our share-earnings forecasts could prove conservative as they don't include gains from assets sales, which have added between $0.06 and $0.10 a share to bottom line over the past three years.

Nonregulated operations have long-term potential. Despite a lot of fanfare, these businesses will most likely account for only 4%-5% of revenues in 2015. Still, margins and growth prospects are higher than in the utility sector.

Aqua is on pace to make about 25 acquisitions this year. There are over 50,000 municipal and private waters companies in the U.S. Most are small and do not have the capital required to meet new environmental standards and to update and modernize their infrastructure. As the second largest water utility in the country, Aqua can cut redundancies and reduce costs of the purchased water systems while improving the service. This strategy is responsible for the company's strong earnings record as it has made 300 acquisitions to date.

A new CEO has been selected. There had been some concern regarding Nicholas DeBenedictis stepping down after 23 years at the helm, in which the company's market capitalization rose from $100 million to $4.3 billion. Chris Franklin, a 20-year veteran of Aqua, was chosen as the replacement and Wall Street seemed satisfied with the selection.

These neutrally ranked shares should appeal to patient, income-oriented investors seeking to diversify into the water utility industry. The stock's total return potential out to 2018-2020 is close to the average of all equities in the *Value Line* universe. This stock appears worthwhile on a risk-adjusted basis as it has a very low Beta, solid finances, and well-defined earnings.

James A. Flood *July 17, 2015*

(A) Diluted egs. Excl. nonrec. gains (losses): '99, (9¢); '00, 2¢; '01, 2¢; '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. May not sum due to rounding. Next earnings report due mid-Aug.
(B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	60
Earnings Predictability	100

CASE NO. 2015-00343
ATTACHMENT 1
TO AG DR NO. 1-28

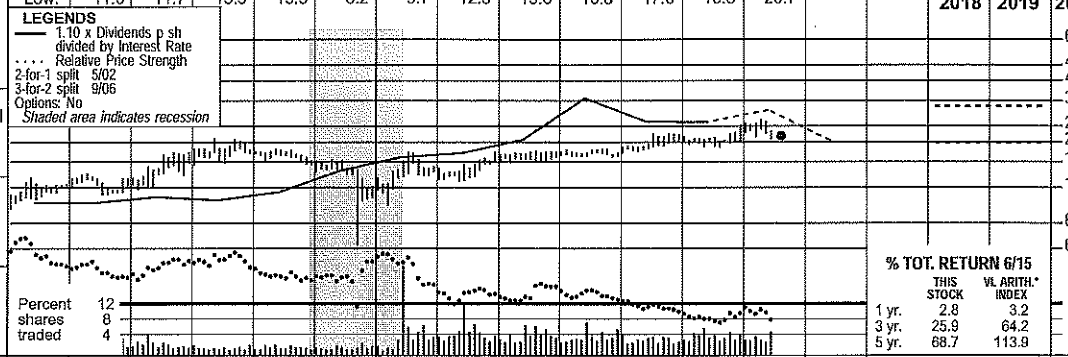
YORK WATER NDQ-YORW

RECENT PRICE 21.47 | P/E RATIO 22.6 (Trailing: 23.1, Median: 25.0) | RELATIVE P/E RATIO 1.19 | DIV'D YLD 2.9% | VALUE LINE

TIMELINESS 3 Raised 3/27/15
SAFETY 3 Lowered 7/17/15
TECHNICAL 2 Raised 6/26/15
BETA .75 (1.00 = Market)

High:	14.0	17.9	21.0	18.5	16.5	18.0	18.0	18.1	18.5	22.0	24.3	26.0	
Low:	11.0	11.7	15.3	15.5	6.2	9.7	12.8	15.8	16.8	17.6	18.8	20.7	

Target Price Range 2018 | 2019 | 2020



2018-20 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	30	(+40%)	12%
Low	20	(-5%)	2%

Insider Decisions

	A	S	O	N	D	J	F	M	A
to Buy	2	1	4	0	0	4	0	2	4
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2014	4Q2014	1Q2015
to Buy	30	32	33
to Sell	30	24	29
Hld's(000)	3656	3767	3841

% TOT. RETURN 6/15

	THIS STOCK	VL ARITH.* INDEX
1 yr.	2.8	3.2
3 yr.	25.9	64.2
5 yr.	68.7	113.9

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	© VALUE LINE PUB. LLC	18-20
--	--	2.05	2.05	2.17	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	***3.85***	***4.00***	Revenues per sh	***4.75***
--	--	.59	.57	.65	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	***1.50***	***1.55***	"Cash Flow" per sh	***1.75***
--	--	.43	.40	.47	.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	***.95***	***1.00***	Earnings per sh A	***1.15***
--	--	.34	.35	.37	.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	***.60***	***.63***	Div'd Decl'd per sh B	***.79***
--	--	.75	.66	1.07	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	***1.10***	***1.20***	Cap'l Spending per sh	***1.15***
--	--	3.79	3.90	4.06	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	***8.15***	***8.65***	Book Value per sh	***9.60***
--	--	9.46	9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	***12.50***	***12.50***	Common Shs Outst'g C	***12.00***
--	--	17.8	26.9	24.5	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	*Bold figures are*		Avg Ann'l P/E Ratio	***22.5***
--	--	.91	1.47	1.40	1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	*Value Line*		Relative P/E Ratio	***1.40***
--	--	4.4%	3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	*estimates*		Avg Ann'l Div'd Yield	***3.0%***

CAPITAL STRUCTURE as of 3/31/15
Total Debt $84.8 mill. Due in 5 Yrs $30.5 mill.
LT Debt $84.8 mill. LT Interest $5.1 mill.
(45% of Cap'l)

Pension Assets 12/14 $30.6 mill.
Oblig. $40.9 mill.

Pfd Stock None

Common Stock 12,858,271 shs.
as of 5/5/15
MARKET CAP: $275 million (Small Cap)

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		18-20
26.8	28.7	31.4	32.8	37.0	39.0	40.6	41.4	42.4	45.9	***48.0***	***50.0***	Revenues ($mill)	***57.0***
5.8	6.1	6.4	6.4	7.5	8.9	9.1	9.3	9.7	11.5	***12.0***	***12.5***	Net Profit ($mill)	***14.0***
36.7%	34.4%	36.5%	36.1%	37.9%	38.5%	35.3%	37.6%	37.6%	29.8%	***29.5%***	***29.5%***	Income Tax Rate	***36.5%***
--	7.2%	3.6%	10.1%	--	1.2%	1.1%	1.1%	.8%	1.8%	***1.5%***	***1.5%***	AFUDC % to Net Profit	***1.0%***
44.1%	48.3%	46.5%	54.5%	45.7%	48.3%	47.1%	46.0%	45.1%	44.8%	***47.5%***	***47.0%***	Long-Term Debt Ratio	***48.0%***
55.9%	51.7%	53.5%	45.5%	54.3%	51.7%	52.9%	54.0%	54.9%	55.2%	***52.5%***	***53.0%***	Common Equity Ratio	***52.0%***
90.3	126.5	125.7	153.4	160.1	176.4	180.2	184.8	188.4	189.4	***195***	***205***	Total Capital ($mill)	***220***
155.3	174.4	191.6	211.4	222.0	228.4	233.0	240.3	244.2	253.2	***260***	***265***	Net Plant ($mill)	***280***
8.4%	6.2%	6.7%	5.7%	6.2%	6.5%	6.4%	6.4%	6.5%	7.4%	***7.5%***	***7.5%***	Return on Total Cap'l	***8.0%***
11.6%	9.3%	9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	***11.5%***	***11.5%***	Return on Shr. Equity	***12.0%***
11.6%	9.3%	9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	***11.5%***	***11.5%***	Return on Com Equity	***12.0%***
3.0%	2.2%	1.7%	1.4%	1.9%	2.7%	2.5%	2.4%	2.4%	3.9%	***4.5%***	***4.5%***	Retained to Com Eq	***3.5%***
74%	77%	82%	85%	78%	72%	73%	74%	74%	64%	***63%***	***63%***	All Div'ds to Net Prof	***69%***

CURRENT POSITION ($MILL.)	2013	2014	3/31/15
Cash Assets	7.6	1.5	.5
Accounts Receivable	3.8	4.0	4.0
Other	3.8	5.7	5.2
Current Assets	15.2	11.2	9.7
Accts Payable	1.8	1.6	1.5
Debt Due	--	--	--
Other	6.0	4.3	4.6
Current Liab.	7.8	5.9	6.1
Fix. Chg. Cov.	417%	424%	437%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '12-'14 to '18-'20
Revenues	4.5%	3.0%	*5.5%*
"Cash Flow"	7.0%	6.5%	*6.5%*
Earnings	5.5%	6.0%	*6.5%*
Dividends	4.0%	2.5%	*5.0%*
Book Value	6.5%	4.5%	*3.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	9.6	10.4	11.0	10.4	41.4
2013	10.1	10.7	10.9	10.7	42.4
2014	10.6	11.8	12.0	11.5	45.9
2015	11.2	***12.0***	***12.5***	***12.3***	***48.0***
2016	***11.5***	***12.5***	***13.0***	***13.0***	***50.0***

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2012	.15	.17	.22	.18	.72
2013	.17	.18	.19	.21	.75
2014	.16	.22	.23	.28	.89
2015	.20	***.25***	***.25***	***.25***	***.95***
2016	***.20***	***.26***	***.28***	***.26***	***1.00***

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2011	.131	.131	.131	.131	.524
2012	.134	.134	.134	.134	.535
2013	.138	.138	.138	.138	.552
2014	.1431	.1431	.1431	.1431	.572
2015	.1495	.1495			

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2014, the company's average daily availability was 35.2 million gallons and its service territory had an estimated population of 190,000. Has more than 65,100 customers. Residential customers accounted for 63% of 2014 revenues; commercial and industrial (29%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 106 full-time employees at 12/31/14. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (4/15 proxy). Address: 130 East Market Street York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water has been turning in solid results recently. For the fourth consecutive quarter, the utility posted strong year-over-year earnings comparisons. In the March period, share earnings rose 25%, mostly due to a lower tax rate and higher tariffs implemented in March.

Wall Street seemingly has not been impressed, however. Since our April report, the price of the stock has decreased 14%. We think some investors may have viewed the equity as overpriced. Another possibility is that a major institutional shareholder sold its entire position all at once, which can substantially move the price of a stock with a market capitalization of only $275 million.

Future bottom-line comparisons are expected to be decent. York should continue to benefit from a reduced tax rate, the higher fees that regulators allowed the company to charge its customers, and an ongoing program aimed at reducing costs that is proving to be successful. However, with a small customer base in a region not expected to experience much economic growth, demand for water should be fairly subdued. All in all, we think earnings per share should rise $0.06 a share (6.7%) in 2015, and $0.05 a share (5.3%) next year.

The capital budget has expanded. York's spending to upgrade and modernize its infrastructure rose 40% in 2014. Over the next three-to five-year period, we think similar annual outlays will be required for this process. The company will not differ too much from other water utilities, as the industry is in the midst of increasing funds spent on improving current pipelines and equipment.

York's finances appear healthy enough to handle this burden. While we expect some of the utility's financial metrics to decline through the end of the decade, they still should remain better than the industry norm. For example, even if its equity-to-total capital ratio declines as it takes on more debt, the ratio should remain a solid 52% by late decade.

York shares are expected to be market performers in the year ahead. And while long-term total return prospects have improved due to the dip in the stock price, we believe there are more-attractive candidates available in the group.

James A. Flood *July 17, 2015*

(A) Diluted earnings. Next earnings report due mid-August.
(B) Dividends historically paid in mid-January, April, July, and October.
(C) In millions, adjusted for splits.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	55
Earnings Predictability	95

REQUEST:

Please provide all of Dr. Vander Weide's exhibits in their native spreadsheet format with cell formulas intact.

RESPONSE:

Please see Attachment 54 to the Company's response to Staff DR No. 1-54 for Dr. Vander Weide's Exhibit JVW-1 in Excel format.

Respondent: Dr. James Vander Weide

REQUEST:

Please provide a copy of each article cited by Dr. Vander Weide in his Direct Testimony and Appendices.

RESPONSE:

Please see Attachment 1 for the requested information.

ATTACHMENT:

ATTACHMENT 1 - Atmos Energy Corporation, AG_1-30_Att1 - Vander Weide Articles.pdf, 262 Pages.

Respondent: Dr. James Vander Weide

Journal of Financial Economics 9 (1981) 3-18. North-Holland Publishing Company

THE RELATIONSHIP BETWEEN RETURN AND MARKET VALUE OF COMMON STOCKS*

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Received June 1979, final version received September 1980

This study examines the empirical relationship between the return and the total market value of NYSE common stocks. It is found that smaller firms have had higher risk adjusted returns, on average, than larger firms. This 'size effect' has been in existence for at least forty years and is evidence that the capital asset pricing model is misspecified. The size effect is not linear in the market value; the main effect occurs for very small firms while there is little difference in return between average sized and large firms. It is not known whether size *per se* is responsible for the effect or whether size is just a proxy for one or more true unknown factors correlated with size.

1. Introduction

The single-period capital asset pricing model (henceforth CAPM) postulates a simple linear relationship between the expected return and the market risk of a security. While the results of direct tests have been inconclusive, recent evidence suggests the existence of additional factors which are relevant for asset pricing. Litzenberger and Ramaswamy (1979) show a significant positive relationship between dividend yield and return of common stocks for the 1936-1977 period. Basu (1977) finds that price-earnings ratios and risk adjusted returns are related. He chooses to interpret his findings as evidence of market inefficiency but as Ball (1978) points out, market efficiency tests are often joint tests of the efficient market hypothesis and a particular equilibrium relationship. Thus, some of the anomalies that have been attributed to a lack of market efficiency might well be the result of a misspecification of the pricing model.

This study contributes another piece to the emerging puzzle. It examines the relationship between the total market value of the common stock of a firm and its return. The results show that, in the 1936-1975 period, the common stock of small firms had, on average, higher risk-adjusted returns

*This study is based on part of my dissertation and was completed while I was at the University of Chicago. I am grateful to my committee, Myron Scholes (chairman), John Gould, Roger Ibbotson, Jonathan Ingersoll, and especially Eugene Fama and and Merton Miller, for their advice and comments. I wish to acknowledge the valuable comments of Bill Schwert on earlier drafts of this paper.

than the common stock of large firms. This result will henceforth be referred to as the 'size effect'. Since the results of the study are not based on a particular theoretical equilibrium model, it is not possible to determine conclusively whether market value *per se* matters or whether it is only a proxy for unknown true additional factors correlated with market value. The last section of this paper will address this question in greater detail.

The various methods currently available for the type of empirical research presented in this study are discussed in section 2. Since there is a considerable amount of confusion about their relative merit, more than one technique is used. Section 3 discusses the data. The empirical results are presented in section 4. A discussion of the relationship between the size effect and other factors, as well as some speculative comments on possible explanations of the results, constitute section 5.

2. Methodologies

The empirical tests are based on a generalized asset pricing model which allows the expected return of a common stock to be a function of risk β and an additional factor ϕ, the market value of the equity.[1] A simple linear relationship of the form

$$E(R_i) = \gamma_0 + \gamma_1 \beta_i + \gamma_2 [(\phi_i - \phi_m)/\phi_m], \qquad (1)$$

is assumed, where

$E(R_i)$ = expected return on security i,
γ_0 = expected return on a zero-beta portfolio,
γ_1 = expected market risk premium,
ϕ_i = market value of security i,
ϕ_m = average market value, and
γ_2 = constant measuring the contribution of ϕ_i to the expected return of a security.

If there is no relationship between ϕ_i and the expected return, i.e., $\gamma_2 = 0$, (1) reduces to the Black (1972) version of the CAPM.

Since expectations are not observable, the parameters in (1) must be estimated from historical data. Several methods are available for this purpose. They all involve the use of pooled cross-sectional and time series regressions to estimate γ_0, γ_1, and γ_2. They differ primarily in (a) the assumption concerning the residual variance of the stock returns (homoscedastic or heteroscedastic in the cross-sectional), and (b) the treatment of the

[1] In the empirical tests, ϕ_i and ϕ_m are defined as the market proportion of security i and average market proportion, respectively. The two specifications are, of course, equivalent.

errors-in-variables problem introduced by the use of estimated betas in (1). All methods use a constrained optimization procedure, described in Fama (1976, ch. 9), to generate minimum variance (m.v.) portfolios with mean returns γ_i, $i=0,\ldots,2$. This imposes certain constraints on the portfolio weights, since from (1)

$$E(R_p)\equiv\gamma_i=\gamma_0\sum_j w_j+\gamma_1\sum_j w_j\beta_j + \gamma_2\left[\left(\sum_j w_j\phi_j-\phi_m\sum_j w_j\right)\Big/\phi_m\right], \qquad i=0,\ldots,2. \tag{2}$$

where the w_j are the portfolio proportions of each asset j, $j=1,\ldots,N$. An examination of (2) shows that $\hat{\gamma}_0$ is the mean return of a standard m.v. portfolio ($\sum_j w_j=1$) with zero beta and $\phi_p\equiv\sum_j w_j\phi_j=\phi_m$ [to make the second and third terms of the right-hand side of (2) vanish]. Similarly, $\hat{\gamma}_1$ is the mean return on a zero-investment m.v. portfolio with beta of one and $\phi_p=0$, and $\hat{\gamma}_2$ is the mean return on a m.v. zero-investment, zero-beta portfolio with $\phi_p=\phi_m$. As shown by Fama (1976, ch. 9), this constrained optimization can be performed by running a cross-sectional regression of the form

$$R_{it}=\gamma_{0t}+\gamma_{1t}\beta_{it}+\gamma_{2t}[(\phi_{it}-\phi_{mt})/\phi_{mt}]+\varepsilon_{it}, \qquad i=1,\ldots,N, \tag{3}$$

on a period-by-period basis, using estimated betas $\hat{\beta}_{it}$ and allowing for either homoscedastic or heteroscedastic error terms. Invoking the usual stationarity arguments the final estimates of the gammas are calculated as the averages of the T estimates.

One basic approach involves grouping individual securities into portfolios on the basis of market value and security beta, reestimating the relevant parameters (beta, residual variance) of the portfolios in a subsequent period, and finally performing either an ordinary least squares (OLS) regression [Fama and MacBeth (1973)] which assumes homoscedastic errors, or a generalized least squares (GLS) regression [Black and Scholes (1974)] which allows for heteroscedastic errors, on the portfolios in each time period.[2] Grouping reduces the errors-in-variables problem, but is not very efficient because it does not make use of all information. The errors-in-variables problem should not be a factor as long as the portfolios contain a reasonable number of securities.[3]

Litzenberger and Ramaswamy (1979) have suggested an alternative method which avoids grouping. They allow for heteroscedastic errors in the cross-section and use the estimates of the standard errors of the security

[2]Black and Scholes (1974) do not take account of heteroscedasticity, even though their method was designed to do so.

[3]Black, Jensen and Scholes (1972, p. 116).

betas as estimates of the measurement errors. As Theil (1971, p. 610) has pointed out, this method leads to unbiased maximum likelihood estimators for the gammas as long as the error in the standard error of beta is small and the standard assumptions of the simple errors-in-variables model are met. Thus, it is very important that the diagonal model is the correct specification of the return-generating process, since the residual variance assumes a critical position in this procedure. The Litzenberger–Ramaswamy method is superior from a theoretical viewpoint; however, preliminary work has shown that it leads to serious problems when applied to the model of this study and is not pursued any further.[4]

Instead of estimating equation (3) with data for all securities, it is also possible to construct arbitrage portfolios containing stocks of very large and very small firms by combining long positions in small firms with short positions in large firms. A simple time series regression is run to determine the difference in risk-adjusted returns between small and large firms. This approach, long familiar in the efficient markets and option pricing literature, has the advantage that no assumptions about the exact functional relationships between market value and expected return need to be made, and it will therefore be used in this study.

3. Data

The sample includes all common stocks quoted on the NYSE for at least five years between 1926 and 1975. Monthly price and return data and the number of shares outstanding at the end of each month are available in the monthly returns file of the Center for Research in Security Prices (CRSP) of the University of Chicago. Three different market indices are used; this is in response to Roll's (1977) critique of empirical tests of the CAPM. Two of the three are pure common stock indices — the CRSP equally- and value-weighted indices. The third is more comprehensive: a value-weighted combination of the CRSP value-weighted index and return data on corporate and government bonds from Ibbotson and Sinquefield (1977) (henceforth 'market index').[5] The weights of the components of this index are derived from information on the total market value of corporate and government bonds in various issues of the *Survey of Current Business* (updated annually) and from the market value of common stocks in the CRSP monthly index file. The stock indices, made up of riskier assets, have both higher returns

[4] If the diagonal model (or market model) is an incomplete specification of the return generating process, the estimate of the standard error of beta is likely to have an upward bias, since the residual variance estimate is too large. The error in the residual variance estimate appears to be related to the second factor. Therefore, the resulting gamma estimates are biased.

[5] No pretense is made that this index is complete; thus, the use of quotation marks. It ignores real estate, foreign assets, etc.; it should be considered a first step toward a comprehensive index. See Ibbotson and Fall (1979).

and higher risk than the bond indices and the 'market index'.[6] A time series of commercial paper returns is used as the risk-free rate.[7] While not actually constant through time, its variation is very small when compared to that of the other series, and it is not significantly correlated with any of the three indices used as market proxies.

4. Empirical results

4.1. Results for methods based on grouped data

The portfolio selection procedure used in this study is identical to the one described at length in Black and Scholes (1974). The securities are assigned to one of twenty-five portfolios containing similar numbers of securities, first to one of five on the basis of the market value of the stock, then the securities in each of those five are in turn assigned to one of five portfolios on the basis of their beta. Five years of data are used for the estimation of the security beta; the next five years' data are used for the reestimation of the portfolio betas. Stock price and number of shares outstanding at the end of the five year periods are used for the calculation of the market proportions. The portfolios are updated every year. The cross-sectional regression (3) is then performed in each month and the means of the resulting time series of the gammas could be (and have been in the past) interpreted as the final estimators. However, having used estimated parameters, it is not certain that the series have the theoretical properties, in particular, the hypothesized beta. Black and Scholes (1974, p. 17) suggest that the time series of the gammas be regressed once more on the excess return of the market index. This correction involves running the time series regression (for $\hat{\gamma}_2$)

$$\hat{\gamma}_{2t} - R_{Ft} = \hat{\alpha}_2 + \hat{\beta}_2 (R_{mt} - R_{Ft}) + \hat{\varepsilon}_{2t}. \tag{4}$$

It has been shows earlier that the theoretical β_2 is zero. (4) removes the effects of a non-zero $\hat{\beta}_2$ on the return estimate $\hat{\gamma}_2$ and $\hat{\alpha}_2$ is used as the final estimator for $\hat{\gamma}_2 - R_F$. Similar corrections are performed for $\hat{\gamma}_0$ and γ_F. The

[6] Mean monthly returns and standard deviations for the 1926–1975 period are:

	Mean return	Standard deviation
'Market index'	0.0046	0.0178
CRSP value-weighted index	0.0085	0.0588
CRSP equally-weighted index	0.0120	0.0830
Government bond index	0.0027	0.0157
Corporate bond index	0.0032	0.0142

[7] I am grateful to Myron Scholes for making this series available. The mean monthly return for the 1926–1975 period is 0.0026 and the standard deviation is 0.0021.

deviations of the β_i, $i=0,\ldots,2$, in (4) from their theoretical values also allow us to check whether the grouping procedure is an effective means to eliminate the errors-in-beta problem.

The results are essentially identical for both OLS and GLS and for all three indices. Thus, only one set of results, those for the 'market index' with GLS, is presented in table 1. For each of the gammas, three numbers are reported: the mean of that time series of returns which is relevant for the test of the hypothesis of interest (i.e., whether or not $\hat{\gamma}_0$ and $\hat{\gamma}_1$ are different from the risk-free rate and the risk premium, respectively), the associated t-statistic, and finally, the estimated beta of the time series of the gamma from (4). Note that the means are corrected for the deviation from the theoretical beta as discussed above.

The table shows a significantly negative estimate for γ_2 for the overall time period. Thus, shares of firms with large market values have had smaller returns, on average, than similar small firms. The CAPM appears to be misspecified. The table also shows that γ_0 is different from the risk-free rate. As both Fama (1976, ch. 9) and Roll (1977) have pointed out, if a test does not use the true market portfolio, the Sharpe–Lintner model might be wrongly rejected. The estimates for γ_0 are of the same magnitude as those reported by Fama and MacBeth (1973) and others. The choice of a market index and the econometric method does not affect the results. Thus, at least within the context of this study, the choice of a proxy for the market portfolio does not seem to affect the results and allowing for heteroscedastic disturbances does not lead to significantly more efficient estimators.

Before looking at the results in more detail, some comments on econometric problems are in order. The results in table 1 are based on the 'market index' which is likely to be superior to pure stock indices from a theoretical viewpoint since it includes more assets [Roll (1977)]. This superiority has its price. The actual betas of the time series of the gammas are reported in table 1 in the columns labeled, β_i. Recall that the theoretical values of β_0 and β_1 are zero and one, respectively. The standard zero-beta portfolio with return $\hat{\gamma}_0$ contains high beta stocks in short positions and low beta stocks in long positions, while the opposite is the case for the zero-investment portfolio with return $\hat{\gamma}_1$. The actual betas are all significantly different from the theoretical values. This suggests a regression effect, i.e., the past betas of high beta securities are overestimated and the betas of low beta securities are underestimated.[8] Past beta is not completely uncorrelated with the error of the current beta and the instrumental variable approach to the error-in-variables problem is not entirely successful.[9]

[8] There is no such effect for β_2 because that portfolio has both zero beta and zero investment; i.e., net holdings of both high and low beta securities are, on average, zero.

[9] This result is first documented in Brenner (1976) who examines the original Fama–McBeth (1973) time series of $\hat{\gamma}_{0t}$.

Table 1

Portfolio estimators for $\hat{\gamma}_0$, $\hat{\gamma}_1$ and $\hat{\gamma}_2$ based on the 'market index' with generalized least squares estimation.[a]

$$R_{it} = \hat{\gamma}_0 + \hat{\gamma}_{1t}\hat{\beta}_{it} + \hat{\gamma}_{2t}[(\phi_{it} - \phi_{mt})/\phi_{mt}]$$

Period	$\hat{\gamma}_0 - R_F$	$t(\hat{\gamma}_0 - R_F)$[a]	$\hat{\beta}_0$	$\hat{\gamma}_1 - (R_M - R_F)$	$t(\hat{\gamma}_1 - (R_M - R_F))$	$\hat{\beta}_1$	$\hat{\gamma}_2$	$t(\hat{\gamma}_2)$	$\hat{\beta}_2$
1936–1975	0.00450	2.76	0.45	−0.00092	−1.00	0.75	−0.00052	−2.92	0.01
1936–1955	0.00377	1.66	0.43	−0.00060	−0.80	0.80	−0.00043	−2.12	0.01
1956–1975	0.00531	2.22	0.46	−0.00138	−0.82	0.73	−0.00062	−2.09	0.01
1936–1945	0.00121	0.30	0.63	−0.00098	−0.27	0.82	−0.00075	−2.32	−0.01
1946–1955	0.00650	2.89	0.03	−0.00021	−0.26	0.75	−0.00015	−0.65	0.06
1956–1965	0.00494	2.02	0.34	−0.00098	−0.56	0.96	−0.00039	−1.27	−0.01
1966–1975	0.00596	1.43	0.49	−0.00232	−0.80	0.69	−0.00080	−1.55	0.01

[a] $\hat{\gamma}_0 - R_F$ = mean difference between return on zero beta portfolio and risk-free rate. $\hat{\gamma}_1 - (R_M - R_F)$ = mean difference between actual risk premium ($\hat{\gamma}_1$) and risk premium stipulated by Sharpe–Lintner model ($R_M - R_F$). $\hat{\gamma}_2$ = size premium. $\hat{\beta}_i$ = actual estimated market risk of $\hat{\gamma}_i$ (theoretical values: $\beta_0 = 0$, $\beta_1 = 1$, $\beta_2 = 0$); all β_0, β_1 are significantly different from the theoretical values. $t(\cdot)$ = t-statistic.

The deviations from the theoretical betas are largest for the 'market index', smaller for the CRSP value-weighted index, and smallest for the CRSP equally-weighted index. This is due to two factors: first, even if the true covariance structure is stationary, betas with respect to a value-weighted index change whenever the weights change, since the weighted average of the betas is constrained to be equal to one. Second, the betas and their standard errors with respect to the 'market index' are much larger than for the stock indices (a typical stock beta is between two and three), which leads to larger deviations — a kind of 'leverage' effect. Thus, the results in table 1 show that the final correction for the deviation of $\hat\beta_0$ and $\hat\beta_1$ from their theoretical values is of crucial importance for maket proxies with changing weights.

Estimated portfolio betas and portfolio market proportions are (negatively) correlated. It is therefore possible that the errors in beta induce an error in the coefficient of the market proportion. According to Levi (1973), the probability limit of $\hat\gamma_1$ in the standard errors-in-the-variables model is

$$\operatorname{plim} \hat\gamma_1 = \gamma_1/(1 + (\sigma_u^2 \cdot \sigma_2^2)/D) < \gamma_1,$$

with

$$D = (\sigma_1^2 + \sigma_u^2) \cdot \sigma_2^2 - \sigma_{12}^2 > 0,$$

where σ_1^2, σ_2^2 are the variances of the true factors β and ϕ, respectively, σ_u^2 is the variance of the error in beta and σ_{12} is the covariance of β and ϕ. Thus, the bias in $\hat\gamma_1$ is unambiguously towards zero for positive γ_1. The probability limit of $\hat\gamma_2 - \gamma_2$ is [Levi (1973)]

$$\operatorname{plim} (\hat\gamma_2 - \gamma_2) = (\sigma_u^2 \cdot \sigma_{12} \cdot \gamma_1)/D.$$

We find that the bias in $\hat\gamma_2$ depends on the covariance between β and ϕ and the sign of γ_1. If σ_{12} has the same sign as the covariance between $\hat\beta$ and ϕ, i.e., $\sigma_{12} < 0$, and if $\gamma_1 > 0$, then $\operatorname{plim}(\hat\gamma_2 - \gamma_2) < 0$, i.e., $\operatorname{plim} \hat\gamma_2 < \gamma_2$. If the grouping procedure is not successful in removing the error in beta, then it is likely that the reported $\hat\gamma_2$ overstates the true magnitude of the size effect. If this was a serious problem in this study, the results for the different market indices should reflect the problem. In particular, using the equally-weighted stock index should then lead to the smallest size effect since, as was pointed out earlier, the error in beta problem is apparently less serious for that kind of index. In fact, we find that there is little difference between the estimates.[10]

[10]For the overall time period, $\hat\gamma_2$ with the equally-weighted CRSP index is −0.00044, with the value weighted CRSP index −0.00044 as well as opposed to the −0.00052 for the 'market index' reported in table 1. The estimated betas of $\hat\gamma_0$ and $\hat\gamma_1$ which reflect the degree of the error in beta problems are 0.07 and 0.91, respectively, for the equally-weighted CRSP index and 0.13 and 0.87 for the value-weighted CRSP index.

Thus, it does not appear that the size effect is just a proxy for the unobservable true beta even though the market proportion and the beta of securities are negatively correlated.

The correlation coefficient between the mean market values of the twenty-five portfolios and their betas is significantly negative, which might have introduced a multicollinearity problem. One of its possible consequences is coefficients that are very sensitive to addition or deletion of data. This effect does not appear to occur in this case: the results do not change significantly when five portfolios are dropped from the sample. Revising the grouping procedure — ranking on the basis of beta first, then ranking on the basis of market proportion — also does not lead to substantially different results.

4.2. A closer look at the results

An additional factor relevant for asset pricing — the market value of the equity of a firm — has been found. The results are based on a linear model. Linearity was assumed only for convenience and there is no theoretical reason (since there is no model) why the relationship should be linear. If it is nonlinear, the particular form of the relationship might give us a starting point for the discussion of possible causes of the size effect in the next section. An analysis of the residuals of the twenty-five portfolios is the easiest way to look at the linearity question. For each month t, the estimated residual return

$$\hat{\varepsilon}_{it} = R_{it} - \hat{\gamma}_{0t} - \hat{\gamma}_{1t}\hat{\beta}_{it} - \hat{\gamma}_{2t}[(\phi_{it} - \phi_{mt})/\phi_{mt}], \qquad i = 1, \dots, 25, \tag{5}$$

is calculated for all portfolios. The mean residuals over the forty-five year sample period are plotted as a function of the mean market proportion in fig. 1. Since the distribution of the market proportions is very skewed, a logarithmic scale is used. The solid line connects the mean residual returns of each size group. The numbers identify the individual portfolios within each group according to beta, '1' being the one with the largest beta, '5' being the one with the smallest beta.

The figure shows clearly that the linear model is misspecified.[11] The residuals are not randomly distributed around zero. The residuals of the portfolios containing the smallest firms are all positive; the remaining ones are close to zero. As a consequence, it is impossible to use $\hat{\gamma}_2$ as a simple size premium in the cross-section. The plot also shows, however, that the misspecification is not responsible for the significance of $\hat{\gamma}_2$ since the linear model underestimates the true size effect present for very small firms. To illustrate this point, the five portfolios containing the smaller firms are

[11] The nonlinearity cannot be eliminated by defining ϕ_i as the log of the market proportion.

deleted from the sample and the parameters reestimated. The results, summarized in table 2, show that the $\hat{\gamma}_2$ remain essentially the same. The relationship is still not linear; the new $\hat{\gamma}_2$ still cannot be used as a size premium.

Fig. 1 suggests that the main effect occurs for very small firms. Further support for this conclusion can be obtained from a simple test. We can regress the returns of the twenty-five portfolios in each result on beta alone and examine the residuals. The regression is misspecified and the residuals contain information about the size effect. Fig. 2 shows the plot of those residuals in the same format as fig. 1. The smallest firms have, on average, very large unexplained mean returns. There is no significant difference between the residuals of the remaining portfolios.

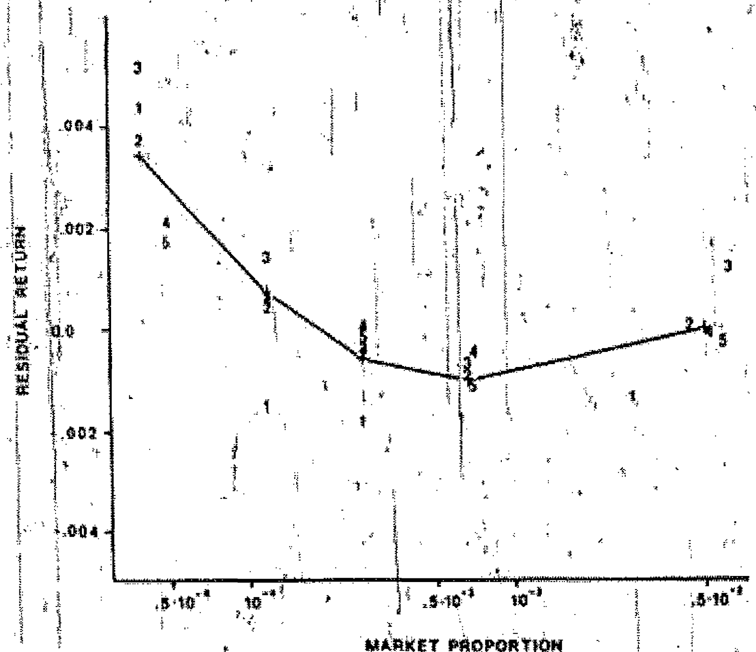

Fig. 1. Mean residual returns of portfolios (1936–1975) with equally-weighted CRSP index as market proxy. The residual is calculated with the three-factor model [eq. (3)]. The numbers 1,...,5 represent the mean residual return for the five portfolios within each size group (1: portfolio with largest beta,...,5: portfolio with smallest beta). + represents the mean of the mean residuals of the five portfolios with similar market values.

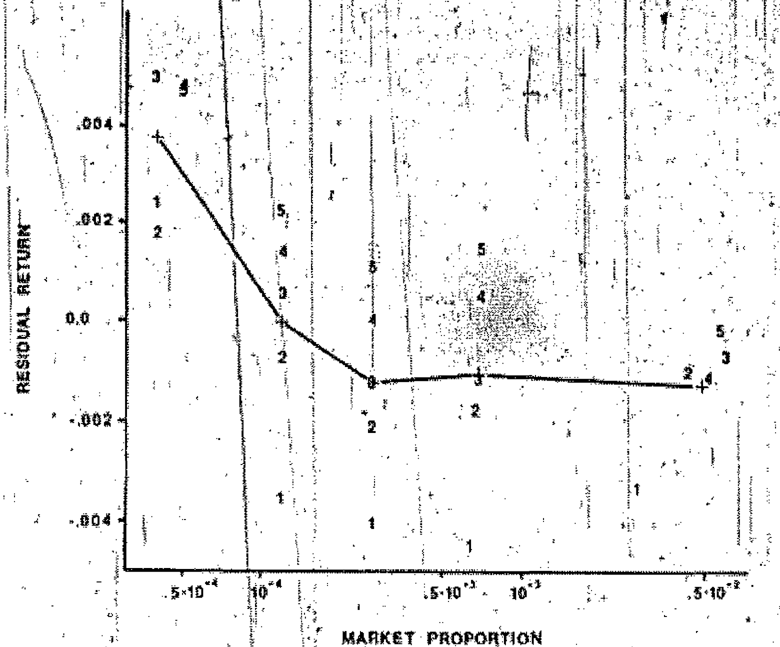

Fig. 2. Mean residual returns of portfolios (1936–1975) with equally-weighted CRSP index as market proxy. The residual is calculated with the two-factor model ($\hat{\varepsilon}_{it} = R_{it} - \hat{\gamma}_{0t} - \hat{\gamma}_{1t}\hat{\beta}_{it}$). The symbols are as defined for fig. 1.

4.3. 'Arbitrage' portfolio returns

One important empirical question still remains: How important is the size effect from a practical point of view? Fig. 2 suggests that the difference in returns between the smallest firms and the remaining ones is, on average, about 0.4 percent per month. A more dramatic result can be obtained when the securities are chosen solely on the basis of their market value.

As an illustration, consider putting equal dollar amounts into portfolios containing the smallest, largest and median-sized firms at the beginning of a year. These portfolios are to be equally weighted and contain, say, ten, twenty or fifty securities. They are to be held for five years and are rebalanced every month. They are levered or unlevered to have the same beta. We are then interested in the differences in their returns,

$$R_{1t} = R_{st} - R_{lt}, \qquad R_{2t} = R_{st} - R_{mt}, \qquad R_{3t} = R_{mt} - R_{lt}, \tag{6}$$

Table 2
Portfolio estimators for γ_2 for all 25 portfolios and for 20 portfolios (portfolios containing smallest firms deleted) based on CRSP equally weighted index with generalized least-squares estimation.[a]

	Size premium $\hat{\gamma}_2$ with	
Period	25 portfolios	20 portfolios
1936–1975	−0.00044 (−2.42)	−0.00043 (−2.54)
1936–1955	−0.00037 (−1.72)	−0.00041 (−1.88)
1956–1975	−0.00056 (−1.91)	−0.00050 (−1.91)
1936–1945	−0.00085 (−2.81)	−0.00083 (−2.48)
1946–1955	0.00003 (0.12)	−0.00003 (−0.13)
1956–1965	−0.00023 (−0.81)	−0.00017 (−0.65)
1966–1975	−0.00091 (−1.78)	−0.00085 (−1.84)

[a] t-statistic in parentheses.

where R_{st}, R_{mt} and R_{lt} are the returns on the portfolios containing the smallest, median-sized and largest firms at portfolio formation time (and $R_{1t} = R_{2t} + R_{3t}$). The procedure involves (a) the calculation of the three differences in raw returns in each month and (b) running time series regressions of the differences on the excess returns of the market proxy. The intercept terms of these regressions are then interpreted as the $\bar{R}_i$, $i=1,\ldots,3$. Thus, the differences can be interpreted as 'arbitrage' returns, since, e.g., R_{1t} is the return obtained from holding the smallest firms long and the largest firms short, representing zero net investment in a zero-beta portfolio.[12] Simple equally weighted portfolios are used rather than more sophisticated minimum variance portfolios to demonstrate that the size effect is not due to some quirk in the covariance matrix.

Table 3 shows that the results of the earlier tests are fully confirmed. $\bar{R}_2$, the difference in returns between very small firms and median-size firms, is typically considerably larger than $\bar{R}_3$, the difference in returns between median-sized and very large firms. The average excess return from holding very small firms long and very large firms short is, on average, 1.52 percent

[12] No *ex post* sample bias is introduced, since monthly rebalancing includes stocks delisted during the five years. Thus, the portfolio size is generally accurate only for the first month of each period.

Table 3
Mean monthly returns on 'arbitrage' portfolios.[a]
$R_j - R_k = \bar{R}_i + \beta_i(R_m - R_f)$

Table 3
Mean monthly returns on 'arbitrage' portfolios.[a]
$R_j - R_k = \hat{z}_i + \hat{\beta}_i(R_m - R_F)$

	$\hat{z}_1$[b]			$\hat{z}_2$[c]			$\hat{z}_3$[d]		
	$n=10$	$n=20$	$n=50$	$n=10$	$n=20$	$n=50$	$n=10$	$n=20$	$n=50$
Overall period									
1931–1975	0.0152	0.0148	0.0101	0.0130	0.0124	0.0089	0.0021	0.0024	0.0012
	(2.99)	(3.53)	(3.07)	(2.90)	(3.56)	(3.64)	(1.06)	(1.41)	(0.85)
Five-year subperiods									
1931–1935	0.0559	0.0597	0.0427	0.0462	0.0462	0.0326	0.0127	0.0134	0.0101
	(2.25)	(2.81)	(2.35)	(1.92)	(2.55)	(2.46)	(1.09)	(1.49)	(1.42)
1936–1940	0.0201	0.0182	0.0089	0.0118	0.0145	0.0064	0.0084	0.0037	0.0025
	(0.82)	(0.97)	(0.67)	(0.55)	(0.90)	(0.65)	(1.20)	(0.62)	(0.49)
1941–1945	0.0430	0.0408	0.0269	0.0381	0.0367	0.0228	0.0049	0.0038	0.0041
	(2.29)	(2.46)	(2.17)	(2.29)	(2.54)	(2.02)	(1.25)	(1.09)	(1.68)
1946–1950	−0.0060	−0.0046	−0.0036	−0.0058	−0.0059	−0.0029	−0.0002	−0.0104	−0.0007
	(−1.17)	(−0.97)	(−0.97)	(−1.03)	(−1.29)	(−0.83)	(−0.07)	(−0.50)	(−0.38)
1951–1955	−0.0067	−0.0011	0.0013	−0.0004	0.0026	0.0010	−0.0062	−0.0037	0.0003
	(−0.89)	(−0.21)	(0.32)	(−0.07)	(0.72)	(0.39)	(−1.29)	(−0.99)	(0.11)
1956–1960	0.0039	0.0008	0.0037	0.0007	−0.0027	0.0011	0.0031	0.0035	0.0026
	(0.67)	(0.15)	(0.89)	(0.14)	(−0.64)	(0.45)	(0.88)	(1.16)	(0.97)
1961–1965	0.0131	0.0060	0.0024	0.0096	0.0046	0.0036	0.0035	0.0014	−0.0012
	(1.38)	(0.67)	(0.31)	(1.11)	(0.72)	(0.77)	(0.59)	(0.24)	(−0.24)
1966–1970	0.0121	0.0117	0.0077	0.0129	0.0110	0.0071	0.0008	0.0007	0.0006
	(1.64)	(2.26)	(1.91)	(1.93)	(2.71)	(2.43)	(0.23)	(0.22)	(0.27)
1971–1975	0.0063	0.0108	0.0098	0.0033	0.0077	0.0083	0.0030	0.0031	0.0015
	(0.60)	(1.23)	(1.45)	(0.39)	(1.18)	(1.79)	(0.64)	(0.72)	(0.43)

[a]Equally-weighted portfolios with n securities, adjusted for differences in market risk with respect to CRSP value-weighted index, t-statistics in parentheses.
[b]Small firms held long, large firms held short.
[c]Small firms held long, median-size firms held short.
[d]Median-size firms held long, large firms held short.

per month or 19.8 percent on an annualized basis. This strategy, which suggests very large 'profit opportunities', leaves the investor with a poorly diversified portfolio. A portfolio of small firms has typically much larger residual risk with respect to a value-weighted index than a portfolio of very large firms with the same number of securities [Banz (1978, ch. 3)]. Since the fifty largest firms make up more than 25 percent of the total market value of NYSE stocks, it is not surprising that a larger part of the variation of the return of a portfolio of those large firms can be explained by its relation with the value-weighted market index. Table 3 also shows that the strategy would not have been successful in every five year subperiod. Nevertheless, the magnitude of the size effect during the past forty-five years is such that it is of more than just academic interest.

5. Conclusions

The evidence presented in this study suggests that the CAPM is misspecified. On average, small NYSE firms have had significantly larger risk adjusted returns than large NYSE firms over a forty year period. This size effect is not linear in the market proportion (or the log of the market proportion) but is most pronounced for the smallest firms in the sample. The effect is also not very stable through time. An analysis of the ten year subperiods show substantial differences in the magnitude of the coefficient of the size factor (table 1).

There is no theoretical foundation for such an effect. We do not even know whether the factor is size itself or whether size is just a proxy for one or more true but unknown factors correlated with size. It is possible, however, to offer some conjectures and even discuss some factors for which size is suspected to proxy. Recent work by Reinganum (1980) has eliminated one obvious candidate: the price-earnings (P/E) ratio.[13] He finds that the P/E-effect, as reported by Basu (1977), disappears for both NYSE and AMEX stocks when he controls for size but that there is a significant size effect even when he controls for the P/E-ratio, i.e., the P/E-ratio effect is a proxy for the size effect and not vice versa. Stattman (1980), who found a significant negative relationship between the ratio of book value and market value of equity and its return, also reports that this relationship is just a proxy for the size effect. Naturally, a large number of possible factors remain to be tested.[14] But the Reinganum results point out a potential problem with some of the existing negative evidence of the efficient market hypothesis. Basu believed to have identified a market inefficiency but his P/E-effect is

[13] The average correlation coefficient between P/E-ratio and market value is only 0.16 for individual stocks for thirty-eight quarters ending in 1978. But for the portfolios formed on the basis of P/E-ratio, it rises to 0.82. Recall that Basu (1977) used ten portfolios in his study.

[14] E.g., debt-equity ratios, skewness of the return distribution [Kraus and Litzenberger (1976)].

just a proxy for the size effect. Given its longevity, it is not likely that it is due to a market inefficiency but it is rather evidence of a pricing model misspecification. To the extent that tests of market efficiency use data of firms of different sizes and are based on the CAPM, their results might be at least contaminated by the size effect.

One possible explanation involving the size of the firm directly is based on a model by Klein and Bawa (1977). They find that if insufficient information is available about a subset of securities, investors will not hold these securities because of estimation risk, i.e., uncertainty about the true parameters of the return distribution. If investors differ in the amount of information available, they will limit their diversification to different subsets of all securities in the market.[15] It is likely that the amount of information generated is related to the size of the firm. Therefore, many investors would not desire to hold the common stock of very small firms. I have shown elsewhere [Banz (1978, ch. 2)] that securities sought by only a subset of the investors have higher risk-adjusted returns than those considered by all investors. Thus, lack of information about small firms leads to limited diversification and therefore to higher returns for the 'undesirable' stocks of small firms.[16] While this informal model is consistent with the empirical results, it is, nevertheless, just conjecture.

To summarize, the size effect exists but it is not at all clear why it exists. Until we find an answer, it should be interpreted with caution. It might be tempting to use the size effect, e.g., as the basis for a theory of mergers — large firms are able to pay a premium for the stock of small firms since they will be able to discount the same cash flows at a smaller discount rate. Naturally, this might turn out to be complete nonsense if size were to be shown to be just a proxy.

The preceding discussion suggests that the results of this study leave many questions unanswered. Further research should consider the relationship between size and other factors such as the dividend yield effect, and the tests should be expanded to include OTC stocks as well.

[15]Klein and Bawa (1977, p. 102).
[16]A similar result can be obtained with the introduction of fixed holding costs which lead to limited diversification as well. See Brennan (1975), Banz (1978, ch. 2) and Mayshar (1979).

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The Capital Asset Pricing Model: Some Empirical Tests*

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I. Introduction and Summary

Considerable attention has recently been given to general equilibrium models of the pricing of capital assets. Of these, perhaps the best known is the mean-variance formulation originally developed by Sharpe [1964] and Treynor [1961], and extended and clarified by Lintner [1965a, b], Mossin [1966], Fama [1968a, b], and Long [1972]. In addition Treynor [1965], Sharpe [1966], and Jensen [1968, 1969] have developed portfolio evaluation models which are either based on this asset pricing model or bear a close relation to it. In the development of the asset pricing model it is assumed that (1) all investors are single period risk-averse utility of terminal wealth maximizers and can choose among portfolios solely on the basis of mean and variance, (2) there are no taxes or

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transactions costs, (3) all investors have homogeneous views regarding the parameters of the joint probability distribution of all security returns, and (4) all investors can borrow and lend at a given riskless rate of interest. The main result of the model is a statement of the relation between the expected risk premiums on individual assets and their "systematic risk." The relationship is

$$E(\tilde{R}_j) = E(\tilde{R}_M)\beta_j \qquad (1)$$

where the tildes denote random variables and

$$E(\tilde{R}_j) = \frac{E(\tilde{P}_t) - P_{t-1} + E(\tilde{D}_t)}{P_{t-1}} - r_{Ft} = \text{expected excess returns on the } j\text{th asset}$$

$\tilde{D}_t$ = dividends paid on the jth security at time t

r_{Ft} = the riskless rate of interest

$E(\tilde{R}_M)$ = expected excess returns on a "market portfolio" consisting of an investment in every asset outstanding in proportion to its value

$$\beta_j = \frac{\text{cov}(\tilde{R}_j, \tilde{R}_M)}{\sigma^2(\tilde{R}_M)} = \text{the "systematic" risk of the } j\text{th asset.}$$

Relation 1 says that the expected excess return on any asset is directly proportional to its β. If we define α_j as

$$\alpha_j = E(\tilde{R}_j) - E(\tilde{R}_M)\beta_j$$

then (1) implies that the α on every asset is zero.

If empirically true, the relation given by (1) has wide-ranging implications for problems in capital budgeting, cost benefit analysis, portfolio selection, and for other economic problems requiring knowledge of the relation between risk and return. Evidence presented by Jensen [1968, 1969] on the relationship between the expected return and systematic risk of a large sample of mutual funds suggests that (1) might provide an adequate description of the relation between risk and return for securities. On the other hand, evidence presented by Douglas [1969], Lintner [1965], and most recently Miller and Scholes [1972] seems to indicate the model does not provide a complete description of the structure of security returns. In particular, the work done by Miller and Scholes suggests that the α's on individual assets depend in a systematic way on their β's: that high-beta assets tend to have negative α's, and that low-beta stocks tend to have positive α's.

Our main purpose is to present some additional tests of this asset pricing model which avoid some of the problems of earlier studies and which, we believe, provide additional insights into the nature of the structure of security returns. All previous direct tests of the model have been conducted using cross-sectional methods; primarily regression of $\bar{R}_j$, the mean excess return over a time interval for a set of securities on estimates of the systematic risk, $\hat{\beta}_j$, of each of the securities. The equation

$$\bar{R}_j = \gamma_0 + \gamma_1\hat{\beta}_j + \tilde{u}_j$$

was estimated, and contrary to the theory, γ_0 seemed to be significantly different from zero and γ_1 significantly different from $\bar{R}_M$, the slope predicted by the model. We shall show in Section III that, because of the structure of the process which appears to be generating the data, these cross-sectional tests of significance can be misleading and therefore do not provide direct tests of the validity of (1). In Section II we provide a more powerful time series test of the validity of the model, which is free of the difficulties associated with the cross-sectional tests. These results indicate that the usual form of the asset pricing model as given by (1) does not provide an accurate description of the structure of security returns. The tests indicate that the expected excess returns on high-beta assets are lower than (1) suggests and that the expected excess returns on low-beta assets are higher than (1) suggests. In other words, that high-beta stocks have negative α's and low-beta stocks have positive α's.

The data indicate that the expected return on a security can be represented by a two-factor model such as

$$E(\tilde{r}_j) = E(\tilde{r}_Z)(1 - \beta_j) + E(\tilde{r}_M)\beta_j \qquad (2)$$

where the r's indicate total returns and $E(\tilde{r}_Z)$ is the expected return on a second factor, which we shall call the "beta factor," since its coefficient is a function of the asset's β. After we had observed this phenomenon, Black [1970] was able to show that relaxing the assumption of the existence of riskless borrowing and lending opportunities provides an asset pricing model which implies that, in equilibrium, the expected return on an asset will be given by (2). His results furnish an explicit definition of the beta factor, $\tilde{r}_Z$, as the return on a portfolio that has a zero covariance with the return on the market portfolio $\tilde{r}_M$. Although this model is entirely consistent with our empirical results (and provides a convenient interpretation of them), there are perhaps other plausible hypotheses consistent with the data (we shall briefly discuss several in Section V). We hasten to add that we have not attempted here to supply any direct tests of these alternative hypotheses.

The evidence presented in Section II indicates the expected excess return on an asset is not strictly proportional to its β, and we believe that this evidence, coupled with that given in Section IV, is sufficiently strong to warrant rejection of the traditional form of the model given by (1). We then show in Section III how the cross-sectional tests are subject to measurement error bias, provide a solution to this problem through grouping procedures, and show how cross-sectional methods are relevant to testing the expanded two-factor form of the model. Here we find that the evidence indicates the existance of a linear relation between risk and return and is therefore consistent with a form of the two-factor model which specifies the realized returns on each asset to be a linear function of the returns on the two factors $\tilde{r}_Z$ and $\tilde{r}_M$,

$$\tilde{r}_j = \tilde{r}_Z(1-\beta_j) + \tilde{r}_M\beta_j + \tilde{w}_j \qquad (2)$$

The fact that the α's of high-beta securities are negative and that the α's of low-beta securities are positive implies that the mean of the beta factor is greater than r_F. The traditional form of the capital asset pricing model as expressed by (1), could hold exactly, even if asset returns were generated by (2'), if the mean of the beta factor were equal to the risk-free rate. We show in Section IV that the mean of the beta factor has had a positive trend over the period 1931–65 and was on the order of 1.0 to 1.3% per month in the two sample intervals we examined in the period 1948–65. This seems to have been significantly different from the average risk-free rate and indeed is roughly the same size as the average market return of 1.3 and 1.2% per month over the two sample intervals in this period. This evidence seems to be sufficiently strong enough to warrant rejection of the traditional form of the model given by (1). In addition, the standard deviation of the beta factor over these two sample intervals was 2.0 and 2.2% per month, as compared with the standard deviation of the market factor of 3.6 and 3.8% per month. Thus the beta factor seems to be an important determinant of security returns.

II. Time Series Tests of the Model

A. Specification of the Model. Although the model of (1) which we wish to test is stated in terms of expected returns, it is possible to use realized returns to test the theory. Let us represent the returns on any security by the "market model" originally proposed by Markowitz [1959] and extended by Sharpe [1963] and Fama [1968a]

$$\tilde{R}_j = E(\tilde{R}_j) + \beta_j\tilde{R}'_M + \tilde{e}_j \qquad (3)$$

where $\tilde{R}'_M = \tilde{R}_M - E(\tilde{R}_M)$ = the "unexpected" excess market return, and $\tilde{R}'_M$ and $\tilde{e}_j$ are normally distributed random variables that satisfy:

$$E(\tilde{R}'_M) = 0 \qquad (4a)$$

$$E(\tilde{e}_j) = 0 \qquad (4b)$$

$$E(\tilde{e}_j\tilde{R}'_M) = 0 \qquad (4c)$$

The specifications of the market model, extensively tested by Fama et al. [1969] and Blume [1968], are well satisfied by the data for a large number of securities on the New York Stock Exchange. The only assumption violated to any extent is the normality assumption[1]—the estimated residuals seem to conform to the infinite variance members of the stable class of distributions rather than the normal. There are those who would explain these discrepancies from normality by certain nonstationarities in the distributions (cf. Press [1967]), which still yield finite variances. However, Wise [1963] has shown that the least-squares estimate of β_j in (3) is unbiased (although not efficient) even if the variance does not exist, and simulations by Blattberg and Sargent [1968] and Fama and Babiak [1968] also indicate that the least-squares procedures are not totally inappropriate in the presence of infinite variance stable distributions. For simplicity, therefore, we shall ignore the nonnormality issues and continue to assume normally distributed random variables where relevant.[2] However, because of these problems caution should be exercised in making literal interpretations of any significance tests.

Substituting from (1) for $E(R_j)$ in (3) we obtain

$$\tilde{R}_j = \tilde{R}_M\beta_j + \tilde{e}_j \qquad (5)$$

where $\tilde{R}_M$ is the ex post excess return on the market portfolio over the holding period of interest. If assets are priced in the market such that (1) holds over each short time interval (say a month), then we can test the traditional form of the model by adding an intercept α_j to (5) and subscripting each of the variables by t to obtain

$$\tilde{R}_{jt} = \alpha_j + \beta_j \tilde{R}_{Mt} + \tilde{e}_{jt} \qquad (6)$$

which, given the assumptions of the market model, is a regression equation. If the asset pricing and the market models given by (1), (3), and (4) are valid, then the intercept α_j in (6) will be zero. Thus a direct test of the model can be obtained by estimating (6) for a security over some time period and testing to see if α_j is significantly different from zero.[3,4]

B. An Aggregation Problem. The test just proposed is simple but inefficient, since it makes use of information on only a single security whereas data is available on a large number of securities. We would like to design a test that allows us to aggregate the data on a large number of securities in an efficient manner. If the estimates of the α_j's were independent with normally distributed residuals, we could proceed along the lines outlined by Jensen [1968] and compare the frequency distributions of the "t" values for the intercepts with the theoretical distribution. However, the fact that the e_{jt} are not cross-sectionally independent, (that is, $E(\tilde{e}_{jt}\tilde{e}_{it}) \neq 0$ for $i \neq j$, cf. King [1966]), makes this procedure much more difficult.

One procedure for solving this problem which makes appropriate allowance for the effects of the nonindependence of the residuals on the standard error of estimate of the average coefficient, $\bar{\alpha}$, is to run the tests on grouped data. That is, we form portfolios (or groups) of the individual securities and estimate (6) defining $\tilde{R}_{Kt}$ to be the average return on all securities in the Kth portfolio for time t. Given this definition of R_{Kt}, β_K will be the average risk of the securities in the portfolio and α_K will be the average intercept. Moreover, since the residual variance from this regression will incorporate the effects of any cross-sectional interdependencies in the $\tilde{e}_{jt}$ among the securities in each portfolio, the standard error of the intercept $\hat{\alpha}_K$ will appropriately incorporate the nonindependence of $\tilde{e}_{jt}$.

In addition, we wish to group our securities such that we obtain the maximum possible dispersion of the risk coefficients, β_K. If we were to construct our portfolios by using the ranked values of the $\hat{\beta}_j$, we would introduce a selection bias into the procedure. This would occur because those securities

entering the first or high-beta portfolio would tend to have positive measurement errors in their $\hat{\beta}_j$, and this would introduce positive bias in $\hat{\beta}_K$, the estimated portfolio risk coefficient. This positive bias in $\hat{\beta}_K$ will, of course, introduce a negative bias in our estimate of the intercept, $\hat{\alpha}_K$, for that portfolio. On the other hand, the opposite would occur for the lowest beta portfolio; its $\hat{\beta}_K$ would be negatively biased, and therefore our estimate of the intercept for this low-risk portfolio would be positively biased. Thus even if the traditional model were true, this selection bias would tend to cause the low-risk portfolios to exhibit positive intercepts and high-risk portfolios to exhibit negative intercepts. To avoid this bias, we need to use an instrumental variable that is highly correlated with $\hat{\beta}_j$, but that can be observed independently of $\hat{\beta}_j$. The instrumental variable we have chosen is simply an independent estimate of the β of the security obtained from past data. Thus when we estimate the group risk parameter on sample data not used in the ranking procedures, the measurement errors in these estimates will be independent of the errors in the coefficients used in the ranking and we therefore obtain unbiased estimates of $\hat{\beta}_K$ and $\hat{\alpha}_K$.

C. The Data. The data used in the tests to be described were taken from the University of Chicago Center for Research in Security Prices Monthly Price Relative File, which contains monthly price, dividend, and adjusted price and dividend information for all securities listed on the New York Stock Exchange in the period January, 1926–March, 1966. The monthly returns on the market portfolio R_{Mt} were defined as the returns that would have been earned on a portfolio consisting of an equal investment in every security listed on the NYSE at the beginning of each month. The risk-free rate was defined as the 30-day rate on U.S. Treasury Bills for the period 1948–66. For the period 1926–47 the dealer commercial paper rate[5] was used because Treasury Bill rates were not available.

D. The Grouping Procedure

1. *The ranking procedure.* Ideally we would like to assign the individual securities to the various groups on the basis of the ranked β_j (the true coefficients), but of course these are unobservable. In addition we cannot assign them on the basis of the $\hat{\beta}_j$, since this would introduce the selection bias prob-

lems discussed previously. Therefore, we must use a ranking procedure that is independent of the measurement errors in the $\hat{\beta}_j$. One way to do this is to use part of the data—in our case five years of previous monthly data—to obtain estimates $\hat{\beta}_{j0}$, of the risk measures for each security. The ranked values of the $\hat{\beta}_{j0}$ are used to assign membership to the groups. We then use data from a subsequent time period to estimate the group risk coefficients $\hat{\beta}_K$, which then contain measurement errors for the individual securities, which are independent of the errors in $\hat{\beta}_{j0}$ and hence independent of the original ranking and independent among the securities in each group.

2. *The stationarity assumptions.* The group assignment procedure just described will be satisfactory as long as the coefficients β_j are stationary through time. Evidence presented by Blume [1968] indicates this assumption is not totally inappropriate, but we have used a somewhat more complicated procedure for grouping the firms which allows for any nonstationarity in the coefficients through time.

We began by estimating the coefficient β_j, (call this estimate $\hat{\beta}_{j0}$) in (6) for the five-year period January, 1926–December, 1930 for all securities listed on the NYSE at the beginning of January 1931 for which at least 24 monthly returns were available. These securities were then ranked from high to low on the basis of the estimates $\hat{\beta}_{j0}$, and were assigned to ten portfolios[6]—the 10% with the largest $\hat{\beta}_{j0}$ to the first portfolio, and so on. The return in each of the next 12 months for each of the ten portfolios was calculated. Then the entire process was repeated for all securities listed as of January, 1932 (for which at least 24 months of previous monthly returns were available) using the immediately preceding five years of data (if available) to estimate new coefficients to be used for ranking and assignment to the ten portfolios. The monthly portfolio returns were again calculated for the next year. This process was then repeated for January, 1933, January, 1934, and so on, through January, 1965.

In this way we obtained 35 years of monthly returns on ten portfolios from the 1,952 securities in the data file. Since at each stage we used all listed securities for which at least 24 months of data were available in the immediately preceding five-year period, the total number of securities used in the analysis varied through time ranging from 582 to 1,094, and thus the number of securities contained in each portfolio changed from year to year.[7] The total number of securities

from which the portfolios were formed at the beginning of each year is given in Table 1. Each of the portfolios may be thought of as a mutual fund portfolio, which has an identity of its own, even though the stocks it contains change over time.

TABLE 1
Total Number of Securities Entering All Portfolios, by Year

Year	*Number of Securities*	*Year*	*Number of Securities*
1931	582	1949	893
1932	673	1950	928
1933	688	1951	943
1934	683	1952	966
1935	676	1953	994
1936	674	1954	1000
1937	666	1955	1006
1938	690	1956	994
1939	718	1957	994
1940	743	1958	1000
1941	741	1959	995
1942	757	1960	1021
1943	772	1961	1014
1944	778	1962	1024
1945	773	1963	1056
1946	791	1964	1081
1947	812	1965	1094
1948	842		

E. *The Empirical Results*

1. *The entire period.* Given the 35 years of monthly returns on each of the ten portfolios calculated as explained previously, we then calculated the least-squares estimates of the parameters α_K and β_K in (6) for each of the ten portfolios ($K = 1, \ldots, 10$) using all 35 years of monthly data (420 observations). The results are summarized in Table 2. Portfolio number 1 contains the highest-risk securities and portfolio number 10 contains the lowest-risk securities. The estimated risk coefficients range from 1.561 for portfolio 1 to 0.499 for portfolio 10. The critical intercepts, the $\hat{\alpha}_K$, are given in the second line of Table 2 and the Student "t" values are given directly below them. The correlation between the portfolio returns and the market returns, $r(\tilde{R}_K, \tilde{R}_M)$, and the autocorrelation of the residuals, $r(\tilde{e}_t, \tilde{e}_{t-1})$, are also given in Table 2. The autocorrelation appears to be quite small and the correlation between the portfolio and market returns are, as expected, quite

TABLE 2
Summary of Statistics for Time Series Tests, Entire Period (January, 1931–December, 1965)
(Sample Size for Each Regression = 420)

	Portfolio Number										
*Item**	1	2	3	4	5	6	7	8	9	10	$\bar{R}_M$
$\hat{\beta}$	1.5614	1.3838	1.2483	1.1625	1.0572	0.9229	0.8531	0.7534	0.6291	0.4992	1.0000
$\hat{\alpha} \cdot 10^2$	−0.0829	−0.1938	−0.0649	−0.0167	−0.0543	0.0593	0.0462	0.0812	0.1968	0.2012	
$t(\hat{\alpha})$	−0.4274	−1.9935	−0.7597	−0.2468	−0.8869	0.7878	0.7050	1.1837	2.3126	1.8684	
$r(\bar{R}, \bar{R}_M)$	0.9625	0.9875	0.9882	0.9914	0.9915	0.9833	0.9851	0.9703	0.9560	0.8981	
$r(\tilde{e}_t, \tilde{e}_{t-1})$	0.0549	−0.0638	0.0366	0.0073	−0.0708	−0.1248	0.1294	0.1041	0.0444	0.0992	
$\sigma(\tilde{e})$	0.0393	0.0197	0.0173	0.0137	0.0124	0.0152	0.0133	0.0139	0.0172	0.0218	
$\bar{R}$	0.0213	0.0177	0.0171	0.0163	0.0145	0.0137	0.0126	0.0115	0.0109	0.0091	0.0142
σ	0.1445	0.1248	0.1126	0.1045	0.0950	0.0836	0.0772	0.0685	0.0586	0.0495	0.0891

*$\bar{R}$ = average monthly excess returns, σ = standard deviation of the monthly excess returns, r = correlation coefficient.

high. The standard deviation of the residuals $\sigma(\tilde{e}_N)$, the average monthly excess return $\bar{R}_K$, and the standard deviation of the monthly excess return, σ, are also given for each of the portfolios.

Note first that the intercepts $\hat{\alpha}$ are consistently negative for the high-risk portfolios ($\hat{\beta} > 1$) and consistently positive for the low-risk portfolios ($\hat{\beta} < 1$). Thus the high-risk securities earned less on average over this 35-year period than the amount predicted by the traditional form of the asset pricing model. At the same time, the low-risk securities earned more than the amount predicted by the model.

The significance tests given by the "t" values in Table 2 are somewhat inconclusive, since only 3 of the 10 coefficients have "t" values greater than 1.85 and, as we pointed out earlier, we should use some caution in interpreting these "t" values since the normality assumptions can be questioned. We shall see, however, that due to the existence of some nonstationarity in the relations and to the lack of more complete aggregation, these results vastly understate the significance of the departures from the traditional model.

2. *The subperiods.* In order to test the stationarity of the empirical relations, we divided the 35-year interval into four equal subperiods each containing 105 months. Table 3 presents a summary of the regression statistics of (6) calculated using the data for each of these periods for each of the ten portfolios. Note that the data for $\hat{\beta}$ in Table 3 indicate that, except for portfolios 1 and 10, the risk coefficients $\hat{\beta}_K$ were fairly stationary.

Note, however, in the sections for α and $t(\hat{\alpha})$ that the critical intercepts $\hat{\alpha}_K$, were most definitely nonstationary throughout this period. The positive α's for the high-risk portfolios in the first subperiod (January, 1931–September, 1939) indicate that these securities earned more than the amount predicted by the model, and the negative α's for the low-risk portfolios indicate they earned less than what the model predicted. In the three succeeding subperiods (October, 1939–June, 1948; July, 1948–March, 1957, and April, 1957–December, 1965) this pattern was reversed and the departures from the model seemed to become progressively larger; so much larger that six of the ten coefficients in the last subperiod seem significant. (Note that all six coefficients are those with β's most different from unity—a point we shall return to. Thus it seems unlikely that these changes were the result of chance; they most probably reflect changes in the α_N's).

TABLE 3
Summary of Coefficients for the Subperiods

Item*	Sub-period†	1	2	3	4	5	6	7	8	9	10	M_M
		Portfolio Number										
	1	1.5416	1.3993	1.2620	1.1813	1.0750	0.9197	0.8569	0.7510	0.6222	0.4843	1.0000
	2	1.7157	1.3196	1.1938	1.0861	0.9697	0.9254	0.8114	0.7675	0.6647	0.5626	1.0000
$\hat{\beta}$	3	1.5427	1.3598	1.1822	1.1216	1.0474	0.9851	0.9180	0.7714	0.6547	0.4568	1.0000
	4	1.4423	1.2764	1.1818	1.0655	0.9957	0.9248	0.8601	0.7800	0.6614	0.6226	1.0000
	1	0.7366	0.1902	0.3978	0.1314	−0.0650	−0.0501	−0.2190	−0.3786	−0.2128	−0.0710	
	2	−0.2197	−0.1300	−0.1224	0.0653	−0.0805	0.0914	0.1306	0.0760	0.2685	0.1478	
$\hat{\alpha} \cdot 10^2$	3	−0.4614	−0.3994	−0.1189	0.0052	0.0002	−0.0070	0.1266	0.2428	0.3032	0.2035	
	4	−0.4475	−0.2536	−0.2329	−0.0654	0.0840	0.1356	0.1218	0.3257	0.3338	0.3685	
	1	1.3881	0.6121	1.4037	0.6484	−0.3687	−0.1882	−1.0341	−1.7601	−0.7882	−0.1978	
	2	−0.4256	−0.7605	−0.8719	0.5019	−0.6288	0.8988	1.1377	0.6178	1.7853	0.8377	
$t(\hat{\alpha})$	3	−2.9030	−3.6760	−1.5160	0.0742	0.0029	−0.1010	1.8261	3.3768	3.3939	1.9879	
	4	−2.8761	−2.4603	−2.7886	−0.7722	1.1016	1.7937	1.6769	3.8772	3.0651	3.2439	
	1	0.0412	0.0326	0.0317	0.0272	0.0230	0.0197	0.0166	0.0127	0.0115	0.0099	0.0220
	2	0.0233	0.0183	0.0165	0.0168	0.0136	0.0147	0.0134	0.0122	0.0126	0.0095	0.0149
$\bar{R}$	3	0.0126	0.0112	0.0120	0.0126	0.0117	0.0109	0.0115	0.0110	0.0103	0.0075	0.0112
	4	0.0082	0.0082	0.0081	0.0087	0.0096	0.0095	0.0088	0.0101	0.0092	0.0092	0.0088
	1	0.2504	0.2243	0.2023	0.1886	0.1715	0.1484	0.1377	0.1211	0.1024	0.0850	0.1587
	2	0.1187	0.0841	0.0758	0.0600	0.0618	0.0586	0.0519	0.0494	0.0441	0.0392	0.0624
σ	3	0.0581	0.0505	0.0436	0.0413	0.0385	0.0364	0.0340	0.0289	0.0253	0.0203	0.0363
	4	0.0577	0.0503	0.0453	0.0420	0.0391	0.0365	0.0340	0.0312	0.0277	0.0265	0.0386

*$\bar{R}$ = average monthly excess returns, σ = standard deviation of monthly excess returns.

†Subperiod 1 = January, 1931–September, 1939; 2 = October, 1939–June 1948; 3 = July, 1948–March, 1957; 4 = April, 1957–December, 1965.

Note that the correlation coefficients between $\tilde{R}_{Nt}$ and $\tilde{R}_{Mt}$ given in Table 2 for each of the portfolios are all greater than 0.95 except for portfolio number 10. The lowest of the 40 coefficients in the subperiods (not shown) was 0.87, and all but two were greater than 0.90. A a result, the standard deviation of the residuals from each regression is quite small and hence so is the standard error of estimate of α, and this provides the main advantage of grouping in these tests.

III. Cross-sectional Tests of the Model

A. Tests of the Two-Factor Model. Although the time series tests discussed in Section II provide a test of the traditional form of the asset pricing model, they cannot be used to test the two-factor model directly. The cross-sectional tests, however, do furnish an opportunity to test the linearity of the relation between returns and risk implied by (2) or (2′) without making any explicit specification of the intercept. Recall that the traditional form of the model implies $\gamma_0 = 0$ and $\gamma_1 = \bar{R}_M$. The two factor model merely requires the linearity of (2) to hold for any specific cross section and allows the intercept to be nonzero. At this level of specification we shall not specify the size or even the sign of γ_0. We shall be able to make some statements on this point after a closer examination of the theory. However, we shall first examine the empirical evidence to motivate that discussion.

B. Measurement Errors and Bias in Cross-sectional Tests. We consider here the problems caused in cross-sectional tests of the model by measurement errors in the estimation of the security risk measures.[8] Let β_j represent the true (and unobservable) systematic risk of firm j and $\hat{\beta}_j = \beta_j + \tilde{\epsilon}_j$ be the measured value of the systematic risk of firm j where we assume that $\tilde{\epsilon}_j$, the measurement error, is normally distributed and for all j satisfies

$$E(\tilde{\epsilon}_j) = 0 \tag{7a}$$

$$E(\tilde{\epsilon}_j \beta_j) = 0 \tag{7b}$$

$$E(\tilde{\epsilon}_i \tilde{\epsilon}_j) = \begin{cases} 0 & i \neq j \\ \sigma^2(\tilde{\epsilon}) & i = j \end{cases} \tag{7c}$$

The traditional form of the asset pricing model and the assumptions of the market model imply that the mean excess return on a security

$$\bar{R}_j = \frac{\sum_{t=1}^{T} \tilde{R}_{jt}}{T} \quad (8)$$

observed over T periods can be written as

$$\bar{R}_j = E(\tilde{R}_j|\bar{R}_M) + \bar{e}_j = \bar{R}_M\beta_j + \bar{e}_j \quad (9)$$

where $\bar{R}_M = \Sigma_{t=1}^{T} \tilde{R}_{Mt}/T$, $\bar{e}_j = \Sigma_{t=1}^{T} e_{jt}/T$. Now an obvious test of the traditional form of the asset pricing model is to fit

$$\bar{R}_j = \gamma_0 + \gamma_1\hat{\beta}_j + \bar{e}_j^* \quad (10)$$

to a cross section of firms (where $\hat{\beta}_j$ is the estimated risk coefficient for each firm and $\bar{e}_j^* = \bar{e}_j - \gamma_1\bar{\epsilon}_j$) and test to see if, as implied by the theory

$$\gamma_0 = 0 \quad \text{and} \quad \gamma_1 = \bar{R}_M$$

There are two major difficulties with this procedure; the first involves bias due to the measurement errors in $\hat{\beta}_j$, and the second involves the apparent inadequacy of (9) as a specification of the process generating the data. The two-factor asset pricing model given by (2′) implies that γ_0 and γ_1 are random coefficients—that is, in addition to the theoretical values above, they involve a variable that is random through time. If the two-factor model is the true model, the usual significance tests on γ_0 and γ_1 are misleading, since the data from a given cross section cannot provide any evidence on the standard deviation of $\tilde{r}_Z$ and hence results in a serious underestimate of the sampling error of $\hat{\gamma}_0$ and $\hat{\gamma}_1$. Ignoring this second difficulty for the moment, we shall first consider the measurement error problems and the cross-sectional empirical evidence. The random coefficients issue and appropriate significance tests in the context of the two-factor model are discussed in more detail in Section IV.

As long as the $\hat{\beta}_j$ contain the measurement errors $\tilde{\epsilon}_j$, the least-squares estimates $\hat{\gamma}_0$ and $\hat{\gamma}_1$ in (10) will be subject to the well-known errors in variables bias and will be inconsistent, (cf. Johnston [1963, Chap. VI]). That is, assuming that $\bar{e}_j$ and $\bar{\epsilon}_j$ are independent and are independent of the β_j in the cross-sectional sample,

$$\text{plim}\ \hat{\gamma}_1 = \frac{\gamma_1}{1 + \sigma^2(\tilde{\epsilon})/S^2(\beta_j)} \quad (11)$$

where $S^2(\beta_j)$ is the cross-sectional sample variance of the true risk parameters β_j. Even for large samples, then, as long as the variance of the errors in the risk measure $\sigma^2(\tilde{\epsilon})$ is positive, the estimated coefficient $\hat{\gamma}_1$ will be biased toward zero and $\hat{\gamma}_0$ will therefore be biased away from zero. Hence tests of the significance of the differences $\hat{\gamma}_0 - 0$ and $\hat{\gamma}_1 - \bar{R}_M$ will be misleading.

C. The Grouping Solution to the Measurement Error Problem. We show in the Appendix that by appropriate grouping of the data to be used in estimating (10) one can substantially reduce the bias introduced through the existence of measurement errors in the $\hat{\beta}_j$. In essence the procedure amounts to systematically ordering the firms into groups (in fact by the same procedure that formed the ten portfolios used in the time series tests in Section II) and then calculating the risk measures $\hat{\beta}$ for each portfolio using the time series of portfolio returns. This procedure can greatly reduce the sampling error in the estimated risk measures; indeed, for large samples and independent errors, the sampling error is virtually eliminated. We then estimate the cross-sectional parameters of (10) using the portfolio mean returns over the relevant holding period and the risk coefficients obtained from estimation of (6) from the time series of portfolio returns. If appropriate grouping procedures are employed, this procedure will yield consistent estimates of the parameters γ_0 and γ_1 and thus will yield virtually unbiased estimates for samples in which the number of securities entering each group is large. Thus, by applying the cross-sectional test to our ten portfolios rather than to the underlying individual securities, we can virtually eliminate the measurement error problem.[9]

D. The Cross-sectional Empirical Results. Given the 35 years of monthly returns on each of the ten portfolios calculated as explained in Section II, we then estimated $\hat{\beta}_K$ and $\bar{R}_K$ ($K = 1, 2, \ldots, 10$) for each portfolio, using all 35 years of monthly data. These estimates (see Table 2) were then used in estimating the cross-sectional relation given by (10) for various holding periods.

Figure 1 is a plot of $\bar{R}_K$ versus $\hat{\beta}_K$ for the 35-year holding period January, 1931–December, 1965. The symbol × denotes the average monthly excess return and risk of each of the ten portfolios. The symbol ⊡ denotes the average excess

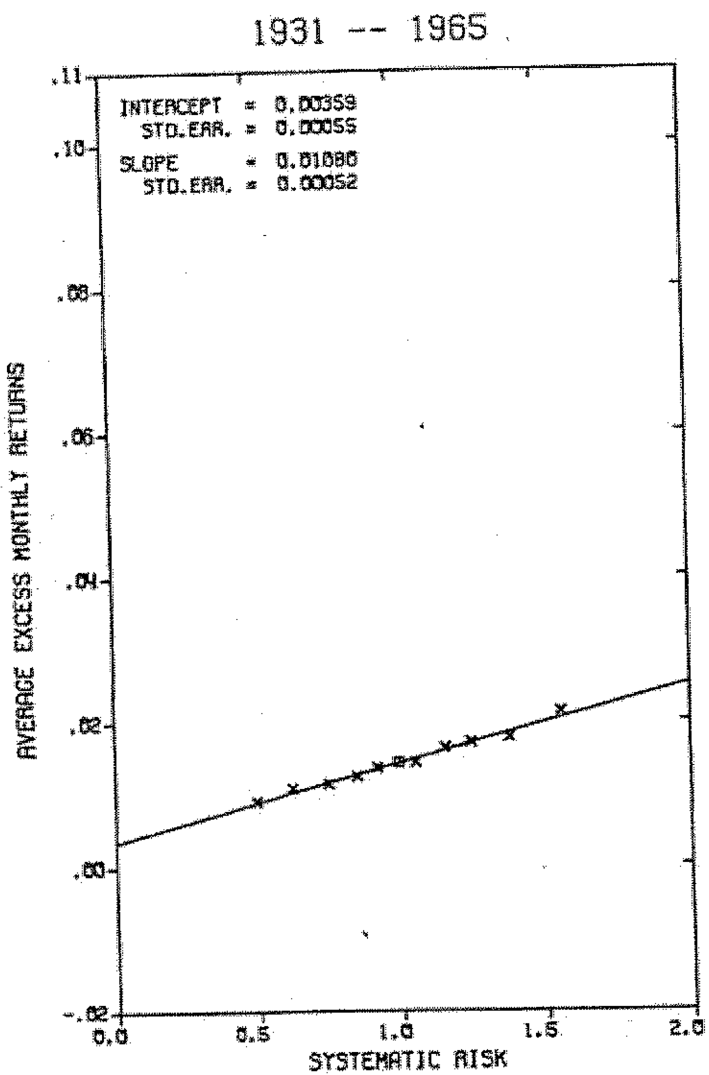


FIGURE 1 Average excess monthly returns versus systematic risk for the 35-year period 1931–65 for each of ten portfolios (denoted by ×) and the market portfolio (denoted by ☐).

return and risk of the market portfolio (which by the definition of β is equal to unity). The line represents the least-squares estimate of the relation between $\bar{R}_K$ and $\hat{\beta}_K$. The "intercept" and "slope" (with their respective standard errors given in parentheses) in the upper portion of the figure are the coefficients γ_0 and γ_1 of (10).

The traditional form of the asset pricing model implies that the intercept γ_0 in (10) should be equal to zero and the slope γ_1 should be equal to $\bar{R}_M$, the mean excess return on the market portfolio. Over this 35-year period, the average monthly excess return on the market portfolio $\bar{R}_M$, was 0.0142, and the theoretical values of the intercept and slope in Figure 1 are

$$\gamma_0 = 0 \qquad \text{and} \qquad \gamma_1 = 0.0142$$

The "t" values

$$t(\hat{\gamma}_0) = \frac{\hat{\gamma}_0}{s(\hat{\gamma}_0)} = \frac{0.00359}{0.00055} = 6.52$$

$$t(\hat{\gamma}_1) = \frac{\gamma_1 - \hat{\gamma}_1}{s(\hat{\gamma}_1)} = \frac{0.0142 - 0.0108}{0.00052} = 6.53$$

seem to indicate the observed relation is significantly different from the theoretical one. However, as we shall see, because (9) is a misspecification of the process generating the data, these tests vastly overstate the significance of the results.

We also divided the 35-year interval into four equal subperiods, and Figures 2 through 5 present the plots of the $\bar{R}_K$ versus the $\hat{\beta}_K$ for each of these intervals. In order to obtain better estimates of the risk coefficients for each of the subperiods, we used the coefficients previously estimated over the entire 35-year period.[10] The graphs indicate that the relation between return and risk is linear but that the slope is related in a nonstationary way to the theoretical slope for each period. Note that the traditional model implies that the theoretical relationship (not drawn) always passes through the two points given by the origin (0, 0) and the average market excess returns represented by ☐ in each figure. In the first subperiod (see Fig. 2) the empirical slope is steeper than the theoretical slope and then becomes successively flatter in each of the following three periods. In the last subperiod (see Fig. 5) the slope $\hat{\gamma}_1$ even has the "wrong" sign.

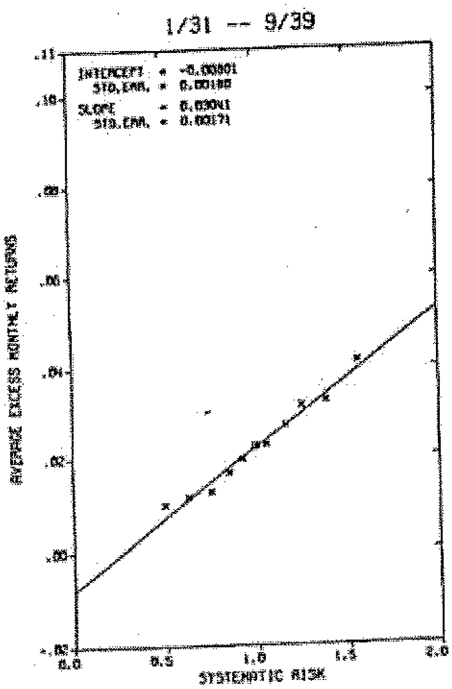


FIGURE 2 Average excess monthly returns versus systematic risk for the 105-month period January, 1931—September, 1939. Symbols as in Figure 1.

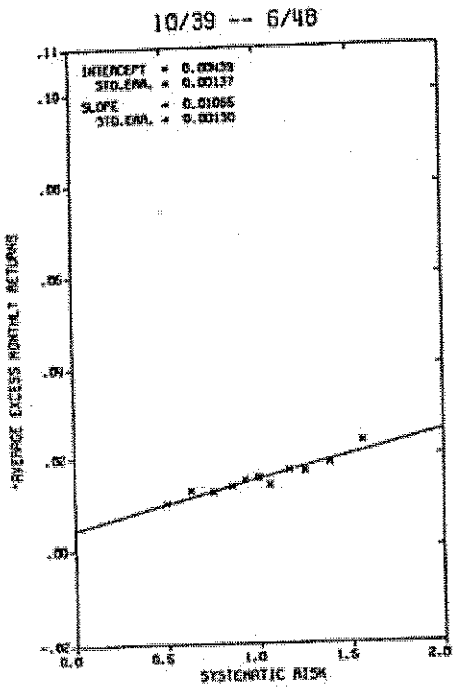


FIGURE 3 Average excess monthly returns versus systematic risk for the 105-month period October, 1939—June, 1948. Symbols as in Figure 1.

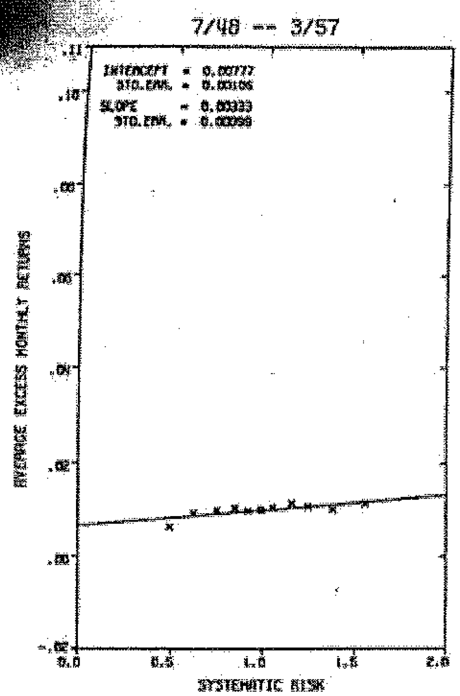


FIGURE 4 Average excess monthly returns versus systematic risk for the 105-month period July, 1948—March, 1957. Symbols as in Figure 1.

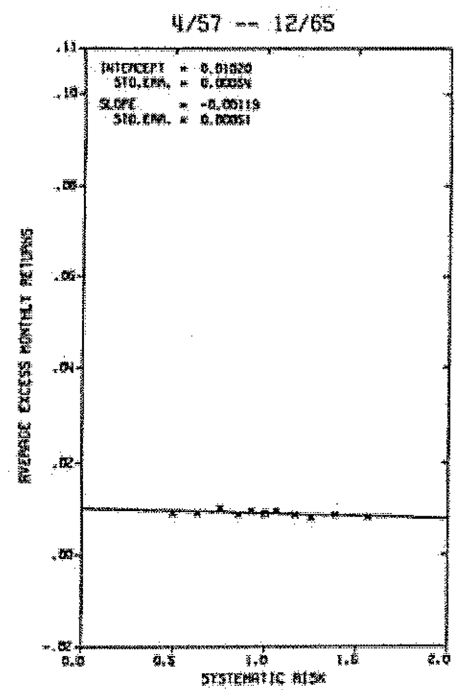
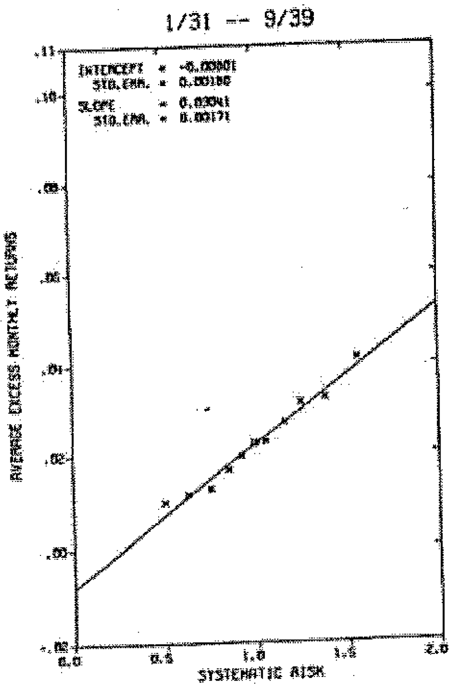


FIGURE 5 Average excess monthly returns versus systematic risk for the 105-month period April, 1957—December, 1965. Symbols as in Figure 1.



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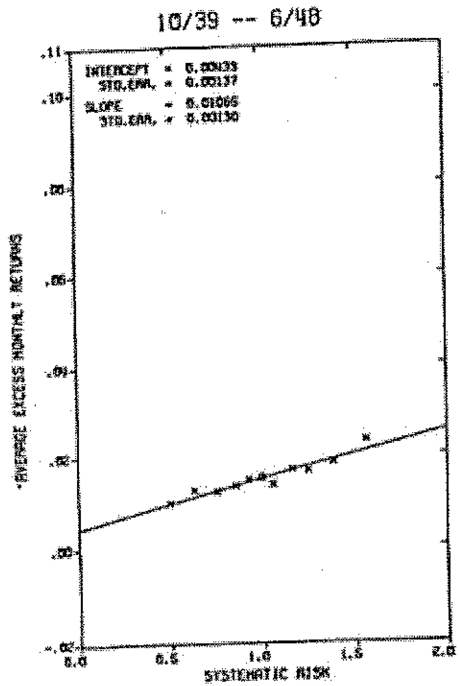

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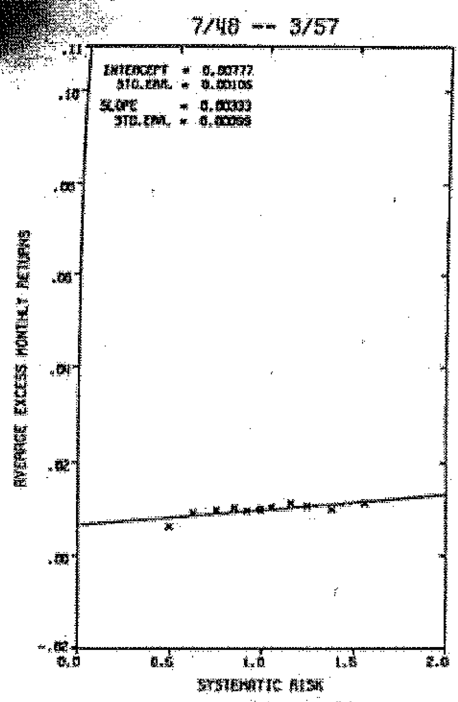

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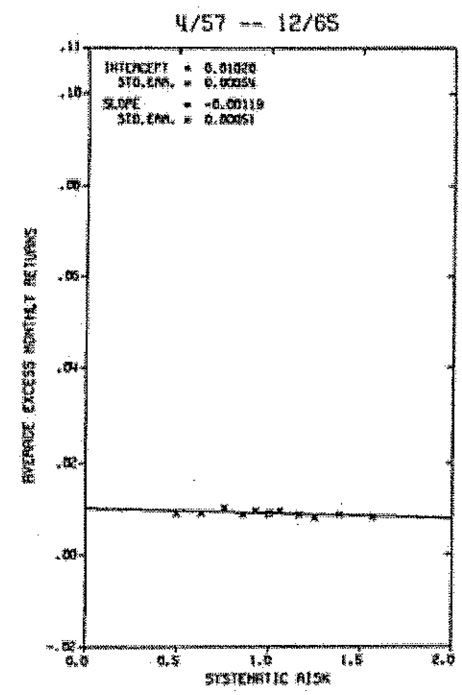

FIGURE 5 Average excess monthly returns versus systematic risk for the 105-month period April, 1957–December, 1965. Symbols as in Figure 1.

TABLE 4
Summary of Cross-sectional Regression Coefficients and Their t Values

	Time Period				
	Total Period	Subperiods			
	1/31–12/65	1/31–9/39	10/39–6/48	7/48–3/57	4/57–12/65
$\hat{\gamma}_0$	0.00359	−0.00801	0.00439	0.00777	0.01020
$\hat{\gamma}_1$	0.0108	0.0304	0.0107	0.0033	−0.0012
$\gamma_1 = \bar{R}_M$	0.0142	0.0220	0.0149	0.0112	0.0088
$t(\hat{\gamma}_0)$	6.52	−4.45	3.20	7.40	18.89
$t(\gamma_1 - \hat{\gamma}_1)$	6.53	−4.91	3.23	7.98	19.61

The coefficients $\hat{\gamma}_0$, $\hat{\gamma}_1$, γ_1 and the "t" values of $\hat{\gamma}_0$ and $\gamma_1 - \hat{\gamma}_1$ are summarized in Table 4 for the entire period and for each of the four subperiods. The smallest "t" value given there is 3.20, and all seem to be "significantly" different from their theoretical values. However, as we have already maintained, these "t" values are somewhat misleading because the estimated coefficients fluctuate far more in the subperiods than the estimated sampling errors indicate. This evidence suggests that the model given by (9) is misspecified. We shall now attempt to deal with this specification problem and to furnish an alternative formulation of the model.

IV. A Two-Factor Model

A. Form of the Model. As mentioned in the introduction, Black [1970] has shown under assumptions identical to that of the asset pricing model that, if riskless borrowing opportunities do not exist, the expected return on any asset j will be given by

$$E(\tilde{r}_j) = E(\tilde{r}_Z)(1-\beta_j) + E(\tilde{r}_M)\beta_j \tag{12}$$

where $\tilde{r}_Z$ represents the return on a "zero beta" portfolio—a portfolio whose covariance with the returns on the market portfolio $\tilde{r}_M$ is zero.[11]

Close examination of the empirical evidence from both the cross-sectional and the time series tests indicates that the results are consistent with a model that expresses the return on a security as a linear function of the market factor r_M, (with a coefficient of β_j) and a second factor r_Z, (with a coefficient of $1-\beta_j$). The function is

$$\tilde{r}_{jt} = \tilde{r}_{Zt}(1-\beta_j) + \tilde{r}_{Mt}\beta_j + \tilde{w}_{jt} \tag{13}$$

Because the coefficient of the second factor is a function of the security's β, we call this factor the beta factor. For a given holding period T, the average value of $\tilde{r}_{Zt}$ will determine the relation between $\hat{\alpha}$ and $\hat{\beta}$ for different securities or portfolios. If the data are being generated by the process given by (13) and if we estimate the single variable time series regression given by (6), then the intercept $\hat{\alpha}$ in that regression will be

$$\hat{\alpha} = (\bar{r}_Z - \bar{r}_F)(1-\hat{\beta}_j) = \bar{R}_Z(1-\hat{\beta}_j) \tag{14}$$

where $\bar{r}_Z = \Sigma_{t=1}^{T} \tilde{r}_{Zt}/T$ is the mean return on the beta factor over the period, $\bar{r}_F$ is the mean risk-free rate over the period, and $\bar{R}_Z$ is the difference between the two. Thus if $\bar{R}_Z$ is positive, high-beta securities will tend to have negative $\hat{\alpha}$'s, and low-beta securities will tend to have positive $\hat{\alpha}$'s. If $\bar{R}_Z$ is negative, high-beta securities will tend to have positive $\hat{\alpha}$'s, and low-beta securities will tend to have negative $\hat{\alpha}$'s.

In addition, if we estimate the cross-sectional regression given by (10), the expanded two-factor model implies that the true values of the parameters γ_0 and γ_1 will not be equal to zero and $\bar{R}_M$ but instead will be given by

$$\gamma_0 = \bar{R}_Z \qquad \text{and} \qquad \gamma_1 = \bar{R}_M - \bar{R}_Z$$

Hence if $\bar{R}_Z$ is positive, γ_0 will be positive and γ_1 will be less than $\bar{R}_M$. If $\bar{R}_Z$ is negative, γ_0 will be negative and γ_1 will be greater than $\bar{R}_M$.

Thus we can interpret Table 3 and Figures 2 through 5 as indicating that $\bar{R}_Z$ was negative in the first subperiod and became positive and successively larger in each of the following subperiods.

Examining (12), we see that the traditional form of the capital asset pricing model, as expressed in (1), is consistent with the present two-factor model if

$$E(\tilde{R}_Z) = 0 \tag{15}$$

and (questions of statistical efficiency aside) any test for whether α_K for a portfolio is zero is equivalent to a test for whether $E(\tilde{R}_Z)$ is zero. The results in Table 3 suggest that $E(\tilde{R}_Z)$ is not stationary through time. For example, $\hat{\alpha}_K$ for the lowest risk portfolio (number 10) is negative in the first subperiod and positive in the last subperiod, with a "t" value of 8. Thus it is unlikely that the true values of α_K were the same in

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where $\bar{r}_Z = \sum_{t=1}^{T} \tilde{r}_{Zt}/T$ is the mean return on the beta factor over the period, $\bar{r}_F$ is the mean risk-free rate over the period, and $\bar{R}_Z$ is the difference between the two. Thus if $\bar{R}_Z$ is positive, high-beta securities will tend to have negative $\hat{\alpha}$'s, and low-beta securities will tend to have positive $\hat{\alpha}$'s. If $\bar{R}_Z$ is negative, high-beta securities will tend to have positive $\hat{\alpha}$'s, and low-beta securities will tend to have negative $\hat{\alpha}$'s.

In addition, if we estimate the cross-sectional regression given by (10), the expanded two-factor model implies that the true values of the parameters γ_0 and γ_1 will not be equal to zero and $\bar{R}_M$ but instead will be given by

$$\gamma_0 = \bar{R}_Z \qquad \text{and} \qquad \gamma_1 = \bar{R}_M - \bar{R}_Z$$

Hence if $\bar{R}_Z$ is positive, γ_0 will be positive and γ_1 will be less than $\bar{R}_M$. If $\bar{R}_Z$ is negative, γ_0 will be negative and γ_1 will be greater than $\bar{R}_M$.

Thus we can interpret Table 3 and Figures 2 through 5 as indicating that $\bar{R}_Z$ was negative in the first subperiod and became positive and successively larger in each of the following subperiods.

Examining (12), we see that the traditional form of the capital asset pricing model, as expressed in (1), is consistent with the present two-factor model if

$$E(\tilde{R}_Z) = 0 \qquad (15)$$

and (questions of statistical efficiency aside) any test for whether α_K for a portfolio is zero is equivalent to a test for whether $E(\tilde{R}_Z)$ is zero. The results in Table 3 suggest that $E(\tilde{R}_Z)$ is not stationary through time. For example, $\hat{\alpha}_K$ for the lowest risk portfolio (number 10) is negative in the first subperiod and positive in the last subperiod, with a "t" value of 8. Thus it is unlikely that the true values of α_K were the same in the two subperiods (each of which contains 105 observations) and thus unlikely that the true values of $E(\tilde{R}_Z)$ were the same in the two subperiods, and we shall derive formal tests of this proposition below.

The existence of a factor $\tilde{R}_Z$ with a weight proportional to $1-\beta_j$ in most securities is also suggested by the unreasonably high "t" values[12] obtained in the cross-sectional regressions, as given in Table 4. Since γ_0 and γ_1 involve $\tilde{R}_Z$, which is a random variable from cross section to cross section, and since no single cross-sectional run can provide any information whatsoever on the variability of $\tilde{R}_Z$, this element is totally ignored in the usual calculation of the standard errors of γ_0 and γ_1. It is not surprising, therefore, that each individual cross-sectional result seems so highly significant but so totally different from any other cross-sectional relationship. Of course the presence of infinite-variance stable distributions will also contribute to this type of phenomenon.

In addition, in an attempt to determine whether the linearity observed in Figures 1 through 5 was in some way due to the averaging involved in the long periods presented there, we replicated those plots for our ten portfolios for 17 separate two-year periods from 1932 to 1965. These results, which also exhibit a remarkable linearity, are presented in Figures 6a and 6b. Since the evidence seems to indicate that the all-risky asset model describes the data better than the traditional model, and since the definition of our "riskless" interest rate was somewhat arbitrary in any case, these plots were derived from calculations on the raw return data with no reference whatsoever to the "risk-free" rate defined earlier (including the recalculation of the ten portfolios and the estimation of the β_j). Figures 7 through 11 contain a replication of Figures 1 through 5 calculated on the same basis. These results indicate that the basic findings summarized previously cannot be be attributed to misspecification of the riskless rate.

In summary, then, the empirical results suggest that the returns on different securities can be written as a linear function of two factors as given in (13), that the expected excess return on the beta factor $\tilde{R}_Z$ has in general been positive, and that the expected return on the beta factor has been higher in more recent subperiods than in earlier subperiods.

B. Explicit Estimation of the Beta Factor and a Crucial Test of the Model. Since the traditional form of the asset

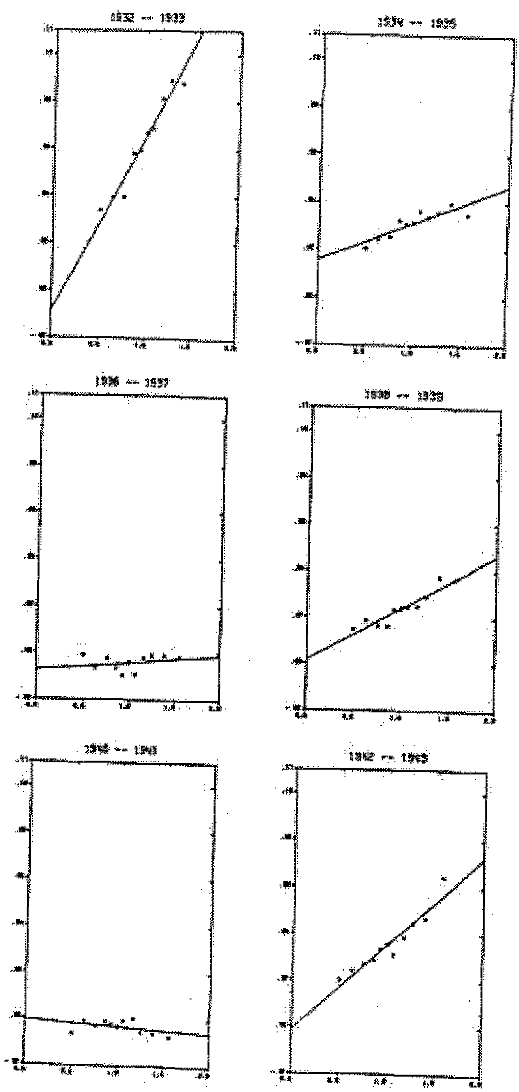
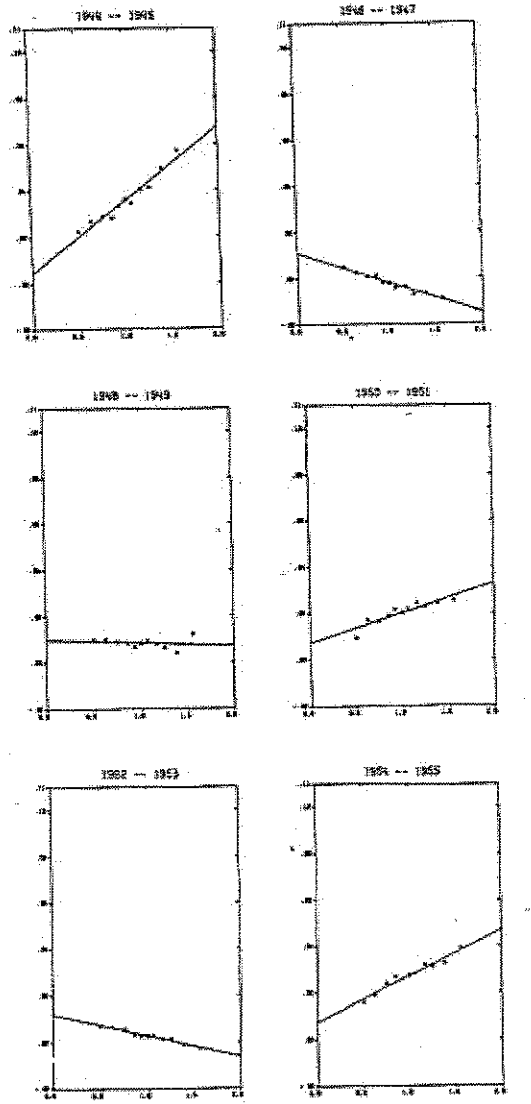


FIGURE 6 Average monthly returns versus systematic risk for 17 non-overlapping two-year periods from 1932 to 1965.

FIGURE 6 (continued)



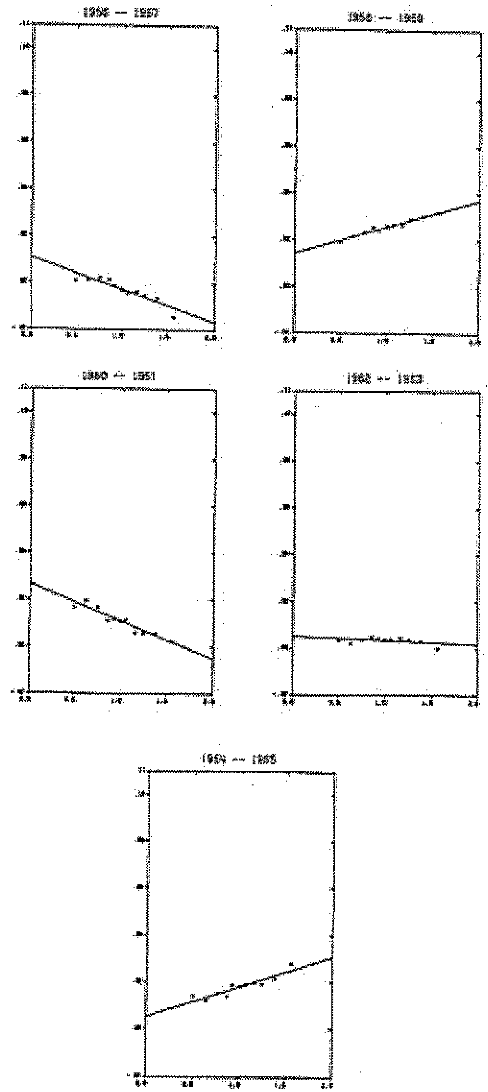


FIGURE 6 (continued)

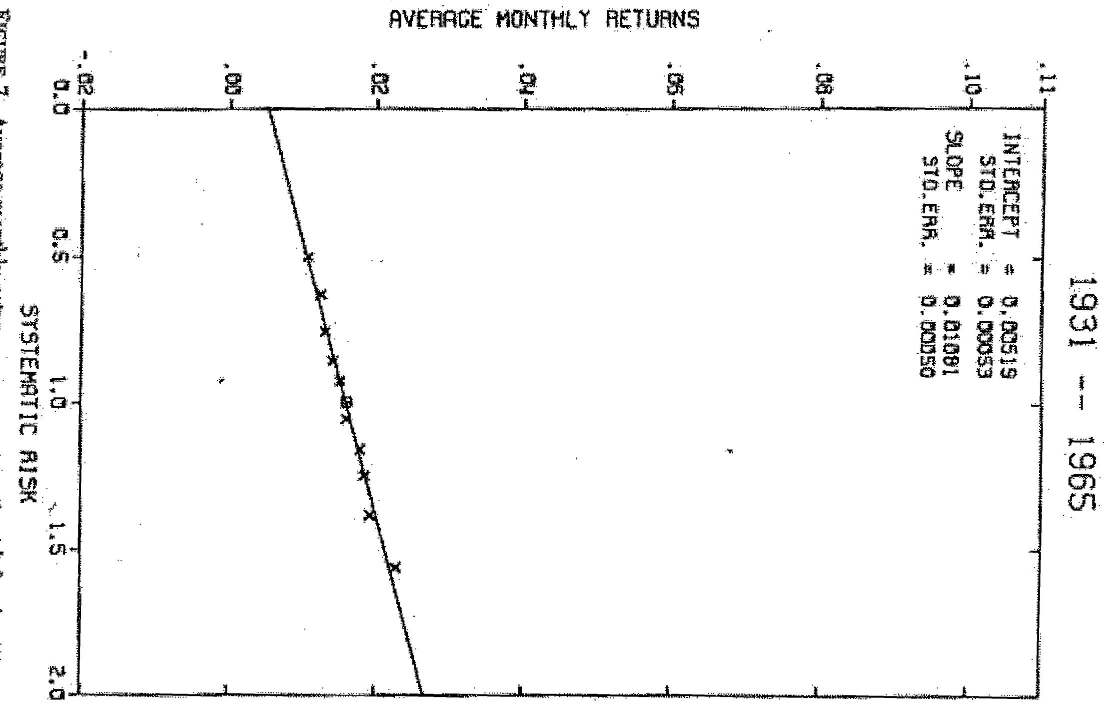


FIGURE 7 Average monthly returns versus systematic risk for the 35-year period 1931–65 for the ten portfolios and the market portfolio.

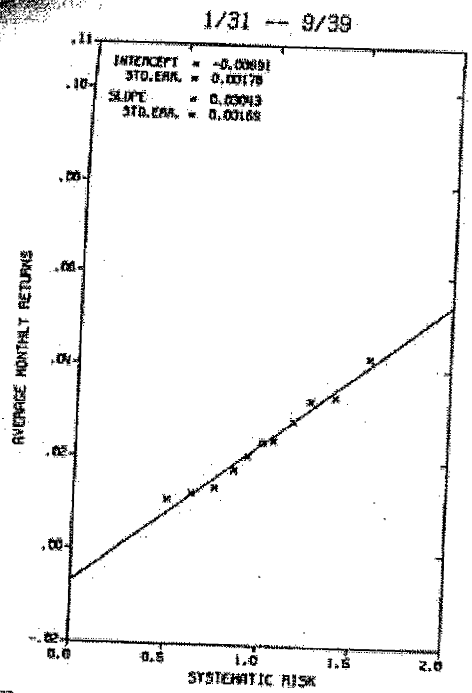


FIGURE 8 Average monthly returns versus systematic risk for the 105-month period January, 1931–September, 1939.

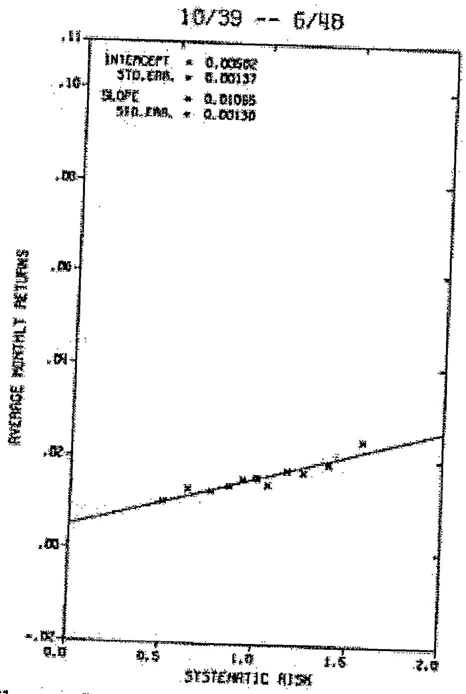


FIGURE 9 Average monthly returns versus systematic risk for the 105-month period October, 1939–June, 1948.

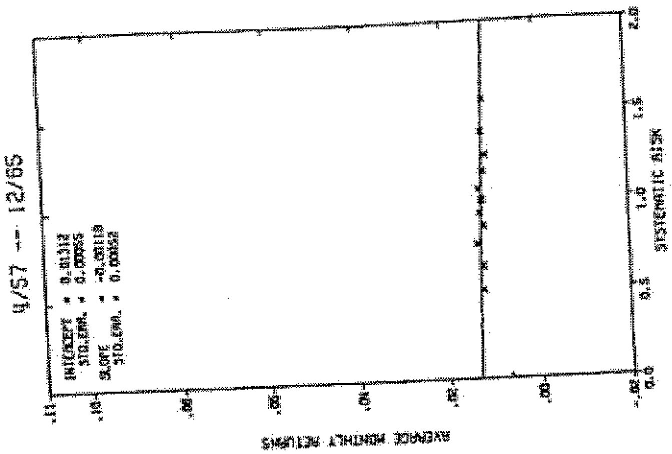


FIGURE 11 Average monthly returns versus systematic risk for the 105-month period April, 1957–December, 1965.

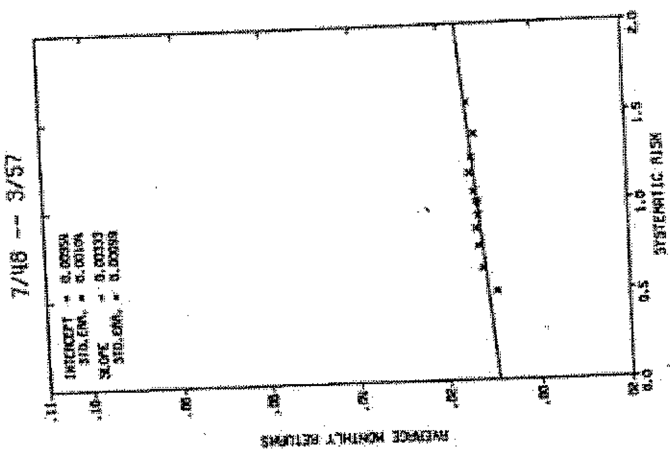


FIGURE 10 Average monthly returns versus systematic risk for the 105-month period July, 1948–March, 1957.

pricing model is consistent with the existence of the beta factor as long as the excess returns on the beta factor have a zero mean,[13] our purpose here is to provide a procedure for explicit estimation of the time series of the factor. Given such a time series, we can then make explicit estimates of the significance of its mean excess return rather than depending mainly on an examination of the $\hat{\alpha}_j$ for high- and low-beta securities. Solving (13) for $\tilde{r}_{Zt}$ plus the error term, we have an estimate $\hat{r}_{Zjt}$, of $\tilde{r}_{Zt}$

$$\hat{r}_{Zjt} = \frac{1}{(1-\beta_j)}[\tilde{r}_j - \beta_j \tilde{r}_{Mt}] = \tilde{r}_{Zt} + \tilde{u}_{jt} \qquad (16)$$

where $\tilde{u}_{jt} = \tilde{\omega}_{jt}/(1-\beta_j)$. We subscript $\hat{r}_{Zjt}$ by j to denote that this is an estimate of $\tilde{r}_{Zt}$ obtained from the jth asset or portfolio. Now, since we can obtain as many separate estimates of $\tilde{r}_{Zt}$ as we have securities or portfolios, we can formulate a combined estimate

$$r^*_{Zt} = \sum_j h_j \hat{r}_{Zjt} \qquad (17)$$

which is a linear combination of the $\hat{r}_{Zjt}$, to provide a much more efficient estimate of $\tilde{r}_{Zt}$. The problem is to find that linear combination of the $\hat{r}_{Zjt}$ which minimizes the error variance in the estimate of $\tilde{r}_{Zt}$. That is, we want to

$$\min_{h_j} E(r^*_{Zt} - \tilde{r}_{Zt})^2 = \min_{h_j} E\Big(\sum_j h_j \hat{r}_{Zjt} - \tilde{r}_{Zt}\Big)^2$$

subject to $\sum_j h_j = 1$, since we want an unbiased estimate. From the Lagrangian we obtain the first-order conditions

$$h_j \sigma^2(\tilde{u}_j) - \lambda = 0 \qquad j = 1, 2, \ldots, N \qquad (18)$$

where λ is the Lagrangian multiplier and N is the total number of securities or nonoverlapping portfolios. These conditions imply that

$$\frac{h_j}{h_i} = \frac{\sigma^2(\tilde{u}_i)}{\sigma^2(\tilde{u}_j)} \qquad \text{for all } i \text{ and } j \qquad (19)$$

which implies that the optimal weights h_j are proportional to $1/\sigma^2(\tilde{u}_j)$. That is,

$$h_j = \frac{K}{\sigma^2(\tilde{u}_j)} \qquad j = 1, 2, \ldots, N \qquad (20)$$

where $K = 1/\Sigma_j [1/\sigma^2(\tilde{u}_j)]$ is a normalizing constant. But from the definition of $\tilde{u}_j$ we know that $\sigma^2(\tilde{u}_j) = \sigma^2(\tilde{w}_j)/(1-\beta_j)^2$, so

$$h_j = \frac{K(1-\beta_j)^2}{\sigma^2(\tilde{w}_j)} \qquad (21)$$

Equation (21) makes sense, for we are then weighting the estimates in proportion to $(1-\beta_j)^2$ and inversely proportional to $\sigma^2(\tilde{w}_j)$. However, since we cannot observe $\sigma^2(\tilde{w}_j)$ directly,[14] we are forced, for lack of explicit estimates, to assume that the $\sigma^2(\tilde{w}_j)$ are all identical and to use as our weights

$$h_j = K'(1-\beta_j)^2 \qquad (22)$$

where $K' = 1/\Sigma_j(1-\beta_j)^2$.

Equations (17) and (22) thus provide an unbiased and (approximately) efficient procedure for estimating $\tilde{r}_{Zt}$ utilizing all available information. However, there is a problem of bias involved in actually applying this procedure to the security data. The coefficient β_j is of course unobservable, and in general if we use our estimates $\hat{\beta}_j$ in the weighting procedure we will introduce bias into our estimate of $\tilde{r}_{Zt}$. To understand this, recall that $\hat{\beta}_j = \beta_j + \epsilon_j$, substitute this into (13) with the necessary additions and subtractions, and solve for the estimate

$$\hat{r}_{Zjt} = \frac{\tilde{r}_{jt} - \hat{\beta}_j \tilde{r}_{Mt}}{(1-\hat{\beta}_j)} = \frac{\tilde{r}_{Zt}(1-\beta_j) + \tilde{w}_j - \tilde{\epsilon}_j \tilde{r}_{Mt}}{(1-\hat{\beta}_j)}$$

Substituting this into (17), using (22), rearranging terms, and taking the probability limit, we have

$$\operatorname*{plim}_{N\to\infty} \hat{r}^{*}_{Zt} = \frac{C_t[S^2(\beta)+(1-\bar{\beta})^2] + \sigma^2(\tilde{\epsilon})r_{Mt}}{[S^2(\beta)+(1-\bar{\beta})^2]+\sigma^2(\tilde{\epsilon})} \qquad (23)$$

where $S^2(\beta)$ is the cross-sectional variance of the β_j and $\bar{\beta}$ is the mean. However, the average standard deviation of the measurement error $\sigma(\tilde{\epsilon}_j)$ for our portfolios is only 0.0101 (implying an average variance on the order of 0.0001), and since $S^2(\beta)$ for our ten portfolios is 0.1144 and $\bar{\beta} = 1.007$, this bias will be negligible and we shall ignore it.

To begin, let us apply the foregoing procedures to the excess return data to obtain an estimate of $\tilde{R}_{Zt} = \tilde{r}_{Zt} - r_{Ft}$, the excess return on the beta factor. Substituting R_{jt} for r_{jt} and R_{Mt} for r_{Mt} in (16), the $\hat{R}_{Zjt}$ were estimated for each of our ten

portfolios. These were then averaged to obtain the estimate

$$R^{*}_{Zt} = \sum_j h_j \hat{R}_{Zjt} = K' \sum_j (1-\hat{\beta}_j)^2 \left[\frac{\tilde{R}_{jt} - \hat{\beta}_j R_{Mt}}{1-\hat{\beta}_j}\right]$$

for each month t. The average of the R^{*}_{Zt} for the entire period and for each of the four subperiods are given in Table 5, along with their t values. Table 5 also presents the serial correlation

TABLE 5

Estimated Mean Values and Serial Correlation of the Excess Returns on the Beta Factor over the Entire Periods and the Four Subperiods*

Period	$\bar{R}^{*}_{Z}$	$\sigma(R^{*}_{Z})$	$t(\bar{R}^{*}_{Z})$	$r(R^{*}_{Zt}, R^{*}_{Z,t-1})$	$t(r)$
1/31–12/65	0.00338	0.0426	1.62	0.113	2.33
1/31–9/39	−0.00849	0.0641	−1.35	0.194	1.49
10/39–6/48	0.00420	0.0455	0.946	0.208	2.19
7/48–3/57	0.00782	0.0199	4.03	−0.181	−1.87
4/57–12/65	0.00997	0.0228	4.49	0.414	4.60

*The values of $t(\bar{R}^{*}_{Z})$ were calculated under the assumption of normal distributions.

coefficients $r(R^{*}_{Zt}, R^{*}_{Z,t-1})$.[15] Note that the mean value $\bar{R}^{*}_{Z}$ of the beta factor over the whole period has a "t" value of only 1.64. However, as hypothesized earlier, it was negative in the first subperiod and positive and successively larger in each of the following subperiods. Moreover, in the last two subperiods its "t" values were 4.03 and 4.49, respectively. These results seem to us to be strong evidence favoring rejection of the traditional form of the asset pricing model which says that $\bar{R}^{*}_{Z}$ should be insignificantly different from zero.

In order to be sure that the significance levels reported in Table 5 are not spurious and due only to the misapplication of normal distribution theory to a situation in which the variables may actually be distributed according to the infinite variance members of the stable class of distributions. We have performed the significance tests using the stable distribution theory outlined by Fama and Roll [1968]. Table 6 presents the standardized variates (i.e., the "t" values) for $\bar{R}^{*}_{Z}$ for each of the sample periods given in Table 5 along with the "t" values at the 5% level of significance (two-tail) under

TABLE 6

Normalized Variate [i.e., t Value $t(\hat{R}_Z^e, \alpha) = \hat{R}_Z^e/\sigma(\hat{R}_Z^e, \alpha)$] of the Excess Return on the Beta Factor Under the Assumption of Infinite Variance Symmetric Stable Distributions

	α					
Period	1.5	1.6	1.7	1.8	1.9	2.0
1/31–12/65	1.33	1.71	2.14	2.61	3.11*	3.65*
1/31–9/39	−1.11	−1.44	−1.71	−2.00	−2.29	−2.58
10/39–6/48	0.82	1.00	1.18	1.38	1.58	1.79
7/48–3/57	2.60	3.16	3.75*	4.37*	5.00*	5.66*
4/57–12/65	3.05	3.70	4.40*	5.11*	5.86*	6.63*
t Value at the 5% level of significance (two-tail)†	4.49	3.90	3.48	3.16	2.93	2.77

Note: α = characteristic exponent, $\sigma(\hat{R}_Z^e, \alpha)$ = dispersion parameter of the distribution.
†Cf. Fama and Roll [1968].

alternative assumptions regarding the value of α, the charac- teristic exponent of the distribution. The smaller is α, the higher are the extreme tails of the probability distribution; $\alpha = 2$ corresponds to the normal distribution and $\alpha = 1$ to the Cauchy distribution. Evidence presented by Fama [1965] seems to indicate that α is probably in the range 1.7 to 1.9 for common stocks. We have not attempted to obtain explicit estimates of α for our data, since currently known estimation procedures are quite imprecise and require extremely large samples (up to 2,000 observations). Therefore we have simply presented the "t" values calculated according to the proce- dures suggested by Fama and Roll [1968] for six values of α ranging from 1.5 to 2.0. The coefficients in Table 6 that are significant at the 5% level are noted with an asterisk. Clearly, if α is greater than 1.7, the results confirm the impression gained from the normal tests given in Table 5.

Note that the estimates in Tables 5 and 6 were obtained from the excess return data; therefore, although the figures are of interest for testing the traditional form of the model, they do not give the appropriate level of the mean value of $\bar{r}_Z$. The estimates $\bar{r}_Z^e$ and $\bar{r}_M$ obtained from the total return data used in Figures 6 through 11 appear in Table 7, along with $\sigma(\bar{r}_Z^e)$ and $\sigma(\bar{r}_M)$ and the estimated values of γ_0 and γ_1 for the cross-sectional regressions [given by (10)] for each of the var-

TABLE 7

Mean and Standard Deviation of Returns on the Zero Beta and Market Portfolios and the Cross-sectional Regression Coefficients [from (10)] for Various Sample Periods

Time Period	$\bar{r}_Z^e$	$\bar{r}_M$	$\bar{r}_M - \bar{r}_Z^e$	$\sigma(r_Z^e)$	$\sigma(r_M)$	$\hat{\gamma}_0$*	$\hat{\gamma}_1$*
1931–1965	0.004980	0.015800	0.010820	0.042584	0.089054	0.005190	0.010807
1/31–9/39	−0.007393	0.023067	0.030459	0.063927	0.158707	−0.006913	0.030429
10/39–6/48	0.004833	0.015487	0.010665	0.045520	0.062414	0.005021	0.010652
7/48–3/57	0.009591	0.012915	0.003324	0.019895	0.036204	0.009537	0.003327
4/57–12/65	0.012889	0.011723	−0.001167	0.022631	0.038470	0.013115	−0.001181
1931	−0.047243	−0.037573	0.009669	0.040827	0.152024	−0.045492	0.009557
1932–1933	−0.009180	0.065574	0.074754	0.059741	0.245281	−0.008286	0.074696
1934–1935	0.015549	0.031250	0.015701	0.048551	0.097739	0.015542	0.015702
1936–1937	−0.007749	−0.004538	0.005211	0.032589	0.084786	−0.007336	0.003194
1938–1939	0.001919	0.024436	0.022517	0.100490	0.147129	0.001514	0.022543
1940–1941	−0.001308	−0.003902	−0.002596	0.043481	0.072454	−0.000646	−0.002638
1942–1943	−0.009898	0.035782	0.036780	0.066552	0.066451	−0.001069	0.036784
1944–1945	0.004511	0.036117	0.031507	0.032522	0.043560	0.004451	0.031517
1946–1947	0.010153	−0.002357	−0.013010	0.033074	0.056139	0.010946	−0.013061
1948–1949	0.009721	0.008529	−0.001192	0.019590	0.051471	0.009709	−0.001191
1950–1951	0.007163	0.020253	0.013090	0.028656	0.039764	0.007215	0.013087
1952–1953	0.012258	0.003054	−0.009204	0.014559	0.026896	0.012050	−0.009191
1954–1955	0.007432	0.027266	0.019834	0.019232	0.030804	0.007392	0.019836
1956–1957	0.010463	−0.003097	−0.013559	0.017638	0.032340	0.010555	−0.013565
1958–1959	0.014582	0.025060	0.011478	0.019982	0.028261	0.014205	0.011502
1960–1961	0.026825	0.010867	−0.015958	0.023178	0.036505	0.026753	−0.015953
1962–1963	0.004300	0.002728	−0.001571	0.026231	0.052144	0.005054	−0.001620
1964–1965	0.005032	0.017771	0.012738	0.014433	0.026761	0.005519	0.012707

*Cf. eq. (10).

ious sample periods portrayed in Figures 6 through 11. (Recall that the two-factor model implies $\gamma_0 = \bar{r}_Z$ and $\gamma_1 = \bar{r}_M - \bar{r}_Z$.) One additional item of interest in judging the importance of the beta factor in the determination of security returns is its standard deviation relative to that of the market returns. As Table 7 reveals, $\sigma(\tilde{r}_Z^e)$ is roughly 50% as large as $\sigma(\tilde{r}_M)$. Comparison of $\bar{r}_Z^e$ and $\bar{r}_M$ in Table 7 for the four 105-month subperiods indicates that the mean returns on the beta factor were approximately equal to the average market returns in the last two periods covering the interval July, 1948–December, 1965. Apparently, then, the relative magnitudes of $\bar{r}_Z^e$ and $\bar{r}_M$ indicate that the beta factor is economically as well as statistically significant.

V. *Conclusion*

The traditional form of the capital asset pricing model states that the expected excess return on a security is equal to its level of systematic risk, β, times the expected excess return on the market portfolio. That is, in capital market equilibrium, prices of assets adjust such that

$$E(\tilde{R}_j) = \gamma_1 \beta_j \tag{24}$$

where $\gamma_1 = E(\tilde{R}_M)$, the expected excess return on the market portfolio.

An alternative hypothesis of the pricing of capital assets arises from the relaxation of one of the assumptions of the tranditional form of the capital asset pricing model. Relaxation of the assumption that riskless borrowing and lending opportunities are available leads to the formulation of the two-factor model. In equilibrium, the expected returns $E(\tilde{r}_j)$ on an asset will be given by

$$E(\tilde{r}_j) = E(\tilde{r}_Z) + [E(\tilde{r}_M) - E(\tilde{r}_Z)]\beta_j \tag{25}$$

where $E(\tilde{r}_Z)$ is the expected return on a portfolio that has a zero covariance (and thus $\beta_Z = 0$) with the return on the market portfolio $\tilde{r}_M$. In the context of this model, the return on 30-day Treasury Bills (which we have used as a proxy for a "riskless" rate) simply represents the return on a particular asset in the system. Thus, subtracting r_F from both sides of (25), we can rewrite (25) in terms of "excess" returns as

$$E(\tilde{R}_j) = \gamma_0 + \gamma_1 \beta_j \tag{26}$$

where $\gamma_0 = E(\tilde{R}_Z)$ and $\gamma_1 = E(\tilde{R}_M) - E(\tilde{R}_Z)$.

The traditional form of the asset pricing model implies that $\gamma_0 = 0$ and $\gamma_1 = E(\tilde{R}_M)$ and the two-factor model implies that $\gamma_0 = E(\tilde{R}_Z)$, which is not necessarily zero and that $\gamma_1 = E(\tilde{R}_M) - E(\tilde{R}_Z)$. In addition, several other models arise from relaxing some of the assumptions of the traditional asset pricing model which imply $\gamma_0 \neq 0$ and $\gamma_1 \neq E(R_M)$. These models involve explicit consideration of the problems of measuring R_M, the existence of nonmarketable assets, and the existence of differential taxes on capital gains and dividends, and we shall briefly outline them. Our main emphasis has been to test the strict traditional form of the asset pricing model; that is, is $\gamma_0 \neq 0$? We have made no attempt to provide direct tests of these other alternative hypotheses.

To test the traditional model, we used all securities listed on the New York Stock Exchange at any time in the interval between 1926 and 1966. The problem we faced was to obtain efficient estimates of the mean of the beta factor and its variance. It would be possible to test the alternative hypotheses by selecting one security at random and estimating its beta from the time series and ascertaining whether its mean return was significantly different from that predicted by the traditional form of the capital asset pricing model. However, this would be a very inefficient test procedure.

To gain efficiency, we grouped the securities into ten portfolios in such a way that the portfolios had a large spread in their β's. However, we knew that grouping the securities on the basis of their estimated β's would not give unbiased estimates of the portfolio "Beta," since the β's used to select the portfolios would contain measurement error. Such a procedure would introduce a selection bias into the tests. To eliminate this bias we used an instrumental variable, the previous period's estimated beta, to select a security's portfolio grouping for the next year. Using these procedures, we constructed ten portfolios whose estimated β's were unbiased estimates of the portfolio "Beta." We found that much of the sampling variability of the β's estimated for individual securities was eliminated by using the portfolio groupings. The β's of the portfolios constructed in this manner ranged from 0.49 to 1.5, and the estimates of the portfolio β's for the subperiods exhibited considerable stationarity.

The time series regressions of the portfolio excess returns on the market portfolio excess returns indicated that high-beta securities had significantly negative intercepts and low-beta securities had significantly positive intercepts, contrary to the predictions of the traditional form of the model. There was also considerable evidence that this effect became stronger through time, being strongest in the 1947–65 period. The cross-sectional plots of the mean excess returns on the portfolios against the estimated β's indicated that the relation between mean excess return and β was linear. However, the intercept and slope of the cross-sectional relation varied in different subperiods and were not consistent with the traditional form of the capital asset pricing model. In the two prewar 105-month subperiods examined, the slope was steeper in the first period than that predicted by the traditional form of the model, and it was flatter in the second period. In each of the two 105-month postwar periods it was considerably flatter than predicted. From the evidence of both the time series and cross-sectional runs, we were led to reject the hypothesis that γ_0 in (26) was equal to zero; we therefore concluded that the traditional form of the asset pricing model is not consistent with the data.

We also attempted to make explicit estimates of the time series of returns on the beta factor in order to obtain a more efficient estimate of its mean and variance and thereby enable ourselves to directly test whether or not the mean excess return on the beta factor was zero. We derived a minimum-variance, unbiased linear estimator of the returns on the β factor using our portfolio return data. We showed that, given the independence of the residuals the optimum estimator requires knowledge of the unobservable residual variances of each of the portfolios but that this problem could be avoided if they were equal. Under this assumption of equal residual variances, we estimated the time series of returns on the beta factor. However, if these assumptions (i.e., the independence of the residuals and equality of their variances) are not valid—and there is reason to believe they are not—more complicated procedures are necessary to obtain minimum-variance estimates. Such estimators, which use the complete covariance structure of the portfolio returns are available (although not derived here). However, we feel that a straightforward application of these procedures to the return data would result in the introduction of serious *ex post* bias in the estimates. Thus we have left a complete investigation of these problems, as well as more detailed tests of the two-factor model, to a future paper. In order to fully utilize the properties of the two-factor model in a number of applied problems (such as portfolio evaluation, see Jensen [1971] and various issues in valuation

theory), it will be necessary to have minimum-variance unbiased estimates of the time series of returns on the beta factor, and we hope to provide such estimates in the not-too-distant future.

The evidence obtained from the time series of returns on the beta factor indicated that the beta factor had a nonzero mean and that the mean was nonstationary over time. It seems to us that we have established the presence and significance of the beta factor in explaining security returns but, as mentioned earlier, we have not provided any direct tests aimed at explaining the existence of the beta factor. We have, however, suggested an economic rationale for why capital market equilibrium is consistent with the finding of this second factor. Black [1970] has shown that if riskless borrowing opportunities are not available, the equilibrium expected returns on an asset will be a linear function of two factors, one the β factor, the other the market factor.

In addition, Black and Jensen [1970] have demonstrated that if assets are omitted from the estimated market return, a model similar in some ways to the two-factor model would result. (Roll's analysis [1969] is relevant to this issue as well.) That is, it yields a model similar in structure to (26) and implies that $\gamma_0 \neq 0$. However, it is clear from Figures 6a and 6b and Table 7 that the beta factor (the intercept in the figures and γ_0 in Table 7) is highly variable and any alternative hypothesis must be consistent with this phenomenon. In other words, it is not sufficient for an alternative model to simply imply a nonzero but constant intercept in (26).

Others have provided alternative models that are similar in structure to the Black–Jensen results. For example, Mayers [1972] has developed an equilibrium model incorporating the existence of nonmarketable assets and has shown that the basic linear relation of the traditional model is unaltered, but the constant term γ_0 will be nonzero and γ_1 will not equal $E(R_M)$. The implications of his model for the structure of asset returns are virtually identical to those of the omitted assets model. Brennan [1970] has derived the equilibrium structure of security returns when the effects of a differential tax on dividends and capital gains are considered. He also concludes that the basic linearity of the traditional model is unchanged, but a nonzero constant term must be included and γ_1 will not equal $E(R_M)$. Black and Scholes [1970], however, have tested for the existence of dividend effects and have found that the differential tax on dividends and capital gains does not affect the structure of security returns and hence cannot explain the results reported here.

There are undoubtedly other economic hypotheses that are consistent with the findings of the existence of a second factor and consistent also with capital market equilibrium. Each hypothesis must be tested directly to determine whether it can account for the presence of the β factor. The Black–Scholes investigation of dividend effects is an example of such a test.

Appendix: The Grouping Solution to the Measurement Error Problem

Consider first the estimate $\hat{\beta}_j$ of the risk parameter in more detail. We will want to test (10) over some holding period, but we must first obtain the estimates of the risk parameter $\hat{\beta}_j$, from the time series equation given by (6). For simplicity, we shall assume that the $\tilde{e}_{jt}$ are independently distributed and have constant variance for all j and t. The least-squares estimate of β_j in (6), $\hat{\beta}_j$, is thus unbiased but subject to a sampling error $\tilde{\epsilon}_j$ as in (7), and the variance of the sampling error of the estimate $\hat{\beta}_j$ is

$$\text{var}(\hat{\beta}_j|\beta_j) = \sigma^2(\tilde{\epsilon}_j) = \frac{\sigma^2(\tilde{e}_j)}{\phi} = \frac{\sigma^2(\tilde{e})}{\phi} \qquad (A.1)$$

since $\sigma^2(\tilde{e}_j)$ was assumed equal for all j, and where

$$\phi = \sum_{t=1}^{T} (R_{Mt} - R_M)^2 \qquad (A.2)$$

is the sample sum of squared deviations of the independent variable over the T observations used in the time series estimating equation. Hence using (11) we see that

$$\text{plim}\ \hat{\gamma} = \frac{\gamma_1}{1 + \sigma^2(\tilde{e})/\phi S^2(\beta_j)} \qquad (A.3)$$

Let us assume that we can order the firms on the basis of β_j or on the basis of some instrumental variable highly correlated with β_j but independent of $\tilde{\epsilon}_j$. Given the N ordered firms, we group them into M equal-size contiguous subgroups, represented by $K = 1, 2, \ldots, M$ and calculate the average return

for each group for each month t according to

$$\tilde{R}_{Kt} = \frac{1}{L}\sum_{j=1}^{L} \tilde{R}_{Kjt} \qquad K = 1, 2, \ldots, M \qquad (A.4)$$

$$L = \frac{N}{M} \quad \text{(assumed to be integer)} \qquad (A.5)$$

where $\tilde{R}_{Kjt}$ is the return for month t for security j in group K. We then estimate the systematic risk of the group by applying least squares to

$$\tilde{R}_{Kt} = \alpha_K + \beta_K \tilde{R}_{Mt} + \tilde{e}_{Kt} \qquad \begin{cases} K = 1, 2, \ldots, M \\ t = 1, 2, \ldots, T \end{cases} \qquad (A.6)$$

where

$$\tilde{e}_{Kt} = \frac{1}{L}\sum_{j=1}^{L} \tilde{e}_{Kjt} \qquad (A.7)$$

and

$$\sigma^2(\tilde{e}_{Kt}) = \frac{\sigma^2(\tilde{e})}{L} \qquad (A.8)$$

Equation (A.8) holds, since, by assumption, the $\tilde{e}_{Kjt}$ are independently distributed with equal variance. The least-squares estimate of β_K in (A.6) is $\hat{\beta}_K = \beta_K + \tilde{\epsilon}_K$ and its variance is

$$\text{var}(\hat{\beta}_K|\beta_K) = \sigma^2(\tilde{\epsilon}_K) = \frac{\sigma^2(\tilde{e})}{\phi L} \qquad (A.9)$$

Now if we estimate the cross-sectional relation (10) using our M observations on $\bar{R}_K = \sum_{t=1}^{T} R_{Kt}/T$ and $\hat{\beta}_K$ for some holding period, we have

$$\bar{R}_K = \gamma_0 + \gamma_1\hat{\beta}_K + \bar{e}_K^* \qquad (A.10)$$

where

$$\bar{e}_K^* = \sum_{t=1}^{T} \frac{\tilde{e}_{Kt}^*}{T} = \bar{e}_K - \gamma_1\tilde{\epsilon}_K \qquad (A.11)$$

Now the large sample estimate of γ_1 in (A.10)

$$\text{plim}\ \hat{\gamma}_1 = \frac{\gamma_1}{1 + \dfrac{\text{plim}\ \sigma^2(\tilde{\epsilon}_K)}{\text{plim}\ S^2(\beta_K)}} = \frac{\gamma_1}{1 + \dfrac{\text{plim}\ \frac{1}{L}\sigma^2(\tilde{e})}{\phi S^2(\beta_K)}} = \gamma_1 \qquad (A.12)$$

since plim $\sigma^2(\tilde{e})/L = 0$ as long as $L \to \infty$ as $N \to \infty$, and this is true as long as we hold the number of groups constant. Thus these grouping procedures will result in unbiased estimates of the parameters of (10) for large samples. Note that $S^2(\beta_K)$, the cross-sectional sample variance of the true group risk coefficients, is constant with increasing L so long as securities are assigned to groups on the basis of the ranked $\hat\beta_j$. Note also, however, that if we randomly assigned securities to the M groups we would have plim $S^2(\beta_K) =$ plim $S^2(\beta_j)/L$ and (A.12) would thus be identical to (A.3). Therefore, random grouping would be of no help in eliminating the bias. As can be seen, the grouping procedures we have already described in the time series tests accomplish these results. While we expect these procedures to substantially reduce the bias[16] they cannot completely eliminate it in our case because the $\tilde e_j$ and therefore the $\tilde\epsilon_j$ are not independent across firms. However, as discussed in Section III, we expect the remaining bias to be trivially small.

Notes

1. Note that (4c) can be valid even though R_M is a weighted average of the R_j and therefore $\tilde R_M$ contains e_j. This may be clarified as follows: taking the weighted sum of (3) using the weights, X_j, of each security in the market portfolio we know by the definition of R_M that $\Sigma_j X_j R_j = R_M$, $\Sigma_j X_j \beta_j = 1$, and $\Sigma_j X_j e_j = 0$. Thus by the last equality we know $X_j e_j = -\Sigma_{i \neq j} X_i e_i$, and by substitution $E(e_j X_j e_j) = E[e_j(-\Sigma_{i\neq j} X_i e_i)] = X_j \sigma^2(e_j)$, and this implies condition (4c) since $E(e_j \tilde R_M) = X_j \sigma^2(e_j) + E[e_j \Sigma_{i \neq j} X_i e_i] = 0$.
2. We could develop the model and tests under the assumption of infinite variance stable distributions, but this would unnecessarily complicate some of the analysis. We shall take explicit account of these distributional problems in some of the crucial tests of significance in Section IV.
3. Recall that the R_j and R_M are defined as excess returns. The model can be formulated with r_{Ft} omitted from (6) and therefore assumed constant (then $\alpha_j = r_F(1-\beta_j)$) or included as a variable (as we have done), which strictly requires them to be known for all t. But experiments with estimates obtained with the inclusion of r_{Ft} as a variable in (6) yield results virtually identical to those obtained with the assumption of constant r_F [and hence the exclusion of r_{Ft} as a variable in (6)], so we shall ignore this problem here. See also Roll [1969] and Miller and Scholes [1972] for a thorough discussion of the bias introduced through misspecification of the riskless rate. Miller and Scholes conclude as we do that these problems are not serious.
4. Unbiased measurement errors in $\hat\beta_j$ cause severe difficulties with the cross-sectional tests of the model, and it is important to note that the time series form of the tests given by (6) are free of this source of bias. Unbiased measurement errors in $\hat\beta_j$, which is estimated simultaneously with α_j in the time series formulation, cause errors in the estimate of α_j but no systematic bias. Measurement errors in R_M may cause difficulties in both the cross-sectional and time series forms of the tests, but we shall ignore this issue here. For an analysis of the problems associated with measurement errors in R_M, see Black and Jensen [1970], Miller and Scholes [1972], and Roll [1969].

5. Treasury Bill rates were obtained from the Salomon Brothers & Hutzler quote sheets at the end of the previous month for the following month. Dealer commercial paper rates were obtained from Banking and Monetary Statistics, Board of Governors of the Federal Reserve System, Washington, D.C.
6. The choice of the number of portfolios is somewhat arbitrary. As we shall see below, we wanted enough portfolios to provide a continuum of observations across the risk spectrum to enable us to estimate the suspected relation between α_K and β_K.
7. Note that in order for the risk parameters of the groups β_K, to be stationary through time, our procedures require that firms leave and enter the sample symmetrically across the entire risk spectrum.
8. See also Miller and Scholes [1972], who provide a careful analysis (using procedures that are complementary to but much different from those suggested here) of many of these problems with cross-sectional tests and their implications for the interpretation of previous empirical work.
9. Intuitively one can see that the measurement error problem is virtually eliminated by these procedures because the errors in $\hat\beta_K$ become extremely small. Since the correlations $r(\tilde R_K, \tilde R_M)$ are so high in Table 2, the standard errors of estimate of the coefficients β_K are all less than 0.022, and nine of them are less than 0.012. The average standard error of estimate for the ten $\hat\beta_K$ coefficients given in Table 2 for the entire period was 0.0101 and the cross-sectional variance of the $\hat\beta_K$, $S^2(\hat\beta_K)$ was 0.1144. Hence, assuming $S^2(\hat\beta_K) = S^2(\beta_K)$, squaring 0.0101, and using (11), we see that our estimateof γ_1 will be greater than 99.9% of its true value.
10. The analysis was also performed where the coefficients were reestimated for each subperiod, and the results were very similar because the $\hat\beta_K$ were quite stable over time. We report these results since this estimation procedure seemed to result in a slightly larger spread of the $\hat\beta_K$ and since the increased sample sizes tends to further reduce the bias caused by the variance of the measurement error in $\hat\beta_K$.
11. In fact, there is an infinite number of such zero β portfolios. Of all such portfolios, however, r_Z is the return on the one with minimum variance. (We are indebted to John Long for the proof of this point.)
12. We say unreasonably high because the coefficients change from period to period by amounts ranging up to almost seven times their estimated standard errors.
13. Although the traditional form of the model is consistent with the existence of the β factor if its excess return had a zero mean, clearly it would not provide as complete an explanation of the structure of asset returns as a model that explicitly incorporated such a factor. In particular, under these circumstances the traditional form would provide an adequate description of security returns over fairly lengthy periods of time, say three years or more, but it would probably not furnish an adequate description of security returns over much shorter intervals.
14. We only observe the residual variance from the single variable regression, and, as we can see from (13), this will be equal to $(1-\beta_j)^2\sigma^2(\tilde r_Z) + \sigma^2(\tilde e_j)$. However, there are more general procedures for estimating $\tilde r_{Zt}$ in

the situation of nonidentical $\sigma^2(\tilde{u}_j)$ and $\text{cov}(\tilde{u}_j, \tilde{u}_i) = 0$ for $j \neq i$. But we leave an investigation of the properties of these estimates and some additional tests of the two-factor model for a future paper. If the assumption of identical $\sigma^2(\tilde{u}_j)$ made here is inappropriate, we still obtain an unbiased estimate of the $\bar{R}_Z$. However, the estimated variance of $\bar{R}_Z$, which is of some interest, will be greater than the true variance.

15. The serial correlation for the entire period appears significant. Indeed, the serial correlation in the last period, 0.414, seems very large and even highly significant, with a t value of 4.6. However, the coefficients in the earlier periods seem to border on significance but show an inordinately large amount of variability, thus indicating substantial nonstationarity.
16. As mentioned earlier, the choice of the number of groups is somewhat arbitrary and, for any given sample size, involves a tradeoff between the bias and the degree of sampling error in the estimates of the parameters in (10). In an unpublished study of the properties of the grouping procedures by simulation techniques, Jensen and Mendu Rao have found that, when $\sigma^2(\tilde{\epsilon}_j) = S^2(\hat{\beta}_j)$, the use of ten groups with a total sample size of $N = 400$, yields estimates of the coefficient γ_1 in (10) which, on the average, are biased downward by less than 0.9% of their true value and have a standard error of estimate about 50% higher than that obtained with ungrouped data. The ungrouped sample estimates were, of course, 50% of their true values on the average [as implied by (11) for these assumed variances].

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The Cross-Section of Expected Stock Returns

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ABSTRACT

Two easily measured variables, size and book-to-market equity, combine to capture the cross-sectional variation in average stock returns associated with market β, size, leverage, book-to-market equity, and earnings-price ratios. Moreover, when the tests allow for variation in β that is unrelated to size, the relation between market β and average return is flat, even when β is the only explanatory variable.

THE ASSET-PRICING MODEL OF Sharpe (1964), Lintner (1965), and Black (1972) has long shaped the way academics and practitioners think about average returns and risk. The central prediction of the model is that the market portfolio of invested wealth is mean-variance efficient in the sense of Markowitz (1959). The efficiency of the market portfolio implies that (a) expected returns on securities are a positive linear function of their market βs (the slope in the regression of a security's return on the market's return), and (b) market βs suffice to describe the cross-section of expected returns.

There are several empirical contradictions of the Sharpe-Lintner-Black (SLB) model. The most prominent is the size effect of Banz (1981). He finds that market equity, ME (a stock's price times shares outstanding), adds to the explanation of the cross-section of average returns provided by market βs. Average returns on small (low ME) stocks are too high given their β estimates, and average returns on large stocks are too low.

Another contradiction of the SLB model is the positive relation between leverage and average return documented by Bhandari (1988). It is plausible that leverage is associated with risk and expected return, but in the SLB model, leverage risk should be captured by market β. Bhandari finds, however, that leverage helps explain the cross-section of average stock returns in tests that include size (ME) as well as β.

Stattman (1980) and Rosenberg, Reid, and Lanstein (1985) find that average returns on U.S. stocks are positively related to the ratio of a firm's book value of common equity, BE, to its market value, ME. Chan, Hamao, and Lakonishok (1991) find that book-to-market equity, BE/ME, also has a strong role in explaining the cross-section of average returns on Japanese stocks.

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Finally, Basu (1983) shows that earnings-price ratios (E/P) help explain the cross-section of average returns on U.S. stocks in tests that also include size and market β. Ball (1978) argues that E/P is a catch-all proxy for unnamed factors in expected returns; E/P is likely to be higher (prices are lower relative to earnings) for stocks with higher risks and expected returns, whatever the unnamed sources of risk.

Ball's proxy argument for E/P might also apply to size (ME), leverage, and book-to-market equity. All these variables can be regarded as different ways to scale stock prices, to extract the information in prices about risk and expected returns (Keim (1988)). Moreover, since E/P, ME, leverage, and BE/ME are all scaled versions of price, it is reasonable to expect that some of them are redundant for describing average returns. Our goal is to evaluate the joint roles of market β, size, E/P, leverage, and book-to-market equity in the cross-section of average returns on NYSE, AMEX, and NASDAQ stocks.

Black, Jensen, and Scholes (1972) and Fama and MacBeth (1973) find that, as predicted by the SLB model, there is a positive simple relation between average stock returns and β during the pre-1969 period. Like Reinganum (1981) and Lakonishok and Shapiro (1986), we find that the relation between β and average return disappears during the more recent 1963–1990 period, even when β is used alone to explain average returns. The appendix shows that the simple relation between β and average return is also weak in the 50-year 1941–1990 period. In short, our tests do not support the most basic prediction of the SLB model, that average stock returns are positively related to market βs.

Unlike the simple relation between β and average return, the univariate relations between average return and size, leverage, E/P, and book-to-market equity are strong. In multivariate tests, the negative relation between size and average return is robust to the inclusion of other variables. The positive relation between book-to-market equity and average return also persists in competition with other variables. Moreover, although the size effect has attracted more attention, book-to-market equity has a consistently stronger role in average returns. Our bottom-line results are: (a) β does not seem to help explain the cross-section of average stock returns, and (b) the combination of size and book-to-market equity seems to absorb the roles of leverage and E/P in average stock returns, at least during our 1963–1990 sample period.

If assets are priced rationally, our results suggest that stock risks are multidimensional. One dimension of risk is proxied by size, ME. Another dimension of risk is proxied by BE/ME, the ratio of the book value of common equity to its market value.

It is possible that the risk captured by BE/ME is the relative distress factor of Chan and Chen (1991). They postulate that the earning prospects of firms are associated with a risk factor in returns. Firms that the market judges to have poor prospects, signaled here by low stock prices and high ratios of book-to-market equity, have higher expected stock returns (they are penalized with higher costs of capital) than firms with strong prospects. It is also possible, however, that BE/ME just captures the unraveling (regression toward the mean) of irrational market whims about the prospects of firms.

Whatever the underlying economic causes, our main result is straightforward. Two easily measured variables, size (ME) and book-to-market equity (BE/ME), provide a simple and powerful characterization of the cross-section of average stock returns for the 1963–1990 period.

In the next section we discuss the data and our approach to estimating β. Section II examines the relations between average return and β and between average return and size. Section III examines the roles of E/P, leverage, and book-to-market equity in average returns. In sections IV and V, we summarize, interpret, and discuss applications of the results.

I. Preliminaries

A. Data

We use all nonfinancial firms in the intersection of (a) the NYSE, AMEX, and NASDAQ return files from the Center for Research in Security Prices (CRSP) and (b) the merged COMPUSTAT annual industrial files of income-statement and balance-sheet data, also maintained by CRSP. We exclude financial firms because the high leverage that is normal for these firms probably does not have the same meaning as for nonfinancial firms, where high leverage more likely indicates distress. The CRSP returns cover NYSE and AMEX stocks until 1973 when NASDAQ returns also come on line. The COMPUSTAT data are for 1962–1989. The 1962 start date reflects the fact that book value of common equity (COMPUSTAT item 60), is not generally available prior to 1962. More important, COMPUSTAT data for earlier years have a serious selection bias; the pre-1962 data are tilted toward big historically successful firms.

To ensure that the accounting variables are known before the returns they are used to explain, we match the accounting data for all fiscal yearends in calendar year $t-1$ (1962–1989) with the returns for July of year t to June of $t+1$. The 6-month (minimum) gap between fiscal yearend and the return tests is conservative. Earlier work (e.g., Basu (1983)) often assumes that accounting data are available within three months of fiscal yearends. Firms are indeed required to file their 10-K reports with the SEC within 90 days of their fiscal yearends, but on average 19.8% do not comply. In addition, more than 40% of the December fiscal yearend firms that do comply with the 90-day rule file on March 31, and their reports are not made public until April. (See Alford, Jones, and Zmijewski (1992).)

We use a firm's market equity at the end of December of year $t-1$ to compute its book-to-market, leverage, and earnings-price ratios for $t-1$, and we use its market equity for June of year t to measure its size. Thus, to be included in the return tests for July of year t, a firm must have a CRSP stock price for December of year $t-1$ and June of year t. It must also have monthly returns for at least 24 of the 60 months preceding July of year t (for "pre-ranking" β estimates, discussed below). And the firm must have COMPUSTAT data on total book assets (A), book equity (BE), and earnings (E), for its fiscal year ending in (any month of) calendar year $t - 1$.

Our use of December market equity in the E/P, BE/ME, and leverage ratios is objectionable for firms that do not have December fiscal yearends because the accounting variable in the numerator of a ratio is not aligned with the market value in the denominator. Using ME at fiscal yearends is also problematic; then part of the cross-sectional variation of a ratio for a given year is due to market-wide variation in the ratio during the year. For example, if there is a general fall in stock prices during the year, ratios measured early in the year will tend to be lower than ratios measured later. We can report, however, that the use of fiscal-yearend MEs, rather than December MEs, in the accounting ratios has little impact on our return tests.

Finally, the tests mix firms with different fiscal yearends. Since we match accounting data for all fiscal yearends in calendar year $t - 1$ with returns for July of t to June of $t + 1$, the gap between the accounting data and the matching returns varies across firms. We have done the tests using the smaller sample of firms with December fiscal yearends with similar results.

B. Estimating Market βs

Our asset-pricing tests use the cross-sectional regression approach of Fama and MacBeth (1973). Each month the cross-section of returns on stocks is regressed on variables hypothesized to explain expected returns. The time-series means of the monthly regression slopes then provide standard tests of whether different explanatory variables are on average priced.

Since size, E/P, leverage, and BE/ME are measured precisely for individual stocks, there is no reason to smear the information in these variables by using portfolios in the Fama-MacBeth (FM) regressions. Most previous tests use portfolios because estimates of market βs are more precise for portfolios. Our approach is to estimate βs for portfolios and then assign a portfolio's β to each stock in the portfolio. This allows us to use individual stocks in the FM asset-pricing tests.

B.1. β Estimation: Details

In June of each year, all NYSE stocks on CRSP are sorted by size (ME) to determine the NYSE decile breakpoints for ME. NYSE, AMEX, and NASDAQ stocks that have the required CRSP-COMPUSTAT data are then allocated to 10 size portfolios based on the NYSE breakpoints. (If we used stocks from all three exchanges to determine the ME breakpoints, most portfolios would include only small stocks after 1973, when NASDAQ stocks are added to the sample.)

We form portfolios on size because of the evidence of Chan and Chen (1988) and others that size produces a wide spread of average returns and βs. Chan and Chen use only size portfolios. The problem this creates is that size and the βs of size portfolios are highly correlated (-0.988 in their data), so asset-pricing tests lack power to separate size from β effects in average returns.

To allow for variation in β that is unrelated to size, we subdivide each size decile into 10 portfolios on the basis of pre-ranking βs for individual stocks. The pre-ranking βs are estimated on 24 to 60 monthly returns (as available) in the 5 years before July of year t. We set the β breakpoints for each size decile using only NYSE stocks that satisfy our COMPUSTAT-CRSP data requirements for year $t - 1$. Using NYSE stocks ensures that the β breakpoints are not dominated after 1973 by the many small stocks on NASDAQ. Setting β breakpoints with stocks that satisfy our COMPUSTAT-CRSP data requirements guarantees that there are firms in each of the 100 size-β portfolios.

After assigning firms to the size-β portfolios in June, we calculate the equal-weighted monthly returns on the portfolios for the next 12 months, from July to June. In the end, we have post-ranking monthly returns for July 1963 to December 1990 on 100 portfolios formed on size and pre-ranking βs. We then estimate βs using the full sample (330 months) of post-ranking returns on each of the 100 portfolios, with the CRSP value-weighted portfolio of NYSE, AMEX, and (after 1972) NASDAQ stocks used as the proxy for the market. We have also estimated βs using the value-weighted or the equal-weighted portfolio of NYSE stocks as the proxy for the market. These βs produce inferences on the role of β in average returns like those reported below.

We estimate β as the sum of the slopes in the regression of the return on a portfolio on the current and prior month's market return. (An additional lead and lag of the market have little effect on these sum βs.) The sum βs are meant to adjust for nonsynchronous trading (Dimson (1979)). Fowler and Rorke (1983) show that sum βs are biased when the market return is autocorrelated. The 1st- and 2nd-order autocorrelations of the monthly market returns for July 1963 to December 1990 are 0.06 and -0.05, both about 1 standard error from 0. If the Fowler-Rorke corrections are used, they lead to trivial changes in the βs. We stick with the simpler sum βs. Appendix Table AI shows that using sum βs produces large increases in the βs of the smallest ME portfolios and small declines in the βs of the largest ME portfolios.

Chan and Chen (1988) show that full-period β estimates for portfolios can work well in tests of the SLB model, even if the true βs of the portfolios vary through time, if the variation in the βs is proportional,

$$\beta_{jt} - \beta_j = k_t(\beta_j - \beta), \tag{1}$$

where β_{jt} is the true β for portfolio j at time t, β_j is the mean of β_{jt} across t, and β is the mean of the β_j. The Appendix argues that (1) is a good approximation for the variation through time in the true βs of portfolios (j) formed on size and β. For diehard β fans, sure to be skeptical of our results on the weak role of β in average stock returns, we can also report that the results stand up to robustness checks that use 5-year pre-ranking βs, or 5-year post-ranking βs, instead of the full-period post-ranking βs.

We allocate the full-period post-ranking β of a size-β portfolio to each stock in the portfolio. These are the βs that will be used in the Fama-MacBeth cross-sectional regressions for individual stocks. We judge that the precision of the full-period post-ranking portfolio βs, relative to the imprecise β estimates that would be obtained for individual stocks, more than makes up for the fact that true βs are not the same for all stocks in a portfolio. And note that assigning full-period portfolio βs to stocks does not mean that a stock's β is constant. A stock can move across portfolios with year-to-year changes in the stock's size (ME) and in the estimates of its β for the preceding 5 years.

B.2. β Estimates

Table I shows that forming portfolios on size and pre-ranking βs, rather than on size alone, magnifies the range of full-period post-ranking βs. Sorted on size alone, the post-ranking βs range from 1.44 for the smallest ME portfolio to 0.92 for the largest. This spread of βs across the 10 size deciles is smaller than the spread of post-ranking βs produced by the β sort of *any* size decile. For example, the post-ranking βs for the 10 portfolios in the smallest size decile range from 1.05 to 1.79. Across all 100 size-β portfolios, the post-ranking βs range from 0.53 to 1.79, a spread 2.4 times the spread, 0.52, obtained with size portfolios alone.

Two other facts about the βs are important. First, in each size decile the post-ranking βs closely reproduce the ordering of the pre-ranking βs. We take this to be evidence that the pre-ranking β sort captures the ordering of true post-ranking βs. (The appendix gives more evidence on this important issue.) Second, the β sort is not a refined size sort. In any size decile, the average values of ln(ME) are similar across the β-sorted portfolios. Thus the pre-ranking β sort achieves its goal. It produces strong variation in post-ranking βs that is unrelated to size. This is important in allowing our tests to distinguish between β and size effects in average returns.

II. β and Size

The Sharpe-Lintner-Black (SLB) model plays an important role in the way academics and practitioners think about risk and the relation between risk and expected return. We show next that when common stock portfolios are formed on size alone, there seems to be evidence for the model's central prediction: average return is positively related to β. The βs of size portfolios are, however, almost perfectly correlated with size, so tests on size portfolios are unable to disentangle β and size effects in average returns. Allowing for variation in β that is unrelated to size breaks the logjam, but at the expense of β. Thus, when we subdivide size portfolios on the basis of pre-ranking βs, we find a strong relation between average return and size, but no relation between average return and β.

A. *Informal Tests*

Table II shows post-ranking average returns for July 1963 to December 1990 for portfolios formed from one-dimensional sorts of stocks on size or β. The portfolios are formed at the end of June each year and their equal-weighted returns are calculated for the next 12 months. We use returns for July to June to match the returns in later tests that use the accounting data. When we sort on just size or 5-year pre-ranking βs, we form 12 portfolios. The middle 8 cover deciles of size or β. The 4 extreme portfolios (1A, 1B, 10A, and 10B) split the bottom and top deciles in half.

Table II shows that when portfolios are formed on size alone, we observe the familiar strong negative relation between size and average return (Banz (1981)), and a strong positive relation between average return and β. Average returns fall from 1.64% per month for the smallest ME portfolio to 0.90% for the largest. Post-ranking βs also decline across the 12 size portfolios, from 1.44 for portfolio 1A to 0.90 for portfolio 10B. Thus, a simple size sort seems to support the SLB prediction of a positive relation between β and average return. But the evidence is muddied by the tight relation between size and the βs of size portfolios.

The portfolios formed on the basis of the ranked market βs of stocks in Table II produce a wider range of βs (from 0.81 for portfolio 1A to 1.73 for 10B) than the portfolios formed on size. Unlike the size portfolios, the β-sorted portfolios do not support the SLB model. There is little spread in average returns across the β portfolios, and there is no obvious relation between β and average returns. For example, although the two extreme portfolios, 1A and 10B, have much different βs, they have nearly identical average returns (1.20% and 1.18% per month). These results for 1963–1990 confirm Reinganum's (1981) evidence that for β-sorted portfolios, there is no relation between average return and β during the 1964–1979 period.

The 100 portfolios formed on size and then pre-ranking β in Table I clarify the contradictory evidence on the relation between β and average return produced by portfolios formed on size or β alone. Specifically, the two-pass sort gives a clearer picture of the separate roles of size and β in average returns. Contrary to the central prediction of the SLB model, the second-pass β sort produces little variation in average returns. Although the post-ranking βs in Table I increase strongly in each size decile, average returns are flat or show a slight tendency to decline. In contrast, within the columns of the average return and β matrices of Table I, average returns and βs decrease with increasing size.

The two-pass sort on size and β in Table I says that variation in β that is tied to size is positively related to average return, but variation in β unrelated to size is not compensated in the average returns of 1963–1990. The proper inference seems to be that there is a relation between size and average return, but controlling for size, there is no relation between β and average return. The regressions that follow confirm this conclusion, and they produce another that is stronger. The regressions show that when one allows

Table I

Average Returns, Post-Ranking βs and Average Size For Portfolios Formed on Size and then β: Stocks Sorted on ME (Down) then Pre-Ranking β (Across): July 1963 to December 1990

Portfolios are formed yearly. The breakpoints for the size (ME, price times shares outstanding) deciles are determined in June of year t (t = 1963–1990) using all NYSE stocks on CRSP. All NYSE, AMEX, and NASDAQ stocks that meet the CRSP-COMPUSTAT data requirements are allocated to the 10 size portfolios using the NYSE breakpoints. Each size decile is subdivided into 10 β portfolios using pre-ranking βs of individual stocks, estimated with 2 to 5 years of monthly returns (as available) ending in June of year t. We use only NYSE stocks that meet the CRSP-COMPUSTAT data requirements to establish the β breakpoints. The equal-weighted monthly returns on the resulting 100 portfolios are then calculated for July of year t to June of year $t + 1$.

The post-ranking βs use the full (July 1963 to December 1990) sample of post-ranking returns for each portfolio. The pre- and post-ranking βs (here and in all other tables) are the sum of the slopes from a regression of monthly returns on the current and prior month's returns on the value-weighted portfolio of NYSE, AMEX, and (after 1972) NASDAQ stocks. The average return is the time-series average of the monthly equal-weighted portfolio returns, in percent. The average size of a portfolio is the time-series average of monthly averages of ln(ME) for stocks in the portfolio at the end of June of each year, with ME denominated in millions of dollars

The average number of stocks per month for the size-β portfolios in the smallest size decile varies from 70 to 177. The average number of stocks for the size-β portfolios in size deciles 2 and 3 is between 15 and 41, and the average number for the largest 7 size deciles is between 11 and 22.

The All column shows statistics for equal-weighted size-decile (ME) portfolios. The All row shows statistics for equal-weighted portfolios of the stocks in each β group.

	All	Low-β	β-2	β-3	β-4	β-5	β-6	β-7	β-8	β-9	High-β
Panel A: Average Monthly Returns (in Percent)											
All	1.25	1.34	1.29	1.36	1.31	1.33	1.28	1.24	1.21	1.25	1.14
Small-ME	1.52	1.71	1.57	1.79	1.61	1 50	1.50	1.37	1.63	1.50	1.42
ME-2	1.29	1.25	1.42	1.36	1.39	1.65	1.61	1.37	1 31	1.34	1.11
ME-3	1.24	1.12	1.31	1.17	1.70	1.29	1.10	1.31	1.36	1.26	0.76
ME-4	1.25	1.27	1.13	1.54	1.06	1.34	1.06	1.41	1.17	1.35	0.98
ME-5	1.29	1.34	1.42	1.39	1.48	1.42	1.18	1.13	1.27	1.18	1.08
ME-6	1.17	1.08	1.53	1.27	1.15	1.20	1.21	1.18	1.04	1.07	1.02
ME-7	1.07	0.95	1.21	1.26	1.09	1.18	1.11	1.24	0.62	1.32	0.76
ME-8	1.10	1.09	1.05	1.37	1.20	1.27	0.98	1.18	1.02	1.01	0.94
ME-9	0.95	0.98	0.88	1.02	1.14	1.07	1.23	0.94	0.82	0.88	0.59
Large-ME	0.89	1.01	0.93	1.10	0.94	0.93	0.89	1.03	0.71	0.74	0.56

Table I—*Continued*

	All	Low-β	β-2	β-3	β-4	β-5	β-6	β-7	β-8	β-9	High-β
					Panel B: Post-Ranking βs						
All		0.87	0.99	1.09	1.16	1.26	1.29	1.35	1.45	1.52	1.72
Small-ME	1.44	1.05	1.18	1.28	1.32	1.40	1.40	1.49	1.61	1.64	1.79
ME-2	1.39	0.91	1.15	1.17	1.24	1.36	1.41	1.43	1.50	1.66	1.76
ME-3	1.35	0.97	1.13	1.13	1.21	1.26	1.28	1.39	1.50	1.51	1.75
ME-4	1.34	0.78	1.03	1.17	1.16	1.29	1.37	1.46	1.51	1.64	1.71
ME-5	1.25	0.66	0.85	1.12	1.15	1.16	1.26	1.30	1.43	1.59	1.68
ME-6	1.23	0.61	0.78	1.05	1.16	1.22	1.28	1.36	1.46	1.49	1.70
ME-7	1.17	0.57	0.92	1.01	1.11	1.14	1.26	1.24	1.39	1.34	1.60
ME-8	1.09	0.53	0.74	0.94	1.02	1.13	1.12	1.18	1.26	1.35	1.52
ME-9	1.03	0.58	0.74	0.80	0.95	1.06	1.15	1.14	1.21	1.22	1.42
Large-ME	0.92	0.57	0.71	0.78	0.89	0.95	0.92	1.02	1.01	1.11	1.32
					Panel C: Average Size (ln(ME))						
All	4.11	3.86	4.26	4.33	4.41	4.27	4.32	4.26	4.19	4.03	3.77
Small-ME	2.24	2.12	2.27	2.30	2.30	2.28	2.29	2.30	2.32	2.25	2.15
ME-2	3.63	3.65	3.68	3.70	3.72	3.69	3.70	3.69	3.69	3.70	3.68
ME-3	4.10	4.14	4.18	4.12	4.15	4.16	4.16	4.18	4.14	4.15	4.15
ME-4	4.50	4.53	4.53	4.57	4.54	4.56	4.55	4.52	4.58	4.52	4.56
ME-5	4.89	4.91	4.91	4.93	4.95	4.93	4.92	4.93	4.92	4.92	4.95
ME-6	5.30	5.30	5.33	5.34	5.34	5.33	5.33	5.33	5.33	5.34	5.36
ME-7	5.73	5.73	5.75	5.77	5.76	5.73	5.77	5.77	5.76	5.72	5.76
ME-8	6.24	6.26	6.27	6.26	6.24	6.24	6.27	6.24	6.24	6.24	6.26
ME-9	6.82	6.82	6.84	6.82	6.82	6.81	6.81	6.81	6.81	6.80	6.83
Large-ME	7.93	7.94	8.04	8.10	8.04	8.02	8.02	7.94	7.80	7.75	7.62

Table II

Properties of Portfolios Formed on Size or Pre-Ranking β: July 1963 to December 1990

At the end of June of each year t, 12 portfolios are formed on the basis of ranked values of size (ME) or pre-ranking β. The pre-ranking βs use 2 to 5 years (as available) of monthly returns ending in June of t. Portfolios 2–9 cover deciles of the ranking variables. The bottom and top 2 portfolios (1A, 1B, 10A, and 10B) split the bottom and top deciles in half. The breakpoints for the ME portfolios are based on ranked values of ME for all NYSE stocks on CRSP. NYSE breakpoints for pre-ranking βs are also used to form the β portfolios. NYSE, AMEX, and NASDAQ stocks are then allocated to the size or β portfolios using the NYSE breakpoints. We calculate each portfolio's monthly equal-weighted return for July of year t to June of year $t + 1$, and then reform the portfolios in June of $t + 1$.

BE is the book value of common equity plus balance-sheet deferred taxes, A is total book assets, and E is earnings (income before extraordinary items, plus income-statement deferred taxes, minus preferred dividends). BE, A, and E are for each firm's latest fiscal year ending in calendar year $t - 1$. The accounting ratios are measured using market equity ME in December of year $t - 1$. Firm size ln(ME) is measured in June of year t, with ME denominated in millions of dollars.

The average return is the time-series average of the monthly equal-weighted portfolio returns, in percent. ln(ME), ln(BE/ME), ln(A/ME), ln(A/BE), E/P, and E/P dummy are the time-series averages of the monthly average values of these variables in each portfolio. Since the E/P dummy is 0 when earnings are positive, and 1 when earnings are negative, E/P dummy gives the average proportion of stocks with negative earnings in each portfolio.

β is the time-series average of the monthly portfolio βs. Stocks are assigned the post-ranking β of the size-β portfolio they are in at the end of June of year t (Table I). These individual-firm βs are averaged to compute the monthly βs for each portfolio for July of year t to June of year $t + 1$.

Firms is the average number of stocks in the portfolio each month.

	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Panel A: Portfolios Formed on Size												
Return	1.64	1.16	1.29	1.24	1.25	1.29	1.17	1.07	1.10	0.95	0.88	0.90
β	1.44	1.44	1.39	1.34	1.33	1.24	1.22	1.16	1.08	1.02	0.95	0.90
ln(ME)	1.98	3.18	3.63	4.10	4.50	4.89	5.30	5.73	6.24	6.82	7.39	8.44
ln(BE/ME)	−0.01	−0.21	−0.23	−0.26	−0.32	−0.36	−0.36	−0.44	−0.40	−0.42	−0.51	−0.65
ln(A/ME)	0.73	0.50	0.46	0.43	0.37	0.32	0.32	0.24	0.29	0.27	0.17	−0.03
ln(A/BE)	0.75	0.71	0.69	0.69	0.68	0.67	0.68	0.67	0.69	0.70	0.68	0.62
E/P dummy	0.26	0.14	0.11	0.09	0.06	0.04	0.04	0.03	0.03	0.02	0.02	0.01
E(+)/P	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0 10	0.10	0.09	0.09
Firms	772	189	236	170	144	140	128	125	119	114	60	64

Table II—*Continued*

	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Panel B: Portfolios Formed on Pre-Ranking β												
Return	1.20	1 20	1.32	1.26	1.31	1.30	1.30	1.23	1.23	1.33	1.34	1.18
β	0.81	0.79	0.92	1.04	1.13	1.19	1.26	1.32	1.41	1.52	1 63	1.73
ln(ME)	4.21	4.86	4.75	4.68	4.59	4.48	4.36	4.25	3.97	3.78	3.52	3.15
ln(BE/ME)	−0.18	−0.13	−0.22	−0.21	−0.23	−0.22	−0.22	−0.25	−0.23	−0.27	−0.31	−0.50
ln(A/ME)	0.60	0.66	0.49	0.45	0.42	0.42	0.45	0.42	0.47	0 46	0.46	0.31
ln(A/BE)	0.78	0.79	0.71	0.66	0.64	0.65	0.67	0.67	0.70	0.73	0.77	0 81
E/P dummy	0.12	0.06	0.09	0.09	0.08	0.09	0.10	0.12	0.12	0.14	0.17	0.23
E(+)/P	0.11	0.12	0.10	0.10	0.10	0.10	0.10	0.09	0.10	0.09	0 09	0.08
Firms	116	80	185	181	179	182	185	205	227	267	165	291

for variation in β that is unrelated to size, the relation between β and average return is flat, even when β is the only explanatory variable.

B. Fama-MacBeth Regressions

Table III shows time-series averages of the slopes from the month-by-month Fama-MacBeth (FM) regressions of the cross-section of stock returns on size, β, and the other variables (leverage, E/P, and book-to-market equity) used to explain average returns. The average slopes provide standard FM tests for determining which explanatory variables on average have non-zero expected premiums during the July 1963 to December 1990 period.

Like the average returns in Tables I and II, the regressions in Table III say that size, ln(ME), helps explain the cross-section of average stock returns. The average slope from the monthly regressions of returns on size alone is -0.15%, with a t-statistic of -2.58. This reliable negative relation persists no matter which other explanatory variables are in the regressions; the average slopes on ln(ME) are always close to or more than 2 standard errors from 0. The size effect (smaller stocks have higher average returns) is thus robust in the 1963–1990 returns on NYSE, AMEX, and NASDAQ stocks.

In contrast to the consistent explanatory power of size, the FM regressions show that market β does not help explain average stock returns for 1963–1990. In a shot straight at the heart of the SLB model, the average slope from the regressions of returns on β alone in Table III is 0.15% per month and only 0.46 standard errors from 0. In the regressions of returns on size and β, size has explanatory power (an average slope -3.41 standard errors from 0), but the average slope for β is negative and only 1.21 standard errors from 0. Lakonishok and Shapiro (1986) get similar results for NYSE stocks for 1962–1981. We can also report that β shows no power to explain average returns (the average slopes are typically less than 1 standard error from 0) in FM regressions that use various combinations of β with size, book-to-market equity, leverage, and E/P.

C. Can β Be Saved?

What explains the poor results for β? One possibility is that other explanatory variables are correlated with true βs, and this obscures the relation between average returns and measured βs. But this line of attack cannot explain why β has no power when used alone to explain average returns. Moreover, leverage, book-to-market equity, and E/P do not seem to be good proxies for β. The averages of the monthly cross-sectional correlations between β and the values of these variables for individual stocks are all within 0.15 of 0.

Another hypothesis is that, as predicted by the SLB model, there is a positive relation between β and average return, but the relation is obscured by noise in the β estimates. However, our full-period post-ranking βs do not seem to be imprecise. Most of the standard errors of the βs (not shown) are

Table III

Average Slopes (*t*-Statistics) from Month-by-Month Regressions of Stock Returns on β, Size, Book-to-Market Equity, Leverage, and E/P: July 1963 to December 1990

Stocks are assigned the post-ranking β of the size-β portfolio they are in at the end of June of year *t* (Table I). BE is the book value of common equity plus balance-sheet deferred taxes, A is total book assets, and E is earnings (income before extraordinary items, plus income-statement deferred taxes, minus preferred dividends) BE, A, and E are for each firm's latest fiscal year ending in calendar year $t - 1$. The accounting ratios are measured using market equity ME in December of year $t - 1$. Firm size ln(ME) is measured in June of year *t*. In the regressions, these values of the explanatory variables for individual stocks are matched with CRSP returns for the months from July of year *t* to June of year $t + 1$. The gap between the accounting data and the returns ensures that the accounting data are available prior to the returns. If earnings are positive, E(+)/P is the ratio of total earnings to market equity and E/P dummy is 0. If earnings are negative, E(+)/P is 0 and E/P dummy is 1.

The average slope is the time-series average of the monthly regression slopes for July 1963 to December 1990, and the *t*-statistic is the average slope divided by its time-series standard error.

On average, there are 2267 stocks in the monthly regressions. To avoid giving extreme observations heavy weight in the regressions, the smallest and largest 0.5% of the observations on E(+)/P, BE/ME, A/ME, and A/BE are set equal to the next largest or smallest values of the ratios (the 0.005 and 0.995 fractiles). This has no effect on inferences.

β	ln(ME)	ln(BE/ME)	ln(A/ME)	ln(A/BE)	E/P Dummy	E(+)/P
0.15 (0.46)						
	−0.15 (−2 58)					
−0.37 (−1.21)	−0.17 (−3.41)					
		0.50 (5.71)				
			0.50 (5 69)	−0.57 (−5.34)		
					0.57 (2.28)	4.72 (4.57)
	−0.11 (−1.99)	0.35 (4.44)				
	−0 11 (−2 06)		0.35 (4.32)	−0 50 (−4.56)		
	−0.16 (−3.06)				0.06 (0 38)	2.99 (3.04)
	−0.13 (−2.47)	0.33 (4.46)			−0.14 (−0.90)	0.87 (1.23)
	−0.13 (−2.47)		0.32 (4.28)	−0.46 (−4.45)	−0.08 (−0.56)	1.15 (1.57)

0.05 or less, only 1 is greater than 0.1, and the standard errors are small relative to the range of the βs (0.53 to 1.79).

The β-sorted portfolios in Tables I and II also provide strong evidence against the β-measurement-error story. When portfolios are formed on pre-ranking βs alone (Table II), the post-ranking βs for the portfolios almost perfectly reproduce the ordering of the pre-ranking βs. Only the β for portfolio 1B is out of line, and only by 0.02. Similarly, when portfolios are formed on size and then pre-ranking βs (Table I), the post-ranking βs in each size decile closely reproduce the ordering of the pre-ranking βs.

The correspondence between the ordering of the pre-ranking and post-ranking βs for the β-sorted portfolios in Tables I and II is evidence that the post-ranking βs are informative about the ordering of the true βs. The problem for the SLB model is that there is no similar ordering in the average returns on the β-sorted portfolios. Whether one looks at portfolios sorted on β alone (Table II) or on size and then β (Table I), average returns are flat (Table II) or decline slightly (Table I) as the post-ranking βs increase.

Our evidence on the robustness of the size effect and the absence of a relation between β and average return is so contrary to the SLB model that it behooves us to examine whether the results are special to 1963–1990. The appendix shows that NYSE returns for 1941–1990 behave like the NYSE, AMEX, and NASDAQ returns for 1963–1990; there is a reliable size effect over the full 50-year period, but little relation between β and average return. Interestingly, there is a reliable simple relation between β and average return during the 1941–1965 period. These 25 years are a major part of the samples in the early studies of the SLB model of Black, Jensen, and Scholes (1972) and Fama and MacBeth (1973). Even for the 1941–1965 period, however, the relation between β and average return disappears when we control for size.

III. Book-to-Market Equity, E/P, and Leverage

Tables I to III say that there is a strong relation between the average returns on stocks and size, but there is no reliable relation between average returns and β. In this section we show that there is also a strong cross-sectional relation between average returns and book-to-market equity. If anything, this book-to-market effect is more powerful than the size effect. We also find that the combination of size and book-to-market equity absorbs the apparent roles of leverage and E/P in average stock returns.

A. Average Returns

Table IV shows average returns for July 1963 to December 1990 for portfolios formed on ranked values of book-to-market equity (BE/ME) or earnings-price ratio (E/P). The BE/ME and E/P portfolios in Table IV are formed in the same general way (one-dimensional yearly sorts) as the size and β portfolios in Table II. (See the tables for details.)

The relation between average return and E/P has a familiar U-shape (e.g., Jaffe, Keim, and Westerfield (1989) for U.S. data, and Chan, Hamao, and Lakonishok (1991) for Japan). Average returns decline from 1.46% per month for the negative E/P portfolio to 0.93% for the firms in portfolio 1B that have low but positive E/P. Average returns then increase monotonically, reaching 1.72% per month for the highest E/P portfolio.

The more striking evidence in Table IV is the strong positive relation between average return and book-to-market equity. Average returns rise from 0.30% for the lowest BE/ME portfolio to 1.83% for the highest, a difference of 1.53% per month. This spread is twice as large as the difference of 0.74% between the average monthly returns on the smallest and largest size portfolios in Table II. Note also that the strong relation between book-to-market equity and average return is unlikely to be a β effect in disguise; Table IV shows that post-ranking market βs vary little across portfolios formed on ranked values of BE/ME.

On average, only about 50 (out of 2317) firms per year have negative book equity, BE. The negative BE firms are mostly concentrated in the last 14 years of the sample, 1976–1989, and we do not include them in the tests. We can report, however, that average returns for negative BE firms are high, like the average returns of high BE/ME firms. Negative BE (which results from persistently negative earnings) and high BE/ME (which typically means that stock prices have fallen) are both signals of poor earning prospects. The similar average returns of negative and high BE/ME firms are thus consistent with the hypothesis that book-to-market equity captures cross-sectional variation in average returns that is related to relative distress.

B. Fama-MacBeth Regressions

B.1. BE/ME

The FM regressions in Table III confirm the importance of book-to-market equity in explaining the cross-section of average stock returns. The average slope from the monthly regressions of returns on ln(BE/ME) alone is 0.50%, with a t-statistic of 5.71. This book-to-market relation is stronger than the size effect, which produces a t-statistic of -2.58 in the regressions of returns on ln(ME) alone. But book-to-market equity does not replace size in explaining average returns. When both ln(ME) and ln(BE/ME) are included in the regressions, the average size slope is still -1.99 standard errors from 0; the book-to-market slope is an impressive 4.44 standard errors from 0.

B.2. Leverage

The FM regressions that explain returns with leverage variables provide interesting insight into the relation between book-to-market equity and average return. We use two leverage variables, the ratio of book assets to market equity, A/ME, and the ratio of book assets to book equity, A/BE. We interpret A/ME as a measure of market leverage, while A/BE is a measure

Table IV

Properties of Portfolios Formed on Book-to-Market Equity (BE/ME) and Earnings-Price Ratio (E/P): July 1963 to December 1990

At the end of each year $t-1$, 12 portfolios are formed on the basis of ranked values of BE/ME or E/P. Portfolios 2–9 cover deciles of the ranking variables. The bottom and top 2 portfolios (1A, 1B, 10A, and 10B) split the bottom and top deciles in half. For E/P, there are 13 portfolios; portfolio 0 is stocks with negative E/P. Since BE/ME and E/P are not strongly related to exchange listing, their portfolio breakpoints are determined on the basis of the ranked values of the variables for all stocks that satisfy the CRSP-COMPUSTAT data requirements. BE is the book value of common equity plus balance-sheet deferred taxes, A is total book assets, and E is earnings (income before extraordinary items, plus income-statement deferred taxes, minus preferred dividends). BE, A, and E are for each firm's latest fiscal year ending in calendar year $t-1$. The accounting ratios are measured using market equity ME in December of year $t-1$. Firm size ln(ME) is measured in June of year t, with ME denominated in millions of dollars. We calculate each portfolio's monthly equal-weighted return for July of year t to June of year $t+1$, and then reform the portfolios at the end of year t.

Return is the time-series average of the monthly equal-weighted portfolio returns (in percent). ln(ME), ln(BE/ME), ln(A/ME), ln(A/BE), E(+)/P, and E/P dummy are the time-series averages of the monthly average values of these variables in each portfolio Since the E/P dummy is 0 when earnings are positive, and 1 when earnings are negative, E/P dummy gives the average proportion of stocks with negative earnings in each portfolio.

β is the time-series average of the monthly portfolio βs. Stocks are assigned the post-ranking β of the size-β portfolio they are in at the end of June of year t (Table I). These individual-firm βs are averaged to compute the monthly βs for each portfolio for July of year t to June of year $t+1$. Firms is the average number of stocks in the portfolio each month.

Portfolio	0	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Panel A: Stocks Sorted on Book-to-Market Equity (BE/ME)													
Return		0.30	0.67	0.87	0.97	1.04	1.17	1.30	1.44	1.50	1.59	1.92	1.83
β		1.36	1.34	1.32	1.30	1.28	1.27	1.27	1.27	1.27	1.29	1.33	1.35
ln(ME)		4.53	4.67	4.69	4.56	4.47	4.38	4.23	4.06	3.85	3.51	3.06	2.65
ln(BE/ME)		−2.22	−1.51	−1.09	−0.75	−0.51	−0 32	−0.14	0.03	0.21	0.42	0.66	1.02
ln(A/ME)		−1.24	−0.79	−0.40	−0.05	0.20	0.40	0.56	0.71	0.91	1.12	1.35	1.75
ln(A/BE)		0.94	0.71	0.68	0.70	0.71	0.71	0.70	0.68	0.70	0.70	0.70	0.73
E/P dummy		0.29	0.15	0.10	0.08	0.08	0.08	0.09	0.09	0.11	0.15	0.22	0.36
E(+)/P		0.03	0.04	0.06	0.08	0.09	0.10	0.11	0.11	0.12	0.12	0.11	0.10
Firms		89	98	209	222	226	230	235	237	239	239	120	117

Table IV—*Continued*

Portfolio	0	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Panel B: Stocks Sorted on Earnings-Price Ratio (E/P)													
Return	1.46	1.04	0.93	0.94	1.03	1.18	1.22	1.33	1.42	1.46	1.57	1.74	1.72
β	1.47	1.40	1.35	1.31	1.28	1.26	1.25	1.26	1.24	1.23	1.24	1.28	1.31
ln(ME)	2.48	3.64	4.33	4.61	4.64	4.63	4.58	4.49	4.37	4.28	4.07	3.82	3.52
ln(BE/ME)	−0.10	−0.76	−0.91	−0.79	−0.61	−0.47	−0.33	−0.21	−0.08	0.02	0.15	0.26	0.40
ln(A/ME)	0.90	−0.05	−0.27	−0.16	0.03	0.18	0.31	0.44	0.58	0.70	0.85	1.01	1.25
ln(A/BE)	0.99	0.70	0.63	0.63	0.64	0.65	0.64	0.65	0.66	0.68	0.71	0.75	0.86
E/P dummy	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E(+)/P	0.00	0.01	0.03	0.05	0.06	0.08	0.09	0.11	0.12	0.14	0.16	0.20	0.28
Firms	355	88	90	182	190	193	196	194	197	195	195	95	91

of book leverage. The regressions use the natural logs of the leverage ratios, ln(A/ME) and ln(A/BE), because preliminary tests indicated that logs are a good functional form for capturing leverage effects in average returns. Using logs also leads to a simple interpretation of the relation between the roles of leverage and book-to-market equity in average returns.

The FM regressions of returns on the leverage variables (Table III) pose a bit of a puzzle. The two leverage variables are related to average returns, but with opposite signs. As in Bhandari (1988), higher market leverage is associated with higher average returns; the average slopes for ln(A/ME) are always positive and more than 4 standard errors from 0. But higher book leverage is associated with lower average returns; the average slopes for ln(A/BE) are always negative and more than 4 standard errors from 0.

The puzzle of the opposite slopes on ln(A/ME) and ln(A/BE) has a simple solution. The average slopes for the two leverage variables are opposite in sign but close in absolute value, e.g., 0.50 and -0.57. Thus it is the difference between market and book leverage that helps explain average returns. But the difference between market and book leverage is book-to-market equity, ln(BE/ME) = ln(A/ME) − ln(A/BE). Table III shows that the average book-to-market slopes in the FM regressions are indeed close in absolute value to the slopes for the two leverage variables.

The close links between the leverage and book-to-market results suggest that there are two equivalent ways to interpret the book-to-market effect in average returns. A high ratio of book equity to market equity (a low stock price relative to book value) says that the market judges the prospects of a firm to be poor relative to firms with low BE/ME. Thus BE/ME may capture the relative-distress effect postulated by Chan and Chen (1991). A high book-to-market ratio also says that a firm's market leverage is high relative to its book leverage; the firm has a large amount of market-imposed leverage because the market judges that its prospects are poor and discounts its stock price relative to book value. In short, our tests suggest that the relative-distress effect, captured by BE/ME, can also be interpreted as an involuntary leverage effect, which is captured by the difference between A/ME and A/BE.

B.3. E/P

Ball (1978) posits that the earnings-price ratio is a catch-all for omitted risk factors in expected returns. If current earnings proxy for expected future earnings, high-risk stocks with high expected returns will have low prices relative to their earnings. Thus, E/P should be related to expected returns, whatever the omitted sources of risk. This argument only makes sense, however, for firms with positive earnings. When current earnings are negative, they are not a proxy for the earnings forecasts embedded in the stock price, and E/P is not a proxy for expected returns. Thus, the slope for E/P in the FM regressions is based on positive values; we use a dummy variable for E/P when earnings are negative.

The U-shaped relation between average return and E/P observed in Table IV is also apparent when the E/P variables are used alone in the FM regressions in Table III. The average slope on the E/P dummy variable (0.57% per month, 2.28 standard errors from 0) confirms that firms with negative earnings have higher average returns. The average slope for stocks with positive E/P (4.72% per month, 4.57 standard errors from 0) shows that average returns increase with E/P when it is positive.

Adding size to the regressions kills the explanatory power of the E/P dummy. Thus the high average returns of negative E/P stocks are better captured by their size, which Table IV says is on average small. Adding both size and book-to-market equity to the E/P regressions kills the E/P dummy and lowers the average slope on E/P from 4.72 to 0.87 (t = 1.23). In contrast, the average slopes for ln(ME) and ln(BE/ME) in the regressions that include E/P are similar to those in the regressions that explain average returns with only size and book-to-market equity. The results suggest that most of the relation between (positive) E/P and average return is due to the positive correlation between E/P and ln(BE/ME), illustrated in Table IV; firms with high E/P tend to have high book-to-market equity ratios.

IV. A Parsimonious Model for Average Returns

The results to here are easily summarized:

(1) When we allow for variation in β that is unrelated to size, there is no reliable relation between β and average return.
(2) The opposite roles of market leverage and book leverage in average returns are captured well by book-to-market equity.
(3) The relation between E/P and average return seems to be absorbed by the combination of size and book-to-market equity.

In a nutshell, market β seems to have no role in explaining the average returns on NYSE, AMEX, and NASDAQ stocks for 1963–1990, while size and book-to-market equity capture the cross-sectional variation in average stock returns that is related to leverage and E/P.

A. Average Returns, Size and Book-to-Market Equity

The average return matrix in Table V gives a simple picture of the two-dimensional variation in average returns that results when the 10 size deciles are each subdivided into 10 portfolios based on ranked values of BE/ME for individual stocks. Within a size decile (across a row of the average return matrix), returns typically increase strongly with BE/ME: on average, the returns on the lowest and highest BE/ME portfolios in a size decile differ by 0.99% (1.63% − 0.64%) per month. Similarly, looking down the columns of the average return matrix shows that there is a negative relation between average return and size: on average, the spread of returns across the size portfolios in a BE/ME group is 0.58% per month. The average return matrix gives life to the conclusion from the regressions that,

Table V

Average Monthly Returns on Portfolios Formed on Size and Book-to-Market Equity; Stocks Sorted by ME (Down) and then BE/ME (Across): July 1963 to December 1990

In June of each year t, the NYSE, AMEX, and NASDAQ stocks that meet the CRSP-COMPUSTAT data requirements are allocated to 10 size portfolios using the NYSE size (ME) breakpoints. The NYSE, AMEX, and NASDAQ stocks in each size decile are then sorted into 10 BE/ME portfolios using the book-to-market ratios for year $t-1$. BE/ME is the book value of common equity plus balance-sheet deferred taxes for fiscal year $t-1$, over market equity for December of year $t-1$. The equal-weighted monthly portfolio returns are then calculated for July of year t to June of year $t+1$.

Average monthly return is the time-series average of the monthly equal-weighted portfolio returns (in percent).

The All column shows average returns for equal-weighted size decile portfolios. The All row shows average returns for equal-weighted portfolios of the stocks in each BE/ME group.

	Book-to-Market Portfolios										
	All	Low	2	3	4	5	6	7	8	9	High
All	1.23	0.64	0.98	1.06	1.17	1.24	1.26	1.39	1.40	1.50	1.63
Small-ME	1.47	0.70	1.14	1.20	1.43	1.56	1.51	1.70	1.71	1.82	1.92
ME-2	1.22	0.43	1.05	0.96	1.19	1.33	1.19	1.58	1.28	1.43	1.79
ME-3	1.22	0.56	0.88	1.23	0.95	1.36	1.30	1.30	1.40	1.54	1.60
ME-4	1.19	0.39	0.72	1.06	1.36	1.13	1.21	1.34	1.59	1.51	1.47
ME-5	1.24	0.88	0.65	1.08	1.47	1.13	1.43	1.44	1.26	1.52	1.49
ME-6	1.15	0.70	0.98	1.14	1.23	0.94	1.27	1.19	1.19	1.24	1.50
ME-7	1.07	0.95	1.00	0.99	0.83	0.99	1.13	0.99	1.16	1.10	1.47
ME-8	1.08	0.66	1.13	0.91	0.95	0.99	1.01	1.15	1.05	1.29	1.55
ME-9	0.95	0.44	0.89	0.92	1.00	1.05	0.93	0.82	1.11	1.04	1.22
Large-ME	0.89	0.93	0.88	0.84	0.71	0.79	0.83	0.81	0.96	0.97	1.18

controlling for size, book-to-market equity captures strong variation in average returns, and controlling for book-to-market equity leaves a size effect in average returns.

B. The Interaction between Size and Book-to-Market Equity

The average of the monthly correlations between the cross-sections of ln(ME) and ln(BE/ME) for individual stocks is -0.26. The negative correlation is also apparent in the average values of ln(ME) and ln(BE/ME) for the portfolios sorted on ME or BE/ME in Tables II and IV. Thus, firms with low market equity are more likely to have poor prospects, resulting in low stock prices and high book-to-market equity. Conversely, large stocks are more likely to be firms with stronger prospects, higher stock prices, lower book-to-market equity, and lower average stock returns.

The correlation between size and book-to-market equity affects the regressions in Table III. Including ln(BE/ME) moves the average slope on ln(ME) from -0.15 ($t = -2.58$) in the univariate regressions to -0.11 ($t = -1.99$) in the bivariate regressions. Similarly, including ln(ME) in the regressions lowers the average slope on ln(BE/ME) from 0.50 to 0.35 (still a healthy 4.44 standard errors from 0). Thus, part of the size effect in the simple regressions is due to the fact that small ME stocks are more likely to have high book-to-market ratios, and part of the simple book-to-market effect is due to the fact that high BE/ME stocks tend to be small (they have low ME).

We should not, however, exaggerate the links between size and book-to-market equity. The correlation (−0.26) between ln(ME) and ln(BE/ME) is not extreme, and the average slopes in the bivariate regressions in Table III show that ln(ME) and ln(BE/ME) are both needed to explain the cross-section of average returns. Finally, the 10×10 average return matrix in Table V provides concrete evidence that, (a) controlling for size, book-to-market equity captures substantial variation in the cross-section of average returns, and (b) within BE/ME groups average returns are related to size.

C. Subperiod Averages of the FM Slopes

The message from the average FM slopes for 1963–1990 (Table III) is that size on average has a negative premium in the cross-section of stock returns, book-to-market equity has a positive premium, and the average premium for market β is essentially 0. Table VI shows the average FM slopes for two roughly equal subperiods (July 1963–December 1976 and January 1977–December 1990) from two regressions: (a) the cross-section of stock returns on size, ln(ME), and book-to-market equity, ln(BE/ME), and (b) returns on β, ln(ME), and ln(BE/ME). For perspective, average returns on the value-weighted and equal-weighted (VW and EW) portfolios of NYSE stocks are also shown.

In FM regressions, the intercept is the return on a standard portfolio (the weights on stocks sum to 1) in which the weighted averages of the explanatory variables are 0 (Fama (1976), chapter 9). In our tests, the intercept is weighted toward small stocks (ME is in millions of dollars so ln(ME) = 0 implies ME = \$1 million) and toward stocks with relatively high book-to-market ratios (Table IV says that ln(BE/ME) is negative for the typical firm, so ln(BE/ME) = 0 is toward the high end of the sample ratios). Thus it is not surprising that the average intercepts are always large relative to their standard errors and relative to the returns on the NYSE VW and EW portfolios.

Like the overall period, the subperiods do not offer much hope that the average premium for β is economically important. The average FM slope for β is only slightly positive for 1963–1976 (0.10% per month, $t = 0.25$), and it is negative for 1977–1990 (−0.44% per month, $t = -1.17$). There is a hint that the size effect is weaker in the 1977–1990 period, but inferences about the average size slopes for the subperiods lack power.

Unlike the size effect, the relation between book-to-market equity and average return is so strong that it shows up reliably in both the 1963–1976 and the 1977–1990 subperiods. The average slopes for ln(BE/ME) are all more than 2.95 standard errors from 0, and the average slopes for the

Table VI

Subperiod Average Monthly Returns on the NYSE Equal-Weighted and Value-Weighted Portfolios and Subperiod Means of the Intercepts and Slopes from the Monthly FM Cross-Sectional Regressions of Returns on (a) Size (ln(ME)) and Book-to-Market Equity (ln(BE/ME)), and (b) β, ln(ME), and ln(BE/ME)

Mean is the time-series mean of a monthly return, Std is its time-series standard deviation, and t(Mn) is Mean divided by its time-series standard error.

	7/63–12/90 (330 Mos.)			7/63–12/76 (162 Mos.)			1/77–12/90 (168 Mos.)		
Variable	Mean	Std	t(Mn)	Mean	Std	t(Mn)	Mean	Std	t(Mn)
	NYSE Value-Weighted (VW) and Equal-Weighted (EW) Portfolio Returns								
VW	0.81	4.47	3.27	0.56	4.26	1.67	1.04	4.66	2.89
EW	0.97	5.49	3.19	0.77	5.70	1.72	1.15	5.28	2.82
	$R_{it} = a + b_{2t}\ln(ME_{it}) + b_{3t}\ln(BE/ME_{it}) + e_{it}$								
a	1.77	8.51	3.77	1.86	10.10	2.33	1.69	6.67	3.27
b_2	−0.11	1.02	−1.99	−0.16	1.25	−1.62	−0.07	0.73	−1.16
b_3	0.35	1.45	4.43	0.36	1.53	2.96	0.35	1.37	3.30
	$R_{it} = a + b_{1t}\beta_{it} + b_{2t}\ln(ME_{it}) + b_{3t}\ln(BE/ME_{it}) + e_{it}$								
a	2.07	5.75	6.55	1.73	6.22	3.54	2.40	5.25	5.92
b_1	−0.17	5.12	−0.62	0.10	5.33	0.25	−0.44	4.91	−1.17
b_2	−0.12	0.89	−2.52	−0.15	1.03	−1.91	−0.09	0.74	−1.64
b_3	0.33	1.24	4.80	0.34	1.36	3.17	0.31	1.10	3.67

subperiods (0.36 and 0.35) are close to the average slope (0.35) for the overall period. The subperiod results thus support the conclusion that, among the variables considered here, book-to-market equity is consistently the most powerful for explaining the cross-section of average stock returns.

Finally, Roll (1983) and Keim (1983) show that the size effect is stronger in January. We have examined the monthly slopes from the FM regressions in Table VI for evidence of a January seasonal in the relation between book-to-market equity and average return. The average January slopes for ln(BE/ME) are about twice those for February to December. Unlike the size effect, however, the strong relation between book-to-market equity and average return is not special to January. The average monthly February-to-December slopes for ln(BE/ME) are about 4 standard errors from 0, and they are close to (within 0.05 of) the average slopes for the whole year. Thus, there is a January seasonal in the book-to-market equity effect, but the positive relation between BE/ME and average return is strong throughout the year.

D. β and the Market Factor: Caveats

Some caveats about the negative evidence on the role of β in average returns are in order. The average premiums for β, size, and book-to-market equity depend on the definitions of the variables used in the regressions. For example, suppose we replace book-to-market equity (ln(BE/ME)) with book equity (ln(BE)). As long as size (ln(ME)) is also in the regression, this change will not affect the intercept, the fitted values or the R^2. But the change, in variables increases the average slope (and the t-statistic) on ln(ME). In other words, it increases the risk premium associated with size. Other redefinitions of the β, size, and book-to-market variables will produce different regression slopes and perhaps different inferences about average premiums, including possible resuscitation of a role for β. And, of course, at the moment, we have no theoretical basis for choosing among different versions of the variables.

Moreover, the tests here are restricted to stocks. It is possible that including other assets will change the inferences about the average premiums for β, size, and book-to-market equity. For example, the large average intercepts for the FM regressions in Table VI suggest that the regressions will not do a good job on Treasury bills, which have low average returns and are likely to have small loadings on the underlying market, size, and book-to-market factors in returns. Extending the tests to bills and other bonds may well change our inferences about average risk premiums, including the revival of a role for market β.

We emphasize, however, that different approaches to the tests are not likely to revive the Sharpe-Lintner-Black model. Resuscitation of the SLB model requires that a better proxy for the market portfolio (a) overturns our evidence that the simple relation between β and average stock returns is flat and (b) leaves β as the only variable relevant for explaining average returns. Such results seem unlikely, given Stambaugh's (1982) evidence that tests of the SLB model do not seem to be sensitive to the choice of a market proxy. Thus, if there is a role for β in average returns, it is likely to be found in a multi-factor model that transforms the flat simple relation between average return and β into a positively sloped conditional relation.

V. Conclusions and Implications

The Sharpe-Lintner-Black model has long shaped the way academics and practitioners think about average return and risk. Black, Jensen, and Scholes (1972) and Fama and MacBeth (1973) find that, as predicted by the model, there is a positive simple relation between average return and market β during the early years (1926–1968) of the CRSP NYSE returns file. Like Reinganum (1981) and Lakonishok and Shapiro (1986), we find that this simple relation between β and average return disappears during the more recent 1963–1990 period. The appendix that follows shows that the relation between β and average return is also weak in the last half century (1941–1990) of returns on NYSE stocks. In short, our tests do not support the central prediction of the SLB model, that average stock returns are positively related to market β.

Banz (1981) documents a strong negative relation between average return and firm size. Bhandari (1988) finds that average return is positively related to leverage, and Basu (1983) finds a positive relation between average return and E/P. Stattman (1980) and Rosenberg, Reid, and Lanstein (1985) document a positive relation between average return and book-to-market equity for U.S. stocks, and Chan, Hamao, and Lakonishok (1992) find that BE/ME is also a powerful variable for explaining average returns on Japanese stocks.

Variables like size, E/P, leverage, and book-to-market equity are all scaled versions of a firm's stock price. They can be regarded as different ways of extracting information from stock prices about the cross-section of expected stock returns (Ball (1978), Keim (1988)). Since all these variables are scaled versions of price, it is reasonable to expect that some of them are redundant for explaining average returns. Our main result is that for the 1963–1990 period, size and book-to-market equity capture the cross-sectional variation in average stock returns associated with size, E/P, book-to-market equity, and leverage.

A. Rational Asset-Pricing Stories

Are our results consistent with asset-pricing theory? Since the FM intercept is constrained to be the same for all stocks, FM regressions always impose a linear factor structure on returns and expected returns that is consistent with the multifactor asset-pricing models of Merton (1973) and Ross (1976). Thus our tests impose a rational asset-pricing framework on the relation between average return and size and book-to-market equity.

Even if our results are consistent with asset-pricing theory, they are not economically satisfying. What is the economic explanation for the roles of size and book-to-market equity in average returns? We suggest several paths of inquiry.

(a) The intercepts and slopes in the monthly FM regressions of returns on ln(ME) and ln(BE/ME) are returns on portfolios that mimic the underlying common risk factors in returns proxied by size and book-to-market equity (Fama (1976), chapter 9). Examining the relations between the returns on these portfolios and economic variables that measure variation in business conditions might help expose the nature of the economic risks captured by size and book-to-market equity.

(b) Chan, Chen, and Hsieh (1985) argue that the relation between size and average return proxies for a more fundamental relation between expected returns and economic risk factors. Their most powerful factor in explaining the size effect is the difference between the monthly returns on low- and high-grade corporate bonds, which in principle captures a kind of default risk in returns that is priced. It would be interesting to test whether loadings on this or other economic factors, such as those of Chen, Roll, and Ross (1986), can explain the roles of size and book-to-market equity in our tests.

(c) In a similar vein, Chan and Chen (1991) argue that the relation between size and average return is a relative-prospects effect. The earning prospects of distressed firms are more sensitive to economic conditions. This results in a distress factor in returns that is priced in expected returns. Chan and Chen construct two mimicking portfolios for the distress factor, based on dividend changes and leverage. It would be interesting to check whether loadings on their distress factors absorb the size and book-to-market equity effects in average returns that are documented here.

(d) In fact, if stock prices are rational, BE/ME, the ratio of the book value of a stock to the market's assessment of its value, should be a direct indicator of the relative prospects of firms. For example, we expect that high BE/ME firms have low earnings on assets relative to low BE/ME firms. Our work (in progress) suggests that there is indeed a clean separation between high and low BE/ME firms on various measures of economic fundamentals. Low BE/ME firms are persistently strong performers, while the economic performance of high BE/ME firms is persistently weak.

B. Irrational Asset-Pricing Stories

The discussion above assumes that the asset-pricing effects captured by size and book-to-market equity are rational. For BE/ME, our most powerful expected-return variable, there is an obvious alternative. The cross-section of book-to-market ratios might result from market overreaction to the relative prospects of firms. If overreaction tends to be corrected, BE/ME will predict the cross-section of stock returns.

Simple tests do not confirm that the size and book-to-market effects in average returns are due to market overreaction, at least of the type posited by DeBondt and Thaler (1985). One overreaction measure used by DeBondt and Thaler is a stock's most recent 3-year return. Their overreaction story predicts that 3-year losers have strong post-ranking returns relative to 3-year winners. In FM regressions (not shown) for individual stocks, the 3-year lagged return shows no power even when used alone to explain average returns. The univariate average slope for the lagged return is negative, -6 basis points per month, but less than 0.5 standard errors from 0.

C. Applications

Our main result is that two easily measured variables, size and book-to-market equity, seem to describe the cross-section of average stock returns. Prescriptions for using this evidence depend on (a) whether it will persist, and (b) whether it results from rational or irrational asset-pricing.

It is possible that, by chance, size and book-to-market equity happen to describe the cross-section of average returns in our sample, but they were and are unrelated to expected returns. We put little weight on this possibility, especially for book-to-market equity. First, although BE/ME has long been touted as a measure of the return prospects of stocks, there is no evidence that its explanatory power deteriorates through time. The 1963–1990 relation between BE/ME and average return is strong, and remarkably similar for the 1963–1976 and 1977–1990 subperiods. Second, our preliminary work on economic fundamentals suggests that high-BE/ME firms tend to be persistently poor earners relative to low-BE/ME firms. Similarly, small firms have a long period of poor earnings during the 1980s not shared with big firms. The systematic patterns in fundamentals give us some hope that size and book-to-market equity proxy for risk factors in returns, related to relative earning prospects, that are rationally priced in expected returns.

If our results are more than chance, they have practical implications for portfolio formation and performance evaluation by investors whose primary concern is long-term average returns. If asset-pricing is rational, size and BE/ME must proxy for risk. Our results then imply that the performance of managed portfolios (e.g., pension funds and mutual funds) can be evaluated by comparing their average returns with the average returns of benchmark portfolios with similar size and BE/ME characteristics. Likewise, the expected returns for different portfolio strategies can be estimated from the historical average returns of portfolios with matching size and BE/ME properties.

If asset-pricing is irrational and size and BE/ME do not proxy for risk, our results might still be used to evaluate portfolio performance and measure the expected returns from alternative investment strategies. If stock prices are irrational, however, the likely persistence of the results is more suspect.

Appendix
Size Versus β: 1941–1990

Our results on the absence of a relation between β and average stock returns for 1963–1990 are so contrary to the tests of the Sharpe-Lintner-Black model by Black, Jensen, and Scholes (1972), Fama and MacBeth (1973), and (more recently) Chan and Chen (1988), that further tests are appropriate. We examine the roles of size and β in the average returns on NYSE stocks for the half-century 1941–1990, the longest available period that avoids the high volatility of returns in the Great Depression. We do not include the accounting variables in the tests because of the strong selection bias (toward successful firms) in the COMPUSTAT data prior to 1962.

We first replicate the results of Chan and Chen (1988). Like them, we find that when portfolios are formed on size alone, there are strong relations between average return and either size or β; average return increases with β and decreases with size. For size portfolios, however, size (ln(ME)) and β are almost perfectly correlated (-0.98), so it is difficult to distinguish between the roles of size and β in average returns.

One way to generate strong variation in β that is unrelated to size is to form portfolios on size and then on β. As in Tables I to III, we find that the resulting independent variation in β just about washes out the positive simple relation between average return and β observed when portfolios are formed on size alone. The results for NYSE stocks for 1941–1990 are thus much like those for NYSE, AMEX, and NASDAQ stocks for 1963–1990.

This appendix also has methodological goals. For example, the FM regressions in Table III use returns on individual stocks as the dependent variable. Since we allocate portfolio βs to individual stocks but use firm-specific values of other variables like size, β may be at a disadvantage in the regressions for individual stocks. This appendix shows, however, that regressions for portfolios, which put β and size on equal footing, produce results comparable to those for individual stocks.

A. *Size Portfolios*

Table AI shows average monthly returns and market βs for 12 portfolios of NYSE stocks formed on the basis of size (ME) at the end of each year from 1940 to 1989. For these size portfolios, there is a strong positive relation between average return and β. Average returns fall from 1.96% per month for the smallest ME portfolio (1A) to 0.93% for the largest (10B) and β falls from 1.60 to 0.95. (Note also that, as claimed earlier, estimating β as the sum of the slopes in the regression of a portfolio's return on the current and prior month's NYSE value-weighted return produces much larger βs for the smallest ME portfolios and slightly smaller βs for the largest ME portfolios.)

The FM regressions in Table AI confirm the positive simple relation between average return and β for size portfolios. In the regressions of the size-portfolio returns on β alone, the average premium for a unit of β is 1.45% per month. In the regressions of individual stock returns on β (where stocks are assigned the β of their size portfolio), the premium for a unit of β is 1.39%. Both estimates are about 3 standard errors from 0. Moreover, the βs of size portfolios do not leave a residual size effect; the average residuals from the simple regressions of returns on β in Table AI show no relation to size. These positive SLB results for 1941–1990 are like those obtained by Chan and Chen (1988) in tests on size portfolios for 1954–1983.

There is, however, evidence in Table AI that all is not well with the βs of the size portfolios. They do a fine job on the relation between size and average return, but they do a lousy job on their main task, the relation between β and average return. When the residuals from the regressions of returns on β are grouped using the pre-ranking βs of individual stocks, the average residuals are strongly positive for low-β stocks (0.51% per month for group 1A) and negative for high-β stocks (−1.05% for 10B). Thus the market lines estimated with size-portfolio βs exaggerate the tradeoff of average return for β; they underestimate average returns on low-β stocks and overestimate average returns on high-β stocks. This pattern in the β-sorted average residuals for individual stocks suggests that (a) there is variation in β across stocks that is lost in the size portfolios, and (b) this variation in β is not rewarded as well as the variation in β that is related to size.

B. *Two-Pass Size-β Portfolios*

Like Table I, Table AII shows that subdividing size deciles using the (pre-ranking) βs of individual stocks results in strong variation in β that is

Table AI

Average Returns, Post-Ranking βs and Fama-MacBeth Regression Slopes for Size Portfolios of NYSE Stocks: 1941–1990

At the end of each year $t-1$, stocks are assigned to 12 portfolios using ranked values of ME. Included are all NYSE stocks that have a CRSP price and shares for December of year $t-1$ and returns for at least 24 of the 60 months ending in December of year $t-1$ (for pre-ranking β estimates). The middle 8 portfolios cover size deciles 2 to 9. The 4 extreme portfolios (1A, 1B, 10A, and 10B) split the smallest and largest deciles in half. We compute equal-weighted returns on the portfolios for the 12 months of year t using all surviving stocks. Average Return is the time-series average of the monthly portfolio returns for 1941–1990, in percent. Average firms is the average number of stocks in the portfolios each month. The simple βs are estimated by regressing the 1941–1990 sample of post-ranking monthly returns for a size portfolio on the current month's value-weighted NYSE portfolio return. The sum βs are the sum of the slopes from a regression of the post-ranking monthly returns on the current and prior month's VW NYSE returns.

The independent variables in the Fama-MacBeth regressions are defined for each firm at the end of December of each year $t-1$. Stocks are assigned the post-ranking (sum) β of the size portfolio they are in at the end of year $t-1$. ME is price times shares outstanding at the end of year $t-1$. In the individual-stock regressions, these values of the explanatory variables are matched with CRSP returns for each of the 12 months of year t. The portfolio regressions match the equal-weighted portfolio returns with the equal-weighted averages of β and ln(ME) for the surviving stocks in each month of year t. Slope is the average of the (600) monthly FM regression slopes and SE is the standard error of the average slope. The residuals from the monthly regressions for year t are grouped into 12 portfolios on the basis of size (ME) or pre-ranking β (estimated with 24 to 60 months of data, as available) at the end of year $t-1$. The average residuals are the time-series averages of the monthly equal-weighted portfolio residuals, in percent. The average residuals for regressions (1) and (2) (not shown) are quite similar to those for regressions (4) and (5) (shown).

	Portfolios Formed on Size											
	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Ave. return	1.96	1.59	1.44	1.36	1.28	1.24	1.23	1.17	1.15	1.13	0.97	0.93
Ave. firms	57	56	110	107	107	108	111	113	115	118	59	59
Simple β	1.29	1.24	1.21	1.19	1.16	1.13	1.13	1.12	1.09	1.05	1.00	0.98
Standard error	0.07	0.05	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
Sum β	1.60	1.44	1.37	1.32	1.26	1.23	1.19	1.17	1.12	1.06	0.99	0.95
Standard error	0.10	0.06	0.05	0.04	0.03	0.03	0.03	0.02	0.02	0.01	0.01	0.01

Table AI—*Continued*

	Portfolio Regressions				Individual Stock Regressions			
	(1) β	(2) ln(ME)	(3) β and ln(ME)		(4) β	(5) ln(ME)	(6) β and ln(ME)	
Slope	1.45	−0.137	3 05	0.149	1.39	−0.133	0.71	−0 060
SE	0.47	0.044	1.51	0 115	0.46	0.043	0.81	0 062

Average Residuals for Stocks Grouped on Size

	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	0.17	0.00	−0.04	−0.06	−0.05	−0.04	0 00	−0 03	0.03	0 08	0.01	0 04
Standard error	0.11	0.06	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.05	0.06
Regression (5)	0.30	0.02	−0.05	−0 06	−0.08	−0.07	−0.03	−0.04	0.02	0.08	0.01	0.13
Standard error	0.14	0.07	0 04	0.04	0 04	0 04	0.04	0.03	0.03	0.03	0.04	0 07
Regression (6)	0.20	0.02	−0.05	−0.07	−0.08	−0 06	−0 01	−0 02	0.04	0 09	0.00	0.06
Standard error	0.10	0.06	0.04	0 04	0 04	0.04	0.03	0.03	0.03	0.03	0 05	0 05

Average Residuals for Stocks Grouped on Pre-Ranking β

	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	0.51	0.61	0.38	0.32	0.16	0.12	0.03	−0.10	−0.27	−0.31	−0.66	−1.05
Standard error	0.21	0.19	0.13	0.08	0 04	0.03	0.04	0 05	0.09	0 11	0 18	0.23
Regression (5)	−0.10	0.00	0.02	0.09	0.05	0.07	0.05	0.00	−0.03	−0.01	−0.11	−0 33
Standard error	0.11	0.10	0.07	0.05	0.04	0.03	0.03	0.04	0.05	0.07	0 10	0 13
Regression (6)	0.09	0.25	0.13	0.19	0.11	0.14	0.09	0.01	−0.11	−0.12	−0.38	−0 70
Standard error	0.41	0.37	0.24	0.14	0 07	0.04	0.04	0.09	0.16	0.21	0 34	0.43

Table AII

Properties of Portfolios Formed on Size and Pre-Ranking β: NYSE Stocks Sorted by ME (Down) then Pre-Ranking β (Across): 1941–1990

At the end of year $t-1$, the NYSE stocks on CRSP are assigned to 10 size (ME) portfolios Each size decile is subdivided into 10 β portfolios using pre-ranking βs of individual stocks, estimated with 24 to 60 monthly returns (as available) ending in December of year $t-1$. The equal-weighted monthly returns on the resulting 100 portfolios are then calculated for year t. The average returns are the time-series averages of the monthly returns, in percent. The post-ranking βs use the full 1941–1990 sample of post-ranking returns for each portfolio. The pre- and post-ranking βs are the sum of the slopes from a regression of monthly returns on the current and prior month's NYSE value-weighted market return. The average size for a portfolio is the time-series average of each month's average value of ln(ME) for stocks in the portfolio. ME is denominated in millions of dollars. There are, on average, about 10 stocks in each size-β portfolio each month. The All column shows parameter values for equal-weighted size-decile (ME) portfolios. The All rows show parameter values for equal-weighted portfolios of the stocks in each β group.

	All	Low-β	β-2	β-3	β-4	β-5	β-6	β-7	β-8	β-9	High-β
Panel A: Average Monthly Return (in Percent)											
All		1.22	1.30	1.32	1.35	1.36	1.34	1.29	1.34	1.14	1.10
Small-ME	1.78	1.74	1.76	2.08	1.91	1.92	1.72	1.77	1.91	1.56	1.46
ME-2	1.44	1.41	1.35	1.33	1.61	1.72	1.59	1.40	1.62	1.24	1.11
ME-3	1.36	1.21	1.40	1.22	1.47	1.34	1.51	1.33	1.57	1.33	1.21
ME-4	1.28	1.26	1.29	1.19	1.27	1.51	1.30	1.19	1.56	1.18	1.00
ME-5	1.24	1.22	1.30	1.28	1.33	1.21	1.37	1.41	1.31	0.92	1.06
ME-6	1.23	1.21	1.32	1.37	1.09	1.34	1.10	1.40	1.21	1.22	1.08
ME-7	1.17	1.08	1.23	1.37	1.27	1.19	1.34	1.10	1.11	0.87	1.17
ME-8	1.15	1.06	1.18	1.26	1.25	1.26	1.17	1.16	1.05	1.08	1.04
ME-9	1.13	0.99	1.13	1.00	1.24	1.28	1.31	1.15	1.11	1.09	1.05
Large-ME	0.95	0.99	1.01	1.12	1.01	0.89	0.95	0.95	1.00	0.90	0.68

Table AII—*Continued*

	All	Low-β	β-2	β-3	β-4	β-5	β-6	β-7	β-8	β-9	High-β
					Panel B: Post-Ranking β						
All		0.76	0.95	1.05	1.14	1.22	1.26	1.34	1.38	1.49	1.69
Small-ME	1.52	1.17	1.40	1.31	1.50	1.46	1.50	1.69	1.60	1.75	1.92
ME-2	1.37	0.86	1.09	1.12	1.24	1.39	1.42	1.48	1.60	1.69	1.91
ME-3	1.32	0.88	0.96	1.18	1.19	1.33	1.40	1.43	1.56	1.64	1.74
ME-4	1.26	0.69	0.95	1.06	1.15	1.24	1.29	1.46	1.43	1.64	1.83
ME-5	1.23	0.70	0.95	1.04	1.10	1.22	1.32	1.34	1.41	1.56	1.72
ME-6	1.19	0.68	0.86	1.04	1.13	1.20	1.20	1.35	1.36	1.48	1.70
ME-7	1.17	0.67	0.88	0.95	1.14	1.18	1.26	1.27	1.32	1.44	1.68
ME-8	1.12	0.64	0.83	0.99	1.06	1.14	1.14	1.21	1.26	1.39	1.58
ME-9	1.06	0.68	0.81	0.94	0.96	1.06	1.11	1.18	1.22	1.25	1.46
Large-ME	0.97	0.65	0.73	0.90	0.91	0.97	1.01	1.01	1.07	1.12	1.38
					Panel C: Average Size (ln(ME))						
All		4.39	4.39	4.40	4.40	4.39	4.40	4.38	4.37	4.37	4.34
Small-ME	1.93	2.04	1.99	2.00	1.96	1.92	1.92	1.91	1.90	1.87	1.80
ME-2	2.80	2.81	2.79	2.81	2.83	2.80	2.79	2.80	2.80	2.79	2.79
ME-3	3.27	3.28	3.27	3.28	3.27	3.27	3.28	3.29	3.27	3.27	3.26
ME-4	3.67	3.67	3.67	3.67	3.68	3.68	3.67	3.68	3.66	3.67	3.67
ME-5	4.06	4.07	4.06	4.05	4.06	4.07	4.06	4.05	4.05	4.06	4.06
ME-6	4.45	4.45	4.44	4.46	4.45	4.45	4.45	4.45	4.44	4.45	4.45
ME-7	4.87	4.86	4.87	4.86	4.87	4.87	4.88	4.87	4.87	4.85	4.87
ME-8	5.36	5.38	5.38	5.38	5.35	5.36	5.37	5.37	5.36	5.35	5.34
ME-9	5.98	5.96	5.98	5.99	6.00	5.98	5.98	5.97	5.95	5.96	5.96
Large-ME	7.12	7.10	7.12	7.16	7.17	7.20	7.29	7.14	7.09	7.04	6.83

independent of size. The β sort of a size decile always produces portfolios with similar average ln(ME) but much different (post-ranking) βs. Table AII also shows, however, that investors are not compensated for the variation in β that is independent of size. Despite the wide range of βs in each size decile, average returns show no tendency to increase with β. AII

The FM regressions in Table AIII formalize the roles of size and β in NYSE average returns for 1941–1990. The regressions of returns on β alone show that using the βs of the portfolios formed on size and β, rather than size alone, causes the average slope on β to fall from about 1.4% per month (Table AI) to about 0.23% (about 1 standard error from 0). Thus, allowing for variation in β that is unrelated to size flattens the relation between average return and β, to the point where it is indistinguishable from no relation at all.

The flatter market lines in Table AIII succeed, however, in erasing the negative relation between β and average residuals observed in the regressions of returns on β alone in Table AI. Thus, forming portfolios on size and β (Table AIII) produces a better description of the simple relation between average return and β than forming portfolios on size alone (Table AI). This improved description of the relation between average return and β is evidence that the β estimates for the two-pass size-β portfolios capture variation in true βs that is missed when portfolios are formed on size alone.

Unfortunately, the flatter market lines in Table AIII have a cost, the emergence of a residual size effect. Grouped on the basis of ME for individual stocks, the average residuals from the univariate regressions of returns on the βs of the 100 size-β portfolios are strongly positive for small stocks and negative for large stocks (0.60% per month for the smallest ME group, 1A, and -0.27% for the largest, 10B). Thus, when we allow for variation in β that is independent of size, the resulting βs leave a large size effect in average returns. This residual size effect is much like that observed by Banz (1981) with the βs of portfolios formed on size and β.

The correlation between size and β is -0.98 for portfolios formed on size alone. The independent variation in β obtained with the second-pass sort on β lowers the correlation to -0.50. The lower correlation means that bivariate regressions of returns on β and ln(ME) are more likely to distinguish true size effects from true β effects in average returns.

The bivariate regressions (Table AIII) that use the βs of the size-β portfolios are more bad news for β. The average slopes for ln(ME) are close to the values in the univariate size regressions, and almost 4 standard errors from 0, but the average slopes for β are negative and less than 1 standard error from 0. The message from the bivariate regressions is that there is a strong relation between size and average return. But like the regressions in Table AIII that explain average returns with β alone, the bivariate regressions say that there is no reliable relation between β and average returns when the tests use βs that are not close substitutes for size. These uncomfortable SLB results for NYSE stocks for 1941–1990 are much like those for NYSE, AMEX, and NASDAQ stocks for 1963–1990 in Table III.

C. Subperiod Diagnostics

Our results for 1941–1990 seem to contradict the evidence in Black, Jensen, and Scholes (BJS) (1972) and Fama and MacBeth (FM) (1973) that there is a reliable positive relation between average return and β. The βs in BJS and FM are from portfolios formed on β alone, and the market proxy is the NYSE equal-weighted portfolio. We use the βs of portfolios formed on size and β, and our market is the value-weighted NYSE portfolio. We can report, however, that our inference that there isn't much relation between β and average return is unchanged when (a) the market proxy is the NYSE EW portfolio, (b) portfolios are formed on just (pre-ranking) βs, or (c) the order of forming the size-β portfolios is changed from size then β to β then size.

A more important difference between our results and the earlier studies is the sample periods. The tests in BJS and FM end in the 1960s. Table AIV shows that when we split the 50-year 1941–1990 period in half, the univariate FM regressions of returns on β produce an average slope for 1941–1965 (0.50% per month, t = 1.82) more like that of the earlier studies. In contrast, the average slope on β for 1966–1990 is close to 0 (−0.02, t = 0.06).

But Table AIV also shows that drawing a distinction between the results for 1941–1965 and 1966–1990 is misleading. The stronger tradeoff of average return for β in the simple regressions for 1941–1965 is due to the first 10 years, 1941–1950. This is the only period in Table AIV that produces an average premium for β (1.26% per month) that is both positive and more than 2 standard errors from 0. Conversely, the weak relation between β and average return for 1966–1990 is largely due to 1981–1990. The strong negative average slope in the univariate regressions of returns on β for 1981–1990 (−1.01, t = −2.10) offsets a positive slope for 1971–1980 (0.82, t = 1.27).

The subperiod variation in the average slopes from the FM regressions of returns on β alone seems moot, however, given the evidence in Table AIV that adding size always kills any positive tradeoff of average return for β in the subperiods. Adding size to the regressions for 1941–1965 causes the average slope for β to drop from 0.50 (t = 1.82) to 0.07 (t = 0.28). In contrast, the average slope on size in the bivariate regressions (−0.16, t = −2.97) is close to its value (−0.17, t = −2.88) in the regressions of returns on ln(ME) alone. Similar comments hold for 1941–1950. In short, any evidence of a positive average premium for β in the subperiods seems to be a size effect in disguise.

D. Can the SLB Model Be Saved?

Before concluding that β has no explanatory power, it is appropriate to consider other explanations for our results. One possibility is that the variation in β produced by the β sorts of size deciles in just sampling error. If so, it is not surprising that the variation in β within a size decile is unrelated to average return, or that size dominates β in bivariate tests. The standard errors of the βs suggest, however, that this explanation cannot save the SLB

Table AIII

Average Slopes, Their Standard Errors (SE), and Average Residuals from Monthly FM Regressions for Individual NYSE Stocks and for Portfolios Formed on Size and Pre-Ranking β: 1941–1990

Stocks are assigned the post-ranking β of the size-β portfolio they are in at the end of year $t-1$ (Table AII). ln(ME) is the natural log of price times shares outstanding at the end of year $t-1$. In the individual-stock regressions, these values of the explanatory variables are matched with CRSP returns for each of the 12 months in year t. The portfolio regressions match the equal-weighted portfolio returns for the size-β portfolios (Table AII) with the equal-weighted averages of β and ln(ME) for the surviving stocks in each month of year t. Slope is the time-series average of the monthly regression slopes from 1941–1990 (600 months); SE is the time-series standard error of the average slope.

The residuals from the monthly regressions in year t are grouped into 12 portfolios on the basis of size or pre-ranking β (estimated with 24 to 60 months of returns, as available) as of the end of year $t-1$. The average residuals are the time-series averages of the monthly equal-weighted averages of the residuals in percent. The average residuals (not shown) from the FM regressions (1) to (3) that use the returns on the 100 size-β portfolios as the dependent variable are always within 0.01 of those from the regressions for individual stock returns. This is not surprising given that the correlation between the time-series of 1941–1990 monthly FM slopes on β or ln(ME) for the comparable portfolio and individual stock regressions is always greater than 0.99.

	Portfolio Regressions				Individual Stock Regressions			
	(1) β	(2) ln(ME)	(3) β and ln(ME)		(4) β	(5) ln(ME)	(6) β and ln(ME)	
Slope	0.22	−0.128	−0.13	−0.143	0.24	−0.133	−0.14	−0.147
SE	0.24	0.043	0.21	0.039	0.23	0.043	0.21	0.039

Average Residuals for Stocks Grouped on Size

	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	0.60	0.26	0.13	0.06	−0.01	−0.03	−0.03	−0.09	−0.10	−0.11	−0.25	−0.27
Standard error	0.21	0.10	0.06	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.06	0.08
Regression (5)	0.30	0.02	−0.05	−0.06	−0.08	−0.07	−0.03	−0.04	0.02	0.08	0.01	0.13
Standard error	0.14	0.07	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.04	0.07
Regression (6)	0.31	0.02	−0.05	−0.06	−0.09	−0.07	−0.03	−0.04	0.02	0.08	0.01	0.13
Standard error	0.14	0.07	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.04	0.07

Table AIII—*Continued*

	Portfolio Regressions						Individual Stock Regressions					
	(1) β		(2) ln(ME)		(3) β and ln(ME)		(4) β		(5) ln(ME)		(6) β and ln(ME)	
	Average Residuals for Stocks Grouped on Pre-Ranking β											
	1A	1B	2	3	4	5	6	7	8	9	10A	10B
Regression (4)	−0.08	0.03	−0.01	0.08	0.04	0.08	0.04	0.02	−0.03	0.02	−0.11	−0.32
Standard error	0.07	0.05	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.06	0.07
Regression (5)	−0.10	0.00	0.02	0.09	0.05	0.07	0.05	0.00	−0.03	−0.01	−0.11	−0.33
Standard error	0.11	0.10	0.07	0.05	0.04	0.03	0.03	0.04	0.05	0.07	0.10	0.13
Regression (6)	−0.17	−0.07	−0.02	0.07	0.04	0.06	0.05	0.03	0.00	0.04	−0.04	−0.23
Standard error	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.07

Table AIV

Subperiod Average Returns on the NYSE Value-Weighted and Equal-Weighted Portfolios and Average Values of the Intercepts and Slopes for the FM Cross-Sectional Regressions of Individual Stock Returns on β and Size (ln(ME))

Mean is the average VW or EW return or an average slope from the monthly cross-sectional regressions of individual stock returns on β and/or ln(ME). Std is the standard deviation of the time-series of returns or slopes, and t(Mn) is Mean over its time-series standard error. The average slopes (not shown) from the FM regressions that use the returns on the 100 size-β portfolios of Table AII as the dependent variable are quite close to those for individual stock returns. (The correlation between the 1941-1990 month-by-month slopes on β or ln(ME) for the comparable portfolio and individual stock regressions is always greater than 0.99.)

Panel A

	1941-1990 (600 Mos.)			1941-1965 (300 Mos.)			1966-1990 (300 Mos.)		
Variable	Mean	Std	t(Mn)	Mean	Std	t(Mn)	Mean	Std	t(Mn)
	NYSE Value-Weighted (VW) and Equal-Weighted (EW) Portfolio Returns								
VW	0.93	4.15	5 49	1.10	3.58	5.30	0.76	4.64	2.85
EW	1.12	5.10	5.37	1.33	4.42	5.18	0.91	5.70	2.77
	$R_{it} = a + b_{1t}\beta_{it} + e_{it}$								
a	0.98	3.93	6.11	0.84	3.18	4.56	1.13	4.57	4.26
b_1	0.24	5.52	1.07	0.50	4.75	1.82	-0.02	6.19	-0 06
	$R_{it} = a + b_{2t}\ln(ME_{it}) + e_{it}$								
a	1.70	8.24	5.04	1.88	6.43	5.06	1.51	9.72	2.69
b_2	-0.13	1.06	-3.07	-0.17	1.01	-2.88	-0.10	1.11	-1.54
	$R_{it} = a + b_{1t}\beta_{it} + b_{2t}\ln(ME_{it}) + e_{it}$								
a	1.97	6.16	7.84	1.80	4.77	6.52	2.14	7.29	5.09
b_1	-0.14	5.05	-0.66	0.07	4.15	0.28	-0.34	5.80	-1.01
b_2	-0.15	0.96	-3.75	-0.16	0.94	-2.97	-0.13	0.99	-2.34

Table AIV—*Continued*

Panel B:

Return	1941–1950 Mean	1941–1950 t(Mn)	1951–1960 Mean	1951–1960 t(Mn)	1961–1970 Mean	1961–1970 t(Mn)	1971–1980 Mean	1971–1980 t(Mn)	1981–1990 Mean	1981–1990 t(Mn)
				NYSE Value-Weighted (VW) and Equal-Weighted (EW) Portfolio Returns						
VW	1.05	2.88	1.18	3.95	0.66	1.84	0.72	1.67	1.04	2.40
EW	1.59	3.16	1.13	3.76	0.88	1.96	1.04	1.82	0.95	2.01
				$R_{it} = a + b_{1t}\beta_{it} + e_{it}$						
a	0.24	0.66	1.41	6.36	0.64	1.94	0.27	0.62	2.35	5.99
b_1	1.26	2.20	−0.19	−0.63	0.32	0.72	0.82	1.27	−1.01	−2.10
				$R_{it} = a + b_{2t}\ln(ME_{it}) + e_{it}$						
a	2.63	3.47	1.08	2.73	1.78	2.50	2.18	2.03	0.82	1.20
b_2	−0.37	−2.90	0.03	0.53	−0.17	−2.19	−0.20	−1.57	0.04	0.57
				$R_{it} = a + b_{1t}\beta_{it} + b_{2t}\ln(ME_{it}) + e_{it}$						
a	2.14	3.93	1.38	4.03	2.01	4.16	1.50	2.12	2.84	4.25
b_1	0.34	0.75	−0.17	−0.53	−0.11	−0.27	0.41	0.75	−1.14	−2.16
b_2	−0.34	−2.92	0.01	0.20	−0.18	−2.89	−0.16	−1.50	−0.07	−0.84

model. The standard errors for portfolios formed on size and β are only slightly larger (0.02 to 0.11) than those for portfolios formed on size alone (0.01 to 0.10, Table AI). And the range of the post-ranking βs within a size decile is always large relative to the standard errors of the βs.

Another possibility is that the proportionality condition (1) for the variation through time in true βs, that justifies the use of full-period post-ranking βs in the FM tests, does not work well for portfolios formed on size and β. If this is a problem, post-ranking βs for the size-β portfolios should not be highly correlated across subperiods. The correlation between the half-period (1941–1965 and 1966–1990) βs of the size-β portfolios is 0.91, which we take to be good evidence that the full-period β estimates for these portfolios are informative about true βs. We can also report that using 5-year βs (pre- or post-ranking) in the FM regressions does not change our negative conclusions about the role of β in average returns, as long as portfolios are formed on β as well as size, or on β alone.

Any attempt to salvage the simple positive relation between β and average return predicted by the SLB model runs into three damaging facts, clear in Table AII. (a) Forming portfolios on size and pre-ranking βs produces a wide range of post-ranking βs in every size decile. (b) The post-ranking βs closely reproduce (in deciles 2 to 10 they exactly reproduce) the ordering of the pre-ranking βs used to form the β-sorted portfolios. It seems safe to conclude that the increasing pattern of the post-ranking βs in every size decile captures the ordering of the true βs. (c) Contrary to the SLB model, the β sorts do not produce a similar ordering of average returns. Within the rows (size deciles) of the average return matrix in Table AII, the high-β portfolios have average returns that are close to or less than the low-β portfolios.

But the most damaging evidence against the SLB model comes from the univariate regressions of returns on β in Table AIII. They say that when the tests allow for variation in β that is unrelated to size, the relation between β and average return for 1941–1990 is weak, perhaps nonexistent, even when β is the only explanatory variable. We are forced to conclude that the SLB model does not describe the last 50 years of average stock returns.

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The Capital Asset Pricing Model: Theory and Evidence

Eugene F. Fama and Kenneth R. French

The capital asset pricing model (CAPM) of William Sharpe (1964) and John Lintner (1965) marks the birth of asset pricing theory (resulting in a Nobel Prize for Sharpe in 1990). Four decades later, the CAPM is still widely used in applications, such as estimating the cost of capital for firms and evaluating the performance of managed portfolios. It is the centerpiece of MBA investment courses. Indeed, it is often the only asset pricing model taught in these courses.[1]

The attraction of the CAPM is that it offers powerful and intuitively pleasing predictions about how to measure risk and the relation between expected return and risk. Unfortunately, the empirical record of the model is poor—poor enough to invalidate the way it is used in applications. The CAPM's empirical problems may reflect theoretical failings, the result of many simplifying assumptions. But they may also be caused by difficulties in implementing valid tests of the model. For example, the CAPM says that the risk of a stock should be measured relative to a comprehensive "market portfolio" that in principle can include not just traded financial assets, but also consumer durables, real estate and human capital. Even if we take a narrow view of the model and limit its purview to traded financial assets, is it

[1] Although every asset pricing model is a capital asset pricing model, the finance profession reserves the acronym CAPM for the specific model of Sharpe (1964), Lintner (1965) and Black (1972) discussed here. Thus, throughout the paper we refer to the Sharpe-Lintner-Black model as the CAPM.

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legitimate to limit further the market portfolio to U.S. common stocks (a typical choice), or should the market be expanded to include bonds, and other financial assets, perhaps around the world? In the end, we argue that whether the model's problems reflect weaknesses in the theory or in its empirical implementation, the failure of the CAPM in empirical tests implies that most applications of the model are invalid.

We begin by outlining the logic of the CAPM, focusing on its predictions about risk and expected return. We then review the history of empirical work and what it says about shortcomings of the CAPM that pose challenges to be explained by alternative models.

The Logic of the CAPM

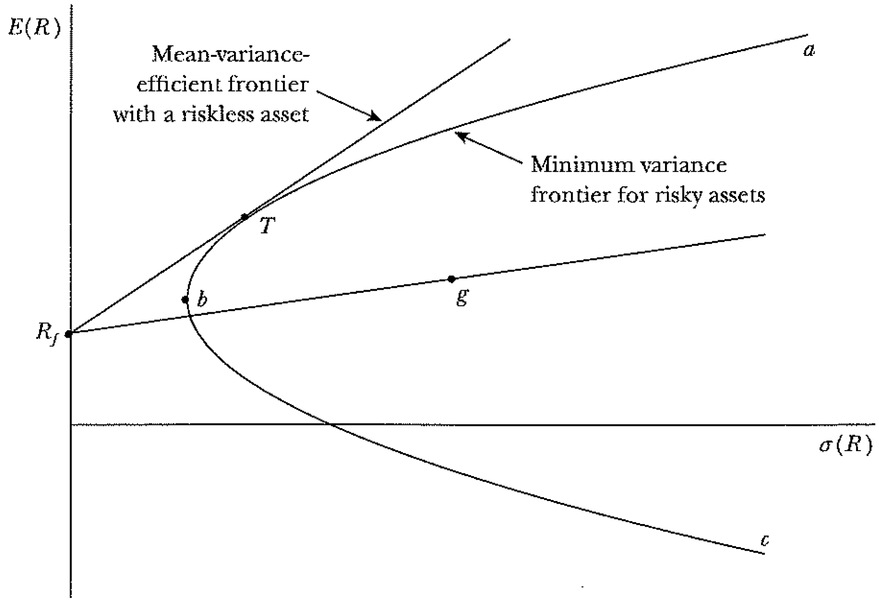
The CAPM builds on the model of portfolio choice developed by Harry Markowitz (1959). In Markowitz's model, an investor selects a portfolio at time $t - 1$ that produces a stochastic return at t. The model assumes investors are risk averse and, when choosing among portfolios, they care only about the mean and variance of their one-period investment return. As a result, investors choose "mean-variance-efficient" portfolios, in the sense that the portfolios 1) minimize the variance of portfolio return, given expected return, and 2) maximize expected return, given variance. Thus, the Markowitz approach is often called a "mean-variance model."

The portfolio model provides an algebraic condition on asset weights in mean-variance-efficient portfolios. The CAPM turns this algebraic statement into a testable prediction about the relation between risk and expected return by identifying a portfolio that must be efficient if asset prices are to clear the market of all assets.

Sharpe (1964) and Lintner (1965) add two key assumptions to the Markowitz model to identify a portfolio that must be mean-variance-efficient. The first assumption is *complete agreement*: given market clearing asset prices at $t - 1$, investors agree on the joint distribution of asset returns from $t - 1$ to t. And this distribution is the true one—that is, it is the distribution from which the returns we use to test the model are drawn. The second assumption is that there is *borrowing and lending at a risk-free rate*, which is the same for all investors and does not depend on the amount borrowed or lent.

Figure 1 describes portfolio opportunities and tells the CAPM story. The horizontal axis shows portfolio risk, measured by the standard deviation of portfolio return; the vertical axis shows expected return. The curve *abc*, which is called the minimum variance frontier, traces combinations of expected return and risk for portfolios of risky assets that minimize return variance at different levels of expected return. (These portfolios do not include risk-free borrowing and lending.) The tradeoff between risk and expected return for minimum variance portfolios is apparent. For example, an investor who wants a high expected return, perhaps at point *a*, must accept high volatility. At point T, the investor can have an interme-

Figure 1
Investment Opportunities



diate expected return with lower volatility. If there is no risk-free borrowing or lending, only portfolios above b along abc are mean-variance-efficient, since these portfolios also maximize expected return, given their return variances.

Adding risk-free borrowing and lending turns the efficient set into a straight line. Consider a portfolio that invests the proportion x of portfolio funds in a risk-free security and $1 - x$ in some portfolio g. If all funds are invested in the risk-free security—that is, they are loaned at the risk-free rate of interest—the result is the point R_f in Figure 1, a portfolio with zero variance and a risk-free rate of return. Combinations of risk-free lending and positive investment in g plot on the straight line between R_f and g. Points to the right of g on the line represent borrowing at the risk-free rate, with the proceeds from the borrowing used to increase investment in portfolio g. In short, portfolios that combine risk-free lending or borrowing with some risky portfolio g plot along a straight line from R_f through g in Figure 1.[2]

[2] Formally, the return, expected return and standard deviation of return on portfolios of the risk-free asset f and a risky portfolio g vary with x, the proportion of portfolio funds invested in f, as

$$R_p = xR_f + (1 - x)R_g,$$

$$E(R_p) = xR_f + (1 - x)E(R_g),$$

$$\sigma(R_p) = (1 - x)\sigma(R_g),\ x \leq 1.0,$$

which together imply that the portfolios plot along the line from R_f through g in Figure 1.

To obtain the mean-variance-efficient portfolios available with risk-free borrowing and lending, one swings a line from R_f in Figure 1 up and to the left as far as possible, to the tangency portfolio T. We can then see that all efficient portfolios are combinations of the risk-free asset (either risk-free borrowing or lending) and a single risky tangency portfolio, T. This key result is Tobin's (1958) "separation theorem."

The punch line of the CAPM is now straightforward. With complete agreement about distributions of returns, all investors see the same opportunity set (Figure 1), and they combine the same risky tangency portfolio T with risk-free lending or borrowing. Since all investors hold the same portfolio T of risky assets, it must be the value-weight market portfolio of risky assets. Specifically, each risky asset's weight in the tangency portfolio, which we now call M (for the "market"), must be the total market value of all outstanding units of the asset divided by the total market value of all risky assets. In addition, the risk-free rate must be set (along with the prices of risky assets) to clear the market for risk-free borrowing and lending.

In short, the CAPM assumptions imply that the market portfolio M must be on the minimum variance frontier if the asset market is to clear. This means that the algebraic relation that holds for any minimum variance portfolio must hold for the market portfolio. Specifically, if there are N risky assets,

$$\text{(Minimum Variance Condition for } M\text{)} \quad E(R_i) = E(R_{ZM}) + [E(R_M) - E(R_{ZM})]\beta_{iM}, \; i = 1, \ldots, N.$$

In this equation, $E(R_i)$ is the expected return on asset i, and β_{iM}, the market beta of asset i, is the covariance of its return with the market return divided by the variance of the market return,

$$\text{(Market Beta)} \quad \beta_{iM} = \frac{\text{cov}(R_i, R_M)}{\sigma^2(R_M)}.$$

The first term on the right-hand side of the minimum variance condition, $E(R_{ZM})$, is the expected return on assets that have market betas equal to zero, which means their returns are uncorrelated with the market return. The second term is a risk premium—the market beta of asset i, β_{iM}, times the premium per unit of beta, which is the expected market return, $E(R_M)$, minus $E(R_{ZM})$.

Since the market beta of asset i is also the slope in the regression of its return on the market return, a common (and correct) interpretation of beta is that it measures the sensitivity of the asset's return to variation in the market return. But there is another interpretation of beta more in line with the spirit of the portfolio model that underlies the CAPM. The risk of the market portfolio, as measured by the variance of its return (the denominator of β_{iM}), is a weighted average of the covariance risks of the assets in M (the numerators of β_{iM} for different assets).

Thus, β_{iM} is the covariance risk of asset i in M measured relative to the average covariance risk of assets, which is just the variance of the market return.[3] In economic terms, β_{iM} is proportional to the risk each dollar invested in asset i contributes to the market portfolio.

The last step in the development of the Sharpe-Lintner model is to use the assumption of risk-free borrowing and lending to nail down $E(R_{ZM})$, the expected return on zero-beta assets. A risky asset's return is uncorrelated with the market return—its beta is zero—when the average of the asset's covariances with the returns on other assets just offsets the variance of the asset's return. Such a risky asset is riskless in the market portfolio in the sense that it contributes nothing to the variance of the market return.

When there is risk-free borrowing and lending, the expected return on assets that are uncorrelated with the market return, $E(R_{ZM})$, must equal the risk-free rate, R_f. The relation between expected return and beta then becomes the familiar Sharpe-Lintner CAPM equation,

$$\text{(Sharpe-Lintner CAPM)} \quad E(R_i) = R_f + [E(R_M) - R_f)]\beta_{iM},\ i = 1, \ldots, N.$$

In words, the expected return on any asset i is the risk-free interest rate, R_f, plus a risk premium, which is the asset's market beta, β_{iM}, times the premium per unit of beta risk, $E(R_M) - R_f$.

Unrestricted risk-free borrowing and lending is an unrealistic assumption. Fischer Black (1972) develops a version of the CAPM without risk-free borrowing or lending. He shows that the CAPM's key result—that the market portfolio is mean-variance-efficient—can be obtained by instead allowing unrestricted short sales of risky assets. In brief, back in Figure 1, if there is no risk-free asset, investors select portfolios from along the mean-variance-efficient frontier from a to b. Market clearing prices imply that when one weights the efficient portfolios chosen by investors by their (positive) shares of aggregate invested wealth, the resulting portfolio is the market portfolio. The market portfolio is thus a portfolio of the efficient portfolios chosen by investors. With unrestricted short selling of risky assets, portfolios made up of efficient portfolios are themselves efficient. Thus, the market portfolio is efficient, which means that the minimum variance condition for M given above holds, and it is the expected return-risk relation of the Black CAPM.

The relations between expected return and market beta of the Black and Sharpe-Lintner versions of the CAPM differ only in terms of what each says about $E(R_{ZM})$, the expected return on assets uncorrelated with the market. The Black version says only that $E(R_{ZM})$ must be less than the expected market return, so the

[3] Formally, if x_{iM} is the weight of asset i in the market portfolio, then the variance of the portfolio's return is

$$\sigma^2(R_M) = Cov(R_M, R_M) = Cov\left(\sum_{i=1}^{N} x_{iM}R_i,\ R_M\right) = \sum_{i=1}^{N} x_{iM}Cov(R_i, R_M).$$

premium for beta is positive. In contrast, in the Sharpe-Lintner version of the model, $E(R_{ZM})$ must be the risk-free interest rate, R_f, and the premium per unit of beta risk is $E(R_M) - R_f$.

The assumption that short selling is unrestricted is as unrealistic as unrestricted risk-free borrowing and lending. If there is no risk-free asset and short sales of risky assets are not allowed, mean-variance investors still choose efficient portfolios—points above *b* on the *abc* curve in Figure 1. But when there is no short selling of risky assets and no risk-free asset, the algebra of portfolio efficiency says that portfolios made up of efficient portfolios are not typically efficient. This means that the market portfolio, which is a portfolio of the efficient portfolios chosen by investors, is not typically efficient. And the CAPM relation between expected return and market beta is lost. This does not rule out predictions about expected return and betas with respect to other efficient portfolios—if theory can specify portfolios that must be efficient if the market is to clear. But so far this has proven impossible.

In short, the familiar CAPM equation relating expected asset returns to their market betas is just an application to the market portfolio of the relation between expected return and portfolio beta that holds in any mean-variance-efficient portfolio. The efficiency of the market portfolio is based on many unrealistic assumptions, including complete agreement and either unrestricted risk-free borrowing and lending or unrestricted short selling of risky assets. But all interesting models involve unrealistic simplifications, which is why they must be tested against data.

Early Empirical Tests

Tests of the CAPM are based on three implications of the relation between expected return and market beta implied by the model. First, expected returns on all assets are linearly related to their betas, and no other variable has marginal explanatory power. Second, the beta premium is positive, meaning that the expected return on the market portfolio exceeds the expected return on assets whose returns are uncorrelated with the market return. Third, in the Sharpe-Lintner version of the model, assets uncorrelated with the market have expected returns equal to the risk-free interest rate, and the beta premium is the expected market return minus the risk-free rate. Most tests of these predictions use either cross-section or time-series regressions. Both approaches date to early tests of the model.

Tests on Risk Premiums

The early cross-section regression tests focus on the Sharpe-Lintner model's predictions about the intercept and slope in the relation between expected return and market beta. The approach is to regress a cross-section of average asset returns on estimates of asset betas. The model predicts that the intercept in these regressions is the risk-free interest rate, R_f, and the coefficient on beta is the expected return on the market in excess of the risk-free rate, $E(R_M) - R_f$.

Two problems in these tests quickly became apparent. First, estimates of beta for individual assets are imprecise, creating a measurement error problem when they are used to explain average returns. Second, the regression residuals have common sources of variation, such as industry effects in average returns. Positive correlation in the residuals produces downward bias in the usual ordinary least squares estimates of the standard errors of the cross-section regression slopes.

To improve the precision of estimated betas, researchers such as Blume (1970), Friend and Blume (1970) and Black, Jensen and Scholes (1972) work with portfolios, rather than individual securities. Since expected returns and market betas combine in the same way in portfolios, if the CAPM explains security returns it also explains portfolio returns.[4] Estimates of beta for diversified portfolios are more precise than estimates for individual securities. Thus, using portfolios in cross-section regressions of average returns on betas reduces the critical errors in variables problem. Grouping, however, shrinks the range of betas and reduces statistical power. To mitigate this problem, researchers sort securities on beta when forming portfolios; the first portfolio contains securities with the lowest betas, and so on, up to the last portfolio with the highest beta assets. This sorting procedure is now standard in empirical tests.

Fama and MacBeth (1973) propose a method for addressing the inference problem caused by correlation of the residuals in cross-section regressions. Instead of estimating a single cross-section regression of average monthly returns on betas, they estimate month-by-month cross-section regressions of monthly returns on betas. The times-series means of the monthly slopes and intercepts, along with the standard errors of the means, are then used to test whether the average premium for beta is positive and whether the average return on assets uncorrelated with the market is equal to the average risk-free interest rate. In this approach, the standard errors of the average intercept and slope are determined by the month-to-month variation in the regression coefficients, which fully captures the effects of residual correlation on variation in the regression coefficients, but sidesteps the problem of actually estimating the correlations. The residual correlations are, in effect, captured via repeated sampling of the regression coefficients. This approach also becomes standard in the literature.

Jensen (1968) was the first to note that the Sharpe-Lintner version of the

[4] Formally, if x_{ip}, $i = 1, \ldots, N$, are the weights for assets in some portfolio p, the expected return and market beta for the portfolio are related to the expected returns and betas of assets as

$$E(R_p) = \sum_{i=1}^{N} x_{ip}E(R_i), \text{ and } \beta_{pM} = \sum_{i=1}^{N} x_{ip}\beta_{pM}.$$

Thus, the CAPM relation between expected return and beta,

$$E(R_i) = E(R_f) + [E(R_M) - E(R_f)]\beta_{iM},$$

holds when asset i is a portfolio, as well as when i is an individual security.

relation between expected return and market beta also implies a time-series regression test. The Sharpe-Lintner CAPM says that the expected value of an asset's excess return (the asset's return minus the risk-free interest rate, $R_{it} - R_{ft}$) is completely explained by its expected CAPM risk premium (its beta times the expected value of $R_{Mt} - R_{ft}$). This implies that "Jensen's alpha," the intercept term in the time-series regression,

$$\text{(Time-Series Regression)} \quad R_{it} - R_{ft} = \alpha_i + \beta_{iM}(R_{Mt} - R_{ft}) + \varepsilon_{it},$$

is zero for each asset.

The early tests firmly reject the Sharpe-Lintner version of the CAPM. There is a positive relation between beta and average return, but it is too "flat." Recall that, in cross-section regressions, the Sharpe-Lintner model predicts that the intercept is the risk-free rate and the coefficient on beta is the expected market return in excess of the risk-free rate, $E(R_M) - R_f$. The regressions consistently find that the intercept is greater than the average risk-free rate (typically proxied as the return on a one-month Treasury bill), and the coefficient on beta is less than the average excess market return (proxied as the average return on a portfolio of U.S. common stocks minus the Treasury bill rate). This is true in the early tests, such as Douglas (1968), Black, Jensen and Scholes (1972), Miller and Scholes (1972), Blume and Friend (1973) and Fama and MacBeth (1973), as well as in more recent cross-section regression tests, like Fama and French (1992).

The evidence that the relation between beta and average return is too flat is confirmed in time-series tests, such as Friend and Blume (1970), Black, Jensen and Scholes (1972) and Stambaugh (1982). The intercepts in time-series regressions of excess asset returns on the excess market return are positive for assets with low betas and negative for assets with high betas.

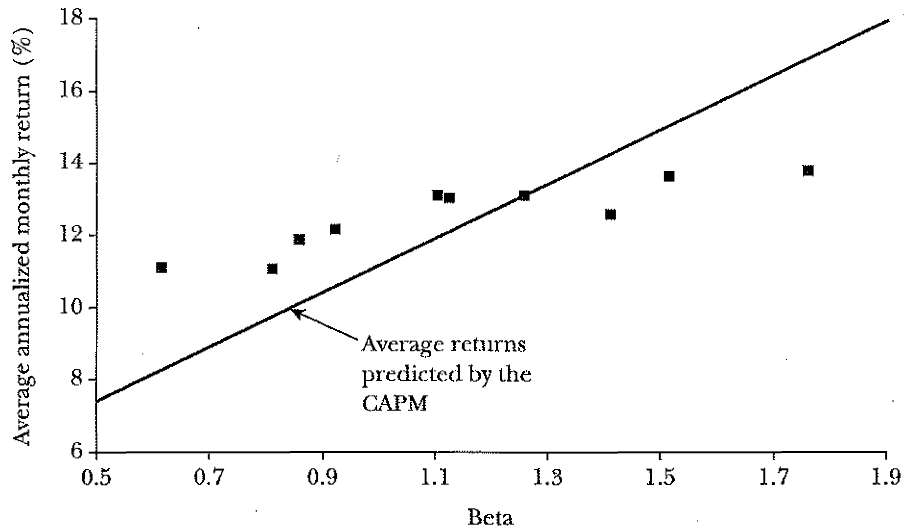
Figure 2 provides an updated example of the evidence. In December of each year, we estimate a preranking beta for every NYSE (1928–2003), AMEX (1963–2003) and NASDAQ (1972–2003) stock in the CRSP (Center for Research in Security Prices of the University of Chicago) database, using two to five years (as available) of prior monthly returns.[5] We then form ten value-weight portfolios based on these preranking betas and compute their returns for the next twelve months. We repeat this process for each year from 1928 to 2003. The result is 912 monthly returns on ten beta-sorted portfolios. Figure 2 plots each portfolio's average return against its postranking beta, estimated by regressing its monthly returns for 1928–2003 on the return on the CRSP value-weight portfolio of U.S. common stocks.

The Sharpe-Lintner CAPM predicts that the portfolios plot along a straight

[5] To be included in the sample for year t, a security must have market equity data (price times shares outstanding) for December of $t - 1$, and CRSP must classify it as ordinary common equity. Thus, we exclude securities such as American Depository Receipts (ADRs) and Real Estate Investment Trusts (REITs).

Figure 2

Average Annualized Monthly Return versus Beta for Value Weight Portfolios Formed on Prior Beta, 1928–2003



line, with an intercept equal to the risk-free rate, R_f, and a slope equal to the expected excess return on the market, $E(R_M) - R_f$. We use the average one-month Treasury bill rate and the average excess CRSP market return for 1928–2003 to estimate the predicted line in Figure 2. Confirming earlier evidence, the relation between beta and average return for the ten portfolios is much flatter than the Sharpe-Lintner CAPM predicts. The returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low. For example, the predicted return on the portfolio with the lowest beta is 8.3 percent per year; the actual return is 11.1 percent. The predicted return on the portfolio with the highest beta is 16.8 percent per year; the actual is 13.7 percent.

Although the observed premium per unit of beta is lower than the Sharpe-Lintner model predicts, the relation between average return and beta in Figure 2 is roughly linear. This is consistent with the Black version of the CAPM, which predicts only that the beta premium is positive. Even this less restrictive model, however, eventually succumbs to the data.

Testing Whether Market Betas Explain Expected Returns

The Sharpe-Lintner and Black versions of the CAPM share the prediction that the market portfolio is mean-variance-efficient. This implies that differences in expected return across securities and portfolios are entirely explained by differences in market beta; other variables should add nothing to the explanation of expected return. This prediction plays a prominent role in tests of the CAPM. In the early work, the weapon of choice is cross-section regressions.

In the framework of Fama and MacBeth (1973), one simply adds predetermined explanatory variables to the month-by-month cross-section regressions of returns on beta. If all differences in expected return are explained by beta, the average slopes on the additional variables should not be reliably different from zero. Clearly, the trick in the cross-section regression approach is to choose specific additional variables likely to expose any problems of the CAPM prediction that, because the market portfolio is efficient, market betas suffice to explain expected asset returns.

For example, in Fama and MacBeth (1973) the additional variables are squared market betas (to test the prediction that the relation between expected return and beta is linear) and residual variances from regressions of returns on the market return (to test the prediction that market beta is the only measure of risk needed to explain expected returns). These variables do not add to the explanation of average returns provided by beta. Thus, the results of Fama and MacBeth (1973) are consistent with the hypothesis that their market proxy—an equal-weight portfolio of NYSE stocks—is on the minimum variance frontier.

The hypothesis that market betas completely explain expected returns can also be tested using time-series regressions. In the time-series regression described above (the excess return on asset i regressed on the excess market return), the intercept is the difference between the asset's average excess return and the excess return predicted by the Sharpe-Lintner model, that is, beta times the average excess market return. If the model holds, there is no way to group assets into portfolios whose intercepts are reliably different from zero. For example, the intercepts for a portfolio of stocks with high ratios of earnings to price and a portfolio of stocks with low earning-price ratios should both be zero. Thus, to test the hypothesis that market betas suffice to explain expected returns, one estimates the time-series regression for a set of assets (or portfolios) and then jointly tests the vector of regression intercepts against zero. The trick in this approach is to choose the left-hand-side assets (or portfolios) in a way likely to expose any shortcoming of the CAPM prediction that market betas suffice to explain expected asset returns.

In early applications, researchers use a variety of tests to determine whether the intercepts in a set of time-series regressions are all zero. The tests have the same asymptotic properties, but there is controversy about which has the best small sample properties. Gibbons, Ross and Shanken (1989) settle the debate by providing an F-test on the intercepts that has exact small-sample properties. They also show that the test has a simple economic interpretation. In effect, the test constructs a candidate for the tangency portfolio T in Figure 1 by optimally combining the market proxy and the left-hand-side assets of the time-series regressions. The estimator then tests whether the efficient set provided by the combination of this tangency portfolio and the risk-free asset is reliably superior to the one obtained by combining the risk-free asset with the market proxy alone. In other words, the Gibbons, Ross and Shanken statistic tests whether the market proxy is the tangency portfolio in the set of portfolios that can be constructed by combining the market portfolio with the specific assets used as dependent variables in the time-series regressions.

Enlightened by this insight of Gibbons, Ross and Shanken (1989), one can see a similar interpretation of the cross-section regression test of whether market betas suffice to explain expected returns. In this case, the test is whether the additional explanatory variables in a cross-section regression identify patterns in the returns on the left-hand-side assets that are not explained by the assets' market betas. This amounts to testing whether the market proxy is on the minimum variance frontier that can be constructed using the market proxy and the left-hand-side assets included in the tests.

An important lesson from this discussion is that time-series and cross-section regressions do not, strictly speaking, test the CAPM. What is literally tested is whether a specific proxy for the market portfolio (typically a portfolio of U.S. common stocks) is efficient in the set of portfolios that can be constructed from it and the left-hand-side assets used in the test. One might conclude from this that the CAPM has never been tested, and prospects for testing it are not good because 1) the set of left-hand-side assets does not include all marketable assets, and 2) data for the true market portfolio of all assets are likely beyond reach (Roll, 1977; more on this later). But this criticism can be leveled at tests of any economic model when the tests are less than exhaustive or when they use proxies for the variables called for by the model.

The bottom line from the early cross-section regression tests of the CAPM, such as Fama and MacBeth (1973), and the early time-series regression tests, like Gibbons (1982) and Stambaugh (1982), is that standard market proxies seem to be on the minimum variance frontier. That is, the central predictions of the Black version of the CAPM, that market betas suffice to explain expected returns and that the risk premium for beta is positive, seem to hold. But the more specific prediction of the Sharpe-Lintner CAPM that the premium per unit of beta is the expected market return minus the risk-free interest rate is consistently rejected.

The success of the Black version of the CAPM in early tests produced a consensus that the model is a good description of expected returns. These early results, coupled with the model's simplicity and intuitive appeal, pushed the CAPM to the forefront of finance.

Recent Tests

Starting in the late 1970s, empirical work appears that challenges even the Black version of the CAPM. Specifically, evidence mounts that much of the variation in expected return is unrelated to market beta.

The first blow is Basu's (1977) evidence that when common stocks are sorted on earnings-price ratios, future returns on high E/P stocks are higher than predicted by the CAPM. Banz (1981) documents a size effect: when stocks are sorted on market capitalization (price times shares outstanding), average returns on small stocks are higher than predicted by the CAPM. Bhandari (1988) finds that high debt-equity ratios (book value of debt over the market value of equity, a measure of leverage) are associated with returns that are too high relative to their market betas.

Finally, Statman (1980) and Rosenberg, Reid and Lanstein (1985) document that stocks with high book-to-market equity ratios (B/M, the ratio of the book value of a common stock to its market value) have high average returns that are not captured by their betas.

There is a theme in the contradictions of the CAPM summarized above. Ratios involving stock prices have information about expected returns missed by market betas. On reflection, this is not surprising. A stock's price depends not only on the expected cash flows it will provide, but also on the expected returns that discount expected cash flows back to the present. Thus, in principle, the cross-section of prices has information about the cross-section of expected returns. (A high expected return implies a high discount rate and a low price.) The cross-section of stock prices is, however, arbitrarily affected by differences in scale (or units). But with a judicious choice of scaling variable X, the ratio X/P can reveal differences in the cross-section of expected stock returns. Such ratios are thus prime candidates to expose shortcomings of asset pricing models—in the case of the CAPM, shortcomings of the prediction that market betas suffice to explain expected returns (Ball, 1978). The contradictions of the CAPM summarized above suggest that earnings-price, debt-equity and book-to-market ratios indeed play this role.

Fama and French (1992) update and synthesize the evidence on the empirical failures of the CAPM. Using the cross-section regression approach, they confirm that size, earnings-price, debt-equity and book-to-market ratios add to the explanation of expected stock returns provided by market beta. Fama and French (1996) reach the same conclusion using the time-series regression approach applied to portfolios of stocks sorted on price ratios. They also find that different price ratios have much the same information about expected returns. This is not surprising given that price is the common driving force in the price ratios, and the numerators are just scaling variables used to extract the information in price about expected returns.

Fama and French (1992) also confirm the evidence (Reinganum, 1981; Stambaugh, 1982; Lakonishok and Shapiro, 1986) that the relation between average return and beta for common stocks is even flatter after the sample periods used in the early empirical work on the CAPM. The estimate of the beta premium is, however, clouded by statistical uncertainty (a large standard error). Kothari, Shanken and Sloan (1995) try to resuscitate the Sharpe-Lintner CAPM by arguing that the weak relation between average return and beta is just a chance result. But the strong evidence that other variables capture variation in expected return missed by beta makes this argument irrelevant. If betas do not suffice to explain expected returns, the market portfolio is not efficient, and the CAPM is dead in its tracks. Evidence on the size of the market premium can neither save the model nor further doom it.

The synthesis of the evidence on the empirical problems of the CAPM provided by Fama and French (1992) serves as a catalyst, marking the point when it is generally acknowledged that the CAPM has potentially fatal problems. Research then turns to explanations.

One possibility is that the CAPM's problems are spurious, the result of data dredging—publication-hungry researchers scouring the data and unearthing contradictions that occur in specific samples as a result of chance. A standard response to this concern is to test for similar findings in other samples. Chan, Hamao and Lakonishok (1991) find a strong relation between book-to-market equity (B/M) and average return for Japanese stocks. Capaul, Rowley and Sharpe (1993) observe a similar B/M effect in four European stock markets and in Japan. Fama and French (1998) find that the price ratios that produce problems for the CAPM in U.S. data show up in the same way in the stock returns of twelve non-U.S. major markets, and they are present in emerging market returns. This evidence suggests that the contradictions of the CAPM associated with price ratios are not sample specific.

Explanations: Irrational Pricing or Risk

Among those who conclude that the empirical failures of the CAPM are fatal, two stories emerge. On one side are the behavioralists. Their view is based on evidence that stocks with high ratios of book value to market price are typically firms that have fallen on bad times, while low B/M is associated with growth firms (Lakonishok, Shleifer and Vishny, 1994; Fama and French, 1995). The behavioralists argue that sorting firms on book-to-market ratios exposes investor overreaction to good and bad times. Investors overextrapolate past performance, resulting in stock prices that are too high for growth (low B/M) firms and too low for distressed (high B/M, so-called value) firms. When the overreaction is eventually corrected, the result is high returns for value stocks and low returns for growth stocks. Proponents of this view include DeBondt and Thaler (1987), Lakonishok, Shleifer and Vishny (1994) and Haugen (1995).

The second story for explaining the empirical contradictions of the CAPM is that they point to the need for a more complicated asset pricing model. The CAPM is based on many unrealistic assumptions. For example, the assumption that investors care only about the mean and variance of one-period portfolio returns is extreme. It is reasonable that investors also care about how their portfolio return covaries with labor income and future investment opportunities, so a portfolio's return variance misses important dimensions of risk. If so, market beta is not a complete description of an asset's risk, and we should not be surprised to find that differences in expected return are not completely explained by differences in beta. In this view, the search should turn to asset pricing models that do a better job explaining average returns.

Merton's (1973) intertemporal capital asset pricing model (ICAPM) is a natural extension of the CAPM. The ICAPM begins with a different assumption about investor objectives. In the CAPM, investors care only about the wealth their portfolio produces at the end of the current period. In the ICAPM, investors are concerned not only with their end-of-period payoff, but also with the opportunities they will have to consume or invest the payoff. Thus, when choosing a portfolio at time $t - 1$, ICAPM investors consider how their wealth at t might vary with future *state variables*, including labor income, the prices of consumption goods and the nature of portfolio opportunities at t, and expectations about the labor income, consumption and investment opportunities to be available after t.

Like CAPM investors, ICAPM investors prefer high expected return and low return variance. But ICAPM investors are also concerned with the covariances of portfolio returns with state variables. As a result, optimal portfolios are "multifactor efficient," which means they have the largest possible expected returns, given their return variances and the covariances of their returns with the relevant state variables.

Fama (1996) shows that the ICAPM generalizes the logic of the CAPM. That is, if there is risk-free borrowing and lending or if short sales of risky assets are allowed, market clearing prices imply that the market portfolio is multifactor efficient. Moreover, multifactor efficiency implies a relation between expected return and beta risks, but it requires additional betas, along with a market beta, to explain expected returns.

An ideal implementation of the ICAPM would specify the state variables that affect expected returns. Fama and French (1993) take a more indirect approach, perhaps more in the spirit of Ross's (1976) arbitrage pricing theory. They argue that though size and book-to-market equity are not themselves state variables, the higher average returns on small stocks and high book-to-market stocks reflect unidentified state variables that produce undiversifiable risks (covariances) in returns that are not captured by the market return and are priced separately from market betas. In support of this claim, they show that the returns on the stocks of small firms covary more with one another than with returns on the stocks of large firms, and returns on high book-to-market (value) stocks covary more with one another than with returns on low book-to-market (growth) stocks. Fama and French (1995) show that there are similar size and book-to-market patterns in the covariation of fundamentals like earnings and sales.

Based on this evidence, Fama and French (1993, 1996) propose a three-factor model for expected returns,

$$\text{(Three-Factor Model)} \quad E(R_{it}) - R_{ft} = \beta_{iM}[E(R_{Mt}) - R_{ft}] + \beta_{is}E(SMB_t) + \beta_{ih}E(HML_t).$$

In this equation, SMB_t (small minus big) is the difference between the returns on diversified portfolios of small and big stocks, HML_t (high minus low) is the difference between the returns on diversified portfolios of high and low B/M stocks, and the betas are slopes in the multiple regression of $R_{it} - R_{ft}$ on $R_{Mt} - R_{ft}$, SMB_t and HML_t.

For perspective, the average value of the market premium $R_{Mt} - R_{ft}$ for 1927–2003 is 8.3 percent per year, which is 3.5 standard errors from zero. The average values of SMB_t, and HML_t are 3.6 percent and 5.0 percent per year, and they are 2.1 and 3.1 standard errors from zero. All three premiums are volatile, with annual standard deviations of 21.0 percent $(R_{Mt} - R_{ft})$, 14.6 percent (SMB_t) and 14.2 percent (HML_t) per year. Although the average values of the premiums are large, high volatility implies substantial uncertainty about the true expected premiums.

One implication of the expected return equation of the three-factor model is that the intercept α_i in the time-series regression,

$$R_{it} - R_{ft} = \alpha_i + \beta_{iM}(R_{Mt} - R_{ft}) + \beta_{is}SMB_t + \beta_{ih}HML_t + \varepsilon_{it},$$

is zero for all assets i. Using this criterion, Fama and French (1993, 1996) find that the model captures much of the variation in average return for portfolios formed on size, book-to-market equity and other price ratios that cause problems for the CAPM. Fama and French (1998) show that an international version of the model performs better than an international CAPM in describing average returns on portfolios formed on scaled price variables for stocks in 13 major markets.

The three-factor model is now widely used in empirical research that requires a model of expected returns. Estimates of α_i from the time-series regression above are used to calibrate how rapidly stock prices respond to new information (for example, Loughran and Ritter, 1995; Mitchell and Stafford, 2000). They are also used to measure the special information of portfolio managers, for example, in Carhart's (1997) study of mutual fund performance. Among practitioners like Ibbotson Associates, the model is offered as an alternative to the CAPM for estimating the cost of equity capital.

From a theoretical perspective, the main shortcoming of the three-factor model is its empirical motivation. The small-minus-big (SMB) and high-minus-low (HML) explanatory returns are not motivated by predictions about state variables of concern to investors. Instead they are brute force constructs meant to capture the patterns uncovered by previous work on how average stock returns vary with size and the book-to-market equity ratio.

But this concern is not fatal. The ICAPM does not require that the additional portfolios used along with the market portfolio to explain expected returns "mimic" the relevant state variables. In both the ICAPM and the arbitrage pricing theory, it suffices that the additional portfolios are well diversified (in the terminology of Fama, 1996, they are multifactor minimum variance) and that they are sufficiently different from the market portfolio to capture covariation in returns and variation in expected returns missed by the market portfolio. Thus, adding diversified portfolios that capture covariation in returns and variation in average returns left unexplained by the market is in the spirit of both the ICAPM and the Ross's arbitrage pricing theory.

The behavioralists are not impressed by the evidence for a risk-based explanation of the failures of the CAPM. They typically concede that the three-factor model captures covariation in returns missed by the market return and that it picks up much of the size and value effects in average returns left unexplained by the CAPM. But their view is that the average return premium associated with the model's book-to-market factor—which does the heavy lifting in the improvements to the CAPM—is itself the result of investor overreaction that happens to be correlated across firms in a way that just looks like a risk story. In short, in the behavioral view, the market tries to set CAPM prices, and violations of the CAPM are due to mispricing.

The conflict between the behavioral irrational pricing story and the rational risk story for the empirical failures of the CAPM leaves us at a timeworn impasse. Fama (1970) emphasizes that the hypothesis that prices properly reflect available information must be tested in the context of a model of expected returns, like the CAPM. Intuitively, to test whether prices are rational, one must take a stand on what the market is trying to do in setting prices—that is, what is risk and what is the relation between expected return and risk? When tests reject the CAPM, one cannot say whether the problem is its assumption that prices are rational (the behavioral view) or violations of other assumptions that are also necessary to produce the CAPM (our position).

Fortunately, for some applications, the way one uses the three-factor model does not depend on one's view about whether its average return premiums are the rational result of underlying state variable risks, the result of irrational investor behavior or sample specific results of chance. For example, when measuring the response of stock prices to new information or when evaluating the performance of managed portfolios, one wants to account for known patterns in returns and average returns for the period examined, whatever their source. Similarly, when estimating the cost of equity capital, one might be unconcerned with whether expected return premiums are rational or irrational since they are in either case part of the opportunity cost of equity capital (Stein, 1996). But the cost of capital is forward looking, so if the premiums are sample specific they are irrelevant.

The three-factor model is hardly a panacea. Its most serious problem is the momentum effect of Jegadeesh and Titman (1993). Stocks that do well relative to the market over the last three to twelve months tend to continue to do well for the next few months, and stocks that do poorly continue to do poorly. This momentum effect is distinct from the value effect captured by book-to-market equity and other price ratios. Moreover, the momentum effect is left unexplained by the three-factor model, as well as by the CAPM. Following Carhart (1997), one response is to add a momentum factor (the difference between the returns on diversified portfolios of short-term winners and losers) to the three-factor model. This step is again legitimate in applications where the goal is to abstract from known patterns in average returns to uncover information-specific or manager-specific effects. But since the momentum effect is short-lived, it is largely irrelevant for estimates of the cost of equity capital.

Another strand of research points to problems in both the three-factor model and the CAPM. Frankel and Lee (1998), Dechow, Hutton and Sloan (1999), Piotroski (2000) and others show that in portfolios formed on price ratios like book-to-market equity, stocks with higher expected cash flows have higher average returns that are not captured by the three-factor model or the CAPM. The authors interpret their results as evidence that stock prices are irrational, in the sense that they do not reflect available information about expected profitability.

In truth, however, one can't tell whether the problem is bad pricing or a bad asset pricing model. A stock's price can always be expressed as the present value of expected future cash flows discounted at the expected return on the stock (Campbell and Shiller, 1989; Vuolteenaho, 2002). It follows that if two stocks have the same price, the one with higher expected cash flows must have a higher expected return. This holds true whether pricing is rational or irrational. Thus, when one observes a positive relation between expected cash flows and expected returns that is left unexplained by the CAPM or the three-factor model, one can't tell whether it is the result of irrational pricing or a misspecified asset pricing model.

The Market Proxy Problem

Roll (1977) argues that the CAPM has never been tested and probably never will be. The problem is that the market portfolio at the heart of the model is theoretically and empirically elusive. It is not theoretically clear which assets (for example, human capital) can legitimately be excluded from the market portfolio, and data availability substantially limits the assets that are included. As a result, tests of the CAPM are forced to use proxies for the market portfolio, in effect testing whether the proxies are on the minimum variance frontier. Roll argues that because the tests use proxies, not the true market portfolio, we learn nothing about the CAPM.

We are more pragmatic. The relation between expected return and market beta of the CAPM is just the minimum variance condition that holds in any efficient portfolio, applied to the market portfolio. Thus, if we can find a market proxy that is on the minimum variance frontier, it can be used to describe differences in expected returns, and we would be happy to use it for this purpose. The strong rejections of the CAPM described above, however, say that researchers have not uncovered a reasonable market proxy that is close to the minimum variance frontier. If researchers are constrained to reasonable proxies, we doubt they ever will.

Our pessimism is fueled by several empirical results. Stambaugh (1982) tests the CAPM using a range of market portfolios that include, in addition to U.S. common stocks, corporate and government bonds, preferred stocks, real estate and other consumer durables. He finds that tests of the CAPM are not sensitive to expanding the market proxy beyond common stocks, basically because the volatility of expanded market returns is dominated by the volatility of stock returns.

One need not be convinced by Stambaugh's (1982) results since his market proxies are limited to U.S. assets. If international capital markets are open and asset prices conform to an international version of the CAPM, the market portfolio should include international assets. Fama and French (1998) find, however, that betas for a global stock market portfolio cannot explain the high average returns observed around the world on stocks with high book-to-market or high earnings-price ratios.

A major problem for the CAPM is that portfolios formed by sorting stocks on price ratios produce a wide range of average returns, but the average returns are not positively related to market betas (Lakonishok, Shleifer and Vishny, 1994; Fama and French, 1996, 1998). The problem is illustrated in Figure 3, which shows average returns and betas (calculated with respect to the CRSP value-weight portfolio of NYSE, AMEX and NASDAQ stocks) for July 1963 to December 2003 for ten portfolios of U.S. stocks formed annually on sorted values of the book-to-market equity ratio (B/M).[6]

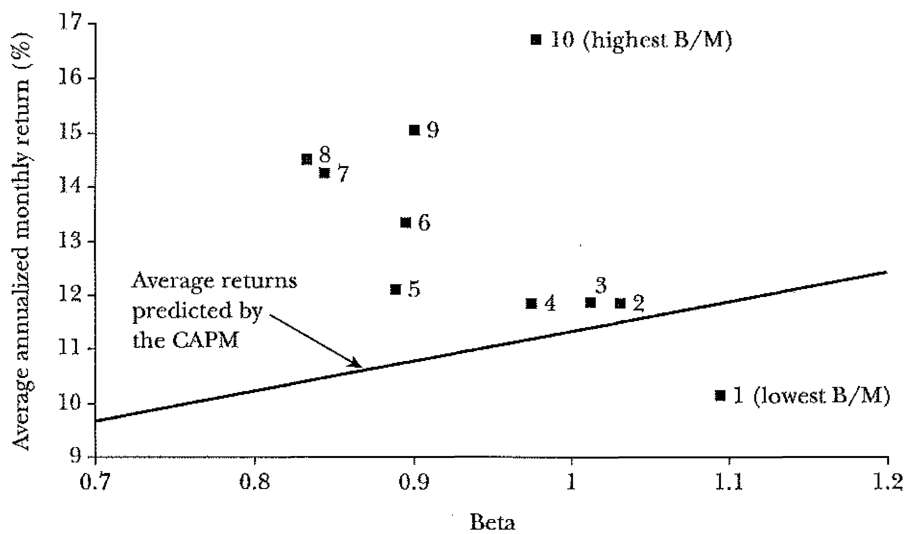
Average returns on the B/M portfolios increase almost monotonically, from 10.1 percent per year for the lowest B/M group (portfolio 1) to an impressive 16.7 percent for the highest (portfolio 10). But the positive relation between beta and average return predicted by the CAPM is notably absent. For example, the portfolio with the lowest book-to-market ratio has the highest beta but the lowest average return. The estimated beta for the portfolio with the highest book-to-market ratio and the highest average return is only 0.98. With an average annualized value of the riskfree interest rate, R_f, of 5.8 percent and an average annualized market premium, $R_M - R_f$, of 11.3 percent, the Sharpe-Lintner CAPM predicts an average return of 11.8 percent for the lowest B/M portfolio and 11.2 percent for the highest, far from the observed values, 10.1 and 16.7 percent. For the Sharpe-Lintner model to "work" on these portfolios, their market betas must change dramatically, from 1.09 to 0.78 for the lowest B/M portfolio and from 0.98 to 1.98 for the highest. We judge it unlikely that alternative proxies for the market portfolio will produce betas and a market premium that can explain the average returns on these portfolios.

It is always possible that researchers will redeem the CAPM by finding a reasonable proxy for the market portfolio that is on the minimum variance frontier. We emphasize, however, that this possibility cannot be used to justify the way the CAPM is currently applied. The problem is that applications typically use the same

[6] Stock return data are from CRSP, and book equity data are from Compustat and the Moody's Industrials, Transportation, Utilities and Financials manuals. Stocks are allocated to ten portfolios at the end of June of each year t (1963 to 2003) using the ratio of book equity for the fiscal year ending in calendar year $t - 1$, divided by market equity at the end of December of $t - 1$. Book equity is the book value of stockholders' equity, plus balance sheet deferred taxes and investment tax credit (if available), minus the book value of preferred stock. Depending on availability, we use the redemption, liquidation or par value (in that order) to estimate the book value of preferred stock. Stockholders' equity is the value reported by Moody's or Compustat, if it is available. If not, we measure stockholders' equity as the book value of common equity plus the par value of preferred stock or the book value of assets minus total liabilities (in that order). The portfolios for year t include NYSE (1963–2003), AMEX (1963–2003) and NASDAQ (1972–2003) stocks with positive book equity in $t - 1$ and market equity (from CRSP) for December of $t - 1$ and June of t. The portfolios exclude securities CRSP does not classify as ordinary common equity. The breakpoints for year t use only securities that are on the NYSE in June of year t.

Figure 3

Average Annualized Monthly Return versus Beta for Value Weight Portfolios Formed on B/M, 1963–2003



market proxies, like the value-weight portfolio of U.S. stocks, that lead to rejections of the model in empirical tests. The contradictions of the CAPM observed when such proxies are used in tests of the model show up as bad estimates of expected returns in applications; for example, estimates of the cost of equity capital that are too low (relative to historical average returns) for small stocks and for stocks with high book-to-market equity ratios. In short, if a market proxy does not work in tests of the CAPM, it does not work in applications.

Conclusions

The version of the CAPM developed by Sharpe (1964) and Lintner (1965) has never been an empirical success. In the early empirical work, the Black (1972) version of the model, which can accommodate a flatter tradeoff of average return for market beta, has some success. But in the late 1970s, research begins to uncover variables like size, various price ratios and momentum that add to the explanation of average returns provided by beta. The problems are serious enough to invalidate most applications of the CAPM.

For example, finance textbooks often recommend using the Sharpe-Lintner CAPM risk-return relation to estimate the cost of equity capital. The prescription is to estimate a stock's market beta and combine it with the risk-free interest rate and the average market risk premium to produce an estimate of the cost of equity. The typical market portfolio in these exercises includes just U.S. common stocks. But empirical work, old and new, tells us that the relation between beta and average return is flatter than predicted by the Sharpe-Lintner version of the CAPM. As a result, CAPM estimates of the cost of equity for high beta stocks are too high (relative to historical average returns) and estimates for low beta stocks are too low (Friend and Blume, 1970). Similarly, if the high average returns on value stocks (with high book-to-market ratios) imply high expected returns, CAPM cost of equity estimates for such stocks are too low.[7]

The CAPM is also often used to measure the performance of mutual funds and other managed portfolios. The approach, dating to Jensen (1968), is to estimate the CAPM time-series regression for a portfolio and use the intercept (Jensen's alpha) to measure abnormal performance. The problem is that, because of the empirical failings of the CAPM, even passively managed stock portfolios produce abnormal returns if their investment strategies involve tilts toward CAPM problems (Elton, Gruber, Das and Hlavka, 1993). For example, funds that concentrate on low beta stocks, small stocks or value stocks will tend to produce positive abnormal returns relative to the predictions of the Sharpe-Lintner CAPM, even when the fund managers have no special talent for picking winners.

The CAPM, like Markowitz's (1952, 1959) portfolio model on which it is built, is nevertheless a theoretical tour de force. We continue to teach the CAPM as an introduction to the fundamental concepts of portfolio theory and asset pricing, to be built on by more complicated models like Merton's (1973) ICAPM. But we also warn students that despite its seductive simplicity, the CAPM's empirical problems probably invalidate its use in applications.

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[7] The problems are compounded by the large standard errors of estimates of the market premium and of betas for individual stocks, which probably suffice to make CAPM estimates of the cost of equity rather meaningless, even if the CAPM holds (Fama and French, 1997; Pastor and Stambaugh, 1999). For example, using the U.S. Treasury bill rate as the risk-free interest rate and the CRSP value-weight portfolio of publicly traded U.S. common stocks, the average value of the equity premium $R_{Mt} - R_{ft}$ for 1927–2003 is 8.3 percent per year, with a standard error of 2.4 percent. The two standard error range thus runs from 3.5 percent to 13.1 percent, which is sufficient to make most projects appear either profitable or unprofitable. This problem is, however, hardly special to the CAPM. For example, expected returns in all versions of Merton's (1973) ICAPM include a market beta and the expected market premium. Also, as noted earlier the expected values of the size and book-to-market premiums in the Fama-French three-factor model are also estimated with substantial error.

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Risk, Return, and Equilibrium: Empirical Tests

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This paper tests the relationship between average return and risk for New York Stock Exchange common stocks. The theoretical basis of the tests is the "two-parameter" portfolio model and models of market equilibrium derived from the two-parameter portfolio model. We cannot reject the hypothesis of these models that the pricing of common stocks reflects the attempts of risk-averse investors to hold portfolios that are "efficient" in terms of expected value and dispersion of return. Moreover, the observed "fair game" properties of the coefficients and residuals of the risk-return regressions are consistent with an "efficient capital market"—that is, a market where prices of securities fully reflect available information.

I. Theoretical Background

In the two-parameter portfolio model of Tobin (1958), Markowitz (1959), and Fama (1965*b*), the capital market is assumed to be perfect in the sense that investors are price takers and there are neither transactions costs nor information costs. Distributions of one-period percentage returns on all assets and portfolios are assumed to be normal or to conform to some other two-parameter member of the symmetric stable class. Investors are assumed to be risk averse and to behave as if they choose among portfolios on the basis of maximum expected utility. A perfect capital market, investor risk aversion, and two-parameter return distributions imply the important "efficient set theorem": The optimal portfolio for any investor must be efficient in the sense that no other portfolio with the same or higher expected return has lower dispersion of return.[1]

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[1] Although the choice of dispersion parameter is arbitrary, the standard deviation

In the portfolio model the investor looks at individual assets only in terms of their contributions to the expected value and dispersion, or risk, of his portfolio return. With normal return distributions the risk of portfolio p is measured by the standard deviation, $\sigma(\tilde{R}_p)$, of its return, $\tilde{R}_p$,[2] and the risk of an asset for an investor who holds p is the contribution of the asset to $\sigma(\tilde{R}_p)$. If x_{ip} is the proportion of portfolio funds invested in asset i, $\sigma_{ij} = \text{cov}(\tilde{R}_i, \tilde{R}_j)$ is the covariance between the returns on assets i and j, and N is the number of assets, then

$$\sigma(\tilde{R}_p) = \sum_{i=1}^{N} x_{ip}\left[\frac{\sum_{j=1}^{N} x_{jp}\sigma_{ij}}{\sigma(\tilde{R}_p)}\right] = \sum_{i=1}^{N} x_{ip}\frac{\text{cov}(\tilde{R}_i, \tilde{R}_p)}{\sigma(\tilde{R}_p)}.$$

Thus, the contribution of asset i to $\sigma(\tilde{R}_p)$—that is, the risk of asset i in the portfolio p—is proportional to

$$\sum_{j=1}^{N} x_{jp}\sigma_{ij}/\sigma(\tilde{R}_p) = \text{cov}(\tilde{R}_i, \tilde{R}_p)/\sigma(\tilde{R}_p).$$

Note that since the weights x_{jp} vary from portfolio to portfolio, the risk of an asset is different for different portfolios.

For an individual investor the relationship between the risk of an asset and its expected return is implied by the fact that the investor's optimal portfolio is efficient. Thus, if he chooses the portfolio m, the fact that m is efficient means that the weights x_{im}, $i = 1, 2, \ldots, N$, maximize expected portfolio return

$$E(\tilde{R}_m) = \sum_{i=1}^{N} x_{im}\, E(\tilde{R}_i),$$

subject to the constraints

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is common when return distributions are assumed to be normal, whereas an interfractile range is usually suggested when returns are generated from some other symmetric stable distribution.

It is well known that the mean-standard deviation version of the two-parameter portfolio model can be derived from the assumption that investors have quadratic utility functions. But the problems with this approach are also well known. In any case, the empirical evidence of Fama (1965*a*), Blume (1970), Roll (1970), K. Miller (1971), and Officer (1971) provides support for the "distribution" approach to the model. For a discussion of the issues and a detailed treatment of the two-parameter model, see Fama and Miller (1972, chaps. 6–8).

We also concentrate on the special case of the two-parameter model obtained with the assumption of normally distributed returns. As shown in Fama (1971) or Fama and Miller (1972, chap. 7), the important testable implications of the general symmetric stable model are the same as those of the normal model.

[2] Tildes (~) are used to denote random variables. And the one-period percentage return is most often referred to just as the return.

$$\sigma(\tilde{R}_p) = \sigma(\tilde{R}_m) \quad \text{and} \quad \sum_{i=1}^{N} x_{im} = 1.$$

Lagrangian methods can then be used to show that the weights x_{jm} must be chosen in such a way that for any asset i in m

$$E(\tilde{R}_i) - E(\tilde{R}_m) = S_m \left[\frac{\sum_{j=1}^{N} x_{jm}\sigma_{ij}}{\sigma(\tilde{R}_m)} - \sigma(\tilde{R}_m) \right], \tag{1}$$

where S_m is the rate of change of $E(\tilde{R}_p)$ with respect to a change in $\sigma(\tilde{R}_p)$ at the point on the efficient set corresponding to portfolio m. If there are nonnegativity constraints on the weights (that is, if short selling is prohibited), then (1) only holds for assets i such that $x_{im} > 0$.

Although equation (1) is just a condition on the weights x_{jm} that is required for portfolio efficiency, it can be interpreted as the relationship between the risk of asset i in portfolio m and the expected return on the asset. The equation says that the difference between the expected return on the asset and the expected return on the portfolio is proportional to the difference between the risk of the asset and the risk of the portfolio. The proportionality factor is S_m, the slope of the efficient set at the point corresponding to the portfolio m. And the risk of the asset is its contribution to total portfolio risk, $\sigma(\tilde{R}_m)$.

II. Testable Implications

Suppose now that we posit a market of risk-averse investors who make portfolio decisions period by period according to the two-parameter model.[3] We are concerned with determining what this implies for observable properties of security and portfolio returns. We consider two categories of implications. First, there are conditions on expected returns that are implied by the fact that in a two-parameter world investors hold efficient portfolios. Second, there are conditions on the behavior of returns through time that are implied by the assumption of the two-parameter model that the capital market is perfect or frictionless in the sense that there are neither transactions costs nor information costs.

A. Expected Returns

The implications of the two-parameter model for expected returns derive from the efficiency condition or expected return-risk relationship of equation (1). First, it is convenient to rewrite (1) as

[3] A multiperiod version of the two-parameter model is in Fama (1970*a*) or Fama and Miller (1972, chap. 8).

$$E(\tilde{R}_i) = [E(\tilde{R}_m) - S_m\,\sigma(\tilde{R}_m)] + S_m\,\sigma(\tilde{R}_m)\beta_i, \tag{2}$$

where

$$\beta_i \equiv \frac{\operatorname{cov}(\tilde{R}_i, \tilde{R}_m)}{\sigma^2(\tilde{R}_m)} = \frac{\sum_{j=1}^{N} x_{jm}\sigma_{ij}}{\sigma^2(\tilde{R}_m)} = \frac{\operatorname{cov}(\tilde{R}_i, \tilde{R}_m)/\sigma(\tilde{R}_m)}{\sigma(\tilde{R}_m)}. \tag{3}$$

The parameter β_i can be interpreted as the risk of asset i in the portfolio m, measured relative to $\sigma(\tilde{R}_m)$, the total risk of m. The intercept in (2),

$$E(\tilde{R}_0) \equiv E(\tilde{R}_m) - S_m\,\sigma(\tilde{R}_m), \tag{4}$$

is the expected return on a security whose return is uncorrelated with $\tilde{R}_m$—that is, a zero-β security. Since $\beta = 0$ implies that a security contributes nothing to $\sigma(\tilde{R}_m)$, it is appropriate to say that it is riskless in this portfolio. It is well to note from (3), however, that since $x_{im}\,\sigma_{ii} = x_{im}\,\sigma^2(\tilde{R}_i)$ is just one of the N terms in β_i, $\beta_i = 0$ does not imply that security i has zero variance of return.

From (4), it follows that

$$S_m = \frac{E(\tilde{R}_m) - E(\tilde{R}_0)}{\sigma(\tilde{R}_m)}, \tag{5}$$

so that (2) can be rewritten

$$E(\tilde{R}_i) = E(\tilde{R}_0) + [E(\tilde{R}_m) - E(\tilde{R}_0)]\beta_i. \tag{6}$$

In words, the expected return on security i is $E(\tilde{R}_0)$, the expected return on a security that is riskless in the portfolio m, plus a risk premium that is β_i times the difference between $E(\tilde{R}_m)$ and $E(\tilde{R}_0)$.

Equation (6) has three testable implications: (C1) The relationship between the expected return on a security and its risk in any efficient portfolio m is linear. (C2) β_i is a complete measure of the risk of security i in the efficient portfolio m; no other measure of the risk of i appears in (6). (C3) In a market of risk-averse investors, higher risk should be associated with higher expected return; that is, $E(\tilde{R}_m) - E(\tilde{R}_0) > 0$.

The importance of condition C3 is obvious. The importance of C1 and C2 should become clear as the discussion proceeds. At this point suffice it to say that if C1 and C2 do not hold, market returns do not reflect the attempts of investors to hold efficient portfolios: Some assets are systematically underpriced or overpriced relative to what is implied by the expected return-risk or efficiency equation (6).

B. Market Equilibrium and the Efficiency of the Market Portfolio

To test conditions C1–C3 we must identify some efficient portfolio m. This in turn requires specification of the characteristic of market equilibrium when investors make portfolio decisions according to the two-parameter model.

Assume again that the capital market is perfect. In addition, suppose that from the information available without cost all investors derive the same and correct assessment of the distribution of the future value of any asset or portfolio—an assumption usually called "homogeneous expectations." Finally, assume that short selling of all assets is allowed. Then Black (1972) has shown that in a market equilibrium, the so-called market portfolio, defined by the weights

$$x_{im} \equiv \frac{\text{total market value of all units of asset } i}{\text{total market value of all assets}},$$

is always efficient.

Since it contains all assets in positive amounts, the market portfolio is a convenient reference point for testing the expected return-risk conditions C1–C3 of the two-parameter model. And the homogeneous-expectations assumption implies a correspondence between ex ante assessments of return distributions and distributions of ex post returns that is also required for meaningful tests of these three hypotheses.

C. *A Stochastic Model for Returns*

Equation (6) is in terms of expected returns. But its implications must be tested with data on period-by-period security and portfolio returns. We wish to choose a model of period-by-period returns that allows us to use observed average returns to test the expected-return conditions C1–C3, but one that is nevertheless as general as possible. We suggest the following stochastic generalization of (6):

$$\tilde{R}_{it} = \tilde{\gamma}_{0t} + \tilde{\gamma}_{1t}\beta_i + \tilde{\gamma}_{2t}\beta_i^2 + \tilde{\gamma}_{3t}s_i + \tilde{\eta}_{it}. \qquad (7)$$

The subscript t refers to period t, so that $\tilde{R}_{it}$ is the one-period percentage return on security i from $t-1$ to t. Equation (7) allows $\tilde{\gamma}_{0t}$ and $\tilde{\gamma}_{1t}$ to vary stochastically from period to period. The hypothesis of condition C3 is that the expected value of the risk premium $\tilde{\gamma}_{1t}$, which is the slope $[E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$ in (6), is positive—that is, $E(\tilde{\gamma}_{1t}) = E(\tilde{R}_{mt}) - E(\tilde{R}_{0t}) > 0$.

The variable β_i^2 is included in (7) to test linearity. The hypothesis of condition C1 is $E(\tilde{\gamma}_{2t}) = 0$, although $\tilde{\gamma}_{2t}$ is also allowed to vary stochastically from period to period. Similar statements apply to the term involving s_i in (7), which is meant to be some measure of the risk of security i that is not deterministically related to β_i. The hypothesis of condition C2 is $E(\tilde{\gamma}_{3t}) = 0$, but $\tilde{\gamma}_{3t}$ can vary stochastically through time.

The disturbance $\tilde{\eta}_{it}$ is assumed to have zero mean and to be independent of all other variables in (7). If all portfolio return distributions are to be normal (or symmetric stable), then the variables $\tilde{\eta}_{it}$, $\tilde{\gamma}_{0t}$, $\tilde{\gamma}_{1t}$, $\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{3t}$ must have a multivariate normal (or symmetric stable) distribution.

D. *Capital Market Efficiency: The Behavior of Returns through Time*

C1–C3 are conditions on expected returns and risk that are implied by the two-parameter model. But the model, and especially the underlying assumption of a perfect market, implies a capital market that is efficient in the sense that prices at every point in time fully reflect available information. This use of the word efficient is, of course, not to be confused with portfolio efficiency. The terminology, if a bit unfortunate, is at least standard.

Market efficiency in combination with condition C1 requires that scrutiny of the time series of the stochastic nonlinearity coefficient $\tilde{\gamma}_{2t}$ does not lead to nonzero estimates of expected future values of $\tilde{\gamma}_{2t}$. Formally, $\tilde{\gamma}_{2t}$ must be a fair game. In practical terms, although nonlinearities are observed ex post, because $\tilde{\gamma}_{2t}$ is a fair game, it is always appropriate for the investor to act ex ante under the presumption that the two-parameter model, as summarized by (6), is valid. That is, in his portfolio decisions he always assumes that there is a linear relationship between the risk of a security and its expected return. Likewise, market efficiency in the two-parameter model requires that the non-β risk coefficient $\tilde{\gamma}_{3t}$ and the time series of return disturbances $\tilde{\eta}_{it}$ are fair games. And the fair-game hypothesis also applies to the time series of $\tilde{\gamma}_{1t} - [E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$, the difference between the risk premium for period t and its expected value.

In the terminology of Fama (1970*b*), these are "weak-form" propositions about capital market efficiency for a market where expected returns are generated by the two-parameter model. The propositions are weak since they are only concerned with whether prices fully reflect any information in the time series of past returns. "Strong-form" tests would be concerned with the speed-of-adjustment of prices to all available information.

E. *Market Equilibrium with Riskless Borrowing and Lending*

We have as yet presented no hypothesis about $\tilde{\gamma}_{0t}$ in (7). In the general two-parameter model, given $E(\tilde{\gamma}_{2t}) = E(\tilde{\gamma}_{3t}) = E(\tilde{\eta}_{it}) = 0$, then, from (6), $E(\tilde{\gamma}_{0t})$ is just $E(\tilde{R}_{0t})$, the expected return on any zero-β security. And market efficiency requires that $\tilde{\gamma}_{0t} - E(\tilde{R}_{0t})$ be a fair game.

But if we add to the model as presented thus far the assumption that there is unrestricted riskless borrowing and lending at the known rate R_{ft}, then one has the market setting of the original two-parameter "capital asset pricing model" of Sharpe (1964) and Lintner (1965). In this world, since $\beta_f = 0$, $E(\tilde{\gamma}_{0t}) = R_{ft}$. And market efficiency requires that $\tilde{\gamma}_{0t} - R_{ft}$ be a fair game.

It is well to emphasize that to refute the proposition that $E(\tilde{\gamma}_{0t}) = R_{ft}$ is only to refute a specific two-parameter model of market equilibrium. Our view is that tests of conditions C1–C3 are more fundamental. We regard C1–C3 as the general expected return implications of the two-parameter model in the sense that they are the implications of the fact that in the two-parameter portfolio model investors hold efficient portfolios, and they are consistent with any two-parameter model of market equilibrium in which the market portfolio is efficient.

F. The Hypotheses

To summarize, given the stochastic generalization of (2) and (6) that is provided by (7), the testable implications of the two-parameter model for expected returns are:

C1 (linearity)—$E(\tilde{\gamma}_{2t}) = 0$.
C2 (no systematic effects of non-β risk)—$E(\tilde{\gamma}_{3t}) = 0$.
C3 (positive expected return-risk tradeoff)—$E(\tilde{\gamma}_{1t}) = E(\tilde{R}_{mt}) - E(\tilde{R}_{0t}) > 0$.
Sharpe-Lintner (S-L) Hypothesis—$E(\tilde{\gamma}_{0t}) = R_{ft}$.

Finally, capital market efficiency in a two-parameter world requires
ME (market efficiency)—the stochastic coefficients $\tilde{\gamma}_{2t}$, $\tilde{\gamma}_{3t}$, $\tilde{\gamma}_{1t} - [E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$, $\tilde{\gamma}_{0t} - E(\tilde{R}_{0t})$, and the disturbances $\tilde{\eta}_{it}$ are fair games.[4]

III. Previous Work[5]

The earliest tests of the two-parameter model were done by Douglas (1969), whose results seem to refute condition C2. In annual and quarterly return data, there seem to be measures of risk, in addition to β, that contribute systematically to observed average returns. These results, if valid, are inconsistent with the hypothesis that investors attempt to hold efficient portfolios. Assuming that the market portfolio is efficient, premiums are paid for risks that do not contribute to the risk of an efficient portfolio.

Miller and Scholes (1972) take issue both with Douglas's statistical techniques and with his use of annual and quarterly data. Using different methods and simulations, they show that Douglas's negative results could be expected even if condition C2 holds. Condition C2 is tested below with extensive monthly data, and this avoids almost all of the problems discussed by Miller and Scholes.

[4] If $\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{3t}$ are fair games, then $E(\tilde{\gamma}_{2t}) = E(\tilde{\gamma}_{3t}) = 0$. Thus, C1 and C2 are implied by ME. Keeping the expected return conditions separate, however, better emphasizes the economic basis of the various hypotheses.

[5] A comprehensive survey of empirical and theoretical work on the two-parameter model is in Jensen (1972).

Much of the available empirical work on the two-parameter model is concerned with testing the S-L hypothesis that $E(\tilde{\gamma}_{0t}) = R_{ft}$. The tests of Friend and Blume (1970) and those of Black, Jensen, and Scholes (1972) indicate that, at least in the period since 1940, on average $\tilde{\gamma}_{0t}$ is systematically greater than R_{ft}. The results below support this conclusion.

In the empirical literature to date, the importance of the linearity condition C1 has been largely overlooked. Assuming that the market portfolio m is efficient, if $E(\tilde{\gamma}_{2t})$ in (7) is positive, the prices of high-β securities are on average too low—their expected returns are too high—relative to those of low-β securities, while the reverse holds if $E(\tilde{\gamma}_{2t})$ is negative. In short, if the process of price formation in the capital market reflects the attempts of investors to hold efficient portfolios, then the linear relationship of (6) between expected return and risk must hold.

Finally, the previous empirical work on the two-parameter model has not been concerned with tests of market efficiency.

IV. Methodology

The data for this study are monthly percentage returns (including dividends and capital gains, with the appropriate adjustments for capital changes such as splits and stock dividends) for all common stocks traded on the New York Stock Exchange during the period January 1926 through June 1968. The data are from the Center for Research in Security Prices of the University of Chicago.

A. General Approach

Testing the two-parameter model immediately presents an unavoidable "errors-in-the-variables" problem: The efficiency condition or expected return-risk equation (6) is in terms of true values of the relative risk measure β_i, but in empirical tests estimates, $\hat{\beta}_i$, must be used. In this paper

$$\hat{\beta}_i \equiv \frac{\widehat{\text{cov}}(\tilde{R}_i, \tilde{R}_m)}{\hat{\sigma}^2(\tilde{R}_m)},$$

where $\widehat{\text{cov}}(\tilde{R}_i, \tilde{R}_m)$ and $\hat{\sigma}^2(\tilde{R}_m)$ are estimates of $\text{cov}(\tilde{R}_i, \tilde{R}_m)$ and $\sigma^2(\tilde{R}_m)$ obtained from monthly returns, and where the proxy chosen for $\tilde{R}_{mt}$ is "Fisher's Arithmetic Index," an equally weighted average of the returns on all stocks listed on the New York Stock Exchange in month t. The properties of this index are analyzed in Fisher (1966).

Blume (1970) shows that for any portfolio p, defined by the weights x_{ip}, $i = 1, 2, \ldots, N$,

$$\hat{\beta}_p \equiv \frac{\widehat{\text{cov}}(\tilde{R}_p, \tilde{R}_m)}{\hat{\sigma}^2(\tilde{R}_m)} = \sum_{i=1}^{N} x_{ip} \frac{\widehat{\text{cov}}(\tilde{R}_i, \tilde{R}_m)}{\hat{\sigma}^2(\tilde{R}_m)} = \sum_{i=1}^{N} x_{ip} \hat{\beta}_i.$$

If the errors in the $\hat{\beta}_i$ are substantially less than perfectly positively correlated, the $\hat{\beta}$'s of portfolios can be much more precise estimates of true β's than the $\hat{\beta}$'s for individual securities.

To reduce the loss of information in the risk-return tests caused by using portfolios rather than individual securities, a wide range of values of portfolio $\hat{\beta}_p$'s is obtained by forming portfolios on the basis of ranked values of $\hat{\beta}_i$ for individual securities. But such a procedure, naïvely executed could result in a serious regression phenomenon. In a cross section of $\hat{\beta}_i$, high observed $\hat{\beta}_i$ tend to be above the corresponding true β_i and low observed $\hat{\beta}_i$ tend to be below the true β_i. Forming portfolios on the basis of ranked $\hat{\beta}_i$ thus causes bunching of positive and negative sampling errors within portfolios. The result is that a large portfolio $\hat{\beta}_p$ would tend to overstate the true β_p, while a low $\hat{\beta}_p$ would tend to be an underestimate.

The regression phenomenon can be avoided to a large extent by forming portfolios from ranked $\hat{\beta}_i$ computed from data for one time period but then using a subsequent period to obtain the $\hat{\beta}_p$ for these portfolios that are used to test the two-parameter model. With fresh data, within a portfolio errors in the individual security $\hat{\beta}_i$ are to a large extent random across securities, so that in a portfolio $\hat{\beta}_p$ the effects of the regression phenomenon are, it is hoped, minimized.[6]

B. Details

The specifics of the approach are as follows. Let N be the total number of securities to be allocated to portfolios and let $\text{int}(N/20)$ be the largest integer equal to or less than $N/20$. Using the first 4 years (1926–29) of monthly return data, 20 portfolios are formed on the basis of ranked $\hat{\beta}_i$ for individual securities. The middle 18 portfolios each has $\text{int}(N/20)$ securities. If N is even, the first and last portfolios each has $\text{int}(N/20) + \frac{1}{2}[N - 20\,\text{int}(N/20)]$ securities. The last (highest $\hat{\beta}$) portfolio gets an additional security if N is odd.

The following 5 years (1930–34) of data are then used to recompute the $\hat{\beta}_i$, and these are averaged across securities within portfolios to obtain 20 initial portfolio $\hat{\beta}_{pt}$ for the risk-return tests. The subscript t is added to indicate that each month t of the following four years (1935–38) these $\hat{\beta}_{pt}$ are recomputed as simple averages of individual security $\hat{\beta}_i$, thus adjusting the portfolio $\hat{\beta}_{pt}$ month by month to allow for delisting of securities. The component $\hat{\beta}_i$ for securities are themselves updated yearly—that

[6] The errors-in-the-variables problem and the technique of using portfolios to solve it were first pointed out by Blume (1970). The portfolio approach is also used by Friend and Blume (1970) and Black, Jensen, and Scholes (1972). The regression phenomenon that arises in risk-return tests was first recognized by Blume (1970) and then by Black, Jensen, and Scholes (1972), who offer a solution to the problem that is similar in spirit to ours.

is, they are recomputed from monthly returns for 1930 through 1935, 1936, or 1937.

As a measure of the non-β risk of security i we use $s(\hat{\epsilon}_i)$, the standard deviation of the least-squares residuals $\hat{\epsilon}_{it}$ from the so-called market model

$$\tilde{R}_{it} = a_i + \beta^i \tilde{R}_{mt} + \tilde{\epsilon}_{it}. \quad (8)$$

The standard deviation $s(\hat{\epsilon}_i)$ is a measure of non-β risk in the following sense. One view of risk, antithetic to that of portfolio theory, says that the risk of a security is measured by the total dispersion of its return distribution. Given a market dominated by risk averters, this model would predict that a security's expected return is related to its total return dispersion rather than just to the contribution of the security to the dispersion in the return on an efficient portfolio.[7] If $B_i \equiv \text{cov}(\tilde{R}_i, \tilde{R}_m)/\sigma^2(\tilde{R}_m)$, then in (8) $\text{cov}(\tilde{\epsilon}_i, \tilde{R}_m) = 0$, and

$$\sigma^2(\tilde{R}_i) = \beta_i^2\sigma^2(\tilde{R}_m) + \sigma^2(\tilde{\epsilon}_i) + 2\beta_i \,\text{cov}(\tilde{R}_m, \tilde{\epsilon}_i). \quad (9)$$

Thus, from (9), one can say that $s(\hat{\epsilon}_i)$ is an estimate of that part of the dispersion of the distribution of the return on security i that is not directly related to β_i.

The month-by-month returns on the 20 portfolios, with equal weighting of individual securities each month, are also computed for the 4-year period 1935–38. For each month t of this period, the following cross-sectional regression—the empirical analog of equation (7)—is run:

$$R_{pt} = \hat{\gamma}_{0t} + \hat{\gamma}_{1t}\hat{\beta}_{p,t-1} + \hat{\gamma}_{2t}\hat{\beta}^2_{p,t-1} + \hat{\gamma}_{3t}\bar{s}_{p,t-1}(\hat{\epsilon}_i) + \hat{\eta}_{pt}, \quad (10)$$
$$p = 1, 2, \ldots, 20.$$

The independent variable $\hat{\beta}_{p,t-1}$ is the average of the $\hat{\beta}_i$ for securities in portfolio p discussed above; $\hat{\beta}^2_{p,t-1}$ is the average of the squared values of these $\hat{\beta}_i$ (and is thus somewhat mislabeled); and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ is likewise the average of $s(\hat{\epsilon}_i)$ for securities in portfolio p. The $s(\hat{\epsilon}_i)$ are computed from data for the same period as the component $\hat{\beta}_i$ of $\hat{\beta}_{p,t-1}$, and like these $\hat{\beta}_i$, they are updated annually.

The regression equation (10) is (7) averaged across the securities in a portfolio, with estimates $\hat{\beta}_{p,t-1}$, $\hat{\beta}^2_{p,t-1}$, and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ used as explanatory variables, and with least-squares estimates of the stochastic coefficients $\hat{\gamma}_{0t}$, $\hat{\gamma}_{1t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$. The results from (10)—the time series of month-by-month values of the regression coefficients $\hat{\gamma}_{0t}$, $\hat{\gamma}_{1t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$ for the 4-year period 1935–38—are the inputs for our tests of the two-parameter model for this period. To get results for other periods, the steps described

[7] For those accustomed to the portfolio viewpoint, this alternative model may seem so naïve that it should be classified as a straw man. But it is the model of risk and return implied by the "liquidity preference" and "market segmentation" theories of the term structure of interest rates and by the Keynesian "normal backwardation" theory of commodity futures markets. For a discussion of the issues with respect to these markets, see Roll (1970) and K. Miller (1971).

above are repeated. That is, 7 years of data are used to form portfolios; the next 5 years are used to compute initial values of the independent variables in (10); and then the risk-return regressions of (10) are fit month by month for the following 4-year period.

The nine different portfolio formation periods (all except the first 7 years in length), initial 5-year estimation periods, and testing periods (all but the last 4 years in length) are shown in table 1. The choice of 4-year testing periods is a balance of computation costs against the desire to reform portfolios frequently. The choice of 7-year portfolio formation periods and 5–8-year periods for estimating the independent variables $\hat{\beta}_{p,t-1}$ and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ in the risk-return regressions reflects a desire to balance the statistical power obtained with a large sample from a stationary process against potential problems caused by any nonconstancy of the β_i. The choices here are in line with the results of Gonedes (1973). His results also led us to require that to be included in a portfolio a security available in the first month of a testing period must also have data for all 5 years of the preceding estimation period and for at least 4 years of the portfolio formation period. The total number of securities available in the first month of each testing period and the number of securities meeting the data requirement are shown in table 1.

C. *Some Observations on the Approach*

Table 2 shows the values of the 20 portfolios $\hat{\beta}_{p,t-1}$ and their standard errors $s(\hat{\beta}_{p,t-1})$ for four of the nine 5-year estimation periods. Also shown are: $r(R_p, R_m)^2$, the coefficient of determination between R_{pt} and R_{mt}; $s(R_p)$, the sample standard deviation of R_p; and $s(\hat{\epsilon}_p)$, the standard deviation of the portfolio residuals from the market model of (8), not to be confused with $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$, the average for individual securities, which is also shown. The $\hat{\beta}_{p,t-1}$ and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ are the independent variables in the risk return regressions of (10) for the first month of the 4-year testing periods following the four estimation periods shown.

Under the assumptions that for a given security the disturbances $\tilde{\epsilon}_{jt}$ in (8) are serially independent, independent of $\tilde{R}_{mt}$, and identically distributed through time, the standard error of $\hat{\beta}_i$ is

$$\sigma(\hat{\beta}_i) = \frac{\sigma(\tilde{\epsilon}_i)}{\sqrt{n}\,\sigma(\tilde{R}_m)},$$

where n is the number of months used to compute $\hat{\beta}_i$. Likewise,

$$\sigma(\tilde{\beta}_{p,t-1}) = \frac{\sigma(\tilde{\epsilon}_p)}{\sqrt{n}\,\sigma(\tilde{R}_m)}.$$

Thus, the fact that in table 2, $s(\hat{\epsilon}_p)$ is generally on the order of one-third to one-seventh $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ implies that $s(\hat{\beta}_{p,t-1})$ is one-third to one-seventh

TABLE 1

PORTFOLIO FORMATION, ESTIMATION, AND TESTING PERIODS

	PERIODS				
	1	2	3	4	5
Portfolio formation period ...	1926–29	1927–33	1931–37	1935–41	1939–45
Initial estimation period	1930–34	1934–38	1938–42	1942–46	1946–50
Testing period	1935–38	1939–42	1943–46	1947–50	1951–54
No. of securities available	710	779	804	908	1,011
No. of securities meeting data requirement	435	576	607	704	751

$s(\hat{\beta}_i)$. Estimates of β for portfolios are indeed more precise than those for individual securities.

Nevertheless, it is interesting to note that if the disturbances $\tilde{\epsilon}_{jt}$ in (8) were independent from security to security, the relative increase in the precision of the $\hat{\beta}$ obtained by using portfolios rather than individual securities would be about the same for all portfolios. We argue in the Appendix, however, that the results from (10) imply that the $\tilde{\epsilon}_{it}$ in (8) are interdependent, and the interdependence is strongest among high-β securities and among low-β securities. This is evident in table 2: The ratios $s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ are always highest at the extremes of the $\hat{\beta}_{p,t-1}$ range and lowest for $\hat{\beta}_{p,t-1}$ close to 1.0. But it is important to emphasize that since these ratios are generally less than .33, interdependence among the $\tilde{\epsilon}_{it}$ of different securities does not destroy the value of using portfolios to reduce the dispersion of the errors in estimated β's.

Finally, all the tests of the two-parameter model are predictive in the sense that the explanatory variables $\hat{\beta}_{p,t-1}$ and $\bar{s}_{p,t-1}(\hat{\epsilon}_i)$ in (10) are computed from data for a period prior to the month of the returns, the R_{pt}, on which the regression is run. Although we are interested in testing the two-parameter model as a positive theory—that is, examining the extent to which it is helpful in describing actual return data—the model was initially developed by Markowitz (1959) as a normative theory—that is, as a model to help people make better decisions. As a normative theory the model only has content if there is some relationship between future returns and estimates of risk that can be made on the basis of current information.

Now that the predictive nature of the tests has been emphasized, to simplify the notation, the explanatory variables in (10) are henceforth referred to as $\hat{\beta}_p$, $\hat{\beta}_p^2$, and $\bar{s}_p(\hat{\epsilon}_i)$.

V. Results

The major tests of the implications of the two-parameter model are in table 3. Results are presented for 10 periods: the overall period 1935–

TABLE 1 (*Continued*)

	Periods			
	6	7	8	9
Portfolio formation period ...	1943–49	1947–53	1951–57	1955–61
Initial estimation period	1950–54	1954–58	1958–62	1962–66
Testing period	1955–58	1959–62	1963–66	1967–68
No. of securities available	1,053	1,065	1,162	1,261
No. of securities meeting data requirement	802	856	858	845

6/68; three long subperiods, 1935–45, 1946–55, and 1956–6/68; and six subperiods which, except for the first and last, cover 5 years each. This choice of subperiods reflects the desire to keep separate the pre– and post–World War II periods. Results are presented for four different versions of the risk-return regression equation (10): Panel D is based on (10) itself, but in panels A–C, one or more of the variables in (10) is suppressed. For each period and model, the table shows: $\bar{\hat{\gamma}}_j$, the average of the month-by-month regression coefficient estimates, $\hat{\gamma}_{jt}$; $s(\hat{\gamma}_j)$, the standard deviation of the monthly estimates; and $\bar{r}^2$ and $s(r^2)$, the mean and standard deviation of the month-by-month coefficients of determination, r_t^2, which are adjusted for degrees of freedom. The table also shows the first-order serial correlations of the various monthly $\hat{\gamma}_{jt}$ computed either about the sample mean of $\hat{\gamma}_{jt}$ [in which case the serial correlations are labeled $\rho_M(\hat{\gamma}_i)$] or about an assumed mean of zero [in which case they are labeled $\rho_0(\hat{\gamma}_j)$]. Finally, t-statistics for testing the hypothesis that $\bar{\hat{\gamma}}_j = 0$ are presented. These t-statistics are

$$t(\bar{\hat{\gamma}}_j) = \frac{\bar{\hat{\gamma}}_j}{s(\hat{\gamma}_j)/\sqrt{n}},$$

where n is the number of months in the period, which is also the number of estimates $\hat{\gamma}_{jt}$ used to compute $\bar{\hat{\gamma}}_j$ and $s(\hat{\gamma}_j)$.

In interpreting these t-statistics one should keep in mind the evidence of Fama (1965*a*) and Blume (1970) which suggests that distributions of common stock returns are "thick-tailed" relative to the normal distribution and probably conform better to nonnormal symmetric stable distributions than to the normal. From Fama and Babiak (1968), this evidence means that when one interprets large t-statistics under the assumption that the underlying variables are normal, the probability or significance levels obtained are likely to be overestimates. But it is important to note that, with the exception of condition C3 (positive expected return-risk tradeoff), upward-biased probability levels lead to biases toward rejection of the hypotheses of the two-parameter model. Thus, if these hypotheses cannot

TABLE 2

SAMPLE STATISTICS FOR FOUR SELECTED ESTIMATION PERIODS

Statistic	1	2	3	4	5	6	7	8	9	10
	Portfolios for Estimation Period 1934–38									
$\hat{\beta}_{p,t-1}$	.322	.508	.651	.674	.695	.792	.921	.942	.970	1.005
$s(\hat{\beta}_{p,t-1})$	.027	.027	.025	.023	.028	.026	.032	.029	.034	.027
$r(R_p, R_m)^2$	.709	.861	.921	.936	.912	.941	.932	.946	.933	.958
$s(R_p)$	.040	.058	.072	.074	.077	.087	.101	.103	.106	.109
$s(\hat{\epsilon}_p)$	.022	.022	.020	.019	.023	.021	.026	.024	.028	.022
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.085	.075	.083	.078	.090	.095	.109	.106	.111	.097
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.259	.293	.241	.244	.256	.221	.238	.226	.252	.227
	Portfolios for Estimation Period 1942–46									
$\hat{\beta}_{p,t-1}$	.467	.537	.593	.628	.707	.721	.770	.792	.805	.894
$s(\hat{\beta}_{p,t-1})$	.045	.041	.044	.037	.027	.032	.035	.035	.028	.040
$r(R_p, R_m)^2$	.645	.745	.753	.829	.919	.898	.889	.898	.934	.896
$s(R_p)$	.035	.037	.041	.041	.044	.046	.049	.050	.050	.057
$s(\hat{\epsilon}_p)$	.021	.019	.020	.017	.013	.015	.016	.016	.013	.018
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.055	.055	.063	.058	.058	.063	.064	.064	.062	.069
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.382	.345	.317	.293	.224	.238	.250	.250	.210	.261
	Portfolios for Estimation Period 1950–54									
$\hat{\beta}_{p,t-1}$	.418	.590	.694	.751	.777	.784	.929	.950	.996	1.014
$s(\hat{\beta}_{p,t-1})$	.042	.047	.045	.037	.038	.035	.050	.038	.035	.029
$r(R_p, R_m)^2$	.629	.723	.798	.872	.878	.895	.856	.913	.933	.954
$s(R_p)$	.019	.025	.028	.029	.030	.030	.036	.036	.037	.038
$s(\hat{\epsilon}_p)$	.012	.013	.013	.010	.010	.010	.014	.011	.010	.008
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.040	.044	.046	.048	.051	.051	.052	.053	.054	.057
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.300	.295	.283	.208	.196	.196	.269	.208	.185	.140
	Portfolios for Estimation Period 1958–62									
$\hat{\beta}_{p,t-1}$	.626	.635	.719	.801	.817	.860	.920	.950	.975	.995
$s(\hat{\beta}_{p,t-1})$	.043	.048	.039	.046	.047	.033	.037	.038	.032	.037
$r(R_p, R_m)^2$	.783	.745	.851	.835	.838	.920	.913	.915	.939	.925
$s(R_p)$	.030	.031	.033	.037	.038	.038	.041	.042	.043	.044
$s(\hat{\epsilon}_p)$	.014	.016	.013	.015	.015	.011	.012	.012	.011	.012
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.049	.052	.056	.059	.064	.061	.070	.069	.068	.064
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.286	.308	.232	.254	.234	.180	.171	.174	.162	.188

be rejected when t-statistics are interpreted under the assumption of normality, the hypotheses are on even firmer ground when one takes into account the thick tails of empirical return distributions.

Further justification for using t-statistics to test hypotheses on monthly common stock returns is in the work of Officer (1971). Under the assumption that distributions of monthly returns are symmetric stable, he estimates that in the post–World War II period the characteristic exponent

TABLE 2 (*Continued*)

Statistic	11	12	13	14	15	16	17	18	19	20
	Portfolios for Estimation Period 1934–38									
$\hat{\beta}_{p,t-1}$	1.046	1.122	1.181	1.192	1.196	1.295	1.335	1.396	1.445	1.458
$s(\hat{\beta}_{p,t-1})$	.028	.031	.035	.028	.029	.032	.032	.053	.039	.053
$r(R_p, R_m)^2$	.959	.956	.951	.969	.966	.966	.967	.922	.958	.927
$s(R_p)$	.113	.122	.128	.128	.129	.140	.144	.154	.156	.160
$s(\hat{\epsilon}_p)$	.023	.026	.029	.023	.024	.026	.026	.043	.032	.043
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.094	.124	.120	.122	.132	.125	.129	.158	.145	.170
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.245	.210	.242	.188	.182	.208	.202	.272	.221	.253
	Portfolios for Estimation Period 1942–46									
$\hat{\beta}_{p,t-1}$	.949	.952	1.010	1.038	1.254	1.312	1.316	1.473	1.631	1.661
$s(\hat{\beta}_{p,t-1})$	.031	.036	.040	.030	.034	.039	.041	.084	.083	.077
$r(R_p, R_m)^2$	.942	.923	.917	.954	.958	.951	.945	.839	.867	.887
$s(R_p)$	.059	.060	.063	.064	.077	.081	.081	.097	.105	.106
$s(\hat{\epsilon}_p)$	.014	.016	.018	.014	.016	.018	.019	.039	.038	.036
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.073	.074	.085	.077	.096	.083	.086	.134	.117	.122
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.192	.216	.212	.182	.167	.217	.221	.291	.325	.295
	Portfolios for Estimation Period 1950–54									
$\hat{\beta}_{p,t-1}$	1.117	1.123	1.131	1.134	1.186	1.235	1.295	1.324	1.478	1.527
$s(\hat{\beta}_{p,t-1})$	.039	.027	.044	.033	.037	.049	.045	.046	.058	.086
$r(R_p, R_m)^2$	.934	.968	.919	.952	.944	.915	.933	.934	.917	.841
$s(R_p)$	.042	.041	.043	.042	.044	.047	.049	.050	.056	.060
$s(\hat{\epsilon}_p)$	.011	.007	.012	.009	.010	.014	.013	.013	.016	.024
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.066	.057	.066	.060	.064	.064	.065	.068	.076	.088
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.167	.123	.182	.150	.156	.219	.200	.192	.210	.273
	Portfolios for Estimation Period 1958–62									
$\hat{\beta}_{p,t-1}$	1.013	1.019	1.037	1.048	1.069	1.081	1.092	1.098	1.269	1.388
$s(\hat{\beta}_{p,t-1})$	.038	.031	.036	.033	.036	.038	.045	.045	.048	.065
$r(R_p, R_m)^2$	.922	.948	.934	.945	.936	.931	.907	.910	.922	.886
$s(R_p)$	.045	.045	.046	.046	.047	.048	.049	.049	.056	.063
$s(\hat{\epsilon}_p)$	.013	.010	.012	.011	.012	.013	.015	.015	.016	.021
$\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.069	.066	.067	.062	.070	.072	.076	.068	.070	.078
$s(\hat{\epsilon}_p)/\bar{s}_{p,t-1}(\hat{\epsilon}_i)$	.188	.152	.179	.177	.171	.180	.197	.220	.228	.269

for these distributions is about 1.8 (as compared with a value of 2.0 for a normal distribution). From Fama and Roll (1968), for values of the characteristic exponent so close to 2.0 stable nonnormal distributions differ noticeably from the normal only in their extreme tails—that is, beyond the .05 and .95 fractiles. Thus, as long as one is not concerned with precise estimates of probability levels (always a somewhat meaningless activity), interpreting t-statistics in the usual way does not lead to serious errors.

TABLE 3

Summary Results for the Regression

$$R_p = \hat{\gamma}_{0t} + \hat{\gamma}_{1t}\hat{\beta}_p + \hat{\gamma}_{2t}\hat{\beta}^2{}_p + \hat{\gamma}_{3t}\bar{s}_p(\hat{\epsilon}_i) + \hat{\eta}_{pt}$$

Period	Statistic																			
	$\bar{\hat{\gamma}}_0$	$\bar{\hat{\gamma}}_1$	$\bar{\hat{\gamma}}_2$	$\bar{\hat{\gamma}}_3$	$\overline{\hat{\gamma}_0 - R_f}$	$s(\hat{\gamma}_0)$	$s(\hat{\gamma}_1)$	$s(\hat{\gamma}_2)$	$s(\hat{\gamma}_3)$	$\rho_0(\hat{\gamma}_0 - R_f)$	$\rho_M(\hat{\gamma}_1)$	$\rho_0(\hat{\gamma}_2)$	$\rho_0(\hat{\gamma}_3)$	$t(\bar{\hat{\gamma}}_0)$	$t(\bar{\hat{\gamma}}_1)$	$t(\bar{\hat{\gamma}}_2)$	$t(\bar{\hat{\gamma}}_3)$	$t(\overline{\hat{\gamma}_0 - R_f})$	$\bar{r}^2$	$s(r^2)$
Panel A:																				
1935–6/68 ..	.0061	.0085	...	...	.0048	.038	.066	...	...	.15	.02	...	...	3.24	2.57	...	...	2.55	.29	.30
1935–45	.0039	.0163	...	...	.0037	.052	.098	...	...	.10	−.03	...	...	.86	1.92	...	...	.82	.29	.29
1946–55	.0087	.0027	...	...	.0078	.026	.041	...	...	.18	.07	...	...	3.71	.70	...	...	3.31	.31	.32
1956–6/68 ..	.0060	.0062	...	...	.0034	.030	.044	...	...	.27	.15	...	...	2.45	1.73	...	...	1.39	.28	.29
1935–40	.0024	.0109	...	...	.0023	.064	.116	...	...	.07	−.09	...	...	.32	.79	...	...	.31	.23	.30
1941–45	.0056	.0229	...	...	.0054	.034	.069	...	...	.23	.15	...	...	1.27	2.55	...	...	1.22	.37	.28
1946–50	.0050	.0029	...	...	.0044	.031	.047	...	...	.20	.04	...	...	1.27	.48	...	...	1.10	.39	.33
1951–55	.0123	.0024	...	...	.0111	.019	.035	...	...	.20	.08	...	...	5.06	.53	...	...	4.56	.24	.29
1956–60	.0148	−.0059	...	...	.0128	.020	.034	...	...	.37	.18	...	...	5.68	−1.37	...	...	4.89	.22	.31
1961–6/68 ..	.0001	.0143	...	...	−.0029	.034	.048	...	...	.22	.09	...	...	.03	2.81	...	...	−.80	.32	.27
Panel B:																				
1935–6/68 ..	.0049	.0105	−.0008	...	.0036	.052	.118	.056	...	.03	−.11	−.11	...	1.92	1.79	−.29	...	1.42	.32	.31
1935–45	.0074	.0079	.0040	...	.0073	.061	.139	.074	...	−.10	−.31	−.21	...	1.39	.65	.61	...	1.36	.32	.30
1946–55	−.0002	.0217	−.0087	...	−.0012	.036	.095	.034	...	.04	.00	.00	...	−.07	2.51	−2.83	...	−.38	.36	.32
1956–6/68 ..	.0069	.0040	.0013	...	.0043	.054	.116	.053	...	.17	.07	.03	...	1.56	.42	.29	...	.97	.30	.30
1935–40	.0013	.0141	−.0017	...	.0012	.069	.160	.075	...	−.13	−.36	−.35	...	.16	.75	−.19	...	.14	.24	.30
1941–45	.0148	.0004	.0108	...	.0146	.050	.111	.073	...	−.04	−.19	−.04	...	2.28	.03	1.15	...	2.24	.39	.29
1946–50	−.0008	.0152	−.0051	...	−.0015	.037	.104	.032	...	.14	.04	.00	...	−.18	1.14	−1.24	...	−.32	.44	.32
1951–55	.0004	.0281	−.0122	...	−.0008	.030	.085	.035	...	−.17	−.14	−.01	...	.10	2.55	−2.72	...	−.20	.28	.29
1956–60	.0128	−.0015	−.0020	...	.0108	.030	.072	.029	...	.35	.11	.26	...	3.38	−.16	−.54	...	2.84	.25	[illegible]
1961–6/68 ..	.0029	.0077	.0034	...	−.0000	.066	.138	.064	...	.14	.06	−.01	...	.42	.53	.51	...	−.01	.34	[illegible]

TABLE 3 (*Continued*)

Period	$\bar{\hat{\gamma}}_0$	$\bar{\hat{\gamma}}_1$	$\bar{\hat{\gamma}}_2$	$\bar{\hat{\gamma}}_3$	$\overline{\hat{\gamma}_0 - R_f}$	$s(\hat{\gamma}_0)$	$s(\hat{\gamma}_1)$	$s(\hat{\gamma}_2)$	$s(\hat{\gamma}_3)$	$\rho_0(\hat{\gamma}_0 - R_f)$	$\rho_M(\hat{\gamma}_1)$	$\rho_0(\hat{\gamma}_2)$	$\rho_0(\hat{\gamma}_3)$	$t(\bar{\hat{\gamma}}_0)$	$t(\bar{\hat{\gamma}}_1)$	$t(\bar{\hat{\gamma}}_2)$	$t(\bar{\hat{\gamma}}_3)$	$t(\overline{\hat{\gamma}_0 - R_f})$	$\bar{r}^2$	$s(r^2)$
Panel C:																				
1935–6/68 ..	.0054	.0072	...	.0198	.0041	.052	.065	...	.868	.04	—.12	...	—.04	2.10	2.20	...	.46	1.59	.32	.31
1935–45	.0017	.0104	...	.0841	.0015	.073	.083	...	.921	—.00	—.26	...	—.08	.26	1.41	...	1.05	.24	.32	.31
1946–55	.0110	.0075	...	—.1052	.0100	.032	.056	...	.609	.08	.02	...	—.20	3.78	1.47	...	—1.89	3.46	.34	.32
1956–6/68 ..	.0042	.0041	...	.0633	.0016	.040	.052	...	.984	.12	.08	...	.03	1.28	.96	...	.79	.50	.30	.29
1935–40	.0036	.0119	...	—.0170	.0035	.082	.105	...	.744	—.03	—.26	...	—.18	.37	.97	...	—.19	.36	.25	.30
1941–45	—.0006	.0085	...	.2053	—.0009	.061	.052	...	1.091	.07	—.29	...	—.02	—.08	1.25	...	1.46	—.11	.41	.30
1946–50	.0069	.0081	...	—.0920	.0062	.034	.066	...	.504	.14	.06	...	—.02	1.56	.95	...	—1.41	1.40	.42	.33
1951–55	.0150	.0069	...	—.1185	.0138	.029	.043	...	.702	.06	—.18	...	—.32	4.05	1.24	...	—1.31	3.72	.27	.29
1956–60	.0127	—.0081	...	.0728	.0107	.037	.045	...	1.164	.15	.15	...	.21	2.68	—1.40	...	.48	2.26	.26	.30
1961–6/68 ..	—.0014	.0122	...	.0570	—.0044	.042	.055	...	.850	.10	.00	...	—.19	—.32	2.12	...	.64	—.98	.33	.27
Panel D:																				
1935–6/68 ..	.0020	.0114	—.0026	.0516	.0008	.075	.123	.060	.929	—.09	—.09	—.12	—.10	.55	1.85	—.86	1.11	.20	.34	.31
1935–45	.0011	.0118	—.0009	.0817	.0010	.103	.146	.079	1.003	—.20	—.23	—.24	—.15	.13	.94	—.14	.94	.11	.34	.31
1946–55	.0017	.0209	—.0076	—.0378	.0008	.042	.096	.038	.619	—.10	—.00	—.01	—.20	.44	2.39	—2.16	—.67	.20	.36	.32
1956–6/68 ..	.0031	.0034	—.0000	.0966	.0005	.065	.122	.055	1.061	.12	.03	.01	—.05	.59	.34	—.00	1.11	.10	.32	.29
1935–40	.0009	.0156	—.0029	.0025	.0008	.112	.171	.085	.826	—.16	—.23	—.26	—.12	.07	.78	—.29	.03	.06	.26	.30
1941–45	.0015	.0073	.0014	.1767	.0012	.092	.109	.072	1.181	—.28	—.21	—.22	—.18	.12	.52	.15	1.16	.10	.43	.31
1946–50	.0011	.0141	—.0040	—.0313	.0004	.047	.106	.042	.590	—.10	.03	—.01	—.12	.18	1.03	—.73	—.41	.07	.44	.33
1951–55	.0023	.0277	—.0112	—.0443	.0011	.037	.085	.034	.651	—.11	—.13	—.01	—.28	.48	2.53	—2.54	—.53	.23	.29	.30
1956–60	.0103	—.0047	—.0020	.0979	.0083	.049	.078	.032	1.286	—.16	.19	—.01	.02	1.63	—.47	—.49	.59	1.31	.28	.30
1961–6/68 ..	—.0017	.0088	.0013	.0957	—.0046	.073	.144	.066	.887	.20	.00	.01	—.15	—.21	.58	.19	1.02	—.60	.35	.29

Inferences based on approximate normality are on even safer ground if one assumes, again in line with the results of Officer (1971), that although they are well approximated by stable nonnormal distributions with $\alpha \cong 1.8$, distributions of monthly returns in fact have finite variances and converge—but very slowly—toward the normal as one takes sums or averages of individual returns. Then the distributions of the means of month-by-month regression coefficients from the risk-return model are likely to be close to normal since each mean is based on coefficients for many months.

A. Tests of the Major Hypotheses of the Two-Parameter Model

Consider first condition C2 of the two-parameter model, which says that no measure of risk, in addition to β, systematically affects expected returns. This hypothesis is not rejected by the results in panels C and D of table 3. The values of $t(\bar{\hat{\gamma}}_3)$ are small, and the signs of the $t(\bar{\hat{\gamma}}_3)$ are randomly positive and negative.

Likewise, the results in panels B and D of table 3 do not reject condition C1 of the two-parameter model, which says that the relationship between expected return and β is linear. In panel B, the value of $t(\bar{\hat{\gamma}}_2)$ for the overall period 1935–6/68 is only —.29. In the 5-year subperiods, $t(\bar{\hat{\gamma}}_2)$ for 1951–55 is approximately —2.7, but for subperiods that do not cover 1951–55, the values of $t(\bar{\hat{\gamma}}_2)$ are much closer to zero.

So far, then, the two-parameter model seems to be standing up well to the data. All is for naught, however, if the critical condition C3 is rejected. That is, we are not happy with the model unless there is on average a positive tradeoff between risk and return. This seems to be the case. For the overall period 1935–6/68, $t(\bar{\hat{\gamma}}_1)$ is large for all models. Except for the period 1956–60, the values of $t(\bar{\hat{\gamma}}_1)$ are also systematically positive in the subperiods, but not so systematically large.

The small t-statistics for subperiods reflect the substantial month-to-month variability of the parameters of the risk-return regressions. For example, in the one-variable regressions summarized in panel A, for the period 1935–40, $\bar{\hat{\gamma}}_1 = .0109$. In other words, for this period the average incremental return per unit of β was almost 1.1 percent per month, so that on average, bearing risk had substantial rewards. Nevertheless, because of the variability of $\hat{\gamma}_{1t}$—in this period $s(\hat{\gamma}_1)$ is 11.6 percent per month (!)—$t(\bar{\hat{\gamma}}_1)$ is only .79. It takes the statistical power of the large sample for the overall period before values of $\bar{\hat{\gamma}}_1$ that are large in practical terms also yield large t-values.

But at least with the sample of the overall period $t(\bar{\hat{\gamma}}_1)$ achieves values supportive of the conclusion that on average there is a statistically observable positive relationship between return and risk. This is not the case with respect to $t(\bar{\hat{\gamma}}_2)$ and $t(\bar{\hat{\gamma}}_3)$. Even, or indeed especially, for the overall period, these t-statistics are close to zero.

The behavior through time of $\hat{\gamma}_{1t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$ is also consistent with hypothesis ME that the capital market is efficient. The serial correlations $\rho_M(\hat{\gamma}_1)$, $\rho_0(\hat{\gamma}_2)$, and $\rho_0(\hat{\gamma}_3)$, are always low in terms of explanatory power and generally low in terms of statistical significance. The proportion of the variance of $\tilde{\gamma}_{jt}$ explained by first-order serial correlation is estimated by $\rho(\hat{\gamma}_j)^2$ which in all cases is small. As for statistical significance, under the hypothesis that the true serial correlation is zero, the standard deviation of the sample coefficient can be approximated by $\sigma(\hat{\rho}) = 1/\sqrt{n}$. For the overall period, $\sigma(\hat{\rho})$ is approximately .05, while for the 10- and 5-year subperiods $\sigma(\hat{\rho})$ is approximately .09 and .13, respectively. Thus, the values of $\rho_M(\hat{\gamma}_1)$, $\rho_0(\hat{\gamma}_2)$, and $\rho_0(\hat{\gamma}_3)$ in table 3 are generally statistically close to zero. The exceptions involve primarily periods that include the 1935–40 subperiod, and the results for these periods are not independent.[8]

To conserve space, the serial correlations of the portfolio residuals, $\hat{\eta}_{pt}$, are not shown. In these serial correlations, negative values predominate. But like the serial correlations of the $\hat{\gamma}$'s, those of the $\hat{\eta}$'s are close to zero. Higher-order serial correlations of the $\hat{\gamma}$'s and $\hat{\eta}$'s have been computed, and these also are never systematically large.

In short, one cannot reject the hypothesis that the pricing of securities is in line with the implications of the two-parameter model for expected returns. And given a two-parameter pricing model, the behavior of returns through time is consistent with an efficient capital market.

B. *The Behavior of the Market*

Some perspective on the behavior of the market during different periods and on the interpretation of the coefficients $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$ in the risk-return regressions can be obtained from table 4. For the various periods of table 3, table 4 shows the sample means (and with some exceptions), the standard

[8] The serial correlations of $\hat{\gamma}_2$ and $\hat{\gamma}_3$ about means that are assumed to be zero provide a test of the fair game property of an efficient market, given that expected returns are generated by the two-parameter model—that is, given $E(\tilde{\gamma}_{2t}) = E(\tilde{\gamma}_{3t}) = 0$. Likewise, $\rho_0(\hat{\gamma}_{0t} - R_{ft})$ provides a test of market efficiency with respect to the behavior of $\hat{\gamma}_{0t}$ through time, given the validity of the Sharpe-Lintner hypothesis (about which we have as yet said nothing). But, at least for $\hat{\gamma}_{2t}$ and $\hat{\gamma}_{3t}$, computing the serial correlations about sample means produces essentially the same results.

To test the market efficiency hypothesis on $\tilde{\gamma}_{1t} - [E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]$, the sample mean of the $\hat{\gamma}_{1t}$ is used to estimate $E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})$, thus implicitly assuming that the expected risk premium is constant. That this is a reasonable approximation [in the sense that the $\rho_M(\hat{\gamma}_1)$ are small], probably reflects the fact that variation in $E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})$ is trivial relative to the month-by-month variation in $\hat{\gamma}_{1t}$.

Finally, it is well to note that in terms of the implications of the serial correlations for making good portfolio decisions—and thus for judging whether market efficiency is a workable representation of reality—the fact that the serial correlations are low in terms of explanatory power is more important than whether or not they are low in terms of statistical significance.

TABLE 4

THE BEHAVIOR OF THE MARKET

PERIOD	STATISTIC*								
	$\overline{R_m}$	$\overline{R_m - R_f}$	$\overline{\hat{\gamma}_1}$	$\overline{\hat{\gamma}_0}$	$\overline{R_f}$	$\dfrac{\overline{R_m - R_f}}{s(R_m)}$	$\dfrac{\overline{\hat{\gamma}_1}}{s(R_m)}$	$s(R_m)$	$s(R_m)$
1935–6/68	.0143	.0130	.0085	.0061	.0013	.2136	.1388	.061	.066
1935–45	.0197	.0195	.0163	.0039	.0002	.2207	.1844	.089	.098
1946–55	.0112	.0103	.0027	.0087	.0009	.2378	.0614	.043	.041
1956–6/68	.0121	.0095	.0062	.0060	.0026	.2387	.1560	.040	.044
1935–40	.0132	.0132	.0109	.0024	.0001	.1221	.1009	.108	.116
1941–45	.0274	.0272	.0229	.0056	.0002	.4715	.3963	.058	.069
1946–50	.0077	.0070	.0029	.0050	.0007	.1351	.0564	.052	.047
1951–55	.0148	.0136	.0024	.0123	.0012	.4174	.0735	.033	.035
1956–60	.0090	.0070	—.0059	.0148	.0020	.2080	—.1755	.034	.034
1961–6/68	.0141	.0111	.0143	.0001	.0030	.2567	.3294	.043	.048

* Since $s(R_f)$ is so small relative to $s(R_m)$, $s(R_m - R_f)$, which is not shown, is essentially the same as $s(R_m)$. The standard deviations of $(R_m - R_f)/s(R_m)$ and $\hat{\gamma}_1/s(R_m)$, also not shown, can be obtained directly from $s(R_m - R_f)$, $s(\hat{\gamma}_1)$ and $s(R_m)$. Finally, the t-statistics for $(\overline{R_m - R_f})/s(R_m)$ and $\overline{\hat{\gamma}_1}/s(R_m)$ are identical with those for $\overline{R_m - R_f}$ and $\overline{\hat{\gamma}_1}$.

deviations, t-statistics for sample means, and first-order serial correlations for the month-by-month values of the following variables and coefficients: the market return R_{mt}; the riskless rate of interest R_{ft}, taken to be the yield on 1-month Treasury bills; $R_{mt} - R_{ft}$; $(R_{mt} - R_{ft})/s(R_m)$; $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$, repeated from panel A of table 3; and $\hat{\gamma}_{1t}/s(R_m)$. The t-statistics on sample means are computed in the same way as those in table 3.

If the two-parameter model is valid, then in equation (7), $E(\tilde{\gamma}_{0t}) = E(\tilde{R}_{0t})$, where $E(\tilde{R}_{0t})$ is the expected return on any zero-β security or portfolio. Likewise, the expected risk premium per unit of β is $E(\tilde{R}_{mt}) - E(\tilde{R}_{0t}) = E(\tilde{\gamma}_{1t})$. In fact, for the one-variable regressions of panel A, table 3, that is,

$$R_{pt} = \hat{\gamma}_{0t} + \hat{\gamma}_{1t}\,\hat{\beta}_p + \hat{\eta}_{pt}, \tag{11}$$

we have, period by period,

$$\hat{\gamma}_{1t} = R_{mt} - \hat{\gamma}_{0t}. \tag{12}$$

This condition is obtained by averaging (11) over p and making use of the least-squares constraint

$$\sum_p \hat{\eta}_{pt} = 0.$$ [9]

Moreover, the least-squares estimate $\hat{\gamma}_{0t}$ can always be interpreted as the return for month t on a zero-$\hat{\beta}$ portfolio, where the weights given to each

[9] There is some degree of approximation in (12). The averages over p of R_{pt} and $\hat{\beta}_p$ are R_{mt} and 1.0, respectively, only if every security in the market is in some portfolio. With our methodology (see table 1) this is never true. But the degree of approximation turns out to be small: The average of the R_{pt} is always close to R_{mt} and the average $\hat{\beta}_p$ is always close to 1.0.

TABLE 4 (*Continued*)

Statistic*										
$s(\hat{\gamma}_0)$	$s(R_f)$	$t(\bar{R}_m)$	$t(\overline{R_m - R_f})$	$t(\bar{\hat{\gamma}}_1)$	$t(\bar{\hat{\gamma}}_0)$	$\rho_M(R_m)$	$\rho_M(R_m - R_f)$	$\rho_M(\hat{\gamma}_1)$	$\rho_M(\hat{\gamma}_0)$	$\rho_M(R_f)$
.038	.0012	4.71	4.28	2.57	3.24	—.01	—.01	.02	.14	.98
.052	.0001	2.56	2.54	1.92	.86	—.07	—.07	—.03	.10	.88
.026	.0004	2.84	2.60	.70	3.71	.09	.09	.07	.10	.94
.030	.0009	3.72	2.92	1.73	2.45	.14	.14	.15	.25	.92
.064	.0001	1.04	1.04	.79	.32	—.13	—.13	—.09	.07	.72
.034	.0001	3.68	3.65	2.55	1.27	.14	.14	.15	.21	.83
.031	.0003	1.15	1.05	.48	1.27	.09	.09	.04	.18	.97
.019	.0004	3.51	3.22	.53	5.06	—.02	—.01	.08	—.07	.89
.020	.0007	2.07	1.60	—1.37	5.68	.12	.13	.18	.13	.80
.034	.0008	3.08	2.44	2.81	.03	.13	.13	.09	.21	.93

of the 20 portfolios to form this zero-$\hat{\beta}$ portfolio are the least-squares weights that are applied to the R_{pt} in computing $\hat{\gamma}_{0t}$.[10]

In the Sharpe-Lintner two-parameter model of market equilibrium $E(\tilde{\gamma}_{0t}) = E(\tilde{R}_{0t}) = R_{ft}$ and $E(\tilde{\gamma}_{1t}) = E(\tilde{R}_{mt}) - E(\tilde{R}_{0t}) = E(\tilde{R}_{mt}) - R_{ft}$. In the period 1935–40 and in the most recent period 1961–6/68, $\bar{\hat{\gamma}}_{1t}$ is close to $\overline{R_m - R_f}$ and the t-statistics for the two averages are similar. In other periods, and especially in the period 1951–60, $\bar{\hat{\gamma}}_1$ is substantially less than $\overline{R_m - R_f}$. This is a consequence of the fact that for these periods $\bar{\hat{\gamma}}_0$ is noticeably greater than $\bar{R}_f$. In economic terms, the tradeoff of average return for risk between common stocks and short-term bonds has been more consistently large through time than the tradeoff of average return for risk among common stocks. Testing whether the differences between $\overline{R_m - R_f}$ and $\bar{\hat{\gamma}}_1$ are statistically large, however, is equivalent to testing the S-L hypothesis $E(\tilde{\gamma}_{0t}) = R_{ft}$, which we prefer to take up after examining further the stochastic process generating monthly returns.

Finally, although the differences between values of $\overline{R_m - R_f}$ for different periods or between values of $\bar{\hat{\gamma}}_1$ are never statistically large, there is a hint in table 4 that average-risk premiums declined from the pre– to the post–World War II periods. These are average risk premiums per unit of $\hat{\beta}$, however, which are not of prime interest to the investor. In making his portfolio decision, the investor is more concerned with the tradeoff of expected portfolio return for dispersion of return—that is, the slope of the efficient set of portfolios. In the Sharpe-Lintner model this slope is

[10] That $\hat{\gamma}_{0t}$ is the return on a zero-$\hat{\beta}$ portfolio can be shown to follow from the unbiasedness of the least-squares coefficients in the cross-sectional risk-return regressions. If one makes the Gauss-Markov assumptions that the underlying disturbances $\tilde{\eta}_{pt}$ of (11) have zero means, are uncorrelated across p, and have the same variance for all p, then it follows almost directly from the Gauss-Markov Theorem that the least-squares estimate $\hat{\gamma}_{0t}$ is also the return for month t on the minimum variance zero-$\hat{\beta}$ portfolio that can be constructed from the 20 portfolio $\hat{\beta}_p$.

always $[E(\tilde{R}_{mt}) - R_{ft}]/\sigma(\tilde{R}_{mt})$, and in the more general model of Black (1972), it is $[E(\tilde{R}_{mt}) - E(\tilde{R}_{0t})]/\sigma(\tilde{R}_{mt})$ at the point on the efficient set corresponding to the market portfolio m. In table 4, especially for the three long subperiods, dividing $\overline{R_m - R_f}$ and $\bar{\hat{\gamma}}_1$, by $s(R_m)$ seems to yield estimated risk premiums that are more constant through time. This results from the fact that any declines in $\bar{\hat{\gamma}}_1$ or $\overline{R_m - R_f}$ are matched by a quite noticeable downward shift in $s(R_m)$ from the early to the later periods (cf. Blume [1970] or Officer [1971]).

C. *Errors and True Variation in the Coefficients* $\hat{\gamma}_{jt}$

Each cross-sectional regression coefficient $\hat{\gamma}_{jt}$ in (10) has two components: the true $\tilde{\gamma}_{jt}$ and the estimation error, $\tilde{\phi}_{jt} = \hat{\gamma}_{jt} - \tilde{\gamma}_{jt}$. A natural question is: To what extent is the variation in $\hat{\gamma}_{jt}$ through time due to variation in $\tilde{\gamma}_{jt}$ and to what extent is it due to $\tilde{\phi}_{jt}$? In addition to providing important information about the precision of the coefficient estimates used to test the two-parameter model, the answer to this question can be used to test hypotheses about the stochastic process generating returns. For example, although we cannot reject the hypothesis that $E(\tilde{\gamma}_{2t}) = 0$, does including the term involving $\hat{\beta}_p^2$ in (10) help in explaining the month-by-month behavior of returns? That is, can we reject the hypothesis that for all t, $\tilde{\gamma}_{2t} = 0$? Likewise, can we reject the hypothesis that month-by-month $\tilde{\gamma}_{3t} = 0$? And is the variation through time in $\hat{\gamma}_{0t}$ due entirely to $\tilde{\phi}_{0t}$ and to variation in R_{ft}?

The answers to these questions are in table 5. For the models and time periods of table 3, table 5 shows for each $\hat{\gamma}_j$: $s^2(\hat{\gamma}_j)$, the sample variance of the month-by-month $\hat{\gamma}_{jt}$; $\overline{s^2(\tilde{\phi}_j)}$, the average of the month-by-month values of $s^2(\tilde{\phi}_{jt})$, where $s(\tilde{\phi}_{jt})$ is the standard error of $\hat{\gamma}_{jt}$ from the cross-sectional risk-return regression of (10) for month t; $s^2(\tilde{\gamma}_j) \equiv s^2(\hat{\gamma}_j) - \overline{s^2(\tilde{\phi}_j)}$; and the F-statistic $F = s^2(\hat{\gamma}_j)/\overline{s^2(\tilde{\phi}_j)}$, which is relevant for testing the hypothesis, $s^2(\hat{\gamma}_j) = \overline{s^2(\tilde{\phi}_j)}$. The numerator of F has $n - 1$ df, where n is the number of months in the sample period; and the denominator has $n(20 - K)$ df, where K is the number of coefficients $\hat{\gamma}_j$ in the model.[11]

[11] The standard error of $\hat{\gamma}_{jt}$, $s(\tilde{\phi}_{jt})$, is proportional to the standard error of the risk-return residuals, $\hat{\eta}_{pt}$, for month t, which has $20 - K$ df. And n values of $s^2(\tilde{\phi}_{jt})$ are averaged to get $\overline{s^2(\tilde{\phi}_j)}$, so that the latter has $n(20 - K)$ df. Note that if the underlying return disturbances $\tilde{\eta}_{pt}$ of (10) are independent across p and have identical normal distributions for all p, then $\hat{\gamma}_{jt}$ is the sample mean of a normal distribution and $s^2(\tilde{\phi}_{jt})$ is proportional to the sample variance of the same normal distribution. If the process is also assumed to be stationary through time, it then follows that $s^2(\hat{\gamma}_{jt})$ and $\overline{s^2(\tilde{\phi}_{jt})}$ are independent, as required by the F-test. Finally, in the F-statistics of table 5, the values of n are 60 or larger, so that, since K is from 2 to 4, $n(20 - K) \geqslant 960$. From Mood and Graybill (1963), some upper percentage points of the F-distribution are:

One clear-cut result in table 5 is that there is a substantial decline in the reliability of the coefficients $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$—that is, a substantial increase in $s^2(\overline{\tilde{\phi}_0})$ and $s^2(\overline{\tilde{\phi}_1})$—when $\hat{\beta}_p^2$ and/or $\bar{s}_p(\hat{\epsilon}_j)$ are included in the risk-return regressions. The variable $\hat{\beta}_p^2$ is obviously collinear with $\hat{\beta}_p$, and, as can be seen from table 2, $\bar{s}_p(\hat{\epsilon}_i)$ likewise increases with $\hat{\beta}_p$. From panels B and C of table 5, the collinearity with $\hat{\beta}_p$ is stronger for $\hat{\beta}_p^2$ than for $\bar{s}_p(\hat{\epsilon}_j)$.

In spite of the loss in precision that arises from multicollinearity, however, the F-statistics for $\hat{\gamma}_2$ (the coefficient of $\hat{\beta}_p^2$) and $\hat{\gamma}_3$ [the coefficient of $\bar{s}_p(\hat{\epsilon}_j)$] are generally large for the models of panels B and C of table 5, and for the model of panel D which includes both variables. From the F-statistics in panel D, it seems that, except for the period 1935–45, the variation through time of $\tilde{\gamma}_{2t}$ is statistically more noticeable than that of $\tilde{\gamma}_{3t}$, but there are periods (1941–45, 1956–60) when the values of F for both $\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{3t}$ are large.

The F-statistics for $\hat{\gamma}_{1t} = \tilde{\gamma}_{1t} + \tilde{\phi}_{1t}$ also indicate that $\tilde{\gamma}_{1t}$ has substantial variation through time. This is not surprising, however, since $\hat{\gamma}_{1t}$ is always directly related to $\tilde{R}_{mt}$. For example, from equation (12), for the one-variable model of panel A, $\hat{\gamma}_{1t} = \tilde{R}_{mt} - \hat{\gamma}_{0t}$.

Finally, the F-statistics for $\hat{\gamma}_{0t} = \tilde{\gamma}_{0t} + \tilde{\phi}_{0t}$ are also in general large. And the month-by-month variation in $\tilde{\gamma}_{0t}$ cannot be accounted for by variation in R_{ft}. The variance of R_{ft} is so small relative to $s^2(\hat{\gamma}_{0t})$, $s^2(\tilde{\gamma}_{0t})$, and $\overline{s^2(\tilde{\phi}_{0t})}$ that doing the F-tests in terms of $\hat{\gamma}_{0t} - R_{ft}$ produces results almost identical with those for $\hat{\gamma}_{0t}$.

Rejection of the hypothesis that $\tilde{\gamma}_{0t} - R_{ft} = 0$ does not imply rejection of the S-L hypothesis—to be tested next—that $E(\tilde{\gamma}_{0t}) = R_{ft}$. Likewise, to find that month-by-month $\tilde{\gamma}_{2t} \neq 0$ and $\tilde{\gamma}_{3t} \neq 0$ does not imply rejection of hypotheses C1 and C2 of the two-parameter model. These hypotheses, which we are unable to reject on the basis of the results in table 3, say that $E(\tilde{\gamma}_{2t}) = 0$ and $E(\tilde{\gamma}_{3t}) = 0$.

What we have found in table 5 is that there are variables in addition to $\hat{\beta}_p$ that systematically affect period-by-period returns. Some of these omitted variables are apparently related to $\hat{\beta}_p^2$ and $\bar{s}_p(\hat{\epsilon}_i)$. But the latter are almost surely proxies, since there is no economic rationale for their presence in our stochastic risk-return model.

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n	$F_{.90}$	$F_{.95}$	$F_{.975}$	$F_{.99}$	$F_{.995}$
60 (120)	1.35	1.47	1.58	1.73	1.83
60 (∞)	1.29	1.39	1.48	1.60	1.69
120 (120)	1.26	1.35	1.43	1.53	1.61
120 (∞)	1.19	1.25	1.31	1.38	1.43

TABLE 5

COMPONENTS OF THE VARIANCES OF THE $\hat{\gamma}_{jt}$

PERIOD	$s^2(\tilde{\gamma}_0)$	$s^2(\hat{\gamma}_0)$	$\overline{s^2(\tilde{\phi}_0)}$	F	$s^2(\tilde{\gamma}_1)$	$s^2(\hat{\gamma}_1)$	$\overline{s^2(\tilde{\phi}_1)}$	F
Panel A:								
1935–6/68 ...	.00105	.00142	.00037	3.84	.00401	.00436	.00035	12.46
1935–45	.00182	.00273	.00091	3.00	.00863	.00950	.00087	10.92
1946–55	.00057	.00066	.00009	7.33	.00163	.00171	.00008	21.38
1956–6/68 ...	.00077	.00090	.00013	6.92	.00181	.00193	.00012	16.08
1935–40	.00265	.00404	.00139	2.91	.01212	.01347	.00135	9.98
1941–45	.00086	.00118	.00032	3.69	.00452	.00481	.00029	16.59
1946–50	.00086	.00094	.00008	11.75	.00216	.00224	.00008	28.00
1951–55	.00027	.00036	.00009	4.00	.00113	.00121	.00008	15.12
1956–60	.00032	.00041	.00009	4.56	.00104	.00112	.00008	21.50
1961–6/68 ...	.00100	.00114	.00014	8.14	.00217	.00231	.00014	16.50
Panel B:								
1935–6/68 ...	.00092	.00267	.00175	1.52	.00564	.01403	.00839	1.67
1935–45	.00057	.00377	.00320	1.18	.00372	.01941	.01569	1.24
1946–55	.00053	.00112	.00059	1.90	.00651	.00897	.00245	3.66
1956–6/68 ...	.00155	.00294	.00139	2.12	.00667	.01338	.00671	1.99
1935–40	.00018	.00476	.00458	1.04	.00374	.02555	.02181	1.17
1941–45	.00101	.00254	.00153	1.66	.00389	.01225	.00836	1.46
1946–50	.00084	.00136	.00052	2.62	.00862	.01071	.00209	5.12
1951–55	.00024	.00090	.00066	1.36	.00447	.00729	.00282	2.58
1956–60	.00037	.00087	.00050	1.74	.00289	.00517	.00228	2.27
1961–6/68 ...	.00232	.00431	.00199	2.16	.00928	.01894	.00966	1.96
Panel C:								
1935–6/68 ...	.00192	.00266	.00075	3.55	.00285	.00428	.00142	3.01
1935–45	.00394	.00533	.00139	3.83	.00433	.00717	.00283	2.52
1946–55	.00083	.00101	.00018	5.61	.00261	.00310	.00050	6.20
1956–6/68 ...	.00100	.00164	.00063	2.60	.00178	.00270	.00092	2.93
1935–40	.00473	.00669	.00196	3.41	.00732	.01094	.00362	3.02
1941–45	.00307	.00377	.00070	5.38	.00085	.00274	.00189	1.45
1946–50	.00103	.00117	.00014	8.36	.00386	.00439	.00053	8.28
1951–55	.00061	.00083	.00022	3.77	.00140	.00188	.00047	4.00
1956–60	.00079	.00134	.00055	2.44	.00106	.00204	.00098	2.08
1961–6/68 ...	.00109	.00177	.00068	2.60	.00212	.00300	.00088	3.41
Panel D:								
1935–6/68 ...	.00150	.00566	.00406	1.39	.00608	.01521	.00913	1.66
1935–45	.00233	.01065	.00832	1.28	.00402	.02118	.01716	1.23
1946–55	.00013	.00176	.00163	1.08	.00647	.00916	.00269	3.41
1956–6/68 ...	.00194	.00420	.00226	1.86	.00763	.01485	.00722	2.06
1935–40	.00157	.01263	.01106	1.14	.00457	.02910	.02453	1.19
1941–45	.00340	.00843	.00503	1.68	.00365	.01196	.00832	1.44
1946–50	.00023	.00220	.00197	1.12	.00858	.01119	.00261	4.29
1951–55	.00006	.00136	.00130	1.05	.00442	.00719	.00277	2.60
1956–60	.00092	.00239	.00147	1.62	.00328	.00602	.00274	2.20
1961–6/68 ...	.00260	.00539	.00279	1.93	.01060	.02081	.01021	2.04

D. *Tests of the S-L Hypothesis*

In the Sharpe-Lintner two-parameter model of market equilibrium one has, in addition to conditions C1–C3, the hypothesis that $E(\tilde{\gamma}_{0t}) = R_{ft}$. The work of Friend and Blume (1970) and Black, Jensen, and Scholes (1972) suggests that the S-L hypothesis is not upheld by the data. At least in the post–World War II period, estimates of $E(\tilde{\gamma}_{0t})$ seem to be significantly greater than R_{ft}.

Each of the four models of table 3 can be used to test the S-L hypothe-

TABLE 5 (*Continued*)

PERIOD	$s^2(\tilde{\gamma}_2)$	$s^2(\hat{\gamma}_2)$	$\overline{s^2(\hat{\phi}_2)}$	F	$s^2(\tilde{\gamma}_3)$	$s^2(\hat{\gamma}_3)$	$\overline{s^2(\hat{\phi}_3)}$	F
Panel A:								
1935–6/68 ...	...	...	...	...	...	...	...	...
1935–45	...	...	...	...	...	...	...	...
1946–55	...	...	...	...	...	...	...	...
1956–6/68 ...	...	...	...	...	...	...	...	...
1935–40	...	...	...	...	...	...	...	...
1941–45	...	...	...	...	...	...	...	...
1946–50	...	...	...	...	...	...	...	...
1951–55	...	...	...	...	...	...	...	...
1956–60	...	...	...	...	...	...	...	...
1961–6/68 ...	...	...	...	...	...	...	...	...
Panel B:								
1935–6/68 ...	.00121	.00318	.00197	1.61	...	...	...	...
1935–45	.00171	.00548	.00377	1.45	...	...	...	...
1946–55	.00063	.00112	.00049	2.29	...	...	...	...
1956–6/68 ...	.00122	.00278	.00156	1.78	...	...	...	...
1935–40	.00041	.00566	.00524	1.08	...	...	...	...
1941–45	.00327	.00527	.00201	2.62	...	...	...	...
1946–50	.00066	.00103	.00037	2.78	...	...	...	...
1951–55	.00058	.00120	.00062	1.94	...	...	...	...
1956–60	.00033	.00083	.00050	1.66	...	...	...	...
1961–6/68 ...	.00182	.00410	.00227	1.81	...	...	...	...
Panel C:								
1935–6/68 ...	...	...	...	...	.341	.753	.412	1.83
1935–45	...	...	...	...	.535	.847	.313	2.71
1946–55	...	...	...	...	.165	.370	.206	1.80
1956–6/68 ...	...	...	...	...	.304	.968	.664	1.46
1935–40	...	...	...	...	.270	.553	.282	1.96
1941–45	...	...	...	...	.840	1.189	.349	3.41
1946–50	...	...	...	...	.118	.254	.136	1.87
1951–55	...	...	...	...	.217	.493	.276	1.79
1956–60	...	...	...	...	.622	1.355	.734	1.85
1961–6/68 ...	...	...	...	...	.105	.722	.617	1.17
Panel D:								
1935–6/68 ...	.00061	.00362	.00301	1.21	.276	.864	.588	1.47
1935–45	...	.00624	.00644	.97	.392	1.001	.613	1.63
1946–55	.00061	.00148	.00087	1.70	.028	.383	.355	1.08
1956–6/68 ...	.00134	.00304	.00169	1.80	.374	1.125	.751	1.50
1935–40	...	.00723	.00886	.82	.120	.682	.562	1.21
1941–45	.00162	.00515	.00353	1.46	.720	1.395	.675	2.07
1946–50	.00083	.00180	.00096	1.87	.023	.348	.325	1.07
1951–55	.00039	.00116	.00077	1.51	.038	.424	.386	1.10
1956–60	.00037	.00103	.00066	1.56	.712	1.654	.941	1.76
1961–6/68 ...	.00202	.00440	.00238	1.85	.163	.787	.624	1.26

sis.[12] The most efficient tests, however, are provided by the one-variable

[12] The least-squares intercepts $\hat{\gamma}_{0t}$ in the four cross-sectional risk-return regressions can always be interpreted as returns for month t on zero-$\hat{\beta}$ portfolios (n. 10). For the three-variable model of panel D, table 3, the unbiasedness of the least-squares coefficients can be shown to imply that in computing $\hat{\gamma}_{0t}$, negative and positive weights are assigned to the 20 portfolios in such a way that the resulting portfolio has not only zero-$\hat{\beta}$ but also zero averages of the 20 $\hat{\beta}_p^2$ and of the 20 $\bar{s}_p(\hat{\epsilon}_i)$. Analogous statements apply to the two-variable models of panels B and C.

Black, Jensen, and Scholes test the S-L hypothesis with a time series of monthly returns on a "minimum variance zero-$\hat{\beta}$ portfolio" which they derive directly. It turns model of panel A, since the values of $s(\hat{\gamma}_0)$ for this model [which are nearly identical with the values of $s(\hat{\gamma}_0 - R_f)$] are substantially smaller than those for other models. Except for the most recent period 1961–6/68, the values of $\overline{\hat{\gamma}_0 - R_f}$ in panel A are all positive and generally greater than 0.4 percent per month. The value of $t(\overline{\hat{\gamma}_0 - R_f})$ for the overall period 1935–6/68 is 2.55, and the t-statistics for the subperiods 1946–55, 1951–55, and 1956–60 are likewise large. Thus, the results in panel A, table 3, support the negative conclusions of Friend and Blume (1970) and Black, Jensen, and Scholes (1972) with respect to the S-L hypothesis.

The S-L hypothesis seems to do somewhat better in the two-variable quadratic model of panel B, table 3 and especially in the three-variable model of panel D. The values of $t(\overline{\hat{\gamma}_0 - R_f})$ are substantially closer to zero for these models than for the model of panel A. This is due to values of $\overline{\hat{\gamma}_0 - R_f}$ that are closer to zero, but it also reflects the fact that $s(\hat{\gamma}_0)$ is substantially higher for the models of panels B and D than for the model of panel A.

But the effects of $\hat{\beta}_p^2$ and $\bar{s}_p(\hat{\epsilon}_i)$ on tests of the S-L hypothesis are in fact not at all so clear-cut. Consider the model

$$\tilde{R}_{it} = \tilde{\gamma}'_{0t} + \tilde{\gamma}'_{1t}\beta_i + \tilde{\gamma}_{2t}(1 - \beta_i)^2 + \tilde{\gamma}_{3t}s_i + \tilde{\eta}_{it}. \tag{13}$$

Equations (7) and (13) are equivalent representations of the stochastic process generating returns, with $\tilde{\gamma}_{1t} = \tilde{\gamma}'_{1t} - 2\tilde{\gamma}_{2t}$ and $\tilde{\gamma}_{0t} = \tilde{\gamma}'_{0t} + \tilde{\gamma}_{2t}$. Moreover, if the steps used to obtain the regression equation (10) from the stochastic model (7) are applied to (13), we get the regression equation,

$$R_{pt} = \hat{\gamma}'_{0t} + \hat{\gamma}'_{1t}\hat{\beta}_p + \hat{\gamma}_{2t}(1 - \hat{\beta}_p)^2 + \hat{\gamma}_{3t}\bar{s}_p(\hat{\epsilon}_i) + \hat{\eta}_{pt}, \tag{14}$$

where, just as $\hat{\beta}_p^2$ in (10) is the average of $\hat{\beta}_i^2$ for securities i in portfolio p, $(1 - \hat{\beta}_p)^2$ is the average of $(1 - \hat{\beta}_i)^2$. The values of the estimates $\hat{\gamma}_{2t}$ and $\hat{\gamma}_{3t}$ are identical in (10) and (14); in addition, $\hat{\gamma}_{1t} = \hat{\gamma}'_{1t} - 2\hat{\gamma}_{2t}$ and $\hat{\gamma}_{0t} = \hat{\gamma}'_{0t} + \hat{\gamma}_{2t}$. But although the regression equations (10) and (14) are statistically indistinguishable, tests of the hypothesis $E(\tilde{\gamma}_{0t}) =$

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out, however, that this portfolio is constructed under what amounts to the assumptions of the Gauss-Markov Theorem on the underlying disturbances of the one-variable risk-return regression (11). With these assumptions the least-squares estimate $\hat{\gamma}_{0t}$, obtained from the cross-sectional risk-return regression of (11) for month t, is precisely the return for month t on the minimum variance zero-$\hat{\beta}$ portfolio that can be constructed from the 20 portfolio $\hat{\beta}_p$. Thus, the tests of the S-L hypothesis in panel A of table 3 are conceptually the same as those of Black, Jensen, and Scholes.

If one makes the assumptions of the Gauss-Markov Theorem on the underlying disturbances of the models of panels B–D of table 3, the regression intercepts for these models can likewise be interpreted as returns on minimum-variance zero-$\hat{\beta}$ portfolios. These portfolios then differ in terms of whether or not they also constrain the averages of the 20 $\hat{\beta}_p^2$ and of the 20 $\bar{s}_p(\hat{\epsilon}_i)$ to be zero. Given the collinearity of $\hat{\beta}_p$, $\hat{\beta}_p^2$, and $\bar{s}_p(\hat{\epsilon}_i)$, however, the assumptions of the Gauss-Markov Theorem cannot apply to all four of the models.

R_{ft} from (10) do not yield the same results as tests of the hypothesis $E(\tilde{\gamma}'_{0t}) = R_{ft}$ from (14). In panel D of table 3, $\overline{\hat{\gamma}_0 - R_f}$ is never statistically very different from zero, whereas in tests (not shown) from (14), the results are similar to those of panel A, table 3. That is, $\overline{\hat{\gamma}'_0 - R_f}$ is systematically positive for all periods but 1961–6/68 and statistically very different from zero for the overall period 1935–6/68 and for the 1946–55, 1951–55, and 1956–60 subperiods.

Thus, tests of the S-L hypothesis from our three-variable models are ambiguous. Perhaps the ambiguity could be resolved and more efficient tests of the hypothesis could be obtained if the omitted variables for which $\bar{s}_p(\hat{\epsilon}_i)$, $\hat{\beta}_p^2$, or $(1 - \hat{\beta}_p)^2$ are almost surely proxies were identified. As indicated above, however, at the moment the most efficient tests of the S-L hypothesis are provided by the one-variable model of panel A, table 3, and the results for that model support the negative conclusions of others.

Given that the S-L hypothesis is not supported by the data, tests of the market efficiency hypothesis that $\tilde{\gamma}_{0t} - E(\tilde{R}_{0t})$ is a fair game are difficult since we no longer have a specific hypothesis about $E(\tilde{R}_{0t})$. And using the mean of the $\hat{\gamma}_{0t}$ as an estimate of $E(\tilde{R}_{0t})$ does not work as well in this case as it does for the market efficiency tests on γ_{1t}. One should note, however, that although the serial correlations $\rho_M(\hat{\gamma}_0)$ in table 4 are often large relative to estimates of their standard errors, they are small in terms of the proportion of the time series variance of $\hat{\gamma}_{0t}$ that they explain, and the latter is the more important criterion for judging whether market efficiency is a workable representation of reality (see n. 8).

VI. Conclusions

In sum our results support the important testable implications of the two-parameter model. Given that the market portfolio is efficient—or, more specifically, given that our proxy for the market portfolio is at least approximately efficient—we cannot reject the hypothesis that average returns on New York Stock Exchange common stocks reflect the attempts of risk-averse investors to hold efficient portfolios. Specifically, on average there seems to be a positive tradeoff between return and risk, with risk measured from the portfolio viewpoint. In addition, although there are "stochastic nonlinearities" from period to period, we cannot reject the hypothesis that on average their effects are zero and unpredictably different from zero from one period to the next. Thus, we cannot reject the hypothesis that in making a portfolio decision, an investor should assume that the relationship between a security's portfolio risk and its expected return is linear, as implied by the two-parameter model. We also cannot reject the hypothesis of the two-parameter model that no measure of risk, in addition to portfolio risk, systematically affects average returns. Finally, the observed fair game properties of the coefficients and residuals of the risk-return regressions are consistent with an efficient capital market—that is, a market where prices of securities fully reflect available information.

Appendix

Some Related Issues

A1. Market Models and Tests of Market Efficiency

The time series of regression coefficients from (10) are, of course, the inputs for the tests of the two-parameter model. But these coefficients can also be useful in tests of capital market efficiency—that is, tests of the speed of price adjustment to different types of new information. Since the work of Fama et al. (1969), such tests have commonly been based on the "one-factor market model":

$$R_{it} = \hat{a}_i + \hat{\beta}_i R_{mt} + \hat{\epsilon}_{it}. \qquad (15)$$

In this regression equation, the term involving R_{mt} is assumed to capture the effects of market-wide factors. The effects on returns of events specific to company *i*, like a stock split or a change in earnings, are then studied through the residuals $\hat{\epsilon}_{it}$.

But given that there is period-to-period variation in $\hat{\gamma}_{0t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$ in (10) that is above and beyond pure sampling error, then these coefficients can be interpreted as market factors, (in addition to R_{mt}) that influence the returns on all securities. To see this, substitute (12) into (11) to obtain the "two-factor market model":

$$R_{pt} = \hat{\gamma}_{0t}(1 - \hat{\beta}_p) + \hat{\beta}_p R_{mt} + \hat{\eta}_{pt}. \qquad 16$$

In like fashion, from equation (10) itself we easily obtain the "four-factor market model":

$$R_{pt} = \hat{\gamma}_{0t}(1 - \hat{\beta}_p) + \hat{\beta}_p R_{mt} + \hat{\gamma}_{2t}(\hat{\beta}^2{}_p - \hat{\beta}_p\bar{\hat{\beta}}{}^2) + \hat{\gamma}_{3t} [\bar{s}_p(\hat{\epsilon}_i) - \hat{\beta}_p\bar{\bar{s}}(\hat{\epsilon}_i)] + \hat{\eta}_{pt}, \qquad (17)$$

where $\bar{\hat{\beta}}{}^2$ and $\bar{\bar{s}}(\hat{\epsilon}_i)$ are the averages over p of the $\hat{\beta}_p{}^2$ and the $\bar{s}_p(\hat{\epsilon}_i)$.

Comparing equations (15–17) it is clear that the residuals $\hat{\epsilon}_{it}$ from the one-factor market model contain variation in the market factors $\hat{\gamma}_{0t}$, $\hat{\gamma}_{2t}$, and $\hat{\gamma}_{3t}$. Thus, if one is interested in the effect on a security's return of an event specific to the given company, this effect can probably be studied more precisely from the residuals of the two- or even the four-factor market models of (16) and (17) than from the one-factor model of (15). This has in fact already been done in a study of changes in accounting techniques by Ball (1972), in a study of insider trading by Jaffe (1972), and in a study of mergers by Mandelker (1972).

Ball, Jaffe, and Mandelker use the two-factor rather than the four-factor market model, and there is probably some basis for this. First, one can see from table 5 that because of the collinearity of $\hat{\beta}_p$, $\hat{\beta}_p{}^2$, and $\bar{s}_p(\hat{\epsilon}_i)$, the coefficient estimates $\hat{\gamma}_{0t}$ and $\hat{\gamma}_{1t}$ have much smaller standard errors in the two-factor model. Second, we have computed residual variances for each of our 20 portfolios for various time periods from the time series of $\hat{\epsilon}_{pt}$ and $\hat{\eta}_{pt}$ from (15), (16), and (17). The decline in residual variance that is obtained in going from (15) to (16) is as predicted: That is, the decline is noticeable over more or less the entire range of $\hat{\beta}_p$ and it is proportional to $(1 - \hat{\beta}_p)^2$. On the other hand, in going from the two- to the four-factor model, reductions in residual variance are generally noticeable only in the portfolios with the lowest and highest $\hat{\beta}_p$, and the reductions for these two portfolios are generally small. Moreover, including $\bar{s}_p(\hat{\epsilon}_i)$ as an explanatory variable in addition to $\hat{\beta}_p$ and $\hat{\beta}_p^2$ never results in a noticeable reduction in residual variances.

A2. Multifactor Models and Errors in the $\hat{\beta}$

If the return-generating process is a multifactor market model, then the usual estimates of β_i from the one-factor model of (15) are not most efficient. For example, if the return-generating process is the population analog of (16), more efficient estimates of β_i could in principle be obtained from a constrained regression applied to

$$\tilde{R}_{it} - \tilde{\gamma}_{0t} = \beta_i(\tilde{R}_{mt} - \tilde{\gamma}_{0t}) + \tilde{\eta}_{it}.$$

But this approach requires the time series of the true $\tilde{\gamma}_{0t}$. All we have are estimates $\hat{\gamma}_{0t}$, themselves obtained from estimates of $\hat{\beta}_p$ from the one-factor model of (15).

It can also be shown that with a multifactor return-generating process the errors in the $\hat{\beta}$ computed from the one-factor market model of (8) and (15) are correlated across securities and portfolios. This results from the fact that if the true process is a multifactor model, the disturbances of the one-factor model are correlated across securities and portfolios. Moreover, the interdependence of the errors in the $\hat{\beta}$ is higher the farther the true β's are from 1.0. This was already noted in the discussion of table 2 where we found that the relative reduction in the standard errors of the $\hat{\beta}$'s obtained by using portfolios rather than individual securities is lower the farther $\hat{\beta}_p$ is from 1.0.

Interdependence of the errors in the $\hat{\beta}_p$ also complicates the formal analysis of the effects of errors-in-the-variables on properties of the estimated coefficients (the $\hat{\gamma}_{jt}$) in the risk-return regressions of (10). This topic is considered in detail in an appendix to an earlier version of this paper that can be made available to the reader on request.

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Investor growth expectations: Analysts vs. history

Analysts' growth forecasts dominate past trends in predicting stock prices.

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For the purposes of implementing the Discounted Cash Flow (DCF) cost of equity model, the analyst must know which growth estimate is embodied in the firm's stock price. A study by Cragg and Malkiel (1982) suggests that the stock valuation process embodies analysts' forecasts rather than historically based growth figures such as the ten-year historical growth in dividends per share or the five-year growth in book value per share. The Cragg and Malkiel study is based on data for the 1960s, however, a decade that was considerably more stable than the recent past.

As the issue of which growth rate to use in implementing the DCF model is so important to applications of the model, we decided to investigate whether the Cragg and Malkiel conclusions continue to hold in more recent periods. This paper describes the results of our study.

STATISTICAL MODEL

The DCF model suggests that the firm's stock price is equal to the present value of the stream of dividends that investors expect to receive from owning the firm's shares. Under the assumption that investors expect dividends to grow at a constant rate, g, in perpetuity, the stock price is given by the following simple expression:

$$P_s = \frac{D(1 + g)}{k - g} \qquad (1)$$

where:

P_s = current price per share of the firm's stock;
D = current annual dividend per share;
g = expected constant dividend growth rate; and
k = required return on the firm's stock.

Dividing both sides of Equation (1) by the firm's current earnings, E, we obtain:

$$\frac{P_s}{E} = \frac{D}{E} \cdot \frac{(1 + g)}{k - g} \qquad (2)$$

Thus, the firm's price/earnings (P/E) ratio is a non-linear function of the firm's dividend payout ratio (D/E), the expected growth in dividends (g), and the required rate of return.

To investigate what growth expectation is embodied in the firm's current stock price, it is more convenient to work with a linear approximation to Equation (2). Thus, we will assume that:

$$P/E = a_0(D/E) + a_1 g + a_2 k. \qquad (3)$$

(Cragg and Malkiel found this assumption to be reasonable throughout their investigation.)

Furthermore, we will assume that the required

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rate of return, k, in Equation (3) depends on the values of the risk variables B, Cov, Rsq, and Sa, where B is the firm's Value Line beta; Cov is the firm's pretax interest coverage ratio; Rsq is a measure of the stability of the firm's five-year historical EPS; and Sa is the standard deviation of the consensus analysts' five-year EPS growth forecast for the firm. Finally, as the linear form of the P/E equation is only an approximation to the true P/E equation, and B, Cov, Rsq, and Sa are only proxies for k, we will add an error term, e, that represents the degree of approximation to the true relationship.

With these assumptions, the final form of our P/E equation is as follows:

$$P/E = a_0(D/E) + a_1 g + a_2 B + a_3 Cov + a_4 Rsq + a_5 Sa + e. \quad (4)$$

The purpose of our study is to use more recent data to determine which of the popular approaches for estimating future growth in the Discounted Cash Flow model is embodied in the market price of the firm's shares.

We estimated Equation (4) to determine which estimate of future growth, g, when combined with the payout ratio, D/E, and risk variables B, Cov, Rsq, and Sa, provides the best predictor of the firm's P/E ratio. To paraphrase Cragg and Malkiel, we would expect that growth estimates found in the best-fitting equation more closely approximate the expectation used by investors than those found in poorer-fitting equations.

DESCRIPTION OF DATA

Our data sets include both historically based measures of future growth and the consensus analysts' forecasts of five-year earnings growth supplied by the Institutional Brokers Estimate System of Lynch, Jones & Ryan (IBES). The data also include the firm's dividend payout ratio and various measures of the firm's risk. We include the latter items in the regression, along with earnings growth, to account for other variables that may affect the firm's stock price.

The data include:

Earnings Per Share. Because our goal is to determine which earnings variable is embodied in the firm's market price, we need to define this variable with care. Financial analysts who study a firm's financial results in detail generally prefer to "normalize" the firm's reported earnings for the effect of extraordinary items, such as write-offs of discontinued operations, or mergers and acquisitions. They also attempt, to the extent possible, to state earnings for different firms using a common set of accounting conventions.

We have defined "earnings" as the consensus analyst estimate (as reported by IBES) of the firm's earnings for the forthcoming year.[1] This definition approximates the normalized earnings that investors most likely have in mind when they make stock purchase and sell decisions. It implicitly incorporates the analysts' adjustments for differences in accounting treatment among firms and the effects of the business cycle on each firm's results of operations. Although we thought at first that this earnings estimate might be highly correlated with the analysts' five-year earnings growth forecasts, that was not the case. Thus, we avoided a potential spurious correlation problem.

Price/Earnings Ratio. Corresponding to our definition of "earnings," the price/earnings ratio (P/E) is calculated as the closing stock price for the year divided by the consensus analyst earnings forecast for the forthcoming fiscal year.

Dividends. Dividends per share represent the common dividends declared per share during the calendar year, after adjustment for all stock splits and stock dividends). The firm's dividend payout ratio is then defined as common dividends per share divided by the consensus analyst estimate of the earnings per share for the forthcoming calendar year (D/E). Although this definition has the deficiency that it is obviously biased downward — it divides this year's dividend by next year's earnings — it has the advantage that it implicitly uses a "normalized" figure for earnings. We believe that this advantage outweighs the deficiency, especially when one considers the flaws of the apparent alternatives. Furthermore, we have verified that the results are insensitive to reasonable alternative definitions (see footnote 1).

Growth. In comparing historically based and consensus analysts' forecasts, we calculated forty-one different historical growth measures. These included the following: 1) the past growth rate in EPS as determined by a log-linear least squares regression for the latest year,[2] two years, three years, . . ., and ten years; 2) the past growth rate in DPS for the latest year, two years, three years, . . ., and ten years; 3) the past growth rate in book value per share (computed as the ratio of common equity to the outstanding common equity shares) for the latest year, two years, three years, . . ., and ten years; 4) the past growth rate in cash flow per share (computed as the ratio of pretax income, depreciation, and deferred taxes to the outstanding common equity shares) for the latest year, two years, three years, . . ., and ten years; and 5) plowback growth (computed as the firm's retention ratio for the current year times the firm's latest annual return on common equity).

We also used the five-year forecast of earnings per share growth compiled by IBES and reported in mid-January of each year. This number represents the consensus (i.e., mean) forecast produced by analysts from the research departments of leading Wall Street and regional brokerage firms over the preceding three months. IBES selects the contributing brokers "because of the superior quality of their research, professional reputation, and client demand" (IBES *Monthly Summary Book*).

Risk Variables. Although many risk factors could potentially affect the firm's stock price, most of these factors are highly correlated with one another. As shown above in Equation (4), we decided to restrict our attention to four risk measures that have intuitive appeal and are followed by many financial analysts: 1) B, the firm's beta as published by Value Line; 2) Cov, the firm's pretax interest coverage ratio (obtained from Standard & Poor's Compustat); 3) Rsq, the stability of the firm's five-year historical EPS (measured by the R^2 from a log-linear least squares regression); and 4) Sa, the standard deviation of the consensus analysts' five-year EPS growth forecast (mean forecast) as computed by IBES.

After careful analysis of the data used in our study, we felt that we could obtain more meaningful results by imposing six restrictions on the companies included in our study:

1. Because of the need to calculate ten-year historical growth rates, and because we studied three different time periods, 1981, 1982, and 1983, our study requires data for the thirteen-year period 1971-1983. We included only companies with at least a thirteen-year operating history in our study.
2. As our historical growth rate calculations were based on log-linear regressions, and the logarithm of a negative number is not defined, we excluded all companies that experienced negative EPS during any of the years 1971-1983.
3. For similar reasons, we also eliminated companies that did not pay a dividend during any one of the years 1971-1983.
4. To insure comparability of time periods covered by each consensus earnings figure in the P/E ratios, we eliminated all companies that did not have a December 31 fiscal year-end.
5. To eliminate distortions caused by highly unusual events that distort current earnings but not expected future earnings, and thus the firm's price/earnings ratio, we eliminated any firm with a price/earnings ratio greater than 50.
6. As the evaluation of analysts' forecasts is a major part of this study, we eliminated all firms that IBES did not follow.

Our final sample consisted of approximately sixty-five utility firms.[3]

RESULTS

To keep the number of calculations in our study to a reasonable level, we performed the study in two stages. In Stage 1, all forty-one historically oriented approaches for estimating future growth were correlated with each firm's P/E ratio. In Stage 2, the historical growth rate with the highest correlation to the P/E ratio was compared to the consensus analyst growth rate in the multiple regression model described by Equation (4) above. We performed our regressions for each of three recent time periods, because we felt the results of our study might vary over time.

First-Stage Correlation Study

Table 1 gives the results of our first-stage correlation study for each group of companies in each of the years 1981, 1982, and 1983. The values in this table measure the correlation between the historically oriented growth rates for the various time periods and the firm's end-of-year P/E ratio.

The four variables for which historical growth rates were calculated are shown in the left-hand column: EPS indicates historical earnings per share growth, DPS indicates historical dividend per share growth, BVPS indicates historical book value per share growth, and CFPS indicates historical cash flow per share growth. The term "plowback" refers to the product of the firm's retention ratio in the currennt year and its return on book equity for that year. In all, we calculated forty-one historically oriented growth rates for each group of firms in each study period.

The goal of the first-stage correlation analysis was to determine which historically oriented growth rate is most highly correlated with each group's year-end P/E ratio. Eight-year growth in CFPS has the highest correlation with P/E in 1981 and 1982, and ten-year growth in CFPS has the highest correlation with year-end P/E in 1983. In all cases, the plowback estimate of future growth performed poorly, indicating that — contrary to generally held views — plowback is not a factor in investor expectations of future growth.

Second-Stage Regression Study

In the second stage of our regression study, we ran the regression in Equation (4) using two different measures of future growth, g: 1) the best historically oriented growth rate (g_h) from the first-stage correlation study, and 2) the consensus analysts' forecast (g_a) of five-year EPS growth. The regression results, which are shown in Table 2, support at least

TABLE 1

Correlation Coefficients of All Historically Based Growth Estimates by Group and by Year with P/E

Historical Growth Rate Period in Years

Current Year	1	2	3	4	5	6	7	8	9	10
1981										
EPS	−0.02	0.07	0.03	0.01	0.03	0.12	0.08	0.09	0.09	0.09
DPS	0.05	0.18	0.14	0.15	0.14	0.15	0.19	0.23	0.23	0.23
BVPS	0.01	0.11	0.13	0.13	0.16	0.18	0.15	0.15	0.15	0.15
CFPS	−0.05	0.04	0.13	0.22	0.28	0.31	0.30	0.31	−0.57	−0.54
Plowback	0.19									
1982										
EPS	−0.10	−0.13	−0.06	−0.02	−0.02	−0.01	−0.03	−0.03	0.00	0.00
DPS	−0.19	−0.10	0.03	0.05	0.07	0.08	0.09	0.11	0.13	0.13
BVPS	0.07	0.08	0.11	0.11	0.09	0.10	0.11	0.11	0.09	0.09
CFPS	−0.02	−0.08	0.00	0.10	0.16	0.19	0.23	0.25	0.24	0.07
Plowback	0.04									
1983										
EPS	−0.06	−0.25	−0.25	−0.24	−0.16	−0.11	−0.05	0.00	0.02	0.02
DPS	0.03	−0.10	−0.03	0.08	0.15	0.21	0.21	0.21	0.22	0.24
BVPS	0.03	0.10	0.04	0.09	0.15	0.16	0.19	0.21	0.22	0.21
CFPS	−0.08	0.01	0.02	0.08	0.20	0.29	0.35	0.38	0.40	0.42
Plowback	−0.08									

two general conclusions regarding the pricing of equity securities.

First, we found overwhelming evidence that the consensus analysts' forecast of future growth is superior to historically oriented growth measures in predicting the firm's stock price. In every case, the R^2 in the regression containing the consensus analysts' forecast is higher than the R^2 in the regression containing the historical growth measure. The regression coefficients in the equation containing the consensus analysts' forecast also are considerably more significant than they are in the alternative regression. These results are consistent with those found by Cragg and Malkiel for data covering the period 1961-1968. Our results also are consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy–and–sell decisions.

TABLE 2

Regression Results
Model I

Part A: *Historical*

$P/E = a_0 + a_1 D/E + a_2 g_h + a_3 B + a_4 Cov + a_5 Rsq + a_6 Sa$

Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	$\hat{a}_4$	$\hat{a}_5$	$\hat{a}_6$	R^2	F Ratio
1981	−6.42*	10.31*	7.67*	3.24	0.54*	1.42*	57.43	0.83	46.49
	(5.50)	(14.79)	(2.20)	(2.86)	(2.50)	(2.85)	(4.07)		
1982	−2.90*	9.32*	8.49*	2.85	0.45*	−0.42	3.63	0.86	65.53
	(2.75)	(18.52)	(4.18)	(2.83)	(2.60)	(0.05)	(0.26)		
1983	−5.96*	10.20*	19.78*	4.85	0.44*	0.33	32.49	0.82	45.26
	(3.70)	(12.20)	(4.83)	(2.95)	(1.89)	(0.50)	(1.29)		

Part B: *Analysis*

$P/E = a_0 + a_1 D/E + a_2 g_a + a_3 B + a_4 Cov + a_5 Rsq + a_6 Sa$

Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	$\hat{a}_4$	$\hat{a}_5$	$\hat{a}_6$	R^2	F Ratio
1981	−4.97*	10.62*	54.85*	−0.61	0.33*	0.63*	4.34	0.91	103.10
	(6.23)	(21.57)	(8.56)	(0.68)	(2.28)	(1.74)	(0.37)		
1982	−2.16*	9.47*	50.71*	−1.07	0.36*	−0.31	119.05*	0.90	97.62
	(2.59)	(22.46)	(9.31)	(1.14)	(2.53)	(1.09)	(1.60)		
1983	−8.47*	11.96*	79.05*	2.16	0.56*	0.20	−34.43	0.87	69.81
	(7.07)	(16.48)	(7.84)	(1.55)	(3.08)	(0.38)	(1.44)		

Notes:
* Coefficient is significant at the 5% level (using a one-tailed test) and has the correct sign. T-statistic in parentheses.

Second, there is some evidence that investors tend to view risk in traditional terms. The interest coverage variable is statistically significant in all but one of our samples, and the stability of the operating income variable is statistically significant in six of the twelve samples we studied. On the other hand, the beta is never statistically significant, and the standard deviation of the analysts' five-year growth forecasts is statistically significant in only two of our twelve samples. This evidence is far from conclusive, however, because, as we demonstrate later, a significant degree of cross-correlation among our four risk variables makes any general inference about risk extremely hazardous.

Possible Misspecification of Risk

The stock valuation theory says nothing about which risk variables are most important to investors. Therefore, we need to consider the possibility that the risk variables of our study are only proxies for the "true" risk variables used by investors. The inclusion of proxy variables may increase the variance of the parameters of most concern, which in this case are the coefficients of the growth variables.[4]

To allow for the possibility that the use of risk proxies has caused us to draw incorrect conclusions concerning the relative importance of analysts' growth forecasts and historical growth extrapolations, we have also estimated Equation (4) with the risk variables excluded. The results of these regressions are shown in Table 3.

Again, there is overwhelming evidence that the consensus analysts' growth forecast is superior to the historically oriented growth measures in predicting the firm's stock price. The R^2 and t-statistics are higher in every case.

CONCLUSION

The relationship between growth expectations and share prices is important in several major areas of finance. The data base of analysts' growth forecasts collected by Lynch, Jones & Ryan provides a unique opportunity to test the hypothesis that investors rely more heavily on analysts' growth forecasts than on historical growth extrapolations in making security buy–and–sell decisions. With the help of this data base, our studies affirm the superiority of analysts' forecasts over simple historical growth extrapolations in the stock price formation process. Indirectly, this finding lends support to the use of valuation models whose input includes expected growth rates.

TABLE 3

Regression Results
Model II

Part A: *Historical*

$P/E = a_0 + a_1 D/E + a_2 g_h$

Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	R^2	F Ratio
1981	−1.05	9.59	21.20	0.73	82.95
	(1.61)	(12.13)	(7.05)		
1982	0.54	8.92	12.18	0.83	167.97
	(1.38)	(17.73)	(6.95)		
1983	−0.75	8.92	12.18	0.77	107.82
	(1.13)	(12.38)	(7.94)		

Part B: *Analysis*

$P/E + a_0 + a_1 D/E + a_2 g_a$

Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	R^2	F Ratio
1981	3.96	10.07	60.53	0.90	274.16
	(8.31)	(8.31)	(20.91)	(15.79)	
1982	−1.75	9.19	44.92	0.88	246.36
	(4.00)	(4.00)	(21.35)	(11.06)	
1983	−4.97	10.95	82.02	0.83	168.28
	(6.93)	(6.93)	(15.93)	(11.02)	

Notes:
* Coefficient is significant at the 5% level (using a one-tailed test) and has the correct sign. T-statistic in parentheses.

[1] We also tried several other definitions of "earnings," including the firm's most recent primary earnings per share prior to any extraordinary items or discontinued operations. As our results were insensitive to reasonable alternative definitions of "earnings " we report only the results for the IBES consensus.

[2] For the latest year, we actually employed a point-to-point growth calculation because there were only two available observations.

[3] We use the word "approximately," because the set of available firms varied each year. In any case, the number varied only from zero to three firms on either side of the figures cited here.

[4] See Maddala (1977).

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Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency

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Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency

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ABSTRACT

This paper documents that strategies which buy stocks that have performed well in the past and sell stocks that have performed poorly in the past generate significant positive returns over 3- to 12-month holding periods. We find that the profitability of these strategies are not due to their systematic risk or to delayed stock price reactions to common factors. However, part of the abnormal returns generated in the first year after portfolio formation dissipates in the following two years. A similar pattern of returns around the earnings announcements of past winners and losers is also documented.

A POPULAR VIEW HELD by many journalists, psychologists, and economists is that individuals tend to overreact to information.[1] A direct extension of this view, suggested by De Bondt and Thaler (1985, 1987), is that stock prices also overreact to information, suggesting that contrarian strategies (buying past losers and selling past winners) achieve abnormal returns. De Bondt and Thaler (1985) show that over 3- to 5-year holding periods stocks that performed poorly over the previous 3 to 5 years achieve higher returns than stocks that performed well over the same period. However, the interpretation of the De Bondt and Thaler results are still being debated. Some have argued that the De Bondt and Thaler results can be explained by the systematic risk of their contrarian portfolios and the size effect.[2] In addition, since the long-term losers outperform the long-term winners only in Januaries, it is unclear whether their results can be attributed to overreaction.

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[1]See for example, the academic papers by Kahneman and Tversky (1982), De Bondt and Thaler (1985) and Shiller (1981).

[2]See for example, Chan (1988), Ball and Kothari (1989), and Zarowin (1990). For an alternate view, see the recent paper by Chopra, Lakonishok, and Ritter (1992).

More recent papers by Jegadeesh (1990) and Lehmann (1990) provide evidence of shorter-term return reversals. These papers show that contrarian strategies that select stocks based on their returns in the previous week or month generate significant abnormal returns. However, since these strategies are transaction intensive and are based on short-term price movements, their apparent success may reflect the presence of short-term price pressure or a lack of liquidity in the market rather than overreaction. Jegadeesh and Titman (1991) provide evidence on the relation between short-term return reversals and bid-ask spreads that supports this interpretation. In addition, Lo and MacKinlay (1990) argue that a large part of the abnormal returns documented by Jegadeesh and Lehmann is attributable to a delayed stock price reaction to common factors rather than to overreaction.

Although contrarian strategies have received a lot of attention in the recent academic literature, the early literature on market efficiency focused on relative strength strategies that buy past winners and sell past losers. Most notably, Levy (1967) claims that a trading rule that buys stocks with current prices that are substantially higher than their average prices over the past 27 weeks realizes significant abnormal returns. Jensen and Bennington (1970), however, point out that Levy had come up with his trading rule after examining 68 different trading rules in his dissertation and because of this express skepticism about his conclusions. Jensen and Bennington analyze the profitability of Levy's trading rule over a long time period that was, for the most part, outside Levy's original sample period. They find that in their sample period Levy's trading rule does not outperform a buy and hold strategy and hence attribute Levy's result to a selection bias.

Although the current academic debate has focused on contrarian rather than relative strength trading rules, a number of practitioners still use relative strength as one of their stock selection criteria. For example, a majority of the mutual funds examined by Grinblatt and Titman (1989, 1991) show a tendency to buy stocks that have increased in price over the previous quarter. In addition, the Value Line rankings are known to be based in large part on past relative strength. The success of many of the mutual funds in the Grinblatt and Titman sample and the predictive power of Value Line rankings (see Copeland and Mayers (1982) and Stickel (1985)) provide suggestive evidence that the relative strength strategies may generate abnormal returns.

How can we reconcile the success of Value Line rankings and the mutual funds that use relative strength rules with the current academic literature that suggests that the opposite strategy generates abnormal returns? One possibility is that the abnormal returns realized by these practitioners are either spurious or are unrelated to their tendencies to buy past winners. A second possibility is that the discrepancy is due to the difference between the time horizons used in the trading rules examined in the recent academic papers and those used in practice. For instance, the above cited evidence favoring contrarian strategies focuses on trading strategies based on either very short-term return reversals (1 week or 1 month), or very long-term return reversals (3 to 5 years). However, anecdotal evidence suggests that practitioners who use relative strength rules base their selections on price movements over the past 3 to 12 months.[3] This paper provides an analysis of relative strength trading strategies over 3- to 12-month horizons. Our analysis of NYSE and AMEX stocks documents significant profits in the 1965 to 1989 sample period for each of the relative strength strategies examined. We provide a decomposition of these profits into different sources and develop tests that allow us to evaluate their relative importance. The results of these tests indicate that the profits are not due to the systematic risk of the trading strategies. In addition, the evidence indicates that the profits cannot be attributed to a lead-lag effect resulting from delayed stock price reactions to information about a common factor similar to that proposed by Lo and MacKinlay (1990). The evidence is, however, consistent with delayed price reactions to firm-specific information.

Further tests suggest that part of the predictable price changes that occur during these 3- to 12-month holding periods may not be permanent. The stocks included in the relative strength portfolios experience negative abnormal returns starting around 12 months after the formation date and continuing up to the thirty-first month. For example, the portfolio formed on the basis of returns realized in the past 6 months generates an average cumulative return of 9.5% over the next 12 months but loses more than half of this return in the following 24 months.

Our analysis of stock returns around earnings announcement dates suggests a similar bias in market expectations. We find that past winners realize consistently higher returns around their earnings announcements in the 7 months following the portfolio formation date than do past losers. However, in each of the following 13 months past losers realize higher returns than past winners around earnings announcements.

The rest of this paper is organized as follows: Section I describes the trading strategies that we examine and Section II documents their excess returns. Section III provides a decomposition of the profits from relative strength strategies and evaluates the relative importance of the different components. Section IV documents these returns in subsamples stratified on the basis of ex ante beta and firm size and Section V measures these profits across calendar months and over 5-year subperiods. The longer term performance of the stocks included in the relative strength portfolios is examined in Section VI and Section VII back tests the strategy over the 1927 to 1964

[3]For instance, one of the inputs used by Value Line to assign a timeliness rank for each stock is a price momentum factor computed based on the stock's past 3- to 12-month returns. Value Line reports that the price momentum factor is computed by "dividing the stock's latest 10-week average relative price by its 52-week average relative price." These timeliness ranks, according to Value Line, are "designed to discriminate among stocks on the basis of relative price performance over the next 6 to 12 months" (see Bernard (1984), pp. 52–53).

period. Section VIII examines the returns of past winners and past losers around earnings announcement dates and Section IX concludes the paper.

I. Trading Strategies

If stock prices either overreact or underreact to information, then profitable trading strategies that select stocks based on their past returns will exist. This study investigates the efficiency of the stock market by examining the profitability of a number of these strategies. The strategies we consider select stocks based on their returns over the past 1, 2, 3, or 4 quarters. We also consider holding periods that vary from 1 to 4 quarters. This gives a total of 16 strategies. In addition, we examine a second set of 16 strategies that skip a week between the portfolio formation period and the holding period. By skipping a week, we avoid some of the bid-ask spread, price pressure, and lagged reaction effects that underlie the evidence documented in Jegadeesh (1990) and Lehmann (1990).

To increase the power of our tests, the strategies we examine include portfolios with overlapping holding periods. Therefore, in any given month t, the strategies hold a series of portfolios that are selected in the current month as well as in the previous $K - 1$ months, where K is the holding period. Specifically, a strategy that selects stocks on the basis of returns over the past J months and holds them for K months (we will refer to this as a J-month/K-month strategy) is constructed as follows: At the beginning of each month t the securities are ranked in ascending order on the basis of their returns in the past J months. Based on these rankings, ten decile portfolios are formed that equally weight the stocks contained in the top decile, the second decile, and so on. The top decile portfolio is called the "losers" decile and the bottom decile is called the "winners" decile. In each month t, the strategy buys the winner portfolio and sells the loser portfolio, holding this position for K months. In addition, the strategy closes out the position initiated in month $t - K$. Hence, under this trading strategy we revise the weights on $\frac{1}{K}$ of the securities in the entire portfolio in any given month and carry over the rest from the previous month.

The profits of the above strategies were calculated for both a series of buy and hold portfolios and a series of portfolios that were rebalanced monthly to maintain equal weights. Since the returns for these two strategies were very similar (the buy and hold strategies yielded slightly higher returns) we present only the rebalanced returns which are also used in the event study presented in Section VI.

II. The Returns of Relative Strength Portfolios

This section documents the returns of the portfolio strategies described in the last section over the 1965 to 1989 period using data from the CRSP daily returns file.[4] All stocks with available returns data in the J months preceding the portfolio formation date are included in the sample from which the buy and sell portfolios are constructed.

Table I reports the average returns of the different buy and sell portfolios as well as the zero-cost, winners minus losers portfolio, for the 32 strategies described above. The returns of all the zero-cost portfolios (i.e., the returns per dollar long in this portfolio) are positive. All these returns are statistically significant except for the 3-month/3-month strategy that does not skip a week. Many of the individual t-statistics are sufficiently large to be significant even after considering the fact that we have conducted 32 separate tests. The probability of obtaining a single t-statistic as large as 4.28 (obtained with the 12-month/3-month strategy that skips a week) with 32 observations is less than 0.0006, as given by the Bonferroni inequality.[5]

The most successful zero-cost strategy selects stocks based on their returns over the previous 12 months and then holds the portfolio for 3 months. This strategy yields 1.31% per month (shown in Panel A) when there is no time lag between the portfolio formation period and the holding period and it yields 1.49% per month (shown in Panel B) when there is a 1-week lag between the formation period and the holding period.[6] The 6-month formation period produces returns of about 1% per month regardless of the holding period. These holding period returns are slightly higher when there is a 1-week lag between the formation period and the holding period (Panel B) than when the formation and holding periods are contiguous (Panel A).

Having established that the relative strength strategies are on average quite profitable, we now examine one specific strategy in detail, the 6-month/6-month strategy that does not skip a week between the portfolio formation period and the holding period. The results for this strategy are representative of the results for the other strategies.

III. Sources of Relative Strength Profits

This section presents two simple return-generating models that allow us to decompose the excess returns documented in the last section and identify the important sources of relative strength profits. The first model allows for factor-mimicking portfolio returns to be serially correlated but requires indi-

[4] The latest version of the CRSP daily returns file at the time this study was initiated covers the July 1962 to December 1989 period. Monthly returns were obtained by compounding the daily returns recorded in this data set. Since the 12-month/12-month strategy considered here requires lagged returns data over 23 months the first full calendar year for which we could examine portfolio returns is 1965.

[5] The Bonferroni inequality provides a bound for the probability of observing a t-statistic of a certain magnitude with N tests that are not necessarily independent.

[6] De Bondt and Thaler (1985) report 1-year holding period returns in their tables that are consistent with our findings here. However, they do not examine strategies based on 1-year horizons in any detail and based on their analysis of longer horizon strategies conclude that the market overreacts.

Table I

Returns of Relative Strength Portfolios

The relative strength portfolios are formed based on J-month lagged returns and held for K months. The values of J and K for the different strategies are indicated in the first column and row, respectively. The stocks are ranked in ascending order on the basis of J-month lagged returns and an equally weighted portfolio of stocks in the lowest past return decile is the *sell* portfolio and an equally weighted portfolio of the stocks in the highest return decile is the *buy* portfolio. The average monthly returns of these portfolios are presented in this table. The relative strength portfolios in Panel A are formed immediately after the lagged returns are measured for the purpose of portfolio formation. The relative strength portfolios in Panel B are formed 1 week after the lagged returns used for forming these portfolios are measured. The t-statistics are reported in parentheses. The sample period is January 1965 to December 1989.

		Panel A				Panel B			
	J	K = 3	6	9	12	K = 3	6	9	12
3	Sell	0.0108	0.0091	0.0092	0.0087	0.0083	0.0079	0.0084	0.0083
		(2.16)	(1.87)	(1.92)	(1.87)	(1.67)	(1.64)	(1.77)	(1.79)
3	Buy	0.0140	0.0149	0.0152	.0156	0.0156	0.0158	0.0158	0.0160
		(3.57)	(3.78)	(3.83)	(3.89)	(3.95)	(3.98)	(3.96)	(3.98)
3	Buy-sell	0.0032	0.0058	0.0061	0.0069	0.0073	0.0078	0.0074	0.0077
		(1.10)	(2.29)	(2.69)	(3.53)	(2.61)	(3.16)	(3.36)	(4.00)
6	Sell	0.0087	0.0079	0.0072	0.0080	0.0066	0.0068	0.0067	0.0076
		(1.67)	(1.56)	(1.48)	(1.66)	(1.28)	(1.35)	(1.38)	(1.58)
6	Buy	0.0171	0.0174	0.0174	0.0166	0.0179	0.0178	0.0175	0.0166
		(4.28)	(4.33)	(4.31)	(4.13)	(4.47)	(4.41)	(4.32)	(4.13)
6	Buy-sell	0.0084	0.0095	0.0102	0.0086	0.0114	0.0110	0.0108	0.0090
		(2.44)	(3.07)	(3.76)	(3.36)	(3.37)	(3.61)	(4.01)	(3.54)
9	Sell	0.0077	0.0065	0.0071	0.0082	0.0058	0.0058	0.0066	0.0078
		(1.47)	(1.29)	(1.43)	(1.66)	(1.13)	(1.15)	(1.34)	(1.59)
9	Buy	0.0186	0.0186	0.0176	0.0164	0.0193	0.0188	0.0176	0.0164
		(4.56)	(4.53)	(4.30)	(4.03)	(4.72)	(4.56)	(4.30)	(4.04)
9	Buy-sell	0.0109	0.0121	0.0105	0.0082	0.0135	0.0130	0.0109	0.0085
		(3.03)	(3.78)	(3.47)	(2.89)	(3.85)	(4.09)	(3.67)	(3.04)
12	Sell	0.0060	0.0065	0.0075	0.0087	0.0048	0.0058	0.0070	0.0085
		(1.17)	(1.29)	(1.48)	(1.74)	(0.93)	(1.15)	(1.40)	(1.71)
12	Buy	0.0192	0.0179	0.0168	0.0155	0.0196	0.0179	0.0167	0.0154
		(4.63)	(4.36)	(4.10)	(3.81)	(4.73)	(4.36)	(4.09)	(3.79)
12	Buy-sell	0.0131	0.0114	0.0093	0.0068	0.0149	0.0121	0.0096	0.0069
		(3.74)	(3.40)	(2.95)	(2.25)	(4.28)	(3.65)	(3.09)	(2.31)

vidual stocks to react instantaneously to factor realizations. This model is used to decompose relative strength profits into two components relating to systematic risk, which would exist in an efficient market, and a third component relating to firm-specific returns, which would contribute to relative strength profits only if the market were inefficient. The second return-generating model relaxes the assumption that stocks react instantaneously to the common factor. This model enables us to evaluate the possibility that the relative strength profits arise because of a lead-lag relationship in stock prices similar to that proposed by Lo and MacKinlay (1990) as a partial explanation for short horizon contrarian profits.

A. A Simple One-Factor Model

Consider the following one-factor model describing stock returns:[7]

$$\begin{aligned} r_{it} &= \mu_i + b_i f_t + e_{it}, \\ \mathrm{E}(f_t) &= 0 \\ \mathrm{E}(e_{it}) &= 0 \\ \mathrm{Cov}(e_{it}, f_t) &= 0, \qquad \forall i \\ \mathrm{Cov}(e_{it}, e_{jt-1}) &= 0, \qquad \forall i \neq j \end{aligned} \tag{1}$$

where μ_i is the unconditional expected return on security i, r_{it} is the return on security i, f_t is the unconditional unexpected return on a factor-mimicking portfolio, e_{it} is the firm-specific component of return at time t, and b_i is the factor sensitivity of security i. For the 6-month/6-month strategy that we consider in the rest of this paper the length of a period is 6 months.

The superior performance of the relative strength strategies documented in the last section implies that stocks that generate higher than average returns in one period also generate higher than average returns in the period that follows. In other words, these results imply that:

$$\mathrm{E}(r_{it} - \bar{r}_t | r_{it-1} - \bar{r}_{t-1} > 0) > 0$$

and

$$\mathrm{E}(r_{it} - \bar{r}_t | r_{it-1} - \bar{r}_{t-1} < 0) < 0,$$

where a bar above a variable denotes its cross-sectional average.

Therefore,

$$\mathrm{E}\{(r_{it} - \bar{r}_t)(r_{it-1} - \bar{r}_{t-1})\} > 0. \tag{2}$$

The above cross-sectional covariance equals the expected profits from the zero-cost contrarian trading strategy examined by Lehmann (1990) and Lo and MacKinlay (1990) that weights stocks by their past returns less the past equally weighted index returns. This weighted relative strength strategy (WRSS) is closely related to our strategy. The WRSS yields a profit of 4.5% per dollar long semiannually (t-statistic = 2.99) and the correlation between the returns of this strategy and that of the trading strategy examined in the last section is 0.95. The equally weighted decile portfolios are used in most of our empirical tests since they provide relatively more information than the WRSS. However, as the following analysis demonstrates, the closely related WRSS provides a tractable framework for analytically examining the sources of relative strength profits and evaluating the relative importance of each of these sources.

[7]Our analysis in this subsection is similar to that in Jegadeesh (1987) and Lo and MacKinlay (1990).

Given the one-factor model defined in (1), the WRSS profits given in expression (2) can be decomposed into the following three terms:

$$\mathrm{E}\{(r_{it} - \bar{r}_t)(r_{it-1} - \bar{r}_{t-1})\} = \sigma_\mu^2 + \sigma_b^2 \mathrm{Cov}(f_t, f_{t-1}) + \overline{\mathrm{Cov}}_i(e_{it}, e_{it-1}), \quad (3)$$

where σ_μ^2 and σ_b^2 are the cross-sectional variances of expected returns and factor sensitivities respectively.

The above decomposition suggests three potential sources of the relative strength profits. The first term in this expression is the cross-sectional dispersion in expected returns. Intuitively, since realized returns contain a component related to expected returns, securities that experience relatively high returns in one period can be expected to have higher than average returns in the following period. The second term is related to the potential to time the factor. If the factor portfolio returns exhibit positive serial correlation, the relative strength strategy will tend to pick stocks with high b's when the conditional expectation of the factor portfolio return is high. As the above expression demonstrates, the extent to which relative strength strategies generate profits because of the serial correlation of the factor portfolio return is a function of the cross-sectional variance of the b's. The last term in the above expression is the average serial covariance of the idiosyncratic components of security returns.

To assess whether the existence of relative strength profits imply market inefficiency, it is important to identify the sources of the profits. If the profits are due to either the first or the second term in expression (3) they may be attributed to compensation for bearing systematic risk and need not be an indication of market inefficiency. However, if the superior performance of the relative strength strategies is due to the third term, then the results would suggest market inefficiency.

B. The Average Size and Beta of Relative Strength Portfolios

This subsection considers the possibility that relative strength strategies systematically pick high-risk stocks and benefit from the first term in expression (3). Table II reports estimates of the two most common indicators of systematic risk, the post-ranking betas of the ten 6-month/6-month relative strength portfolios and the average capitalizations of the stocks in these portfolios. The betas of the extreme past returns portfolios are higher than the average beta for the full sample. In addition, since the beta of the portfolio of past losers is higher than the beta of the portfolio of past winners, the beta of the zero-cost winners minus losers portfolio is negative. The average capitalizations of the stocks in the different portfolios show that the highest and the lowest past returns portfolios consist of smaller than average stocks, with the stocks in the losers portfolios being smaller than the stocks in the winners portfolio. This evidence suggests that the observed relative strength profits are not due to the first source of profits in expression (3).

Table II

Betas and Market Capitalization of Relative Strength Portfolios

The relative strength portfolios are formed based on 6-month lagged returns and held for 6 months. The stocks are ranked in ascending order on the basis of 6-month lagged returns. The equally weighted portfolio of stocks in the lowest past return decile is portfolio P1, the equally weighted portfolio of stocks in the next decile is portfolio P2, and so on. The betas with respect to the value-weighted index and the average market capitalizations of the stocks included in these portfolios are reported here. The sample period is January 1965 to December 1989.

	Beta	Average Market Capitalization
P1	1.36	208.24
P2	1.19	480.07
P3	1.14	545.31
P4	1.11	618.85
P5	1.09	692.89
P6	1.08	702.51
P7	1.09	738.09
P8	1.12	758.87
P9	1.17	680.18
P10	1.28	495.13
P10–P1	−0.08	—

Additional evidence relating to the extent to which the dispersion in expected returns explains these profits is given in the next section.

C. The Serial Covariance of 6-Month Returns

This subsection examines the serial covariance of 6-month returns in order to assess the potential contribution of the second and third source of profits from our decomposition. Given the model expressed in (1), the serial covariance of an equally weighted portfolio of a large number of stocks is:[8]

$$\operatorname{cov}(\bar{r}_t, \bar{r}_{t-1}) = \bar{b}_i^2 \operatorname{Cov}(f_t, f_{t-1}). \tag{4}$$

If the source of relative strength profits is the serial covariance of factor-related returns then, from the above expression, the in-sample serial covariance of the equally weighted index returns is required to be positive. However, we find that the serial covariance of 6-month returns of the equally weighted index is negative (-0.0028) which, from the decomposition in expression (3), reduces the relative strength profits. This result indicates that the serial covariance of factor portfolio returns is unlikely to be the source of relative strength profits.

[8]The contribution of the serial covariances of e_{it} to the serial covariance of the equally weighted index becomes arbitrarily small as the number of stocks in the index becomes arbitrarily large.

The estimates of the serial covariance of market model residuals for individual stocks are on average positive (0.0012). This evidence suggests that the relative strength profits may arise from stocks underreacting to firm-specific information. However, this evidence is also potentially consistent with an alternative model in which some stocks react with a lag to factor realizations, and we address this possibility in the next subsection.

D. Lead-Lag Effects and Relative Strength Profits

This subsection examines whether the relative strength profits can arise from a lead-lag relationship in stock prices similar to that considered in Lo and MacKinlay (1990). In contrast to the model previously presented, the model in this subsection assumes that stocks can either overreact or underreact to the common factor but that the factor-mimicking portfolio returns are serially uncorrelated.

Consider the following return generating process:

$$r_{it} = \mu_i + b_{1i} f_t + b_{2i} f_{t-1} + e_{it}, \tag{5}$$

where b_{1i} and b_{2i} are sensitivities to the contemporaneous and lagged factor realizations. $b_{2i} > 0$ implies that stock i partly reacts to the factor with a lag as in Lo and MacKinlay and $b_{2i} < 0$ implies that the stock overreacts to contemporaneous factor realizations and this overreaction gets corrected in the subsequent period.

Given this model, the WRSS profits and the serial covariance of the equally weighted index are given by:

$$\mathrm{E}\{(r_{it} - \bar{r}_t)(r_{it-1} - \bar{r}_{t-1})\} = \sigma_\mu^2 + \delta\sigma_f^2 \tag{6}$$

and

$$\mathrm{cov}(\bar{r}_t, \bar{r}_{t-1}) = \bar{b}_1 \bar{b}_2 \sigma_f^2, \tag{7}$$

where $\bar{b}_1$ and $\bar{b}_2$ are cross-sectional averages of b_{1i} and b_{2i}, and,

$$\delta \equiv \frac{1}{N} \sum_{i=1}^{N} (b_{1i} - \bar{b}_1)(b_{2i} - \bar{b}_2).$$

From expression (6), when $\delta < 0$ the lead-lag relation has a negative effect on the profitability of the WRSS, or equivalently, a positive effect on contrarian profits as in Lo and MacKinlay. However, when $\delta > 0$, the lead-lag relation will generate positive relative strength profits. In addition, if $\bar{b}_2$ is positive (negative) then the equally weighted index returns will be positively (negatively) serially correlated. This parameter, however, does not affect the profitability of the WRSS.

If the lead-lag effect is an important source of relative strength profits, then the profit in any period will depend on the magnitude of factor portfolio return in the previous period. Formally, consider the expected WRSS profits conditional on the past factor portfolio return:

$$\mathrm{E}\{(r_{it} - \bar{r}_t)(r_{it-1} - \bar{r}_{t-1}) | f_{t-1}\} = \sigma_\mu^2 + \delta f_{t-1}^2. \tag{8}$$

In contrast, under model (1), the conditional expectation of the WRSS profits given in expression (3), assuming that the factor portfolio returns are normally distributed, is:

$$\mathrm{E}\{(r_{it} - \bar{r}_t)(r_{it-1} - \bar{r}_{t-1}) | f_{t-1}\} = \sigma_\mu^2 + \sigma_b^2 \rho f_{t-1}^2,$$

where ρ is the first order serial correlation of the factor portfolio returns.

Expression (8) implies that if the relative strength profits come entirely from the lead-lag effect in stock returns, then the magnitude of the profits should be positively related to the squared factor portfolio return in the previous period. Intuitively, if inefficient stock price reactions to factor realizations are important for the profitability of relative strength strategies, then large factor realizations should result in large WRSS profits. Alternatively, if the lead-lag effect does not contribute to the profits, then the observed negative serial covariance of the market index implies a negative relation between the magnitude of the WRSS profits and squared lagged factor portfolio returns.

To examine which of these predictions best explains the time-series variation in relative strength profits we estimate the following regression using the value-weighted index as a proxy for the factor portfolio:

$$r_{pt,6} = \alpha_i + \theta r_{mt,-6}^2 + u_{it},$$

where $r_{pt,6}$ is the 6-month return of the relative strength portfolio formed in month t based on 6-month lagged returns and $r_{mt,-6}$ is the demeaned return on the value-weighted index in the months $t-6$ through $t-1$. The estimates of θ and the corresponding autocorrelation-consistent t-statistic over the 1965 to 1989 sample period are -2.29 and -1.74 respectively. The estimates (t-statistic) of θ in the first and second half of this sample period are -2.55 (-2.65) and -1.83 (-2.52) respectively.[9] This reliably negative relation between the relative strength profits and lagged squared market returns is consistent with the model presented in the last subsection which assumed no lead-lag relationship and is inconsistent with the lead-lag model. This evidence indicates that the lead-lag effect is not an important source of relative strength profits and that the profitability of these strategies is therefore related to market underreaction to the firm-specific information.

[9] When this regression is fitted with the WRSS profits as the dependent variable, the estimate (t-statistic) of θ over 1965–1989 is -1.77 (-3.56) and the corresponding statistics in the two equal subperiods are -1.94 (-2.52) and -1.51 (-2.53).

IV. Profitability of Relative Strength Strategies Within Size- and Beta-Based Subsamples

In this section we examine the profitability of the 6-month/6-month strategy within subsamples stratified on the basis of firm size and ex ante estimates of betas. Specifically, we implement this strategy on three size-based subsamples (small, medium, and large), and three beta-based subsamples (low-beta, medium-beta, and high-beta stocks).

Measuring relative strength profits on size- and beta-based subsamples allows us to examine whether the profitability of the strategy is confined to any particular subsample of stocks. This analysis also provides additional evidence about the source of the observed relative strength profits. Since extant empirical evidence indicates that size and beta are related to both risk and expected returns,[10] the cross-sectional dispersion in expected returns should be less within these subsamples than in the full sample. Therefore, if the relative strength strategy profits are related to differences in expected returns, they will be less when they are implemented on stocks within each subsample rather than on all the stocks in the sample. The profits need not be reduced in these subsamples, however, if the profits of the strategies are due to serial covariances in idiosyncratic returns. In fact, if the profits are not factor-related, the strategies are likely to generate higher returns when they are implemented within the small-firm subsample that consists of less actively traded stocks and to generate lower returns when they are implemented within the large-firm subsample.

Table III presents the average returns of the 6-month/6-month strategy for each of the subsamples. The results in Panel A indicate that the observed abnormal returns are of approximately the same magnitude when the strategies are implemented on the various subsamples of stocks as when they are implemented on the entire sample. They do, however, appear to be somewhat related to firm size and beta; for the zero-cost, winners minus losers portfolio, the subsample with the largest firms generates lower abnormal returns than the other two subsamples and the returns in the subsamples segmented by beta are monotonically increasing in beta.[11] These findings indicate that the relative strength profits are not primarily due to the cross-sectional differences in the systematic risk of the stocks in the sample. This evidence suggests that the profits are due to the serial correlation in the firm-specific component of returns. Furthermore, these results indicate that the profitabil-

[10] See Fama and MacBeth (1973) and Banz (1981).

[11] One thing that is interesting to note here is that the average returns of low beta stocks are higher than the returns of the medium and high beta stocks. The average returns of stocks in the low, medium and high beta groups are 1.48%, 1.39%, and 1.16% respectively. These results, obtained with daily betas, should be contrasted with earlier findings of positive relations between monthly betas and average returns (e.g., Fama and MacBeth (1973)). The difference between our results using daily betas and the earlier results using monthly betas is due to the lower correlation between firm size and daily betas. Jegadeesh (1992) and Fama and French (1992) document that there is no reliable relation between monthly betas and average returns after controlling for firm size.

ity of the relative strength strategies is not confined to any particular subsample of stocks.

As a further test Panel B of Table III presents the risk-adjusted returns of the relative strength strategies implemented within the size- and beta-based subsamples. The risk-adjusted returns are estimated as the intercepts from the following market model regression:

$$r_{pt} - r_{ft} = \alpha_p + \beta_p(r_{mt} - r_{ft}) + e_{it}, \tag{9}$$

where r_{pt} is the return on the portfolio p, r_{mt} is the return on the value-weighted index, and r_{ft} is the interest rate on 1-month Treasury Bill. Consistent with the negative betas of the zero-cost strategies, the abnormal returns of the relative strength strategies estimated from these regressions slightly exceed the raw returns given in Table III (Panel A). With the exception of the F-statistics becoming somewhat more significant, the findings in Table III (Panel B) are virtually the same as those reported in Table III (Panel A).

An additional implication of the results in Table III (Panel B) is that the abnormal performance of the zero-cost portfolio is due to the buy side of the transaction rather than the sell side. The portfolio of past winners achieves significant positive abnormal return when the value-weighted index is used as the benchmark, while the abnormal return of the portfolio of past losers is not statistically significant with this benchmark. However, in unreported regressions that used the equally weighted index as the benchmark, the positive and the negative abnormal returns of the winners and losers portfolios were both statistically significant. The magnitude and statistical significance of the abnormal returns of the zero-cost, winners minus losers, portfolio (0.0115 with a t-statistic of 3.84) was slightly higher when the equally weighted index was used in place of the value-weighted index as the benchmark.

From a practical investment perspective, it is important to assess whether the relative strength strategies will be profitable after accounting for transaction costs. On average, the relative strength trading rule results in a turnover of 84.8% semiannually.[12] The risk-adjusted return of the relative strength trading rule after considering a 0.5% one-way transaction cost[13] is 9.29% per year, which is reliably different from zero. The risk-adjusted returns after transaction costs are also significantly positive in each of the three size-based subsamples.

[12] The average turnovers for the buy and sell sides of the zero-cost portfolio are 86.6% and 83.1% respectively. These percentages are significantly less than the 90% turnover that would be expected if the transition probabilities are equal across the return decile portfolios.

[13] Berkowitz, Logue, and Noser (1988) estimate one way transaction costs of 23 basis points for institutional investors, suggesting that the assumed transaction cost of 0.5% per trade is conservative.

V. Subperiod Analysis

A. Seasonal Patterns in Relative Strength Portfolio Returns

This section tests for possible seasonal effects in the performance of the relative strength portfolios. Based on earlier papers, e.g., Roll (1983), we have reason to expect that the relative strength strategies will not be successful in the month of January. Table IV reports the average returns of the zero-cost portfolio in each calendar month and the results here support this conjecture.

Table III

Returns of Size-Based and Beta-Based Relative Strength Portfolios

The relative strength portfolios are formed based on 6-month lagged returns and held for 6 months. The stocks are ranked in ascending order on the basis of 6-month lagged returns and the equally weighted portfolio of stocks in the lowest past return decile is portfolio P1, the equally weighted portfolio of stocks in the next decile is portfolio P2, and so on. Average monthly returns and excess returns of these portfolios and the returns of the relative strength portfolios formed using size-based and beta-based subsamples of securities are reported here. The subsample S1 contains the smallest firms, S2 contains the medium-sized firms, and S3 contains the largest firms. The subsamples β_1, β_2, and β_3 contain the firms with the smallest, medium, and the largest Scholes-Williams betas estimated from the returns data in the calendar year prior to portfolio formation. The sample period is January 1965 to December 1989.

Panel A: Average Monthly Returns

	All	S1	S2	S3	β_1	β_2	β_3
P1	0.0079	0.0083	0.0047	0.0082	0.0129	0.0097	0.0052
	(1.56)	(1.35)	(0.99)	(2.22)	(2.92)	(2.01)	(0.95)
P2	0.0112	0.0117	0.0102	0.0098	0.0140	0.0128	0.0086
	(2.78)	(2.29)	(2.54)	(3.08)	(4.38)	(3.37)	(1.83)
P3	0.0125	0.0152	0.0125	0.0105	0.0132	0.0133	0.0102
	(3.40)	(3.23)	(3.34)	(3.53)	(4.59)	(3.77)	(2.28)
P4	0.0124	0.0163	0.0130	0.0105	0.0134	0.0128	0.0110
	(3.59)	(3.59)	(3.58)	(3.66)	(5.02)	(3.82)	(2.50)
P5	0.0128	0.0164	0.0134	0.0109	0.0135	0.0135	0.0121
	(3.87)	(3.74)	(3.83)	(3.85)	(5.14)	(4.15)	(2.86)
P6	0.0134	0.0174	0.0146	0.0102	0.0135	0.0142	0.0122
	(4.14)	(4.08)	(4.22)	(3.66)	(5.23)	(4.38)	(2.92)
P7	0.0136	0.0175	0.0143	0.0109	0.0136	0.0142	0.0126
	(4.19)	(4.13)	(4.12)	(3.90)	(5.09)	(4.43)	(3.01)
P8	0.0143	0.0174	0.0148	0.0111	0.0143	0.0146	0.0132
	(4.30)	(4.11)	(4.16)	(3.86)	(5.12)	(4.44)	(3.15)
P9	0.0153	0.0183	0.0154	0.0126	0.0165	0.0156	0.0141
	(4.36)	(4.28)	(4.11)	(4.17)	(5.34)	(4.56)	(3.28)
P10	0.0174	0.0182	0.0173	0.0157	0.0191	0.0176	0.0160
	(4.33)	(3.99)	(4.11)	(4.41)	(5.17)	(4.53)	(3.50)
P10–P1	0.0095	0.0099	0.0126	0.0075	0.0062	0.0079	0.0108
	(3.07)	(2.77)	(4.57)	(3.03)	(2.05)	(2.64)	(3.35)
F-Statistics[a]	2.83	2.65	4.51	4.38	2.51	1.99	1.69
p-Value	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.04)	(0.09)

Table III—*Continued*

Panel B: Excess Returns Using the CRSP Value-Weighted Index as the Market Proxy

	All	S1	S2	S3	β_1	β_2	β_3
P1	−0.0030	−0.0029	−0.0062	−0.0020	0.0031	−0.0009	−0.0062
	(−0.89)	(−0.60)	(−2.11)	(−1.17)	(0.94)	(−0.28)	(−1.71)
P2	0.0011	0.0012	−0.0001	0.0000	0.0051	0.0029	−0.0024
	(0.43)	(0.31)	(−0.03)	(0.03)	(2.36)	(1.26)	(−0.87)
P3	0.0026	0.0051	0.0024	0.0009	0.0045	0.0035	−0.0007
	(1.24)	(1.46)	(1.18)	(0.93)	(2.45)	(1.83)	(−0.29)
P4	0.0026	0.0062	0.0030	0.0011	0.0048	0.0031	0.0000
	(1.48)	(1.90)	(1.57)	(1.24)	(2.98)	(1.83)	(0.01)
P5	0.0031	0.0064	0.0036	0.0014	0.0049	0.0038	0.0012
	(1.96)	(2.06)	(1.98)	(1.84)	(3.21)	(2.55)	(0.58)
P6	0.0037	0.0075	0.0048	0.0008	0.0048	0.0045	0.0013
	(2.55)	(2.51)	(2.74)	(1.13)	(3.46)	(3.12)	(0.69)
P7	0.0039	0.0075	0.0044	0.0015	0.0049	0.0045	0.0017
	(2.70)	(2.57)	(2.61)	(2.15)	(3.29)	(3.25)	(0.90)
P8	0.0045	0.0074	0.0048	0.0016	0.0054	0.0049	0.0023
	(3.01)	(2.56)	(2.76)	(2.12)	(3.53)	(3.29)	(1.19)
P9	0.0053	0.0082	0.0052	0.0029	0.0074	0.0057	0.0031
	(3.20)	(2.89)	(2.76)	(3.23)	(4.10)	(3.60)	(1.54)
P10	0.0070	0.0077	0.0067	0.0056	0.0094	0.0074	0.0048
	(3.24)	(2.56)	(2.91)	(3.50)	(4.10)	(3.47)	(2.02)
P10–P1	0.0100	0.0106	0.0129	0.0076	0.0063	0.0083	0.0111
	(3.23)	(2.97)	(4.69)	(3.08)	(2.09)	(2.76)	(3.42)
F-Statistics[b]	5.2910	5.4401	8.3713	4.7386	3.6045	4.0171	2.5872

[a]The *F*-statistics are computed under the hypothesis that the returns on portfolios P1 through P10 are jointly equal.

[b]The *F*-statistics are computed under the hypothesis that the abnormal returns on portfolios P1 through P10 are jointly equal to zero. All *F*-statistics are significant at the 1 percent level.

The relative strength strategy loses about 7% on average in each January but achieves positive abnormal returns in each of the other months.[14] The relative strength strategy realizes positive returns in 67% of the months, and 71% of the months when January is excluded (see Table V). The average return in non-January months is 1.66% per month.[15] Consistent with earlier papers, we find the magnitude of the negative January performance of the relative strength strategy to be inversely related to firm size. The negative

[14]It is possible that at least part of the negative January returns of the relative strength strategy is due to a tendency of past winners to trade at the ask prices and past losers to sell at the bid prices at the close of the last trading day in the year. See Keim (1989) for a discussion of bid-ask spread biases and the January effect.

[15]If we were to use our priors about the performance of relative strength strategies in January and reverse the buy and sell portfolios in that calendar month (taking a long position in the past losers and a short position in the past winners in January only), then the abnormal returns would be even larger. Such a strategy generates close to 25% per year in abnormal returns, and loses money (about −0.7%) only in 1 year out of the 25 years in the sample period.

Table IV

Returns on Size-Based Relative Strength Portfolios (P10–P1) by Calendar Months

The relative strength portfolios are formed based on 6-month lagged returns and held for 6 months. The stocks are ranked in ascending order on the basis of 6-month lagged returns and the equally weighted portfolio of stocks in the lowest past return decile is the *sell* portfolio and the equally weighted portfolio of stocks in the highest past return decile is the *buy* portfolio. This table reports the average monthly returns of the zero-cost, buy minus sell, portfolio in each calendar month. The average returns of the zero-cost portfolios formed using size-based subsamples of securities are also reported. The subsample S1 contains the smallest firms, S2 contains the medium-sized firms, and S3 contains the largest firms. The sample period is January 1965 to December 1989.

	All	S1	S2	S3
Jan.	−0.0686	−0.0797	−0.0347	−0.0161
	(−3.52)	(−3.36)	(−2.14)	(−1.28)
Feb.	0.0063	0.0089	0.0149	0.0099
	(0.85)	(0.81)	(2.44)	(1.35)
Mar.	0.0105	0.0196	0.0103	0.0108
	(1.37)	(2.08)	(1.49)	(1.49)
Apr.	0.0333	0.0323	0.0368	0.0215
	(7.39)	(5.35)	(7.29)	(4.91)
May	0.0102	0.0046	0.0091	0.0079
	(1.32)	(0.56)	(1.18)	(1.19)
June	0.0238	0.0237	0.0231	0.0185
	(3.86)	(3.50)	(3.23)	(2.59)
July	0.0075	0.0112	0.0084	0.0035
	(0.96)	(1.44)	(0.96)	(0.41)
Aug.	0.0027	0.0079	−0.0011	−0.0058
	(0.35)	(0.97)	(−0.14)	(−0.71)
Sept.	0.0116	0.0126	0.0137	0.0053
	(1.10)	(1.20)	(1.27)	(0.60)
Oct.	0.0137	0.0160	0.0151	0.0025
	(1.30)	(1.40)	(1.44)	(0.22)
Nov.	0.0372	0.0352	0.0331	0.0248
	(5.31)	(5.01)	(4.12)	(2.78)
Dec.	0.0264	0.0265	0.0224	0.0070
	(2.61)	(2.13)	(2.86)	(0.99)
Feb.–Dec.	0.0166	0.0181	0.0169	0.0096
	(6.67)	(6.47)	(6.83)	(4.00)
F-Statistics[a]	7.90	7.14	4.11	1.81
p-Value	(0.00)	(0.00)	(0.00)	(0.51)
F-Statistics[b]	2.04	1.23	1.91	1.28
p-Value	(0.03)	(0.27)	(0.04)	(0.24)

[a] The F-statistics are computed under the hypothesis that the returns on the zero-cost portfolio are jointly equal in all calendar months.

[b] The F-statistics are computed under the hypothesis that the returns on the zero-cost portfolios are jointly equal in the calendar months February through December.

Table V

Proportion of Positive Returns of Relative Strength Portfolios by Calendar Months

The relative strength portfolios are formed based on 6-month lagged returns and held for 6 months. The stocks are ranked in ascending order on the basis of 6-month lagged returns and the equally weighted portfolio of stocks in the lowest past return decile is the *sell* portfolio and the equally weighted portfolio of stocks in the highest past return decile is the *buy* portfolio. This table reports the proportion of months when the average return of the zero-cost, buy minus sell, portfolio is positive. This proportion for the zero-cost portfolio formed within each size-based subsample of securities is also reported. The subsample S1 contains the smallest firms, S2 contains the medium-sized firms, and S3 contains the largest firms. The sample period is January 1965 to December 1989.

	All	S1	S2	S3
Jan.	0.24	0.16	0.20	0.44
Feb.	0.60	0.60	0.76	0.60
Mar.	0.80	0.76	0.72	0.72
Apr.	0.96	0.92	0.96	0.80
May	0.68	0.68	0.72	0.56
June	0.76	0.64	0.76	0.72
July	0.56	0.68	0.56	0.52
Aug.	0.52	0.60	0.48	0.48
Sept.	0.80	0.72	0.80	0.68
Oct.	0.64	0.60	0.64	0.56
Nov.	0.84	0.84	0.84	0.68
Dec.	0.68	0.76	0.68	0.44
Feb.–Dec.	0.71	0.71	0.72	0.61
All	0.67	0.66	0.68	0.60

average relative strength return in January is not statistically significant for the subsample of large firms.

The findings in Table IV suggest that there is also a seasonal pattern outside January. For example, the returns are fairly low in August and are particularly high in April, November, and December. The F-statistics reported in this table indicate that these monthly differences outside January are statistically significant for the whole sample as well as for the sample of medium-size firms.

One of the interesting findings documented in this table is that the relative strength strategy produces positive returns in 96% (24 out of 25) of the Aprils. The large (3.33%) and consistently positive April returns may be related to the fact that corporations must transfer money to their pension funds prior to April 15 if the funds are to qualify for a tax deduction in the previous year. If these pension fund assets are primarily invested by portfolio managers who follow relative strength rules, then the winners portfolio may benefit from additional price pressure in this month. Similarly, the larger than average returns in November and December may in part be due to price pressure arising from portfolio managers selling their losers in these months for tax or window dressing reasons.

Table VI

Returns of Size-Based Relative Strength Portfolios: Subperiod Analysis

The relative strength portfolios are formed based on 6-month lagged returns and held for 6 months. The stocks are ranked in ascending order on the basis of 6-month lagged returns and the equally weighted portfolio of stocks in the lowest past return decile is the *sell* portfolio and the equally weighted portfolio of stocks in the highest past return decile is the *buy* portfolio. This table reports the average monthly returns of the zero-cost, buy minus sell, portfolio within 5-year subperiods. The average returns of the zero-cost portfolios formed using size-based subsamples of securities within subperiods are also reported. The subsample S1 contains the smallest firms, S2 contains the medium-sized firms, and S3 contains the largest firms. The sample period is January 1965 to December 1989.

Sample	Months	65–69	70–74	75–79	80–84	85–89
	All	0.0123	0.0109	−0.0044	0.0127	0.0162
		(1.94)	(1.23)	(−0.51)	(2.67)	(3.42)
All	Jan.	−0.0524	−0.1070	−0.1017	−0.0253	−0.0569
		(−1.28)	(−2.54)	(−1.31)	(−1.38)	(−2.76)
	Feb.–Dec.	0.0182	0.0217	0.0044	0.0161	0.0229
		(3.36)	(2.88)	(0.78)	(3.44)	(6.09)
	All	0.0082	0.0128	−0.0064	0.0153	0.0197
		(1.14)	(1.63)	(−0.58)	(2.61)	(2.89)
S1	Jan.	−0.0838	−0.0853	−0.1107	−0.0124	−0.1064
		(−1.60)	(−2.29)	(−1.09)	(−0.62)	(−4.45)
	Feb.–Dec.	0.0165	0.0217	0.0031	0.0179	0.0311
		(3.19)	(3.18)	(0.41)	(2.94)	(6.59)
	All	0.0177	0.0115	0.0018	0.0172	0.0146
		(3.08)	(1.57)	(0.24)	(3.38)	(3.40)
S2	Jan.	−0.0264	−0.0465	−0.0795	−0.0100	−0.0112
		(−1.05)	(−1.81)	(−1.16)	(−0.46)	(−0.48)
	Feb.–Dec.	0.0217	0.0168	0.0092	0.0197	0.0170
		(3.86)	(2.29)	(1.87)	(3.83)	(4.08)
	All	0.0129	0.0115	0.0018	0.0076	0.0035
		(2.71)	(1.62)	(0.35)	(1.41)	(0.73)
S3	Jan.	−0.0073	−0.0154	−0.0335	−0.0094	−0.0147
		(−0.32)	(−0.48)	(−0.77)	(−0.33)	(−0.78)
	Feb.–Dec.	0.0148	0.0139	0.0050	0.0092	0.0052
		(3.08)	(1.95)	(1.21)	(1.70)	(1.04)

B. Portfolio Returns Over 5-Year Subperiods

This section documents the returns of the 6-month/6-month zero-cost strategy in each of the five 5-year subperiods in the 1965 to 1989 sample period. The evidence in Table VI indicates that the returns of the strategy, when implemented on the entire sample of stocks, produces average returns that are positive in all but one time period (1975 to 1979). An analysis of this strategy applied to size-based subsamples indicates that the negative returns in the 1975 to 1979 time period is due primarily to the January returns of the small firms. The strategy yields positive profits in each of the 5-year time periods when it is implemented on the subsamples of large- and medium-size firms. In addition, the returns are positive in each of the 5-year periods as well as in each size-based subsample when the month of January is excluded.

VI. Performance of Relative Strength Portfolios in Event Time

In this section we examine the returns of the relative strength portfolio in event time. We track the average portfolio returns in each of the 36 months following the portfolio formation date.

This event study analysis provides both additional insights about the riskiness of the strategy and about whether the profits are due to overreaction or underreaction. Significant positive returns in months beyond the holding period would indicate that the zero-cost portfolio systematically selects stocks that have higher than average unconditional returns either because of their risk or for other reasons such as differential tax exposures. Significant negative returns of the zero-cost portfolio in the months following the holding period would suggest that the price changes during the holding period are at least partially temporary.

Table VII presents the average monthly and cumulative returns of the zero-cost portfolio in event time in the 36 months after the formation date.[16] With the exception of month 1, the average return in each month is positive in the first year. The average return is negative in each month in year 2 as well as in the first half of year 3 and virtually zero thereafter. The cumulative returns reach a maximum of 9.5% at the end of 12 months but decline to about 4% by the end of month 36.

The negative returns beyond month 12 indicate that the relative strength strategy does not tend to pick stocks that have high unconditional expected returns. The observed pattern of initially positive and then negative returns of the zero-cost portfolio also suggests that the observed price changes in the first 12 months after the formation period may not be permanent. Unfortunately, estimates of expected returns over 2-year periods are not very precise. As a result, the negative returns for the zero-cost portfolio in years 2 and 3 are not statistically significant (t-statistic of -1.27). Similarly, since the abnormal return over the entire 36-month period is not statistically different from zero, we cannot rule out the possibility that the positive returns over the first 12 months is entirely temporary.[17]

[16]Since overlapping returns are used to calculate the cumulative returns in event time, the autocorrelation-consistent Newey-West standard errors are used to compute the t-statistics for the cumulative returns (see Newey and West (1987)).

[17]Another reason why we find this evidence hard to interpret is that the entire negative return over this holding period occurs in Januaries. The returns beyond the first year are close to zero in non-January months.

Table VII

Performance of Relative Strength Portfolios in Event Time

The relative strength portfolios are formed based on 6-month lagged returns. The stocks are ranked in ascending order on the basis of 6-month lagged returns. The equally weighted portfolio of stocks in the lowest past return decile is the *sell* portfolio and the equally weighted portfolio of stocks in the highest past return decile is the *buy* portfolio. This table reports the average returns of the zero-cost, buy minus sell, portfolio in each month following the formation period. t is the month after portfolio formation. The sample period is January 1965 to December 1989. Autocorrelation-consistent estimates of standard errors are used to compute the t-statistics for cumulative returns.

t	Monthly Return	Cumulative Return	t	Monthly Return	Cumulative Return	t	Monthly Return	Cumulative Return
1	−0.0025	−0.0025	13	−0.0036	0.0915	25	−0.0035	0.0521
	(−0.59)	(−0.59)		(−1.12)	(3.35)		(−1.36)	(1.41)
2	0.0124	0.0099	14	−0.0039	0.0876	26	−0.0030	0.0492
	(3.29)	(1.37)		(−1.34)	(3.07)		(−1.14)	(1.22)
3	0.0116	0.0216	15	−0.0034	0.0842	27	−0.0024	0.0467
	(3.18)	(2.20)		(−1.21)	(2.89)		(−0.98)	(1.10)
4	0.0110	0.0326	16	−0.0038	0.0804	28	−0.0032	0.0435
	(3.19)	(2.67)		(−1.41)	(2.76)		(−1.33)	(0.98)
5	0.0093	0.0419	17	−0.0047	0.0757	29	−0.0032	0.0403
	(2.82)	(2.79)		(−1.74)	(2.70)		(−1.38)	(0.87)
6	0.0091	0.0510	18	−0.0056	0.0701	30	−0.0030	0.0373
	(2.94)	(2.92)		(−2.19)	(2.68)		(−1.31)	(0.77)
7	0.0134	0.0644	19	−0.0026	0.0675	31	−0.0001	0.0372
	(4.98)	(3.32)		(−1.14)	(2.75)		(−0.06)	(0.74)
8	0.0115	0.0759	20	−0.0032	0.0642	32	0.0008	0.0380
	(4.16)	(3.60)		(−1.35)	(2.73)		(0.41)	(0.73)
9	0.0085	0.0844	21	−0.0032	0.0611	33	0.0013	0.0394
	(3.07)	(3.73)		(−1.32)	(2.55)		(0.62)	(0.73)
10	0.0048	0.0892	22	−0.0034	0.0577	34	0.0008	0.0402
	(1.69)	(3.74)		(−1.39)	(2.21)		(0.36)	(0.71)
11	0.0045	0.0938	23	−0.0011	0.0566	35	0.0010	0.0412
	(1.55)	(3.77)		(−0.45)	(1.93)		(0.45)	(0.71)
12	0.0013	0.0951	24	−0.0010	0.0556	36	−0.0005	0.0406
	(0.43)	(3.67)		(−0.40)	(1.69)		(−0.24)	(0.67)

One possible explanation of the inverted U shape in the cumulative returns is that the risk of the strategy changes over event time. Perhaps, the strategy picks stocks that are initially very risky and the risk then diminishes with time. To assess this possibility we estimate the betas in each event month with respect to the value-weighted index and the equally weighted index. The beta of the zero-cost portfolio with respect to the value-weighted (equally weighted) index is initially −0.20 (−0.41) and then it steadily increases to 0.02 (−0.08). Although these results indicate that the risk of the zero-cost portfolio does change over time, the direction of change in risk goes counter to what would be required to explain the change in average returns.

VII. Back-Testing the Strategy

This section examines the extent to which the relative strength profits reported in the previous sections existed prior to 1965. Specifically, we replicate the test in Table VII, which tracks the performance of the 6-month relative strength portfolio in event time for both the 1927 to 1940 time period and the 1941 to 1964 time period. As Fama and French (1988) and others have noted, the market was extremely volatile and experienced a significant degree of mean reversion in the 1927 to 1940 period. In contrast, the market's volatility in the 1941 to 1964 period was similar to the volatility in the 1965 to 1989 period and the market index did not exhibit mean reversion in the post-1940 period.

Table VIII (Panel A) reports the returns of the 6-month relative strength strategy in the 36 event months over the 1927 to 1940 time period. The returns in this time period are significantly lower than the returns in the 1965 to 1989 period, but the patterns of returns across event months is somewhat similar. The month 1 returns are strongly negative on average (about −5%). The returns in months 2 through 10 are statistically insignificant, but the returns in the later months are substantially lower. The cumulative excess return equals −40.81% in month 36.

These negative cumulative returns are likely to be due to two factors: First, because of the greater volatility in this period, many of the firms in the loser's decile were close to bankruptcy and thus had very high betas over the holding periods. The beta of the zero-cost 6-month/6-month strategy is about −0.5 in this period and it is substantially higher following periods of market declines. The second factor relates to the market's mean reversion in this time period. As the decomposition in Subsection III.*A* and the regression results in Subsection III.*B* indicate, negative serial correlation in the market and large market movements will reduce the profits from relative strength strategies. This is because the relative strength strategy tends to select high- (low-) beta stocks following a market increase (decrease) and hence tends to perform poorly during market reversals. For example, following a 40% decline in the equally weighted index over the previous 6 months, the index rebounded with a 43% increase in July 1932. In this month the 6-month/6-month relative strength portfolio experienced a negative 40% return. In the following month the equally weighted index increased an additional 66% and the 6-month/6-month strategy lost 68%. In the 1930s there were four other months in which the 6-month/6-month strategy lost over 40%. Each occurred when the market increased substantially.

Panel B of Table VIII reports the returns in the 36 event months for the 1941 to 1964 period. The relative strength strategy returns over this time period are very similar to the returns in the more recent time period reported earlier. As in the 1965 to 1989 time period, the average return is slightly negative in month 1, significantly positive in month 2 through month 8, and negative in month 12 and beyond. In contrast to the findings for the 1965 to

1989 period, the positive cumulative return over the first 12 months dissipates almost entirely by month 24.

VIII. Stock Returns Around Earnings Announcement Dates

This section examines the returns of past winners and losers around their quarterly earnings announcement dates. By analyzing stock returns within a short window around the dissemination of important firm-specific information we have a sharp test that directly assesses the potential biases in market expectations. Consider, for example, the possibility that stock prices system-

Table VIII

Back-Testing the Strategy: Performance of Relative Strength Portfolios Prior to 1965

The relative strength portfolios are formed based on 6-month lagged returns. The stocks are ranked in ascending order on the basis of 6-month lagged returns. The equally weighted portfolio of stocks in the lowest past return decile is the *sell* portfolio and the equally weighted portfolio of stocks in the highest past return decile is the *buy* portfolio. This table reports the average returns of the zero-cost, buy minus sell, portfolio in each month following the formation period. t is the month after portfolio formation. Autocorrelation consistent estimates of standard errors are used to compute the t-statistics for cumulative returns.

Panel A: 1927–1940

t	Monthly Return	Cumulative Return	t	Monthly Return	Cumulative Return	t	Monthly Return	Cumulative Return
1	−0.0495	−0.0495	13	−0.0245	−0.1257	25	−0.0118	−0.3359
	(−3.72)	(−3.72)		(−2.60)	(−1.50)		(−1.41)	(−2.48)
2	−0.0143	−0.0639	14	−0.0166	−0.1423	26	−0.0067	−0.3427
	(−1.32)	(−2.21)		(−2.08)	(−1.69)		(−1.01)	(−2.53)
3	−0.0088	−0.0726	15	−0.0164	−0.1587	27	−0.0135	−0.3562
	(−0.87)	(−1.78)		(−1.87)	(−1.83)		(−1.82)	(−2.52)
4	−0.0048	−0.0775	16	−0.0200	−0.1787	28	−0.0082	−0.3644
	(−0.45)	(−1.60)		(−2.20)	(−2.01)		(−1.06)	(−2.47)
5	0.0061	−0.0713	17	−0.0131	−0.1919	29	−0.0125	−0.3769
	(0.60)	(−1.40)		(−1.80)	(−2.12)		(−1.37)	(−2.39)
6	0.0057	−0.0656	18	−0.0166	−0.2085	30	−0.0107	−0.3876
	(0.55)	(−1.22)		(−2.11)	(−2.07)		(−1.20)	(−2.29)
7	0.0092	−0.0564	19	−0.0161	−0.2245	31	−0.0018	−0.3894
	(0.83)	(−1.05)		(−1.90)	(−2.01)		(−0.20)	(−2.18)
8	0.0054	−0.0511	20	−0.0224	−0.2469	32	−0.0022	−0.3916
	(0.52)	(−0.92)		(−2.28)	(−2.03)		(−0.26)	(−2.07)
9	−0.0029	−0.0539	21	−0.0178	−0.2647	33	0.0008	−0.3908
	(−0.34)	(−0.94)		(−1.92)	(−2.04)		(0.11)	(−1.99)
10	−0.0065	−0.0604	22	−0.0213	−0.2860	34	−0.0025	−0.3933
	(−0.68)	(−0.90)		(−2.08)	(−2.14)		(−0.41)	(−1.97)
11	−0.0183	−0.0787	23	−0.0183	−0.3043	35	−0.0050	−0.3983
	(−1.74)	(−1.04)		(−1.74)	(−2.23)		(−0.89)	(−1.97)
12	−0.0225	−0.1012	24	−0.0198	−0.3241	36	−0.0098	−0.4081
	(−2.35)	(−1.27)		(−1.94)	(−2.41)		(−1.47)	(−2.01)

Table VIII—*Continued*

Panel B: 1941–1964

t	Monthly Return	Cumulative Return	t	Monthly Return	Cumulative Return	t	Monthly Return	Cumulative Return
1	−0.0035	−0.0035	13	−0.0068	0.0515	25	−0.0035	0.0014
	(−1.04)	(−1.04)		(−2.14)	(2.57)		(−1.32)	(0.04)
2	0.0069	0.0034	14	−0.0085	0.0429	26	−0.0027	−0.0013
	(2.32)	(0.59)		(−3.07)	(1.90)		(−1.08)	(−0.03)
3	0.0109	0.0143	15	−0.0059	0.0371	27	−0.0015	−0.0028
	(4.15)	(2.20)		(−2.40)	(1.54)		(−0.69)	(−0.07)
4	0.0098	0.0241	16	−0.0063	0.0308	28	−0.0003	−0.0030
	(3.81)	(3.15)		(−2.80)	(1.21)		(−0.14)	(−0.08)
5	0.0075	0.0316	17	−0.0080	0.0228	29	−0.0009	−0.0039
	(3.09)	(3.40)		(−3.70)	(0.86)		(−0.51)	(−0.11)
6	0.0049	0.0365	18	−0.0074	0.0153	30	−0.0001	−0.0040
	(1.97)	(3.42)		(−3.63)	(0.56)		(−0.03)	(−0.12)
7	0.0079	0.0444	19	−0.0033	0.0120	31	0.0017	−0.0023
	(3.24)	(3.82)		(−1.61)	(0.43)		(0.98)	(−0.08)
8	0.0062	0.0507	20	−0.0012	0.0108	32	0.0011	−0.0012
	(2.52)	(4.00)		(−0.61)	(0.38)		(0.69)	(−0.05)
9	0.0039	0.0546	21	−0.0016	0.0092	33	−0.0005	−0.0017
	(1.63)	(3.91)		(−0.81)	(0.31)		(−0.32)	(−0.10)
10	0.0022	0.0568	22	−0.0021	0.0071	34	−0.0006	−0.0023
	(0.96)	(3.73)		(−1.04)	(0.22)		(−0.37)	(−0.17)
11	0.0024	0.0592	23	−0.0008	0.0063	35	−0.0004	−0.0027
	(1.00)	(3.70)		(−0.35)	(0.19)		(−0.24)	(−0.20)
12	−0.0009	0.0583	24	−0.0014	0.0050	36	−0.0004	−0.0030
	(−0.34)	(3.40)		(−0.60)	(0.14)		(−0.28)	(−0.20)

atically underreact to information about future earnings. In this case, the stock returns for past winners, which presumably had favorable information revealed in the past, should realize positive returns around the time when their earnings are actually announced. Similarly, past losers should realize negative returns around the time their earnings are announced.[18] The quarterly earnings announcement dates used in this analysis are obtained from the COMPUSTAT quarterly industrial database. The sample period for this part of the study is 1980 to 1989, the period covered by the 1990 COMPUSTAT quarterly file. On average, there are 429.2 available quarterly earnings announcements per month with matched stock return data.

Our tests again separate firms into deciles based on their prior 6-month returns. The 3-day returns (days −2 to 0) of the individual stocks in these groups are then calculated around each of their quarterly earnings announcements that occur within 36 months of the date at which the stocks are ranked according to their past returns. Table IX reports the differences between the

[18] Chopra, Lakonishok, and Ritter (1992) use a similar approach to evaluate the evidence of long horizon overreaction documented by De Bondt and Thaler (1985). See also Bernard and Thomas (1990).

Table IX

Quarterly Earnings Announcement Date Returns

The stocks are ranked in ascending order on the basis of 6-month lagged returns. The stocks in the lowest past return decile are called the *losers* group and the stocks in the highest past return decile is called the *winners* group. The differences between the 3-day returns (returns on days −2 to 0) around quarterly earnings announcements for stocks in the winners group and the losers group are reported here ($r_t^w - r_t^l$). t is the month after the ranking date. The sample period is January 1980 to December 1989.

t	$r_t^w - r_t^l$	t	$r_t^w - r_t^l$	t	$r_t^w - r_t^l$
1	0.0055	13	−0.0055	25	−0.0002
	(2.75)		(−2.56)		(−0.11)
2	0.0082	14	−0.0080	26	−0.0021
	(4.41)		(−3.89)		(−1.02)
3	0.0082	15	−0.0071	27	−0.0032
	(4.36)		(−4.04)		(−1.68)
4	0.0090	16	−0.0097	28	−0.0028
	(4.88)		(−5.75)		(−1.31)
5	0.0059	17	−0.0062	29	−0.0015
	(3.16)		(−2.90)		(−0.62)
6	0.0058	18	−0.0060	30	−0.0021
	(3.14)		(−2.96)		(−1.10)
7	0.0013	19	−0.0031	31	−0.0027
	(0.62)		(−1.63)		(−1.52)
8	0.0000	20	−0.0017	32	−0.0021
	(−0.02)		(−0.82)		(−1.13)
9	−0.0020	21	0.0006	33	−0.0020
	(−1.07)		(0.27)		(−1.05)
10	−0.0031	22	−0.0005	34	−0.0017
	(−1.60)		(−0.29)		(−0.91)
11	−0.0039	23	−0.0001	35	−0.0022
	(−2.23)		(−0.05)		(−1.29)
12	−0.0053	24	0.0012	36	−0.0059
	(−2.75)		(0.63)		(−2.91)

average announcement period returns for the winners and losers deciles in each of the 36 months following the ranking date. The pattern of announcement date returns presented in this table is consistent with the pattern of the zero-cost portfolio returns reported in Table VII. For the first 6 months the announcement date returns of the past winners exceed the announcement date returns of the past losers by over 0.7% on average, and is statistically significant in each of these 6 months. Since there are on average 2 quarterly earnings announcements per firm within a 6-month period, the returns around the earnings announcements represents about 25% of the zero-cost portfolio returns over this holding period.

The negative announcement period returns in later months are consistent with the negative relative strength portfolio returns beyond month 12 documented earlier (see Table VII). From months 8 through 20 the differences in announcement date returns are negative and are generally statistically significant. The announcement period returns are especially significant in months 11 through 18 where they average about −0.7%. In the later months the differences between the announcement period returns of the winners and losers are generally negative but are close to zero.

The predictability of stock returns around quarterly earnings announcements documented in Table IX is similar to the recent findings of Bernard and Thomas (1990). Bernard and Thomas find that average returns around quarterly earnings announcement dates are significantly positive following a favorable earnings surprise in the previous quarter. This is consistent with the positive announcement returns we see in the first 7 months in Table IX. Bernard and Thomas also find that the average return around earnings announcement dates is significantly negative 4 quarters after a positive earnings surprise. The significant negative returns around earnings announcement dates in months 11 through 18 are consistent with this finding.

IX. Conclusions

Trading strategies that buy past winners and sell past losers realize significant abnormal returns over the 1965 to 1989 period. For example, the strategy we examine in most detail, which selects stocks based on their past 6-month returns and holds them for 6 months, realizes a compounded excess return of 12.01% per year on average. Additional evidence indicates that the profitability of the relative strength strategies are not due to their systematic risk. The results of our tests also indicate that the relative strength profits cannot be attributed to lead-lag effects that result from delayed stock price reactions to common factors. The evidence is, however, consistent with delayed price reactions to firm-specific information.

The returns of the zero-cost winners minus losers portfolio were examined in each of the 36 months following the portfolio formation date. With the exception of the first month, this portfolio realizes positive returns in each of the 12 months after the formation date. However, the longer-term performances of these past winners and losers reveal that half of their excess returns in the year following the portfolio formation date dissipate within the following 2 years.

The returns of the stocks in the winners and losers portfolios around their earnings announcements in the 36 months following the formation period were also examined and a similar pattern was found. Specifically, stocks in the winners portfolio realize significantly higher returns than the stocks in the losers portfolio around the quarterly earnings announcements that are made in the first few months following the formation date. However, the announcement date returns in the 8 to 20 months following the formation date are significantly higher for the stocks in the losers portfolio than for the stocks in the winners portfolio.

The evidence of initial positive and later negative relative strength returns suggests that common interpretations of return reversals as evidence of overreaction and return persistence (i.e., past winners achieving positive returns in the future) as evidence of underreaction are probably overly simplistic. A more sophisticated model of investor behavior is needed to explain the observed pattern of returns. One interpretation of our results is that transactions by investors who buy past winners and sell past losers move prices away from their long-run values temporarily and thereby cause prices to overreact. This interpretation is consistent with the analysis of DeLong, Shleifer, Summers, and Waldman (1990) who explore the implications of what they call "positive feedback traders" on market price. Alternatively, it is possible that the market underreacts to information about the short-term prospects of firms but overreacts to information about their long-term prospects. This is plausible given that the nature of the information available about a firm's short-term prospects, such as earnings forecasts, is different from the nature of the more ambiguous information that is used by investors to assess a firm's longer-term prospects.

The evidence in this paper does not allow us to distinguish between these two hypotheses about investor behavior. In addition, there are probably other explanations for these results. Given that our results suggest that investor expectations are systematically biased, further research that attempts to identify explanations for these empirical regularities would be of interest.

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THE COSTS OF RAISING CAPITAL

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Abstract

We report the average costs of raising external debt and equity capital for U.S. corporations from 1990 to 1994. For initial public offerings (IPOs) of equity, the direct costs average 11.0 percent of the proceeds. For seasoned equity offerings (SEOs), the direct costs average 7.1 percent. For convertible bonds, the direct costs average 3.8 percent. For straight debt issues, the direct costs average 2.2 percent, although they are strongly related to the credit rating of the issue. All classes of securities exhibit economies of scale, although they are less pronounced for straight debt issues. IPOs also incur a substantial indirect cost due to short-run underpricing. Most large equity offers include an international tranche, although debt issues do not.

I. Introduction

In this article we present the average costs of raising external capital for U.S. corporations from 1990 to 1994. Specifically, we report the average spreads on public equity offerings and debt offerings, along with the other direct costs of raising capital, as a percentage of the proceeds. We find substantial economies of scale for initial public offerings (IPOs) of equity and seasoned equity offerings (SEOs). We also find substantial economies of scale for both straight bond offerings and convertible bond offerings. Spreads on bond offerings are highly sensitive to the credit rating of the offering. This article is descriptive in nature; no theories are tested. Its purpose is to provide benchmark numbers for use by issuers of securities. We do not address why firms issue the securities they do. This much broader corporate finance question would have to address taxes, corporate control, debt capacity, long-run performance patterns, investment-financing interactions, etc.

We would like to thank Charles Calomiris and Tim Loughran for useful comments on an earlier draft.

II. Data and Terminology

Securities Data Company's (SDC) New Issues database is the primary source of information. After downloading SDC's data, we identified outliers and checked suspicious numbers in other publicly available sources. The New Issues database includes publicly placed firm commitment offerings only. In all of our tables, we exclude ADRs and unit offerings.[1] We restrict our sample to securities offered by domestic operating companies, and so exclude closed-end fund and real estate investment trust (REIT) offerings. We also exclude rights offerings and shelf registrations.[2]

We use security offerings from January 1990 to December 1994, a five-year period of relatively low inflation. Consequently, we do not make any inflation adjustments; all proceeds are the nominal proceeds. Proceeds reflect the gross proceeds raised in the U.S. and do not include money raised from the exercise of overallotment options or an international tranche, if any. In the case of equity offerings, the proceeds include the amount raised from both primary and secondary components. Primary shares are those being sold by the company, thereby increasing the number of shares outstanding. Secondary shares are those being sold by existing shareholders (managers, venture capitalists, etc.), which neither increase the number of shares outstanding nor provide capital for the company. Many IPOs include both primary and secondary components, with the fraction that is primary generally higher for younger companies. A few IPOs, sometimes involving spin-offs from parent companies, are pure secondaries. All of our SEOs involve primary shares; we exclude "registered secondaries," in which the entire issue is composed of shares being sold by existing shareholders, from our SEO sample.

For our sample of bond offerings, we exclude issues with a maturity date of one year or less. Our sample includes both zero-coupon, original-issue discount bonds, and coupon bonds. We include serial, floating-rate, and reset bonds, as

[1]ADRs are American Depository Receipts (also called American Depository Shares) that are traded in the United States for foreign issuers. Unit offerings are bundles of securities (frequently, a share plus a warrant to buy a share at some exercise price), commonly issued in small IPOs by young, speculative companies taken public by less-prestigious investment bankers.

[2]Rights offerings give existing shareholders the right to buy the securities offered. While they are common in many countries, rights offerings have been rare in the United States during the last twenty years. See Smith (1977), Hansen and Pinkerton (1982), and Hansen (1988) for a discussion of rights offerings. Shelf registrations are offerings whereby a company meeting certain qualifications is permitted to issue securities without issuing a prospectus (taking the securities "off the shelf" and selling them). In our sample period, shelf equity offerings are practically nonexistent, although there are many bond offerings (typically smaller issues) using shelf registrations that we exclude.

well as traditional coupon bonds.[3] We exclude mortgage-backed bonds. For zero-coupon and original-issue discount bonds that are sold for less than their par value, our percentage spreads and costs are based upon the offer price, and not the face value. Our convertible bond sample includes only issues that are convertible into shares of the issuing company. Exchangeable bonds, where the bond is convertible into shares of a different company, are not in our sample. None of our convertible bonds has a maturity date of less than five years.

We refer to new equity issues by publicly traded companies as seasoned equity offerings, reserving the use of "secondary" to identify the source of shares. Among practitioners, the term "secondary offering" is frequently used to refer to an SEO. Seasoning refers to whether the security being offered is already publicly traded; IPOs are unseasoned new issues. For that matter, the term "new issues" is sometimes used to refer to any security offering, and sometimes used to refer to equity IPOs alone. Although a new bond issue is an unseasoned new issue, and therefore a debt initial public offering, we use the term IPO to refer to unseasoned equity offerings exclusively.

Gross spreads are the commissions paid to investment bankers when securities are issued. Since buyers do not pay commissions on new security issues, these spreads implicitly reflect both the buyer and seller commissions. Other direct costs include the legal, auditing, and printing costs associated with putting together a prospectus.

III. Evidence

Average Spreads and Total Direct Costs

In Table 1 we report the average investment banker commissions (gross spreads) and other direct expenses for four classes of securities: IPOs, SEOs, convertible bonds, and straight bonds. In addition to reporting the average direct costs for each class, we also classify issues by proceeds categories. By going across a row, a reader can see how the expenses vary by security type, holding proceeds constant. By going down a column, a reader can see the magnitude of the economies of scale for a given type of security. Also reported is the number of observations in each category.

In Table 1 the median IPO is $24.4 million, the median SEO is $33.8 million, the median convertible bond is $75 million, and the median straight

[3]Serial bonds have the individual bonds maturing on different dates, with the coupons varying depending upon the maturity date. Reset and floating-rate bonds have the interest rate changing periodically, with the new interest rate determined either by an auction (reset) or a formula (floaters).

TABLE 1. Direct Costs as a Percentage of Gross Proceeds for Equity (IPOs and SEOs) and Straight and Convertible Bonds Offered by Domestic Operating Companies, 1990–94.

	Equity								Bonds							
	IPOs				SEOs				Convertible Bonds				Straight Bonds			
Proceeds[a] ($ millions)	N[b]	GS[c]	E[d]	TDC[e]	N	GS	E	TDC	N	GS	E	TDC	N	GS	E	TDC
2–9.99	337	9.05	7.91	16.96	167	7.72	5.56	13.28	4	6.07	2.68	8.75	32	2.07	2.32	4.39
10–19.99	389	7.24	4.39	11.63	310	6.23	2.49	8.72	14	5.48	3.18	8.66	78	1.36	1.40	2.76
20–39.99	533	7.01	2.69	9.70	425	5.60	1.33	6.93	18	4.16	1.95	6.11	89	1.54	0.88	2.42
40–59.99	215	6.96	1.76	8.72	261	5.05	0.82	5.87	28	3.26	1.04	4.30	90	0.72	0.60	1.32
60–79.99	79	6.74	1.46	8.20	143	4.57	0.61	5.18	47	2.64	0.59	3.23	92	1.76	0.58	2.34
80–99.99	51	6.47	1.44	7.91	71	4.25	0.48	4.73	13	2.43	0.61	3.04	112	1.55	0.61	2.16
100–199.99	106	6.03	1.03	7.06	152	3.85	0.37	4.22	57	2.34	0.42	2.76	409	1.77	0.54	2.31
200–499.99	47	5.67	0.86	6.53	55	3.26	0.21	3.47	27	1.99	0.19	2.18	170	1.79	0.40	2.19
500–up	10	5.21	0.51	5.72	9	3.03	0.12	3.15	3	2.00	0.09	2.09	20	1.39	0.25	1.64
Total	1767	7.31	3.69	11.00	1593	5.44	1.67	7.11	211	2.92	0.87	3.79	1092	1.62	0.62	2.24

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

[a]Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).
[b]Number of issues.
[c]Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).
[d]Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)*10).
[e]Total direct costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

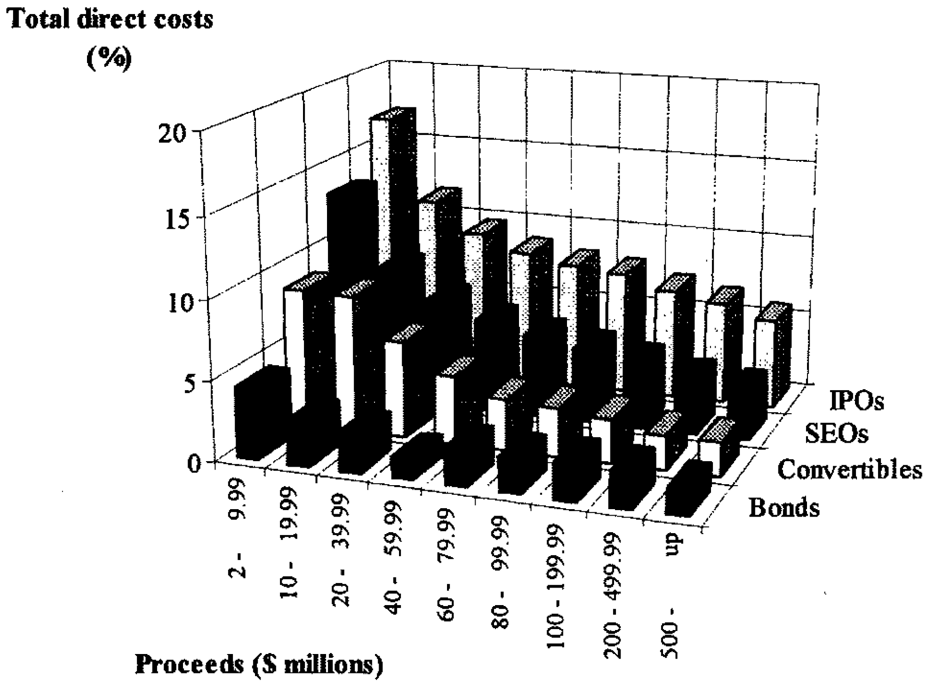

Figure I. Total Direct Costs as a Percentage of Gross Proceeds. The total direct costs for initial public offerings (IPOs), seasoned equity offerings (SEOs), convertible bonds, and straight bonds are composed of underwriter spreads and other direct expenses. Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. The numbers plotted are reported in Table 1 for issues from 1990 to 1994.

bond is $100 million. For both IPOs and SEOs, substantial economies of scale exist in both the gross spreads and the other expenses.

For SEOs, the lack of any diseconomies, even for offerings over $500 million, is inconsistent with the findings of Hansen and Torregrosa (1992), who report diseconomies of scale for offers over $100 million. Hansen and Torregrosa use a sample of SEOs from 1978–86, in contrast to our 1990–94 sample period. Our conjecture is that while diseconomies of scale may have existed for very large issues before the mid 1980s, a structural change has probably occurred since then, possibly because of the market's greater experience with absorbing large numbers of big offerings. While they are not in our sample, the large number of multibillion dollar privatizations that have occurred around the world in the last decade have made megaofferings routine events.

In all of our tables, we report the averages based upon the number of observations for which we have data. For the gross spreads, SDC reports numbers for our entire sample. For the other direct expenses, however, many observations are missing. Consequently, the averages for the expenses are based upon a

TABLE 2. Direct Costs of Raising Capital, 1990–94: Utility versus Nonutility Companies.

	Equity						Bonds					
	IPOs			SEOs			Convertible			Straight		
Proceeds[a] ($ millions)	N[b]	GS[c]	TDC[d]	N	GS	TDC	N	GS	TDC	N	GS	TDC
Panel A. Nonutility Offerings Only												
2–9.99	332	9.04	16.97	154	7.91	13.76	4	6.07	8.75	29	2.07	4.53
10–19.99	388	7.24	11.64	278	6.42	9.01	12	5.54	8.65	47	1.70	3.28
20–39.99	528	7.01	9.70	399	5.70	7.07	16	4.20	6.23	63	1.59	2.52
40–59.99	214	6.96	8.71	240	5.17	6.02	28	3.26	4.30	76	0.73	1.37
60–79.99	78	6.74	8.21	131	4.68	5.31	47	2.64	3.23	84	1.84	2.44
80–99.99	47	6.46	7.88	60	4.35	4.84	12	2.54	3.19	104	1.61	2.25
100–199.99	101	6.01	7.01	137	3.97	4.36	55	2.34	2.77	381	1.83	2.38
200–499.99	44	5.65	6.49	50	3.27	3.48	26	1.97	2.16	154	1.87	2.27
500–up	10	5.21	5.72	8	3.12	3.25	3	2.00	2.09	19	1.28	1.53
Total	1742	7.31	11.01	1457	5.57	7.32	203	2.90	3.75	957	1.70	2.34
Panel B. Utility Offerings Only												
2–9.99	5	9.40	16.54	13	5.41	7.68	0	—	—	3	2.00	3.28
10–19.99	1	7.00	8.77	32	4.59	6.21	2	5.13	8.72	31	0.86	1.35
20–39.99	5	7.00	9.86	26	4.17	4.96	2	3.88	5.18	26	1.40	2.06
40–59.99	1	6.98	11.55	21	3.69	4.12	0	—	—	14	0.63	1.10
60–79.99	1	6.50	7.55	12	3.39	3.72	0	—	—	8	0.87	1.13
80–99.99	4	6.57	8.24	11	3.68	4.11	1	1.13	1.34	8	0.71	0.98
100–199.99	5	6.45	7.96	15	2.83	2.98	2	2.50	2.74	28	1.06	1.42
200–499.99	3	5.88	7.00	5	3.19	3.48	1	2.50	2.65	16	1.00	1.40
500–up	0	—	—	1	2.25	2.31	0	—	—	1	3.50	na[e]
Total	25	7.15	10.14	136	4.01	4.92	8	3.33	4.66	135	1.04	1.47

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

[a]Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).
[b]Number of issues.
[c]Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).
[d]Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)*10).
[e]Not available because of missing data on other direct expenses.

more limited number of observations.[4] For computing the average total direct costs in Table 1 (and other tables), we add the average gross spread and the average other expenses. In Figure I we show the average total direct costs for the four classes of securities, categorized by their gross proceeds.

The Appendix table reports the interquartile ranges for both the gross spreads and the total direct costs. (We report the interquartile range of the offerings for which we have complete data.) The largest variability of spreads occurs for bonds. As we document below, this can largely be explained based on differences in the credit quality of the issues.

Utility versus Nonutility Offerings

In Table 2 we report the direct costs of raising capital after categorizing offerings into utility and nonutility offerings. During the early 1990s, utilities were relatively minor issuers, representing roughly 10 percent of SEOs and straight bond offerings, and less than 5 percent of IPOs and convertibles. Spreads and direct costs are lower for utilities than for nonutilities. This pattern, previously documented by Bhagat and Frost (1986), may be partly due to the use of competitive bidding, rather than negotiated deals, for choosing an investment banker. Alternatively, it may be partly due to the relative noncomplexity of typical utility offerings.

Debt Offerings and Credit Quality

In Table 3 we report the costs of raising debt capital after categorizing issues by whether they are investment grade or noninvestment grade.[5] Following industry practice, we classify offerings as investment grade issues if they have a Standard & Poor's credit rating of BBB− or higher.[6]

Inspection of Table 3 discloses that for both convertibles and straight bonds, spreads are lower for investment-grade issues. For straight bonds, this difference is especially pronounced. Note that for issues raising less than $60

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[4]If the offerings with missing expense information have systematically higher or lower expenses than those for which SDC reports information, our procedure would result in biased estimates of average expenses. To check this, for a sample of bond offerings in 1994 that are missing expense information, we used the Securities and Exchange Commission's Edgar electronic database (http://www.sec.gov/cgi-bin/srch-edgar) to find the expense information. The expenses for these issues are representative of those for which SDC reports information, suggesting our numbers do not have important biases.

[5]Following the practice of SDC, we report as separate offerings two bond issues by the same company on the same day if they have different maturity dates, provided they are not explicitly serial bonds. For example, on September 22, 1994, Southern Pacific Transport issued two bonds, one with proceeds of $8.1 million with a coupon rate of 7.61 percent, and the other with proceeds of $8.8 million and a coupon rate of 7.77 percent. We treat these as two distinct offerings.

[6]The highest credit rating is AAA, followed by AA, A, BBB, BB, B, C, and D, in order of their perceived default probabilities. These ratings are further partitioned by pluses and minuses.

TABLE 3. Average Gross Spreads and Total Direct Costs for Domestic Debt Issues, 1990–94.

	Convertible Bonds						Straight Bonds					
	Investment Grade[a]			Noninvestment Grade[b]			Investment Grade			Noninvestment Grade		
Proceeds[c] ($ millions)	N[d]	GS[e]	TDC[f]	N	GS	TDC	N	GS	TDC	N	GS	TDC
2–9.99	0	—	—	0	—	—	14	0.58	2.19	0	—	—
10–19.99	0	—	—	1	4.00	5.67	56	0.50	1.19	2	5.13	7.41
20–39.99	1	1.75	2.75	9	3.29	4.92	64	0.86	1.48	9	3.11	4.42
40–59.99	3	1.92	2.43	19	3.37	4.58	78	0.47	0.94	9	2.48	3.35
60–79.99	4	1.31	1.76	41	2.76	3.37	49	0.61	0.98	43	3.07	3.84
80–99.99	2	1.07	1.34	10	2.83	3.48	65	0.66	0.94	47	2.78	3.75
100–199.99	20	2.03	2.33	37	2.51	3.00	181	0.57	0.81	222	2.75	3.44
200–499.99	17	1.71	1.87	10	2.46	2.70	60	0.50	0.93	105	2.56	2.96
500–up	3	2.00	2.09	0	—	—	11	0.39	0.57	9	2.60	2.90
Total	50	1.81	2.09	127	2.81	3.53	578	0.58	0.94	446	2.75	3.42

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

[a]Firms with a BBB− or higher Standard & Poor's credit rating.
[b]Firms with a BB+ or lower Standard & Poor's credit rating.
[c]Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).
[d]Number of issues.
[e]Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).
[f]Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)*10).

million, very few noninvestment-grade issues exist. This reflects that smaller issues with lower credit quality are commonly placed privately, and thus do not appear in our sample.

This correlation of credit quality and issue size also explains why in Tables 1 and 2 straight bond issues do not appear to display large economies of scale: as the issue size increases, the credit quality of public issuers decreases, masking some of the economies of scale. Still, in Table 3, where we hold credit quality constant, the economies of scale for debt issues are more modest than those for equity issues in Tables 1 and 2. The correlation between issue size and credit quality also explains why the average spread is so low for bonds with $40–$59.9 million in proceeds. The average spread of only seventy-two basis points in Table 1 reflects that for this issue size, economies of scale are largely realized, while, at the same time, very few noninvestment-grade issuers exist. For smaller offerings, the lack of economies of scale keeps the average spread high. For larger offerings, the high proportion of noninvestment-grade issues pushes

TABLE 4. Direct and Indirect Costs, in Percent, of Equity IPOs, 1990–94.

Proceeds[a] ($ millions)	Gross Spreads[b]	Other Expenses[c]	Total Direct Costs[d]	Average Initial Return[e]	Average Direct and Indirect Costs[f]
2–9.99	9.05	7.91	16.96	16.36	25.16
10–19.99	7.24	4.39	11.63	9.65	18.15
20–39.99	7.01	2.69	9.70	12.48	18.18
40–59.99	6.96	1.76	8.72	13.65	17.95
60–79.99	6.74	1.46	8.20	11.31	16.35
80–99.99	6.47	1.44	7.91	8.91	14.14
100–199.99	6.03	1.03	7.06	7.16	12.78
200–499.99	5.67	0.86	6.53	5.70	11.10
500–up	5.21	0.51	5.72	7.53	10.36
Total	7.31	3.69	11.00	12.05	18.69

Notes: There are 1,767 domestic operating company IPOs in the sample. The first four columns express costs as a percentage of the offer price, and the last column expresses costs as a percentage of the market price.

[a]Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).
[b]Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).
[c]Other direct expenses as a percentage of total proceeds (including registration fee and printing, legal, and auditing costs) (SDC variables: EXPTH/(PROCDS)*10).
[d]Total direct costs as a percentage of total proceeds (the average total direct costs are the sum of average gross spreads and average other direct expenses).
[e]Initial return = 100*{[closing price one day after the offering date (SDC variable: PR1DAY)/offering price (SDC variable: P)] − 1}. If PR1DAY is missing, PR2DAY is used.
[f]Total direct and indirect costs = $(d + e)/(1 + e/100)$, computed for each issue individually (excluding firms with other expenses or initial returns missing), and then averaged, where d is the percentage of total direct costs, and e is the percentage initial return.

the average spread up. In other words, the average spread of only seventy-two basis points for this category is not a typographical error.

Although not reported in any table, the average maturity of bond offerings is about ten years for all of the proceeds categories and investment grades.

Initial Public Offerings

In Table 4 we report not only the direct costs for IPOs, but also the indirect costs of short-run underpricing.[7] Inspection of the table reveals that, consistent with previous findings, IPOs are underpriced on average. With average direct costs of 11.0 percent and average initial returns of 12.0 percent, a typical

[7]We compute the average initial return only for those offerings for which SDC reports the market price at the end of the first day of trading or, if this is missing, at the end of the second day of trading. In computing the average direct and indirect cost, we compute this number for each individual firm for which we have the gross spread, other expenses, and the initial return, and then compute the average.

issuer with an offer price of $10.00 receives net proceeds of $8.90 on a share that trades at $11.20. Taking the difference between the market price and the amount realized of $8.90, the total direct and indirect costs amount to $2.30, which is 20.5 percent of the market value of $11.20. In Table 4 the average direct and indirect cost as a percentage of market value is 18.7 percent, since the average that is reported is the average of this percentage for each firm. (The average ratio of costs to market value is different from the ratio of the averages.) This number is less than the 21.2 percent that Ritter (1987) reports for firm commitment offerings from 1977 to 1982 for several reasons. First, our 1990–94 sample period reveals less underpricing than in 1977-1982. Second, we exclude offerings of less than $2 million, whereas he includes them. Third, spreads have experienced some downward movement the past fifteen years.[8] Still, the direct and indirect costs of going public are substantial.[9]

Note that we may be understating the extent of the economies of scale. This is because we are not including the value of any warrants granted to underwriters as part of their compensation. These warrants are common among small, speculative offerings underwritten by less-prestigious underwriters. Their inclusion would boost the average costs of the smallest offerings, but not the larger offerings. For evidence on the quantitative effect of this omission, see Barry, Muscarella, and Vetsuypens (1991) and Dunbar (1995).

While the average gross spread on IPOs is 7.31 percent, we find a large "bunching" at exactly 7.00 percent. Most issues with proceeds of $20–$60 million have a spread of exactly 7 percent, as shown in the Appendix table.

For IPOs, we include the indirect cost of underpricing in Table 4, but we do not include this as a cost for other security offerings. This is because of the lack of economically important underpricing effects for other offerings. Smith (1977) documents underpricing of 0.5 percent for SEOs. We suspect that much of this represents the practice of pricing the offering at the bid price, rather than the mean of the bid and the ask price, and the tendency to round down to the nearest eighth or integer. For example, if a stock traded at $30.125 bid and $30.375 ask, it would be common to set a $30.00 offer price. Depending upon which price had been the most recent transaction price, this would be measured as underpricing of either 0.4 percent or 1.2 percent. Barclay and Litzenberger (1988) report excess returns of 1.5 percent for SEOs during the month after issuing. Since companies typically issue after a large stock price run-up, it is not clear how much of this 1.5 percent is due to momentum effects, and how

[8]Calomiris and Raff (1995) report that for convertible bonds, the average spread in 1963–65 was 3.7 percent and in 1971–72 it was 3.2 percent. Our 1990–94 sample has an average spread of 2.9 percent.

[9]Beatty and Welch (1996) report the average direct and indirect costs for a sample of 980 IPOs from 1992 to 1994. Whereas we aggregate auditing, legal, printing, and other direct expenses, they report audit expenses and legal expenses separately. For all proceeds classes, legal expenses are slightly higher than auditor expenses.

TABLE 5. Number of Issues Containing an International Tranche for Domestic Operating Companies That Are Issuing, 1990–94.

	Equity				Bonds			
	IPOs Int'l Tranche?[a]		SEOs Int'l Tranche?		Convertible Int'l Tranche?		Straight Int'l Tranche?	
Proceeds ($ millions)	Yes	No	Yes	No	Yes	No	Yes	No
2–9.99	2	335	4	163	0	4	1	31
10–19.99	12	377	12	298	1	13	0	78
20–39.99	45	488	36	389	3	15	0	89
40–59.99	40	175	42	219	0	28	4	86
60–79.99	33	46	45	98	1	46	8	84
80–99.99	25	26	30	41	9	4	2	110
100–199.99	81	25	72	80	22	35	14	395
200–499.99	39	8	48	7	14	13	13	157
500–up	10	0	8	1	2	1	2	18
Total	287	1480	297	1296	52	159	44	1048

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

[a]If (TOTDOLAMT/PROCDS) > 1.05, the issue is treated as having an international tranche. TOTDOLAMT is the total proceeds raised globally, and PROCDS is the total proceeds raised in the United States.

much is due to issue effects. Kang and Lee (1996) document that convertible bonds are underpriced by about 1 percent on average. Straight bonds, especially those with high credit ratings, seem to be underpriced very little.

International Tranches

In Table 5 we report the frequency with which domestic operating companies include an international tranche in their offerings. Recall that we are excluding Eurobonds from our debt offerings and ADRs from our equity offerings. Inspection of the table reveals that equity offerings and convertibles that raise less than $60 million in domestic trading rarely include an international tranche. Straight debt offerings, no matter what their size, rarely include an international tranche. Now, foreign investors can always participate in a domestic offering regardless of whether it is explicitly marketed overseas. Thus, the existence/nonexistence of an international tranche largely reflects the degree to which the selling efforts are expanded to find international buyers. Domestic operating companies issuing debt with foreign buyers in mind frequently issue Eurobonds.[10]

Overallotment Options

The Rules of Fair Practice of the National Association of Security Dealers (NASD) permit firm commitment offerings to include an overallotment option, where more securities can be sold if demand is strong.[11] Since August 1983, the size of this overallotment option has been limited to 15 percent of the issue size. Investment bankers typically have thirty days to exercise this option. In practice, investment bankers typically presell at least 115 percent of the offering, and then stand ready to buy back the incremental 15 percent if demand is weak when some of the buyers immediately sell their securities (a practice known as "flipping").[12]

The NASD Rules of Fair Practice require that investment bankers sell securities at or below the stated offer price. Normally, all of the securities are sold at the offer price, but occasionally, if demand is weak, the investment banker winds up selling some of the securities below the offer price. In this arrangement the underwriter writes a put option to the issuing firm, with the value of this put included in the gross spread. The overallotment option can be viewed as a call option that the issuing firm has written, where investors hold this call.

On securities sold through the exercise of overallotment options, investment bankers collect the same gross spread as on the rest of the issue. However, since the direct expenses do not change, these fixed costs are spread over a larger issue size. Thus, the total direct cost numbers that we report would be lower if overallotment options were included in the gross proceeds. On the other hand, since overallotment options are generally exercised only if the issue is underpriced, the value of this call option is a cost to the issuing firm that we do not include in our total cost calculations.

In Table 6 we report the frequency with which overallotment options are used and the frequency with which they are exercised. Inspection of the table reveals that in recent years, essentially all IPOs have included an overallotment option. The vast majority of SEOs and convertibles include an overallotment option, but straight bond issues rarely do.

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[10]The relative yields on Eurobonds versus domestic bonds also play a role in the decision of what to issue (see Kim and Stulz (1988)).

[11]Overallotment options are sometimes called Green Shoe options. The Green Shoe Company was apparently the first company to use one.

[12]See Schultz and Zaman (1994) for evidence on the exercise of overallotment options on IPOs. With IPOs, if the underwriter expects aftermarket demand to be weak, 135 percent of the issue may be presold, with the underwriter's taking a naked short position equal to the amount exceeding 115 percent of the offering. This allows the underwriter to support, or stabilize, the price by buying back the increment in open market purchases. These shares are then treated as if they were never issued. If the underwriter expects the price to jump, typically only 115 percent of the issue size will be presold, to avoid losing money on a naked short position.

TABLE 6. Number of Issues Containing an Overallotment Option, for Domestic Operating Companies That Are Issuing, 1990–94.

	Equity								Bonds							
	IPOs Overallotment Option?				SEOs Overallement Option?				Convertible Overallotment Option?				Straight Overallotment Option?			
	Yes			No[d]	Yes			No	Yes			No	Yes			No
	Sold?				Sold?				Sold?				Sold?			
Proceeds ($ millions)	Yes[a]	No[b]	?[c]		Yes	No	?		Yes	No	?		Yes	No	?	
2–9.99	159	115	51	12	100	41	21	5	0	0	4	0	1	0	4	27
10–19.99	198	151	40	0	209	58	38	5	1	2	8	3	2	1	4	71
20–39.99	306	164	60	3	269	100	49	7	4	2	8	4	6	0	9	74
40–59.99	123	67	25	0	173	50	33	5	6	6	13	3	1	0	1	88
60–79.99	45	27	7	0	81	37	21	4	21	6	16	4	3	0	0	89
80–99.99	25	17	9	0	44	9	15	53	10	0	3	0	0	1	1	10
100–199.99	54	34	16	2	96	24	28	4	23	2	28	4	4	1	3	401
200–499.99	21	17	8	1	35	4	14	2	7	2	15	3	3	1	1	165
500–up	6	0	3	1	6	2	1	0	0	0	3	0	0	0	1	19
Total	937	592	219	19	1013	325	220	35	72	20	98	21	20	4	24	1044

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

[a]If OVERAMT > 0 and OVERC = Yes, where OVERAMT is the amount that can be raised through the overallotment option and OVERC is "Yes" if any overallotment option is exercised.
[b]If OVERAMT > 0 and OVERC = No.
[c]If OVERAMT > 0 and OVERC = Missing.
[d]If OVERAMT = "–"; this may include offerings with missing data on OVERAMT.

APPENDIX. Interquartile Range of Direct Costs as a Percentage of Gross Proceeds for Equity (IPOs and SEOs) and Straight and Convertible Bonds Offered by Domestic Operating Companies, 1990–94.

	Equity				Bonds			
	IPOs		SEOs		Convertible Bonds		Straight Bonds	
Proceeds[a] ($ millions)	GS[b]	TDC[c]	GS	TDC	GS	TDC	GS	TDC
2–9.99	8.00–10.00	14.34–19.23	6.50–10.00	10.03–16.16	5.45–6.69	7.38–10.04	0.64–3.38	3.47–6.21
10–19.99	7.00–7.14	9.94–12.44	5.74–6.94	7.42–9.63	4.25–6.00	6.65–9.70	0.35–2.90	1.55–5.68
20–39.99	7.00–7.00	8.82–10.09	5.22–6.00	6.19–7.57	3.00–5.00	4.56–6.50	0.57–3.00	1.10–4.55
40–59.99	7.00–7.00	8.23–9.00	4.73–5.48	5.26–6.31	2.88–3.50	3.63–4.65	0.15–0.71	0.91–2.88
60–79.99	6.55–7.00	7.69–8.51	4.24–5.00	4.51–5.70	2.50–3.00	2.83–3.54	0.65–3.00	0.94–3.64
80–99.99	6.21–6.85	7.26–8.44	3.87–4.75	4.22–5.38	2.25–3.00	2.56–3.66	0.63–2.76	0.94–3.70
100–199.99	5.72–6.47	6.43–7.49	3.15–4.47	3.38–4.89	2.15–2.75	2.36–3.19	0.65–2.75	1.01–3.55
200–499.99	5.29–5.86	5.92–6.78	2.79–3.58	2.92–3.79	1.25–2.50	1.40–2.69	0.65–2.63	1.43–3.16
500–up	5.00–5.37	5.33–5.95	2.75–3.00	2.82–3.17	1.00–2.50	1.11–2.60	0.29–2.75	1.05–3.18
Total	7.00–7.05	8.57–12.04	4.51–6.08	5.12–8.20	2.25–3.00	2.66–3.96	0.60–2.75	1.02–3.60

Notes: Closed-end funds (SIC 6726), REITs (SIC 6798), ADRs, and unit offerings are excluded from the sample. Rights offerings for SEOs are also excluded. Bond offerings do not include securities backed by mortgages and issues by Federal agencies (SIC 6011, 6019, 6111, and 999B). Only firm commitment offerings and nonshelf-registered offerings are included. Standard Industrial Classification (SIC) codes are from Securities Data Co. (SDC).

[a]Total proceeds raised in the United States, excluding proceeds from the exercise of overallotment options (SDC variable: PROCDS).
[b]Gross spreads as a percentage of total proceeds (including management fee, underwriting fee, and selling concession) (SDC variable: GPCTP).
[c]Total direct costs as a percentage of total proceeds (total direct costs are the sum of gross spreads and other direct expenses).

The frequency with which overallotment options are exercised varies across security type. In Table 6 we use the SDC classification where an overallotment option is considered to be exercised as long as at least part of it is exercised. In practice, most overallotment options are for 15 percent of the issue size. Most commonly, either all or none of the additional shares are sold, but sometimes only part of the overallotment option is exercised. On securities sold as part of an overallotment option, the spread is the same as on the rest of the issue.

IV. Conclusions

Firms have many choices for financing their activities: internal versus external, private versus public, and debt versus equity. This article focuses on public external financing and documents the cost of this financing from 1990 to 1994. We report the direct costs of raising capital for IPOs, SEOs, convertible bonds, and straight bonds. These are, respectively, 11.0 percent, 7.1 percent, 3.8 percent, and 2.2 percent of the proceeds. We find substantial economies of scale for all types of securities, although for straight bond offerings, these are largely exhausted for proceeds over $40 million. Spreads on bonds are sensitive to credit quality, with gross spreads more than 200 basis points higher on noninvestment-grade issues. Except for bonds, most large issues include an international tranche.

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THE EFFECT OF PERSONAL TAXES AND DIVIDENDS ON CAPITAL ASSET PRICES

Theory and Empirical Evidence

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This paper derives an after tax version of the Capital Asset Pricing Model. The model accounts for a progressive tax scheme and for wealth and income related constraints on borrowing. The equilibrium relationship indicates that before-tax expected rates of return are linearly related to systematic risk and to dividend yield. The sample estimates of the variances of observed betas are used to arrive at maximum likelihood estimators of the coefficients. The results indicate that, unlike prior studies, there is a strong positive relationship between dividend yield and expected return for NYSE stocks. Evidence is also presented for a clientele effect.

1. Introduction

The effect of dividend policy on the prices of equity securities has been an issue of interest in financial theory. The traditional view was that investors prefer a current, certain return in the form of dividends to the uncertain prospect of future dividends. Consequently, they bid up the price of high yield securities relative to low yield securities [see Cottle, Dodd and Graham (1962) and Gordon (1963)]. In their now classic paper Miller and Modigliani (1961) argued that in a world without taxes and transactions costs the dividend policy of a corporation, given its investment policy, has no effect on the price of its shares. In a world where capital gains receive preferential treatment relative to dividends, the Miller-Modigliani 'irrelevance proposition' would seem to break down. They argue, however, that since tax rates vary across investors each corporation would attract to itself a clientele of investors that most desired its dividend policy. Black and Scholes (1974) assert that corporations would adjust their payout policies until in equilib-

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rium the spectrum of policies offered would be such that any one firm is unable to affect the price of its shares by (marginal) changes in its payout policy.

In the absence of taxes, capital asset pricing theory suggests that individuals choose mean-variance efficient portfolios. Under personal income taxes, individuals would be expected to choose portfolios that are mean-variance efficient in after-tax rates of return. However, the tax laws in the United States are such that some economic units (for example, corporations) would seem to prefer dividends relative to capital gains. Other units (for example, non-profit organizations) pay no taxes and would be indifferent to the level of yield for a given level of expected return. The resulting effect of dividend yield on common stock prices seems to be an empirical issue.

Brennan (1973) first proposed an extended form of the single period Capital Asset Pricing Model that accounted for the taxation of dividends. Under the assumption of proportional individual tax rates (not a function of income), certain dividends, and unlimited borrowing at the riskless rate of interest (among others) he derived the following equilibrium relationship:

$$E(\tilde{R}_i)-r_f=b\beta_i+\tau(d_i-r_f), \tag{1}$$

where $\tilde{R}_i$ is the before tax total return to security i, β_i is its systematic risk, $b=[E(\tilde{R}_m)-r_f-\tau(d_m-r_f)]$ is the after-tax excess rate of return on the market portfolio, r_f is the return on a riskless asset, d_i is the dividend yield on security i, and the subscript m denotes the market portfolio. τ is a positive coefficient that accounts for the taxation of dividends and interest as ordinary income and taxation of capital gains at a preferential rate.

In empirical tests [of the form (1)] to date, the evidence has been inconsistent. Black and Scholes (1974, p. 1) conclude that

> '...it is not possible to demonstrate that the expected returns on high yield common stocks differ from the expected returns on low yield common stocks either before or after taxes.'

Alternatively, stated in terms of the Brennan model, their tests were not sufficiently powerful either to reject the hypothesis that $\tau=0$ or to reject the hypothesis that $\tau=0.5$. Rosenberg and Marathe (1978) attribute the lack of power in the Black–Scholes tests to (a) the loss in efficiency from grouping stocks into portfolios and (b) the inefficiency of their estimating procedures, which are equivalent to Ordinary Least Squares. Using an instrumental variables approach to the problem of errors in variables and a more complete specification of the variance-covariance matrix (of disturbances in the regression), Rosenberg and Marathe find that the dividend term is statistically significant. Both the Rosenberg and Marathe and the Black and Scholes studies use an average dividend yield from the prior twelve month

period as a surrogate for the expected dividend yield. Since most dividends are paid quarterly, their proxy understates the expected dividend yield in ex-dividend months and overstates it in those months that a stock does not go ex-dividend, thereby reducing the efficiency of the estimated coefficient on the dividend yield term. Both studies (Rosenberg and Marathe in using instrumental variables, and Black–Scholes in grouping) sacrifice efficiency to achieve consistency.

The present paper derives an after-tax version of the Capital Asset Pricing Model that accounts for a progressive tax scheme and both wealth and income related constraints on borrowing. Alternative econometric procedures are used to test the implications of this model. Unlike prior tests of the CAPM, the tests here use the variance of the observed betas to arrive at maximum likelihood estimators of the coefficients. Consistent estimators are obtained without loss of efficiency. Also, for ex-dividend months the expected dividend yield based on prior information is used, and for other months the expected dividend yield is set equal to zero. While the estimate of the coefficient of dividend yield is of the same order of magnitude as that found in Black and Scholes, and lower than that found by Rosenberg and Marathe, the t-value is substantially larger, indicating a substantial increase in efficiency. Furthermore, the tests are consistent with the existence of a clientele effect, indicating that the aversion for dividends relative to capital gains is lower for high yield stocks and higher for low yield stocks. This is consistent with the Elton and Gruber (1970) empirical results on the ex-dividend behavior of common stocks.

2. Theory

This section derives a version of the Capital Asset Pricing Model that accounts for the tax treatment of dividend and interest income under a progressive taxation scheme. Two types of constraints on individual borrowing are imposed. The first constrains the maximum interest on riskless borrowing to be equal to the individual's dividend income, and the second is a margin requirement that restricts the fraction of security holdings that may be financed through borrowing. In previous published work, Brennan (1973) derives an after-tax version of the Capital Asset Pricing Model with unlimited borrowing and with constant tax rates which may vary across individuals.[1] Under his model when interest on borrowing exceeds dividend income the investor would pay a negative tax. The theoretical model

[1]Brennan (1970) also derives a model with a progressive tax scheme. However, he neither considers constraints on borrowing nor the limiting of interest deduction on margin borrowing to dividend income. Consideration of the limit on the interest tax deduction to dividend income combined with a positive capital gains tax would result in a preference for dividends by those individuals whose interest payments exceed their dividend income.

developed here may be viewed as an extension of the Brennan analysis to account for constraints on borrowing along with a progressive tax scheme. Special cases of the model are examined, where the income related constraint and/or the margin constraint on individual borrowing are removed.

The following assumptions are made:

(A.1) Individuals' Von Neumann–Morgenstern utility functions are monotone increasing strictly concave functions of after-tax end of period wealth.

(A.2) Security rates of return have a multivariate normal distribution.

(A.3) There are no transactions costs, and no restrictions on the short sale of securities, and individuals are price takers.

(A.4) Individuals have homogeneous expectations.

(A.5) All assets are marketable.

(A.6) A riskless asset, paying a constant rate r_f, exists.

(A.7) Dividends on securities are paid at the end of the period and are known with certainty at the beginning of the period.

(A.8) Income taxes are progressive and the marginal tax rate is a continuous function of taxable income.

(A.9) There are no taxes on capital gains.

(A.10) Constraints on individuals' borrowing are of the form:

(i) A constraint that the interest on borrowing cannot exceed dividend income, called the income constraint on borrowing, and/or

(ii) a margin constraint that the individual's net worth be at least a given fraction of the market value of his holdings of risky securities.

Assumptions (A.1) through (A.6) are standard assumptions of the Capital Asset Pricing Model. Assumptions (A.1) and (A.2) taken together imply that preferences can be described over the mean and the variance of after-tax end of period wealth. Under these conditions individuals prefer more mean return and are averse to the variance of return. The individual's marginal rate of substitution between the mean and variance of after-tax end of period wealth, at the optimum, can be written as the ratio of his global risk tolerance to his initial period wealth. That is, if $u_k(W_1^k)$ is the kth individual's utility function in terms of after-tax end of period wealth, $f^k(\mu_k, \sigma_k^2)$ is his objective function in terms of the mean and variance of the after-tax portfolio return, and W^k is his initial wealth,

$$f_1^k/-2f_2^k = \theta^k/W^k, \tag{2}$$

where $\theta^k = -E(u')/E(u'')$ is the individual's global risk tolerance at the optimum [see Gonzalez-Gaverra (1973) and Rubinstein (1973)]. (A.7) implies

that dividends are announced at the beginning of the period and paid at its end. Since firms display relatively stable dividend policies this may be a reasonable approximation for a monthly holding period.

Assumption (A.8) closely resembles the tax treatment of ordinary dividends in the U.S. The $100 dividend exclusion is ignored. Since the small magnitude of the exclusion implies that for the majority of stockholders the marginal tax rate applicable to ordinary income is the same as that applied to dividends. Assumption (A.9) abstracts from the effects of capital gains taxes. Since capital gains are taxed only upon realization, their treatment in a single period model is not possible. It is, however, straightforward to model a capital gains tax on an accrual basis [see Brennan (1973)]. Since most capital gains go unrealized for long periods, this would tend to overstate the effect of the actual tax. Noting that the ratio of realizations to accruals is small, and that capital gains are exempt from tax when transferred by inheritance, Bailey (1969) has argued that the effective tax is rather small.

Under assumption (A.8), the kth individual's average tax rate, t^k, is a non-decreasing function of his taxable end of period income Y_1^k,

$$\begin{aligned} &t^k = g(Y_1^k),\\ &g(0)=0, \quad g'(Y_1^k)=0 \quad \text{for} \quad Y_1^k \leq 0,\\ &\qquad\qquad\qquad\quad >0 \quad \text{for} \quad Y_1^k > 0. \end{aligned} \tag{3}$$

The kth individual's marginal tax rate, written T^k, is the first derivative of taxes paid with respect to taxable income. This is equal to the average tax rate plus the product of taxable income and the derivative of the average tax rate,

$$T^k \equiv d(t^k Y_1^k)/dY_1^k = t^k + Y_1^k g'(Y_1^k). \tag{4}$$

The margin constraint in assumption (A.10-ii) resembles institutional margin restrictions. By (A.10-i), borrowing is constrained up to a point where interest paid equal dividends received. This constraint incorporates the casual empirical observation that loan applications require information on income (which this constraint accounts for) in addition to information on wealth (which the margin constraint accounts for). One or both of the constraints may be binding, for a given individual. This formulation allows the analysis of an equilibrium with both constraints, with only one of them imposed or with no borrowing constraints.

The following notation is employed:

$\tilde{R}_i$ = the total before tax rate of return on security i, equal to the ratio of the value of the security at the end of the period plus dividends over its current value, less one.

d_i = the dividend yield on security i, equal to the dollar dividend divided by the current price,

X_i^k = the fraction of the kth individual's wealth invested in the ith risky asset, $i=1,2,\ldots,N$ (a negative value is a short sale),

X_f^k = the fraction of the kth individual's wealth invested in the safe asset (a negative value indicates borrowing),

$\tilde{R}_p^k$ = the before-tax rate of return on the kth individual's portfolio,

W^k = the kth individual's initial wealth, and

$f^k(\mu_k;\sigma_k^2)$ = the kth individual's expected utility function defined over the mean and variance of after-tax portfolio return, μ_k and σ_k^2, respectively.

The kth individual's ordinary income is then

$$Y_1^k = W^k\left(\sum_i X_i^k d_i + X_f^k r_f\right). \tag{5}$$

The mean after-tax return on the individual's portfolio is

$$\mu_k = \sum X_i^k E(\tilde{R}_i) + X_f^k r_f - t^k\left(\sum_i X_i^k d_i + X_f^k r_f\right). \tag{6}$$

and under assumption (A.7) the variance of after-tax return is

$$\begin{aligned}\sigma_k^2 &= \sum_j\sum_{i} X_i^k X_j^k \operatorname{cov}(\tilde{R}_i - d_i t^k, \tilde{R}_j - d_j t^k)\\ &= \sum_i\sum_j X_i^k X_j^k \operatorname{cov}(\tilde{R}_i, \tilde{R}_j).\end{aligned} \tag{7}$$

By assumption (A.10-i) the income constraint on borrowing is

$$W^k\left\{\sum_i X_i^k d_i + X_f^k r_f\right\} \geq 0, \tag{8}$$

and the margin constraint on borrowing is

$$W^k\left\{(1-\alpha)\sum_i X_i^k + X_f^k\right\} \geq 0, \tag{9}$$

where α; $0<\alpha<1$, is the margin requirement on the individual. As pointed out earlier, one or both of these constraints may be binding.

The kth individual's optimization problem is stated in terms of the

following Lagrangian:

$$\begin{aligned}\mathcal{L}^k &\equiv f^k(\mu_k,\sigma_k^2) + \lambda_1^k\left[1-\sum_i X_i^k - X_f^k\right]\\ &\quad + \lambda_2^k\left[\sum_i X_i^k d_i + X_f^k r_f - S_2^k\right] + \lambda_3^k\left[(1-\alpha)\sum_i X_i^k + X_f^k - S_3^k\right],\end{aligned} \tag{10}$$

where

λ_1^k = the Lagrange multiplier on the kth individual's budget,

λ_2^k, S_2^k = the Lagrange multiplier and non-negative slack variable for the income related constraint on the kth individual's borrowing, respectively (when the constraint is binding $\lambda_2^k>0$ and $S_2^k=0$, and when it is not binding $\lambda_2^k=0$ and $S_2^k\geq 0$), and

λ_3^k, S_3^k = the Lagrange multipler and non-negative slack variables for the margin constraint on the kth individual's borrowing, respectively; again if the constraint is binding (not binding), $\lambda_3^k > (=)\ 0$ and $S_3^k = (\geq)\ 0$.

The stationary points satisfy the following first order conditions:

$$\begin{aligned}\frac{\partial \mathcal{L}^k}{\partial X_i^k} &= f_1^k\{E(\tilde{R}_i) - [t^k + Y_1^k g'(Y_1^k)]d_i\} - \lambda_1^k + \lambda_2^k d_i\\ &\quad + \lambda_3^k(1-\alpha) + 2f_2^k \sum_j X_j^k \operatorname{cov}(\tilde{R}_i, \tilde{R}_j) = 0, \qquad i=1,2,\ldots,N,\end{aligned} \tag{11}$$

$$\frac{\partial \mathcal{L}^k}{\partial X_f^k} = f_1^k\{r_f - [t^k + Y_1^k g'(Y_1^k)]r_f\} - \lambda_1^k + \lambda_2^k r_f + \lambda_3^k = 0, \tag{12}$$

where $f_1^k \equiv \partial f^k(\mu_k,\sigma_k^2)/\partial\mu_k$, $f_2^k \equiv \partial f^k(\mu_k,\sigma_k^2)/\partial\sigma_k^2$. The other first order conditions are the constraints and specify the signs of the Lagrangian multipliers and are omitted here. The progressive nature of the tax scheme [assumption (A.8)] ensures that the mean variance efficient frontier in after-tax terms is concave, and this together with risk aversion from assumption (A.8) is sufficient to guarantee the second order conditions for a maximum.

Recall the following relationships: (i) the marginal tax rate, $T^k = [t^k + Y_1^k g'(\cdot)]$, (ii) the covariance $\sum_j X_j^k \operatorname{cov}(\tilde{R}_i, \tilde{R}_j) = \operatorname{cov}(\tilde{R}_i, \tilde{R}_p^k)$, and (iii) the global risk tolerance $\theta^k = W^k(f_1^k/-2f_2^k)$. Subtracting relation (12) from relation (11) and re-arranging terms yields

$$\begin{aligned}[E(\tilde{R}_i) - r_f] &= \alpha(\lambda_3^k/f_1^k) + (W^k/\theta^k)\operatorname{cov}(\tilde{R}_i, \tilde{R}_p^k)\\ &\quad + [T^k - (\lambda_2^k/f_1^k)](d_i - r_f).\end{aligned} \tag{13}$$

Relation (13) must be satisfied for the individual's portfolio optimum.

Market equilibrium requires that relation (13) holds for all individuals, and that markets clear. For markets to clear all assets have to be held which implies the conservation relation (14) that requires the value weighted average of all individuals' portfolios be equal to the market portfolio,

$$\sum_k (W^k/W^m)\tilde{R}_p^k = \tilde{R}_m, \tag{14}$$

or

$$\sum_k W^k \tilde{R}_p^k = W^m \tilde{R}_m,$$

where

$$\sum_k W^k \equiv W^m.$$

Multiplying both sides of relation (13) by θ^k, summing over all individuals, using the conservation relation (14) and re-arranging terms yields

$$E(\tilde{R}_i) - r_f = a + b\beta_i + c(d_i - r_f), \tag{15}$$

where

$$\beta_i \equiv \operatorname{cov}(\tilde{R}_i, \tilde{R}_m)/\operatorname{var}(\tilde{R}_m),$$

$$a \equiv \alpha \sum_k (\theta^k/\theta^m)(\lambda_1^k/f_1^k),$$

$$b \equiv \operatorname{var}(\tilde{R}_m)(W^m/\theta^m),$$

$$c \equiv \sum_k (\theta^k/\theta^m)[T^k - (\lambda_2^k/f_1^k)],$$

$$\theta^m \equiv \sum_k \theta^k.$$

The term 'a', the intercept of the implied security market plane, is the fractional margin requirement α times the weighted average of the ratios of individual shadow prices on the margin constraint and the expected marginal utility of mean return. The weights, (θ^k/θ^m), are proportional to individuals' global risk tolerances. When $\alpha>0$ and the constraint is binding for some individuals, $\lambda_1^k>0$ for some k, a is positive. In the absence of margin requirements ($\alpha=0$) or when the margin constraint is not binding for all individuals, ($\lambda_1^k=0$ for all k), $a=0$.

Interpreting eq. (15), 'a' is the excess return on a zero beta portfolio (relative to the market) whose dividend yield is equal to the riskless rate, i.e.,

$a=E(\tilde{R}_z)-r_f$. The term 'b', the coefficient on beta is equal to the product of the variance of the rate of return on the market portfolio and global market relative risk aversion, i.e., $b=\operatorname{var}(\tilde{R}_m)(W^m/\theta^m)$. Since relation (15) also holds for the market portfolio, b may be alternatively expressed as $b=[E(\tilde{R}_m)-r_f-c(d_m-r_f)-a]$. If '$c$' is interpreted as a tax rate, b may be viewed as the expected after-tax rate of return on a hedge portfolio which is long the market portfolio and short a portfolio having a zero beta and a dividend yield equal to the riskless rate of interest; i.e., $b=[E(\tilde{R}_m)-E(\tilde{R}_z)-c(d_m-d_z)]$. The term '$c$' is a weighted average of individual's marginal tax rates $(\sum_k(\theta^k/\theta^m)T^k)$, less the weighted average of the individual's ratios of the shadow price on the income related borrowing constraint and the expected marginal utility of mean portfolio return $\sum_k(\theta^k/\theta^m)(\lambda_2^k/f_1^k)$. For the cases where the income related margin constraint is either non-existent or non-binding for all individuals, c is simply the weighted average of marginal tax rates, and is positive. Otherwise, the sign of 'c' depends on the magnitudes of these two terms. Define B as the set of indices of those individuals k for whom the income related constraint is binding: and define N (not B) as the set of indices for which the constraint is non-binding. Now for $k\in B$, $\lambda_2^k>0$, $Y_1^k=0$ and $T^k=t^k=0$. And for $k\in N$, $\lambda_2^k=0$, $Y_1^k\geqq 0$ and $T^k\geqq t^k\geqq 0$. Hence

$$c = \sum_{k\in N}\frac{\theta^k}{\theta^m}T^k - \sum_{k\in B}\frac{\theta^k}{\theta^m}\frac{\lambda_2^k}{f_1^k}. \tag{16}$$

The individuals in N may be viewed as a clientele that prefers capital gains to dividends. The individuals in B may be viewed as a clientele that shows a preference for dividends: in the context of this model, these individuals wish to borrow more than the income related constraint allows them, and increased dividends serve to increase their debt capacity without additional tax obligations. To this point corporate dividend policies have been treated as exogenous in this model.

Now consider supply adjustments by value maximizing firms. If $c>0$ ($c<0$) firms could increase their market values by decreasing (increasing) cash dividends and increasing (decreasing) share repurchases or decreasing (increasing) external equity flotations. Value maximizing firms (in absence of any restrictions the IRS may impose) would adjust the supply of dividends until an equilibrium was obtained where

$$\sum_{k\in N}(\theta^k/\theta^m)T^k = \sum_{k\in B}(\theta^k/\theta^m)(\lambda_2^k/f_1^k). \tag{17}$$

When condition (17) is satisfied an individual firm's dividend decision does not affect its market value, $c=0$ and dividend yield has no effect on the before tax rate of return on any security.[2]

Under unrestricted supply effects, $c=0$ and the equilibrium relationship (15) reduces to the before tax zero beta version of the Capital Asset Pricing Model:

$$E(\tilde{R}_i)=(a+r_f)(1-\beta_i)+E(\tilde{R}_m)\beta_i. \tag{18}$$

Note that this obtains in the presence of taxes. Long (1975) has studied conditions under which the before tax and after-tax mean variance efficient frontiers are identical for any individual. He does not, however, study the equilibrium as is done here: for even though the before tax and after-tax individual mean variance frontiers are not identical, (18) demonstrates that prices are found as if there is no tax effect.

In the case where there are no margin constraints, $a=0$, and relation (18) reduces to the before tax traditional Sharpe–Lintner version of the Capital Asset Pricing Model,

$$E(\tilde{R}_i)=r_f+[E(\tilde{R}_m)-r_f]\beta_i. \tag{19}$$

Return now to the case where the income related borrowing constraint is absent. Then, in (16), $c=\sum_k T^k(\theta^k/\theta^m)\equiv T^m$, the 'market' marginal tax bracket: and the relation reduces to an after-tax version of the Black (1972), Lintner (1965), Vasicek (1971) zero beta model,

$$E(\tilde{R}_i)-T^m d_i=[r_f(1-T^m)+a](1-\beta_i)+(E(\tilde{R}_m)-T^m d_m)\beta_i. \tag{20}$$

When there is no margin constraint or when it is non-binding for all individuals, $a=0$, and relation (20) reduced to an after-tax version of the Sharpe (1964), Lintner (1965) model,

$$E(\tilde{R}_i)-T^m d_i=[r_f(1-T^m)]+[E(\tilde{R}_m)-T^m d^m-r_f(1-T^m)]\beta_i. \tag{21}$$

However, in none of these cases is T^m a weighted average of individual

[2]Note, however, that this equilibrium, where dividends do not affect before tax returns, may not exist. For example, the income constraint may be binding for no one even when dividends are zero. If all individuals had the same endowments and had the same utility functions this constraint would be non-binding for all individuals.

[3]This argument is in the spirit of the 'supply effect' alluded to in Black and Scholes (1974). Unlike the recent argument in Miller and Scholes (1977) for a zero dividend effect, the present argument does not depend on an artificial segmentation of accumulators and non-accumulators, and the existence of tax-sheltered lending opportunities with zero administrative costs. The major problem with the argument here is that with the existence of two distinct clienteles, one preferring higher dividends and the other preferring lower dividends, shareholders would not agree on the direction in which firms should change their dividend. Thus the assertion of value maximizing behavior by firms does not have a strong theoretical basis.

average tax rates. It is only when taxes are simply proportional to income that $T^k=t^k$, and relation (21) is identical to the equilibrium implied by Brennan (1973), who assumes a constant tax rate that may differ across investors.

3. Empirical tests

From the theory, the equilibrium specification to be tested is

$$E(\tilde{R}_i)-r_f=a+b\beta_i+c(d_i-r_f). \tag{22}$$

The hypotheses are $a>0$, $b>0$ and in the absence of the income related constraint on borrowing $c>0$.

In obtaining econometric estimates of a, b and c, two problems arise. The first is that expectations are not directly observed. The usual procedure is to assume that expectations are rational and that the parameters a, b and c are constant over time; the realized returns are used on the left-hand side

$$\tilde{R}_{it}-r_{ft}=\gamma_0+\gamma_1\beta_{it}+\gamma_2(d_{it}-r_{ft})+\tilde{\varepsilon}_{it}, \qquad i=1,2,\ldots,N_t, \quad t=1,2,\ldots,T, \tag{23}$$

where $\tilde{R}_{it}$ is the return of security i in period t, β_{it} and d_{it} are the systematic risk and the dividend yield of security i in period t respectively. The disturbance term $\tilde{\varepsilon}_{it}$ is $\tilde{R}_{it}-E(\tilde{R}_{it})$, the deviation of the realized return from its expected value. The coefficients γ_0, γ_1 and γ_2 correspond to a, b and c. The variance of the column vector of disturbance terms, $\tilde{\varepsilon}\equiv\{\tilde{\varepsilon}_{it}: i=1,2,\ldots,N_t, t=1,\ldots,T\}$, is not proportional to the identity matrix, since contemporaneous covariances between security returns are non-zero, and return variances differ across securities. (Note that in order to conserve space '{ }' is used to denote a column vector.) This means that ordinary least squares (OLS) estimators are inefficient, for either a cross-sectional regression in month t, or a pooled time series and cross-sectional regression. The computed variance of the OLS estimator (based on the assumption that the variance of $\tilde{\varepsilon}$ is proportional to the identity matrix) is not equal to the true variance of the estimator.

The second problem is that the true population β_{it}'s are unobservable. The usual procedure uses an estimate from past data, and this estimate has an associated measurement error. This means that the OLS estimates will be biased and inconsistent. The method used in tackling these problems is discussed in this section.

To fix matters, assume that data exist for rates of return, true betas and for dividend yields in periods t, $i=1,2,\ldots,N_t$ securities in each period t, $t=1,\ldots,T$. Define the vector of realized excess returns as

$$\tilde{R} \equiv \{\tilde{R}_1 \tilde{R}_2, \ldots, \tilde{R}_t, \ldots, \tilde{R}_T\},$$

where

$$\tilde{R}_t \equiv \{(\tilde{R}_{1t} - r_{ft})(\tilde{R}_{2t} - r_{ft})(\tilde{R}_{it} - r_{ft}), \ldots, (\tilde{R}_{N_t t} - r_{ft})\},$$

and the matrices X of explanatory variables as

$$X \equiv \{X_1 X_2, \ldots, X_t, \ldots, X_T\},$$

where

$$X_t \equiv \begin{bmatrix} 1 & \beta_{1t} & (d_{1t} - r_{ft}) \\ 1 & \beta_{2t} & (d_{2t} - r_{ft}) \\ \vdots & \vdots & \\ 1 & \beta_{N_t t} & (d_{N_t t} - r_{ft}) \end{bmatrix}.$$

By defining the vector of regression coefficients as $\Gamma = \{\gamma_0 \gamma_1 \gamma_2\}$ one can write the pooled time series and cross-sectional regression as

$$\tilde{R} = X\Gamma + \tilde{\varepsilon}, \tag{24}$$

where

$$\tilde{\varepsilon} \equiv \{\tilde{\varepsilon}_1 \tilde{\varepsilon}_2, \ldots, \tilde{\varepsilon}_t, \ldots, \tilde{\varepsilon}_T\},$$

and

$$\tilde{\varepsilon}_t \equiv \{\tilde{\varepsilon}_{1t} \tilde{\varepsilon}_{2t}, \ldots, \tilde{\varepsilon}_{it}, \ldots, \tilde{\varepsilon}_{N_t t}\}.$$

It is assumed that

$$E(\tilde{\varepsilon}) = 0,$$

and that

$$E(\tilde{\varepsilon}_t \tilde{\varepsilon}_t') = V_t,$$

some symmetric positive definite matrix of order $(N_t \times N_t)$. It is also assumed that security returns are serially uncorrelated, so that

$$E(\tilde{\varepsilon}_{it} \tilde{\varepsilon}_{js}) = 0 \quad \text{for} \quad t \neq s.$$

This means that the variance–covariance matrix $V \equiv E(\tilde{\varepsilon}\tilde{\varepsilon}')$ is block diagonal, with the off-diagonal blocks being zero. The matrices V_t appears along the diagonal of V.

It is well known that the estimator for Γ which is linear in $\tilde{R}$, unbiased and has minimum variance is unique, and is given by the Aitken or Generalized Least Squares estimator (GLS),

$$\hat{\Gamma} = (X'V^{-1}X)^{-1}X'V^{-1}\tilde{R}. \tag{25}$$

From the block diagonal nature of V, it follows that V^{-1} is also block diagonal. The matrices V_t^{-1}, $t = 1, 2, \ldots, T$, appear along the diagonal of V^{-1}, with the off-diagonal blocks being zero. Assuming that Γ is an intertemporal constant, Γ can be estimated by efficiently pooling T independent GLS estimates of Γ, namely $\hat{\Gamma}_1, \hat{\Gamma}_2, \ldots, \hat{\Gamma}_t, \ldots, \hat{\Gamma}_T$, obtained by using cross-sectional data in periods $1, 2, \ldots, t, \ldots, T$,

$$\hat{\Gamma}_t = (X_t'V_t^{-1}X_t)^{-1}X_t'V_t^{-1}\tilde{R}_t, \quad t = 1, 2, \ldots, T. \tag{26}$$

That is, the monthly estimators $\hat{\gamma}_{kt}$ for γ_k, $k = 0$, 1 or 2, are serially uncorrelated, and the pooled GLS estimator $\hat{\gamma}_k$ is found as the weighted mean of the monthly estimates, where the weights are inversely proportional to the variances of these estimates,

$$\hat{\gamma}_k = \sum_{t=1}^{T} Z_{kt} \hat{\gamma}_{kt}, \tag{27}$$

$$\operatorname{var}(\hat{\gamma}_k) = \sum_{t=1}^{T} Z_{kt}^2 \operatorname{var}(\hat{\gamma}_{kt}), \tag{28}$$

$$Z_{kt} = [\operatorname{var}(\hat{\gamma}_{kt})]^{-1} \Big/ \sum_t [\operatorname{var}(\hat{\gamma}_{kt})]^{-1}. \tag{29}$$

For some of the results presented in section 4 each $\hat{\gamma}_{kt}$ is assumed to be drawn from a stationary distribution, and the estimates of $\hat{\gamma}_k$ and its variance are

$$\hat{\gamma}_k = \sum_{t=1}^{T} (\hat{\gamma}_{kt}/T), \tag{30}$$

$$\hat{\sigma}^2(\hat{\gamma}_k) = \left[\sum_{t=1}^{T} (\hat{\gamma}_{kt} - \hat{\gamma}_k)^2 / T(T-1)\right], \quad k = 0, 1, 2. \tag{31}$$

A useful portfolio interpretation can be given to each of the GLS estimators $\hat{\Gamma}_t$ in (26). Choose any matrix numbers of order $N_t \times N_t$, say W_t^{-1}, such that $(X_t' W_t^{-1} X_t)^{-1}$ exists. Construct an estimator, using cross-sectional data in period t, as

$$(X_t' W_t^{-1} X_t)^{-1} X_t' W_t^{-1} \tilde{R}_t. \tag{32}$$

This estimator is linear in $\tilde{R}_t$ and unbiased for Γ. This estimator is a linear combination of realized security excess returns in period t. From the fact that

$$(X_t' W_t^{-1} X_t)^{-1} X_t' W_t^{-1} X_t = I, \tag{33}$$

where I is the identity matrix, it follows that the estimator for γ_0 in (32) is the realized excess return on a zero beta portfolio having a dividend yield equal to the riskless rate. Similarly, the estimator for γ_1 is the realized excess return on a hedge portfolio that has a beta of one and dividend yield equal to zero; and that for γ_2 is the realized excess return on a hedge portfolio having a zero beta and a dividend yield equal to unity. This interpretation[3] can be given to any estimator of the form (32). When W_t^{-1} (or, equivalently, the portfolio weights discussed above) is chosen so as to minimize the variance of the portfolio return, the resulting estimator is the GLS estimator. This is because portfolio estimates as in (32) are linear and unbiased by construction, and by the Gauss–Markov theorem the GLS estimator is the unique minimum variance estimator among linear unbiased estimators [see Amemiya (1972)].

It is not possible to specify the elements of the variance–covariance matrix V_t a priori. The task of estimating these elements is greatly simplified by assuming that the Sharpe single index model is a correct description of the return generating process. The process that generates returns at the beginning of period t is assumed to be as follows:

$$\tilde{R}_{it} = \alpha_{it} + \beta_{it}\tilde{R}_{mt} + \tilde{\varepsilon}_{it}, \qquad i = 1, 2, \ldots, N_t, \tag{34}$$

$$\begin{aligned} \operatorname{cov}(\tilde{\varepsilon}_{it}, \tilde{\varepsilon}_{jt}) &= 0, \qquad i \neq j, \\ &= s_{iit}, \qquad i = j, \end{aligned} \tag{35}$$

$$\alpha_{it} = E(\tilde{R}_{it} \mid R_{mt} = 0).$$

With this specification the element in the ith row and the jth column of V_t, written as $V_t(i,j)$, is given by

$$\begin{aligned} V_t(i,j) &= \beta_{it}\beta_{jt}\sigma_{mmt}, \qquad i \neq j, \\ &= \beta_{it}^2\sigma_{mmt} + s_{iit}, \quad i = j, \end{aligned} \qquad i,j = 1, 2, \ldots, N_t, \tag{36}$$

[3] For a similar interpretation, see Rosenberg and Marathe (1978).

where

$$\sigma_{mmt} \equiv \operatorname{var}(\tilde{R}_{mt}).$$

Under these conditions the GLS estimator of Γ obtained by using data in period t reduces to

$$\hat{\Gamma}_t = (X_t' \Omega_t^{-1} X_t)^{-1} X_t' \Omega_t^{-1} R_t, \tag{37}$$

where Ω_t is a diagonal matrix of order $(N_t \times N_t)$, whose element in the ith row and jth column is given by

$$\begin{aligned} \Omega_t(i,j) &= 0, \qquad i \neq j, \\ &= s_{iit}, \qquad i = j, \end{aligned} \qquad i,j = 1, 2, \ldots, N_t. \tag{38}$$

In appendix A it is shown that this estimator is the GLS estimator for Γ. That is, under the assumptions of the single index model, the estimator minimizes the 'residual risk' of three portfolio returns, subject to the constraint that the expected returns on these portfolios are γ_0, γ_1 and γ_2 respectively. This estimator can be constructed as a heteroscedastic transformation on $\tilde{R}_t$ and X_t. Define the matrix P_t of order $(N_t \times N_t)$ whose elements are given by

$$\begin{aligned} P_t(i,j) &= \phi/s_i \equiv \phi/\sqrt{s_{iit}}, \qquad i = j \\ &= 0, \qquad i \neq j, \end{aligned} \tag{39}$$

where ϕ is a positive scalar. Then $\hat{\Gamma}_t$ can also be arrived at from the OLS regression on the transformed variables,

$$\tilde{R}_t^* = X_t^* \Gamma + \tilde{\varepsilon}_t^*, \tag{40}$$

where

$$\tilde{R}_t^* = P\tilde{R}_t \quad \text{and} \quad X_t^* = PX_t.$$

This is equivalent to deflating the variables in the ith rows of $\tilde{R}_t$ and X_t by a factor proportional to the residual standard error s_i. Note that Black and Scholes (1974), who used the portfolio approach, assumed in addition to the single index model that the 'residual' risks of all securities were equal; that is, they assumed that $s_{ii} = s^2$ for all i. Therefore, the Black–Scholes estimator reduces to OLS on the untransformed variables.

Errors in variables. Since true population β_{it} variables are unobserved, estimates of this variable, $\hat{\beta}_{it}$ are obtained from historical data. The estimated beta is assumed equal to the true beta plus a measurement error $\tilde{v}_{it}$,

$$\hat{\beta}_{it} = \beta_{it} + \tilde{v}_{it}. \tag{41}$$

The presence of measurement error causes a misspecification in OLS and GLS estimators, and the resulting estimates of Γ are biased and inconsistent [see, for example, Johnston (1972), for a discussion of the bias in the coefficients of a variable without error, here dividend yield; see Fisher (1977)]. The estimates $\hat{\beta}_{it}$ are obtained from a regression of $\tilde{R}_{i\tau}$ on the return of the market portfolio $\tilde{R}_{m\tau}$ from data prior to period t,

$$\tilde{R}_{i\tau} = \alpha_{it} + \beta_{it}\tilde{R}_{m\tau} + \tilde{e}_{i\tau}, \qquad \tau = t-60, t-59, \ldots, t-1. \tag{42}$$

Since the single index model is assumed, $\text{cov}(\tilde{e}_{i\tau}, \tilde{e}_{j\tau}) = 0$ and hence $\text{cov}(\tilde{v}_{it}, \tilde{v}_{jt}) = 0$. If the joint probability distribution between security rates of return and market return is stationary, the variance of the measurement error $\text{var}(\tilde{v}_{it})$ is proportional to the variance of the residual risk term $\text{var}(\tilde{e}_{it})$, for each i. Since month t is not used in this time series regression, $\text{cov}(\tilde{e}_{it}, \tilde{v}_{it}) = 0$. Note that this time series regression yields a measured beta, $\hat{\beta}_{it}$, its variance $\text{var}(\tilde{v}_{it})$ and the variance of the residual risk term $\text{var}(\tilde{e}_{it}) = s_{it}$.

Consistent with prior empirical studies, the assumption $E(\tilde{v}_{it}) = 0$ has been made. However, it is recognized that if the 'market return' used in (42) is not the true market return, then the estimate of β_{it} may be biased, as has been observed by Sharpe (1977), Mayers (1972) and Roll (1977).

Because of errors in variables, most previous empirical tests have grouped stocks into portfolios. Since errors in measurement in betas for different securities are less than perfectly correlated, grouping risky assets into portfolios would reduce the asymptotic bias in OLS estimators. However, grouping results in a reduction of efficiency caused by the loss of information. The efficiency of the OLS estimator of the coefficient of a single independent variable is proportional to the cross sectional variation in that independent variable (beta). For the two independent variables case (dividend yield and beta), Stehle (1976) has shown that the efficiency of the OLS estimator of the coefficient of a given independent variable, using grouped data, is proportional to the cross-sectional variation in that variable unexplained by the variation in the other independent variable. Since the within group variation in dividend yield unexplained by beta is eliminated, the efficiency of the estimate of the dividend yield coefficient using grouped data is lower than that using all the data.[4] For this reason the present study does not use the grouping approach to errors in variables. Instead, use is made of the measurement error in beta to arrive at a consistent estimator for Γ.

In constructing the GLS estimator $\hat{\Gamma}_t$ in (37), each variable has been deflated by a factor proportional to the residual standard deviation. The factor of proportionality was an arbitrary positive scalar. The structure of our problem is such that the standard error of measurement in $\hat{\beta}_{it}$, $\sigma_i = (\text{var}(\tilde{v}_{it}))^{\frac{1}{2}}$, is proportional to the standard deviation of residual risk, $s_i = (\text{var}(\tilde{e}_{it}))^{\frac{1}{2}}$. That is, if the time series regression model satisfies the OLS assumptions,

$$\sigma_i = s_i \Bigg/ \left(\sum_{\tau=t-60}^{t-1} (\tilde{R}_{m\tau} - \bar{R}_m)^2 \right)^{\frac{1}{2}}, \tag{43}$$

where $\bar{R}_m$ is the sample mean of the market return in the prior 60 month period.[5] Assume that σ_i is known and let

$$\phi = s_{ij}/\sigma_i, \tag{44}$$

in the definition of P in (39). Thus each variable in the rows of $\tilde{R}_t$ and X_t is now deflated by the standard deviation of the measurement error in β_{it}. If $\hat{\beta}_{it}$ is used in place of β_{it} (unobserved), the measurement error in the deflated independent variable, $\hat{\beta}^* = \hat{\beta}_{it}/\sigma_i$ will now have unit variance.

Call the matrix of regressors used $\hat{X}_t^*$, which is simply X_t^* with $\hat{\beta}_{it}$ replacing β_{it}. Then

$$\hat{X}_t^* = X_t^* + \begin{bmatrix} 0 & \tilde{v}_{1t}/\sigma_1 & 0 \\ 0 & \tilde{v}_{2t}/\sigma_2 & 0 \\ \vdots & \vdots & \vdots \\ 0 & \tilde{v}_{N_t t}/\sigma_{N_t} & 0 \end{bmatrix}, \tag{45}$$

where $\text{var}(\tilde{v}_{it}/\sigma_i) = 1$. Then the computed overall estimator

[4] The variance of the OLS estimator of the second independent variable (dividend yield) is equal to the variance of the error term divided by the portion of its variation that is unexplained by the first independent variable (beta). Therefore, unless the independent variables are uncorrelated sequential grouping procedures as used by Black and Scholes (1974) are inefficient relative to grouping procedures that maximize the between group variation in dividend yield that is unexplained by the between group variation in beta.

[5] In the actual estimation, risk premiums were used. That is, $\tilde{R}_{it} - r_{ft}$ was regressed on $\tilde{R}_{mt} - r_{ft}$ to estimate β_{it}, as explained in section 4 below. Thus in the computation in (43), $(\tilde{R}_{mt} - r_{ft} - \overline{R_m - r_f})^2$ is used in place of $(\tilde{R}_{m\tau} - \bar{R}_m)^2$.

$$\hat{\Gamma} = \sum_{t=1}^{T} (\hat{\Gamma}_t / T), \tag{46}$$

where

$$\hat{\Gamma}_t = (\hat{X}_t^{*\prime} \hat{X}_t^*)^{-1} \hat{X}_t^{*\prime} \tilde{R}_t^* \tag{47}$$

is inconsistent. This is because

$$\underset{N_t}{\text{plim}}\, \hat{\Gamma}_t = \left(\Sigma_{X_t^* X_t^*} + \begin{pmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{pmatrix} \right)^{-1} \frac{X_t^{*\prime} \tilde{R}_t}{N_t}, \tag{48}$$

where

$$\Sigma_{X_t^* X_t^*} = \underset{N_t}{\text{plim}} \frac{X_t^{*\prime} X_t^*}{N_t}.$$

This says that each cross sectional estimator is biased even in large samples. Hence the overall estimator, being an arithmetic mean of the cross-sectional estimators, is inconsistent.

Consider the following estimator in each cross sectional month:

$$\hat{\Gamma}_t = \left(\frac{\hat{X}_t^{*\prime} \hat{X}_t^*}{N_t} - \begin{pmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{pmatrix} \right)^{-1} \frac{\hat{X}_t^{*\prime} R_t^*}{N_t}. \tag{49}$$

Then

$$\underset{N_t}{\text{plim}}\, \hat{\Gamma} = \frac{X_t^{*\prime} \tilde{R}_t}{X_t^{*\prime} X_t^*}, \tag{50}$$

and

$$E\left(\underset{N_t}{\text{plim}}\, \hat{\Gamma}_t \right) = \frac{X_t^{*\prime} E(\tilde{R}_t^*)}{X_t^{*\prime} X_t^*} = \Gamma. \tag{51}$$

Thus each cross-sectional estimator is unbiased, in large samples, for Γ.

Note that a portfolio interpretation can also be given to (47). Since

$$\underset{N_t}{\text{plim}} \left(\frac{\hat{X}_t^{*\prime} \hat{X}_t^*}{N_t} - \begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix} \right)^{-1} \frac{\hat{X}_t^{*\prime} X_t^*}{N_t} = I, \tag{52}$$

it follows that the estimator for γ_0 in (47) is the realized excess return on a normal portfolio that has, in probability limit, a zero beta and a dividend yield equal to the riskless rate. Similarly the estimator for γ_1 (or γ_2) is the realized excess return on a hedge portfolio that has, in probability limit, a beta of one (or zero) and a dividend yield equal to zero (or unity).

The overall estimator,

$$\hat{\hat{\Gamma}} = \sum_{t=1}^{T} (\hat{\hat{\Gamma}}_t / T), \tag{53}$$

combines T independent estimates, and is consistent,

$$\underset{T}{\text{plim}} \left[\underset{N_t}{\text{plim}} \sum_{t=1}^{T} (\hat{\hat{\Gamma}}_t / T) \right] = \Gamma. \tag{54}$$

It is shown in appendix B that, if $\tilde{e}_{it}$ and $\tilde{\varepsilon}_{it}$ are jointly normal and independent, then $\hat{\hat{\Gamma}}_t$ is the maximum likelihood estimator (MLE) for Γ, using data in period t.

4. Data and results

Data on security rates of return (R_{it}) were obtained from the monthly return tapes supplied by the Center for Research in Security Prices (CRSP) at the University of Chicago. The same service provides the monthly return on a value weighted index of all the securities on the tape, and this index was used as the market return (R_{mt}) for the time series regressions. From January 1931 until December 1951, the monthly return on high grade commercial paper was used as the return on the riskless asset (r_{ft}); from January 1952 until December 1977 the return on a Treasury Bill (with one month to maturity) was used for r_{ft}. Estimates of each security's beta, $\hat{\beta}_{it}$, and its associated standard error were obtained from regressions of the security excess return on the market excess return for 60 months prior to t,

$$\tilde{R}_{i\tau} - r_{f\tau} = \alpha_{it} + \beta_{it}(\tilde{R}_{m\tau} - r_{f\tau}) + \tilde{e}_{i\tau}, \quad \tau = t-60, t-59, \ldots, t-1. \tag{55}$$

This was repeated for all securities on the CRSP tapes from $t = 1$ (January 1936) to $t = T = 504$ (December 1977). January 1936 was chosen as the initial month for (subsequent) cross-sectional regressions because that was when dividends first became taxable.

To conduct the cross-sectional regression, the dividend yield variable (d_{it}) was computed from the CRSP monthly master file. This is

$$d_{it} = 0,$$

if in month t, security i did not go ex-dividend; or if it did, it was a non-recurring dividend not announced prior to month t;

$$d_{it} = \hat{D}_{it}/P_{it-1},$$

if in month t, security i went ex-dividend, and the dollar taxable dividend D_{it} per share was announced prior to month t; and

$$d_{it} = \hat{D}_{it}/P_{it-1},$$

if in month t security i went ex-dividend and this was a recurring dividend not previously announced. Here $\hat{D}_{it}$ was the previous (going back at most 12 months), recurring, taxable dividend per share, adjusted for any changes in the number of shares outstanding in the interim; where P_{it-1} is the closing price in month $t-1$.

This construction assumes that the investor knows at the end of each month whether or not the subsequent month is an ex-dividend month for a recurring dividend. However, the surrogate for the dividend is based only on information that would have been available ex ante to the investor.

The cross-sectional regressions in each month provide a sequence of estimates $\{(\hat{\gamma}_{0t}, \hat{\gamma}_{1t}, \hat{\gamma}_{2t}),\ t = 1, 2, \ldots, 504\}$. Three such sequences are available: the first uses OLS, the second uses GLS and the third uses maximum likelihood estimation. The econometric procedures developed in section 3 apply equally well to the single variable regression, excess returns on beta alone. This corresponds to a test of the two factor Capital Asset Pricing Model, as in Black, Jensen and Scholes (1972) and Fama and MacBeth (1973),

$$\tilde{R}_{it} - r_{ft} = \hat{\gamma}'_0 + \hat{\gamma}'_1 \beta_{it} + \tilde{u}_{it}, \qquad i = 1, 2, \ldots, N_t, \quad t = 1, 2, \ldots, 504, \tag{56}$$

where $\tilde{u}_{it}$ is the deviation of $\tilde{R}_{it}$ from its expected value. These cross sectional regressions provide three sequences $\{(\hat{\gamma}'_{0t}, \hat{\gamma}'_{1t}),\ t = 1, 2, \ldots, 504\}$, the first using OLS, the second using GLS and the third using maximum likelihood estimation.

The estimated coefficients were shown to be realized excess rates of return on portfolios (with certain characteristics)[6] in month t. It is assumed that the excess rates of return on these portfolios are stationary and serially uncorrelated. Under these conditions the most efficient estimators of the expected excess return on these portfolios would be the unweighted means of the monthly realized excess returns. The sample variance of the mean is computed as the time series sample variance of the respective portfolio returns divided by the number of months,

$$\hat{\gamma}_k = \sum_{t=1}^{504} \hat{\gamma}_{kt} \Big/ 504, \qquad k = 0, 1, 2, \tag{57}$$

$$\mathrm{var}(\hat{\gamma}_k) = \sum_{t=1}^{504} (\hat{\gamma}_{kt} - \hat{\gamma}_k)^2/(504 \cdot 503). \tag{58}$$

A similar computation is made for $\hat{\gamma}'_0$ and $\hat{\gamma}'_1$.

The three sets of estimators of γ_0, γ_1 and γ_2 (and of γ'_0 and γ'_1) and their respective t-statistics for the overall period January 1936 to December 1977 are provided in Panel A (Panel B) of table 1.

[6] See section 3, and also appendix A.

Table 1

Pooled time series and cross section estimates of the after-tax and the before-tax CAPM: 1936–1977.[a]

	Panel A: After-tax model			Panel B: Before-tax model	
Procedure	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}'_0$	$\hat{\gamma}'_1$
OLS	0.00616 (4.37)	0.00268 (1.51)	0.227 (6.33)	0.00681 (4.84)	0.00228 (1.26)
GLS	0.00446 (3.53)	0.00344 (1.87)	0.234 (8.24)	0.00516 (4.09)	0.00302 (1.63)
MLE	0.00363 (2.63)	0.00421 (1.86)	0.236 (8.62)	0.00443 (3.22)	0.00369 (1.62)

[a] *Notes:* The after-tax version corresponds to the regression

$$\tilde{R}_{it} - r_{ft} = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (d_{it} - r_{ft}) + \tilde{\varepsilon}_{it}, \quad i = 1, 2, \ldots, N_t,\ t = 1, 2, \ldots, T.$$

The before-tax version corresponds to the regression

$$\tilde{R}_{it} - \tilde{r}_{ft} = \gamma'_0 + \gamma'_1 \beta_{it} + \tilde{\mu}_{it}, \quad i = 1, 2, \ldots, N_t,\ t = 1, 2, \ldots, T.$$

Each regression above is performed across securities in a given month. This gives estimates $\{\hat{\gamma}_{0t}, \hat{\gamma}_{1t}, \hat{\gamma}_{2t};\ t = 1, 2, \ldots, T\}$ and $\{\hat{\gamma}'_{0t}, \hat{\gamma}'_{1t};\ t = 1, 2, \ldots, T\}$. The reported coefficients are arithmetic averages of this time series; for example,

$$\hat{\gamma}_1 = \sum_{t=1}^{T} \frac{\hat{\gamma}_{1t}}{T},$$

where $T = 504$, t-statistics are in parentheses under each coefficient, and they refer to $t(\hat{\gamma}_j)$ where $j = 1, 2, 3$.

The OLS and GLS estimators are biased and inconsistent due to measurement error in beta. The maximum likelihood estimators are consistent: consistency is a large sample property and for this study the monthly cross sectional regressions have between 600 and 1200 firms, and there were 504 months.[7] In Panel A, table 1, the MLE estimator of γ_1 is about 60 percent greater than the corresponding GLS estimator. Consistent with prior studies, the MLE estimator of γ_1 is significantly positive, indicating that investors are risk averse. Also consistent with prior studies, the MLE estimator of γ_0 is significantly positive. In Panel B, tests of the two factor model are presented. Note that in both panels, the GLS procedure results in an increase in the efficiency of the estimator of γ_1, which is $\hat{\gamma}_1$ ($\hat{\gamma}_1'$) in Panel A (Panel B). Consistent with prior tests of the traditional version of the Capital Asset Pricing Model, the null hypothesis that $\hat{\gamma}_0'=0$ is rejected. Consistent with investor risk aversion $\hat{\gamma}_1'$ is significantly positive at the 0.1 level. Explanations for a positive intercept ($\gamma_0>0$) include, in addition to margin constraints on borrowing, misspecification of the market porfolio [see Mayers (1972), Sharpe (1977) and Roll (1977)], or beta serving as a surrogate for systematic skewness [see Kraus and Litzenberger (1976)].

The coefficient of the excess dividend yield variable, $\hat{\gamma}_2$, (Panel A) is highly significant under all the estimating procedures. The standard errors of the GLS and maximum likelihood estimators of γ_2 are about 25 percent smaller than that of the OLS estimator. The magnitude of the coefficient indicates that for every dollar of taxable return investors require between 23 and 24 cents of additional before tax return.

While the finding of a significant dividend coefficient contrasts with the Black–Scholes (1974) finding of an insignificant dividend effect, the magnitude of the coefficient in table 1 is consistent with their study. The dividend yield (independent) variable they used was $(d_i-d_m)/d_m$, where d_m was the average dividend yield on stocks. Since the coefficient they found was 0.0009, and the average annual yield in their period of study (1936–1966) was 0.048, their estimate of γ_2 can be approximated by 0.0009/(0.048/12), or 0.225.

It has been assumed that the variance of the estimator of Γ is constant over time. If, due to the quarterly patterns in the incidence of dividend payments, the variances of the estimators are not constant, the equally weighted estimators in (50) are inefficient relative to an estimator that accounts for any seasonal pattern in the variance. Since dividends are usually paid once every quarter, it is possible to compute three independent estimates of Γ by averaging the coefficients obtained in only the first, only the second and only the third month of each quarter. These three estimates of Γ may be weighted by the inverse of their variances to obtain a more efficient estimator. This is provided in table 2. As can be seen from this table, the overall estimator for γ_2 is very close to the MLE estimate in table 1. The estimate of the standard error of $\hat{\gamma}_2$ is approximately the same for the first two months, but about 30 percent less for the third month.

[7] Consistency here is with respect to the overall estimator so one takes probability limits with respect to t and with respect to N_t. See section 3.

Table 2

Pooled time series and cross section estimates of the after-tax CAPM: 1936–1977 (based on quarterly dividend patterns).[a]

Month of quarter	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$
First	0.00748 (0.00234)	0.00770 (0.00379)	0.28932 (0.05415)
Second	0.00212 (0.00232)	0.00071 (0.00335)	0.23531 (0.05034)
Third	0.00134 (0.00248)	0.00399 (0.00453)	0.18940 (0.03534)
Overall estimate	0.00373 (0.00137)	0.00383 (0.00219)	0.22335 (0.02552)

[a] Notes: The after-tax version corresponds to the regression

$$\tilde{R}_{it}-r_{ft}=\gamma_0+\gamma_1\beta_{it}+\gamma_2(d_{it}-r_{ft}),\quad i=1,2,\ldots,N_t.$$

This regression is performed across securities in a given month t. Maximum likelihood estimation is used. The reported coefficients are arithmetic averages of the coefficients obtained over time (see note to table 1). The first three rows use the estimates from only the first, only the second and only the third months of each quarter. There are 168 months' estimates in each row. Standard errors are in parentheses under each coefficient. The 'overall estimates' use the estimates in each row above, weighted inversely by their variances.

It may be inappropriate to treat γ_2 as an intertemporal constant: in the absence of income related constraints on borrowing, γ_2 is a weighted average of individuals' marginal tax rates, which may have changed over time. Assume that investors have utility functions that display decreasing absolute risk aversion and non-decreasing relative risk aversion. Assume in addition that the distribution of wealth is independent of individual utility functions. Under these conditions the weight of the marginal tax rates of individuals in the higher tax brackets would be greater than that of individuals in lower tax brackets. Holland (1962) has shown that from 1936 to 1960 there was no pronounced upward trend in the marginal tax rates of individuals with taxable income in excess of $25,000. To examine empirically whether there is evidence of an upward trend in γ_2 over time, the maximum likelihood results are presented for six subperiods in table 3. The estimators of γ_2 for the subperiods were consistently positive and, except for the 1/1955 to 12/1961 period, significantly different from zero. There does not appear to be a trend to the estimate.

Table 3

Pooled time series and cross section estimates of the after-tax CAPM (for 6 subperiods).[a]

Period	$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$
1/36–12/40	−0.00287 (−0.52)	0.00728 (0.65)	0.335 (2.64)
1/41–12/47	0.00454 (1.44)	0.00703 (1.59)	0.408 (7.35)
1/48–12/54	0.00528 (2.77)	0.00617 (1.45)	0.158 (4.37)
1/55–12/61	0.01355 (5.62)	−0.00316 (−0.78)	0.018 (0.32)
1/62–12/68	−0.00164 (−0.47)	0.01063 (1.95)	0.171 (2.33)
1/69–12/77	0.00164 (0.47)	−0.00045 (−0.09)	0.329 (6.00)

[a]Notes: The after-tax version corresponds to the regression

$$\tilde{R}_{it}-r_{ft}=\gamma_0+\gamma_1\hat{\beta}_{it}+\gamma_2(d_{it}-r_{ft})+\tilde{\varepsilon}_{it},\quad i=1,2,\dots,N_t,\ t=1,2,\dots,T.$$

Maximum likelihood estimation is used for the cross sectional regression. The reported coefficients are arithmetic averages of the coefficients estimated in the months in the period (see note to table 1). t-statistics are in parentheses under each coefficient.

It is possible that the positive coefficient on dividend yield is not a tax effect and that in non-ex-dividend months the effect completely reverses itself. If dividends are paid quarterly there would be twice as many non-ex-dividend months as ex-dividend months. Thus, a complete reversal would require a negative effect on returns in each non-ex-dividend month that is half the absolute size of the effect in an ex-dividend month. It is also possible that a stock's dividend yield is a proxy for the covariance of its return with classes of assets not included in the value weighted index of NYSE stocks used to calculate betas in the present study. If the coefficient on dividend yield is entirely due to the effects of omitted assets, the effect in non-ex-dividend months should be positive and the same size as the effect in ex-dividend months.

In order to test whether there is a reversal effect or a re-inforcing effect in non-ex-dividend months the following cross-sectional regression was estimated:

$$\tilde{R}_{it}-r_{ft}=\gamma_0+\gamma_1\hat{\beta}_{it}+\gamma_2\{\delta_{it}d_{it}^0-r_{ft}\}+\gamma_3\{(1-\delta_{it})d_{it}^0\}+\tilde{\varepsilon}_{it},\quad i=1,2,\dots,N_t \qquad (59)$$

where

$$d_{it}^0=D_{it}/P_{it-1},$$

if a dividend was announced prior to month t, to go ex-dividend in month t;

$$d_{it}^0=\hat{D}_{it}/P_{it-1}$$

otherwise; and

$$\delta_{it}=1,$$

if month t was an ex-dividend month for a recurring dividend;

$$\delta_{it}=0,$$

otherwise.

The variable $(1-\delta_{it})d_{it}^0$ is intended to pick up the effect of a dividend payment in subsequent, non-ex-dividend months. The variable $\delta_{it}d_{it}^0$ is identical to d_{it}, the variable used earlier. If dividends are paid quarterly, and γ_3 is negative and has an absolute value half the size of γ_2, then one can conclude that there is a complete reversal over the course of the quarter so that there is no net tax effect. On the other hand, if there is no reversal, γ_3 should not be significantly negative.

The MLE estimates of the coefficients in (52) are presented in table 4. The estimated value of $\hat{\gamma}_3$ is positive and significantly different from zero: this rejects the hypothesis that there is complete reversal.

The significant positive γ_3 is evidence of a re-inforcing effect in non-ex-dividend months. If the coefficient on dividend yield is entirely attributable

Table 4

Pooled time series and cross section test of the reversal effect of dividend yield: 1936–1977.[a]

$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}_3$
0.00184 (1.29)	0.00493 (2.17)	0.32784 (7.31)	0.10321 (2.87)

[a]Notes: The regression performed in each month is

$$\tilde{R}_{it}-r_{ft}=\gamma_0+\gamma_1\hat{\beta}_{it}+\gamma_2\{\delta_{it}d_{it}^0-r_{ft}\}+\gamma_3(1-\delta_{it})d_{it}^0+\tilde{\varepsilon}_{it},\quad i=1,2,\dots,N_t,\ t=1,2,\dots,T.$$

Maximum likelihood estimation is used for the cross-sectional regression. The reported coefficients are arithmetic averages of the coefficients in each month (see note to table 1). t-statistics are in parentheses under each coefficient.

to the effect of omitted assets γ_3^* should be the same order of magnitude as γ_2. If the effect in ex-dividend months exceeds the combined effect in the subsequent two non-ex-dividend months γ_2 should be more than twice as large as γ_3. $\hat{\gamma}_2 - 2\hat{\gamma}_3$ is 0.1214 and has a t-value of 2.79. Thus, the effect in an ex-dividend month is more than twice the size of the effect in a non-ex-dividend month. This evidence suggests that the coefficient on dividend yield in ex-dividend months is not solely attributable to the effects of missing assets and that the effect in an ex-dividend month exceeds the combined effect in the subsequent two non-ex-dividend months. If the effect in non-ex-dividend months is asserted to be entirely due to the effect of missing assets, the difference $\hat{\gamma}_2 - \hat{\gamma}_3 = 0.225$ is an estimate of the tax effect. However, further theoretical work on the combined effects of transaction costs and personal taxes in a multi-period valuation framework is required to be able to understand the cause of a significant yield effect in non-ex-dividend months. For the present it seems reasonable to conclude that 0.225 is a lower bound estimate of the tax effect.[8]

The empirical evidence presented by Elton and Gruber (1970) on the ex-dividend behavior of common stocks suggests that the coefficient on the excess dividend yield term may be a decreasing function of yield. The theoretical rationale for this effect is that investors in low (high) tax brackets invest in high (low) dividend yield stocks: a possible explanation is that institutional restrictions on short sales results in a segmentation of security holdings according to investors' tax brackets. To provide a simple test of this 'clientele' effect, the coefficient c in (22) is hypothesized to be a linear decreasing function of the ith security's dividend yield. That is c, which is now dependent on i, is written c_i and given by

$$c_i = k - hd_i, \tag{60}$$

where $k, h > 0$, and the hypothesized relationship is

$$E(\tilde{R}_i) - r_f = a + b\beta_i + (k - hd_i)(d_i - r_f). \tag{61}$$

The econometric model is

[8] It might be argued that the persistent dividend effect is due to the fact that the dividend variable used incorporates knowledge of the ex-dividend month, which the investor may not have. To test whether this introduces spurious correlations between yields and returns the variable $(d_{it}/3)$ was used in the cross-sectional regression (23). The variable does not incorporate knowledge of the ex-dividend month except when it was announced. It is divided by 3 so as to distribute the yield over the three months of every quarter. The overall estimate (1936–1977) of γ_2 is 0.39, with a t-value of 3.57; one cannot attribute the earlier results due to knowledge of ex-dividend months. This is consistent with the Rosenberg and Marathe (1978) study. Note that this estimate is lower than the total effect in table 4, which is $\hat{\gamma}_1 + 2\hat{\gamma}_3 = 0.52$. The lower estimate is attributable to constraining the coefficient on yield to be the same in non-ex-dividend months and ex-dividend months.

$$\tilde{R}_{it} - r_{ft} = \gamma_0 + \gamma_1\beta_{it} + \gamma_2(d_{it} - r_{ft}) + \gamma_4 d_{it}(d_{it} - r_{ft}) + \tilde{\varepsilon}_{it}, \quad i = 1, 2, \ldots, N_t, \tag{62}$$

where the estimate of k is γ_2 and that for $-h$ is γ_4. The maximum likelihood approach is used in each cross sectional regression, and the pooled estimates presented in table 5.

Table 5

Pooled time series and cross section test of the clientele effect: 1936–1977.[a]

$\hat{\gamma}_0$	$\hat{\gamma}_1$	$\hat{\gamma}_2$	$\hat{\gamma}_4$
0.00365	0.00425	0.336	−6.92
(2.65)	(1.88)	(6.60)	(−1.70)

[a] Notes: This corresponds to the following cross-sectional regression in each month:

$$\tilde{R}_{it} - r_{ft} = \gamma_0 + \gamma_1\beta_{it} + \gamma_2(d_{it} - r_{ft}) + \gamma_4 d_{it}(d_{it} - r_{ft}) + \tilde{\varepsilon}_{it}, \quad i = 1, 2, \ldots, N_t, \quad t = 1, 2, \ldots, T.$$

Maximum likelihood estimation is used for the cross-sectional regression. The reported coefficients are arithmetic averages of the coefficients in each month (see note in table 1). t-statistics are in parentheses under each coefficient.

Consistent with the existence of a clientele effect, the maximum likelihood estimate of γ_2 is significantly positive and that of γ_4 is significantly negative, both at the 0.05 level. The magnitude of $\hat{\gamma}_4$ suggests that for every percentage point in yield the implied tax rate for ex-dividend months declines by 0.069. For example, if the annual yield was 4 percent, the implied tax rate would be approximately 0.336–6.92 (0.04/4) = 0.268, assuming quarterly payments. The empirical evidence supporting a clientele effect suggests the need for further research that rigorously derives an equilibrium model that incorporates institutional restrictions on short sales, along with personal taxes.

5. Conclusion

In this paper, an after-tax version of the Capital Asset Pricing Model is derived. The model extends the Brennan after-tax version of the CAPM to incorporate wealth and income related constraints on borrowing along with a progressive tax scheme. The wealth related constraint on borrowing causes the expected return on a zero-beta portfolio (having a dividend yield equal to the riskless rate) to exceed the riskless rate of interest. The income related constraint tends to offset the effect that personal taxes have on the equilibrium structure of share prices. The equilibrium relationship indicates that the before tax expected return on a security is linearly related to its systematic risk and to its dividend yield. Unrestricted supply adjustments in corporate dividends would result in the before tax version of the CAPM, in a world where dividends and interest are taxed as ordinary income. If income related constraints are non-binding and/or corporate supply adjustments are restricted, the before tax return on a security would be an increasing linear function of its dividend yield.

Unlike prior tests of the CAPM that used grouping or instrumental variables to correct for measurement error in beta, this paper uses the sample estimate of the variance of observed betas to arrive at maximum likelihood estimates of the coefficients in the relations tested. Unlike prior studies of the effect of dividend yields on asset prices, which used average monthly yields as a surrogate for the expected yield in both ex-dividend and non-ex-dividend months, the expected dividend yield based on prior information is used for ex-dividend months and is set to zero for other months.

The results indicate that there is a strong positive relationship between before tax expected returns and dividend yields of common stocks. The coefficient of the dividend yield variable was positive, less than unity, and significantly different from zero. The data indicates that for every dollar increase in return in the form of dividends, investors require an additional 23 cents in before tax return. There was no noticeable trend in the coefficient over time. A test was constructed to determine whether the effect of dividend yield reverses itself in non-ex-dividend months, and this hypothesis was rejected. Indeed, the data indicates that the effect of a dividend payment on before tax expected returns is positive in both the ex-dividend month and in the subsequent non-ex-dividend months. However, the combined effect in the subsequent non-ex-dividend months is significantly less than the effect in the ex-dividend month.

Evidence is also presented for a clientele effect: that is, that stockholders in higher tax brackets choose stocks with low yields, and vice versa. Further work is needed to derive a model that implies the existence of such clienteles and to test its implications.

Appendix A

In this appendix it is shown that the estimator for Γ, given by

$$\hat{\Gamma}_t = (X_t' \Omega_t^{-1} X_t)^{-1} X_t' \Omega_t^{-1} \tilde{R}_t,$$

using data in period t, is the Generalized Least Squares (GLS) estimator for Γ under the assumption of the single index model. It was shown in section 3 of the paper that each estimated coefficient corresponds to the realized excess

return of a specific portfolio. Suppose portfolio weights $\{h_{it}, i = 1, 2, \ldots, N_t\}$ are chosen in each period, for investment in assets $i = 1, 2, \ldots, N_t$. Using eq. (23) from the text the excess return on such a portfolio is given by

$$\sum_i h_{it}(\tilde{R}_{it} - r_{ft}) = \gamma_0\left(\sum_i h_{it}\right) + \gamma_1\left(\sum_i h_{it}\beta_{it}\right) + \gamma_2\left[\sum_i h_{it}(d_{it} - r_{ft})\right] + \sum_i h_{it}\tilde{Z}_{it}.$$

The expected excess return on this portfolio is

$$\gamma_0 \quad \text{if} \quad \sum_i h_{it} = 1, \quad \sum_i h_{it}\beta_{it} = 0, \quad \sum_i h_{it}(d_{it} - r_{ft}) = 0,$$

$$\gamma_1 \quad \text{if} \quad \sum_i h_{it} = 0, \quad \sum_i h_{it}\beta_{it} = 1, \quad \sum_i h_{it}(d_{it} - r_{ft}) = 0,$$

$$\gamma_2 \quad \text{if} \quad \sum_i h_{it} = 0, \quad \sum_i h_{it}\beta_{it} = 0, \quad \sum_i h_{it}(d_{it} - r_{ft}) = 1.$$

Under the assumption of the single index model, the variance of the return on such a portfolio is, from eq. (36) in the text,

$$\operatorname{var}\left(\sum_i h_{it}(\tilde{R}_{it} - r_{ft})\right) = \left(\sum_i h_{it}\beta_{it}\right)^2 \sigma_{mt} + \sum_i h_{it}^2 s_{it}.$$

Suppose one wishes to minimize the variance of the excess return on such a portfolio subject to the condition that the expected excess return on the portfolio is, in turn, γ_0, γ_1 or γ_2. This condition enforces $\sum_i h_{it}\beta_{it}$ to be either zero or unity. Hence minimizing

$$\left(\sum_i h_{it}\beta_{it}\right)^2 \sigma_{mt} + \sum_i h_{it}^2 s_{it},$$

subject to the unbiasedness condition, is equivalent to minimizing

$$\sum_i h_{it}^2 s_{it},$$

the 'residual risk' of the portfolio subject to the unbiasedness condition. Thus, one is using the residual risk of the portfolio as the minimand and enforcing the unbiasedness condition. By construction, Ω_t is the diagonal matrix of the residual variances s_{it}, and by construction, $\hat{\Gamma}_t$ is linear and unbiased for Γ. The variance of the estimator has been minimized under the single index model. But by the Gauss–Markov theorem, the GLS estimator [using the full matrix V_t in (36) as the variance–covariance matrix] is the unique minimum variance estimator among linear and unbiased estimators. Hence $\hat{\Gamma}_t$ is the GLS estimator for Γ_t under the assumption of the single index model.

Appendix B

In this section, it is shown that under certain conditions, $\hat{\Gamma}_t$ in (49) is the maximum likelihood estimator for Γ in period t.

First, note that there are no errors in the measurement of β, then if security returns are multivariate normal, then the GLS estimator in (37) is also the maximum likelihood estimator [see Johnston (1972)].

Suppose now there are errors in the measurement of β. Then one can use the transformation P defined in (39), with $\phi = s_i/\phi_i$, to write the model as

$$\tilde{R}^*_{it} = \gamma_0 p^*_{it} + \gamma_1 \beta^*_{it} + \gamma_2 d^*_{it} + \tilde{\varepsilon}^*_{it}, \tag{B.1}$$

and the observed beta as

$$\tilde{\beta}^*_{it} = \beta^*_{it} + \tilde{v}^*_{it}, \tag{B.2}$$

where

$$\tilde{R}^*_{it} = (\tilde{R}_{it} - r_{ft})/\phi_i, \quad p^*_{it} = 1/\phi_i, \quad \beta^*_{it} = \beta_{it}/\phi_i,$$
$$\tilde{\beta}^*_{it} = \tilde{\beta}_{it}/\phi_i, \quad d^*_{it} = (\hat{d}_{it} - r_{ft})/\phi_i, \quad \tilde{\varepsilon}^*_{it} = \tilde{\varepsilon}_{it}/\phi_i,$$

and

$$\tilde{v}^*_{it} = \tilde{v}_{it}/\phi_i.$$

Define the variable

$$m_{xy} = \sum_{i=1}^{N_t} x_{it} y_{it} \Big/ N_t, \tag{B.3}$$

as the raw co-moment for a given sequence $\{(x_{it}, y_{it}),\ i = 1, 2, \ldots, N_t\}$. Then from (B.1) and (B.2),

$$m_{\tilde{R}^* p^*} = \gamma_0 m_{p^* p^*} + \gamma_1 m_{\beta^* p^*} + \gamma_2 m_{d^* p^*} + m_{\varepsilon^* p^*}, \tag{B.4}$$

$$m_{\tilde{R}^* \tilde{\beta}^*} = \gamma_0 [m_{p^* \beta^*} + m_{p^* v^*}] + \gamma_1 [m_{\beta^* \beta^*} + m_{v^* \beta^*}] + \gamma_2 [m_{d^* \beta^*} + m_{d^* v^*}] + m_{\varepsilon^* \beta^*} + m_{\varepsilon^* v^*}, \tag{B.5}$$

$$m_{\tilde{R}^* d^*} = \gamma_0 m_{p^* d^*} + \gamma_1 m_{\beta^* d^*} + \gamma_2 m_{d^* d^*} + m_{\varepsilon^* d^*}, \tag{B.6}$$

$$m_{\tilde{\beta}^* p^*} = m_{\beta^* p^*} + m_{v^* p^*}, \tag{B.7}$$

$$m_{\tilde{\beta}^* \tilde{\beta}^*} = m_{\beta^* \beta^*} + 2 m_{\beta^* v^*} + m_{v^* v^*}, \tag{B.8}$$

$$m_{d^* \tilde{\beta}^*} = m_{d^* \beta^*} + m_{d^* v^*}. \tag{B.9}$$

In these six equations, take expectations and use the fact that

$$E(\tilde{v}^*_{it}) = E(\tilde{\varepsilon}^*_{it}) = 0,$$
$$E(\tilde{v}^*_{it} \tilde{\varepsilon}^*_{it}) = 0, \tag{B.10}$$
$$E(\tilde{v}^*_{it} \tilde{v}^*_{it}) = E[\tilde{v}^2_{it}/s^2_i] = 1.$$

The left-hand side of each of (B.4) through (B.9), after taking expectations, corresponds to the population co-moments of the subscripted variables.

If $\tilde{v}_{it}$ and $\tilde{\varepsilon}_{it}$ are independently normally distributed, then the corresponding sample moment is a maximum likelihood estimator of the population parameter. Replace these expected values by their maximum likelihood estimates. There are now six equations for the six unknown parameters γ_0, γ_1, γ_2, $m_{\beta^* \beta^*}$, $m_{\beta^* d^*}$, and $m_{\beta^* p^*}$. They can be solved for the coefficients of interest from the following 'normal' equations, which are in terms of observed sample estimates,

$$m_{\tilde{R}^* p^*} = \gamma_0 m_{p^* p^*} + \gamma_1 m_{\tilde{\beta}^* p^*} + \gamma_2 m_{d^* p^*}, \tag{B.11}$$

$$m_{\tilde{R}^* \tilde{\beta}^*} = \gamma_0 m_{p^* \tilde{\beta}^*} + \gamma_1 (m_{\tilde{\beta}^* \tilde{\beta}^*} - 1) + \gamma_2 m_{d^* \tilde{\beta}^*}, \tag{B.12}$$

$$m_{\tilde{R}^* d^*} = \gamma_0 m_{p^* d^*} + \gamma_1 m_{\tilde{\beta}^* d^*} + \gamma_2 m_{d^* d^*}, \tag{B.13}$$

and are themselves maximum likelihood [see Mood et al. (1974, p. 285)].

The solution to this set gives estimates $\hat{\gamma}_{kt}$, $k = 0, 1, 2$, which are embodied in (49). They are functions of maximum likelihood estimates. Note that in addition to (B.4) through (B.9), one could write an equation for $m_{\tilde{R}^* \tilde{R}^*}$,

$$\begin{aligned} m_{\tilde{R}^* \tilde{R}^*} = {} & \gamma_0^2 m_{p^* p^*} + \gamma_1^2 m_{\beta^* \beta^*} + \gamma_2^2 m_{d^* d^*} + 2\gamma_0 \gamma_1 m_{p^* \beta^*} \\ & + 2\gamma_0 \gamma_2 m_{p^* d^*} + 2\gamma_1 \gamma_2 m_{\beta^* d^*} + 2\gamma_0 m_{p^* \varepsilon^*} + 2\gamma_1 m_{\beta^* \varepsilon^*} \\ & + 2\gamma_2 m_{d^* \varepsilon^*} + m_{\varepsilon^* \varepsilon^*}. \end{aligned} \tag{B.14}$$

If we take expectations, using (B.10) and the fact that

$$E(m_{p^*p^*})=E\left(\sum_{t=1}^{N_t}\frac{\tilde{\varepsilon}_{it}^2}{\sigma_i^2 N_t}\right)$$

$$=\frac{1}{N_t}\sum_{t=1}^{N_t}\frac{E(\tilde{\varepsilon}_{it}^2)}{\sigma_i^2}=\frac{1}{N_t}\cdot N_t\phi^2=\phi^2,$$

we have

$$E(m_{g^*g^*})=\gamma_0^2 m_{p^*p^*}+\gamma_1^2 m_{p^*p^*}+\gamma_2^2 m_{p^*p^*}+2\gamma_0\gamma_1 m_{p^*p^*}$$
$$+2\gamma_0\gamma_2 m_{p^*p^*}+2\gamma_1\gamma_2 m_{p^*p^*}+\phi^2, \tag{B.15}$$

where ϕ^2 is assumed known.

By writing down the likelihood function and maximizing it for an analogous case, Johnston (1963) demonstrates a maximum likelihood estimator over the parameter space $(\gamma_0, \gamma_1, \gamma_2, \beta_i$ for $i=1,2,\ldots,N_t, \phi)$. This has the undesirable characteristic that the parameter space grows with the sample size.[9] It turns out in our problem that ϕ is assumed known. If this ϕ satisfies (B.15), when in (B.15) we use the sample co-moment estimates for the population parameters, then Johnston's M.L. procedure coincides with the solution to (B.11) through (B.13). Whereas our estimators are linear in the returns and can be interpreted as portfolios, the expanded parameter space estimator in Johnston is non-linear and has no such analog to theory. Thus conditional on ϕ^2 coinciding with the residual variation in the sample, using our estimates, the estimator in (49) is a maximum likelihood estimator over the parameter space $(\gamma_0, \gamma_1, \gamma_2)$.

[9]See Kendall and Stuart (1973, especially pp. 62 and 402).

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Expectations and the Structure of Share Prices

By Burton G. Malkiel and John G. Cragg*

This paper presents the results of an empirical study of year-end common-stock prices from 1961 through 1965. The ratios of market prices to earnings are related to such factors as earnings growth, dividend payout, and various proxy variables designed to measure the risk or quality of the returns stream.

Several previous empirical studies[1] have tried to explain share prices on the basis of such variables, but these investigations were forced to rely on published accounting data and untested hypotheses about the formation of expectations. V. Whitbeck and M. Kisor were able to increase the explanatory ability of their regression by substituting the estimates of security analysts of one firm for fabricated expectations variables based on simple extrapolations of past performance. Our study tries to determine whether the goodness of fit can be improved still further by substituting the estimates from several securities firms for the expectations of a single predictor and by using a wider variety of such expectational variables. The most important of the expectational variables employed are forecasts of short-term and long-term earnings growth, estimates of the "normal earning power" of each company, and estimates of the "instability" of the earnings stream. The data used are described in Section II.

It is found in Section III that an extermely close fit to the empirical structures of share prices is obtained with the use of such expectations data. These results are also contrasted with those obtained when only historic data are used. Section III then examines further the stability and predictive power of the model over time. Section IV discusses the usefulness of the model for security selection.

I. *Specification of a Valuation Model*

In the typical valuation model, the price of a share is taken to be the present value of the returns expected therefrom. In the simplest model, the price is the sum of the present values of a stream of dividends that is assumed to grow at a constant rate, g, over time. See, for example, J. B. Williams for one of the earliest statements of the problem and M. J. Gordon for a more recent treatment. Letting P stand for the (ex dividend) price of a share, D the (annual) dividend per share in the year just past, and r the appropriate rate of discount, we have

$$(1) \qquad P = \sum_{i=1}^{\infty} D \frac{(1+g)^i}{(1+r)^i},$$

provided $g<r$. Dividing both sides of (1) by earnings per share, E, and summing the

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[1] Cross-sectional empirical studies have been undertaken by F. D. Arditti, H. Benishay, R. S. Bower and D. H. Bower, G. R. Fisher, I. Friend and M. Puckett, M. J. Gordon, F. C. Jen, M. Kisor, Jr. and A. Feuerstein, Kisor and S. Levine, and R. Ortner.

progression we obtain an expression for the price-earnings multiple

$$\frac{P}{E} = \frac{D}{E} \frac{(1+g)}{(r-g)} \qquad (2)$$

The price-earnings ratio is seen to depend on the dividend payout ratio and the expected long-term growth rate of the dividend stream.

The specific model of security price-earnings ratios presented in equations (1) and (2) has several drawbacks. It is inapplicable in cases where no dividends are currently paid, it leads to an infinite value for the shares when $g>r$, and it requires projecting growth rates from now till Kingdom come.[2] Such difficulties have led several writers to formulate a finite-horizon model of share prices. See, for example, Charles Holt and Malkiel. P. F. Wendt presents a useful survey of a number of alternative models. The basic idea of the finite-horizon approach is that both dividends and earnings are assumed to grow at some rate g for N periods,[3] and then grow at a normal rate such as the growth rate for economy as a whole. This approach can be illustrated by the following very simple model.[4]

$$\frac{P_0}{E_0} = \sum_{i=1}^{N} \frac{D_0}{E_0} \frac{(1+g)^i}{(1+r)^i} + (m_s)_0 \frac{(1+g)^N}{(1+r)^N}, \qquad (3)$$

where $(m_s)_0$ is the average current price-earnings ratio for the market as a whole. The model in (3) appears to be highly nonlinear in the growth rate and payout ratio. Fortunately, however, a linear approximation to the true expression seems to work reasonably well for N as small as five, the period for which we have growth-rate estimates.[5]

The preceding model has abstracted entirely from the existence of risk. There are several possible ways in which risk can be represented in a valuation model. The theoretical justification for the alternatives rests on the assumptions employed.

A common way in which risk is introduced into empirical valuation models is to incorporate a term representing the (expected) variance of the future returns stream from each security. Such a procedure has been justified in two ways. First, it has been argued (e.g., see L. G. Peck) that the horizon, N, over which extraordinary growth can be forecast is itself a function of the variance or "dependability" of the returns stream. By this reasoning, investors would project extraordinary earnings growth over only a very limited horizon for companies where the anticipated variance of the earnings stream is large. Since it can easily be shown that $\partial(P/E)/\partial N>0$ for a growth stock according to the finite-horizon model (see Malkiel, pp. 1028–29), it follows that price-earnings multiples should be negatively related to the variance term.

[2] Moreover, since the growth rate estimates collected were specifically made for only the next five years, it would seem that this model is not consistent with the data.

[3] In some models, the growth rate is assumed to decline in stages to the final "mature" growth rate of the economy. In other models, the initial and terminal growth rates are estimated on the basis of such factors as the retention rate and the rate of return on equity.

[4] The rationale for this approach and the derivation of equation (3) is contained in Malkiel. It is assumed that after N periods, the price-earnings ratios for all stocks revert to the same average condition.

[5] The closeness of the proposed linear approximation was examined by fitting a regression of the form

$$\frac{D_{j0}}{E_{j0}} \sum_{i=1}^{5} \frac{(1+g_j)^i}{(1+r)^i} + (m_s)_0 \frac{(1+g_j)^5}{(1+r)^5} = A + Bg_j + C\frac{D_0}{E_0} \qquad (3')$$

Values of the parameters $(m_s)_0$ and r were chosen to be consistent with experience during the 1961–65 period. The coefficient of determination, 0.97, was so high that it seemed safe to substitute the right-hand side of (3′) for the right-hand side of (3). It should be noted, however, that this argument assumed that the horizon N is the same for all companies.

A second justification for the inclusion of a variance term in the model rests on recent theoretical work by William Sharpe, John Lintner, and Jan Mossin, extending the Markowitz portfolio selection model. In these models the market establishes "prices" for the expected return and "risk" of each security, where risk consists of the sum of the variance of that security's return and its covariances with all other returns multiplied by the number of shares. If we assume that the returns from different securities are uncorrelated with each other, however, it turns out that the price of a security should simply be a linear function of the expected return and the variance associated with the security. This suggests not only that a variance term should be included in the model but also provides some justification for the linear specification employed in this study.

The second risk measure employed in this study, an index of the conformance between the returns of each individual security and that of a market index, rests on more realistic assumptions. In Sharpe's simplification of the Markowitz model, covariances are assumed to arise because all returns depend on one or a few common factors, such as a market or industry return. For example, the returns from each security, R_i, might first be related to the returns from some index of security prices

$$(4) \quad R_i = \alpha_i + \beta_i(\text{Return to Index}) + \mu_i$$

The total risk of an asset (i.e., the scatter of the R_i around their mean), can then be decomposed into a systematic component (due to underlying relationship between R_i and the return from the market index) and a nonsystematic component, μ_i, uncorrelated with the market index. We would expect investors to prefer those securities with low or negative β_i's. Other things being equal, a stock whose movements are not highly correlated with the market will tend to reduce the variability and thus, the risk of the stock portfolio. Of course, it should be emphasized that the covariances and variances that are being valued in the market are those perceived by investors and not some "true" set.

The final risk variable employed was a leverage variable measuring the "financial risk" of a company. As Franco Modigliani and Merton Miller have shown, leverage can be expected to decrease the price-earnings multiple by increasing the riskiness of the returns of common stock relative to their expected values. With a fully adequate measure for the risk associated with the stock, leverage should play no part. Otherwise, it may serve as a useful proxy for the expected variability of the returns stream. Indeed, if other risk measures apply to the instability of the operating earnings stream before fixed charges, and thus serve as estimates of the "business risk" of the firm, a leverage term may capture the additional financial risk of the firm.

Before ending this discussion of the general model underlying the study,[6] it is worth emphasizing that the model is cast entirely in terms of expectational variables. The critical dependence of share prices on expectational variables has proved to be a major obstacle for empirical investigators. Since only historical data have been available to most researchers, it has been difficult to isolate the true effect of the various variables influencing stock prices. A simple illustration should make this clear. The model described above indicates that we should expect that a *ceteris paribus* increase in the dividend-payout ratio should increase the price-earnings multiple of the shares.[7] Suppose, however, that the past

[6] In a forthcoming publication, the authors will present a thorough and integrated model of share valuation.

[7] We must be careful, however, not to interpret a positive dividend coefficient as indicating that an individual firm can increase the price-earnings ratio of its shares by raising the dividend-payout ratio. A higher dividend (lower retention rate) may lower the future

growth rate of earnings is a very imperfect substitute for the relevant expected growth rate security purchasers anticipate.[8] The dividend payout could actually serve as an alternative proxy for expected growth.

For example, investors may take a low dividend payout ratio as a signal that the firm has many profitable investment opportunities available and that a high rate of earnings growth can be expected. In such a case, the coefficient of the payout ratio will be biased downward.[9] Without the proper expectational variables, it will be impossible to untangle the true influence of the many factors influencing the structure of price-earnings multiples. The following section will discuss the actual data employed in the study and indicate how they were collected.

II. *A Description of the Data Employed*

The principal data used in the study consist of a small number of forecasts of the long-term growth rates of earnings for 178 corporations, as of the five year-end periods from 1961 through 1965. In addition, data were collected on security analysts' estimates of "normal" earnings for the preceding year, their forecasts of next year's earnings, and their expectations about the future variability of the earnings stream. Certain historical financial data were also used to provide a contrast with the expectations data. These included past growth rates of various financial variables, past dividend-payout ratios, and a number of calculated risk proxies.[10]

The expectations data were collected from 17 investment firms, most of which were members of The Institute for Quantitative Research in Finance.[11] Of the participating firms, four were brokerage houses doing a considerable amount of investment advisory and institutional business, five were banks heavily engaged in trust management, five were mutual-fund management companies, two were pension-fund managers, and the remaining participant was an insurance company. The sample of 178 corporations was selected on the basis of data availability. Companies were included in the sample only when several investment firms made estimates of future earnings growth. Since there tended to be considerable overlap in the coverage of the security analysts for the leading industrial and utility companies, our sample tends to contain the "blue-chip" group of companies in which investment interest is centered. A detailed description of the data used in the study follows:

(a) *Normalized Earnings*

It is well known that the market does not necessarily capitalize the reported accounting earnings for a firm during the preceding year. If, for example, reported earnings are affected unfavorably by such

growth rate per share by an amount sufficient to keep the price of the shares constant. Thus, the standard dividend model of share valuation is in no way inconsistent with the result of Miller and Modigliani that dividend policy cannot effect the value of the enterprise.

8 It may be argued that one should not put so much reliance on either past or expected growth rates to explain security prices since there is considerable evidence that earnings growth is "higgledy piggledy." I. M. D. Little and Cragg and Malkiel have shown that both historic growth rates and even the forecasts of security analysts are little related to the growth that is actually achieved. This may be true and yet security analysts may continue to estimate the worth of shares and their anticipated future returns on the basis of the anticipated growth rate of the security's earnings. As is well known from work on the term structure of interest rates, expectations need not be correct to be an important determinant of the yield curve. Surely it is an empirical question whether or not the market actually does value shares consistently with the model presented here.

9 For a full discussion of the pitfalls involved in isolating the effect of dividend policy on share prices, see Friend and Puckett.

10 All historical data were taken from the *COMPUSTAT* tapes made available by Standard Statistics Corporation.

11 The Institute is a consortium of 30 investment firms, organized to promote quantitative research in finance.

nonrecurring factors as strikes or flood damage, or by a cyclical contraction, it is likely that investors apply an appropriate price-earnings multiple to the amount they consider to represent the normal earning power of the company. Indeed, one of the first jobs of a security analyst is to adjust the firm's accounting earnings to arrive at an indication of true earning power (see B. Graham, D. L. Dodd, and S. Cottle ch. 34). Thus, the price-earnings ratios that are relevant for valuation may be the ratios of prices to normalized earnings rather than ratios of prices to reported earnings for the preceding accounting period. These normalized earnings are estimated to be the earnings that would obtain at a normal level of economic activity if the company were experiencing normal operations—that is, operations not affected by such nonrecurring items as strikes, natural disasters, and so forth. The normalized-earnings figures used in the present study were averages of estimates supplied by two of the participating firms.

(b) *Future Long-term and Short-term Growth Rates*

As was mentioned above, several theoretical models of stock valuation have all focused on the expected growth rates of earnings and dividends as a central explanatory variable. Most previous empirical studies, however, were forced to rely on past growth rates as a proxy for future growth rates. One of the major purposes of the present study was to ascertain whether the estimates of future growth rates from several securities firms can enable us to obtain a more satisfactory explanation for the structure of share prices.

In order to contrast the use of historical and expected growth rates, we first tried to find those historical growth rates that showed the closest correlation with market price-earnings multiples. Forty alternative growth rates were tried. These growth rates differed with respect to the period covered, the method of calculation, and the financial data upon which the growth rate was estimated. From the forty candidate growth rates, the following three were either clearly superior or, at least, no worse than any of the others. These were 1) the ten-year growth rate of earnings per share calculated as the geometric mean of first ratios, 2) the ten-year growth rate of cash earnings per share (i.e., earnings plus noncash charges) calculated as the geometric mean of first ratios, and 3) the ten-year growth rate of cash earnings plus taxes calculated from a regression of the logarithms of the earnings on time. The growth rate of cash earnings was slightly better than the other two in most of the five years studied, and was used in the regressions reported in this paper.

The expected growth rates were estimated by nine securities firms.[12] Each growth rate figure was reported as an average annual rate of growth of earnings per share expected to occur over the next five years. The figures used in the study were averages of the nine predictors.

In addition to these expectations of long-term growth rates, we also collected estimates of the following year's earnings from eleven securities firms.[13] We found, somewhat to our surprise, that the implicit forecasts of short-term (one-year) growth were not highly correlated with the long-term anticipations and we were able to use both sets of data in some of the empirical work presented later.

Obviously these expected growth rates are not the expectations of a wide cross-section of the buyers and sellers in the market. These expectations were formed,

[12] It should be noted that not all firms provided growth-rate estimates for each of the companies used in the sample during each of the five years, 1961–65.

[13] Three of these eleven firms also supplied long-term forecasts.

however, by professional security analysts for securities firms or for large institutional investors who are important participants in the market. Moreover, in many cases, these expectations were made to be provided to other investors whose own expectations may be influenced by their advisors. Finally, we should note that these expectations are not limited to published information. The security analysts involved frequently visit the companies they follow and discuss the company's prospects with its executives. Insofar as other security analysts follow the same sort of procedures as our participating firms, the growth-rate estimates of other institutional investors and securities firms may resemble those we have collected. Consequently, these predictions may well serve as acceptable proxies for market expectations and they surely seem worthy of detailed analysis.

(c) *Dividend Payout*

The measurement of the dividend-payout ratio also presents problems. If we simply take the ratio of dividends to earnings, short-run disturbances to reported earnings that do not produce equiproportional changes in dividends can make calculated payouts differ considerably from target or normal payout ratios. For this reason we chose two alternative methods of calculating the dividend payout. The first method was simply to divide the dividend by normalized rather than reported earnings. The second method, used in the regressions where only historic data were employed, was to average the actual payout ratios over the preceding seven years.

(d) *Risk Variables*

Several types of expectational risk variables were introduced to serve as proxies for the anticipated variance of individual security returns. We included such variables as the standard deviation of the forecasts of security firms, various types of subjective quality ratings, and an index of the expected instability of future earnings. These risk proxies all turned out to be highly correlated with each other and only the one most useful in explaining earnings multiples, the instability index, has been included in the regressions reported in this paper. This variable was collected from one of our participating firms and represented a measure of the past variability of earnings (around trend) adjusted by the security analyst to indicate anticipated future variability.

In order to contrast the use of expectations data with historical data, a number of risk proxies were calculated on the basis of the financial records of each company. These included statistics measuring the variance of past earnings and of other financial data, a leverage variable, and the conformance between returns of each individual security and that of a market index. The index of market conformance was obtained by estimating the slope, β_i, of a regression of the annual returns of each security on the annual returns from the Standard and Poor's Composite Index. Ten years of data were employed in obtaining the estimate. The most useful historic risk proxies for our present purposes were the semideviation of earnings around trend, the index of market conformance, and the leverage variable. In Table 1 we summarize the variables employed in the regressions.

Before turning to the regression results, a problem concerning the timing of the availability of the expectations and hisrorical data should be mentioned. Our study tries to explain differences among price-earnings multiples for a cross-section of securities as of December 31 in each of five years. While normal earnings per share (and expected growth rates) were estimated and, therefore, available at the end of each year, actual earnings per share for the 12 months to December 31 are not generally known until some time after the close of the year. Thus, the actual P/E ratios and the historic growth rates calculated to the end of the year, which we employed in the regressions estimated from historic data, were not available to investors on the dates for which equations were estimated, although rather close estimates of the earnings necessary for the calculations are usually well known by that time. In order to test whether our results might be strongly influenced by, in effect, assuming perfect foresight by the market regarding current-year's earnings, we performed an alternative set of runs using the most recent publicly available 12-months' earnings to calculate P/E ratios and historic growth rates. Since the regression results from the alternative set of runs were almost identical to those reported here, it seems safe to conclude that our assumptions regarding the timing of the availability of historic data had little influence on the results.

TABLE 1—VARIABLES USED IN VALUATION STUDY

P	End-of-year market price per share
D	Total dividends paid per share (adjusted to number of shares outstanding at year end)
E	Reported earnings per share (adjusted to exclude nonrecurring items)
$\overline{D/E}$	Average dividend-payout ratio over past 7 years
$\overline{NE}$	Average "normalized" earnings estimates of security analysts
$\bar{g}_p$	Average predicted future long-term growth rate of earnings per share, measured as an annual percentage rate of growth
g_H	Historic (10-year) growth rate of (cash) earnings per share measured as an annual percentage rate of growth
I_p	Predicted instability index of the future earnings stream
β	The slope of a regression of the annual returns from a company's shares on the annual returns from the market index
$I_{H,1}$	Calculated instability index of the historic earnings stream (semideviation of earnings around trend)
$I_{H,2}$	Calculated instability index of the historic operating earnings streams (semideviation of earnings plus financial fixed charges around trend)
$\bar{E}_{t+1}$	Average predicted earnings per share for the next year
$\frac{F}{E+F}$	Leverage variable (the ratio of fixed charges to earnings plus fixed charges)

III. *Regression Results*

In this section we first present a comparison of the regression results for equations including comparable historic and expectational variables. Then, the results for the most satisfactory expectational equations are shown and the stability of the coefficients over time is examined.

(a) *Comparison of Regressions Using Historical and Expectational Variables*

In Table 2 the results of regressions using only three variables calculated from readily available historical data are compared with regressions employing comparable expectations data.[14] In panel A of Table 2, the price-earnings multiple is regressed on the historic ten-year growth rate of cash earnings (calculated as the geometric mean of first ratios), the dividend-payout ratio (averaged over the preceding seven years), and an instability index of earnings (calculated as the semideviation from a regression of earnings over the past ten years). It will be noted that generally about half of the variance in price-earnings multiples is explained by the regressions. The growth-rate variable is highly significant in each of the years covered. The calculated payout and risk

[14] It will be noted that the sample size for each regression was usually less than the total sample of 178 companies. Companies had to be dropped from the sample whenever historic or expectational data were unavailable or could not be computed. In addition whenever a company's calculated historic growth rate was negative, the firm was dropped from the sample. This was done to make the regressions based on historic data as comparable as possible to those based on expectations data, where no negative growth rates were projected.

TABLE 2—COMPARISON OF REGRESSIONS USING HISTORICAL AND EXPECTATIONAL VARIABLES

A. Regression Results: Historic Variables $P/E=a_0+a_1g_H+a_2\overline{D}/\overline{E}+a_3I_{H,1}$						
Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	R^2	F
1961	13.65	+1.87	−.26	−.65	.50	51.27
		(.17)	(6.14)	(1.37)		(3; 156)
		10.72	−.04	−.47		
1962	8.92	+1.06	+6.90	−.77	.45	44.78
		(.10)	(3.28)	(.68)		(3; 163)
		10.90	2.10	−1.14		
1963	9.39	+1.33	+5.22	−.96	.49	51.31
		(.12)	(3.73)	(.81)		(3; 161)
		11.29	1.40	−1.19		
1964	10.88	+.95	+4.85	−.69	.36	32.16
		(.11)	(3.52)	(.71)		(3; 170)
		8.65	1.38	−.96		
1965	5.74	+1.52	+6.64	+.35	.65	98.65
		(.10)	(3.55)	(.77)		(3; 162)
		15.23	1.87	.46		
B. Regression Results: Comparable Expectations Variables $P/E=a_0+a_1\bar{g}_p+a_2D/\overline{NE}+a_3I_p$						
Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	R^2	F
1961	4.73	+3.28	+2.05	−.82	.70	89.34
		(.23)	(4.33)	(.75)		(3; 115)
		14.47	.47	−1.09		
1962	11.06	+1.75	+.78	−1.61	.70	133.33
		(.13)	(2.47)	(.39)		(3; 174)
		13.99	.31	−4.11		
1963	2.94	+2.55	7.62	−.27	.75	174.51
		(.13)	(2.58)	(.39)		(3; 174)
		19.67	2.95	−.69		
1964	6.71	+2.05	+5.33	−.89	.75	168.46
		(.11)	(2.17)	(.36)		(3; 170)
		18.24	2.44	−2.48		
1965	.96	+2.74	+5.01	−.35	.85	317.52
		(.10)	(2.05)	(.30)		(3; 171)
		26.50	2.44	−1.14		

Note: Numbers in parentheses below coefficients are standard errors and numbers below parentheses are t-values. Numbers below the F-values are degrees of freedom.

measures usually have their expected signs but are not significant.[15]

In panel B of Table 2, the average growth rates and other expectational variables collected from the participating firms are used to explain price-earnings multiples. All coefficients have their expected signs. Moreover, the fits are very close for cross-sectional empirical work and are much better than those obtained with the historical data. About three quarters of the variability of price-earnings ratios is explained by the regressions. We should also mention that better fits were obtained by using the average growth rates of all predictors than by employing forecasts of a single analyst. This suggests that our survey was useful in getting closer to what might be considered the expectations of a "representative" investor.

(b) *Regression Results Employing a Covariance Risk Measure*

In Table 3 we present regression results employing a covariance risk measure. It will be noted that β, the index of market conformance, has the right sign in all cases except for the 1961 regression employing expectations data. Although it is significant in only two of the five years, the general consistency of the signs would suggest that market values do tend to reflect measures of past covariance with the market. It is also interesting that β had a particularly strong influence on price-earnings ratios at the end of 1962, following a large decline in stock prices. It would appear that investors particularly favor securities that tend to move relatively independently of the market during periods when the memory of sharply falling stock prices is clearly in mind.

Comparing Tables 2 and 3, the *t*-values associated with β tend to be slightly higher than those associated with either of the two previous risk variables.[16] When a variable measuring expected short-term growth is introduced, however, the predicted instability index tends to be somewhat superior, being "significant" in four out of the five years (see Table 5). The variables β and I_p cannot be used together in the same regression, because the two variables are highly correlated, and both become insignificant.[17]

(c) *Regression Results Employing a Combination of Expectations and Historic Data*

In Table 4, we present regression results involving a combination of expectations and historic data. The price-normalized earnings ratio is employed as the dependent variable. Independent expectational variables include anticipations of short- and long-term growth, and the dividend payout expressed as a percent of normalized earnings. Historic variables were an instability index and a leverage variable. In these regressions, the instability index was calculated from a time-series of earnings plus fixed charges. This measure should represent the instability of operating earnings and may serve as an acceptable proxy for business risk. We also included a leverage variable, which should indicate the additional financial risk borne

[15] As noted above, the positive sign on the dividend coefficient should not be interpreted as evidence that dividend policy can affect the value of the shares. This coefficient indicates only that a *ceteris paribus* change in dividend payout will increase the price of the shares. What the famous "dividend-irrelevancy" theorem of Modigliani and Miller says is that an increase in dividend payout (holding the firm's investment constant) will tend to reduce the growth rate of earnings per share since new shares will now have to be sold to make up for the extra funds paid out in dividends. A positive dividend coefficient is thus in no way inconsistent with the dividend-irrelevancy theorem.

[16] While it should be noted that these comparisons are based on regressions using somewhat different numbers of observations, the conclusions presented hold also for comparisons based on the smaller sample of companies for which all data were available.

[17] Correlation coefficients between β and I_p during the period studied are approximately 0.60.

TABLE 3—REGRESSION RESULTS EMPLOYING A COVARIANCE RISK MEASURE

A. HISTORIC VARIABLES AND COVARIANCE MEASURE

$$P/E=a_0+a_1g_H+a_2\overline{D}/\overline{E}+a_3\beta$$

Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	R^2	F
1961	15.52	1.82 (0.17) 10.54	−1.75 (6.14) −0.29	−1.53 (1.34) −1.15	.49	52.60 (3; 161)
1962	12.42	1.02 (0.09) 11.38	4.28 (2.94) 1.46	−2.87 (0.60) −4.76	.54	65.86 (3; 169)
1963	9.20	1.28 (0.11) 11.19	6.84 (3.67) 1.87	−1.21 (0.88) −1.38	.48	51.69 (3; 168)
1964	14.37	0.96 (0.10) 9.36	3.29 (3.18) 1.03	−3.54 (0.72) −4.92	.44	44.76 (3; 173)
1965	7.47	1.52 (0.10) 15.30	5.58 (3.34) 1.67	−0.95 (0.79) −1.20	.64	99.49 (3; 165)

B. COMPARABLE EXPECTATIONS VARIABLES AND COVARIANCE MEASURE

$$P/E=a_0+a_1\bar{g}_p+a_2D/\overline{NE}+a_3\beta$$

Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	R^2	F
1961	3.63	3.29 (0.19) 17.20	3.24 (4.47) 0.73	0.97 (1.09) 0.89	.74	132.82 (3; 140)
1962	9.79	1.87 (0.11) 16.88	2.25 (2.23) 1.01	−2.65 (0.47) −5.69	.72	148.29 (3; 173)
1963	3.47	2.57 (0.12) 21.38	7.17 (2.47) 2.90	−0.84 (0.61) −1.37	.75	176.82 (3; 174)
1964	6.16	2.10 (0.10) 21.40	5.87 (2.04) 2.88	−1.41 (0.53) −2.67	.76	184.63 (3; 173)
1965	0.25	2.86 (0.10) 29.14	5.01 (2.00) 2.50	−0.47 (0.49) −0.96	.86	352.19 (3; 172)

Note: Numbers in parentheses below coefficients are standard errors and numbers below parentheses are *t*-values. Numbers below the *F*-values are degrees of freedom.

by the shareholders. The specific measure employed was the ratio of fixed charges per share to earnings plus fixed charges per share.[18] In addition, a dummy variable was included that took the value unity for utility companies and zero for industrials. This variable was introduced to account

[18] For a discussion of the problems involved in using the debt-equity ratio itself, see A. Barges and R. Wippern.

TABLE 4—REGRESSION RESULTS EMPLOYING A COMBINATION OF EXPECTATIONS AND HISTORIC DATA

$$P/\overline{NE}=a_0+a_1\bar{g}_p+a_2\bar{E}_{t+1}/\overline{NE}+a_3D/\overline{NE}+a_4F/(E+F)+a_5Dum+a_6I_{H,2}$$

Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	$\hat{a}_4$	$\hat{a}_5$	$\hat{a}_6$	R^2	F
1961	−41.19	+2.88	+44.88	+5.53	−12.34	+1.79	−4.93	.85	102.98
		(.20)	(5.24)	(4.53)	(4.06)	(1.69)	(9.21)		(6;106)
		14.07	8.57	1.22	−3.04	1.05	− .54		
1962	−1.41	+1.68	+9.89	+2.60	−7.53	+4.46	−7.69	.78	74.04
		(.13)	(2.72)	(2.50)	(2.07)	(.92)	(4.75)		(6;129)
		13.16	3.63	1.04	−3.65	4.87	−1.62		
1963	−12.94	+2.41	+15.29	+8.96	−6.20	+.71	−5.70	.81	90.72
		(.14)	(2.99)	(2.79)	(2.33)	(1.04)	(5.33)		(6;129)
		17.12	5.11	3.21	−2.66	.69	−1.07		
1964	−10.91	+1.89	+14.31	+7.70	−3.39	+3.62	+4.59	.80	83.42
		(.12)	(2.02)	(2.45)	(2.21)	(.94)	(5.28)		(6;128)
		15.65	7.09	3.14	−1.53	3.86	(.87)		
1965	−15.55	+2.64	+20.05	−2.04	−7.81	+2.64	−17.59	.84	118.41
		(.14)	(1.99)	(3.01)	(2.61)	(1.12)	(6.33)		(6;128)
		18.69	10.09	−.68	−2.99	2.37	−2.78		

Note: Numbers in parentheses below coefficients are standard errors and numbers below parentheses are t-values. Numbers below the F-values are degrees of freedom.

for differences in risk between the two classes of companies not captured by our other risk variables.

As can be seen from the table, the combination of historical and expectational variables works remarkably well in accounting for the structure of share prices. Most significant were the coefficients of the short- and long-term growth rates. It should be noted that while the coefficient of the "operating-risk" variable (the semi-deviation of earnings plus fixed charges around trend) usually was not statistically significant and had the "wrong" sign in 1964, the coefficient of the financial-risk variable (our measure of leverage) always had the "correct" sign and was significant in all but one year. This provides support for the Modigliani-Miller proposition that the required rate of return on equity should be an increasing function of leverage.

(d) *Regression Results Employing Expectations Data Alone*

In Table 5 we present additional regression results for the equations employing only expectations variables. The price-normalized earnings ratio is the dependent variable. Independent variables include expectations of short- and long-term growth, the dividend-payout ratio, and the expected instability index.[19]

We find that the long-term growth variable contributes most to an explanation of the structure of earnings multiples. The growth coefficient has a t-value over 13 in every year. The coefficient of short-term growth ($\bar{E}_{t+1}/\overline{NE}$) is also positive and highly significant. The coefficients of the payout ratio and the risk proxy are positive and negative, respectively, as ex-

[19] Fortunately, the correlations between the independent variables tended to be relatively low in all years. A sample correlation matrix (for the 1964 data) is presented below

	$\bar{g}_p$	$\bar{E}_{t+1}/\overline{NE}$	I_p	$D/\overline{NE}$
$\bar{g}_p$	1.00			
$\bar{E}_{t+1}/\overline{NE}$	.28	1.00		
I_p	− .32	.09	1.00	
$D/\overline{NE}$	− .34	− .07	− .37	1.00

TABLE 5—REGRESSION RESULTS: EMPLOYING EXPECTATIONS DATA

	$P/\overline{NE}=a_0+a_1\bar{g}_p+a_2\bar{E}_{t+1}/\overline{NE}+a_3D/\overline{NE}+a_4I_p$							$R_{t+1}=a+b\left[\frac{P/\overline{NE}-\hat{P}/\overline{NE}}{\hat{P}/\overline{NE}}\right]$		
Year	$\hat{a}_0$	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	$\hat{a}_4$	R^2	F	$\hat{b}$	R^2	F
1961	−27.96	+2.91	+31.78	+4.57	−.58	.77	80.39	−.25	.09	9.47
		(.21)	(5.76)	(3.96)	(.70)		(4,96)	(.08)		(1;99)
		13.56	5.51	1.15	−.83			−3.08		
1962	+3.42	+1.61	+6.88	+3.21	−2.20	.79	129.14	.21	.03	3.73
		(.12)	(2.87)	(2.32)	(.41)		(4,138)	(.11)		(1;141)
		13.05	2.40	1.39	−5.44			1.93		
1963	−11.33	+2.29	+15.11	+8.11	−1.14	.80	139.82	−.20	.04	6.48
		(.14)	(2.82)	(2.70)	(.39)		(4,137)	(.08)		(1;140)
		16.30	5.35	3.01	−2.88			−2.55		
1964	−9.29	+1.87	+15.20	+7.03	−1.13	.78	120.00	−.00	.00	.00
		(.14)	(1.94)	(2.40)	(.41)		(4,134)	(.15)		(1;137)
		13.05	7.83	2.92	−2.75			−.00		
1965	−11.15	+2.42	+13.78	+4.22)	−.81	.83	162.21	−.01	.00	.01
		(.12)	(1.85)	(2.34)	(.38)		(4,136)	(.10)		(1;139)
		19.59	7.46	1.81	−2.14			−.11		

Note: Numbers in parentheses below coefficients are standard errors and numbers below parentheses are t-values. Numbers below the F-values are degrees of freedom.

pected, and are usually significant. While Tables 4 and 5 are not comparable because of different degrees of freedom, the regressions in Table 5 tend to produce slightly better fits adjusted for degrees of freedom.

It might be argued that the expectations data used as independent variables in the valuation equation may strongly reflect the $P/\overline{NE}$ ratio and, thus, we are in effect including the same variable on both sides of the valuation equation. The growth rates that we have collected are "supposedly" independent of market prices. The security analysts who have furnished the data claim that these estimates are ones that they use to calculate an "intrinsic" value of the shares, which is then compared with actual market prices in arriving at purchase or sale recommendations. In point of fact, however, the forecasted growth rates may still be strongly influenced by the market earnings multiples themselves.

Even if the anticipations data are strongly influenced by current market prices, however, this should not interfere with the basic purpose of this paper, which is to gain an understanding of the structure of share prices. The point is that the anticipations we have collected may simply be the security analysts' estimates of what the "average opinion" will continue to believe the reasonable expectations will be. The point is, of course, the familiar one about the Keynes beauty contest where the rational contestant would not pick those girls that he himself found prettiest, nor even those he deemed most likely to catch the fancy of the other contestants, but rather those that he anticipated the other contestants would believe the average opinion would consider prettiest.

Thus, if the $P/\overline{NE}$ ratio rises, and the security analyst believes that such a rise will continue to be justified by the average opinion, he may simply adjust his anticipated growth rate to a level that would justify the earnings multiple. In any case, what our valuation equation will measure is the relationship between growth rates and price-earnings multiples that security analysts believe the average opinion will continue to justify. Even in this event, our empirical results should still be useful in explaining and describing the structure of share prices at any given time.

(e) *Changes in the Valuation Relationship Over Time*

It is of some interest to examine whether the coefficients of the valuation equations are the same in each year or whether they change. This is of considerable importance to those who wish to use valuation equations in connection with assigned values of the independent variables to estimate the intrinsic worth of a security. Constancy of the relationship is also important if a firm is to seek to follow policies that will maximize the value of its shares. On the other hand, there is nothing in the theory of valuation to indicate that the equation need be constant over time.

An inspection of Table 5 indicates that the coefficients of our equation change considerably from year to year and in a manner that is consistent with the changing standards of value in vogue at the time. At the end of 1961 "growth stocks" were in high favor, and it is not surprising to find that the coefficient of the growth rate (2.91) is highest in this year. During 1962, however, there was a conspicuous change in the structure of share prices that was popularly called "the revaluation of growth stocks." This revaluation is reflected in the decline of the growth-rate coefficient for 1962 to 1.61, its lowest value for any of the five years. A similar set of observations can be made for the coefficient of the short-term growth rate ($\hat{E}_{t+1}/\overline{NE}$). On the other hand, the risk index has its most negative influence on earnings multiples in 1962, whereas the coefficient was smallest in 1961, and, while negative, it was not significantly different from zero.

In actually testing whether the coefficients of the valuation equation were the same over time, it had to be recognized that the residuals in different years might not be independent. Indeed, it is shown in the bottom panel of Table 6, which we will discuss below, that the residuals are fairly highly correlated. As a result, Arnold Zellner's seemingly unrelated regression version of Aitken's generalized least-squares model is appropriate, although it had to be modified to take account of the fact that we did not have observations for all corporations in all years.[20] Using this procedure, the hypothesis that the coefficients are the same in each year was rejected beyond the .0001 level.

IV. *Use of the Valuation Model for Security Selection*

One of the most intriguing questions concerning empirical valuation models is whether they can be used to aid investors in security selection. The empirical valuation equation shows us, at a moment in time, the average way in which variables such as growth, payout, and risk influence market price-earnings multiples. Given the values of these variables applicable to any specific company, we can compute an estimated normal price-earnings ratio based on the empirical valuation equation. It has been suggested that securities may be selected by comparing the actual market price-earnings ratio with the normal

[20] In using this procedure, the covariance matrix of the disturbances was estimated from the single-equation regression residuals. This procedure also produced more efficient estimates of the coefficients of the individual equations. Since these differed but little from those shown in Table 5, and had the same implications, we shall not present them here. The test reported is an F-test (asymptotically), which uses the vectors of independent and dependent variables, following transformation, in the usual way.

TABLE 6—ANALYSIS OF LACK OF FORECASTING SUCCESS

Description	Coefficient of Determination Residuals against 1964 Return	F-Value (and Degrees) of Freedom)
1963 Valuation equation with 1963 predictions	.04	6.48 (1; 140)
1964 Valuation equation with 1963 data. (Assume that next year's valuation relationship is known.)	.08	12.15 (1; 140)
1963 Valuation equation with realized growth rates. (Assumes perfect foresight regarding future long-term growth and next year's earnings.)	.12	18.140) (1; 14
1963 Valuation equation with 1964 predictions. (Assumes perfect foresight regarding market expectations next year.)	.24	41.75 (1; 140)

Correlations of Residuals over Years

Description	Coefficient of Determination
1962 vs. 1961	.46
1963 vs. 1962	.24
1964 vs. 1963	.13
1965 vs. 1964	.35

multiple predicted by the valuation equation. If the actual earnings multiple is greater (less) than the normal earnings multiple, we designate the security as "overpriced" ("underpriced") and recommend sale (purchase). Such a procedure was employed by Whitbeck and Kisor, who claimed that an underpriced group of securities selected by the above procedure consistently outperformed an overpriced group during the early 1960's.

Of course, even on a priori grounds, it is possible to think of many reasons why such a procedure would prove fruitless. For example, if high P/E (high growth rate) stocks tended to be overpriced during one particular period, the estimated growth-rate coefficient will be larger (by assumption) than that which is warranted. However, the recommended procedure will not indicate that high P/E stocks are overpriced because normal market-determined earnings multiples for these securities will themselves be higher than is warranted. Nevertheless, in view of the positive results reported by Whitbeck and Kisor, it would seem desirable to attempt to replicate their experiment with our data.

The results of some of our experiments are shown in the right-hand columns of Table 5. We measured the degree of over- or underpricing as the ratio of the residual from the prediction equation to the predicted earnings multiple, i.e., $[(P/\overline{NE}-\hat{P}/\overline{NE})/(\hat{P}/\overline{NE})]$. A percentage measure was chosen in view of the considerable variance in actual earnings multiples. If the model is useful in measuring underpricing, then underpriced securities, according to this criterion, ought to "outperform" overpriced issues over some subsequent period. We picked one year as the appropriate horizon and measured subsequent returns, in the normal manner, as

$$R_{t+1} = \frac{P_{t+1} - P_t + D_{t+1}}{P_t} \tag{5}$$

If the empirical valuation model is successful in selecting securities for purchase, the percentage residual (degree of overvaluation) from the valuation equation ought to be negatively related to these subsequent returns. As the table indicates, in only three of the five years for which this experiment was performed was the relationship negative, and the degree of association was extremely low. In the other two years, there was either a positive or zero relationship. Supplementary tests conducted by industry and other groupings produced similar results. It should also be noted that the residuals from the equations employing historical data and from equations combining historical and expectational data were no more successful in predicting subsequent performance. Moreover, these results were unaltered when the subsequent returns were measured over alternative time periods such as one quarter ahead or two or more years ahead.

In Table 6 some statistics are presented which may be helpful in interpreting the reason for our predictive failures. We note that using the 1963 valuation equation as an example, the percentage degree of under- or overpricing is not highly correlated with subsequent returns. The coefficient of determination is only .04. It is possible, however, to isolate four reasons for our lack of forecasting success.

1) The first reason is that the valuation relationship changes over time. We might be unable to select truly underpriced securities because by the next year (the end of the horizon period) the norms of valuation have been significantly altered. Thus, what was cheap on the basis of 1963's relationship may no longer represent good value on the basis of the 1964 relationship. To test how important this factor might be, we performed the following experiment: We assumed that investors knew at the end of 1963 exactly what the market valuation relationship would be in 1964, i.e., we assumed perfect foresight regarding next year's valuation equation. Then, on the basis of the 1964 valuation equation, we utilized the 1963 data to calculate warranted $P/\overline{NE}$ multiples, which could then be compared with actual multiples to determine whether each security was appropriately priced. Correlating the percentage residuals with subsequent returns, we found that the coefficient of determination doubled, 8 percent of the variance in subsequent returns was explained.

2) A second reason for lack of success might be the quality of the expectations data employed. As was indicated in our 1968 article several of the growth-rate forecasts used in the present study were in fact shown to be rather poor predictors of realized earnings growth. To determine how much better off we would be with more accurate forecasts, we assumed perfect foresight regarding the future long-term growth rate of the company and regarding the next year's anticipated earnings. Thus, the 1963 empirical valuation equation was used to determine normal value, but in place of the variable $\hat{E}_{64}/\overline{NE}_{63}$ we substituted the variable $E_{\text{actual } 64}/\overline{NE}_{63}$, and in place of $\bar{g}_p$ we substituted the realized long-term growth rate through the end of 1966. Using these realized data to determine warranted price-earnings multiples, the percentage residuals therefrom were correlated with future returns. As expected, an even greater improvement in forecasting future returns was found. The R^2 rises to .12.

3) As a further experiment, perfect foresight was assumed not regarding the

actual rate of growth of earnings but rather regarding what the market expectations of growth would be next year. Calculating the degree of overpricing as before, we find a much greater improvement in prediction of future returns, 24 percent of the variability of future returns is explained, compared with 4 percent in the original experiment. We conclude that if one wants to explain returns over a one-year horizon it is far more important to know what the market will think the growth rate of earnings will be next year rather than to know the realized long-term growth rate. Of course this observation brings us back to Keynes' newspaper contest again. What matters is not one's personal criteria of beauty but what the average opinion will expect the average opinion to think is beautiful at the close of the contest.

4) A final source of error is that the valuation model does not capture all the significant determinants of value for each individual company. Despite our success in accounting for approximately 80 percent of the variance in market price-earnings multiples, there are likely to be special features applicable to many individual companies that cannot be captured quantitatively. For example, it turned out that the stock of Reynolds Tobacco always appeared to be underpriced. The reason for this is, of course, not difficult to conjecture. There is a risk of government sanctions against the tobacco industry, which weighs heavily in the minds of investors, but which is not related to the instability measure of Reynolds' earnings we have employed.

To indicate how important this problem of omitted variables might be, the residuals from our valuation equations from year to year were correlated. If certain factors specific to individual companies are consistently missing, the residuals from the valuation equations can be expected to be positively correlated over time. As the bottom half of Table 6 indicates, the residuals are significantly correlated over time. Thus, despite our success with expectations data in estimating a valuation equation which has far more explanatory ability than those based on historic information, it is clear that certain systematic valuation factors are still missing from the analysis.[21] Consequently, it cannot be said that all deviations of actual from predicted price-earnings ratios are simply manifestations of temporary over- or underpricing.

V. *Concluding Comments*

We have demonstrated that it is possible to explain, for several successive years, a large percentage of the variability in market price-earnings ratios with the variables included in this study and the specification suggested by the very simple model in Section I. The analysis was not successful, however, in isolating underpriced securities that might be expected to have above-average future returns. Needless to say, there are many additional factors that should be considered in a full valuation study. While it does not seem likely that this further work will provide direct answers to the problem of security selection, it may well shed further light on the logic of market valuations.

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The Effects of New Equity Sales Upon Utility Share Prices

By RICHARD H. PETTWAY*

Public knowledge of a forthcoming sale of new equity by a utility company often precipitates a decline in the market price of that equity and continues to impact share prices after the sale has taken place. Such price changes are part of the real cost of selling the new issue. The market pressure costs of new equity capital have been the subject of much speculation in utility rate cases, but have received little detailed study. The author of this article has made such a study and here presents a quantitative analysis of price-return movements encountered by utility stocks in the market, after first defining market pressure as it applies particularly to the regulated utility environment. He concludes that investors clearly view a new sale of equity shares with disfavor and regulators, as well as company managements, should be concerned with the resultant decline in utility stock prices.

WHEN a public utility decides to sell a new issue of equity capital and publicly discloses this information, share prices are thought to decline. Often these selling firms ask for an adjustment to their costs of equity capital for the effects of this market pressure upon share prices. The subsequent argument and debate about the magnitude of an adjustment for market pressure at rate hearings is well known.

The electric utility industry has been one of the largest issuers of new equity shares during the past twenty-five years. Therefore, it is surprising that there has not been much more research to determine the magnitude of market pressure of these numerous new equity sales in this industry. The objective of this article is to report on the results of an analysis of 368 equity sales by 73 different electric utilities from January 1, 1973, through December 31, 1980. The analysis will measure two effects of new common equity sales upon share prices: market pressure and sales effect. Specifically, this article will determine the magnitude of market pressure defined as the effect of the sale upon share prices which reduces the funds received by the issuing company at the sale date, and will determine the size of the sales effect defined as the total effect of the sale upon share prices from before the announcement until after the sale.

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There have been studies into the size of market pressure defined as a temporary price decline in share values when a large block of shares is said to be "overhanging" the market. However, most of this research concentrates upon the price effects of new issues of industrial companies sold in the primary markets or of large blocks of existing stock sold in the secondary market [1, 2, 4, 5, 6, 9].** This literature defines market pressure as the amount of recovery in market prices *after* the issue has been sold. A review of this literature indicates either no market pressure existing in large block trades of outstanding shares, or only a small amount of pressure associated with primary market sales of new issues.

Under utility regulation, the concern is with a different definition of market pressure. Market pressure in the public utility industry is generally defined as the decline in prices *while* the issue is still overhanging, *before* it is sold. The main question is how much did the utility's stock decline in the secondary market associated with the sales announcement to the date of sale. This decline is a real cost of selling the new issue as the firm will receive only the reduced price at the sales date. An

**Numbers in brackets refer to the list of references at the end of the article.

article by Bowyer and Yawitz (BY) [3] measured the decline in share prices between the announcement date and the sales date of 278 new equity issues of public utilities from 1973 through 1976. But that research had some obvious problems which are corrected by this study.

The first problem with BY is their definition of the announcement date (AD). They defined this critical AD as the initial Securities and Exchange Commission filing date of the issue prospectus. This may not be the true AD as often public utilities make prior announcements of their new issues to state public service commissions, to investors in the *Irving Trust Calendar,* to underwriters, or to financial analysts much earlier than the SEC filing date. This study redefines the critical announcement date through a detailed questionnaire survey of electric utility companies. Further, an analysis of price changes prior to the established announcement date for each issue will be made to determine the actual impact of new equity sales upon share prices. It is very important to measure the complete decline in market prices associated with the information about the forthcoming sale of new equity shares.

Another problem with the BY study concerns its authors' use of the Dow-Jones utility index to measure differential declines in share prices and returns. The use of this index is flawed for at least four reasons. First, the number of companies included is small, 15 firms, and only 11 are electric companies; whereas four are gas transmission and distribution companies. The inclusion of the gas companies raises serious questions concerning the similarities of risks between electric utilities tested and the companies which make up their comparison index. Second, their index does not capture the dividend portion of the return and thus only measures the changes in prices without adjusting for dividends paid. In the electric power industry, the dividend yields tend to be a high portion of the total return and the omission of dividends could impart a bias to the index. Third, if there is evidence of market pressure in new sales of equity shares by utilities as BY found, then it is certain that this market pressure is contained also in share prices of Dow-Jones utility index firms when they sold new equity shares. The effect of using an index which contains market pressure to measure the size of market pressure of a particular firm which sold new equity naturally will understate the true amount of market pressure which is present. Fourth, if utilities are impacted differently from unregulated firms, there may be an additional "industrial effect" which will not be observed by looking only at other utilities rather than a broadly based comparison index of share prices and returns.

Finally, there are some technical problems with the way that BY measured the decline in stock returns or market pressure. These problems concern the use of average residual returns versus a more correct measure (geometric residual returns) and the way BY handled underwriting costs.

Data

A questionnaire survey was conducted of the 93 New York Stock Exchange-listed, investor-owned electric utilities from which 73 usable company replies were obtained for a response rate of over 78 per cent. Each company provided all identifiable costs and critical dates for each new equity capital sale made by the firm from January 1, 1973, through December 31, 1980. The survey results contain data on 368 actual equity sales over the eight-year survey period. The data represent more than five new equity sales per company on average over the study period. The size of these equity sales ranged from $4.7 million to $198 million with a mode sale value in a range between $30 and $49.9 million per issue. The frequency of the issues over the eight years of the survey shows that 1975 was the most popular year followed by 1976 and 1980. Yet, the individual year variation was not dramatic as the range over the eight years was from a low of 37 issues in 1974 to a high of 64 issues in 1975. Eighty-two per cent of the sales were through negotiated underwriting, 16 per cent through competitive bidding, and 2 per cent through rights offerings. See [7] for a thorough review of the data and details on the flotation costs of these issues.

Data on realized share returns including dividends for each company were obtained on a daily basis for a period which began sixty-five trading days before the announcement date and ended thirty trading days after the sale date (SD). Thus, company returns were obtained from a fixed period prior to the AD through a fixed period after the SD for each issue. It is best to think of these data sets as 368 separate arrays of returns. Because the interim time period between the AD and the subsequent SD varied for each issue, the number of return observations in each array is different. Each collected array of returns is unique to the particular announcement and issue dates and is not impacted by other equity sales of the same company.

Methodology

In order to control for risk, to adjust for movements in general prices and returns, and to reduce estimating bias, a two-stage regression process was used to measure the effects of new equity sales upon share returns and prices. First, during the estimating period, the market regression model (1) was applied to a firm's daily equity returns over a uniform estimating period which began sixty-five trading days prior to the AD and ended fifteen days before the AD for each issue. The market regression model asserts that:

$$\tilde{R}_{i,t} = \hat{a}_i + \hat{B}_i \tilde{R}_{m,t} + \tilde{e}_{i,t} \qquad (1)$$

where $\tilde{R}_{i,t}$ is the daily return including dividends of the issuing company for equity issue i — i.e., one to 368 — at time t; where daily returns of the issuing company concerning issue i are defined as $(P_{i,t} + D_{i,t} - P_{i,t-1}) / (P_{i,t-1})$; P is the price and D is the dividend per share; $\tilde{R}_{m,t}$ is the daily return at time t on a market portfolio for comparison; $\hat{a}_i$ and $\hat{B}_i$ are the estimated parameters of the market model; and $\tilde{e}_{i,t}$ is the error term of the model.

In order to make comparisons, an electric utility portfolio index of returns was created over the period January 1, 1973, through December 31, 1980, containing an equal investment in each of 73 electric companies which sold equity during the period. It is a daily returns index including dividends and provides the average return for each day on a portfolio consisting of an equal dollar investment in each of the 73 electric utilities.

Thus, the first stage uses an estimating period of fifty trading days, approximately two and one-half months, to determine the parameters of the market regression model. The second stage then applies these estimated parameters to the returns series during the subsequent test period after the estimating period in each array in order to calculate the expected returns for each company on each issue i using:

$$\hat{R}_{i,t} = \hat{a}_i + \hat{B}_i R_{m,t} \qquad (2)$$

where $\hat{R}_{i,t}$ is the expected return for the issuing company associated with issue i at time t. Then residual returns during the test period are obtained by comparing the actual versus the predicted returns using:

$$R_{i,t} - \hat{R}_{i,t} = \hat{u}_{i,t} \qquad (3)$$

where $\hat{u}_{i,t}$ is the daily residual return of the issuing company for issue i at time t.

In order to display these residual returns properly, a decision must be made of how to combine the individual company residuals centered on a common date during the test period. The method of combining residuals used by Bowyer and Yawitz is called cumulative average residual or CAR. This method would find the average residual return of all issues on a specific day relative to the common AD or SD and would accumulate these averages over the period in an additive way. A different way of combining residual returns, average geometric residual return (AGRR), was chosen for this study. It is a theoretically better measure of residual returns over time than CAR. AGRR does not use the average residual returns on a specific date but takes the individual issue residual ($\hat{u}_{i,t}$) from (3) and converts it into a price relative for each t and then forms a geometric return series by multiplying successive price relatives from fourteen days prior to AD to the end of the residual data for each company using formula (4). Thus, a geometric return series which precisely measures the change in investment worth for each individual issue is created. At any point in time relative to the common dates, AD and SD, the AGRR was determined as the numeric average of the geometric returns up to that point in time of all issues using formula (5).

$$GRR_{i,T} = \prod_{t=1}^{T} (1 + u_{i,t}) \qquad (4)$$

$$AGRR_T = \sum_{i=1}^{N} GRR_{i,T}/N \qquad (5)$$

where i is the issue number, t is time, T is the specific point in time (T=1, 2, 3, . . . total number of observations in the test period which was from fourteen days before the AD until thirty trading days after the SD), and N is the number of issues. For further details concerning the specifics of the methodology employed see [8].

In observing the pattern of these residuals over the test period, it is important to be able to use common definitions to describe their movements. "Market pressure" is defined as the decline of share prices and average geometric residual returns from fourteen days before the AD until the SD. "Sales effect" is defined as the change in share prices and AGRRs from fourteen days before the AD until thirty trading days after the SD. This sales effect would be the net change over the entire test period from before the announcement until well after the sale.

Price-Return Movements

Because the number of days between the AD and the SD are not identical for each issue, arrays of residual returns had to be centered on two separate common dates. The first common date is the AD and then data are centered on the common SD. To begin measuring any price effects of these new equity sales, the study first observed movements in residual returns when the data are centered on the common AD.

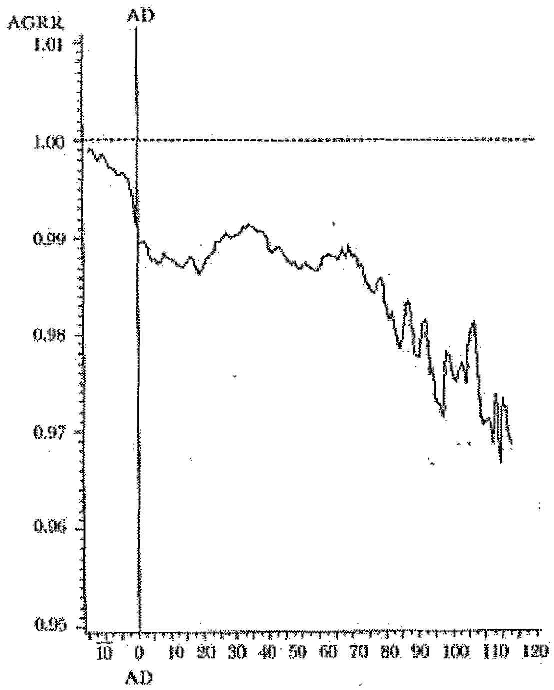
Common Announcement Date

Figure 1 illustrates the AGRRs derived from the use of the electric utility market index of returns for comparison.† The derived residuals are accumulated for 128 days starting fourteen days before the announcement date. All issues are centered on the AD. The trend of the AGRRs are clearly downward and below one during the entire span of 128 days. The downward trend is most noticeable immediately before and around the AD and is then followed by a period of relative stability. During this initial decline, share prices had fallen between one per cent and 1.4 per cent. The downward trend resumes again beginning about sixty-seven days after the AD. The latter downward trend may be associated with the SD, but since these data are centered on the AD, the SD did not occur at a common point in time in the data. Further, because SD is not a common point in the data, the amount of market pressure cannot be measured from the data in this format.

Panel 1 of the accompanying table contains statistical summaries of changes in AGRRs over the entire period shown in Figure 1. It is clear from the data that the change over the 128-day period centered on the AD was a negative 3.019 per cent, indicating a sales effect of this

†If there were no effects of new equity sales upon electric utilities which sold new shares, then the AGRRs shown on Figure 1 would be very close to one over time. A detrimental effect and a relative decline in share prices would be represented as a decline in AGRRs below one. A favorable effect would be represented as an increase in AGRRs. Also notice that the x-axis displays time with negative numbers as days before the AD and positive numbers as days after the AD. The AD, or centering date, is designated as zero.

FIGURE 1
AGRR CENTERED ON ANNOUNCEMENT DATE
(UTILITY INDEX)



magnitude. Thus, comparing the returns over the same time period of an electric utility which sold new equity shares with returns of a portfolio of electric companies which also sold equity during the eight-year study period, there appears to have been a substantial and significant decline or sales effect of −3 per cent. There appear to be two periods of rapid declines, one just before and around the AD and another which appears to begin about sixty-seven days after the AD. Measuring the initial decline during a period from fourteen days before the AD to fourteen days after the AD, the specific decline was −1.2 per cent. This first major decline which begins before the AD suggests that the market was either anticipating the new equity sale or obtaining infor-

EFFECTS OF NEW EQUITY SALES OF UTILITIES UPON SHARE PRICES
CHANGES IN THE AVERAGE GEOMETRIC RESIDUAL RETURNS

368 New Equity Issues of 73 Electric Utilities from
January 1, 1973, through December 31, 1980

Using the Utility Index

Measurements	*Panel 1* Centered on AD (Sales Effect)	*Panel 2* Centered on SD (Sales Effect)	*Panel 3* Centered and Ending on SD (Market Pressure)
Change over the Period	−3.019%	−2.041%	−1.893%
Length of Period (Days)	128	147	104
Change from −14 AD to +14 AD	−1.170%		
Length of Period (Days)	29		

mation about the new equity sale just prior to the public announcement.

Because of the decline in these residuals, it is clear that the market considered the potential new equity sale as detrimental to the future prospects of the current equity holders of the selling firm. Since the decline begins before the AD, this article measures more precisely the *total* decline in share prices than did the work of Bowyer and Yawitz.

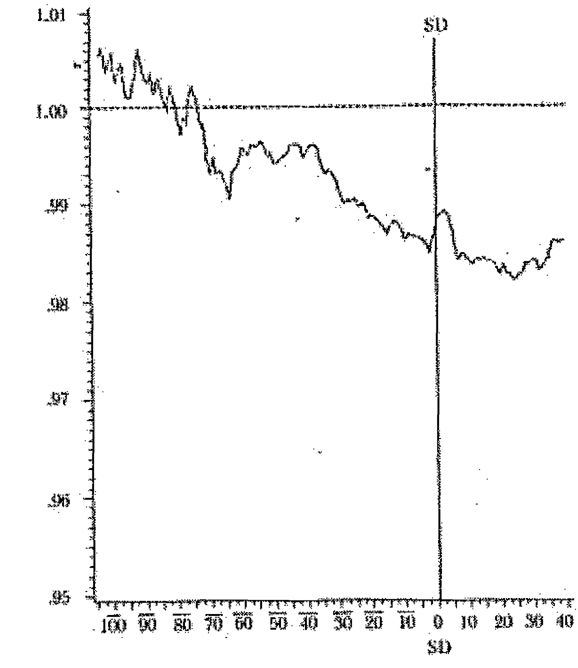
Common Sales Date

Figure 2 shows the AGRRs using the electric utility returns index for comparison with all issues centered on the SD. This plot is clearly one whose trend is also downward across the entire time period, although it appears not to begin its major decline until eighty-five to ninety days prior to the SD.

In Panel 2 of the table are found the summary statistics describing the magnitudes of the AGRRs shown on Figure 2. The changes or sales effect during the period from fourteen days before the AD to after the SD over 147 days was −2.041 per cent.

Panel 3 of the table contains the magnitudes of AGRRs shown on Figure 2 but stopping at the SD. This decline in relative share prices and returns, called market pressure, is caused by the equity sale and is the discount required to sell the new issue. These costs of new equity issues were 1.893 per cent on average. Thus, market prices of shares of electric utilities which sold new equity declined by about 1.9 per cent from before the AD until the SD over 104 days. This is the decline in price that the firm did not receive when it sold new equity shares at the SD and is the market pressure of the new equity issue.

FIGURE 2
AGRR CENTERED ON SALE DATE
(UTILITY INDEX)



Summary and Conclusions

When electric utilities sold new equity shares between January 1, 1973, and December 31, 1980, the share prices of these companies were depressed downward because of the sale. This downward movement or market pressure measured from before the announcement date to the sales date of the new issue was −1.9 per cent when compared with returns of other electric utilities which sold new equity regularly. Further, a sales effect ranging from −3 per cent to −2 per cent was found over the period from before the announcement date until after the sales date depending upon whether the data were centered on the AD or on the SD.

These averages are conservative and the minimum estimated average declines as they were derived from using a return index of comparison (electric utility) which itself contains the effects of market pressure. Further, the use of another index of return for comparison which was composed of regulated and unregulated firms would substantially raise these average costs. (In fact, if the comparison were to be made against the return of all equities listed on the New York and American stock exchanges over the same time period, the average estimate for market pressure would rise to −3 per cent and the average estimates for sales effect would rise to −4.4 per cent centered on the AD to −3.6 per cent centered on the SD. See [8] for details.)

The sizeable sales effect over the entire period from before the announcement date to after the sales date using the portfolio of electric companies for comparison provides direct evidence that share prices of electric utilities which sell new equity continue to decline after the sale has taken place. This condition may be explained as the impact of other factors than market pressure alone upon share prices. Perhaps some of these factors are due to the investors' perceptions of increased dilution problems caused by regulatory lag and regulatory risk associated with these public utilities not being allowed a rate of return on new equity equal to the investors' required rate of return over the eight-year survey period.

Even though the exact causes are not known precisely, it is definitely clear that investors view the new sale of equity shares with disfavor and that the new equity sale results in a substantial decline in equity prices. Public utility regulators should be concerned with these impacts of new equity sales upon share prices and returns and attempt to make proper adjustments in the allowed rate of return to offset or eliminate these effects in the future.

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Utilities Raise Their Capital Appropriations

The nation's investor-owned utilities appropriated $7.2 billion (seasonally adjusted) for new plant and equipment in the final quarter of 1983, up 25 per cent over the unusually low figure recorded in the third quarter, the Conference Board reported in April. Both the gas and electric utilities shared in this fourth-quarter gain. (Capital appropriations are authorizations to spend money in the future for new plant and equipment. Appropriations are the first step in the capital investment process, preceding the ordering of equipment, the letting of construction contracts, and finally the actual expenditures. Appropriations are considered to be a leading indicator for capital spending.)

Electric utility appropriations rose to $5.8 billion in the fourth quarter, their first quarterly increase since the third quarter of 1982. Cancellations of previously approved projects were widespread, however, amounting to $2.7 billion in the final quarter of 1983.

Gas utility appropriations climbed to $1.4 billion in the fourth quarter, a 68 per cent jump over the third quarter. It was the highest quarterly total recorded last year. For the full year, however, the gas utilities appropriated only $4.4 billion, down by a third from 1982, and canceled a record $1.3 billion worth of earlier-approved projects.

Actual capital spending by the investor-owned utilities fell to $8.3 billion in the fourth quarter, an 8 per cent dip from the third quarter. The electric utilities accounted for all of the fourth-quarter decline. For 1983 as a whole, the electric utilities spent a record $32.2 billion on new plant and equipment, up 3 per cent over 1982. Gas utility expenditures amounted to $3.5 billion in 1983, down 30 per cent from 1982.

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ALTERNATIVE METHODS FOR RAISING CAPITAL

Rights Versus Underwritten Offerings

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This paper provides an analysis of the choice of method for raising additional equity capital by listed firms Examination of expenses reported to the SEC indicates that rights offerings involve significantly lower costs, yet underwriters are employed in over 90 percent of the offerings The underwriting industry, finance textbooks, and corporate proxy statements offer several justifications for the use of underwriters However estimates of the magnitudes of these arguments indicate that they are insufficient to justify the additional costs of the use of underwriters The use of underwriters thus appears to be inconsistent with rational, wealth-maximizing behavior by the owners of the firm The paper concludes with an examination of alternate explanations of the observed choice of financing method

1. Introduction and summary

In this paper I examine an apparent paradox Based on a comparison of costs, simple finance theory suggests that listed firms should use rights offerings to raise additional equity capital, rather than employing underwriters Yet the majority of firms choose underwritten offerings, rather than rights offerings

In an underwritten offering, underwriters contract to purchase shares from the issuing firm at a price usually set within 24 hours of the offering, and then resell the shares to the public In a rights offering the shareholder receives a right from the firm giving him the option to purchase new shares for each share owned In section 2, I show that with the proper specification of the subscription price, the proceeds of a rights offering are identical to the proceeds of an underwritten offering

Not identical, however, are costs In section 3, I examine the out-of-pocket costs of underwritten and rights offerings reported to the Securities and Exchange

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Commission for issues registered under the Securities Act of 1933 between January 1971 and December 1975. Rights offerings are significantly less expensive. I also examine additional out-of-pocket expenses associated with both types of offerings. These include extras (options sold to underwriters), unreported expenses such as employee compensation, and the costs of rights offerings imposed directly on the owners of the firm. With these costs considered, I find rights offerings still are less expensive than underwritten offerings.

It has been suggested that selling efforts by underwriters raise stock prices while rights offerings lower them. In section 4 I study price behavior around the date of the offering. I find no empirical support for the hypothesis that abnormal positive returns are associated with underwritten offerings. Moreover, underwriters appear to set the offer price below the market value of the stock by at least 0.5 percent. While stock prices fall when rights are issued, the fall equals the market value of the rights received by the shareholder. Examination of the total rate of return to shareholders around the offer date indicates no abnormal returns; thus the wealth of the firm's owners is not reduced by a rights offering.

Section 5 provides an examination of other benefits presumed to accrue from the use of underwriters. Finance texts, corporate proxy statements, and the underwriting industry itself claim the existence of advantages in timing, insurance, distribution of ownership and from future consulting advice. My estimates of the magnitudes of the costs and benefits associated with these arguments are not sufficient to outweigh the lower costs of rights offerings as a means of raising capital. I can find no differential legal liability associated with the use of rights offerings which might explain the observed use of underwriters. Furthermore, there is no apparent difference in the sets of firms employing the alternative methods which could attribute the reported cost differences to selection bias.

In section 6, I offer a two-part hypothesis which is consistent with the observed frequency of employment of underwriters, with their higher costs, by the majority of listed firms. First, since managers' and directors' interests are different from those of shareholders in general, their financing decisions are not always in the best interests of the owners; benefits flow to management from the use of underwriters although not to shareholders. Second, I hypothesize that the cost to shareholders of monitoring their directors and managers is greater than the cost imposed by the choice of the more expensive financing method.

In section 7 I briefly present my conclusions.

A detailed description of the institutional arrangements for rights offerings and underwritten offerings is not easily available; I have provided one in Appendix 1. The reader unfamiliar with this institutional material will find it valuable to read this appendix before the body of the paper.

Appendix 2 presents a Black–Scholes (1973) option pricing analysis of rights issues and underwriting contracts, given here since general equilibrium analyses of these contracts have not been published.

2. Comparison of proceeds from rights and underwritten offerings

In a firm commitment underwritten offering, the underwriting syndicate purchases the new shares from the firm at an agreed upon price, and offers the shares for sale to the public at the offer price If the shares cannot be sold at the offer price, the underwriting syndicate breaks and the shares are sold for whatever price they will bring The underwriters bear the risk associated with adverse price movements, the proceeds to the firm are guaranteed Of course the difference between the offer price and the proceeds to the firm are expected to compensate the underwriter for bearing this risk

In a rights offering, each shareholder receives one right for each share owned This right is an option issued by the firm to purchase new shares The right states the relevant terms of the option, specifying the number of rights required to purchase each new share, the subscription price for each new share, and the expiration date of the option Since issuing rights is costly, it is in the firm's interest to insure the success of the offering A lower subscription price for the rights provides this insurance, a lower subscription price raises the market value of the right and reduces the probability that at the expiration date of the rights offering the stock price will be below the subscription price There is a corresponding fall in the market value of the stock, but this fall is like a stock split It does not affect the wealth of the owners of the firm [1]

If the shareholder does not exercise his rights, or does not sell his rights to someone who will exercise the rights, his wealth is reduced by the market value of the rights Thus the firm can make the probability of failure of the rights offering arbitrarily small by setting the subscription price low enough

Thus, since rights offerings and underwritten offerings can be specified so that the amount of capital raised by each is essentially equivalent, the decision as to which method to employ depends on the costs, the firm should employ that method which has lower net costs

3. Out-of-pocket expenses of rights and underwritten issues

"Expenses involved in a preemptive common stock rights offering are significantly greater than expenses involved in a direct offering of common stock

[1]The adjustment for the 'split effect' of a rights offering can be calculated as follows The ex-rights price of the shares, P_x, equals the with-rights price, P_w, minus the value of the right, R

$$P_x = P_w - R.$$

Ignoring the 'option value' of the right, the market value of a right is the difference between the ex-rights price and the subscription price, P_s, divided by the number of rights required to purchase one share, n

$$R = (P_x - P_s)/n$$

Substituting the second expression into the first and simplifying yields

$$P_x = (nP_w + P_s)/(n+1)$$

to the public due to additional printing and mailing costs, expenses associated with the handling of rights and the processing of subscriptions, higher underwriters' commissions and the longer time required for the consummation of financing." [2]

3.1. Reported out-of-pocket expenses

To examine the out-of-pocket expenses referred to in the quotation above (from Commonwealth Edison's 1976 proxy statement) I obtained a tape from the Securities and Exchange Commission covering the reported costs of all issues registered under the Securities Act of 1933 between January, 1971 and December, 1975. The tape contains data covering the following costs: (1) compensation received by investment bankers for underwriting services, (2) legal fees, (3) accounting fees, (4) engineering fees, (5) trustee's fees, (6) listing fees, (7) printing and engraving expenses, (8) Securities and Exchange Commission registration fees, (9) Federal Revenue Stamps, and (10) state taxes.

To restrict my analysis to equity issues by listed firms, I established the following criteria for inclusion: (1) the offering is of common stock and contains no other classes of securities; (2) the company's stock is listed on the New York Stock Exchange, American Stock Exchange, or a regional stock exchange prior to the offering; and (3) any associated secondary distribution is less than 10 percent of the gross proceeds of the issue. Table 1 is based on the issues meeting these criteria.

The data summarized in table 1 contradict Commonwealth Edison's Proxy Statement. My information, consistent with findings of previous SEC studies,[3] indicates that costs are *highest* for underwritten public offerings, and *lowest* for pure rights offerings. Furthermore, the difference in costs is striking. For a $15 million issue, the reported cost difference between an underwritten public offering and a pure rights offering is 4.83 percent, or $720,000; and for a $100 million issue the cost difference is 3.82 percent, or $3,820,000.[4] Yet underwriters were employed in over 93 percent of the issues examined.

3.2. Extras

Systematic understatement of the costs of underwriting presented in table 1 occurs because extras are omitted. Extras refer to the warrants which are associated with some underwritten issues and are used as partial payment to the underwriter. The warrants are options which are usually convertible into the

[2]Commonwealth Edison Proxy Statement, 1976.

[3]See SEC (1940, 1941, 1944, 1949, 1951, 1957, 1970, 1974).

[4]One empirical regularity in the data presented in table 1 should be noted. To a first approximation, the differences in costs among financing methods are explained by the differences in underwriter compensation. Compare 'Other Expenses' for Underwriting and Rights with Standby Underwriting with 'Total Costs' for Rights.

Table 1

Costs of flotation as a percentage of proceeds for 578 common stock issues registered under the Securities Act of 1933 during 1971–1975 The issues are subdivided by size of issue and method of financing underwriting, rights with standby underwriting, and pure rights offering[a]

Size of issue ($ millions)	Underwriting				Rights with standby underwriting				Rights	
	Number	Compensation as a percent of proceeds	Other expenses as a percent of proceeds	Total cost as a percent of proceeds	Number	Compensation as a percent of proceeds	Other expenses as a percent of proceeds	Total cost as a percent of proceeds	Number	Total cost as a percent of proceeds
Under 0 50	0	–	–	–	0	–	–	–	3	8 99
0 50 to 0 99	6	6 96	6 78	13 74	2	3 43	4 80	8 24	2	4 59
1 00 to 1 99	18	10 40	4 89	15 29	5	6 36	4 15	10 51	5	4 90
2 00 to 4 99	61	6 59	2 87	9 47	9	5 20	2 85	8 06	7	2 85
5 00 to 9 99	66	5 50	1 53	7 03	4	3 92	2 18	6 10	6	1 39
10 00 to 19 99	91	4 84	0 71	5 55	10	4 14	1 21	5 35	3	0 72
20 00 to 49 99	156	4 30	0 37	4 67	12	3 84	0 90	4 74	1	0 52
50 00 to 99 99	70	3 97	0 21	4 18	9	3 96	0 74	4 70	2	0 21
100 00 to 500 00	16	3 81	0 14	3 95	5	3 50	0 50	4 00	9	0 13
Total/Average	484	5 02	1 15	6 17	56	4 32	1 73	6 05	38	2 45

[a]Issues are included only if the company's stock was listed on the NYSE, AMEX or regional exchanges prior to the offering, any associated secondary distribution represents less than ten percent of the total proceeds of the issue, and the offering contains no other types of securities The costs reported are (1) compensation received by investment bankers for underwriting services rendered, (2) legal fees, (3) accounting fees, (4) engineering fees, (5) trustees' fees, (6) listing fees (7) printing and engraving expenses (8) Securities and Exchange Commission registration fees (9) Federal Revenue Stamps, and (10) state taxes

stock of the firm at prices ranging from well below to considerably above the offering price When the underwriters acquire these warrants at a price below their market value, this represents a form of compensation to the underwriter, and it is not included in table 1

Although extras have historically been most often associated with new issues, their use in the compensation of underwriters of seasoned firms is not unusual For the years 1971–1972, the SEC (1974) reported that of the 1,599 issues which were underwritten, 530, or 33 1 percent, included extras However, since extras were included primarily with the smaller offerings, the total dollar volume of issues with extra compensation was only 7 percent of the gross proceeds from all underwritten offerings

The average exercise price of the warrants granted as a percentage of the offering price was 11 72 percent A lower bound on the value of the option is the difference between the subscription price of the offering and the exercise price of the extras, here that is 88 28 percent of the subscription price [5] Since these warrants are typically purchased by the managing investment banker at a minimal price, usually one to ten cents, the options appear to be significantly underpriced The SEC also found that the average ratio of shares granted the underwriters through extras to the number of shares offered in the underwriting was 7 99 percent To assess the impact on the figures reported in table 1, assume that the value of the warrant is 80 percent of the offering price, that the underwriter pays 5 percent of the offering price for the extras, and that the ratio of warrants received as extras to shares offered through the underwriting is 0 07, then the compensation represented by the extras would be 4 95 percent of the total proceeds These numbers suggest that for the issues employing extras, the figures in table 1 understate the underwriters' compensation on the order of 50 to 100 percent

3 3 Unreported out-of-pocket expenses

Such items as the opportunity cost of the time of the firm's employees and postage expenses[6] are not included in the summary of costs reported in table 1 However, unreported employee expenses are unlikely to explain the deviations reported in table 1 For a $15 million issue, the $720,000 difference would not be explained if 20 employees with an average salary of $30 thousand worked

[5]This is a conservative estimate of the value Merton (1973) has demonstrated that the lower bound on the value of an option is the difference between the stock price and the discounted exercise price

[6]Although postage expenses are not reported to the SEC, estimates were obtained from summaries of expenses reported to the New York State Public Utilities Commission for a sample of firms For the sample, the maximum postage expense as a percentage of total proceeds was one-tenth of one percent Even if this were understated by a factor of ten, it would be of insufficient magnitude to explain even the smallest reported difference in costs Moreover, the marginal postage expense could be reduced to zero by mailing the rights with other required mailings, such as dividend checks or quarterly reports

full time on a rights offering for a year. For a $300 million issue the difference in reported costs of underwriting versus a rights issue exceeds $11 million; it would require over 350 man-years to explain this difference.

It should be noted that expenses allocated to raising capital do *not* reduce the tax liability of the firm.[7] These expenses are deducted from the capital account without affecting the income statement. Thus, the use of internal resources can lower the tax liability of the firm if it is more expensive for the Internal Revenue Service to monitor the allocation of internal resources between capital raising activities and other activities. In the above examples, if the firm's marginal tax rate is 50 percent, and if they were able to deduct all their wages for tax purposes, the required number of man-years to explain the reported cost differential would be doubled.

There are strong reasons to believe that table 1 also omits significant unreported costs of the issuing firm's employees' time for underwritten offerings. There are important parameters (e.g., the offering price and the fee structure) which must be negotiated between the underwriter and the representatives of the firm; these parameters have wealth implications for the owners of the firm as well as the underwriter. Such negotiation can be lengthy and usually directly involves top management. These unreported costs of underwriting must be significantly greater than the costs of setting a subscription price for a rights issue, since the subscription price has no wealth implications for the owners of the firm as long as it is low enough to ensure that the rights will be exercised.

Moreover, with an underwritten issue the firm has the same tax incentives to substitute internal for external resources if it is more expensive for the IRS to monitor the allocation of costs of internally acquired resources to capital raising activities than of those which are externally acquired. Thus, it is not clear that rights offerings employ fewer unreported internal resources than do underwritten offerings.

3.4. *Costs imposed directly on shareholders*

If a shareholder chooses to sell his rights, he incurs transactions costs and tax liabilities. These costs, although not borne by the firm, are relevant because they affect the wealth of the owners.[8]

[7]If the firm sells bonds rather than stock, the costs of selling the issue can be amortized over the life of the issue. In no case, however, may these costs be expensed either for tax or reporting purposes.

[8]There is a limited benefit from issuing rights to the owners of the firm under Regulation T, the Federal Reserve regulation restricting margin credit. For an owner who wishes to borrow to acquire additional stock, Reg T provides for the establishment of a 'Special Subscription Account' which lowers the effective margin requirement by permitting a customer to purchase on an installment basis a margin security acquired through the exercise of subscription rights expiring within 90 days. Under this provision, 75 percent of the market value of the acquired stock can be borrowed initially. Quarterly installments are required over a 12 month period to bring the position up to proper margin.

To determine the impact of the selling costs, let us assume generally extreme values for the relevant parameters For small dollar transactions (less than $1,000), the brokerage fee can be as much as 10 percent And for rights, the bid-ask spread can be as high as 10 percent, this represents another selling cost If half the bid-ask spread is taken as an implicit selling cost the total cost can be as much as 15 percent of the value of the rights To make the figures comparable to those in table 1, calculate transactions costs as a fraction of the proceeds of the offering to the firm The 15 percent must be multiplied by the ratio of the value of the rights to the total proceeds For the offerings in the sample, this ratio was approximately 10 percent If all individuals sold their rights, transactions costs would be 1 50 percent of the proceeds, a figure less than the difference in transactions costs for any reported issue size [9] But rights offerings are generally 50 percent subscribed by existing shareholders who do not bear these transactions costs [10] Therefore this cost appears to be less than one percent

Selling rights also has tax consequences for the shareholder For tax purposes, the cost basis of the stock must be allocated between the stock and the rights when the rights are received based on the market values of the rights and stock at that time [11] The acquisition date of the rights for tax purposes is the date on which the stock issuing the rights is acquired If the stock has risen in value since it was acquired, a relevant cost of employing a rights offering is the difference between the shareholder tax liability incurred now and the present value of the taxes which would have been paid had the rights issue not occurred [12]

To determine the impact of this cost again postulate generally extreme values for the relevant parameters Assume (1) that the marginal tax rate for the average shareholder is 50 percent (note this would be an unattainably high rate if the capital gain were long term), (2) that in the absence of the rights offering the taxes could have been postponed forever (3) that the allocated cash basis for the rights is 50 percent of the current rights price (4) that the ratio of the value of the rights to the proceeds of the issue is 10 percent, and (5) that only 20 percent of the current stockholders subscribe to the rights offering In this

[9]Note that since the expenses associated with raising equity capital are not tax deductible, these figures are comparable without further adjustment

[10] Estimates vary but ballpark figures on how investors react [to rights offerings] are as follows 50% exercise their rights 40% sell out for cash, and 10% do nothing [Vanishing Rights' (May 2, 1977) *Barron's* p 25]

[11]If the fair market value of the rights is less than fifteen percent of the fair market value of the stock, the shareholder can choose to set the basis of the rights at zero leaving unaffected the basis of the stock The shareholder might choose this alternative if the cost of the bookkeeping exceeded the present value of the tax saving or if he anticipated being in a higher tax bracket when his remaining holdings were sold

[12]See Bailey (1969) for a discussion of the effective rate of capital gains tax, discounted to reflect the liability deferral

case, the cost would be 2 percent of the capital raised by the firm This is less than any reported cost differential in table 1 [15]

One other argument involving shareholder-borne costs has been offered by Weston and Brigham (1975) They argue that in a rights offering some stockholders may neither exercise nor sell, and by allowing their rights to expire unexercised they incur a loss [16] However, if an oversubscription privilege is employed with the offering, current owners in the aggregate receive full market value for the shares sold Admittedly, the oversubscription privilege affects the distribution of wealth among the owners, but it does not impose costs on owners as a whole

4. Security price behavior associated with rights and underwritten offering

4 1 Rights offerings lower the stock price

"A rights offering, under market conditions then existing, could well have a long-term depressing effect on the market price of the stock " [17]

Given the investment policy of the firm, a rights offering *will* lower the price of the stock in both the short run and in the long run as AT&T s Proxy Statement suggests But this is irrelevant to the choice of financing methods because the drop in price is *not* a reduction in the wealth of the owners and thus cannot be considered a cost of a rights issue

The fall in the stock price when rights are issued can be illustrated by the following argument Rights give the shareholders the option to purchase new shares at less than market prices Other things equal, the total market value of the firm after a rights offering, V, will then be the previous value, V' plus the subscription payments, S

$$V = V' + S \tag{1}$$

The per share price before the offering is V'/n, where n is the number of old shares If m new shares are sold, the per share price after the offering, $(V'+S)/(n+m)$ must be less than the price per share before the offering [18]

[15]If taxes were important, firms would avoid rights offerings when share prices had risen However the evidence presented in table 2 shows that, on average, firms have had abnormal positive price changes during the 12 months before an offering

[16]Stockbrokers holding securities for safekeeping do not allow the warrants to expire unexercised If no instructions are received, the broker will sell the rights immediately before expiration

[17]American Telephone and Telegraph Co, Notice of 1976 Annual Meeting and Proxy Statement

[18]Also note that arbitrage profits must not be available When a stock trades ex rights, a right is issued for each share outstanding At the ex rights date, the expected change in the stock price must equal the expected value of the right, or profit opportunities would exist if the sum of the ex rights value of the stock plus the value of the right at the ex rights date were

The fall in the stock price on the ex rights day is similar to the expected fall in the stock price at the ex dividend date. The two cases differ only in what is distributed – in the latter instance cash, in the former rights. Thus, the fall in the stock price simply reflects the fact that the shareholders have been given a valuable asset, the right.

The argument that the fall in the stock price is a relevant cost of a rights offering also appears in two related forms: (1) if an underwriter is used, the firm can raise a greater amount of capital with the same number of shares; (2) a rights offering lowers the earnings per share of the firm.[19] Both statements are true but if the fall in the stock price equals the market value of the rights, then the impact of the additional shares issued through the rights offering is the same as that of a stock split and the wealth of the owners of the firm is unaffected.

To examine whether, after correcting for the expected normal fall in the stock price, there were also abnormal price changes,[20] I studied the 853 rights offerings on the CRSP master file between 1926 and 1975. Following Fama, Fisher, Jensen and Roll (1967), I estimated the regression,

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}, \qquad (2)$$

where R_{jt} is the return to security j in month t, adjusted for capital structure changes (including rights offerings) and R_{mt} is the return to the market portfolio in month t. I estimated (2) for each of the 853 offerings, using data from the CRSP monthly return file, excluding the 25 months around the date of the offering. Setting $t = 0$ for the month of the rights offering, I used the estimated α_j and β_j to calculate the ε_{jt} for each security for the 25 months around the offering. I then calculated the average residual over all firms for each month in the interval -12 to $+12$. The average residuals were then cumulated from month -12 to the event month. The results are presented in table 2 and figure 1.

In the months subsequent to 'event month minus two' the average residuals

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systematically different from the value of the stock immediately before the ex rights date, then profits could be made by taking an appropriate position in the stock upon the announcement of the rights issue.

[19] 'Thus, if the amendment [to remove the preemptive right from the corporate charter] is adopted, the company will be able to obtain the amount of capital needed through the issuance of fewer shares. Over a period of time this will result in slightly less dilution, higher equity value per share and better earnings per share.' [Commonwealth Edison Proxy Statement, 1976.]

[20] E.g., Commonwealth Edison suggests, 'Selling pressures often unduly depress both stock and rights values during the two or three week offering period which is a practical necessity when stock is sold with preemptive rights. Because the majority of stockholders do not exercise their rights but offer them for sale, the market value of the rights is driven far too low. Outsiders are then able to benefit by selling large amounts of stock during the offering period while buying rights for almost nothing and then exercising their rights to purchase stock at a discount to cover their sales. As a result, rights offerings tend to cost the company more than the rights themselves are worth to the stockholders who get them.'

are all insignificantly different from zero[21] and there is no significant sign pattern in the time series of average residuals. The cumulative average residuals in table 2 are also at approximately the same level three months before the

Table 2

Summary of average residual and cumulative average residual analysis of 853 rights offerings between 1926 and 1975 for the 25 event months [−12 to +12] surrounding the offer date.

Event month	Average residual	Cumulative average
−12	0.00721	0.00721
−11	0.01004	0.01725
−10	0.00255	0.01980
− 9	0.00629	0.02609
− 8	0.00388	0.02997
− 7	0.01062[a]	0.04059
− 6	0.00750	0.04809
− 5	0.00622	0.05431
− 4	0.01334[a]	0.06765
− 3	0.00662	0.07427
− 2	0.01624[a]	0.09051
− 1	−0.00649	0.08401
0	−0.00739	0.07663
+ 1	0.00779	0.08441
+ 2	0.00412	0.08853
+ 3	0.00405	0.09258
+ 4	−0.00110	0.09149
+ 5	−0.00047	0.09102
+ 6	0.00053	0.09155
+ 7	−0.00338	0.08817
+ 8	−0.00387	0.08430
+ 9	0.00256	0.08686
+10	−0.00264	0.08422
+11	−0.00013	0.08408
+12	−0.00476	0.07933

[a]Greater than 2σ. (Computation of the standard deviation is described in footnote 21.)

offering, on the date of the offering and 12 months after the offering. The significant positive residuals prior to the offer date are to be expected because of selection bias; firms which raise capital tend to have been doing well.

[21]As an estimate of the dispersion of an average residual, the approximation

$$\sigma^2 = (\sigma^2_M/r^2)(1-r^2)/N$$

was employed where σ^2_M is the variance of the market return, r^2 is the squared correlation coefficient between the return to an asset and the market return, and N is the number of securities in the sample. If σ_M is 0.089 [from Black Jensen Scholes (1972)], $r^2 = 0.25$, and $N = 853$ then $\sigma^2 = 0.000028$ and $\sigma = 0.00528$.

The results presented in table 2 are consistent with previous studies of this question Nelson (1965) examined all the rights offerings by firms listed on the New York Stock Exchange between January 1, 1946 and December 31, 1957. He found after the price series is adjusted for the 'split effect' in the rights offerings and general market movements are removed, prices six months after a rights offering are not significantly different from prices six months before the offering [22] Scholes (1972) found that the price of shares generally rose in value before the issue, fell 0 3 percent during the month of the issue, but experienced no abnormal gains or losses after the issue

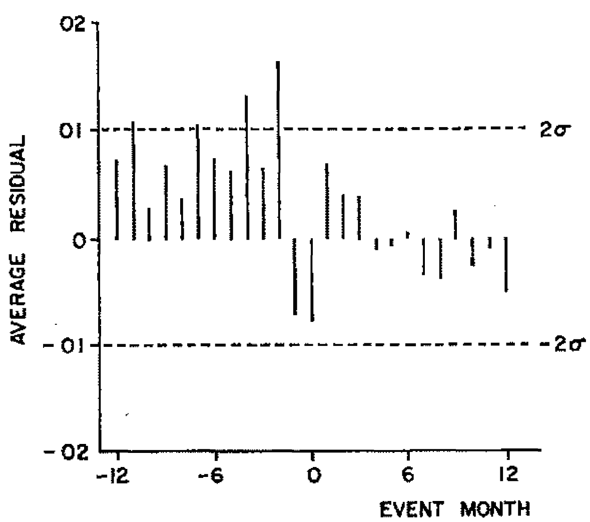

Fig 1 Plot of average residuals for 853 rights offerings between 1926 and 1975 for the 25 event months [−12 to +12] surrounding the offer date

4 2 *Underwriters increase the stock price*

Some argue that underwriters cause an increase in the stock price (1) by increasing 'public confidence' through external certification of the legal, accounting, and engineering analyses and (2) by the selling efforts of the underwriting syndicate.[23]

To examine the behavior of stock prices around the offer date of underwritten offerings and rights offerings, I obtained the returns for those securities which were included both in the sample of 578 firms covered in table 1 and on the CRSP daily return file There were 344 underwritten offerings and 52 rights offerings in this sample I set the offer date equal to day zero for all offerings and formed a portfolio of underwritten offerings and a portfolio of rights offerings I weighted securities in the portfolio of underwritten offerings so that

[22]The 'split effect' adjustment used by Nelson is derived in footnote 1
[23]See e g Brigham (1977, pp 473–474)

the two portfolios had equal betas. Then I calculated the difference in the portfolio returns for the 130 days before and 130 days after the offerings. The difference in average returns between two portfolios with equal risk will measure abnormal returns from either underwritten offerings or rights offerings. Table 3 presents the results for the period 20 days before the offering to 20 days after the offering; and figure 2 graphically presents the results for the period 40 days before to 40 days after the offering.

The average difference in returns to the two portfolios over the 260 days around the offer date is +0.00006, with a sample standard deviation of 0.00265. Therefore rights offerings have marginally higher returns during the 40 days around the offer date, but there is no obvious abnormal price behavior around the offer date for either underwritten offerings or rights offerings.

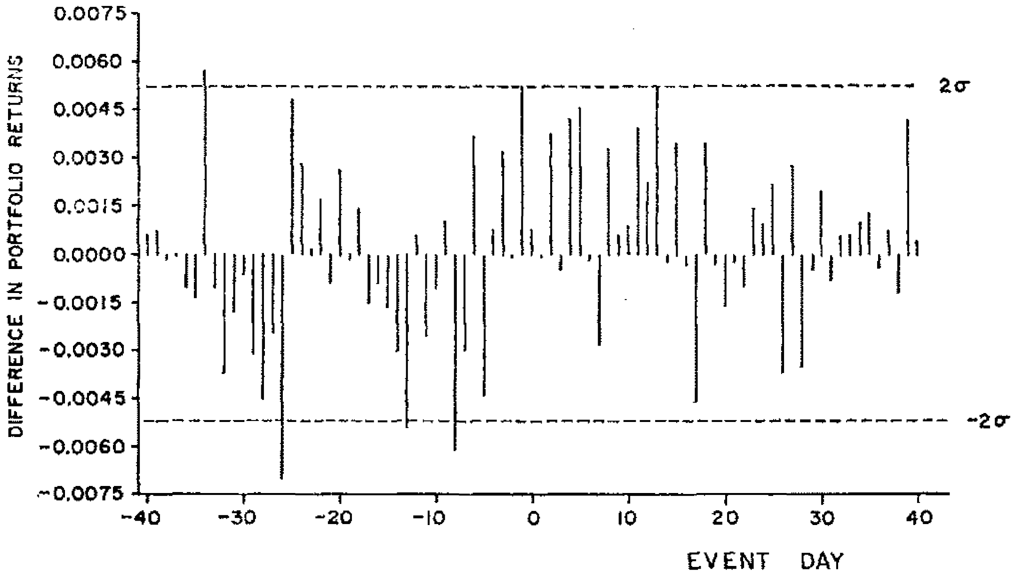

Fig. 2. Differences in daily returns between a portfolio of 52 rights offerings and a portfolio of 344 underwritten offerings for the 81 event days [−40 to +40] surrounding the offer date. (Portfolio weights are adjusted so that the two portfolios have the same beta.)

That underwriters are unable to generate abnormal positive price behavior should not be surprising. The firm always has the option of disclosing more information than is required by the Securities and Exchange Commission. The firm will expend resources on certification by external legal, accounting, and engineering firms until the net increase in the value of the firm is zero. Since the firm can contract for external certification of any disclosure, the benefit of whatever 'expert' valuation by the investment banker associated with an underwriting is limited to the difference in costs between certification through the underwriting process and independent certification.

But if underwriters are employed they influence the firm's decision about the

Table 3

Differences in daily returns between a portfolio of 52 rights offerings and a portfolio of 344 underwritten offerings between January 1971 and December 1975 for the 41 event days [−20 to +20] surrounding the offer date (Portfolio weights are adjusted so that the two portfolios have the same beta)

Event day	Rights average return	Underwritten average return	Difference (rights-und)	Cumulative difference
−20	−0 000361	−0 003007	0 002646	0 002646
−19	−0 001642	−0 001523	−0 000120	0 002526
−18	0 000072	−0 001361	0 001433	0 003959
−17	−0 001325	0 000175	−0 001500	0 002458
−16	−0 001134	−0 000231	−0 000902	0 001556
−15	−0 002865	−0 001229	−0 001636	−0 000080
−14	−0 002245	0 000732	−0 002977	−0 003057
−13	−0 004471	0 000949	−0 005420	−0 008477
−12	0 001722	0 001110	0 000611	−0 007866
−11	−0 002834	−0 000264	−0 002570	−0 010436
−10	−0 001226	−0 000125	−0 001102	−0 011538
− 9	0 001961	0 000960	0 001000	−0 010537
− 8	−0 004966	0 001151	−0 006117	−0 016654
− 7	0 001031	0 001327	−0 000296	−0 016950
− 6	0 002433	−0 001257	0 003690	−0 013260
−	−0 002373	0 002069	−0 004442	−0 017702
4	0 002180	0 001384	0 000797	−0 016905
− 3	0 001978	−0 001284	0 003262	−0 013642
− 2	−0 000570	−0 000557	−0 000013	−0 013656
− 1	0 004425	−0 000803	0 005228	−0 008428
0	0 001413	0 000583	0 000829	−0 007598
1	−0 000000	0 000054	−0 000054	−0 007653
2	0 003127	−0 000605	0 003732	−0 003921
3	−0 001182	−0 000700	−0 000482	−0 004403
4	0 003059	−0 001195	0 004254	−0 000149
5	0 005288	0 000710	0 004577	0 004428
6	0 000311	0 000477	−0 000166	0 004262
7	−0 002551	0 000206	−0 002757	0 001505
8	0 004396	0 001072	0 003324	0 004829
9	0 000851	0 000221	0 000630	0 005458
10	0 001601	0 000720	0 000881	0 006339
11	0 004703	0 000768	0 003934	0 010273
12	0 002369	0 000099	0 002271	0 012544
13	0 004764	−0 000502	0 005267	0 017811
14	−0 000734	−0 000495	−0 000239	0 017572
15	0 002944	−0 000527	0 003471	0 021043
16	−0 001089	−0 000790	−0 000299	0 020744
17	−0 001809	0 003065	−0 004874	0 015870
18	0 001228	−0 002196	0 003424	0 019294
19	0 000169	0 000458	−0 000289	0 019004
20	−0 000823	0 000711	−0 001534	0 017471

level of disclosure The underwriters will request that level of disclosure for which the marginal private costs and benefits to the underwriter are equal Given the legal liability of underwriters under the 1933 Act, the incentives of the firm and underwriter can differ Any divergence from the level of disclosure which maximizes the market value of the firm imposes a cost on the shareholders, and underwriters do ask for 'comfort letters' from accountants, frequently requiring expensive auditing procedures not produced without underwriters Thus, I conclude that the disclosure incentives of the underwriters lead to an over-investment in information production However, the costs of this over-investment should be reflected in the figures in table 1

4 3 Do underwriters underprice the securities?

In Ibbotson's (1975) study of unseasoned new issues he found that the offer price on average is set 11 4 percent below the market value of the shares If seasoned new issues are also underpriced, the difference between market value and offer price would represent another cost of employing underwriters

There are reasons to believe that underwriters underprice the seasoned new issues For a firm commitment underwriting agreement the Rules of Fair Practice of the National Association of Securities Dealers[24] require that once the offer price is set, the underwriter cannot sell the shares at a higher price. If the offer price is set above the market value of the shares excess supply results If the offer price presents a binding constraint to the underwriter, the limit order placed with the specialist by the managing underwriter results in the purchase of additional shares at the offer price If continued this purchasing would cause the underwriting syndicate to break Since very few underwriting syndicates break,[25] the implication must be either that the offer price is generally set below the market value of the shares, or that the offer price constraint can be circumvented

There are two ways in which the offer price could be circumvented First, for hot issues (i e, underpriced issues for which there is significant excess demand) the underwriters allocate the shares to preferred customers One way to achieve preferred customer status is to purchase issues for which there is an excess supply Second, underwriters employ 'swaps' In a swap, the underwriter buys another security from a customer while selling the underwritten security at the offer price Through this tie-in sale, the underwriter can shift the profit or loss These two tying arrangements allow the underwriter to minimize the impact of the regulation

[24]Although the rules of fair practice were established by the NASD, and not Congress or the SEC, there is little difference in the impact These rules are a response to the SEC's self regulatory position If the SEC found them unsatisfactory the SEC could establish superseding regulation

[25]See *History of Corporate Finance for the Decade* (1972)

To see if seasoned new issues are underpriced I calculated the return from the closing price the day prior to the offer date to the offer price, and the return from the offer price to the close on the offer date For the 328 firms with the requisite data, the average return from the close to the offer price is −0 0054 and the average return from the offer price to the close on the offer date is +0 0082 For the 260 days around the offer date the average daily return is 0 0005 with a sample standard deviation in the time series of average returns of 0 0013 Therefore, both figures, although much smaller than the 11 4 percent found by Ibbotson, are significantly different from the average daily return [26] Thus the underpricing imposes an additional cost on the owners of the firm of between 0 5 and 0 8 percent of the proceeds of the issue, a cost which is not reflected in table 1

5. Miscellaneous arguments favoring underwritten offerings

5 1 Insurance

It is frequently argued that employing an underwriter provides an 'insurance policy', reducing uncertainty of the offering's success [27] In effect, the firm

[26]One difference between Ibbotson's unseasoned issues and the seasoned issues examined here is that the unseasoned shares trade on the OTC market One hypothesis which has been suggested to explain the differences in the results is that the underpricing is a method of compensating the underwriter for maintaining a secondary market in the security Although the argument can explain why underwriter's compensation (including underpricing costs) for unseasoned issues is higher than for seasoned issues it does not explain the differential underpricing

[27]Another type of 'insurance' might be relevant If material errors are found in the registration statement of a public issue, parties who allege damage can bring suit The suit typically names as co-defendants the firm, the board of directors of the firm, the firm s accountants, and the firm s underwriter If the underwriter assumes a large share of the liability for the error, sheltering the firm from suit, then the underwriter will receive a normal compensation for bearing that risk

Direct evidence on the hypothesis that underwriters reduce the firm's liability in case of a suit is expensive to obtain, economic studies of securities fraud suits have not been published However indirect evidence suggests that this factor cannot be of a sufficiently large magnitude to make this an important factor in the choice of underwritten issues over rights issues First, damage must be demonstrated – i e in addition to finding a material misstatement in the registration statement, the share price must have fallen after the offering Second, the underwriters explicitly seek to limit their liability as much as is legally feasible '[Issuer-Underwriter Indemnification] agreements are universally used in today s underwriting These agreements, although varying in specific language provide essentially for indemnification of the 'passively' guilty party by the party whose omissions or misstatements were the source of the liability ' (See 'The Expanding Liability of Security Underwriters', *Duke Law Journal*, Dec 1969, pp 1191–1246) Thus underwriters contracts seek to minimize their exposure in this area Third if the courts imposed a significant share of the responsibility for material errors on the underwriter, it would be expected that accounting firms would recognize this by offering lower rates for securities work to firms employing underwriters This does not seem to be the case At least when this issue was raised with several partners of eight big accounting firms, this effect was denied The judicial procedure tends to make the liability of each of the groups of defendants in this type of suit virtually independent.

purchases an option to sell the shares to the underwriter at the offer price (See Appendix 2) Note four things about this option First, in an underwritten issue, the offer price is not set generally until within 24 hours of the offering when the final agreement is signed, and hence the net proceeds are not determined until that time Second, as shown in section 4 3, the offer price on average is set below the market value of the stock Thus, the firm purchases a one-day option to sell shares at a discount of ½ percent below their market value Third, subject to certain conditions specified in the letter of intent, the underwriter has the option of backing out of the tentative agreement until the date the final agreement is signed Thus, the 'insurance policy' is of limited value because its effective duration is short Fourth, as argued above, the subscription price for a rights offering can be set low enough so that the probability of failure of the rights offering becomes arbitrarily close to zero So an alternate source of 'self-insurance' is available through the rights offering For these reasons, the possible value of the 'insurance policy' associated with underwritten issues must be small

5 2 Timing

Commonwealth Edison claims that the proceeds of an underwritten issue are available to the firm sooner than in a rights issue [28] But timing benefits provided by underwriters must be small First, the settlement date for an underwritten issue is generally seven days after the offer date, while the settlement date for a rights offering is generally seven days after the expiration of the offering Since the offering generally lasts about 18 days, any reasonable estimate of the cost in terms of the lost interest which would be imposed on the firm by waiting that short period of time would have to be small Second, since it is not expected that the rights will be exercised prior to their expiration,[29] the owners of the firm have the use of the funds during the period of the offering Thus, the time period which entails an opportunity cost of the funds is reduced to a seven- to ten-day period both for rights and underwritten offerings Third, if the services provided by the underwriter and transfer agents are competitively supplied, the fees charged will reflect the opportunity cost of the funds at their disposal This would imply that the timing cost is impounded in the figures in table 1 And fourth, unless there is an unforeseen urgency associated with obtaining the funds, the firm can simply initiate the rights procedure at an earlier date

Moreover, under certain circumstances, the registration procedure with the SEC is simpler when a rights issue is employed It is my belief that with a rights offering, the SEC is more likely to presume a regular dialogue between the firm and its owners and thus impose less restrictive disclosure requirements There-

[28] Commonwealth Edison Proxy Statement, 1976
[29] See Merton (1973) or Smith (1976)

fore, the time until the registration becomes effective can be expected to be shorter with a rights offering than with an underwritten offering. This shorter registration time reduces the total time from the point where the decision is made to raise additional capital to the receipt of the proceeds.

5 3 Distribution of ownership

Weston and Brigham (1975) argue that underwriters provide a wider distribution of the securities sold, 'lessening any possible control problem' Since change in control may result in a change in management, this is likely to be a relevant issue for the current management. Yet it is not clear that possible control problems should be a concern of the owners I know of no reason to believe that one group of owners is any better (i e , will price the firm any higher) than another group

Furthermore, it is not obvious that underwriters will achieve a wider distribution of ownership than will a rights offering For most rights offerings of listed firms, the consensus among investment bankers is that the subscription rate of the current owners of the firm ranges from 20 to 50 percent It is difficult to estimate what percentage of an underwritten issue is purchased by the current owners of the firm, but there is no reason to believe it is zero Further, underwritten issues seem to attract more institutional interest, resulting in large block purchases and therefore more concentration of ownership

These factors preclude any general conclusions about the effect of financing method on ownership distribution With this uncertainty it is not clear that management, even if concerned with control issues, should prefer the use of an underwriter

5 4 Consulting advice

Van Horne (1974) suggests that 'advice from investment bankers may be of a continuing nature, with the company consulting a certain investment banker or group of bankers regularly' It is more expensive for the firm to compensate the investment banker for future consulting services by including in the underwriting fee a payment for the present value of the expected advice Costs incurred in raising capital are not tax deductible, they directly reduce the capital account and do not enter the income statement Thus, compared to separate billing for services rendered, paying for future consulting through a higher underwriting fee doubles its cost for a firm with a marginal tax rate of 50 percent

5 5 Expected legal costs

If there were a law, regulation, or merely an unresolved judicial principle which might impose additional liability on a firm using rights offerings, then the expected legal costs of using rights could explain the observed use of underwriters But I can find no differential legal liability associated with the use of rights offerings

5 6 Selection bias

If the firms which employ rights offerings were systematically different from the firms which employ underwritten offerings, then the observed cost differences could be attributable to selection bias It could be that if the firms which employed underwriters had used rights, their expenses would have been greater

There is a significant difference in the betas of the firms in the two groups I calculated the betas for those firms in the sample which were listed on the New York Stock Exchange and included on the daily CRSP tape The average beta for the 344 underwritten offerings is 0 731 with a standard deviation of 0 560, and the average beta for the 52 rights offerings is 0 493 with a standard deviation of 0 330 But I can find no other systematic difference between the two populations

Examination of the data shows similar distributions of firms across industries, 80 8 percent of the firms employing rights and 73 2 percent of the firms employing underwritten offerings were utilities (electric, gas, or telephone companies) I attempted to predict the choice of underwritten versus rights offering based on the following variables (1) the percentage of the firm which is sold through the offering, (2) the market value of the firm, and (3) the variance of the returns on the stock The r^2 for the regression is 0 016 None of the t statistics for the variables appears to be significant

Although differences exist between the two sets of firms, the nature and magnitude of the differences seem insufficient to account for the observed cost differences

6. A monitoring cost hypothesis

6 1 Why not monitor the choice of financing method?

My examination of alternative financing methods suggests that rights offerings are significantly less expensive than underwritten offerings Yet underwriters are employed in over 90 percent of the offerings studied One hypothesis consistent with the evidence is (1) managers and members of the board of directors receive benefits from the use of underwriters which do not accrue to the other owners of the firm, and (2) the expenses which would be imposed on the owners of the firm by monitoring the managers and directors in the choice of financing method are greater than the costs without monitoring

Managers or members of the board of directors may recommend that offerings be underwritten because their welfare increases as a by-product of the use of underwriters in several ways [30] First, firms frequently include an investment banker as a member of the board of directors It is in his interest to lobby for the use of underwriters, particularly the use of his investment banking firm as managing underwriter Second, there is the possibility of 'bribery' This may be simply consumption for the managers and directors through 'wining and dining' by the underwriters But there is a more important possibility In an underwritten issue, if the offer price is set below the market value of the shares, the issue will be oversubscribed To handle this excess demand, underwriters ration the shares In the rationing process the underwriters presumably favor their preferred customers, and preferred customer status could be given to key management people or members of the board of directors of firms employing the underwriter This form of payment would be virtually impossible to detect, since the shares the officer of Company A would favorably acquire are those of Company B and would therefore call for no disclosure [31]

Further possible benefits to managers include the reduction of possible control problems, if underwritten offerings produce a wider distribution of ownership than rights offerings Finally, managers whose compensation is a function of reported profits will prefer an underwriter's fee which includes a payment for future consulting advice, the manager's compensation will be higher because payment through underwriting does not affect reported profits while separate billing for consulting does

Jensen and Meckling (1976) show that the costs which the managers and directors can impose on the other owners of the firm are limited by the costs of monitoring their activities Thus the cost to shareholders of monitoring the method of raising capital must be greater than the costs imposed by the financing method chosen Given the dispersion of ownership in modern corporations, the benefit to any single shareholder from voting his shares is small Thus the costs that he would rationally incur in voting are small,[32] and the resources the shareholder would rationally devote to deciding whether a 'yes' or 'no' vote is more in his interest are few Moreover, voting procedures in most corporations ensure that management has a disproportionate voice in the outcome Management is often assigned votes by proxy, and in many firms management has the

[30]Certain management compensation plans, such as stock option plans, make managers' compensation a function of the price of the firm's shares If the compensation plan were not adjusted to reflect the effect of the rights offering on the share price, management could be expected to provide a strong lobby in favor of employing underwriters In fact, however, employee stock option plans have general clauses calling for adjustment of the terms of the plan to reflect relevant capital structure changes Furthermore, most plans include specific reference to rights issues Thus, agency costs resulting from compensation plans do not seem to offer an explanation of the observed behavior

[31]This argument is similar to that of Manne (1966), especially Chapter V

[32]See Downs (1957) Basically, if a person owns 100 shares in a firm, his vote only matters if the vote is tied or his 'side' would have lost by 100 votes or less The probability is low that out of 50 million votes, the issue will split that way Thus the expected benefit (benefit times probability) of voting is very small

power to vote unreturned proxies They are also permitted to vote proxies on specific questions when the stockholder does not specify a choice These factors raise the cost of monitoring management

6 2 *The preemptive right as a monitoring tool*

There appears to be a low cost method of monitoring the use of underwriters the preemptive right The preemptive right is a provision which can be included in a firm s charter requiring the firm to offer any new common stock first to its existing shareholders But the inclusion of the preemptive right does not solve the problem firms can still employ underwriters through a standby under-

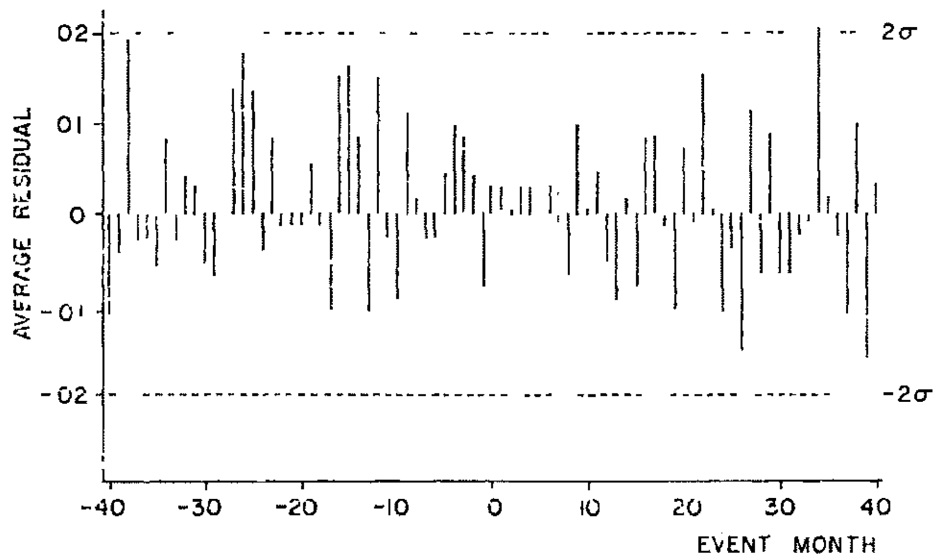

Fig 3 Plot of average residuals from 89 firms which removed the preemptive right from their corporate charter for the 81 event months [−40 to +40] surrounding the month of removal

writing agreement Since the figures in table 1 suggest a negligible difference in costs between a firm commitment underwritten offering and a rights offering with a standby underwriting agreement what becomes important is not a requirement to use rights, but a prohibition against using underwriters

To test the hypothesis that the impact of removing the preemptive right from the corporate charter is negligible, I collected a sample of 89 firms listed on the New York Stock Exchange which have removed the preemptive right The results of this study are presented in table 4 and figure 3 The average residual in the month of removal is 0 277 percent, and the mean average residual for the six prior months is 0 309 percent There is no apparent impact

I believe the results in table 4 provide a plausible explanation for why the intellectual level of the argument involving the preemptive right is so low on both sides of the question For example, the above quotes from Commonwealth

Table 4

Summary of residual analysis of 89 firms which removed the preemptive right from their corporate charter for the 81 event months [−40 to +40] surrounding the month of removal

Event month	Average residual	Cumulative average residual	Event month	Average residual	Cumulative average residual
−40	−0 00995	−0 00995	1	0 00363	0 11718
−39	−0 00382	−0 01376	2	0 00028	0 11745
−38	0 01999	0 00623	3	0 00293	0 12038
−37	−0 00258	0 00365	4	0 00276	0 12315
−36	−0 00160	0 00205	5	0 00101	0 12415
−35	−0 00414	−0 00209	6	0 00336	0 12751
−34	0 00842	0 00633	7	−0 00017	0 12734
−33	−0 00238	0 00395	8	−0 00537	0 12196
−32	0 00483	0 00878	9	0 00963	0 13159
−31	0 00375	0 01254	10	0 00002	0 13162
−30	−0 00419	0 00834	11	0 00406	0 13568
−29	−0 00632	0 00202	12	−0 00446	0 13122
−28	0 00082	0 00284	13	−0 00855	0 12266
−27	0 01337	0 01621	14	0 00210	0 12476
−26	0 01839	0 03460	15	−0 00696	0 11780
−25	0 01440	0 04900	16	0 00903	0 12683
−24	−0 00397	0 04503	17	0 00752	0 13435
−23	0 00800	0 05303	18	−0 00096	0 13339
−22	−0 00102	0 05201	19	−0 00942	0 12397
−21	−0 00007	0 05195	20	0 00701	0 13097
−20	−0 00072	0 05123	21	−0 00021	0 13077
−19	0 00602	0 05725	22	0 01591	0 14668
−18	−0 00067	0 05658	23	0 00090	0 14758
−17	−0 01032	0 04626	24	−0 01043	0 13715
−16	0 01575	0 06201	25	−0 00281	0 13434
−15	0 01608	0 07809	26	−0 01389	0 12046
−14	0 00828	0 08637	27	0 01069	0 13115
−13	−0 00943	0 07694	28	−0 00566	0 12548
−12	0 01496	0 09190	29	0 00901	0 13449
−11	−0 00183	0 09007	30	−0 00592	0 12857
−10	−0 00833	0 08174	31	−0 00624	0 12233
− 9	0 01103	0 09277	32	−0 00240	0 11993
− 8	0 00138	0 09415	33	−0 00071	0 11922
− 7	−0 00185	0 09230	34	0 02059	0 13981
− 6	−0 00170	0 09060	35	0 00183	0 14165
− 5	0 00508	0 09568	36	−0 00263	0 13901
− 4	0 00998	0 10566	37	−0 01103	0 12799
− 3	0 00816	0 11382	38	0 00971	0 13770
− 2	0 00477	0 11859	39	−0 01524	0 12246
− 1	−0 00782	0 11078	40	0 00300	0 12546
0	0 00277	0 11355			

Edison's Proxy Statement are demonstrably false, and the quote from AT&T's Proxy Statement is irrelevant The primary lobbying effort in favor of the preemptive right is from Lewis D Gilbert, John J Gilbert and Wilma Soss who regularly introduce proposals to reincorporate the preemptive right into the corporate charter of corporations which have removed it However, their reason for the use of rights is so that shareholders can maintain their proportionate interest in the firm For large firms this 'benefit' has negligible value [33]

6 3 Other considerations

It should be emphasized that the monitoring cost hypothesis is consistent with both observed institutional arrangements and rational, wealth-maximizing behavior by the stockholders Rational behavior implies that actions will be taken if the benefits exceed the costs I have pointed out certain costs associated with the voting mechanism within corporations inclusion of an investment banker on the board of directors, and certain management compensation plans These practices, while costly, would still be in the stockholders' best interests if there are offsetting benefits

Furthermore, the monitoring cost hypothesis does not imply that there are rents which accrue to the underwriting industry There are two available 'technologies' with which additional equity capital can be raised If the underwriting industry is competitive, the underwriting fees reported in table 1 would reflect a normal return to the resources required in employing that technology

However, the monitoring cost hypothesis does present some problems I do not observe the costs of monitoring management Hence the hypothesis is not directly tested Furthermore, while the incentives set up through the voting mechanism suggest that it is plausible that monitoring costs are large enough to explain the observed use of underwriters, competition in the market for management should reduce the required monitoring expenditures If the use of rights offerings is in the best interests of stockholders, then it will pay potential managers to incur bonding costs to guarantee not to use underwriters

7. Conclusions

In my examination of the choice of method for raising additional equity capital by listed firms I demonstrate that properly constructed rights offerings provide proceeds which are equivalent to those of an underwritten offering Furthermore, estimates of expenses from reports filed with the Securities and

[33] For a firm with 50 million shares outstanding, a ten percent increase in the number of outstanding shares would change the percentage ownership for someone with 100 shares only in the sixth decimal place With so many inexpensive alternate ways for a stockholder to maintain his proportionate interest in the firm the proportionate interest argument lacks importance

Exchange Commission indicate that rights offerings involve lower out-of-pocket costs than underwritten offerings Yet underwriters are employed in over 90 percent of the issues Examination of the arguments to justify the use of underwriters advanced by the underwriting industry, finance textbooks, corporate officers, and securities lawyers suggest that none of the arguments are capable of explaining the observed choice of financing method in terms of rational, wealth-maximizing behavior by the stockholders of the firm

The one hypothesis I find which is consistent with the available evidence relates to the costs of monitoring management Although direct expenses imposed on shareholders are higher per dollar raised through the use of underwriters, I hypothesize that management derives benefits from their use From the shareholders' standpoint, the firm's use of underwriters is optimal because the cost of monitoring management exceeds the savings in out-of-pocket expenses from using rights If this hypothesis is correct, then the present value of the stream of differences in costs reported in this paper provides a lower bound on the costs of getting shareholders together to monitor and control management on the method of raising capital Thus, the present value of the differences in costs establishes a lower bound on the expected costs of control mechanisms such as proxy fights, tender offers, and takeover bids

The monitoring cost hypothesis does present some problems I do not observe directly the costs of monitoring management While it is possible that the monitoring costs are large enough to explain the observed choice of underwriters, consideration of competition in the market for management reduces the plausibility of this hypothesis But if the monitoring cost hypothesis is rejected, then the observed choice of financing method cannot be explained in terms of rational, wealth-maximizing behavior by the owners of the firm, unless it can be shown that I have either ignored or misestimated a relevant cost of using rights or benefit from using underwriters

Appendix 1: A description of the institutional arrangements for rights and underwritten offerings

A description of the procedures followed in the various types of offerings specified in sufficient detail to answer the questions addressed in this study is not available This appendix provides that information Some of this material comes from written sources [34] However, much of the material comes from conversations with underwriters, corporate financial officers, and SEC officials.

Underwritten offerings

The firm typically selects an underwriter in one of two ways – either by competitive bidding or by negotiated underwriting In competitive bidding, the firm

[34] See Weston and Brigham (1975), SEC (1974), and Pessin (1976)

files appropriate papers with the SEC, then specifies the terms of the issue and has potential underwriters submit sealed bids Government regulation requires the use of this procedure by electric utility holding companies the primary users of competitive bidding In a negotiated underwriting bid, the important variables in the underwriting contract are determined by direct negotiation between firm and underwriter

Negotiated underwriting begins with a series of pre-underwriting conferences, when decisions as to the amount of capital, type of security, and other terms of the offering are discussed Several general forms of the underwriting agreement can be employed [35] The first is a 'firm commitment' underwriting agreement, under which the underwriter agrees to purchase the whole issue from the firm at a particular price for resale to the public Almost all large underwriters employ this form In the second form, a 'best efforts' underwriting, the underwriter acts only as a marketing agent for the firm The underwriter does not agree to purchase the issue at a predetermined price, but sells the security for whatever price it will bring The underwriters take a predetermined spread and the firm takes the residual A variant of this agreement employs a fixed price but no guarantee on the quantity to be sold The third possibility is an 'all-or-nothing' commitment which requires the underwriter to sell the entire issue at a given price, usually within thirty days, otherwise the underwriting agreement is voided

If the corporation and underwriter agree to proceed,[36] the underwriter will begin his underwriting investigation, in which he assesses the prospects for the offering This investigation includes an audit of the firm s financial records by a public accounting firm, which aids in preparing the registration statements required by the Securities and Exchange Commission A legal opinion of the offering will be obtained from lawyers who typically participate in writing the registration statement Reports may also be obtained from the underwriter s engineering staff when applicable

Before a company can raise capital through a public offering of new stock it must comply with the Federal Law that governs such a sale – the Securities Act of 1933, and the Securities Exchange Act of 1934 The Securities and Exchange Commission, established to administer both laws, requires full disclosure of all pertinent facts about the company before it makes a public offering of new stock The firm must file a lengthy registration statement with the SEC setting forth data about its financial condition For underwritten issues,

[35]The underwriter may make a 'standby commitment' during a rights offering under which he will purchase and distribute to the public any amount of the rights issue not purchased by the present security holders This form will be discussed further below

[36]Agreements are usually subject to conditions, most allow the underwriters to void their obligation in the event of specified adverse developments For example, a negative finding in the lawyer's or auditor's reports may allow voiding the contract

the firm usually files the form S-1 or S-7 registration statement Form S-7 is less expensive, but requires certain conditions to qualify [37]

The SEC has 20 days to examine the registration statement for material omissions or misrepresentations If any error is found, a deficiency letter is sent to the corporation and the offering is delayed until the deficiency is corrected If no deficiency letter is sent, a registration statement automatically becomes effective 20 days after filing, except when the SEC notifies the firm that the commission's workload is such that it requires more time to review the registration statement [38] The firm will typically amend the registration statement to include the offer price and the offer date after the SEC has examined the rest of the statement This procedure allows the firm and underwriter to postpone the effective date of the registration statement until they agree the offering should proceed

In addition to the registration requirements under the Securities Act of 1933, firms must qualify their securities under the state securities laws, the so-called 'Blue Sky Laws', in those states where the securities are to be sold Some states are satisfied with SEC approval, others require a registration statement be filed with state securities commissioners

The underwriter usually does not handle the purchase and distribution of the issue alone, except for the smallest of security issues The investment banker usually forms a syndicate of other investment bankers and security dealers to assist the underwriting [39] During the waiting period between the filing and the offer date, no written sales literature other than the so-called 'red herring'

[37]For example, the majority of the board of directors have been members for the last three years, there have been no defaults on preferred stock or bond payments for the past 10 years, net income after taxes was at least $500,000 for the past five years, and earnings exceeded any dividend payments made over the past five years

[38]In 1960 and 1961, delays of four to six months occurred for this reason

[39]Prior to the passage of the Securities Act in 1933 most new issues were purchased by an originating house The originating house would resell the issue at a small increase in price to a so-called banking group, generally a few large houses The banking group would then sell the issue to an underwriting group, which in turn sold it to a selling syndicate – each sale occurred at a fractional increase in price The selling syndicate members, however, were liable for their proportional interest of any securities remaining unsold Late in the 1920s it became frequent practice to make the final group a so-called selling group, the members of which had no liability except for securities which they had purchased from the underwriting syndicate

The Securities Act, as amended shortly after its passage, contained a provision limiting an underwriter's liability for misstatements and omissions in the registration statement to an amount not 'in excess of the total price at which securities underwritten by him and distributed to the public were offered to the public' This Act changed the method of wholesaling securities, the use of the joint syndicate in handling registered securities disappeared Because of the provisions of the Act, it was to the advantage of the manager of the offering to have his fellow participants purchase direct from the company, since then the manager's liability under the Act became limited to the amount which the firm itself underwrote Liability for transfer taxes that would have been payable on the sale by the manager to the underwriters was thus avoided At the present time, underwriters of securities registered under the Act contract to buy directly from the issuer even though the manager of the offering signs the agreement with the issuer on behalf of each of the underwriting firms prospectus[40] and 'tombstone' advertisements[41] are permitted by the SEC However, oral selling efforts are permitted, and underwriters can and do note interest from their clients to buy at various prices These do not represent legal commitments, but are used to help the underwriter decide on the offer price for the issue Underwriters typically attempt to obtain indications of interest for approximately 10 percent more shares than will be available through the offering [42]

Before the effective date of the registration, the corporation's officers meet with the members of the underwriting group Given the personal liability provisions of the 1933 Act, this meeting is often identified as a due diligence meeting An investment banker who is dissatisfied with any of the terms or conditions discussed at this session can still withdraw from the group with no legal or financial liability Discussed at this meeting are (1) the information in the firm's registration statement, (2) the material in the prospectus, (3) the specific provisions of the formal underwriting agreement As a rule, all the provisions of the formal underwriting agreement are set except the final sales price

The 'Rules of Fair Practice' of the National Association of Security Dealers require that new issues must be offered at a fixed price and that a maximum offering price be announced two weeks in advance of the offering However, the actual offering price need not be established until immediately before the offering date In fact, the binding underwriting agreement which specifies the offer price is not normally signed until within 24 hours of the effective date of the registration

Once the underwriter files the final offering price with the SEC, the underwriters are precluded from selling the shares above this price The SEC permits the managing underwriter to place a standing order with the specialist to buy the stock at the public offer price If the underwriter buys more than 10 percent of the shares to be issued through this order, the syndicate usually breaks, permitting the stock to be sold below the offer price The syndicate can also be broken if the managing underwriter feels that the issue cannot be sold at the offer price [43] On the other hand, if all the indications of interest become orders

[40]The red herring prospectus derives its name from the required disclaimer on the front printed in red

A registration statement relating to these securities has been filed with the Securities and Exchange Commission but has not yet become effective Information contained herein is subject to completion or amendment These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective This prospectus shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state

[41]The very limited notice of the offering permitted is often presented in a form resembling the inscription on a tombstone – hence the name

[42]This procedure is like 'over-booking' on airplane flights

[43]Syndicates break infrequently, my impression is that this occurs less than five percent of the time See *History of Corporate Finance For the Decade* (1972)

for shares, the issue is oversold In that case the managing underwriter typically sells additional shares short and covers these short sales in the aftermarket

The final settlement with the underwriter usually takes place seven to ten days after the registration statement becomes effective At that time, the firm receives the proceeds of the sale, net of the underwriting compensation

Rights offering

Offering of stock to existing shareholders on a pro rata basis is called a rights offering Each stockholder owning shares of common stock at the issue date receives an instrument (formally called a warrant) giving the owner the option to buy new shares [44] One warrant or right is issued for each share of stock held [45] This instrument states the relevant terms of the option (1) the number of rights required to purchase one new share, (2) the exercise price (or subscription price) for the rights offering, (3) the expiration date of the rights offering

Before the offering, the firm must file a registration statement for these securities For rights offerings, the firm typically files either a form S-1 or S-16 registration S-16 is simpler, but has usage requirements similar to those of form S-7

After the SEC approves the registration statement, the firm establishes a holder of record date The stock exchange establishes the date five business days earlier as the ex rights date [46] All individuals who hold the stock on the ex rights date will appear in the company's records on the holder of record date and will receive the rights However, the rights can be traded on a 'when issued' basis Usually trading begins after the formal announcement of the rights offering To ensure that there is adequate time for the stockholders to exercise or sell their rights, the New York Stock Exchange requires that the minimum period during which rights may be exercised is 14 days Rights trade on the exchange where the stock is listed

Issuing rights is costly in terms of management s time, postage and other expenses, so it is in the best interest of the firm to ensure the success of the offering Therefore, the firm has an incentive to set the subscription price of the rights low enough to ensure that the rights will be exercised But some of

[44] In the 1880s it was customary to require a stockholder to appear in person in the office of the corporation to subscribe to the issue After the 1880s, it became customary to send out a printed slip of paper so the stockholders could sign and subscribe for the stock without actually having to appear Later, it became the practice to make these slips of paper transferable, so that they could be sold Around 1910 the engraved form of warrant was first issued

[45] The Uniform Practice Code of the National Association of Security Dealers, Inc, provides that subscription rights issued to security holders shall be traded in the market on the basis of one right accruing on each share of outstanding stock, except when otherwise designated by the National Uniform Practice Committee Thus, the price quotation will be based on a single right even though several rights may be necessary to purchase one new share

[46] This procedure is comparable to that used in setting the ex dividend date

the warrants of most offerings do expire unexercised These unexercised rights can be offered through an over-subscription privilege to subscribing shareholders on a pro rata basis Shares not distributed through the rights offering or through the over-subscription privilege can be sold by the firm either to investment bankers or directly to the public

Rights offerings with a standby underwriting agreement

A formal commitment with an underwriter to take the shares not distributed through a rights offering is called a standby underwriting agreement Several types of fee schedules are generally employed in standby underwriting agreements A single fee may be negotiated, the firm paying the underwriter to exercise any unexercised rights at the subscription price A two fee agreement employs both a standby fee', based on the total number of shares to be distributed through the offering and a take-up fee, based on the number of warrants handled The take-up' fee may be a flat fee or a proportioned fee [47] These agreements generally include a profit sharing arrangement on unsubscribed shares (e g , if the underwriter sells the shares for more than the subscription price, this difference in prices is split between the underwriter and the firm according to an agreed formula)

Underwriters are prohibited from trading in the rights until 24 hours after the rights offering is made [48] After that time, they can sell shares of the stock short and purchase and exercise rights to cover their short position in the stock, thus hedging the risk that they bear

Appendix 2: A contingent claims analysis of rights and underwriting contracts

The derivation of general equilibrium pricing implications of rights and underwriting contracts has not been presented Black and Scholes (1973) suggest the approach I employ to value rights, but they do not carry out the analysis or present the solution Ederington (1975) provides a model of under-

[47] A proportioned fee involves more than one price for the shares handled by the underwriter For example there may be one price for the first 15% of the issue, a higher price for from 15% to 30% of the issue, and a still higher price for any of the issue over 30% which is unexercised through the rights offering and must be purchased by the underwriter

[48] Through the late 1940s underwriters were prohibited from trading in the rights during the offering This arrangement increased the underwriter s risk because the 14-day time period allowed large adverse price movements in the stock The NYSE instituted a study in 1947 after the failure of three rights offerings They found than on 43 rights offerings which had been successful the total underwriting profit was approximately $2 4 million, while on the three unsuccessful offerings, their losses were in excess of $3 million Underwriters were reportedly refusing to sign standby agreements unless the offering period were as short as five days Since this violated NYSE rules no NYSE listed firms used rights issues with standby underwriting agreements In response to this impasse, the NYSE now allows underwriters to trade in the rights 24 hours after the rights offering is made

writer behavior, but his model assumes underwriters maximize expected profits, and thus does not represent a general equilibrium solution in a market where the agents are risk averse The option pricing framework employed here will yield a solution which is consistent with general equilibrium, no matter what the risk preferences of the agents in the market.

I employ the contingent claims pricing techniques to derive a specification of the equilibrium value of these contracts For valuing both contracts I assume

(1) There are homogeneous expectations about the dynamics of firm asset values and of security prices The distribution of firm values at the end of any finite time interval is log normal The variance rate, σ^2, is constant
(2) Capital markets are perfect There are no transactions costs or taxes and all traders have free and costless access to all available information Borrowing and perfect short sales of assets are allowed Traders are price takers in the capital markets
(3) There is a known constant instantaneously riskless rate of interest, r, which is the same for borrowers and lenders
(4) Trading takes place continuously, price changes are continuous and assets are infinitely divisible
(5) The firm pays no dividends

Rights offerings

To derive the equilibrium value of the rights offering I make the following assumptions about the specification of the rights offering

> The total proceeds to the firm if the rights are exercised is X (the exercise price per share times the total number of shares sold through the rights issue) The rights expire after T time periods If the rights are exercised, the shares sold through the offering will be a fraction, γ, of the total number of shares outstanding ($\gamma \equiv Q_R/(Q_S+Q_R)$, where Q_R is the number of shares sold through the rights offering and Q_S is the existing number of shares) Any assets acquired with the proceeds of the rights offering are acquired at competitive prices [49]

Given the above assumption, Merton (1974) has demonstrated that any contingent claim, whose value can be written solely as a function of asset value and time must satisfy the partial differential equation

$$\frac{\partial f}{\partial t} = \frac{1}{2}\frac{\partial^2 f}{\partial V^2}\sigma^2 V^2 + rV\frac{\partial f}{\partial V} - rf, \tag{A1}$$

[49]This last assumption is necessary to avoid the problem of the dependence of the dynamic behavior of the stock price on the probability of the rights being exercised

where $f(V, t)$ is the function representing the value of the contingent claim [e.g., $R = R(V, t)$]. To solve this equation, normally two boundary conditions are required, one in the time dimension and one in the firm value dimension.

To derive the appropriate boundary condition in the time dimension, note that when the time to expiration is zero, R^*, the value of the rights at the expiration date will be either zero (in which case the rights will not be exercised) or, if the rights are valuable and are exercised, their value is their claim on the total assets of the firm, $\gamma(V^*+X)$ (where V^* is the value of the firm's assets and X is the proceeds from the exercise of the rights) minus the payment the right-holders must make, X:

$$R^* = \mathrm{Max}[0, \gamma(V^*+X)-X], \tag{A2}$$

where:

V^* is the value of the firm's assets at the expiration date of the issue.

X is the proceeds to the firm of the exercise of the rights.

γ is the fraction of new shares issued through the rights offering to the total shares of the firm (both old and new).

The most natural boundary condition in the firm value dimension is that when the value of the firm is zero, the value of the rights issue, R, is zero. However, the first assumption, that the distribution of firm values is log normal, insures that V can never be zero; therefore, this boundary condition will never be binding.

This equation can be solved by noting that no assumptions about risk preferences have been made, thus the solution must be the same for any preference structure which permits equilibrium. Therefore choose that structure which is mathematically simplest.[50] Assume that the market is composed of risk-neutral investors. In that case, the equilibrium rate of return on all assets will be equal. Specifically, the expected rate of return on the firm, and the rights will equal the riskless rate. Then the current rights price must be the discounted terminal price:

$$R = \mathrm{e}^{-rT} \int_{((1-\gamma)/\gamma)X}^{\infty} [\gamma V^* - (1-\gamma)X] L'(V^*)\,\mathrm{d}V^*, \tag{A3}$$

where $L'(V^*)$ is the log normal density function.

Eq. (A3) can be solved to yield:[51]

[50]See Cox and Ross (1976) or Smith (1976). For a mathematical derivation of this solution technique, see Friedman (1975), especially page 148.

[51]See Smith (1976, p. 16) for a theorem which can be employed to immediately solve (A3) to yield (A4).

$$R = \gamma V N\left\{\frac{\ln(\gamma V/(1-\gamma)X)+(r+\sigma^2/2)T}{\sigma\sqrt{T}}\right\}$$
$$-\mathrm{e}^{-rT}(1-\gamma)XN\left\{\frac{\ln(\gamma V/(1-\gamma)X)+(r-\sigma^2/2)T}{\sigma\sqrt{T}}\right\}$$
$$= R(V, T, X, \gamma, \sigma^2, r) \qquad \text{(A4)}$$

where $\partial R/\partial V$, $\partial R/\partial T$, $\partial R/\partial \gamma$, $\partial R/\partial \sigma^2$, $\partial R/\partial r > 0$ and $\partial R/\partial X < 0$

The indicated partial effects have intuitive interpretations Increasing the value of the firm, decreasing the exercise price (holding the proportion of the firm's shares offered through the rights offering constant), or increasing the proportion of the firm's shares offered through the rights offering (holding the total proceeds of the issue constant) increase the expected payoff to the rights and thus increases the current market value of the rights offering An increase in the time to expiration of the riskless rate lowers the present value of the exercise payment, and thus increases the value of the rights Finally, an increase in the variance rate gives a higher probability of a large increase in the value of the firm and increases the value of the rights

Underwriting agreements

To analyze the appropriate compensation to the underwriter for the risk he bears in the distribution of the securities make the following assumptions about the underwriting contract

Underwriters submit a bid, B, today which specifies that on the offer date, T time periods from now, the underwriter will pay B dollars and receive shares of stock representing fraction γ of the total shares of the firm He can sell the securities at the offer price and receive a total payment of Ω, or (if the share price is below the offer price) at the market price, $\gamma(V^*+B)$ If his bid is accepted, he will be notified immediately

Again, (A1) can be employed where $f(V, t)$ is the function representing the value of the underwriting contract (i e, $U-U(V, t)$) The boundary condition for this problem is

$$U^* = \mathrm{Min}[\gamma(V^*+B)-B, \Omega-B] \qquad \text{(A5)}$$

This assumes that at the offer date the underwriter will pay the firm B dollars The shares which the underwriter receives represent a claim to a fraction γ of the total assets of the firm, V^*+B If the offer price is greater than the value of the shares, $\gamma(V^*+B)$, then the underwriter will be unable to sell the shares at the offer price, hence he will receive $\gamma(V^*+B)$ If, at the offer date the offer price is less than the value of the shares, the underwriter receives the offer price Therefore, the boundary condition is that at the offer date the underwriting contract is worth the minimum of the market value of the shares minus the bid, B, or the proceeds of the sale at the offer price minus the bid

Again, the above solution technique can be employed to solve (A1) subject to (A5). In a risk-neutral world, the expected value of the underwriting contract can be expressed as [52]

$$U = \int_0^{(\Omega/\gamma)-B} [\gamma(V^*+B)-B]L'(V^*)\mathrm{d}V^* + \int_{(\Omega/\gamma)-B}^{\infty} [\Omega-B]L'(V^*)\mathrm{d}V^*. \qquad \text{(A6)}$$

Note that this can be rewritten as

$$U = \int_0^{\infty} [\gamma(V^*+B)-B]L'(V^*)\mathrm{d}V^* - \int_{(\Omega/\gamma)-B}^{\infty} \gamma\left[V^*-\left(\frac{\Omega}{\gamma}-B\right)\right]L'(V^*)\mathrm{d}V^* \qquad \text{(A7)}$$

Eq (A7) can be solved for the risk-neutral case to yield

$$U = \mathrm{e}^{rT}\gamma V-(1-\gamma)B-\mathrm{e}^{rT}\gamma VN\left\{\frac{\ln(\gamma V/(\Omega-\gamma B))+(r+\sigma^2/2)T}{\sigma\sqrt{T}}\right\} + (\Omega-B\gamma)N\left\{\frac{\ln(\gamma V/(\Omega-\gamma B)+(r-\sigma^2/2)T}{\sigma\sqrt{T}}\right\} \qquad \text{(A8)}$$

Examination of (A8) reveals that the underwriting contract is equivalent to a portfolio consisting of a long position in the firm, a cash payment, and writing a call on γ of the firm with an exercise price equal to $(\Omega-\gamma B)$

$$U = \mathrm{e}^{rT}\gamma V-(1-\gamma)B-\mathrm{e}^{rT}C(\gamma V, T, \Omega-\gamma B) = \mathrm{e}^{rT}\gamma V-(1-\gamma)B-\mathrm{e}^{rT}\gamma C\left(V, T, \frac{\Omega}{\gamma}-B\right), \qquad \text{(A9)}$$

where $C(\ )$ is the Black–Scholes call option function

If the process of preparing and submitting a bid is costless, then in a competitive equilibrium, the value of the underwriting contract must be zero [53]

[52] Since the contract calls for the payment only at t^*, to find the current value of the underwriting contract does not require discounting

[53] If this were not the case, arbitrage profits could be earned by acquiring an underwriting contract and establishing the above hedge

Therefore the bid which would represent a normal compensation for the risk he bears is implicitly defined by the equation [54]

$$B - e^{rT}\frac{\gamma}{1-\gamma}\left[V - C\left(V, T, \frac{\Omega}{\gamma} - B\right)\right] = 0 \qquad \text{(A10)}$$

The firm generally receives less than the market value of the stock[55] given the specification of the underwriting contract, if the equilibrium stock price at the offer date is above the offer price then the initial purchaser of the issue receives 'rents', he obtains the shares for less than the market value of the shares Therefore, if the offer price in the underwriting agreement represents a binding constraint to the underwriter, then in a perfect market underwriting must be a more expensive method of raising additional capital than is a rights issue Therefore, under these conditions, underwriting would not be employed

The above analysis implicitly assumes that the terms of the underwriting contract represent a binding constraint to the underwriter, i e , if the security price is above the offer price, then the offer price presents a constraint to the underwriter and a pure profit opportunity to the potential investor However, in a market without transactions costs, this could not be the case If the security price is above the offer price there will be excess demand for the issue To the extent that the underwriter can, through the rationing process, extract those profits, they will accrue to the underwriter rather than to the initial purchaser In this situation competition among underwriters would ensure that the profits were in fact garnered by the firm In that case the offer price presents no effective constraint and the competitive bid becomes simply

$$B = e^{rT}\left(\frac{\gamma}{1-\gamma}\right)V \qquad \text{(A11)}$$

Therefore, if through tie-in sales or other means the offer price in an underwriting agreement can be circumvented, then underwriting is no more expensive a method of raising additional capital than a rights offering

[54]This equation implicitly defines the bid because B appears twice in the equation The explicit solution for equilibrium bid can be found by standard numerical analysis techniques

[55]A sufficient condition for the bid to be less than the market value of the shares is that $(1-\gamma)$ be less than $e^{\gamma T}$ Since T is generally a matter of days, this condition should be met

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