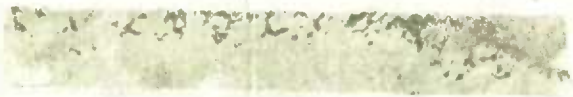


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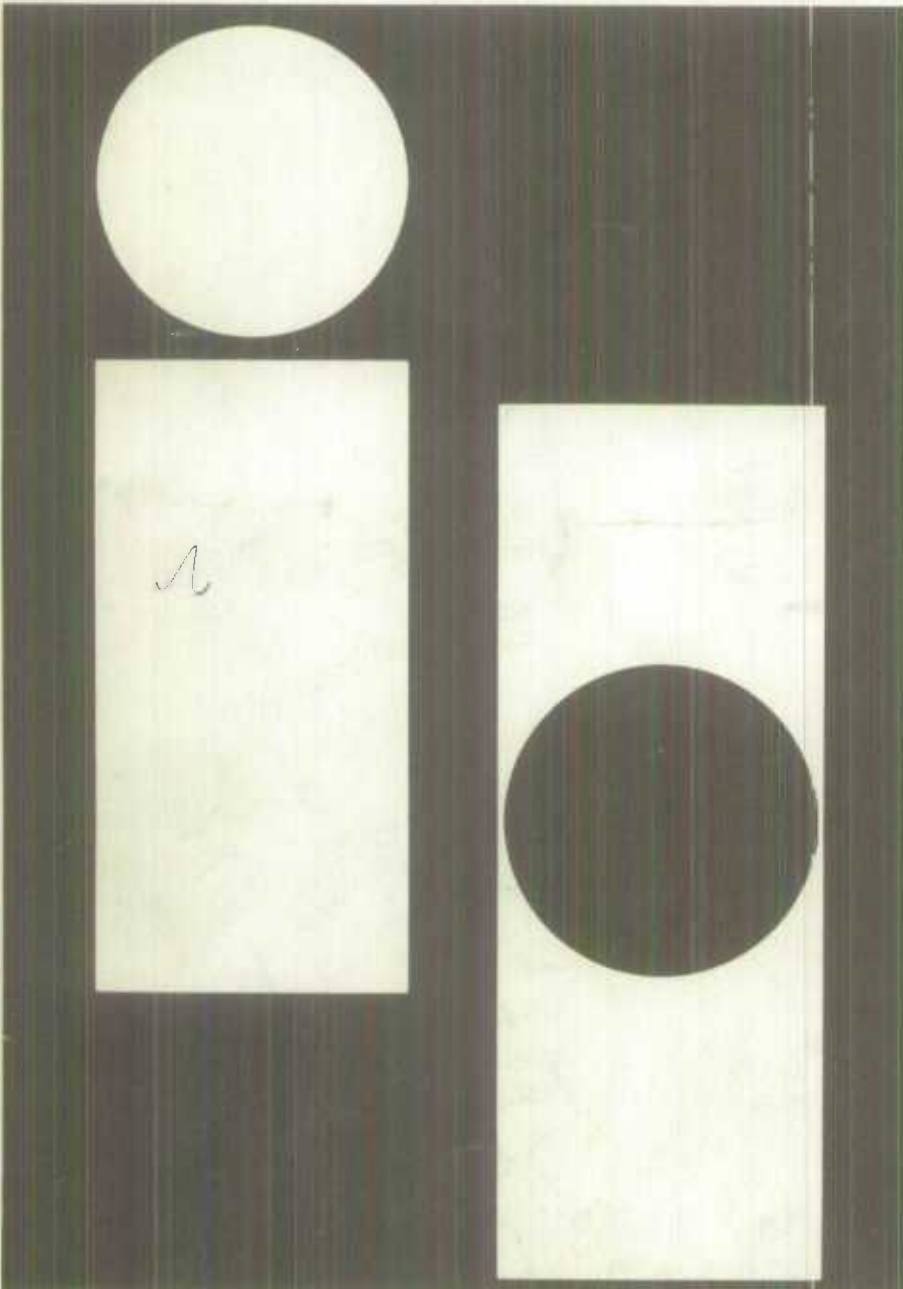


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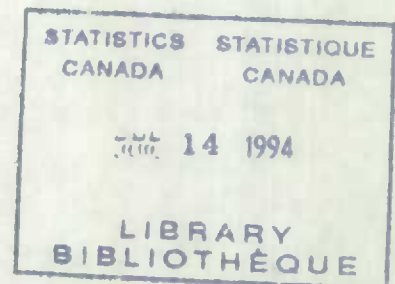


Canada



Revised September 1981

USER'S GUIDE
TO
STATISTICS CANADA STRUCTURAL ECONOMIC MODELS



Input-Output Division
Statistics Canada

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Preface

One of the functions of the Structural Analysis Division of Statistics Canada is to develop and maintain structural economic models of the Canadian economy. These models serve as frameworks for integrating economic data and as tools for supporting a wide range of economic analyses.

This volume describes the static input-output type models that have been developed by the Structural Analysis Division.

Included are descriptions of the National Input-Output Model for Canada, the Price Model, the Energy Model, and the Interprovincial Input-Output Model. A two region Canada-United States Input-Output Model is being developed which will be included as a separate chapter to be distributed at a later date.

All of the models are operational as computer-based systems in the Division. These models are intended for use by analysts in both government and private institutions. Model use and associated consultative services are provided by the Division on a cost recovery basis. More information about these services may be obtained by contacting:

Input-Output Division
Statistics Canada
23rd floor, R.H. Coats Building
Tunney's Pasture
Ottawa, Ontario
K1A 0T6
(613) 951-3697

The work upon which this volume is based is the product of a number of individuals and several organizations. The focal point for the research is the Structural Analysis Division under the directorship of R.B. Hoffman. Significant contributions to this volume were made by C. Gaston, K. Hamilton, N. Miller and R. Rioux. The work of T. Gigantes is clearly visible in the Input-Output and Price Models. The proof of convergence presented in Chapter 4.4 was prepared by V. Chant of the Bureau of Management Consulting, Department of Supply and Services; this contribution is gratefully acknowledged. The input-output tables for Canada which are the common data base for all of the models described in this volume are prepared by the Input-Output Division of Statistics Canada.

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1. INTRODUCTION
2. THE ACCOUNTING FRAMEWORK
3. NOTATION
4. INPUT-OUTPUT MODELS
5. THE ENERGY MODEL
6. THE PRICE MODELS
7. INTERPROVINCIAL MODEL

1. Introduction

This volume is a "Users' Guide" to the input-output models maintained by the Structural Analysis Division of Statistics Canada. "Users' Guide" documentation is intended to describe each model in terms precise enough to give a user a full understanding of the structure of the model and to render model solutions interpretable; sample solutions for each model are appended. This level of documentation is distinct from "Users' Manual" documentation which describes the procedures for obtaining model solutions; Users' Manuals are available under separate cover.

The contents of this volume are as follows: the present chapter describes the features that are common to all of the static input-output models; Chapters 2 and 3 present the input-output accounting framework and the notation used to describe it; these chapters are a pre-requisite for the following chapters; Chapters 4, 5, 6, and 7 present descriptions of the National Input-Output Model, the Energy Input-Output Model, the Price Model and the Interprovincial Input-Output Model respectively. A forthcoming chapter will describe the Canada-U.S. Input-Output Model which is being developed.

New chapters and revised versions of existing chapters are disseminated to holders of the Users' Guide as they become available.

All of the models in this volume are updated as new data becomes available; input-output tables for Canada in both current and constant dollars are compiled on an annual basis by the Input-Output Division of Statistics

Canada. This time series commences in 1961. New tables appear with about a three year time lag from the current year. In general, sets of coefficients can be calculated for each year for which input-output tables are available; alternatively, 'undated' coefficients can be calculated which make use of data from more than one year.

Input-output models are based on the observation that the process of production, in modern technological societies, involves strong inter-connections of many industries. To produce an automobile, for example, requires the efforts not only of those who are in the automobile industry, but also of those who are concerned with the production of steel, aluminum, rubber, textiles and the myriad other materials and services which are embodied in automobiles. In turn the production of steel, aluminum, rubber, etc. is only possible if yet other materials and services have been produced and are available. Thus the production of automobiles, and indeed of any other product, implicates a long chain of production which links many of the human, material and technological resources of the economy.

Now if the human, material and service inputs into automobiles form stable proportions to the output of automobiles, and if, in turn, the input requirements for producing steel, aluminum, rubber, etc., are stable proportions of these outputs, it is possible to calculate the impact of the demand for automobiles not only on the production of the automobile industry but also on the production of all the other industries which are involved, however indirectly, in the production of automobiles; similar estimates can be made for any other commodity. Input-output models thus make it possible to study technological interdependence and to trace the propagation of

demand through the economic system. Moreover, these models can be formulated so that the incomes and revenues generated by the industrial activity in turn determine the level and composition of a large proportion of final demand. In this way, input-output models can be made to simulate the circular flow of economic activity.

Of course, input-output models present a simplified account of economic interdependence. Since their inception they have undergone many changes designed to make them more realistic, but it is inevitable that they will continue to be very simple constructs compared to the complexity of actual economic systems. In this they are not unique; all models of economic behaviour represent a simplification of reality.

Because input-output models present economic relations in a highly disaggregated form, they lend themselves to analyses which are not possible with aggregative models, particularly where the interdependence of sectors of the economy is being studied. They have been used throughout the world for a variety of analytical purposes by governments, businesses and universities.

The types of questions which can be answered using input-output models include the following: What is the impact on output and employment in each industry of a unit of demand for a particular commodity? What is the impact on industrial prices of a change in wage rates? How much energy is embodied in a particular product?

However, input-output models have several features which limit the kinds of

analysis that can be performed.

The relationships of the models are simple proportionalities; this implies that marginal changes are equal to average changes; this in turn means that input-output models can be used in partial or incremental mode. While this feature makes the models convenient for certain kinds of analysis, under many circumstances proportional relationships may not be appropriate; for example economies of scale cannot be represented.

The models are static; that is to say that time is not explicitly represented. Input-output analyses involve comparing the values of the variables of the model before and after an exogenous event has taken place. The model does not calculate the amount of time required for the changes to work themselves through the system nor does it calculate the time paths of the variables as they change.

Supply and demand factors cannot be handled simultaneously. Implicit in the quantity models is the assumption that supply is perfectly elastic; imports and primary factors are available as required. Thus the Input-Output Model is characterized as a demand propagation model and analogously the Price Model analyses the propagation of factor prices.

Input-output models are exclusively flow models; stocks are not represented. Indeed the introduction of the concept of stocks would require explicit representation of time. As a result, it is usually necessary to assume that all intermediate goods can be produced without addition to capital stock.

The most common criticism of input-output models is that they are based upon out-dated data. When this criticism is made, it is usually an indication that comparative static analysis is not appropriate for the problem under consideration.

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CHAPTER 2

THE ACCOUNTING FRAMEWORK

Table Of Contents

- 2.1 Introduction
- 2.2 The Canadian Input-Output Accounting Framework
- 2.3 Relation to the National Income and Expenditure Accounts
- 2.4 The System of Classifications

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- 2.1 The Commodity Classification
- 2.2 The Industry Classification
- 2.3 The Classification of Final Demand Categories
- 2.4 The Primary Input Classification
- 2.5 Reconciliation Between the Input-Output Table and the National Income and Expenditure Accounts 1971.

2.1 Introduction

In any model, the accounting framework plays a vital role. It serves to define the variables and the accounting relationships or identities among them. The state of the system being represented by the model is quantified in terms of the values of those variables. Past states of the system are quantified by measuring the variables in the accounting framework. In this case the identities of the framework serve to ensure the consistency if not the accuracy, of the statistical procedures for measuring values of the variables. A forecast of future values of the variables is made by extrapolating or conditionally projecting the values of the variables in the accounting framework. Often relationships among variables are quantified by analyzing past values of the variables; these relationships, when combined with the accounting identities, form a forecasting model. Static structural analyses of the kind supported by the models described in this volume are performed by calculating the values of the variables defined in the accounting framework that would result in response to a hypothetical change in some of the variables or a change in the structure of the system.

2.2 The Canadian Input-Output Accounting Framework

This chapter describes the accounting framework of the Canadian input-output tables which is common to all of the models described in this volume. Extensions to this framework which are specific to each model are described in the appropriate model chapters. The Canadian input-output accounting framework is detailed in References (5) and (6).

The distinguishing feature of the Canadian input-output tables is the distinction of commodities in the transactions dimension and industries in the institutional dimension. The inequality between the number of commodities and the number of industries gives the accounting framework its "rectangular" character. Canada was among the first countries to adopt the commodity-by-industry accounting framework recommended by the United Nations as its international standard. See Reference (1). The initial work on the commodity-by-industry framework of Richard Stone was elaborated for the Canadian implementation by T. Gigantes, K. Levitt, T. Matuszewski, and P. Pitts. Input-output tables for Quebec and the Atlantic provinces have been compiled in this framework. See References (2), (3), (4).

The Canadian input-output accounting framework is a fully integrated set of accounts that articulates flows of goods, services, and primary factors among sectors of the Canadian economy. It is comprehensive and compatible with the National Income and Expenditure Accounts. Figures 1 and 2 depict the accounting framework. In Figure 1, the output table labelled 'V' shows the value of commodities produced by Canadian industries. Each commodity may be produced by more than one industry and, conversely, each industry may produce more than one commodity. The Canadian system distinguishes 183 industries and 593 intermediate commodities. The total output of each industry is obtained by summing all the commodities produced by each industry - that is by taking the column sums of V. The result is a vector labelled 'g'. The total domestic production of each commodity is obtained by taking the row sums of V. The result is a vector labelled 'q'. Adding domestic production 'q', thus obtained, to imports 'm' of each commodity yields the total supply of each commodity.

Figure 1

SUPPLY OF COMMODITIES

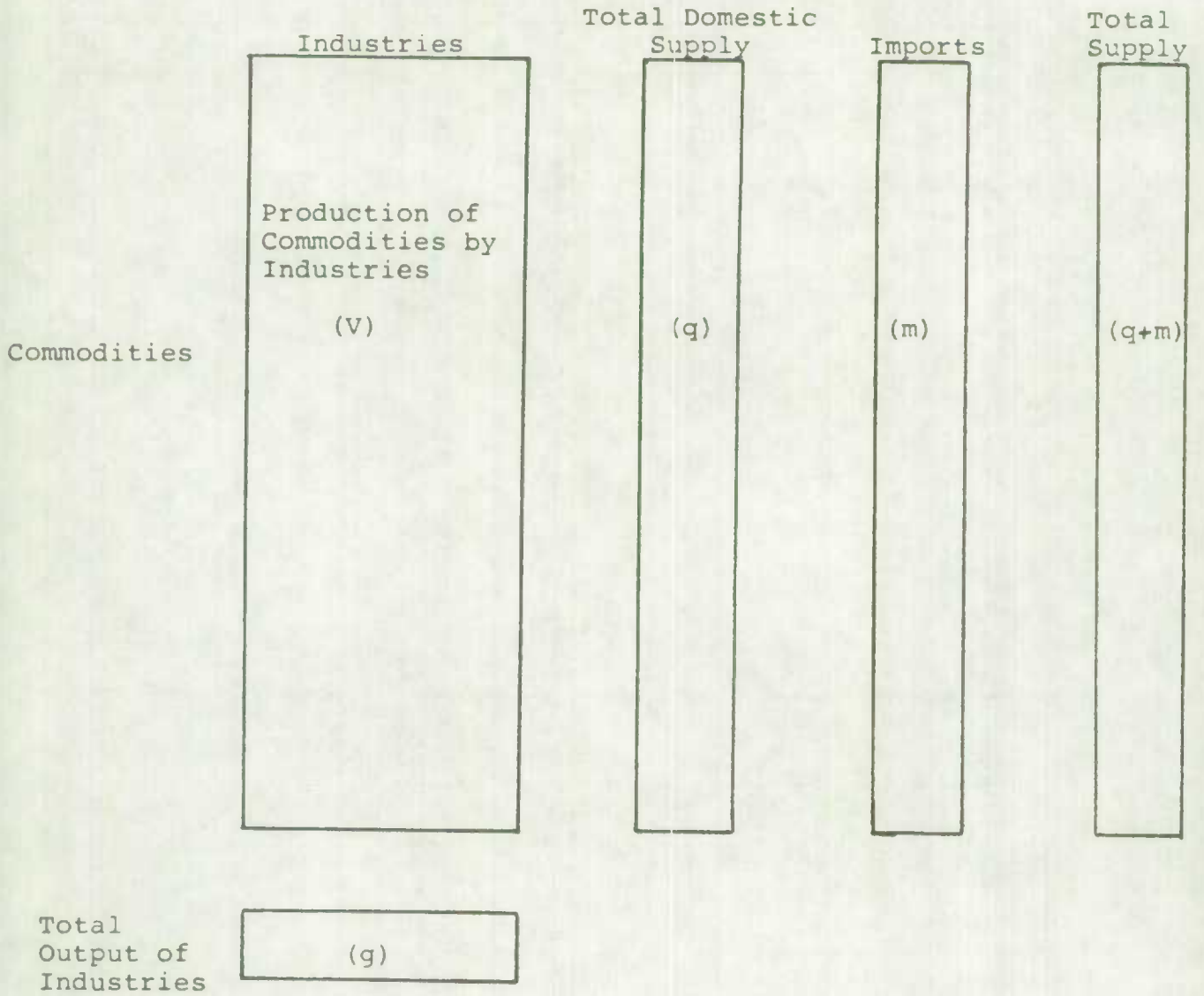


Figure 2

DISPOSITION OF COMMODITIES

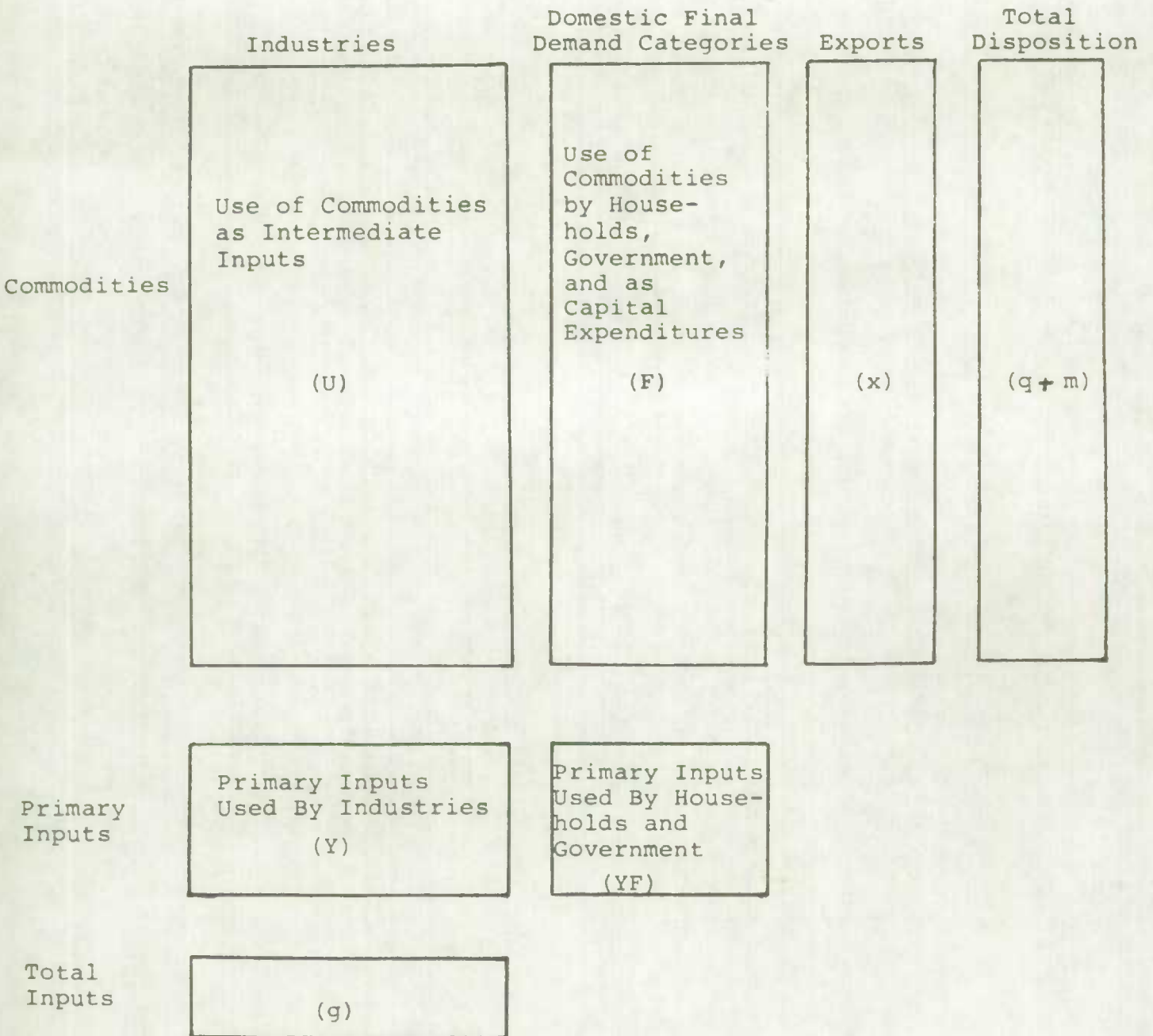


Figure 2 shows the disposition of total supply first among industries as current inputs 'U', then among categories of domestic final demand 'F', consisting of consumer expenditures, government expenditures, and capital expenditures, and finally as international exports, 'x'. Values of primary inputs used in industries, 'Y', and primary inputs to final demand categories 'Y_F' complete the disposition table. Primary inputs are the factor incomes - labour income, indirect taxes, net income of unincorporated business, and surplus - which constitute the components of gross domestic product or value added.

It is customary to express the measures of inputs and outputs of commodities in input-output tables on the same basis of valuation because the transaction values of commodities are often interpreted as proxies for the corresponding quantities. It is desirable that a dollar's worth of a commodity represent approximately the same quantity of the commodity in every part of the accounts.

To this end, all entries in the accounts are valued at "producers' prices". In the production table the producers' price is defined to be the selling value at the boundary of the producing establishment exclusive of any sales or excise taxes levied after the final stage of processing. International input-output practice suggests that imports should be valued duty paid at the frontier of the importing country. In accordance with this practice, the producers' value of Canadian imports is greater than the Trade of Canada values by the cost of transportation to the border and by the duty collected on each import. In the disposition table, the producers' price is defined to be the purchase price less trade, transportation, and storage margins and

commodity taxes such as sales and excise taxes. These margins and taxes are accumulated into separate rows of the table. Implicit in this valuation procedure is the convention that the margins and taxes are shown as inputs to the sector consuming the goods.

Two sets of balances or identities emerge from the accounts: the total supply of commodities is equal to the total disposition,

$$V_i + m = U_i + F_i + x = q + m ,$$

where i is an appropriately dimensioned vector of one's used to perform the operation of summing across rows; and the total outputs of industries are equal to the total inputs of materials and primary factors,

$$i'V = i'U + i'Y = g ,$$

where i' performs column sums on the given arrays.

Industries in the input-output tables are classified according to the Standard Industrial Classification (1970 edition). For the most part the three-digit level of the SIC is used although there is some aggregation in primary industries and service industries.

The SIC Manual defines an industry as "establishments engaged in the same or a similar kind of economic activity". The establishment is defined for statistical purposes as "the smallest unit which is a separate operating entity capable of reporting all elements of basic industrial statistics".

Typically the establishment is a factory, mine, store, or service outlet.

The criterion for determining the economic classification of an establishment is the nature of its principal product or activity. The nature of the product is characterised according to either its purpose (e.g., transportation equipment) or the basis of the chief component material used in its production (e.g., wood products). Since purpose or use can be applied only in the case of manufactured articles that have been processed to the point where their main purpose is apparent, the choice of which criterion (chief component material or purpose) to employ depends on the stage of processing undertaken by the establishment. In the case where an establishment engages in several different activities, it is assigned to an industry class on the basis of its principal source of value added, or principal source of revenue where value added cannot be determined.

In one important aspect the concept of establishment used in the input-output tables differs from the SIC definition: the own account new and repair construction activities of all establishments have been included in the construction industries of the input-output table.

Goods purchased for resale without transformation other than packaging are netted from the output of each industry. In this way the links between the producers of a good and final consumers is maintained. The gross margin or value added in wholesaling or retailing is shown as an output of industries engaged in this activity. The gross margin is calculated as sales less cost of goods sold. The main outputs of the wholesale and retail industries are wholesale and retail margins respectively.

The input-output accounts also make use of the "dummy industry" which is a technique for imparting an average commodity composition to aggregate "catch-all" commodity classifications. For instance, information on the purchase of office supplies is available from industrial surveys but there is no information on the commodity composition of office supplies. A dummy industry "office supplies" was created whose output was equal to the purchases of office supplies by industries and whose inputs are the appropriate values of paper, envelopes, etc. The Canadian input-output tables employ eight dummy industries of this type: these are industries 18400 - 19100. Note that no value added originates in the dummy industries.

2.3 Relation to the National Income and Expenditure Accounts

Because the input-output tables form a part of the more comprehensive System of National Accounts, the measures of production of the Income and Expenditure Accounts, and their main components, can be calculated from the Input-Output Accounts by aggregating certain detailed parts of the latter. On the expenditure side, the relevant measure is Gross Domestic Expenditure at Market Prices (GDE_m).⁴

This measure is "gross" because the cost of fixed capital consumed during the year has not been deducted. It is however, a "net" output measure, and therefore avoids duplication to the extent that intermediate goods and services used by industries in the production of other goods and services are excluded. For example, the value of flour used by the baking industry to produce the bread which is purchased by persons is counted only once - as part of the value of the bread.

In the Income and Expenditure Accounts, GDE is estimated directly as the sum of final expenditures at market prices by persons, governments, industries (on capital account) and non-residents (exports), less total purchases of goods and services from non-residents (imports). These expenditure totals appear as the sums of the entries in the columns of the Disposition Table which refer to final demand categories: personal expenditures on goods and services, government current expenditures, business and government capital expenditures, physical change in inventories, and exports less imports.

For the economy as a whole, the comparable measure of production on the income side of the Income and Expenditure Accounts is Gross Domestic Product at Market Prices (GDP_m). GDP_m is equal to the sums of the primary input rows in the Disposition Table: - adjustments, taxes less subsidies, wages and salaries, supplementary labour income, net income of unincorporated businesses and surplus.

Again, the measure of GDP_m avoids duplication by excluding the intermediate inputs of industries in the form of current account goods and services used in production; this is appropriate because, for each industry, these inputs represent the accumulated values of gross domestic product originating in the domestic industries at earlier stages of production, plus the value of foreign commodities (imports) used at earlier stages of production or directly imported by that industry.

The necessary identity of GDE_m and GDP_m is readily apparent from the following:

Total outputs of all industries

- = total commodity outputs of all industries
- = total commodity supply - total commodity imports
- = total final demands - total imports + total intermediate demands(a)

Total outputs of all industries

- = total inputs of all industries
- = total primary inputs + total intermediate inputs(b)

Since (a) = (b) and since total intermediate demands = total intermediate inputs, subtraction of the duplication in output represented by the total of intermediate entries for both (a) and (b) gives:

Total Final Demands - Total Imports = Total Primary Inputs

The above equations do not provide for primary inputs related to final demand categories. Since these are, at the same time, both primary inputs and final demands, the identity of GDE_m and GDP_m is maintained when they are added in.

The most frequently used measure of output originating by industry is Gross Domestic Product at Factor Cost (GDP_f), which excludes indirect taxes but includes capital consumption allowances. There is no unique way of distributing indirect taxes by industry. (This applies particularly to

taxes on commodities). The industrial distribution of indirect taxes shown in any set of input-output tables is dependent on the conventions chosen for the "routing" and valuation of commodities in those tables. Hence it is not possible to make a meaningful distribution by industry of Gross Domestic Product at Market Prices.

A reconciliation between the National Income and Expenditure Accounts and the input-output tables for 1966 is presented in Appendix 2.5.

2.4 The System of Classifications

The commodity, industry, final demand, and primary input classifications are presented in Appendixes 2.1, 2.2, 2.3, and 2.4 respectively. The commodity classification distinguishes 593 goods and services. Of these, eight are "dummy commodities" which are "produced" by the eight dummy industries. The LINK commodity classification concords with most commodity classifications used in Statistics Canada including the Standard Commodity Classification, the Industrial Commodity Classification used for manufacturing and primary industries statistics, and the external trade classifications. These concordances are too bulky to be reproduced in this volume but are available on request. Coding to LINK classes is best accomplished using the alphabetically sorted concordance between the SCC rulings and the LINK classification.

The industry classification distinguishes 191 industries including the eight dummy industries. The correspondence between the LINK industry classification and the 1970 Standard Industrial Classification is published

in Reference (5).

The final demand classification distinguishes 136 categories of final demand including 40 categories of consumer expenditure, 39 categories of fixed capital formation in machinery and equipment, 40 of fixed capital expenditure on structures, 12 government expenditures and revenues, two categories of net change in inventories, exports, re-exports, and imports.

The sectoring implicit in the industry and final demand classifications follow the National Income and Expenditure Accounting Conventions that are set out in Reference (8). According to these conventions the industrial sector includes government enterprises such as Canadian National Railways, the Post Office, the Canadian Wheat Board, and the St. Lawrence Seaway Authority. The consumer expenditure sector includes, as well as households, private non-profit institutions such as labour unions, welfare institutions, and universities.

The accounting framework distinguishes 12 primary inputs. They are all precisely defined in terms of categories in the National Income and Expenditure Accounts, See References (5) and (8). What follows is an informal description of these categories to aid in model use.

Unallocated Imports and Exports consists of items in the Balance of Payments for which a commodity distribution could not be obtained. Included in these items are travel expenditures, special trade transactions, freight and shipping.

Commodity Indirect Taxes are the taxes that make up part of the difference between purchasers' and producers' valuation. (Distribution and transportation margins make up the remaining difference.) Therefore indirect commodity taxes are distributed among industries under the convention that the purchaser pays the tax. These taxes include provincial sales taxes, federal sales taxes, excise taxes, gasoline taxes and amusement taxes.

Government Goods and Services consist of goods and services produced by government and sold as intermediate and final demand. These goods and services are non-competitive in the sense that they are not produced in the business or foreign sectors. Inputs required to produce these goods and services are included in the government expenditure columns but are not identified separately.

Subsidies represent amounts contributed by governments toward current costs of production. The subsidies are shown in the industry receiving the payment and hence do not necessarily reflect the beneficiary of the subsidy.

Other Indirect Taxes include licenses, fees and permits, and real and personal property taxes.

Wages and Salaries are payments made from domestic production for labour services. They include payments in kind, bonuses, commissions and military pay and allowances but exclude earnings from self-employment.

Supplementary Labour Income consists of payments made on account of labour

services such as employers' contributions to pension funds, unemployment insurance and workman's compensation.

Household Investment Income consists of interest and dividends received by households.

Net Income of Unincorporated Businesses includes accrued net income of farm operators from farm production and the net rental income of persons.

Depletion and Mining Write-offs represent depletion claimed by companies operating mines, oil and gas wells, or timber limits and the write-offs or amortization of pre-production or deferred developmental expenses by mining and oil companies.

Capital Cost Allowances are the amount of the write-offs of fixed assets claimed by companies and unincorporated businesses for tax purposes. As well it includes an estimate for depreciation of government fixed assets and personal dwellings.

Other Surplus is the residual between gross production and all of the intermediate and primary inputs mentioned above. It includes corporate profits before tax and dividends and interest paid, (excluding interest and dividends paid to households), inventory valuation adjustment, donations, less investment income received. This investment income is subtracted because it is not counted as gross production. Interest paid on government debt does not appear as "Other Surplus" originating in the government sector since it is treated as a transfer payment.

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COMMODITY TITLE SET LINK AGGREGATION

00100 CATTLE AND CALVES	05100 SERVICES INCIDENTAL TO MINING
00200 SHEEP AND LAMBS	05200 MEAT EXC POULTRY
00300 HOGS	05300 HORSE MEAT, FRESH, CHILLED, FROZEN
00400 POULTRY	05400 MEAT, CURED
00500 OTHER LIVE ANIMALS	05500 MEAT PREP., COCKED, NOT CANNED
00600 RICE, UNMILLED	05600 MEAT PREPARATIONS, CANNED
00700 WHEAT, UNMILLED	05700 ANIMAL OILS AND FATS AND LARD
00800 GRAIN UNMILLED EXC WHEAT	05800 MARGARINE, SHOPPING
00900 MILK, WHOLE, FLUID, UNPROCESSED	05900 SAUSAGE CASINGS, NAT., SYNTHETIC
01000 EGGS IN THE SHELL	06000 PRIMARY PACKAGING
01100 HONEY AND BEESWAX	06100 FEEDS OF ANIMAL ORIGIN NES
01200 NUTS, EDIBLE, NOT SHELLS	06200 HIDES AND SKINS, RAW, NES
01300 FRUITS, FRESH, EXC TROPICAL	06300 CRUDE ANIMAL PRODUCTS NES
01400 VEGETABLES, FRESH	06400 CUSTOM WORK MEAT AND FOOD
01500 HAY, FORAGE, AND STRAW	06500 POULTRY, FRESH, CHILLED, FROZEN
01600 SEEDS EXC OIL AND SEED GRADES	06600 POULTRY, CANNED
01700 NURSERY STOCK, RELATED MATERIAL	06700 MILK, WHOLE, FLUID, PROCESSED
01800 OIL SEEDS, NUTS AND KERNELS	06800 CREAM, FRESH
01900 HOPS INC LUPULIN	06900 BUTTER
02000 TOBACCO, RAW	07000 CHEESE, INC PROCESS CHEESE
02100 MINK SKINS, RANCH, UNRESSED	07100 MILK, EVAPORATED
02200 WOOL IN GREASE	07200 ICE CREAM
02300 SERVICES AGRICULTURE, FORESTRY	07300 OTHER DAIRY PRODUCTS
02400 LOGS AND BOLTS	07400 MUSTARD, SALAD DRESSINGS, SPREADS
02500 POLES, PIT PROPS, FENCE-POSTS ETC	07500 PROCESSED FISH AND FISH PRODUCTS
02600 PULFWOOD	07600 FRUITS, BERRIES, PROC., NOT CANNED
02700 OTHER CRUDE WOOD MATERIALS	07700 FRUITS AND PREPARATIONS, CANNED
02800 CUSTOM FORESTRY	07800 VEGETABLES, PROCESSED, NOT CANNED
02900 FISH LANDINGS	07900 VEGETABLES, PREPARATIONS, CANNED
03000 HUNTING AND TRAPPING PRODUCTS	08000 SOUPS, CANNED
03100 GOLD ORES	08100 INFANT AND JUNIOR FOODS, CANNED
03200 GOLD AND ALLOYS IN PRIMARY FORM	08200 PICKLES, RELISHES, OTHER SAUCES
03300 RADIO-ACTIVE ORES, CONCENTRATES	08300 VINEGAR
03400 IRON ORES AND CONCENTRATES	08400 OTHER FOOD PREPARATIONS
03500 BAUXITE AND ALUMINA	08500 PRIMARY OR CONCENTRATED FEEDS
03600 METAL ORES AND CONCENTRATES NES	08600 FEED FOR COMMERCIAL LIVESTOCK
03700 COAL	08700 FEEDS, GRAIN ORIGIN, NES
03800 CRUDE MINERAL OILS	08800 FEEDS OF VEGETABLE ORIGIN NES
03900 NATURAL GAS	08900 PET FEEDS
04000 CRUDE BITUMINOUS SUBSTANCES NES	09000 WHEAT FLOUR
04100 SULFUR, CRUDE AND REFINED	09100 MEAL, FLOUR, BRAN, GRAIN FEEDS, NES
04200 ASBESTOS, UNMANUF., CRUDE, FIBROUS	09200 BREAKFAST CEREAL PRODUCTS
04300 GYPSUM	09300 BISCUIT PRODUCTS
04400 SALT	09400 BREAD AND ROLLS
04500 PEATHOSS	09500 OTHER BAKERY PRODUCTS
04600 CRUDE REFRACTORY MATERIALS NES	09600 COCOA AND CHOCOLATE
04700 NATURAL ABRASIVES, INC. DIAMONDS	09700 NUTS AND SEEDS, EDIBLE, PROCESSED
04800 CRUDE NON-METALLIC MINERALS NES	09800 CHOCOLATE CONFECTIONERY
04900 SAND AND GRAVEL	09900 OTHER CONFECTIONERY
05000 STONE, CRUDE	10000 BEET PULP

COMMODITY TITLE SET LINK AGGREGATION

10100 SUGAR, REFINED	15100 YARN OF WOOL AND HAIR
10200 MOLASSES, SUGAR REFINERY PRODUCTS	15200 FABRICS, WOVEN, WOOL, WOOL MIXTURES
10300 OILSEED, MEAL AND CAKE	15300 PAPERMAKERS' FELTS
10400 VEGETABLE OILS, FATS EXC REFINED	15400 MAN MADE FIBRES
10500 NITROGEN FUNCTION COMPOUNDS NES	15500 POLYAMIDE RESINS (NYLON)
10600 MALT, MALT FLOUR AND WHEAT STARCH	15600 YARNS, SYNTHETIC FIBRES AND SILK
10700 MAPLE SUGAR AND SYRUP	15700 TIRE YARNS
10800 PREPARED CAKE AND SIMILAR MIXES	15800 FABRICS WOVEN, NON-WOVEN NES
10900 SOUPS, DRIED, SOUP MIXES AND BASES	15900 FABRICS, WOVEN, SYNTHETIC, BLENDS
11000 COFFEE, ROASTED, GROUND, PREPARED	16000 COTTON WASTE; TEXTILE MATERIAL
11100 TEA	16100 WOOL, FINE ANIMAL HAIR, SPINNING
11200 POTATO CHIPS, SIMILAR PRODUCTS	16200 THREAD, OF COTTON FIBRES
11300 FOOD PRODUCTS AND BYPRODUCTS NES	16300 THREAD, OF MAN-MADE FIBRES
11400 CONCENTRATES FOR SOFT DRINKS	16400 YARN, THREAD, VEGETABLE FIBRES NES
11500 CARBONATED BEVERAGES	16500 BALER AND BINDER TWINE
11600 ALCOHOLIC BEVERAGES DISTILLED	16600 OTHER CORDAGE, TWINE AND ROPE
11700 ALCOHOL, NATURAL, ETHYL	16700 NARROW FABRICS
11800 BREWERS' AND DISTILLERS' GRAINS	16600 LACE FABRICS, BOBBINET AND NET
11900 ALE, BEER, STOUT AND PORTER	16900 FELTS EXC PAPERMAKERS' FELTS
12000 WINES	17000 FLOOR COVERINGS, TEXTILE
12100 TOBACCO, PROCESSED, UNMANUFACTURED	17100 TEXTILE DYEING, FINISHING SERVICE
12200 CIGARETTES	17200 AWNINGS, OF CLOTH AND PLASTIC
12300 TOBACCO, MANUF. EXC CIGARETTES	17300 TENTS, HAMMOCKS, SLEEP BAGS, SAILS
12400 FOOTWEAR, RUBBER AND PLASTIC	17400 TARPULINS AND OTHER COVERS
12500 TIRES AND TUBES, PASSENGER CARS	17500 TEXTILE CONTAINERS
12600 TIRES AND TUBES, TRUCKS AND BUSES	17600 VEGETABLE TEXTILE FIBRES NES
12700 TIRES AND TUBES NES	17700 TEXTILE FABRICATED MATERIALS NES
12800 SOLID TIRES, TIRE PRODUCTS NES	17800 HOUSEHOLD TEXTILES NES
12900 RECLAIMED RUBBER	17900 TEXTILE END PRODUCTS NES
13000 RUBBER BELTS AND COATED FABRICS	18000 HOSIERY
13100 RUBBER FABRICATED MATERIALS NES	18100 FABRICS, KNITTED, NETTED, ELASTIC
13200 HOSE AND TUBING, MAINLY RUBBER	18200 FABRICS, KNITTED, NES
13300 RUBBER WASTE AND SCRAP	18300 KNITTED WEAR
13400 RUBBER END PRODUCTS NES	18400 CLOTHING, WOVEN FABRICS
13500 PLASTIC FILM, SHEET, BASIC SHAPES	18500 APPAREL ACCESSORIES, MATERIAL NES
13600 PLASTIC CONTAINERS, BOTTLE CAPS	18600 FURS, DRESSED
13700 PREFAB. BLDGS AND STRUCTURES NES	18700 FUR PLATES, MATS AND LININGS
13800 PLASTIC HOSE, END PRODUCTS NES	18800 FUR APPAREL
13900 LEATHER	18900 CUSTOM TAILORING
14000 FOOTWEAR EXC RUBBER AND PLASTIC	19000 PULPHOOD CHIPS
14100 LEATHER GLOVES, MITTENS EXC SPORT	19100 LUMBER AND TIMBER
14200 LEATHER FABRICATED MATERIALS NES	19200 RAILWAY TIES
14300 LUGGAGE	19300 WOOD WASTE
14400 LEATHER PRODUCTS NES	19400 CUSTOM WOOD WORKING AND MILLWORK
14500 YARN, COTTON	19500 VENEER AND PLYWOOD
14600 YARNS, MIXED, ALL FIBRES	19600 MILLWORK (WOODWORK)
14700 FABRICS, BROAD WOVEN OF COTTON	19700 FABRICATED WOOD FOR STRUCTURES
14800 TIRE CORD AND TIRE FABRICS	19800 PREFABRICATED WOOD STRUCTURES
14900 NETS AND NETTING	19900 WOOD CONTAINERS AND PALLETS
15000 BLANKETS, SHEETS, TOWELS, CLOTHS	20000 CASKETS, OTHER MORTICIANS' GOODS

COMMODITY TITLE SET LINK AGGREGATION

20100 WOOD FABRICATED MATERIALS NES	25100 IRON CASTINGS
20200 BARRELS AND KEGS OF WOOD	25200 PIPES AND FITTINGS,CAST IRON
20300 WOOD END PRODUCTS NES	25300 NICKEL IN PRIMARY FORMS
20400 HOUSEHOLD FURNITURE	25400 COPPER,ALLOYS IN PRIMARY FORMS
20500 OFFICE FURNITURE	25500 LEAD AND ALLOYS IN PRIMARY FORMS
20600 SPECIAL PURPOSE FURNITURE	25600 ZINC AND ALLOYS IN PRIMARY FORMS
20700 FURNITURE AND FIXTURES NES	25700 ALUMINUM,ALLOYS IN PRIMARY FORMS
20800 PORTABLE LAMPS RESIDENTIAL TYPE	25900 TIN,TIN ALLOYS IN PRIMARY FORMS
20900 PULP	25900 SILVER,PLATINUM IN PRIMARY FORMS
21000 NEWSFRINT PAPER	26000 BASE METALS IN PRIMARY FORMS NES
21100 OTHER PAPER FOR PRINTING	26100 ALUM.,SODIUM ALUMINUM FLUORIDES
21200 FINE PAPER	26200 METALLIC OXIDES AND BASES NES
21300 TISSUE AND SANITARY PAPER	26300 SCRAP AND WASTE MATERIALS NES
21400 WRAPPING PAPER	26400 ALUMINUM AND ALLOYS,FORMED
21500 PAPER BOARD	26500 COPPER,CAST,ROLLED,OR EXTRUDED
21600 BUILDING PAPER AND BOARD	26600 COPPER ALLOYS,FORMED
21700 TOWELS, NAPKINS AND TOILET PAPER	26700 LEAD AND ALLOYS,FORMED
21800 VANILLIN	26800 NICKEL AND ALLOYS,FABRICATED
21900 PAPER MATERIALS,BYPRODUCTS NES	26900 TIN AND TIN ALLOYS,FABRICATED
22000 FLOORING,VINYL-ASBESTOS,ASHPHALT	27000 ZINC AND ZINC ALLOYS,FABRICATED
22100 PAPER CARTONS,BAGS,CANS,BOTTLES	27100 SOLDERS
22200 PAPER,GUMMED,WAXED,OR PRINTED	27200 PLATES, STEEL, FABRICATED
22300 CONVERTED ALUMINUM FOIL	27300 TANKS
22400 FACIAL TISSUES,SANITARY NAPKINS	27400 FOWER BOILERS
22500 PAPER CONTAINERS NES	27500 BOILERS, MARINE TYPE
22600 OFFICE AND STATIONERY SUPPLIES	27600 STRUCTURAL STEEL INC FABRICATED
22700 PAPER END PRODUCTS NES	27700 SCAFFOLD EQUIPMENT,DEMOUNTABLE
22800 NEWSPAPERS,MAGAZINES,PERIODICALS	27800 PREFABRICATED STRUCTURES,METAL
22900 BOOKS,PAMPHLETS,MAPS,PICTURES	27900 ARCHITECTURAL METAL PRODUCTS NES
23000 BANKNOTES,BONDS,DRAFTS ETC	28000 STEEL SHEET,STRIP PROCESSED
23100 OTHER PRINTED MATTER	28100 CULVERT PIPE, CORRUGATED METAL
23200 ADVERTISING,PRINT MEDIA	28200 STAMPINS,BASIC METAL PRODUCTS
23300 SPECIALIZED PUBLISHING SERVICE	28300 PIPES,SIDING,SHEET METAL WK NES
23400 TYPE SETTING,BINDING SERVICES	28400 METAL AWNINGS,ASH CANS,PAIS ETC
23500 FERRO-ALLOYS	28500 HOUSEHOLD UTENSILS,MAINLY METAL
23600 PIG IRON AND STEEL INGOTS	28600 CONTAINERS,BOTTLE CAPS OF METAL
23700 STEEL BLOOMS,BILLETS AND SLABS	28700 WIRE AND WIRE ROPE, OF STEEL
23800 STEEL CASTINGS	28900 WIRE FENCING,SCREENING,NETTING
23900 STEEL BARS AND RODS	29000 CHAIN EXC POWER TRANSMISSION
24000 STEEL PLATES, NOT FABRICATED	29000 WELDING RODS,WIRE,AND ELECTRODES
24100 CARBON STEEL SHEET,STRIP	29100 SPRINGS,EXC AUTOMOTIVE
24200 TINPLATE	29200 NAILS,BOLTS,SCREWS,STAPLES
24300 GALVANIZED STEEL SHEET AND STRIP	29300 BUILDERS' HARDWARE
24400 RAILS AND TRACK MATERIAL,STEEL	29400 CABINET HARDWARE
24500 COAL TAR	29500 BASIC HARDWARE NES
24600 GRAPHITE AND CARBON PRODUCTS	29600 METAL CUTTING TOOLS,SAWING MACH.
24700 MECHANICAL STEEL TUBING	29700 HAND TOOLS
24800 OIL COUNTRY GOODS	29800 INDUSTRIAL CUTLERY,RAZORS,BLADES
24900 LINE PIPE,STEEL,FOR OIL AND GAS	29900 DOM. APPLIANCES EXC COOK,HAND
25000 STEEL PIPES AND TUBES NES	30000 HEAT EQUIPMENT,HOT WATER,STEAM

COMMODITY TITLE SET LINK AGGREGATION

30100 HEAT EQUIPMENT,WARM AIR,EXC PIPE	35100 SNOWMOBILES;NON-MOTOR VEHICLES
30200 UNIT AND WATER TANK HEATERS	35200 CANOES,BOATS,CRUISERS,YACHTS
30300 FUEL BURNING EQUIPMENT	35300 SMALL ELECTRICAL APPLIANCES,DOM.
30400 COM. FOOD COOKING EQUIPMENT	35400 SPACE HEATERS,ELEC.,FUEL BURNING
30500 CUSTOM METAL WRKING	35500 REFRIGERATORS,FREEZERS,DOMESTIC
30600 FORGINGS OF CARBON,ALLOY STEEL	35600 STOVES,RANGES,AND OVENS,DOMESTIC
30700 VALVES	35700 TELEVISION,RADIO,AUDIO EQUIPMENT
30800 PLUMBING FIXTURES,BRASS FITTINGS	35800 TELECOMMUNICATION EQUIPMENT
30900 GAS METERS AND WATER METERS	35900 RADIO,TELEVISION COM. EQUIPMENT
31000 MUNICIPAL EQUIPMENT	36000 RADAR AND RELATED EQUIPMENT
31100 CONTROL INSTRUMENTS;LADDERS	36100 ELECTRONIC TUBES,SEMI CONDUCTORS
31200 FIREARMS AND MILITARY HARDWARE	36200 ELECTRONIC EQUIPMENT COMPONENTS
31300 COLLAPSIBLE TUBES,METAL	36300 INTERIOR ALARM,SIGNAL SYSTEMS
31400 TRACTORS, FARM AND GARDEN TYPE	36400 POLE LINE HARDWARE
31500 AGRICULTURAL MACH. EXC TRACTORS	36500 WELDING MACHINERY AND EQUIPMENT
31600 MECH. POWER TRANSMISSION EQUIP.	36600 MOTORS,GENERATORS,ENGINES NES
31700 PUMPS,COMPRESSORS,BLOWERS ETC	36700 ELECTRICAL TRANSFORMERS NES
31800 CONVEYERS,HOISTING MACHINERY	36800 ELECTRICAL EQUIPMENT NES
31900 MATERIALS HANDLING EQUIPMENT NES	36900 BATTERIES
32000 FANS,AIR CIRCULATING MACHINERY	37000 WIRE AND CABLE, INSULATED
32100 PACKAGING,AIR CLEANING,MACH. NES	37100 WIRE AND CABLE,ALUM.,NOT INS.
32200 INDUSTRIAL FURNACES,KILNS,OVENS	37200 CONDUIT,SWITCHES,WIRING DEVICES
32300 INDUSTRY-SPECIFIC MACHINERY	37300 ELECTRIC LIGHT BULBS AND TUBES
32400 POWER DRIVEN HAND TOOLS	37400 ELECTRIC LIGHTING FIXTURES NES
32500 METAL END PRODUCTS NES	37500 CEMENT
32600 AIR COOLERS,REFRIGERATORS NES	37600 LIME
32700 SCALES AND BALANCES	37700 CONCRETE BASIC PRODUCTS
32800 VENDING MACHINES	37800 SAND LIME BRICKS AND BLOCKS
32900 OFFICE MACHINES AND EQUIPMENT	37900 READY-MIX CONCRETE
33000 AIRCRAFT, ALL TYPES	38000 BRICKS AND TILES, CLAY
33100 AIRCRAFT ENGINES	38100 ELECTRICAL FITTINGS,PORCELAIN
33200 SPECIALIZED AIRCRAFT EQUIPMENT	38200 PLUMBING FIXTURES,ARTWARE,CHINA
33300 AIRCRAFT REPAIR SERVICES	38300 REFRACTORIES
33400 PASSENGER AUTOMOBILES	38400 NATURAL STONE BASIC PRODUCTS
33500 TRUCKS,TRUCK TRACTORS,COMMERCIAL	38500 STONE,CLAY,CONCRETE PRODUCTS NES
33600 BUSES	38600 GYPSUM PRODUCTS
33700 MOTOR VEHICLES NES	38700 INSULATION MATERIALS NES
33800 MOBILE HOMES	38800 ASB. AND ASB.-CEMENT PRODUCTS
33900 TRAILERS AND SEMI TRAILERS	38900 NON-METALLIC MINERAL PRODUCTS NE
34000 BODIES AND CABS FOR TRUCKS	39000 GLASS INC FIBROUS BASIC PRODUCTS
34100 MOTOR VEHICLE ENGINES AND PARTS	39100 GLASS CONTAINERS
34200 ELECTRICAL EQUIPMENT FOR ENGINES	39200 GLASS TABLEWARE,END PRODUCTS NES
34300 MOTOR VEHICLE PARTS,ACCESSORIES	39300 ABRASIVE BASIC PRODUCTS
34400 AUTOMOTIVE HARDWARE, EXC SPRINGS	39400 AVIATION GASOLINE
34500 RAILWAY LOCOMOTIVE,ROLLING STOCK	39500 MOTOR GASOLINE
34600 SELF PROPELLED RAILWAY CARS	39600 FUEL OIL
34700 PARTS FOR RAILWAY ROLLING STOCK	39700 LUBRICATING OILS AND GREASES
34800 SHIPS AND COMMERCIAL VESSELS	39800 BENZENE, TOLUENE AND XYLENE
34900 PARTS,ASSEMBLIES FOR SHIPS,BOATS	39900 LIQUIFIED PETROLEUM GASES,GASES
35000 SHIP REPAIRS	40000 NAPHTHA

COMMODITY TITLE SET LINK AGGREGATION

40100 ASPHALT,COAL PRODUCTS NES	45100 PHENOLS;ALCOHOLS,DERIVATIVES NES
40200 FEEDSTOCKS,OIL PRODUCTS NES	45200 ETHER,ACETALS,DERIVATIVES NES
40300 FERTILIZERS	45300 KETONE,ALDEHYDE COMPOUNDS NES
40400 PLASTIC RESINS,NOT SHAPED	45400 ACETONE
40500 FILM,SHEET, CELLULOSIC PLASTIC	45500 ACETIC ACID
40600 ETHANOLAMINES	45600 ACETIC ANHYDRIDE
40700 ETHYLENE GLYCOL, MONO	45700 ADIPIC ACID
40800 PHARMACEUTICALS	45800 CITRIC ACIDS
40900 PAINTS AND RELATED PRODUCTS	45900 ORGANIC ACIDS,DERIVATIVES NES
41000 VEGETABLE OILS,REFINED,EXC CORN	46000 HEXAMETHYLENEDIAMINE
41100 GLYCERIN, REFINED	46100 SODIUM GLUTAMATE, MONO
41200 DENTIFRICES, ALL KINDS	46200 DICYANODIAMIDE
41300 SOAPS,CLEANING,HOUSEHLD CHEM.	46300 ORGANO-INORGANIC COMPOUNDS NES
41400 INDUSTRIAL CHEMICAL PREP. NES	46400 ORGANIC CHEMICALS NES
41500 TOILET PREPARATIONS,COSMETICS	46500 TITANIUM DIOXIDE
41600 CHLORINE	46600 BLACKS, ACETYLENE AND CARBON
41700 OXYGEN	46700 PIGMENTS, LAKES,TONERS,PROPER
41800 PHOSPHORUS	46800 IRON OXIDES
41900 CHEMICAL ELEMENTS NES	46900 FERTILIZER CHEMICALS
42000 SULPHURIC ACID	47000 SYNTHETIC RUBBER
42100 CARBON DIOXIDE (GAS AND DRY ICE)	47100 ANTIFREEZE COMPOUNDS
42200 INORGANIC ACIDS,COMPOUNDS NES	47200 ADDITIVES FOR MINERAL OILS NES
42300 AMMONIA, ANHYDROUS AND AQUA	47300 GLYCERINE, CRUDE
42400 CAUSTIC SODA (SOD.HYDROXIDE)DRY	47400 RUBBER,PLASTIC COMPOUNDING AGTS
42500 CALCIUM CHLORIDE	47500 EXPLOSIVES, FUSES AND CAPS
42600 SODIUM CHLORIDE	47600 AMMUNITION, NON-MILITARY
42700 ALUMINUM SULPHATE	47700 AMMUNITION,ORDNANCE, MILITARY
42800 SODIUM PHOSPHATES	47800 PYROTECHNIC ARTICLES,FIREWORKS
42900 SODIUM CARBONATE (SODA ASH)	47900 CRUDE VEG. MATERIALS,EXTRACTS
43000 SODIUM CYANIDE	48000 PHTHALIC ANHYDRIDE
43100 SODIUM SILICATE	48100 AGRICULTURAL CHEMICALS
43200 METALLIC SALTS OF ACIDS NES	48200 ADHESIVES
43300 INORGANIC CHEM. NES;PHOTOGRAPHIC	48300 AUTOMOTIVE CHEM. EXC ANTIFREEZE
43400 ETHYLENE	48400 CONCRETE ADDITIVES
43500 BUTYLENES	48500 BOILER CHEMICALS
43600 BUTADIENE	48600 COMPOUND CATALYSTS
43700 ACETYLENE	48700 METAL WORKING COMPOUNDS
43800 STYRENE MONOMER	48800 PRINTING AND OTHER INKS
43900 CARBON TETRACHLORIDE	48900 TEXTILE SPECIALTY CHEMICALS
44000 VINYLCHLORIDE MONOMER	49000 POLISHES,WAXES,COMPOUNDS ETC
44100 TRICHLOROETHYLENE	49100 WAXES,ANIMAL,VEGETABLE, OTHER
44200 PERCHLOROETHYLENE	49200 ESSENTIAL OILS,NAT. OR SYNTHETIC
44300 FLUORINATED HALOGEN HYDROCARBONS	49300 TANNING MATERIALS AND DYESTUFFS
44400 HYDROCARBONS,ACID TREATED	49400 FATS AND CHEMICAL MIXTURES
44500 METHYL ALCOHOL	49500 EMBALMING CHEMICALS,PREPARATIONS
44600 PROPYL AND ISOPROPYL ALCOHOLS	49600 MATCHES
44700 BUTYL AND ISOBUTYL ALCOHOLS	49700 AIRCRAFT,NAUTICAL INSTRUMENTS
44800 PENTAERYTHRITOL	49800 LABORATORY,SCIENTIFIC APPARATUS
44900 ALCOHOLS,ACID TREATED NES	49900 MEASURING,CONTROL INSTR.,NES
45000 PHENOL	50000 MEDICAL AND RELATED INSTRUMENTS

COMMODITY TITLE SET LINK AGGREGATION

50100 SAFETY EQUIPMENT	55100 REPAIR SERVICE
50200 WATCHES,CLOCKS,CHRONOMETERS ETC	55200 RENTAL OF OFFICE EQUIPMENT
50300 PHOTOGRAPHIC EQUIPMENT AND FILM	55300 RETAILING MARGINS
50400 JEWELRY,GEM STONES	55400 IMPUTED SERVICE, BANKS
50500 TABLE CUTLERY	55500 REAL ESTATE,FIN. SERVICES NES
50600 BROOMS,MOPS,CLEANING EQUIPMENT	55600 INSURANCE,WORKMEN'S COMPENSATION
50700 CHILDRENS' VEHICLES AND PAPTS	55700 IMPUTED RENT ON OWNERS'DWELLINGS
50800 SPORTING AND PLAYGROUND EQUIPMEN	55800 CASH RESIDENTIAL RENT
50900 TOYS AND GAME SETS	55900 OTHER RENT
51000 FABRICS,COATED,IMPREGNATED NES	56000 GOV'T NATURAL RESOURCE ROYALTIES
51100 FLOOR,WALL COVERS,RUBBER,PLASTIC	56100 EDUCATION SERVICES
51200 SIGNS AND ADVERTISING DISPLAYS	56200 HOSPITAL SERVICES
51300 SHADES AND BLINDS	56300 HEALTH SERVICES
51400 FUR DRESSING AND DYEING SERVICES	56400 MOTION PICTURE ENTERTAINMENT
51500 CUSTOM WORK, MISCELLANEOUS	56500 OTHER RECREATIONAL SERVICES
51600 ICE	56600 SERVICES TO BUSINESS MANAGEMENT
51700 ANIMAL HAIR,FEATHERS,QUILLS,ETC.	56700 ADVERTISING SERVICES
51800 FABRICATED MATERIALS NES	56800 LAUNDRY AND CLEANING SERVICES
51900 NOTIONS,INC BUTTONS,NEEDLES,PINS	56900 ACCOMMODATION SERVICES
52000 ENDS PRODUCTS NES	57000 MEALS
52100 HOUSEHOLD ORNAMENTAL OBJECTS,ART	57100 SERV.MARG.ON ALCDHOLIC BEVERAGES
52200 REPAIR CONSTRUCTION	57200 PERSONAL SERVICES
52300 RESIDENTIAL CONSTRUCTION	57300 PHOTOGRAPHIC SERVICES
52400 NON-RESIDENTIAL CONSTRUCTION	57400 SERVICES TO BUILDINGS,DWELLINGS
52500 ROAD HIGHWAY AIRSTRIP CONSTR.	57500 RENTAL DATA PROCESSING EQUIPMENT
52600 GAS,OIL FACILITY CONSTRUCTION	57600 BUSINESS,PERSONAL SERVICES, NES
52700 DAMS AND IRRIGATION PROJECTS	57700 RENTAL OF AUTOMOBILES AND TRUCKS
52800 RAILWAY,COMMUNICATIONS CONSTR.	57800 TRADE ASSOCIATION DUES
52900 OTHER ENGINEERING CONSTRUCTION	57900 MACHINERY,EQUIPMENT RENTAL, NES
53000 AIR TRANSPORTATION	58000 EQUIPMENT MAINTENANCE SUPPLIES
53100 OTHER TRANSPORTATION	58100 OFFICE SUPPLIES
53200 SERVICES TO TRANSPORTATION NES	58200 CAFETERIA SUPPLIES
53300 WATER TRANSPORTATION	58300 TRANSPORTATION MARGINS
53400 SERVICES TO WATER TRANSPORTATION	58400 LABORATORY EQUIPMENT,SUPPLIES
53500 RAILWAY TRANSPORTATION	58500 TRAVELLING AND ENTERTAINMENT
53600 TRUCK TRANSPORTATION	58600 ADVERTISING AND PROMOTION
53700 BUS TRANSPORT,INTERURBAN,RURAL	58700 EQUIPMENT REPAIR SERVICES
53800 URBAN TRANSIT	58900 COTTON RAW AND SEMI-PROCESSED
53900 TAXICAB TRANSPORTATION	58900 NATURAL RUBBER AND ALLIED GUMS
54000 PIPELINE TRANSPORTATION	59000 SUGAR, RAW
54100 HIGHWAY AND BRIDGE MAINTENANCE	59100 COCOA BEANS,UNRDASTED
54200 STORAGE	59200 GREEN COFFEE
54300 RADIO,TELEVISION BROADCASTING	59300 TROPICAL FRUIT
54400 TELEPHONE AND TELEGRAPH	
54500 POSTAL SERVICES	
54600 ELECTRIC POWER	
54700 GAS DISTRIBUTION	
54800 COKE	
54900 WATER AND OTHER UTILITIES	
55000 WHOLESALING MARGINS	

INDUSTRY TITLE SET LINK AGGREGATION

00100 AGRICULTURE	05100 CARPET, MAT & RUG INDUSTRY
00200 FORESTRY	05200 TEXTILE DYEING & FINISHING
00300 FISHING, HUNTING & TRAPPING	05300 CANVAS PRODUCTS INDUSTRY
00400 GOLD MINES	05400 COTTON & JUTE BAG INDUSTRY
00500 URANIUM MINES	05500 MISCELLANEOUS TEXTILE IND.
00600 IRON MINES	05600 HOSIERY MILLS
00700 BASE METAL & OTHER METAL MINES	05700 OTHER KNITTING MILLS
00800 COAL MINES	05800 CLOTHING INDUSTRIES
00900 PETROLEUM & GAS WELLS	05900 SAWMILLS
01000 ASBESTOS MINES	06000 VENEER & PLYWOOD MILLS
01100 GYPSUM MINES	06100 SASH & DOOR & PLANING MILLS
01200 SALT MINES	06200 WOODEN BOX FACTORIES
01300 OTHER NON-METAL MINES	06300 COFFIN & CASKET INDUSTRY
01400 QUARRIES & SAND PITS	06400 MISCELLANEOUS WOOD INDUSTRIES
01500 SERVICES INCIDENTAL TO MINING	06500 HOUSEHOLD FURNITURE INDUSTRY
01600 SLAUGHTERING & MEAT PROCESSORS	06600 OFFICE FURNITURE INDUSTRY
01700 POULTRY PROCESSORS	06700 OTHER FURNITURE INDUSTRIES
01800 DAIRY FACTORIES	06800 ELECTRIC LAMP & SHADE INDUSTRY
01900 FISH PRODUCTS INDUSTRY	06900 PULP & PAPER INDUSTRY
02000 FRUIT & VEGETABLE PROCESSING	07000 ASPHALT AND RELATED PRODUCTS
02100 FEED MFGRS.	07100 PAPER BOX & BAG MFGRS.
02200 FLOUR & BREAKFAST CEREALS IND.	07200 OTHER PAPER CONVERTERS
02300 BISCUIT MFGRS.	07300 PRINTING & PUBLISHING
02400 BAKERIES	07400 ENGRAVING, STEREOTYPING IND.
02500 CONFECTIONERY MFGRS.	07500 IRON & STEEL INDUSTRY
02600 SUGAR REFINERIES	07600 STEEL PIPE & TUBE MILLS
02700 VEGETABLE OIL MILLS	07700 IRON FOUNDRIES
02800 MISCELLANEOUS FOOD INDUSTRIES	07800 ALUMINUM SMELTING & REFINING
02900 SOFT DRINK MFGRS.	07900 OTHER SMELTING & REFINING
03000 DISTILLERIES	08000 ALUMINUM ROLLING & EXTRUDING
03100 BREWERIES	08100 COPPER & ALLOY ROLLING
03200 WINERIES	08200 METAL CASTING & EXTRUDING NES
03300 LEAF TOBACCO PROCESSING	08300 BOILER & PLATE WORKS
03400 TOBACCO PRODUCTS MFGRS.	08400 FABRICATED STRUCT. METAL IND.
03500 RUBBER FOOTWEAR MFGRS.	08500 ORNAMENTAL & ARCH. METAL IND.
03600 TIRE & TUBE MFGRS.	08600 METAL STAMP, PRESS. & COAT. IND.
03700 OTHER RUBBER INDUSTRIES	08700 WIRE & WIRE PRODUCTS MFGRS.
03800 PLASTIC FABRICATORS, NLS.	08800 HARDWARE TOOL & CUTLERY MFGRS.
03900 LEATHER TANNERIES	08900 HEATING EQUIPMENT MFGRS.
04000 SHOE FACTORIES	09000 MACHINE SHOPS
04100 LEATHER GLOVE FACTORIES	09100 MISC. METAL FABRICATING IND.
04200 SMALL LEATHER GOODS MFGRS.	09200 AGRICULTURAL IMPLEMENT IND.
04300 COTTON YARN & CLOTH MILLS	09300 MISC. MACHINERY & EQUIP. MFGRS
04400 WOOL, YARN & CLOTH MILLS	09400 COMM. REFRIG & AIR COND. MFGRS
04500 SYNTHETIC TEXTILE MILLS	09500 OFFICE & STORE MACHINERY MFGRS
04600 FIBRE PREPARING MILLS	09600 AIRCRAFT & PARTS MFGRS.
04700 THREAD MILLS	09700 MOTOR VEHICLE MFGRS.
04800 CORDAGE & TWINE INDUSTRY	09800 TRUCK BODY & TRAILER MFGRS.
04900 NARROW FABRIC MILLS	09900 MOTOR VEH. PTS & ACCESS. MFGRS
05000 PRESSED & PUNCHED FELT MILLS	10000 RAILROAD ROLLING STOCK IND.

INDUSTRY TITLE SET LINK AGGREGATION

10100 SHIPBUILDING & REPAIR	15100 TRUCK TRANSPORT
10200 MISC. TRANSP. EQUIP. IND.	15200 BUS TRANSP. INTERURBAN & RURAL
10300 SMALL ELECTRICAL APPLIANCES	15300 URBAN TRANSIT SYSTEMS
10400 MAJOR APPLIANCES ELECT. & NON.	15400 TAXICAB OPERATIONS
10500 RADIO & TELEVISION RECEIVERS	15500 PIPELINE TRANSPORT
10600 COMMUNICATIONS EQUIPMENT MFGRS	15600 HIGHWAY & BRIDGE MAINTENANCE
10700 MFGRS OF ELECT. IND. EQUIP.	15700 STORAGE
10800 BATTERY MFGRS.	15800 RADIO & TEL. BROADCASTING
10900 MFGRS OF ELECTRIC WIRE & CABLE	15900 COMMUNICATION INDUSTRIES, NES.
11000 MFGRS OF MISC. ELECT. PRODUCTS	16000 POST OFFICE
11100 CEMENT MFGRS	16100 ELECTRIC POWER
11200 LIME MFGRS	16200 GAS DISTRIBUTION
11300 CONCRETE PRODUCTS MFGRS	16300 WATER & OTHER UTILITIES
11400 READY-MIX CONCRETE MFGRS	16400 WHOLESALE TRADE
11500 CLAY PRODUCTS MFGRS	16500 RETAIL TRADE
11600 REFRACTORIES MFGRS	16600 OWNER OCCUPIED DWELLINGS
11700 STONE PRODUCTS MFGRS	16700 GOVT. ROYALTIES ON NAT. RESOURCES
11800 OTHER NON-METALLIC PRODUCTS IND.	16800 BANKS AND CREDIT UNIONS
11900 GLASS & GLASS PRODUCTS MFGRS	16900 INSURANCE
12000 ABRASIVES MFGRS	17000 OTHER FIN. INS. & REAL ESTATE
12100 PETROLEUM REFINERIES	17100 EDUCATION & RELATED SERVICES
12200 OTHER PETROL & COAL PROD. IND.	17200 HOSPITALS
12300 MFGRS. OF MIXED FERTILIZERS	17300 HEALTH SERVICES
12400 MFGRS. OF PLAST. & SYNTH. RES.	17400 MOTION PICTURE THEATRES
12500 MFGRS. OF PHARM. & MEDICINES	17500 OTHER RECREATIONAL SERVICES
12600 PAINT & VARNISH MFGRS.	17600 PROF. SERVICES TO BUSINESS
12700 MFGRS. OF SOAP & CLEANING COMP	17700 ADVERTISING SERVICES
12800 MFGRS. OF TOILET PREPARATIONS	17800 LAUNDRIES & CLEANERS
12900 MFGRS. OF INDUSTRIAL CHEMICALS	17900 ACCOMMODATION & FOOD SERVICES
13000 OTHER CHEMICAL INDUSTRIES	18000 OTHER PERSONAL SERVICES
13100 SCIENT. & PROF. EQUIP. MFGRS.	18100 PHOTOGRAPHY
13200 JEWELRY & SILVERWARE MFGRS.	18200 MISC. REPAIR & MAINTENANCE
13300 BROOM BRUSH & MOP INDUSTRY	18300 MISC. SERVICES TO BUS. & PERS.
13400 SPORTING GOODS & TOY INDUSTRY	18400 OPERATING SUPPLIES
13500 LINOLEUM & COATED FABRICS IND.	18500 OFFICE SUPPLIES
13600 SIGNS & DISPLAYS INDUSTRY	18600 CAFETERIA REQU.
13700 MISC. MANUFACTURING IND. NES	18700 TRANSPORTATION MARGINS
13800 DEPART. CONSTRUCTION	18800 LABORATORY SUPPLIES
13900 RESIDENTIAL CONSTRUCTION	18900 TRAVEL & ENTERTAINMENT
14000 NON-RESIDENTIAL CONSTRUCTION	19000 ADVERTISING & PROMOTION
14100 ROAD HIGHWAY AIRSTRIP CONST.	19100 MACHINERY REPAIR SERVICES
14200 GAS AND OIL FACILITY CONST.	
14300 DAMS AND IRRIGATION PROJECTS	
14400 RAILWAY TELEPHONE TELEGRAPH CON.	
14500 OTHER ENGINEERING CONSTRUCTION	
14600 CONSTRUCTION OTHER ACTIVITIES.	
14700 AIR TRANSPORT	
14800 SERVICES INCIDENTAL TO TRANSP.	
14900 WATER TRANSPORT	
15000 RAILWAY TRANSPORT	

FINAL DEMAND TITLE SET

20001	CE FOOD & NON-ALCOHOLIC BEVERAG	21011	M&E FURNITURE AND FIXTURES
20002	CE ALCOHOLIC BEVERAGES	21012	M&E PAPER AND ALLIED INDUSTRIES
20003	CE TOBACCO	21013	M&E PRINTING,PUBLISHING & ALLIED
20004	CE MEN'S AND BOY'S CLOTHING	21014	M&E PRIMARY METALS
20005	CE WOMEN'S&CHILDREN'S CLOTHING	21015	M&E METAL FABRICATING
20006	CE FOOTWEAR AND SHOE REPAIR	21016	M&E MACHINERY
20007	CE GROSS IMPUTED RENTS	21017	M&E TRANSPORT EQUIPMENT
20008	CE GROSS PAID RENTS	21018	M&E ELECTRICAL PRODUCTS
20009	CE OTHER LODGING	21019	M&E NON-METALLIC MINERAL PRODUCT
20010	CE ELECTRICITY	21020	M&E PETROLEUM AND COAL PRODUCTS
20011	CE GAS	21021	M&E CHEMICALS & CHEMICAL PROD.
20012	CE OTHER FUELS	21022	M&E MISCELLANEOUS MANUFACTURING
20013	CE FURN.,CARPETS&FLOOR COVERING	21023	M&E CONSTRUCTION INDUSTRY
20014	CE DURABLE HHLD. APPLIANCES	21024	M&E ELECTRIC POWER
20015	CE SEMI-DUR HHLD FURN&SUPPLIES	21025	M&E GAS DISTRIBUTION
20016	CE NON-DURABLE HHLD. SUPPLIES	21026	M&E RAILWAY TRANSPORT
20017	CE LAUNDRY & DRY CLEANING SERV.	21027	M&E URBAN TRANSIT SYSTEMS
20018	CE DOMESTIC SERVICES	21028	M&E WATER TRANSPORT AND SERVICES
20019	CE OTHER HOUSEHOLD SERVICES	21029	M&E MOTOR TRANSPORT
20020	CE MEDICAL CARE	21030	M&E GRAIN ELEVATORS
20021	CE HOSPITAL CARE	21031	M&E TELEPHONES
20022	CE OTHER MEDICAL CARE	21032	M&E BROADCASTING
20023	CE DRUGS AND SUNDRIES	21033	M&E AIR TRANSPORT & OTH. UTIL.
20024	CE NEW & USED AUTOMOBILES	21034	M&E TRADE, WHOLESALE AND RETAIL
20025	CE AUTO REPAIRS & PARTS	21035	M&E FINANCE INSURANCE & REAL EST
20026	CE GASOLINE,OIL & GREASE	21036	M&E COMMERCIAL SERVICES
20027	CE OTH AUTO RELATED SERVICES	21037	M&E CHURCHES AND UNIVERSITIES
20028	CE PURCHASED TRANSPORTATION	21038	M&E USED CARS,EQUIP'T. & SCRAP
20029	CE COMMUNICATIONS	21500	M&E GOVERNMENT SECTOR
20030	CE REC., SPORTS&CAMPING EQP.	22001	CON AGRICULTURE AND FISHING
20031	CE BOOKS,MAGAZINES & STATIONARY	22002	CON FORESTRY
20032	CE RECREATIONAL SERVICES	22003	CON MINING QUARRYING & OIL WELLS
20033	CE EDUCATION &CULTURAL SERVICES	22004	CON FOOD AND BEVERAGES
20034	CE JEWELLRY,WATCHES & REPAIRS	22005	CON TOBACCO AND TOBACCO PRODUCTS
20035	CE TOILET ARTICLES,COSMET. ETC.	22006	CON RUBBER PRODUCTS
20036	CE PERSONAL CARE	22007	CON LEATHER GOODS
20037	CE EXP. IN RESTAUR.&HOTELS ETC.	22008	CON TEXTILE PRODUCTS
20038	CE PERSONAL BUSINESS	22009	CON CLOTHING AND KNITTING MILLS
20039	CE OPER. EXP. NON-PROFIT ORGN.	22010	CON WOOD PRODUCTS
20040	CE NET EXPENDITURES ABROAD	22011	CON FURNITURE AND FIXTURES
21001	M&E AGRICULTURE AND FISHING	22012	CON PAPER AND ALLIED INDUSTRIES
21002	M&E FORESTRY	22013	CON PRINTING,PUBLISHING & ALLIED
21003	M&E MINING QUARRYING & OIL WELLS	22014	CON PRIMARY METALS
21004	M&E FOOD AND BEVERAGES	22015	CON METAL FABRICATING
21005	M&E TOBACCO AND TOBACCO PRODUCTS	22016	CON MACHINERY
21006	M&E RUBBER PRODUCTS	22017	CON TRANSPORT EQUIPMENT
21007	M&E LEATHER GOODS	22018	CON ELECTRICAL PRODUCTS
21008	M&E TEXTILE PRODUCTS	22019	CON NON-METALLIC MINERAL PRODUCT
21009	M&E CLOTHING AND KNITTING MILLS	22020	CON PETROLEUM AND COAL PRODUCTS
21010	M&E WOOD PRODUCTS	22021	CON CHEMICALS & CHEMICAL PROD.

FINAL DEMAND TITLE SET

22022 CON MISCELLANEOUS MANUFACTURING
22023 CON CONSTRUCTION INDUSTRY
22024 CON ELECTRIC POWER
22025 CON GAS DISTRIBUTION
22026 CON RAILWAY TRANSPORT
22027 CON URBAN TRANSIT SYSTEMS
22028 CON WATER TRANSPORT AND SERVICES
22029 CON MOTOR TRANSPORT
22030 CON GRAIN ELEVATORS
22031 CON TELEPHONES
22032 CON BROADCASTING
22033 CON AIR TRANSPORT & OTH. UTIL.
22034 CON TRADE, WHOLESALE AND RETAIL
22035 CON FINANCE INSURANCE + REAL EST
22036 CON COMMERCIAL SERVICES
22037 CON CHURCHES AND UNIVERSITIES
22040 CON HOUSING
22045 CON REAL ESTATE COMMISSIONS
22500 CON GOVERNMENT SECTOR
23010 INV FINISHED GOODS & GOODS I.P.
23020 INV RAW MATERIALS & G.P.R.S.
24001 GCE HOSPITAL EXP.
24002 GCE EDUCATION EXP.
24003 GCE DEFENCE EXP.
24004 GCE OTHER MUNICIPAL GOVT. EXP.
24005 GCE OTHER PROV. GOVT. EXP.
24006 GCE OTHER FED. GOVT. EXP.
25000 DOMESTIC EXPORTS
26000 RE-EXPORTS
27000 IMPORTS
28001 GCE HOSPITAL REV.
28002 GCE EDUCATION REV.
28003 GCE DEFENCE REV.
28004 GCE OTHER MUNICIPAL GOVT. REV.
28005 GCE OTHER PROV. GOVT. REV.
28006 GCE OTHER FED. GOVT. REV.

PRIMARY INPUTS

59400 UNALLOCATED IMPORTS AND EXPORTS
59500 GOVERNMENT GOODS AND SERVICES
59600 COMMODITY INDIRECT TAXES
59700 SUBSIDIES
59800 OTHER INDIRECT TAXES
59900 WAGES AND SALARIES
60000 SUPPLEMENTARY LABOUR INCOME
60100 NET INCOME UNINCORP BUSINESS
60210 HOUSEHOLD INVESTMENT INCOME
60220 DEPLETION AND MINING WRITE-OFFS
60230 CAPITAL COST ALLOWANCE
60240 OTHER SURPLUS

NOMENCLATURE DES BRINS ET SERVICES AGRÉGATION L

00100 BÉTAIL & VEAUX	05100 SERVICES AUXILIAIRES AUX MINES
00200 MOUTONS & AGNEAUX	05200 EQ.,VEAU-MOUT.,PORC FRAIS & CON.
00300 PORCS	05300 VIANDE DE CHEV. FR. REFR. CONG.
00400 VOLAILLE	05400 VIANDE SALÉE
00500 AUTRES ANIMAUX VIVANTS	05500 VIANDE PRÉP. CUITE NON EN CONS.
00600 RIZ NON MOULU	05600 VIANDE PRÉPARÉE EN CONSERVE
00700 BLÉ NON MOULU	05700 HUILES, GRAISSES & LARD ANIMAUX
00800 ORGE, AVOINE, FAVES, MAÏS, GRAIN NCA	05800 MARGARINE, GRAISSE & PRODU. CONN.
00900 LAIT - ENTIER, FLUIDE, NON TRAITÉ	05900 ÉMULS. DES SAUC. NAT. & SYNTH.
01000 ŒUFS AVEC COQUILLE	06000 RÉSIDUS DE GRAISSE PRIMAIRES
01100 MIEL & CIRE D'ABEILLE	06100 ALIM. FOUR ANIM.-ORIG. ANIM. NCA
01200 NOIX COMESTIBLES SANS COQUILLE	06200 CUIPS & PEAUX BRUTES NCA
01300 FRUITS FRAIS (SAUF TROPICAUX)	06300 MAT. ANIM. FOUR PHARM. PARF.
01400 LÉGUMES FRAIS	06400 TRAV. VIANDE & ALIM. SUR COMM.
01500 FOIN, FOURRAGE & PAILLE	06500 VOLAILLE FRAICHE, REFR., CONGELÉE
01600 SEMENCES (SAUF HUILE & GRAINES)	06600 VOLAILLE EN CONSERVE
01700 MATÉRIEL DE PÉPIN. & CONNEXE	06700 LAIT ENTIER, FLUIDE, TRAITÉ
01800 GRAINES OLÉAGIN., NOIX & AMANDES	06800 CRÈME FRAICHE
01900 HÔLÉBLON (Y COMPRIS LUPULIN)	06900 BEURRE
02000 TABAC BRUT	07000 FROMAGE, CHEDDAR & LAIT
02100 PEAUX VISON, RANCHO, INAPRÊTE	07100 LAIT ÉVAPORE
02200 LAINE EN SUINT	07200 CRÈME GLACÉE
02300 AUTRES AUXIL. AGRIC. & FOREST.	07300 AUTRES PRODUITS LAITIERS
02400 BILLOTS & BOULONS	07400 MOUTARDE MAYONNAISE
02500 PÔTEAUX (FOSS., CLOT.), ÉTAIS ETC.	07500 PRODUITS DU POISSON
02600 BOIS À PÂTE	07600 FRUITS, BAIES SECH., DESHYDRATÉES
02700 AUTRES DÉRIVÉS BRUTS DU BOIS	07700 FRUITS & PRÉP. EN CONSERVE
02800 FORESTAGE COMMANDE	07800 LÉG. CONG., SECHES & PRÉSERVES
02900 SORTIE DE L'EAU (POISSONS)	07900 LÉGUMES & PRÉPAR. EN CONSERVE
03000 PROD. DE LA CHASSE & DU PIÈGEAGE	08000 SOUPES EN CONSERVE
03100 MINÉRAI & CONCENT. OR & PLATINE	08100 ALIM. EN CONS. BÉBES & ENFANTS
03200 DR & ALLIAGES FORME PRIMAIRE	08200 CORNICH., ASSAIS. & AUTR. SAUCES
03300 MINÉRAI & CONCENT. RADIOACTIFS	08300 VINAIGRE
03400 MINÉRAI & CONCENT. DE FER	08400 AUTRES PRÉPARATIONS ALIMENTAIRES
03500 BAUXITE & ALUMINE	08500 ALIM. PRIM. OU CONG. FOUR ANIM.
03600 MINÉRAI & CONCENT. DE MÉTAL NCA	08600 ALIM. FOUR BÉTAIL DE COMMERCE
03700 CHARBON	08700 ALIM. ANIM. CR. GRAINES NCA
03800 HUILES MINÉRALES BRUTES	08800 ALIM. FOUR ANIM.-ORIG. LÉG.
03900 GAZ NATUREL	08900 ALIM. FOUR ANIMAUX D'AGRÈMENT
04000 AUTR. SUBST. BITUMINEUSES BRUTES	09000 FARINE DE BLÉ
04100 SOUFFRE BRUT & RAFFINÉ	09100 FARINE D'AUTRES CÉR. & LÉG.
04200 AMIANTE BRUTE & FIBREUSE	09200 CÉRÉALES POUR LE DÉJEUNER
04300 GYPSE	09300 BISCU., COC. DE CRÈME GLAC. ETC.
04400 SEL	09400 PAIN & PETITS PAINS
04500 TOURBE	09500 AUTRES PRODUITS DE BOULANGERIE
04600 ARGILE & AUT. MAT. BRUTES REFR.	09600 CACAO & CHOCOLAT
04700 ABRASIFS NAT. DIAMANT INDUSTRIEL	09700 NOIX, AMANDES & GRAIN. PRÉPARÉES
04800 MINÉRAUX BRUTS NCA	09800 CONFISERIE EN CHOCOLAT
04900 SABLE & GRAVIER	09900 AUTRE CONFISERIE
05000 PIERRE NON TAILLÉE	10000 PULPE DE BETTERAVE

NOMENCLATURE DES BRINS ET SERVICES AGREGATION L

10100	SUCRE	15100	FILATURE DE LAINE & DU POIL
10200	MELASSES, PROD. RAFF. DE SUCRE	15200	TISS. LARG., LAINE, POIL, MEL.
10300	GRAINES OLEAGI., FARINE & GATEAUX	15300	FEUTRES DE PAPERIE
10400	HUILES & GRAISSES VEG. BRUTES	15400	FIBRES SYNTHETIQUES
10500	COMPOSES FONCTIO. DE L'AZOTE NCA	15500	RESINES DE POLYAMIDE (NYLON)
10600	MALT, FARINE DE MALT, FECULE BLE	15600	FIL., SOIE, FIB. VERRE
10700	SUCRE & SIROP D'ERABLE	15700	FILATURE DE PNEUS
10800	MELANGES A GATEAU & AUTRES	15800	TISS. FIBRES TEXTILES
10900	SOUPES (DESHYD., MELANGE, BASES)	15900	TISS. LARGES, MIXTES
11000	CAFE TORREFIE, MOULU, INSTANTANE	16000	CHIFF., REB., COTON & MAT. TEXT.
11100	THE	16100	LAINE & POIL FIN, FILATURE
11200	CRUSTILLEES & PROD. SIMIL.	16200	FIL., FIBRES DE COTON
11300	ALIMENTS DIVERS NCA	16300	FIL., FIBRES SYNTHETIQUES
11400	CONCEN. & SIROPS DE BOISS. GAZ.	16400	FILES & FIL., AUTRES FIB. VEGET.
11500	BOISSONS GAZEUSES	16500	FICELLE A EMPAQUETER & A LIER
11600	BOISSONS ALCOOLISEES DISTILLEES	16600	AUTRES CORDS, FICELLES & CABLES
11700	ALCOOL ETHYLIQUE NATUREL	16700	TISSUS ETROITS
11800	GRAINS (ERASSEURS & DISTILLER.)	16800	TISS. DENTELLES & FIL.
11900	ALE, BIERE, PORTER, STOUT	16900	FEUTRE COUSSIN A TAPIS
12000	VINS DE RAISIN	17000	TAPIS DE TISSU & DE CAOUTCHOUC
12100	TABAC TRAITE NON MANUF.	17100	SERV. TEINT. & APPRET DES TEXT.
12200	CIGARETTES	17200	AUVENTS DE TISSUS & DE PLASTIQUE
12300	FABR. DE TABAC SAUF CIGARETTES	17300	TENTES, HAM., S. DE COU. & VOIL.
12400	CHAUSSURES CAOUTC. & PLASTIQUE	17400	BACHES & AUTRES REVETEMENTS
12500	PNEUS & CH. A AIR AUTOS	17500	CONTENANTS EN MAT. TEXTILE
12600	PNEUS CH. A AIR CAMIONS AUTOBUS	17600	FIBRES TEXTILES VEGETALES NCA
12700	PNEUS & CH. A AIR NCA	17700	DIV. TISS. TEXT. Y COMPRIS CHIFF
12800	PNEUS RECHAPES	17800	TEXTILES MENAGERS NCA
12900	COMPOSES DU CAOUTCHOUC	17900	AUTRES PROD. FINIS TEXT., LACETS
13000	CEINT. DE CADUT. & TISSUS END.	18000	EAS & CHAUSSETTES
13100	STOCK CHAUSS. TOILES CAOUT. ETC.	18100	TISS. TRICOT. & EN FILET, ELAST.
13200	BOYAU D'ARR. TUBES, SURT. CAOUT.	18200	TISSUS EN TRICOT, NCA
13300	REBUTS DE CAOUTCHOUC	18300	VETEMENTS EN TRICOT
13400	PRODUITS FINIS DE CAOUTCHOUC NCA	18400	VETEMENTS
13500	FEUILLES, TUYAUX & RACCORDS DE PL	18500	VETEMENTS, ACCESSOIRES & DIVERS
13600	CONT. PLAST. COUVERC. ECUTEILLE	18600	FOURURES APPRETEES
13700	PLAST. PREFAB., CONST. STRUCT.	18700	REVEL., TAPIS & DOUBL. DE FOUR.
13800	BOYAU ARR., SCAUX, PROD. FIN. NCA	18800	ART., VET., FOURR., FOURR. SYNTH.
13900	CUIR	18900	VETEMENTS SUR MESURE
14000	CHAUSSURES (CAOUTC., PLAST., ETC.)	19000	COPEAUX DE BOIS A PATE
14100	GANTS, MITAINES CUIR SAUF SPORT	19100	SCIAGE & BOIS D'OEUVRE
14200	STOCK CHAUSS. & CEINT. DE CUIR	19200	TRAVERSES DE CHEMIN DE FER
14300	VALISES	19300	REBUTS DE BOIS
14400	SACOCHE, PORTEF., ETC. EN CUIR	19400	TRAV. BOIS FORF., BOIS D'O. BRUT
14500	FILES DE COTON	19500	PLACAGES & CONTRE-PLAQUES
14600	FILES SIMP. OU MIXTES, PES. COT.	19600	BOIS D'OEUVRE EBUT
14700	TISSUS LARGES DE COTON, TISSES	19700	MAT. FAB. EN BOIS POUR STRUCT.
14800	FABR. PNEUS & CORD. DE PNEUS	19800	IMB. & STRUC. BOIS PREFABRIQUES
14900	FILETS	19900	CONT., FERMETURES & PAL. DE BOIS
15000	ORAPS, COUV., SERVIET. & CHIFFONS	20000	CERCUEILS & AUTRES ART. FUN.

NOMENCLATURE DES BRINS ET SERVICES AGRÉGATION L

20100 DIVERS PRODUITS DE BOIS	25100 BOULES BOUY., MOULES LINSOIS ETC.
20200 BARILS & TONNEAUX DE BOIS	25200 TUYAUX & MONT., FER MOULE TORDU
20300 PRODUITS FINIS DE BOIS, NCA	25300 NICKEL PROFILÉS PRIMAIRES
20400 MEUB. MAISON, CAMPING & PELOUSE	25400 CUIVRE & ALL. CUIV., PROF. PRIM.
20500 MEUB. BUR. & MAT. CLASS. VISIB.	25500 PLOMB & ALL. PLOMB, PROF. PRIM.
20600 MEUBLES SPECIAUX	25600 ZINC & ALL. ZINC, PROF. PRIM.
20700 MEUBLES & ART. D'AMEUB. DIVERS	25700 ALUM. ALL. ALUM., PROF. PRIM.
20800 LANDES FORT. TYPE RESIDENTIEL	25800 ETAIN & ALL. ETAIN, PROF. PRIM.
20900 FÂTE DE BOIS	25900 METAUX FREQ. ALLIAG. PROF. PRIM.
21000 PAPIER JOURNAL	26000 AUTRES METAUX BASE NON FERREUX
21100 AUTRE PAPIER D'IMPRIMERIE	26100 FLUORU. ALUM., ALUMINATE SODIUM
21200 PAPIER FIN	26200 OXYDES INORG. BASE & MET., NCA
21300 TISSU & PAPIER HYGIENIQUES	26300 FERRAILLE & REBUTS NCA
21400 PAPIER D'EMBALLAGE	26400 ALUMINIUM ALL. ALUMINIUM, MOULES
21500 CARTON	26500 PROD. CUIV. MOUL., LAM., PÉFOULÉS
21600 PAPIER CONSTRUCTION	26600 PROD. ALL. CUIV. MOUL., LAM., RE.
21700 LINGES, SERV. TABLE & PAP. HYG.	26700 PROD. PLOMB ALLIAGES M.L.R.
21800 VERNILLINE	26800 MAT. FAB. NICKEL & ALLIAGES
21900 DIV. MAT. PA. IND.; SCU-FR.; REB.	26900 MAT. FAB. ETAIN & ALLIAGES
22000 TUILES, DALLES - VINYLE, AMIANTE	27000 MOUL. PRES. ZINC, AUT. MAT. ZINC
22100 CART., SACS PAP., BOIT. COM. BOU.	27100 SOUD., Y COM. BLOCS, TIG., FILS, ETC
22200 PAP. TRANSF., GOM., CIRE OU D'IN.	27200 PLAQUES ACIER FABRIQUEES
22300 PAPIER D'ALUMINIUM TRANSFORME	27300 RESERVOIRS
22400 TISSU FACIAL & SERV. SANIT.	27400 CHAUDIERES ENERGETIQUES
22500 CONTENANTS DE PAPIER, NCA	27500 CHAUDIERES, TYPES MARIN
22600 PAPET. & PAPIER, FOURN. BUREAU	27600 POUT. AUT. STRUCT. ACIER
22700 PRODUITS FINIS DE PAPIER	27700 MAT. ECHAFAUDAGE DEMONTABLE
22800 JOURNAUX, REVUES & PERIODIQUES	27800 MAT. PRES. CONS. STR. SORT. MET.
22900 LIVRES, DEPL., CARTES & ILLUST.	27900 PRODUITS METALLIQUES NCA
23000 BIL DE BAN., BONS, TRAITES ETC.	28000 FEUILL., BARR. ACIER PEV. OU FAB.
23100 AUTRE PAPIER IMPRIME	28100 TUYAU D'EGOUT, METAL ONDULE
23200 PUBLICITE, JOURNAUX	28200 PRO. MET. BASE, CHAUD. A FOURNEAU
23300 SERV. DE PUBLICATION SPECIALISEES	28300 TUYAUX, PACCOIDS & PAREMENTS EN M
23400 PLAQUES D'IMPRESSION, COMPOSITION	28400 AUVENTS MET., CENDRIERS, SEAUX, ETC
23500 FERRO-ALLIAGES	28500 USTENSILES DE CUISINE
23600 LINSOIS DE FER & D'ACIER	28600 CONTEN., COUVERCLES METALL.
23700 MASSES, BILLETES, PLAQUES D'ACIER	28700 FILS & CABLES D'ACIER
23800 MOULAGES D'ACIER	28800 CLOTURES, GRILLAGES, FILETS MET.
23900 BARRES & TIGES D'ACIER	28900 CHAINES SAUF FN., AUTOS, AUT. VEH.
24000 PLAQUES D'ACIER NON FABRIQUEES	29000 TIGES, FILS, ELECTRODES, SOUDURE
24100 FEUI. D'ACIER CARB. NON REVETUES	29100 RESSORTS REMB., DIVERS VEHICULES
24200 FEUILLES D'ETAIN	29200 BOULONS, ECROUS, VIS, RONDEL. ETC.
24300 FEUILLES & BARR. D'ACIER GALV.	29300 QUINCAILLERIE DE BATIMENT
24400 MAT. D'ACIER PAIS CHENIN DE FER	29400 GARN., MEUBLES, ARMOIRES & CERC.
24500 SOUDON	29500 QUINC. DE BASE, NCA
24600 PROD. NAT., SYNTH. GRAPH. CARBONE	29600 OUTILS A COUPER & A MODELER, ETC.
24700 TUYAUX D'ACIER MECANIQUE	29700 OUTILS MECAN. MESURE TAILLE
24800 PRODUITS DOMESTIQUES DU PETROLE	29800 CISEAUX, LAMES RAS., COUT. IND.
24900 PIPEL. ACIER, TRANS. GAZ & PETP.	29900 MATERIEL DOMESTIQUE NCA
25000 TUBES & TUYAUX D'ACIER, NCA	30000 APP. CHAUFF. EAU CH., VAP., ETC.

NOMENCLATURE DES BRINS ET SERVICES AGREGATION L

30100 APP. CH. AIR CHAUD, SAUF TUYAUX	35100 MOTON. & DIV. VEHIC. NON MOTOR.
30200 ELEM. & RESERV. EAU NON EL.	35200 EMBARCATION PLAISANCE & SPORT
30300 MATERIEL A COMBUSTIBLE	35300 PETITS APP. ELECTR. DOMESTIQUES
30400 APP. COMM. CUISS. RECH. NOUR.	35400 APP. CHAUFF., POELES, ETC.
30500 TRAVAUX DE METAL SUR COMMANDE	35500 REFR., CONG., APP. COMBINES-DOMES.
30600 FORGE ACIER CARB. & ALL.	35600 FOURS A GAZ, POELES ELECT.-DOMES.
30700 SOUPAPES	35700 TELEV., RADIOS, TOURN.-DISQUES
30800 ACC. TUY., AUT. CUE FER & ACIER	35800 TELEP. & TELEG., CABLES & MAT.
30900 COMPTEURS A GAZ & A EAU	35900 RADIO, TELEV., MAT. ENIS. TRANSP.
31000 MAT. CONTRE INCEND. & CONT. CIRC	36000 MAT. RADAR & APP. COMMENES
31100 TAXIME., PAFCON., FOULIES, ECHELLES	36100 TUBES ELECTRON., SEMI-COND., ETC.
31200 ARMES A FEU & INST. MILITAIRES	36200 MATERIEL ELECTRONIQUE - MORCEAUX
31300 TUBES TELESCOPIQUES, METAL	36300 SYST. INT. SIGN., ALARM., HORLOG.
31400 TRACTEURS TYPE FERME & JARDIN	36400 QUINCAILL. DE LIGNES SUR POTEAUX
31500 AUTRES MACHINES AGRICOLES	36500 APPAREILS & MATERIEL DE SOUDURE
31600 MATERIEL MECAN. DE TRANSPORT	36600 MOT. MARIN, TURB. ELECT.
31700 POMPES, COMPRESSEURS, VENTIL. ETC.	36700 TRANSF. & CONVERT. SAUF TELC.
31800 MACH. CONV., ASCENS., APP. LEV.	36800 MATERIEL ELECT. INDUSTRIEL NCA
31900 CAMIONS, TRACTEURS, REPO. IND. ETC	36900 PILES & BATTERIES
32000 VENT., APP. CIRC. D'AIR & AERAT.	37000 FILS & CABLES ISOLES
32100 MACH. ENDALL., GRAIS., AUT. DIV.	37100 FILS & CAB. ALUM. NON ISOLES
32200 FOURNAISES, FOURNEAUX, FOURS IND.	37200 INTERR. SECURITE INCORPORES
32300 MACH. INDUSTRIELLES SPECIALISEES	37300 AMPOULES & LAMPES ELECT. ETC.
32400 OUTILS A MAIN MUNIS D'UN MOTEUR	37400 ACC. ELECT. ECLAIRAGE ETC.
32500 PRODUITS FINIS METALLIQUES, NCA	37500 CIMENT
32600 MAT. PEFR. CLIMAT., SAUF MAISON	37600 CHAUX
32700 BALANCES	37700 PROD. BASE BETON
32800 DISTRIBUTEURS AUTOMATIQUES	37800 BRIQUES, BLOCS SILICO-CALCAIRES
32900 MACHINES & MATERIEL DE BUREAU	37900 BETON PREPARE
33000 AERONEFS TOUS GENRES	38000 BRIQUES & TUILES D'ARGILE
33100 MOTEURS D'AERONEFS	38100 ISOLANTS, ACC. ELECT. PORCELAINES
33200 MATERIEL AERIEN SPECIALISE	38200 MAT. PLOMB., PORC. VITR. ETC.
33300 SERV. MODIFICATION & CONVERSION	38300 PRODUITS REFRACTAIRES
33400 VOITURES PARTICUL. & CHASSIS	38400 PROD. BASE PIERRE NATUR. STRUCT.
33500 CAMIONS, CHASSIS, TRACTEURS COMM.	38500 PROD. FIN. PIER. ARG. BETON NCA
33600 AUTOBUS & CHASSIS	38600 PLATRE & AUT. PROD. GYPSE
33700 VEHICULES MILIT., MOTOCYCLETTES	38700 MAT. LAINE MIN. ISOL. THERM. NCA
33800 POMPES CADINE OU MAISON	38800 PRODUITS BASE AMIANTE
33900 AUTRES REM. & SEMI-REM. COMM.	38900 VERRE-PLAQ., FEUIL., STRUCT., ORN.
34000 CARROSSER. & CABINES DE CAMIONS	39000 CONTENANTS DE VERRE
34100 VEHICULES-MOTEURS & MORCEAUX	39100 ART. VERRE TABLE MAIS. FIN. NCA
34200 MATERIEL ELECTRIQUE AUXILIAIRE	39200 PRODUITS BASE ABRASIFS
34300 ACC. MORC., ASSENS. VEHIC. MOT.	39300 AUT. FRO. BASE MIN. NON MET. NCA
34400 QUINC. VEH. MOT. SAUF RESSORTS	39400 ESSENCE A AVIATION
34500 LOC., JACONS, TENDERS, SERV. RAIL	39500 ESSENCE A MOTEUR
34600 LOCOMOTIVES, AUTO-PROP., IND.	39600 MAZOUT
34700 MORC., ACC. MAT. ROUL. CHEMIN FER	39700 HUILES & GRAISSES LUBRIFIANTES
34800 NAVIRES, ENMPC. MILIT. COMM.	39800 BENZENE, TOLUENE & XYLENE
34900 MONTAGES AUXIL. MORC., ETC.-NAV.	39900 BUT., PROP., AUT. LIQ. PET. ESS.
35000 REPARATION DE NAVIRES	40000 HUILE DE NAPHTHE

NOMENCLATURE DES BRINS ET SERVICES AREGATION L

40100 ASPHALTE, HUILES CHAUD. NCA	45100 PHENOLS, ALCOOLS PHEN. & DERIVES
40200 ALIMENTATION IND. PETROCHIMIQUE	45200 ETHERS, PEROXYDES D'ALCOOL, ETC.
40300 ENCREAIS	45300 FONCT. METHYL-ETHYL, ADEH. NCA
40400 RESINES, MAT. PLAST. BRUTES	45400 ACETONE
40500 FELLICULES, FEUILLES CELLULOSE	45500 ACIDE ACETIQUE
40600 ETHANOCAMINES	45600 ANHYDRIDE ACETIQUE
40700 ETHYLENE GLYCOL, MONO	45700 ACIDE ADIPIQUE
40800 PRODUITS PHARMACEUTIQUES	45800 ACIDES CITRIQUES
40900 PEINTURE & PRODUITS CONNEXES	45900 ACIDES STEAR. & ORGANIQUES
41000 HUILES VEG. AUTRES QUE MAIS, RAF.	46000 HEXAMETHYLENEDIAMINE
41100 GLYCERINE, PAFINEE	46100 GLUTAMATE DE SODIUM, MONO
41200 DENTIFRICES TOUTS GENRES	46200 GUANIDINES
41300 SAVONS, DETERGENTS, PROO. NETT.	46300 COMP. ORGANO-INORGANIQUES, ETC.
41400 PREP. CHIM. IND. NCA	46400 PRODUITS CHIMIQUES ORGANIQUES
41500 PRODUITS TOILETTE COSMETIQUES	46500 DIOXIDE DE TITANIUM
41600 CHLORE	46600 CHARBON, ACETHYLENE, CARBONE
41700 OXYGENE	46700 COLORANTS, LAQUES, TONS, PROPRES
41800 PHOSPHORE	46800 COLORANTS, LAQUES, TONS, NCA
41900 ELEMENTS CHIMIQUES NCA	46900 ENERAIS, CHIMIQUES
42000 ACIDE SULFURIQUE	47000 CAOUTCHUC SYNTHETIQUE
42100 BIONIDE CARB. (GAZ, GLACE SECHE)	47100 COMPOSES ANTIGEL
42200 ACIDES INORG., COMP. OXYG. ETC.	47200 ADDITIFS HUILES MINERALES NCA
42300 AMMONIACQUE ANHYDRIQUE & AQU.	47300 GLYCERINE BRUTE
42400 SOUDE CAUST. (HYDR. SOL.) SECHE	47400 AGENTS COMP. CAOUT. PLASTIQUES
42500 CHLOURE DE CALCIUM	47500 EXPLOSIFS, FUSEES, DETONATEURS
42600 CHLORATE DE SODIUM	47600 MUNITIONS NON MILITAIRES
42700 SULFATE D'ALUMINIUM	47700 MUNITIONS & ARTILLERIE MILIT.
42800 PHOSPHATES DE SODIUM	47800 ARTICLES & PIECES PIROTECHNIQUES
42900 CARBONATE SODIUM (CENDRE SOLDE)	47900 MAT., EXTRAITS VEGETAUX BRUTS
43000 CYANURE DE SODIUM	48000 ANHYDRIDE PHTALIQUE
43100 SILICATE DE SODIUM	48100 PRODUITS CHIMIQUES AGRICOLES
43200 SELS METAL. & DE PEROX. NCA	48200 ADHESIFS
43300 PRODUITS CHIM. INORG. NCA	48300 PROO. CHIM. VEHIC. SAUF ANTIGEL
43400 ETHYLENE	48400 ADDITIFS ANTI-ACIDES AU CIMENT
43500 BUTYLENES	48500 PRODUITS CHIMIQUES A CHAUDIERE
43600 BUTADIENE	48600 COMPOSE CATALYSEUR
43700 ACETYLENE	48700 CONFUSES POUR TRAVAILLER METAL
43800 STYRENE MONOMERE	48800 ENCRE D'IMPRIMERIE
43900 TETRACHLORURE DE CARBONE	48900 PROO. CHIM. SPECIALISES TEXTILE
44000 VINYLCHLORURE MONOMETRE	49000 FOLIS, CIPES, COMPOSES, ETC.
44100 TRICHLOROETHYLENE	49100 CIERES, ANIM. VEGET. AUTRE
44200 DICHLOROETHYLENE	49200 HUILES ESSENT., NAT. CU SYNTH.
44300 CHLOROFLUOROCHLOROCARBONES, NCA	49300 MAT. TANNAGE & TEINTURES
44400 HYDROCARBONES & DERIVES	49400 GRAS, MELANGES CHIMIQUES
44500 ALCOOL METHYLIQUES	49500 PROO. CHIM. PREP. ENBAUMEMENT
44600 ALCOOLS PROPY. & ISOPROPYLIQUES	49600 ALLUMETTES
44700 ALCOOLS BUTYL. & ISOBUTYLIQUES	49700 INSTRUMENTS AER. NAUT.
44800 PENTAERYTHRITOL	49800 APPAREILLAGE LAB. SCIENT. ETC.
44900 ALCOOLS & LEURS DERIVES	49900 DIV. INST. MESURE & CONTROLE
45000 PHENOL	50000 INSTR. MEDICAUX & CONNEXES ETC.

NOMENCLATURE DES BRINS ET SERVICES AGREGATION L

50100 MAT. IND. SECUR. MIL. DEF. CIV.	55100 SERVICES DE REPARATION
50200 MONTRES, HORLOGES, CHRONOMET., ETC.	55200 LOCATION DE MATERIEL DE BUREAU
50300 MAT. FOURN. PHOT. Y COMP. FILM	55300 MARGE, COMMERCE DE DETAIL
50400 BIJOUX, DEC. MET & PIER. PREC.	55400 SERVICE IMPUTE, BANQUES
50500 COUTEL, RECQVY. ARGENTERIE, ETC.	55500 AUT. SER. IMMOC. (NON LOC.) FIN.
50600 BAL., CROSS., VADR. AUT. MAT. NET.	55600 ASSURANCE, IDEN. ACC. TRAVAIL
50700 BICYCL. FOUR ENFANTS, MORCEAUX	55700 LOYER IMPUT. LOG. OCC. PROPR.
50800 MAT. SPORT, PECHE, CHASSE	55800 LOYER RESIDENTIEL COMPTANT
50900 JOUETS & JEUX	55900 AUTRES LOYERS
51000 TISSUS ENDUITS SAUF CAOUTCHOUTES	56000 RECEV. GOUV. RESS. NAT.
51100 TUILES, CAOUTCHOUC, PLASTIQUE	56100 ENSEIGNEMENT
51200 MARCH. PUBLICITE	56200 SERVICES HOSPITALIERS
51300 STORES & TOILES	56300 SERVICES SANITAIRES
51400 SERV. APPRET TEINTURE FOURPURE	56400 CINEMAS
51500 TRAV. SUR COMMANDE, DIVERS	56500 AUTRES SERVICES DE LOISIRS
51600 GLACE	56600 SERVICES EXT. DES ENTREPRISES
51700 FOILS, PLUMES, PIQUANTS ANIM., ETC.	56700 PUBLICITE
51800 DIV. MAT. FAB. (SOIES, ETC.)	56800 SERV. BLANC., NETT., PRESS.
51900 BOUTONS, AIGUIL., EPIN., DIV. ART.	56900 SERVICES DE LOGEMENT
52000 MAT. AUDIT. ENR. ART.	57000 REFAS
52100 DECORATIONS & OBJ. ART MAISON	57100 SERV. LIM. BOISS. ALCOOL.
52200 CONSTRUCTION DE REPARATION	57200 SERVICES PERSONNELS
52300 CONSTRUCTION DE RESIDENCES	57300 PHOTOGRAPHIE
52400 CONSTR. AUT. QUE RESIDENCE	57400 DIV. SERV. REP. SAUF IMM. LOG.
52500 CONST. ROUTES, AUTOR., FIST. ATT.	57500 MATERIEL INFORMATIQUE LOCATION
52600 CONSTR. INST. GAZ HUILE	57600 AUT. SERV. AUX ENR. & PERS.
52700 ENFRAGES, PROJETS D'IRRIGATION	57700 LOCATION AUTOMOBILES CAMIONS
52800 CONST. CH. FER, TEL., TELEG.	57800 COTISATIONS ASS. COMM.
52900 AUTRES CONSTRUCTIONS INGENIERIE	57900 LOG. AUT. MACH. MAT., CONS. COMP.
53000 TRANSPORT AERIEN	58000 FOURN. P. DET. & ENT. MAC. MAT.
53100 AUTRE TRANSPORT	58100 FOURNITURES DE BUREAU
53200 SERV. AUXILIAIR. DES TRANSP. NCA	58200 FOURNITURES DE CAFETERIA
53300 TRANSPORTS PAR EAU	58300 MARGES DE TRANSPORTS
53400 SERV. AUXIL. DES TRANSP. PAR EAU	58400 MATERIEL FOURN. LABORATOIRE
53500 TRANSPORTS FERROVIAIRES	58500 DEPLACEMENTS & LOISIRS
53600 TRANSPORTS PAR CAMIONS	58600 PUBLICITE & PROMOTION
53700 TRANSP. INTER. RUR. PAR AUTOBUS	58700 ACHAT SERV. REP. MACH. MAT.
53800 TRANSPORTS URBAINS	58800 COTON BRUT, SEMI-TRAITÉ
53900 TRANSPORTS PAR TAXIS	58900 CACUIC. MAT & CONNES CONNEXES
54000 TRANSPORTS PAR PIPE-LINE	59000 SUCRE DE CANNE BRUT
54100 ENTRETIEN ROUTES PONTS	59100 FEVES DE CACAO, NON ROTIES
54200 ENTREPOSAGE	59200 CAFE VERT
54300 RADIODIFFUSION & TELEVISION	59300 FRUITS TROPICAUX
54400 TELEPHONE & TELEGRAPHIE	
54500 SERVICES POSTAUX	
54600 ELECTRICITE	
54700 DISTRIBUTION DU GAZ	
54800 CORE	
54900 EAU & AUTRES SERVICES	
55000 MARGE, COMMERCE DE GROS	

NOMENCLATURE DES INDUSTRIES AGREGATION L

00100 AGRICULTURE	05100 INDUSTRIE DES TAPIS & CARPETTES
00200 FORETS	05200 TEINTURE & APPRET DES TEXTILES
00300 PECHE, CHASSE ET PIEGEAGE	05300 INDUSTRIE DE LA GROSSE TOILE
00400 MINES D'OR	05400 IND. DES SACS DE COT. & DE JUTE
00500 MINES D'URANIUM	05500 INDUSTRIES TEXTILES DIVERSES
00600 MINES DE FER	05600 INDUSTRIE DES BAS ET CHAUS.
00700 MINES (METAUX DE BASE & AUTRES)	05700 AUTRES IND. DES TRICOTS
00800 MINES DE CHARBON	05800 INDUSTRIES DU VETEMENT
00900 FUITS DE PETROLE ET DE GAZ	05900 SCIERIES
01000 MINES D'AMIANTE	06000 FABRIQUES DE PLACAGES & CONTREP.
01100 MINES DE GYPSE	06100 IND. FORTES & CHASSIS & RABOT.
01200 MINES DE SEL	06200 FAB. DE BOITES EN BOIS
01300 MINES NON METALLIQUES DIVERSES	06300 INDUSTRIE DES CERCUEILS
01400 CARRIERES ET SABLIERES	06400 INDUSTRIES DIVERSES DU BOIS
01500 SERVICES MINIERES	06500 INDUSTRIE DES MEUBLES DE MAISON
01600 ABATT. & PREPARAT. DE LA VIANDE	06600 INDUSTRIE DES MEUBLES DE BUREAU
01700 PREPARATION DE LA VOLAILLE	06700 AUTRES INDUSTRIES DU MEUBLE
01800 FABRIQUES LAITIERES	06800 IND. LAMPES ELEC. & ABAT-JOUR
01900 INDUSTRIE DU FOISSON	06900 INDUSTRIE DES PATES & PAPIERS
02000 PREPARAT. DE FRUITS & DE LEGUMES	07000 ASPHALTE & PRODUITS CONNEXES
02100 FAB. D'ALIMENTS POUR ANIMAUX	07100 FAB. DE BOITES & SACS EN PAPIER
02200 FABRICATION DE CEREAL. DE TABLE	07200 AUTRES TRANSFORMATIONS DU PAPIER
02300 FABRICANTS DE BISCUITS	07300 IMPRIMERIE & EDITION
02400 BOULANGERIES	07400 IND. DE GRAV. & DE STEREOT.
02500 FABRICANTS DE CONFISERIE	07500 IND. FER & ACIER
02600 RAFFINERIES DE SUCRE	07600 FAB. DE TUBES ET TUYAUX D'ACIER
02700 INDUSTRIE DES HUILES VEGETALES	07700 FONDERIE DE FER
02800 INDUSTRIE D'ALIMENTS DIVERS	07800 FONTE & AFFINAGE DE L'ALUMINIUM
02900 FABRIC. DE BOISSONS GAZEUSES	07900 FONTE & AFFINAGE - AUTRES
03000 DISTILLERIES	08000 LAMINAGE & PERÇULAGE DE L'ALUM.
03100 BRASERIES	08100 LAMINAGE DU CUIVRE & ALLIAGES
03200 INDUSTRIE DU VIN	08200 MOULAGE & REF. DE METAUX (MCA)
03300 TRAITEMENT DU TABAC EN FEUILLES	08300 IND. DES CHAUD. & DES PLAQUES
03400 FABRIC. DE PRODUITS DU TABAC	08400 FAB. DES ELEM. DE CHAPP. METAL.
03500 FABRIC. DE CHAUS. EN CACUT.	08500 IND. FR. MET. ARCH. & ORN.
03600 FAB. DE CHAUS. A AIR & DE FREUS	08600 IND. EMB. MAT. REV. METAUX
03700 AUTRES INDUSTRIES DU CACOUTCHOUC	08700 IND. FIL METAL. & PRODUITS
03800 ART. NAT. PLASTIQUE NCA	08800 FAB. QUINC., OUT., COUPELLERIE
03900 TANNERIES	08900 FAB. APPAREILS DE CHAUFFAGE
04000 FABRIQUES DE CHAUSSURES	09000 ATELIERS D'USINAGE
04100 FABRIQUES DE GANTS EN CUIR	09100 IND. DES PROD. METALL. DIVERS
04200 FABRIQUES DE MENUS ART. EN CUIR	09200 FABRIC. DE MATERIEL AGRICOLE
04300 FILS & TISSUS DE COTON	09300 FAB. MACHINES & MATER. DIVERS
04400 FABRIQUES DE TISSUS DE LAINE	09400 FAB. MAT. FRIG. COND. AIR COMM.
04500 INDUSTRIE DES TEXTILES SYNTHET.	09500 FAB. MACHINES BUREAU/MAGASIN
04600 PREPARATION DES FIBRES	09600 FAB. D'AVIONS & D'ELEMENTS
04700 FABRICATION DU FIL	09700 FAB. DE VEHICULES AUTOMOBILES
04800 INDUSTRIE DES CORDES & FICELLES	09800 FAB. CAMIONS, CAMIONS PENCH.
04900 INDUSTRIE DES TISSUS ETROITS	09900 FAB. ACCESSOIRES AUTOMOBILES
05000 IND. DU FEUTRE PRESSE & AERE	10000 FAB. MATER. ROUL. CHENIN DE FER

NOMENCLATURE DES INDUSTRIES AGREGATION L

10100 CONST. & REPARATION DE NAVIRES	15100 TRANSPORTS PAR CAMIONS
10200 IND. MATER. TRANSP. (DIVERS)	15200 TRANSP. INTER. & RUR. AUTOS.
10300 FAB. PETITS APPAREILS ELECTRIQ.	15300 TRANSPORTS URBAINS
10400 FAB. GROS APP. (ELECT. CU NON)	15400 EXPLOITATION DE TAXIS
10500 APPAREILS DE RADIO & DE TELEV.	15500 TRANSPORTS PAR PIPELINE
10600 FAB. MATER. DE TELECOMMUNICATION	15600 ENTRETIEN DES ROUTES & PONTS
10700 FAB. MATERIEL ELECTRIQUE INDUST.	15700 ENTREPOSAGE
10800 FABRICANTS DE BATTERIES	15800 RADIODIFFUSION & TELEVISION
10900 FABRIC. FILS CABLES ELECTRIQUES	15900 IND. DES COMMUNICATIONS NCA
11000 FAB. APPAREILS ELECTR. DIVERS	16000 POSTES
11100 FABRICANTS DE CIMENT	16100 ELECTRICITE
11200 FABRICANTS DE CHAUX	16200 DISTRIBUTION DU GAZ
11300 FABRIC. DE PRODUITS EN BETON	16300 EAU & AUTR. SERV. D'UTIL. PUBL.
11400 INDUSTRIE DU BETON PREPARE	16400 COMMERCE DE GROS
11500 FABRIC. DE PRODUITS DE L'ARGILE	16500 COMMERCE DE DETAIL
11600 FAB. DE PRODUITS REFRACTAIRES	16600 IMMEUBLES OCC. PAR PROPR.
11700 FABRIC. DE PRODUITS EN PIERRE	16700 REDEV. COUV. SUR LES RESS. NAT.
11800 FAB. AUTR. PROD. MINER. NON MET.	16800 BANQUES & CAISSES POPULAIRES
11900 FAB. VERRE & ARTICLES EN VERRE	16900 ASSURANCE
12000 FABRICANTS D'ABRASIFS	17000 AUTRES AGENCES D'ASS. & D'IMM.
12100 RAFFINERIES DE PETROLE	17100 ENSEIGNEMENT & SERVICES COMM.
12200 FAB. AUT. DER. PETR. & DU CHAR.	17200 HOPITAUX
12500 FAB. ENGRAIS MELANGES	17300 SERVICES DE SANTE
12400 FAB. MAT. PLAST. RES. SYNT.	17400 CINEMAS
12500 FAB. PROD. MED. & PHARM.	17500 AUTRES SERVICES RECREATIFS
12600 FAB. DE PEINTURES & VERNIS	17600 SERVICES SPEC. AUX ENTREP.
12700 FAB. SAVONS & COMP. DE NETTOYAGE	17700 PUBLICITE
12800 FAB. PRODUITS DE TOILETTE	17800 BLANCHISSAGE & NETTOYAGE
12900 FAB. PROD. CHIM. INDUSTRIELS	17900 HEBERGEMENT & RESTAURATION
13000 AUTRES INDUSTRIES CHIMIQUES	18000 AUTRES SERVICES PERSONNELS
13100 FAB. INST. SCIENT. & PROF.	18100 PHOTOGRAPHIE
13200 FAB. DE BIJOUTERIE & D'ORFÈV.	18200 REPARATIONS & ENTRETIEN GENÈR.
13300 IND. BALAIS, BROSSES & VASEQUIL.	18300 SERV. DIVERS FERS. & AUX ENTR.
13400 IND. ARTICLES DE SPORT & JOUETS	18400 ACHATS D'EXPLOITATION
13500 IND. DES LINOLEUMS & TIS. ENDUIT	18500 FOURNITURES DE BUREAU
13600 IND. DES ENSEIGNES & ETALAGES	18600 CAFETERIA BESOINS
13700 IND. MANUFACTURIERES DIV. NCA	18700 MARGE DE TRANSPORTS
13800 REPARATION & CONSTRUCTION	18800 FOURN. DE LABORATOIRE
13900 CONSTRUCTION DE RESIDENCES	18900 DEPLACEMENTS & REPRESENTATIONS
14000 CONSTRUCTIONS AUTRES QUE RESID.	19000 PUBLICITE & PROMOTION
14100 CONST. ROUTES & PISTES D'ATTER.	19100 SERVICES DE REP. DES MACH.
14200 CONST. INST. GAZIF. & PETROLIF.	
14300 BARRAGES & PROJ. D'IRRIGATION	
14400 CONST. CH. DE FER TELEG. TELEPH.	
14500 AUTRES CHANTIERS D'INGENIERIE	
14600 AUTRES CONSTRUCTIONS	
14700 TRANSPORTS AERIENS	
14800 AUTRES SERV. AUX. DES TRANSPORTS	
14900 TRANSPORTS PAR EAU	
15000 TRANSPORTS FERROVIAIRES	

NOMENCLATURE DES CATEGORIES DE DEMANDE FINALE AGRÉGATION L

1	DC ALIM. & POISS. NON ALCOOL.	51	MI MEUBLES & APPAREILLAGES
2	DC BOISSONS ALCOOLISEES	52	MI PAPIER & INDUSTRIES CONNEXES
3	DC TABAC	53	MI INFR. PUBLIC & IND. COMM.
4	DC VETEM. FOUR HOMMES & GARC.	54	MI METAUX PRIMAIRES
5	DC VETEM. POUR DAMES & ENF.	55	MI FABRICATION DES METAUX
6	DC CHAUS. & REPAR. DE CHAUS.	56	MI MACHINERIE
7	DC LOYERS DEUTS IMPUTES	57	MI MATERIEL DE TRANSPORT
8	DC LOYERS ERUITS PAYES	58	MI APPAREILS ELECTRIQUES
9	DC AUTRES LOGEMENTS	59	MI PROD. MINER. NON METALLIQUES
10	DC ELECTRICITE	60	MI PETROLE & PROD. DU CHARBON
11	DC GAZ	61	MI PRODUITS CHIMIQUES
12	DC AUTRES COMBUSTIBLES	62	MI FABRICATIONS DIVERSES
13	DC MEUBLES, TAPIS & COUPE-PARQ.	63	MI INDUSTRIE DE LA CONSTRUCTION
14	DC APPAREILS MENAGERS DURABLES	64	MI ELECTRICITE
15	DC APP. & ART. MEN. SEMI-DUR.	65	MI DISTRIBUTION DU GAZ
16	DC ART. MENAGERS NON DURABLES	66	MI TRANSPORTS PAR RAIL
17	DC SERV. BUAND. & NETT. A SEC	67	MI TRANSPORTS URBAINS
18	DC SERVICES DOMESTIQUES	68	MI TRANSPORTS & SERV. PAR EAU
19	DC AUTRES SERVICES MENAGERS	69	MI TRANSPORTS PAR CAMIONS
20	DC SOINS MEDICAUX	70	MI ELEVATEURS A GRAINS
21	DC SOINS HOSPITALIERS	71	MI TELEPHONES
22	DC AUTRES SOINS MEDICAUX	72	MI RADIODIFFUSION
23	DC PRODUITS PHARM. & DIVERS	73	MI TRANSP. AERIENS & AUT. SERV.
24	DC AUTOMOBILES NEUVES & USEES	74	MI COMMERCE GROS & DETAIL
25	DC AUTOM. - REPAR. & NORDEAUX	75	MI FINANCE, ASSURANCE & IMMEUBLE
26	DC ESSENCE, HUILE & GRAISSE	76	MI SERVICES COMMERCIAUX
27	DC AUTOMOBILES - AUTRES SERVICES	77	MI EGLISES & UNIVERSITES
28	DC TRANSPORTS PAYES	78	MI AUTOS USAG. MOTO. & FERR.
29	DC COMMUNICATIONS	79	MI SECTEUR DU GOUVERNEMENT
30	DC LOISIRS - SPORTS & NAT. CAMP.	80	CON AGRICULTURE & PECHE
31	DC LIVRES, REVUES & PAPIER	81	CON FORETS
32	DC SERVICES RECREATIFS	82	CON MINES, CARR. & PUIES DE PETR.
33	DC SERVICES PEDAG. & CULTURELS	83	CON ALIMENTS & BOISSONS
34	DC BIJOUT. MONTRES & REPAR.	84	CON TABAC & PRODUITS DU TABAC
35	DC ART. DE TOILETTE, COSM. ETC.	85	CON PRODUITS DU CAOUTCHOUC
36	DC SOINS PERSONNELS	86	CON PRODUITS DU CUIR
37	DC DEPENSES REST. HOTELS ETC.	87	CON PRODUITS TEXTILES
38	DC ENTREPRISES PERSONNELLES	88	CON IND. DU VETEM. & DES TRICOTS
39	DC DEP. EXP. CTS. EUT NON LUOP.	89	CON PRODUITS DU BOIS
40	DC DEPENSES NETTES A L'ETRANGER	90	CON MEUBLES & APPAREILLAGES
41	MI AGRICULTURE & PECHE	91	CON PAPIER & INDUSTRIES CONNEXES
42	MI FORETS	92	CON INFR. PUBLIC. & IND. COMM.
43	MI MINES, CARR. & PUIES DE PETR.	93	CON METAUX PRIMAIRES
44	MI ALIMENTS & BOISSONS	94	CON FABRICATION DES METAUX
45	MI TABAC & PRODUITS DU TABAC	95	CON MACHINERIE
46	MI PRODUITS DU CAOUTCHOUC	96	CON MATERIEL DE TRANSPORT
47	MI PRODUITS DU CUIR	97	CON APPAREILS ELECTRIQUES
48	MI PRODUITS TEXTILES	98	CON PROD. MINER. NON METALLIQUES
49	MI IND. DU VETEM. & DES TRICOTS	99	CON PETROLE & PROD. DU CHARBON
50	MI PRODUITS DU BOIS	100	CON PRODUITS CHIMIQUES

NOMENCLATURE DES CATEGORIES DE DEMANDE FINALE AGREGATION L

101 CON FABRICATIONS DIVERSES
102 CON INDUSTRIE DE LA CONSTRUCTION
103 CON ELECTRICITE
104 CON DISTRIBUTION DU GAZ
105 CON TRANSPORTS PAR RAIL
106 CON TRANSPORTS URBAINS
107 CON TRANSPORTS & SERV. PAR EAU
108 CON TRANSPORTS PAR CAMION
109 CON ELEVATEURS A GRAINS
110 CON TELEPHONES
111 CON RADIODIFFUSION
112 CON TRANS. AERIENS & AUT. SERV.
113 CON COMMERCE GROS & DETAIL
114 CON FINANCE, ASSUR. & IMMOBIL.
115 CON SERVICES COMMERCIAUX
116 CON EGLISES & UNIVERSITES
117 CON HABITATIONS
118 CON COMMIS. DE BIENS IMMOBIL.
119 CON SECTEUR DU GOUVERNEMENT
120 ST PRODUITS FINIS &Industr.
121 ST MATIERES BRUTES & P.A.P.R.
122 DCA FRAIS HOSPITALIERS
123 DCA FRAIS PEDAGOGIQUES
124 DCA FRAIS DE DEFENSE
125 DCA AUT. DEP. DE L'ADM. MUNIC.
126 DCA AUTR. DEP. DE L'ADM. PRDV.
127 DCA AUTR. DEP. DE L'ADM. FED.
129 EXPORTATIONS INTERIEURES
129 REEXPORTATIONS
130 IMPORTATIONS
131 DCA REVENUS HOSPITALIERS
132 DCA REVENUS PEDAGOGIQUES
133 DCA REVENUS DE DEFENSE
134 DCA AUTR. REV. DE L'ADM. MUNIC.
135 DCA AUTR. REV. DE L'ADM. PRDV.
136 DCA AUTR. REV. DE L'ADM. FED.

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CHAPITRE 2
ANNEXE 2.4
PAGE 1

ENTRANTS PRIMAIRES

59400 IMPORT. & EXPORT. NON REPARTIS
59500 BIENS & SERVICES DU GOUVERNEMENT
59700 IMPOTS INDIRECTS BIENS & SERV.
59700 SUBVENTIONS
59800 AUTRES IMPOTS INDIRECTS
59900 SALAIRES & TRAITEMENTS
60000 REVENU SUPP. DU TRAVAIL
60100 REV. NET ENTREPR. INDIV.
60200 REVENUS PLACEMENTS DES MENAGES
60300 AMONT. BRUT. & EXPLOIT. MIN.
60400 PROVISIONS CONGOMM. DE CAPITAL
60500 AUTRES EXCEDENTS

Revised September 1981

CHAPTER 3

NOTATION

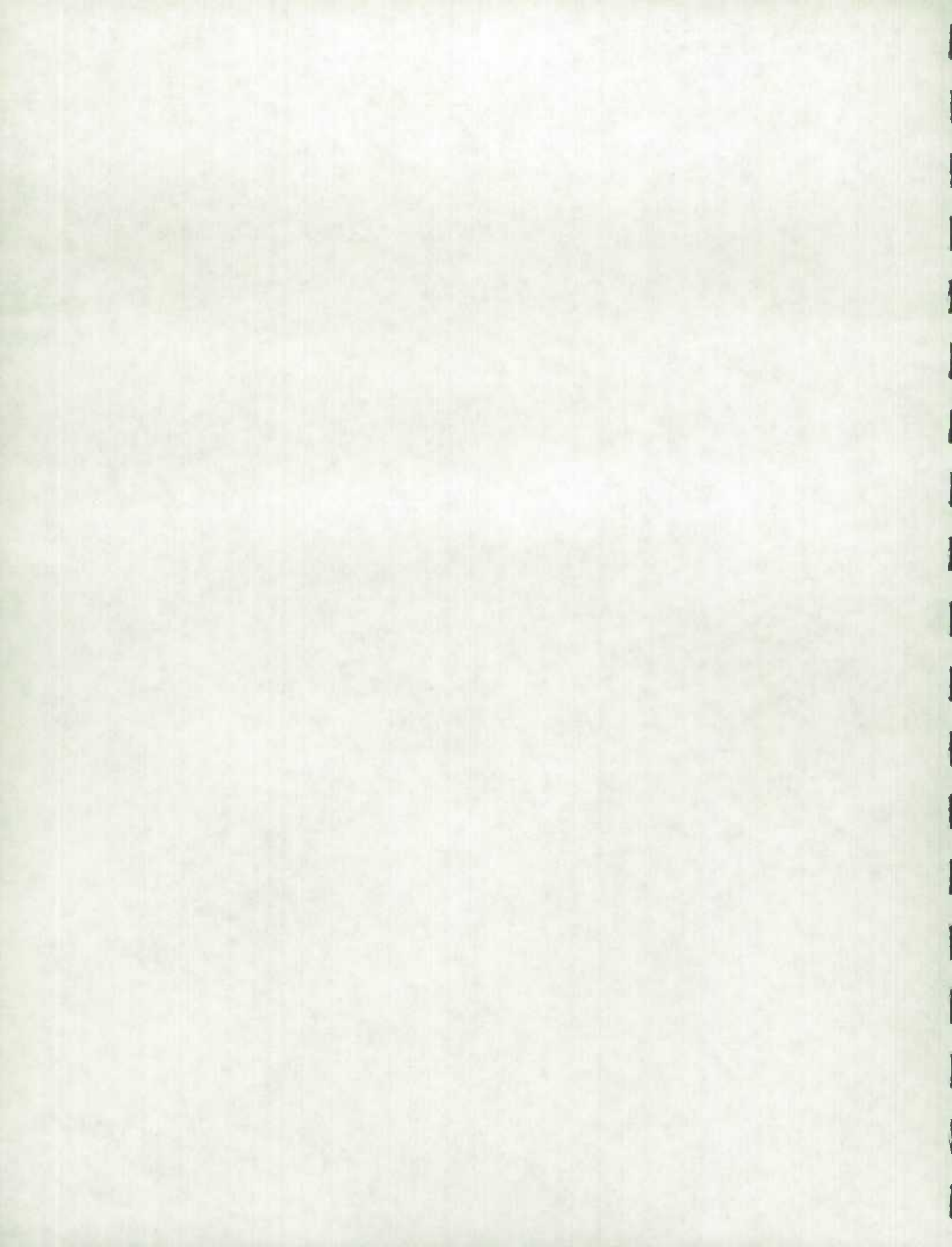


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3.1 Conventions

3.2 Accounting Framework Notation

3.3 Coefficient Notation

Throughout this volume matrix notation and algebra is used to complement the non-mathematical descriptions of the models and the accounting framework. Matrix algebra is convenient for these purposes because it is concise and rigorous. This chapter will describe some of the conventions that are used throughout this volume and notation that is common to the accounting framework and the models. Notation specific to a particular model is introduced in the course of the model description.

3.1 Conventions

- X an upper case or capital letter denotes a matrix.
- x a lower case letter denotes a vector or a scalar.
- ' indicates transposition (unprimed vectors are considered to be column vectors).
- i is a vector whose elements are all equal to unity. These 'unity' vectors are used to accomplish row and column summation, i.e., $i'X$ is a vector of the column sums of X . Xi is a vector of the row sums of X . The length of the unity vectors is always assumed to be consistent with the row or column dimension (as appropriate) of the array upon which the operation is being performed.
- ^ indicates diagonalization, i.e. given a vector c ,

$$\hat{g} = \begin{bmatrix} g_1 & & & & 0 \\ & g_2 & & & \\ & & \cdot & & \\ & & & \cdot & \\ & & & & \cdot \\ 0 & & & & & g_n \end{bmatrix}$$

obviously $i' \hat{g} = g'$ and $\hat{g} i = g$

I is an identity matrix of appropriate dimension, i.e.,

$$I = \begin{bmatrix} 1 & & & & 0 \\ & 1 & & & \\ & & \cdot & & \\ & & & \cdot & \\ & & & & \cdot \\ 0 & & & & & 1 \end{bmatrix}$$

() Parentheses are used both to indicate that one array is a function of another, and to delimit expressions over which algebraic operations are performed. This distinction is made clear by the context, as, for instance

$$X(e) = Ze$$

indicates that array X is a function of vector e , the relationship being given by the right hand side of the equation, and

$$X = Z(I-A)^{-1}$$

indicates that array X is the product of arrays Z and $(I-A)^{-1}$.

X^{66} A superscript on an array is used to denote that the values of that array are the observed values for the year indicated by the superscript. Thus g^{66} is the vector of observed industry outputs for 1966.

3.2 Accounting Framework Notation

The accounting framework is depicted in Figures 2.1 and 2.2. It will be convenient for the reader to refer to these diagrams in using this section of the User's Guide.

Designating the number of industries as NI, the number of commodities as NC, the number of primary inputs as NY, and the number of final demand categories as NF

V is an NC by NI order matrix showing the gross production of commodities by industries.

m is an NC order vector of imports by commodities.

U is an NC by NI order matrix showing the use of commodities by industries as current inputs.

F is an NC by NF matrix fo final demand categories by commodities.

x is an NC order vector of domestic exports by commodity.

Y is an NY by NI order matrix of primary inputs used by industries.

Y_f is an NY by NF order matrix of primary inputs used as final demand.

g is an NI order vector of total outputs, or alternatively, total inputs of industries.

$$g' = i'V$$

$$g' = i'U + i'Y$$

q is an NC order vector of total domestic outputs of commodities.

$$q = Vi$$

f is an NF order vector of the totals of the final demand categories.

$$f' = i'F + i'Y_f$$

The commodity balance identity may be expressed as follows

$$q + m = Vi + m = Ui + Fi + x$$

The industry balance identity may be expressed as

$$g' = i'V = i'U + i'Y$$

The national accounts identity (GNP = GNE) may be expressed as:

$$i' \begin{pmatrix} F & x & -m \\ \text{---} & \text{---} & \text{---} \\ Y_f & o & o \end{pmatrix} i = i' (Y \mid Y_f) i$$

3.3 Coefficient Notation

Input-output type models employ a number of sets of coefficients that are usually calculated from an input-output table for a particular year. These coefficients or parameters express relationships concerning industry technology, market shares, and final demand conversion.

Industry Technology Coefficients

B is an NC x NI order matrix of intermediate input coefficients. These coefficients express the assumption that current intermediate inputs into each industry are proportional to the output. i.e.

$$u_{ij} = b_{ij} g_j$$

i.e., the input of the *i*th commodity into the *j*th industry, u_{ij} , is a proportion b_{ij} of the output of the *j*th industry, g_j , or in a matrix notation,

$$U(g) = B\hat{g}$$

B is usually calculated from the input-output tables for a year, let us say t, according to

$$B = U^t (\hat{g}^t)^{-1}$$

H is an NY by NI matrix of primary input coefficients. These coefficients express the assumption that primary inputs into industries are proportional to industry outputs. i.e.

$$Y_{kj} = h_{kj} g_j$$

i.e., the input of the kth primary input into the jth industry, Y_{kj} , is a proportion, h_{kj} , of the output of the jth industry g_j , or in matrix notation,

$$Y(g) = H\hat{g}$$

It is normally calculated from the input-output tables for any year, let us say t, according to

$$H = Y^t (\hat{g}^t)^{-1}$$

Market Share Coefficients

D is an NI by NL matrix of domestic market share coefficients which express the assumption that demand for domestically produced commodities is allocated

among industries according to production shares. i.e.

$$v_{ji} = d_{ji} q_i$$

i.e., the j th industry's output of the i th, v_{ji} , commodity is a fixed share, d_{ji} , of total amount of the i th commodity produced in domestic industries q_i , or in matrix notation,

$$V(q) = D\hat{q}$$

D is calculated from the input-output tables compiled for a year, t , according to the following formula

$$D = (V^t)' (\hat{q}^t)^{-1}$$

Note that the sums of D across the commodity dimensions are unity.

$$i'D = i'$$

μ is an NC order of import share coefficients which express the assumption that imports are a fixed share on domestic demand for each commodity, i.e.,

$$m_i = \mu_i \left(\sum_j u_{ij} + \sum_k f_{ik} \right)$$

the imports of the i th commodity, m_i , are a fixed proportion, μ_i , of intermediate demand for the i th commodity in all industries, $\sum_j u_{ij}$,

plus the domestic final demand for the i th commodity, $\sum_k f_{ik}$: in matrix notation,

$$m = \hat{U} (U_i + F_i)$$

It is to be noted that import share coefficients must take values that lie between zero and unity, inclusive.

It is to be noted as well, that this import share assumption implies that exports of a commodity are supplied exclusively from domestic industries that produce the commodity. Of course, exports may have imports indirectly embodied in them to the extent that producing industries import their intermediate inputs.

Final Demand Converter Coefficients

For many applications it is necessary to calculate the commodity composition of final demand categories. This is usually accomplished by assuming that the commodity composition of each category is fixed.

E is an NC by NF matrix of final demand converter coefficients.

It is usually calculated from the input-output tables for a year t according to:

$$E = F^t (f^t)^{-1}$$

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4. Input-Output Models

4.1 Introduction

The Statistics Canada output determination models are 'input-output' models in the sense that they are direct descendents of the models associated with Professor Leontief of Harvard University.¹

Input-output models are characterized by the degree of industrial disaggregation - often as many as two or three hundred sectors and by their simple mathematical structure - reflecting the assumption that inputs into an industry are proportional to the output of the industry. The proportions are derived from an input-output table for a single year.

The Statistics Canada output determination models share with the more traditional input-output models a number of the characteristics mentioned above. The major difference arises from the commodity by industry accounting framework described in section 2.² In this framework, the one-to-one correspondence between industries and commodities associated with the Leontief models has been abandoned. Rather each industry is allowed to produce more than one commodity and each commodity may be produced in more than one industry.

The Canadian accounting framework distinguishes in excess of 650 commodities and 200 industries, thus giving rise to "rectangular" data arrays.

The rectangular accounting framework allows a distinction to be made between marketing or supply relationships and technological or input relationships. Within this framework a variety of assumptions can be made concerning the marketing and technological behaviour.³

Input-output models have three distinguishable but related types of application or use.

First and foremost input-output models are models which analyse the propagation of demand throughout an economic system. For example, demand for an automobile generates demand in industries supplying the automobile industry which in turn generates demand for the suppliers of the suppliers. Each industry thus affected requires imports, labour and other factors. This kind of application of input-output models is the familiar 'impact' analysis which has given rise to a language of 'direct effects', 'indirect effects', 'employment multipliers', etc. Within this context, one can examine the impact of a large investment project, the impact of an industry, or the impact of producing additional

products. This analysis is usually but not necessarily carried out under the assumption that supply is perfectly elastic - i.e., that there is a sufficient supply of labour to support the hypothesized activity without curtailing any other activity, that capacity exists in industries without further investment, and that imports are available.

Secondly, input-output models are used as final demand converters. Categories of gross national expenditure, such as consumer expenditures, government expenditures, gross fixed capital formation, exports are converted or transformed into the income components of the accounts: labour income, indirect taxes, profits and depreciation by industry. In this context, the input-output model normally is a part of a larger system that forecasts or projects the final demand components. The Statistics Canada long term simulation model is an example of this kind of application.⁴

Finally, input-output models may be used to perform structural simulations, i.e., to investigate the impact of a change in the parameters of the model.

The Statistics Canada output determination models are comparative static models as are most input-output type models. This is to say that time is not represented directly

in the models. The analysis involves the comparison of the economy as represented by a set of input-output accounts before a hypothesized final demand has occurred to the situation resulting after all the effects have worked themselves through the system. On certain occasions, each round of indirect effects has been given a time interpretation. In general, this time interpretation is not legitimate as it ignores 'expectations' and stocks.

In the past, the question has arisen as to whether input coefficients should be interpreted as constant dollar (physical) ratios or as current dollar ratios. Under the former interpretation, the assumption of fixed coefficients is tantamount to assuming no substitution among current inputs in the process of production. In the latter case, unitary price elasticities of substitution among inputs is assumed. Analyses have been made to test the stability of coefficients over time. Their results are inconclusive; both assumptions show the same degree of stability. It follows from this discussion that input-output models may be given both current and constant dollar interpretations. If final demand is specified in current dollars, then results may be safely interpreted as current dollars. On the other hand, if final demand is specified in constant dollars, then results are in constant dollars. It is to be noted that employment

coefficients can only be given a physical (constant dollar) interpretation.

Two versions of the output determination model are operational. One is the 'open' model in which incomes generated in process of production accruing to other sectors of the economy are not respent. All of the components of Gross National Expenditure constitute the exogenous final demand. The other version is the 'closed' model in which the incomes generated in the process of production accruing to households are spent on goods and services, taxes or savings. This version is in effect a partially closed model or a model that includes a consumer expenditure multiplier. In the 'closed' model consumer expenditures are calculated and hence are not a part of the exogenous final demand. Charts 4.1 and 4.2 present a diagrammatic representation of the open and closed models.

Chart 4.1 - THE OPEN MODEL

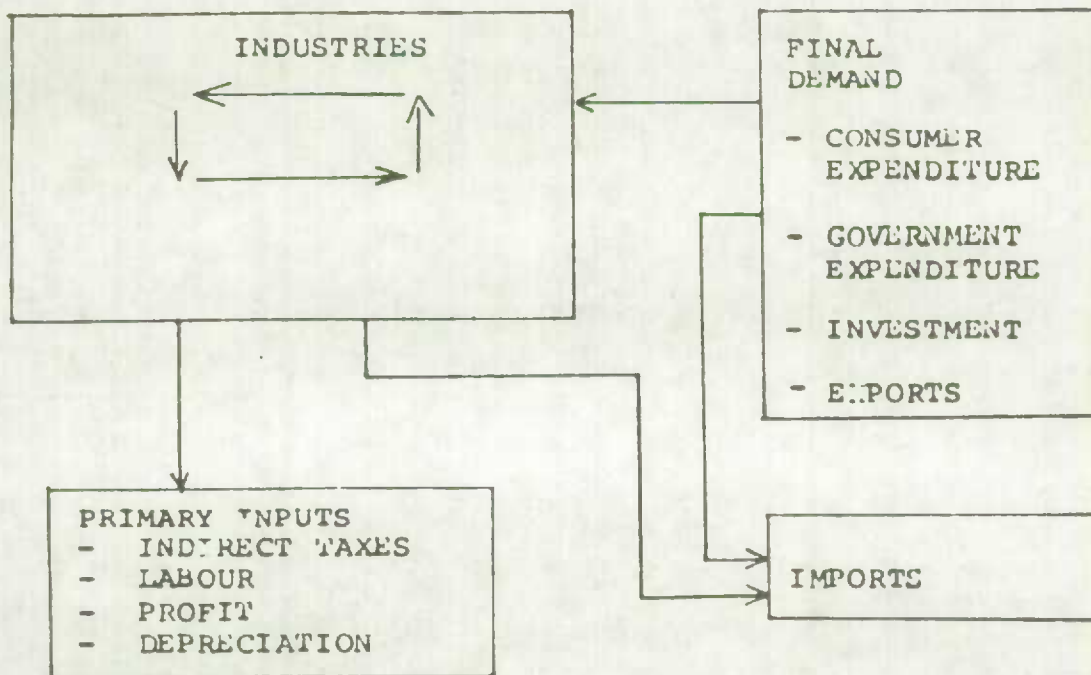
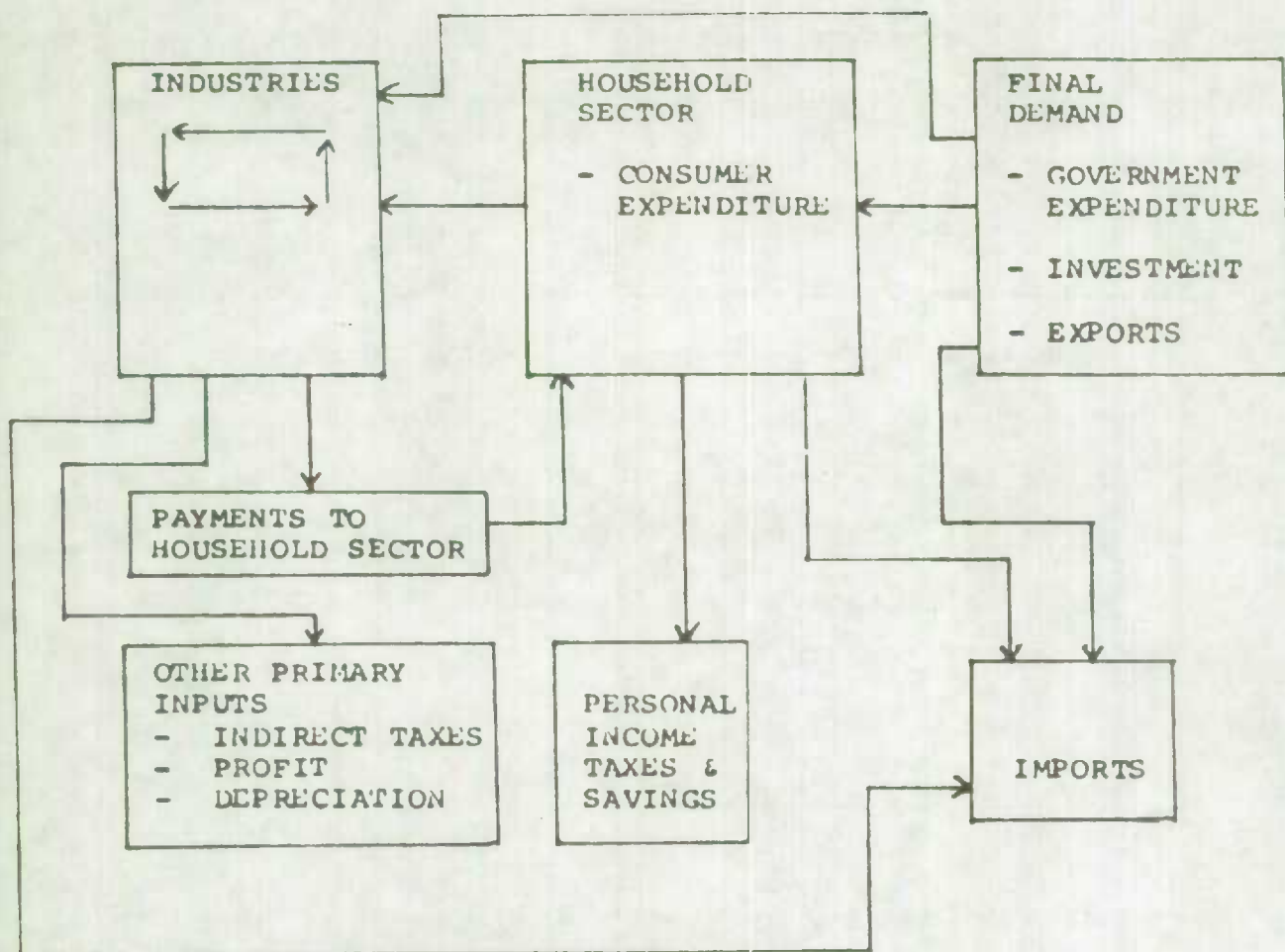


Chart 4.2 - THE CLOSED MODEL



Because input-output models are sets of linear equations, general solutions exist which express the unknown industry outputs as linear combinations of final demand. The general solution of an input-output model is known as the inverse of the Leontief matrix.

Statistics Canada output determination models do not make use of the general solution. Rather, a computer algorithm has been developed that calculates a single solution at a time. This feature is important in that the possibility for using non-proportional relationships are enhanced and in that the models can be efficiently used for examining the effects of parameter changes.

4.2 An algebraic expression of the model

The Statistics Canada output determination models have the mathematical structure of input-output models under the assumptions of industry technology and fixed market shares. However, the introduction of 'activities' and 'customer specific shares' relax these assumptions without changing the mathematical structure.

The current output models require five sets of structural parameters. These parameters are obtained directly from the

input-output tables of a particular year, as simple ratios or proportionalities.

Industry Technology

It is assumed that current intermediate inputs into each industry are proportional to the output of the industry.

$$u_{ij} = b_{ij} g_j$$

i.e., the input of the i th commodity into the j th industry, u_{ij} , is a proportion b_{ij} of the output of the j th industry, g_j , or in matrix notation,

$$U(g) = B\hat{g}$$

4.1

where B is an $NC \times NI$ matrix of intermediate input coefficients.

Also, it is assumed that primary inputs into each industry are proportional to the output of the industry.

$$y_{kj} = h_{kj} g_j$$

i.e., the input of the k th primary input into the j th industry, y_{kj} , is a proportion, h_{kj} , of the output of the j th industry g_j , or in matrix notation,

$$Y(g) = H\hat{g}$$

4.2

where H is an $NY \times NI$ matrix of primary input coefficients.

It is to be noted that under the assumption of industry technology, inputs into an industry do not vary with the mix of commodities produced in the industry.

Market Shares

It is assumed that demand for domestically produced commodities is allocated among industries according to fixed market shares.

$$v_{ji} = d_{ji} q_i$$

i.e., the j th industry's output of the i th, v_{ji} , commodity is a fixed share, d_{ji} , of total amount of the i th commodity produced in domestic industries q_i , or in matrix notation,

$$V_{(q)} = D\hat{q} \quad 4.3$$

where D is an $NI \times NC$ matrix of domestic market share coefficients.

It is assumed that imports of a commodity are a fixed share of the domestic demand or disappearance of the commodity.

$$m_i = \nu_i \left(\sum_j u_{ij} + \sum_k f_{ik} \right)$$

i.e., the imports of the i th commodity, m_i , are a fixed proportion, μ_i , of intermediate demand for the i th commodity in all industries, $\sum_j u_{ij}$, plus the domestic final demand for the i th commodity, $\sum_k f_{ik}$, or in matrix notation,

$$m = \hat{\mu} (U_i + F_i) \quad 4.4$$

where μ is an NC order vector of import share coefficients.

It is to be noted that this import share assumption implies that exports of a commodity are supplied exclusively from domestic industries that produce the commodity. Of course, exports may have imports indirectly embodied in them to the extent that producing industries import their intermediate inputs.

The final set of market share coefficients is concerned with the share of a commodity market satisfied by government production of commodities of the type produced by the business sector or imported. It is assumed that the government share is a proportion of the total demand or disappearance of each commodity.

$$a_i = \alpha_i \left(\sum_j u_{ij} + \sum_k f_{ik} + x_j \right)$$

i.e., government production of the i th commodity, a_i , is a proportion, a_i , of the sum of intermediate use of the i th commodity, $\sum_j u_{ij}$, the domestic final demand of the i th commodity, $\sum_k f_{ik}$, and exports of the i th commodity, x_i , or in matrix notation,

$$a = \hat{g} (U_i + F_i + x) \quad 4.5$$

where a is an NC order vector of government share coefficients.

This treatment of government production of commodities implies another leakage to the system. It is to be noted that the inputs required to satisfy this production are part of exogenous government expenditures and hence are not related to the level of production in the model.

Recalling identity 3.1 we have

$$g = V_i \quad 4.6$$

Substituting 4.3 into 4.6 and simplifying

$$g = Dq \quad 4.7$$

Recalling identity 3.2 we have

$$q + m + a = U_i + F_i + x \quad 4.8$$

Substituting 4.1, 4.4, and 4.5 into 4.8 and rearranging we have.

$$q = (I - \hat{\mu} - \hat{\alpha}) Bg + (I - \mu - \hat{\alpha}) Fi + (I - \hat{\alpha}) x \quad 4.9$$

The set of NI + 3NC equations formed by 4.4, 4.5, 4.7 and 4.9 may be solved for g , q , m and a , in terms of Fi and x given parameters D , B , μ and α .

By substituting equation 4.9 into equation 4.7 and rearranging

$$g = [I - D(I - \hat{\mu} - \hat{\alpha}) B]^{-1} D[(I - \hat{\mu} - \hat{\alpha}) Fi + (I - \hat{\alpha}) x] \quad 4.10$$

More generally we have

$$g(e) = [I - D(I - \hat{\mu} - \hat{\alpha}) B]^{-1} \bar{D}e \quad 4.11$$

where:

e is a final demand specified in commodity space.

\bar{D} is a matrix which transforms demands specified in commodity space into demands in industry space.

Vectors q , m and a may then be obtained from expressions 4.7, 4.4 and 4.5, respectively and the matrix of primary inputs by industry may be obtained as follows:

$$Y = H\hat{g} \quad 4.12$$

For certain applications, it is convenient to specify final demand in terms of the categories of national expenditure used in the National Income and Expenditure Accounts rather

than in terms of commodities. This can be accomplished if the assumption is made that the commodity composition of each category is stable. Under this assumption, a matrix of final demand converter coefficients may be defined as follows:

$$F = Ef \quad 4.13$$

for domestic final demand and a vector

$$r = xz \quad 4.14$$

for exports.

The system of equations consisting of equations 4.4, 4.5, 4.7, 4.9, 4.13 and 4.14 can be solved for g , q , m , a , F_i , and x in terms of f and z . For example:

$$g(f, z) = [I - D(I - \hat{\mu} - \hat{\alpha})B]^{-1} D[(I - \hat{\mu} - \hat{\alpha})Ef' + (I - \hat{\alpha})rz] \quad 4.15$$

All of the parameters of the models, namely matrices (vectors) B , H , D , μ , α , E , r , are usually but not necessarily calculated from a set of input-output tables as observed for a year in the past. These procedures are presented in chapter 4.4.2.

4.3 The Closed Model

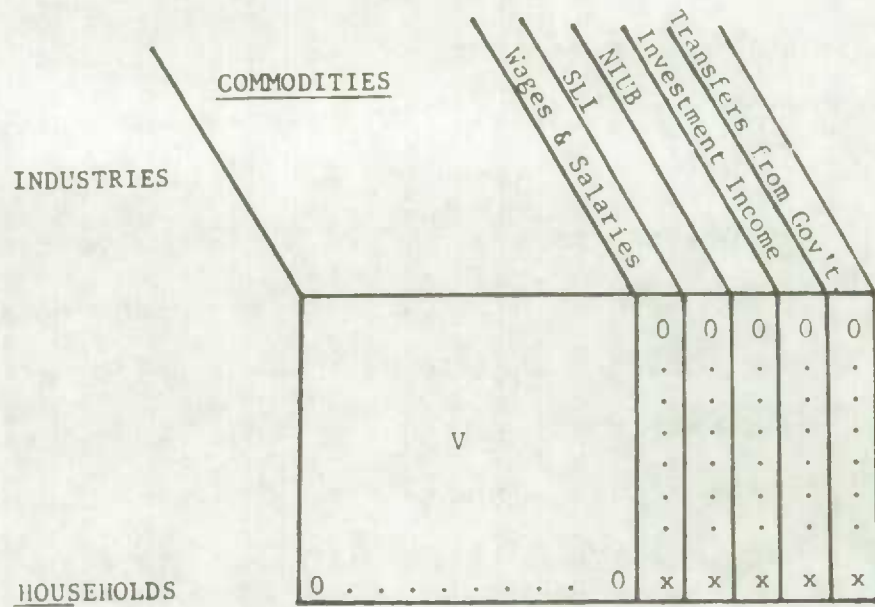
A version of the input-output model has been developed which is closed with respect to household incomes. In this model the incomes accruing to households that are generated in the

process of production are spent on goods and services, taxes or saved. Consumer expenditures are calculated in the model and are not a part of the exogenous final demand.

The major difference between the open and closed models is the accounting systems. The accounts upon which the open model is based are consolidated. That is, transfers of income among sectors are not shown as they do not affect total production in the system. For the closed model transactions between the household sector and the other sectors of the economy are not consolidated. Transfers of income to the household sector are shown explicitly. This item includes unemployment insurance benefits, old age pensions, family allowance, etc. Transfers of income from the household account, namely personal income taxes are also shown explicitly. The difference between total income and total outlay in the household accounts is personal savings.

The mathematical structure of the closed model is similar to that of the open model. In the closed model households are an "industry" which "produces" labour and capital services. These labour and capital services are intermediate inputs into industries.

The production matrix, V , is thus augmented by one row and five columns. The entries in the intersection of the new column and rows show the "production" of wages and salaries, supplementary labour income, net income of unincorporated businesses, investment income, and transfer income by household "industry".



The intermediate input matrix, U , is augmented by corresponding rows and columns. The entries in the household column are consumer expenditures on goods and services. This column of "inputs" into the household industry is obtained by summing the 40 consumer expenditure columns of the final demand matrix. The rows, wages and salaries, supplementary labour income, and net income of unincorporated business are

identical to the corresponding rows in the primary input matrix of the input-output accounts. Because transfers to persons are an outlay of the government sector, the transfer row is null in the augmented intermediate input matrix. The entries in the row "investment income" reflect that part of surplus which are interest or dividend payments to Canadian residents.

Because the amount of investment income accruing to the household sector originating in each industry cannot be observed, it is assumed that this investment income is the same proportion of "Other Surplus" in each industry. There is one exception to this treatment for allocating the household sector's investment income to originating industries: the proportion in the "Royalties on Natural Resources" industry accruing to households differ because it is known that most of these royalties are paid to governments.

Augmented Intermediate Input Matrix
INDUSTRIES

<u>COMMODITIES</u>	households	
	U	
Wages and Salaries	x x	x
SLI	x x	x
NIUB	x x	x
Investment Income	x x	x
Transfers	0 0	0

The primary input matrix is augmented by two new rows, personal income taxes and personal savings, each of which have entries only in the household column.

The closed input-output model is based upon these augmented production and intermediate input matrices and is formed in the same way as the open model using the same sets of assumptions.

Concerning the behaviour of the household sector, these assumptions imply that the marginal propensity to consume is equal to the average propensity to consume and that the

pattern of expenditure is the same irrespective of the kind of income.

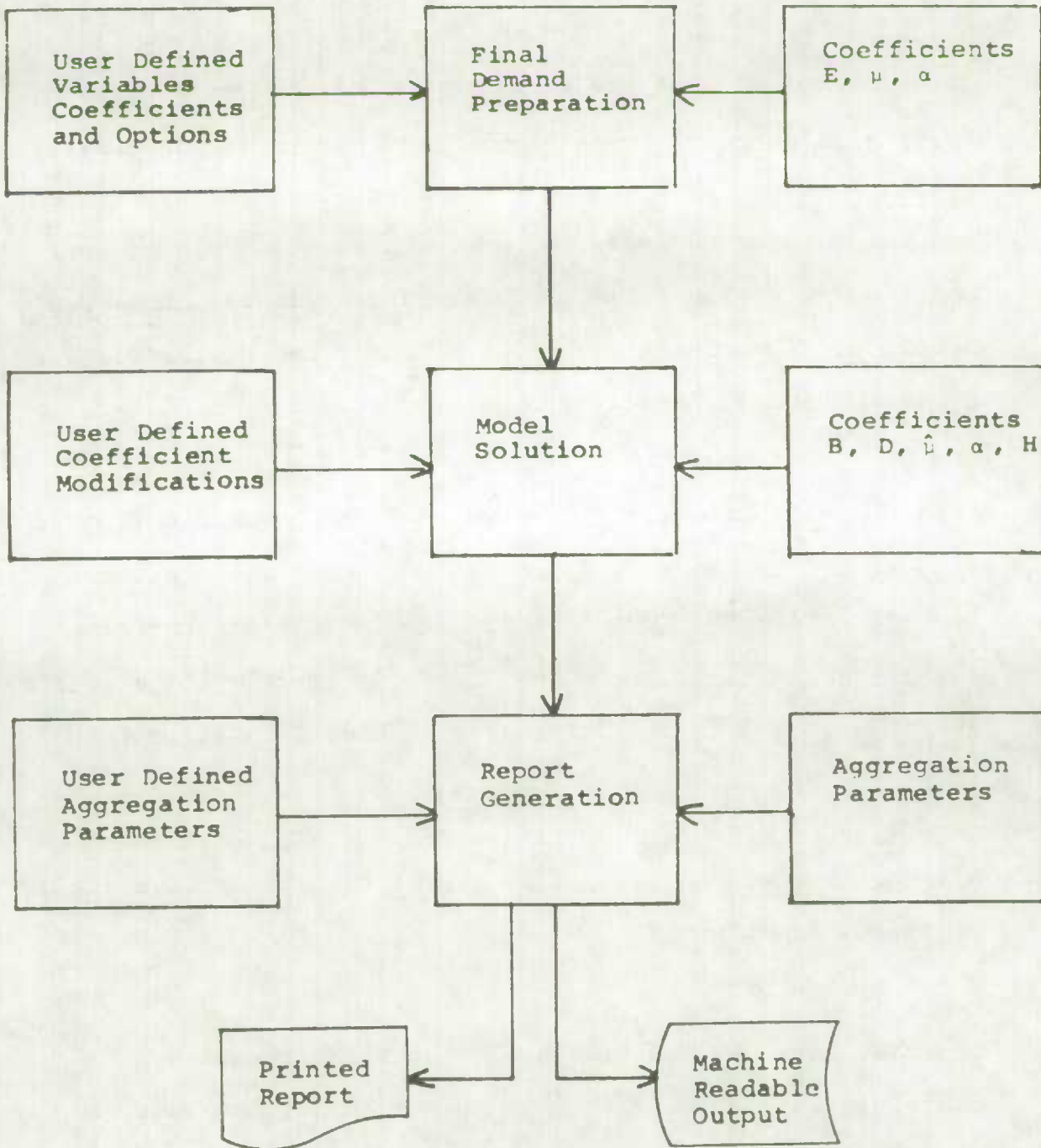
Thus the solution of the closed model may be represented by equations 9) to 12) substituting augmented parameter matrices for D , B , μ , α . The $(NI + 1)$ th element in the augmented g vector is then the activity level in the household "industry" and the $(NC + 1)$ th to $(NC + 5)$ th elements in the augmented g vector are the domestic outputs of the "commodities" produced by the household "industry".

4.4 The Operational Models

From an operational point of view, the Statistics Canada input-output models consist of data files, computer programs, and the procedures for executing the programs at a computer installation.

A single solution of the model may be thought of in terms of the steps depicted in chart 4.3.

Chart 4.3: The Input-Output Model System



4.4.1 Final Demand Preparation

The computer programs that are used for final demand preparation offer the user considerable flexibility in setting up a final demand vector and in calculating direct imports and direct government production.

Normally, final demand is specified in terms of commodities or groups of commodities. For the complete list of commodities and their identification number see Appendix A.

Once the final demand vector (e) has been established, it is allocated among sources of supply. The available sources of supply are domestic industries, imports, and government production. In the absence of intervention $(I - \hat{\mu} - \hat{a})e$ will be directed to the domestic producers, $\hat{\mu}e$ will be directly imported, and $\hat{a}e$ will be produced by government where $\hat{\mu}$ and \hat{a} are the diagonal matrices of import share and government production share coefficients respectively as defined in Section 3.

The user may intervene in this allocation process by overriding values in $\hat{\mu}$ and \hat{a} . For instance, the user may direct all of the final demand to domestic producers by

setting appropriate import and government share coefficients equal to zero.

It is important to note that for commodities that are not domestically produced the sum of the corresponding import share and government production share coefficients must be equal to one,

i.e. if $\sum_i d_{ij} = 0$ for the j^{th} commodity
 where d_{ij} is the element in the i^{th} row and j^{th}
 column of the domestic market share matrix D

then $\mu_j + \alpha_j = 1$

If this condition is not met the model solution will not balance because demand will not have been satisfied.

It is also important to note that the import and government production share coefficients that are used to allocate final demand among sources of supply may be different from the coefficients used to allocate intermediate demand among sources of supply.

Under certain circumstances it is convenient to use the column of inputs into an industry or group of industries as the final demand vector. Then by altering the import coefficients the impact of a change in the import share of materials used in the industry can be examined.

The portion of final demand that is directed to domestic industries - namely $(I - \hat{\mu} - \hat{\alpha})e$ - is then allocated among the domestic industries according to the proportions in the domestic market shares matrix, D . In this case as well the domestic market shares used to allocate final demand among industries may be different from those used to allocate intermediate demand among industries. This feature is commonly used to direct the final demand for a particular commodity to a single industry.

Final demand may also be specified in terms of categories of final demand. The categories of final demand are the components of gross national expenditure (GNE) that are distinguished in the National Income and Expenditure Accounts. See Appendix C for a complete list of final demand categories. The final demand specified in terms of categories or groups of categories, f , is converted into demand by commodity by means of the converter matrix F which is defined in section 3 and is then allocated among sources of supply. Accordingly, $(I - \hat{\mu} - \hat{\alpha}) Ff' + (I - \hat{\alpha}) rz$ is allocated to domestic industries, $\hat{\mu} Ff'$ is directly imported, and $\hat{\alpha} Ff' + \hat{\alpha} rz$ is produced by government. It is to be noted that the direct import share of exports is assumed to be zero. This procedure serves to connect the input-output model to

available time series, and hence is mainly used for forecasting or projection applications.

4.4.2 Parameter Preparation

All of the parameters of the models may be user defined and may be the subject of simulations. The logic of the model imposes some restrictions on the range of values that certain parameters may take. These will be discussed below.

Of course we do not expect that each user will provide complete sets of structural parameters. Accordingly, default values for all of the parameters have been estimated. In some cases alternative sets of parameters have been estimated and the user may choose different sets.

Default Values

All of the vectors and matrices of structural parameters may be (and are usually) calculated from input-output tables as observed in a single year in the past. At the time of writing, 1966 was the latest year for which a set of input-output tables had been compiled for Canada. Therefore the procedure for calculating parameters is described in terms of 1966 data. Obviously, one can perform analogous calculations

to estimate parameters from input-output tables of previous years (1961 to 1965 are available) and for subsequent years as the data becomes available.

There are, at least, two other approaches for estimating parameters - one involves pooling the data from a series of input-output tables in order to remove anomalies associated with a particular year and possibly to project trends in certain coefficients - the other involves supplementing the input-output data with engineering or technical data from other sources. Both of the approaches have been followed to a limited extent.

Industry Technology Parameters

The matrices of intermediate and primary input coefficients, B and H, may be obtained from the input-output tables for a particular year by dividing each of the elements in the U and Y matrices by the appropriate industry outputs in the vector

g. Thus,

$$B = U^{66} (\hat{g}^{66})^{-1}$$

$$H = Y^{66} (\hat{g}^{66})^{-1}$$

Market Share Parameters

The matrix of domestic market share coefficients, D , may be obtained by dividing each of the elements in the output matrix, V , by the appropriate commodity outputs in the vector q . Therefore,

$$D = V^{66} (\hat{q}^{66})^{-1}$$

The vector of import share coefficients, μ , may be obtained by dividing the imports of each commodity by its total domestic disappearance. Therefore,

$$\mu = (U^{66} i + F^{66} i)^{-1} m$$

When calculated according to this formula certain import coefficients may take a value greater than one or less than zero. This can occur when there is a decumulation of inventories. As well, it has been observed that the import coefficients are more volatile than other coefficients. For these reasons an alternative set of import coefficients has been estimated which is used as the standard default vector. The following adjustments were made:

- import share coefficients for commodities which had a decumulation of inventories were recalculated as follows:

$$\mu_i = \frac{m_i^{66}}{\sum_j U_{ij}^{66} + \sum_k f_{ik}^{66} - (\Delta INV_i^{66})}$$

where ΔINV_i is the change in inventories of the i th commodity.

- import share coefficients which were volatile but did not show a trend were given the mean value for the period 1961 to 1966.
- import share coefficients that displayed a trend throughout these years were given the latest value.
- import share coefficients for automobile related commodities were given values that would reflect post autopact conditions. In this case data for more recent years than 1966 was examined.

The vector of government revenue share coefficients, α , may be obtained by dividing government revenues by the total disappearance of each commodity. Thus,

$$\alpha = (U^{66} + F^{66} + X^{66})^{-1} a$$

Final Demand Converter Coefficients

The matrix of final demand converter coefficients, E , may be calculated by dividing each element in the final demand matrix F by the corresponding elements in the vector of final demand by category, f , giving

$$E = F^{66} (\hat{f}^{66})^{-1}$$

Analogously the export converter coefficients, r , may be obtained from x and z , giving

$$r = x^{-1} z$$

User Defined Values

As indicated above the user may override the default values of some or all parameters. However, there are some restrictions on the range of values that sets of coefficients may take. If these restrictions are not met, the model may fail to converge and thus give no solution; alternatively it may converge to a solution that has negative activity levels or one that does not balance in the sense that all demand is not satisfied. What follows, then, is a list of restrictions:

1. The input coefficients for each industry must sum to one.

$$\sum_i b_{ij} + \sum_i h_{ij} = 1 \quad \text{for all } j.$$

The further restriction that

$$\sum_i h_{ij} > 0 \quad \text{for all } j.$$

will assure convergence of the model.

2. The domestic market share coefficients for each commodity must sum to one or zero.

$$\sum_j d_{ji} = 1 \quad \text{for all } i \text{ except those commodities} \\ \text{which are not domestically produced.}$$

3. If the domestic market share coefficients for a commodity sum to zero, i.e., the commodity is not domestically produced, the sum of the import share and the government revenue share must sum to one.

$$\text{If } \sum_j d_{ji} = 0 \\ \text{then } \mu_i + \alpha_i = 1$$

4. Each intermediate input coefficient is usually equal to or greater than zero.

$$b_{ij} \geq 0 \quad \text{for all } i \text{ and } j.$$

Negative input coefficients may lead to a solution with negative activity levels.

5. Import share and government revenue share coefficients usually take values between one and zero.

$$1 \geq \mu_i \geq 0 \quad \text{for all } i.$$

$$1 \geq \alpha_i \geq 0 \quad \text{for all } i.$$

6. The sum of the import share and government revenue share coefficients for each commodity usually may not exceed one.

$$\mu_i + \alpha_i \leq 1 \quad \text{for all } i.$$

4.4.3 Model Solution

In conceptual terms, the solution of the models is identical to those developed in sections 3 and 4. However, the solution of the system is significantly different from a computational point of view.

The most distinguishing characteristic of the computer algorithm is that it does not calculate or make use of an inverse or impact table such as that set out in equation 12 of section 3 or those published in The Input-Output Structure of the Canadian Economy, 1961. Rather the computer system calculates a single solution at a time, thus abandoning the idea of a general solution.

This approach was chosen for reasons of computational efficiency and flexibility for changing parameter arrays. The large arrays of parameters required by the model - namely the input coefficients, the domestic market share coefficients, and the final demand converter coefficients, are stored and manipulated in "compact" form. The main feature of "compact" form is that only the non-zero elements in the arrays are handled. A matrix is represented by three vectors; a vector of the non-zero elements taken row by row, a vector whose elements are the column identification of the corresponding elements in the first vector, and a vector whose elements are the number of elements in each row of the matrix. The number of elements in each of the first two vectors is equal to the number of non-zero elements in the original matrix and the number of elements in the third vector is equal to the number of rows in the original matrix. The expression of matrices in compact form is significant for input-output calculations because the coefficient arrays are extremely sparse. Because inverse matrices are by nature not sparse, it is more efficient to store sparse parameter matrices and to calculate single solutions using them rather than to store and manipulate inverse matrices.

As well it is to be noted that the use of a single solution procedure avoids the necessity of recalculating an inverse

matrix each time the coefficient arrays are changed. Accordingly, the single solution system is convenient for analysing the impact of changes in the structure of the economy.

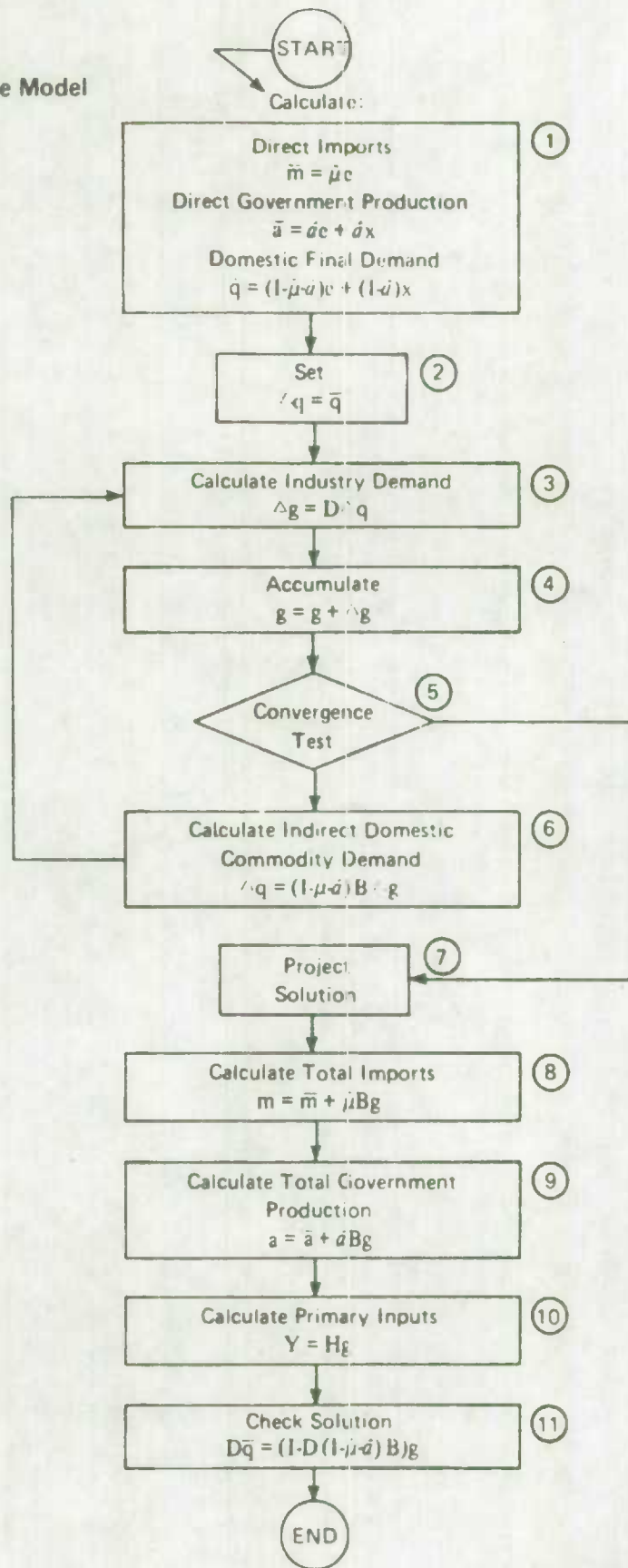
The solution of the model is achieved by means of the iterative process set out in Chart 4.4

Block 1 allocates final demand among direct imports, \bar{m} , direct government production of competitive commodities, \bar{a} , and domestic final demand, \bar{q} , according to the procedures and options described under the heading of Final Demand Preparation.

Block 3 allocates the domestic final demand, \bar{q} , among industries according to the domestic market share coefficients.

Block 6 then calculates the indirect domestic commodity production required as inputs in order to satisfy the additional demand.

Chart 4.4
The Solution of the Model



These additional demands, Δg , for domestically produced commodities are allocated among industries in Block 3.

The system iterates over Block 3 to Block 6 inclusive. At each iteration the increments to industry outputs, Δg , are accumulated in the g vector. This occurs in Block 4.

Intuitively convergence is assured in so much as the increments to industry outputs diminish from iteration to iteration because of the leakages to imports and primary inputs that take place at each iteration. A mathematical proof of convergence is supplied in Appendix L.

The iterations proceed until a measure of the average increment in industry outputs is approximately equal to the increment in each industry output. More precisely, when a prespecified tolerance is met,

$$\epsilon \geq \frac{\sum_{j=1}^n \frac{x_j}{1-x_j} \Delta g_{ij}}{\sum_{j=1}^n \Delta g_{oj}}$$

where $j = 1 \dots n$ and there are n industries

and $i = 1 \dots k$ and there are k iterations

and $x_j = r_j - \bar{r}$

where $r_j = \frac{\Delta g_{ij}}{\Delta g_{i-1, j}}$

$$\text{and } \bar{r} = \frac{\sum_{j=1}^n \Delta g_{ij}}{\sum_{j=1}^n \Delta g_{i-1, j}}$$

Convergence is assured and a solution is calculated in Block 7. The solution for industry outputs is the sum of the increments to industry outputs up to the iteration in which the tolerance is met plus a projected increment. For the j^{th} industry

$$g_j = \sum_{i=1}^k \Delta g_{ij} + \frac{r_j}{1-\bar{r}} \Delta g_{kj}$$

where k is the iteration in which the tolerance is met.

Given industry outputs, g , Block 8 and 9 calculate total imports and total government production respectively by adding direct requirements to indirect requirements.

Block 10 calculates primary inputs by industry.

Block 11 checks the solution by running the system in reverse, that is by calculating domestic final demand from the calculated industry output levels.

4.4.4 Report Generation

The output of the model system takes the form of a report that consists of six sections. In general, the form of the report depends upon the options used to prepare the final demand and on the model used (open or closed). As well, some information concerning the operation of the system is printed.

Section A: Commodity Space

The commodity space results consist of five vectors. These are total final demand, domestic final demand, \bar{q} , direct imports, \bar{m} , total import, m , and total domestic output, σ . These results are available in two standard levels of aggregation - 680 commodities or 105 commodities. See Appendixes A and D for a listing of the classifications and the correspondence between them. It is to be noted that when the closed model is used, there are entries in the total domestic output vector "q" in the rows, wages and salaries, supplementary labour income, net income of unincorporated businesses, surplus and transfers. This occurs because these "commodities" are produced in the "household industry". Only the part of surplus that accrues to households is reported in the "q" vector.

Section B: Industry Space

Results in industry space are available at two levels of aggregation - 211 industries or 43 industries. See Appendixes B and E for listings of the classification and the correspondence between them. For results in both commodity and industry space non-standard or user-defined aggregations can be obtained by defining user-specific classifications in terms of the 680 commodities and/or 211 industries. It is to be noted that "households" appear as an industry in the industry space results for solutions of the closed model. Results in industry space are printed in two parts, the first dealing with domestic output, domestic final demand and value added and the second with employment.

Results for the first part are printed in seven columns. The first column is "Domestic Final Demand". This represents the amount of final demand supplied directly by each industry. It is to be noted that the sum of this column may be other than the sum of "Domestic Final Demand" in commodity space, because some of the primary input commodities are not produced in a domestic industry.

The second column is "Total Domestic Output" or industry activity levels, g. The sum of this column is equal to the sum of the "Total Domestic Output" column in commodity space.

The next four columns present the components of value added in each industry. Indirect Taxes less Subsidies consist of "Indirect Commodity Taxes" and "Indirect Non-Commodity Taxes" less "Subsidies". "Wages and Salaries" and "Supplementary Labour Income" are combined into a single column. For a more detailed description of the primary input categories see Section 2.

The seventh column shows the Gross Domestic Product at Factor Cost by Industry. This is equal to value added less Indirect Taxes less Subsidies.

The second part of the industry space results consists of five columns. The first two columns show wages and salaries and supplementary labour income separately.

The third and fourth columns present employment in man-years for paid and "other than paid" workers, respectively. The latter includes working owners and partners, unpaid family workers, and own account workers. The calculations are based upon employment coefficients which relate employment in man-years to the level of output. These employment coefficients are based upon 1966 data and hence reflect average annual earnings in 1966. If final demand is specified in other than 1966 dollars, these employment coefficients would require

user-specified adjustments for changes in average annual earnings.

The fifth column shows the total of the two categories of workers.

Section C: Consolidated Income & Expenditure Accounts
(Domestic Basis)

The number of categories distinguished on the expenditure side of the account depends upon the procedures used to specify demand and whether the open or closed model is used.

If the open model is used and final demand is specified in terms of commodities, the expenditure side of the account is:

- Final Demand
- Imports less duties
- Government revenue from production

If the open model is used and final demand is specified in terms of final demand categories, the account is:

- Consumer expenditure
- Government current expenditure
- Investment expenditures
- Inventory change
- Exports

- Imports less duties
- Gov't revenue from production

If the closed model is used and final demand is specified in terms of commodities, the account is:

- Consumer expenditure
- Final demand
- Imports less duties
- Government Revenue from production

If the closed model is used and final demand is specified in terms of categories of expenditure, the account is:

- Consumer expenditure
- Government current expenditure
- Investment expenditure
- Inventory change
- Exports
- Imports less duties
- Government revenue from production

Final demand, as it appears in the income and expenditure account is the sum of the "Total Final Demand" column in section A.

Consumer expenditure, when the closed model is used, is calculated as a proportion of the household industry activity level. Consumer expenditure (if the open model is used), Government current expenditures, Investment expenditures, Inventory change and exports together sum to the sum of the Total Final Demand column.

Imports less duties consist of the sum of the total imports from Section A less calculated import duties. Duties are subtracted because imports are valued duty paid. The duty calculation is described under Section E of the report.

Government Revenue from Production consists of the intermediate and final demand components of the Government Goods and Services Row plus direct and indirect government production of competitive commodities as calculated in Block 9 of Chart 1.

The Income side of the Consolidated Income and Expenditure Accounts is as follows:

Wages, Salaries, Supplementary Labour Income

Net Income of Unincorporated Businesses

Surplus

Gross Domestic Product at Factor Cost

Taxes and Duties less Subsidies

Adjustments

The first three lines of this account consist of the intermediate components (appropriate column sums in Section B), plus the final demand components (appropriate elements from the total final demand vector in Section A).

Gross Domestic Product at Factor Cost is a subtotal of the first three lines.

Taxes and Duties less Subsidies consists of the intermediate and final demand components of "Indirect Commodity Taxes", "Indirect Non-Commodity Taxes" plus import duties as calculated in Section E less subsidies.

Adjustments consists of the "Balance of Payments Adjustments". For a description of this item, see page 100 in The Input-Output Structure of the Canadian Economy, 1961, Volume 1.

Section D: Household Account

The Household Income and Outlay Account appears only for solutions of the closed model.

The Expenditure side of the account consists of the following lines:

Consumer Expenditures on Goods and Services

Personal Income Taxes

Personal Savings

Other Transfers to Governments

Other Transfers

All of the expenditure items are calculated as proportions of the "Household" industry activity level in Section B of the report. Other transfers to Governments includes contributions to government pension plans, gift taxes, and succession duties. Other transfers includes payments abroad.

The income side of the account consists of the following lines:

Wages and Salaries

Supplementary Labour Income

Net Income of Unincorporated Businesses

Investment Income

Exogenous Income

All of the income items are taken from the appropriate rows of the "Total Commodity Output" column in Section A of the report. It is to be noted that Exogenous Income is a parameter in the model. Normally it is set at zero.

Section E: Government Revenue

The Government Revenue section of the report brings together all the government revenues that are related to activities represented in the model. These are:

Commodity Taxes

Non-Commodity Taxes

Government Revenue from Production

Resource Taxes

Import Duties

Personal Income Taxes

Corporation Taxes

Other Transfers from Households

Less Subsidies

Neither Personal Income Taxes nor Other Transfers from Households appear when the open model is used.

Commodity Taxes and Non-Commodity Taxes are the intermediate and final demand components of the corresponding primary input rows of indirect taxes.

Government Revenue from Production is revenue accruing to governments from the sale of intermediate goods and services.

Resource Taxes are calculated as a proportion of the surplus generated in industry 16820, "Royalties on National Resources" - namely the portion of royalties that accrue to governments. According to national accounting concepts royalties on natural resources reflect economic rent and here are treated as contributing to national product.

Import Duties are calculated by multiplying each import by an import duty coefficient and summing all of the duty. The calculated figure is gross of rebates.

Personal Income Taxes are reproduced in this account from the Section D: Household Account.

Corporation Taxes are calculated as a proportion of the sum of "Other Surplus".

Other Transfers from Households corresponds to the fourth line in the expenditure side of the Household Account.

Section F: Business Sector Account

The business sector account consolidates all of the industries in the business sector. The information relating to the dummy industries 18300 to 19100 is excluded in order to avoid artificial double counting. The industries such as

"Iron and Steel" and "Pulp and Paper" that were sub-divided into "activities" are reconsolidated so that the production figures will represent production for shipment outside of the producing establishment. For solutions of the closed model the "Household" industry is excluded from the business sector.

The income side of the business sector account consists of two items:

Gross Production

Subsidies

It is to be noted that where final demand consists of the inputs into an industry, a parameter called the "industry switch" may be set which will include the final demand in the appropriate lines in the Business Sector Accounts.

Gross Production is a measure of the goods and services produced by establishments in the business sector for use as intermediate inputs in other establishments or for final use.

The expenditure side of the business sector account consists of the following items:

Intermediate Goods and Services

Indirect taxes

Wages, Salaries, Supplementary Labour Income
Net Income of Unincorporated Business
Interest and Dividends Paid to Persons
Depletion and Mining Write-offs
Capital Cost Allowance
Other Surplus

4.5 Output Model Sample Results

Four sample solutions of the output model are presented in the following section. The full computer generated reports are included as Appendixes 4.5, 4.6, 4.7 and 4.8. All of the commodity and industry space results are presented in terms of the aggregated industry and commodity classifications. (See Appendixes 4.1 and 4.2.)

Output Model Solution #1:

1966 Closed Model Balance.

This is a model solution for which the final demand was the actual final demand in 1966. In this case the calculated values of industry and commodity results are equal to the observed values in 1966. Accordingly, this run serves to set out appropriate parts of the 1966 input-output tables and may be used as a benchmark for solutions designed to be a change from 1966 values. This balancing run also serves to

'validate' the model, but in a mechanical sense only. For the purpose of obtaining a balancing solution, it is necessary to use coefficients derived directly from the 1966 input-output tables and left unadjusted.

Output Model Solution #2:

Impact Analysis of 1.0 Million Exogenous Household Income. This is a closed model solution that isolates the household income multiplier.

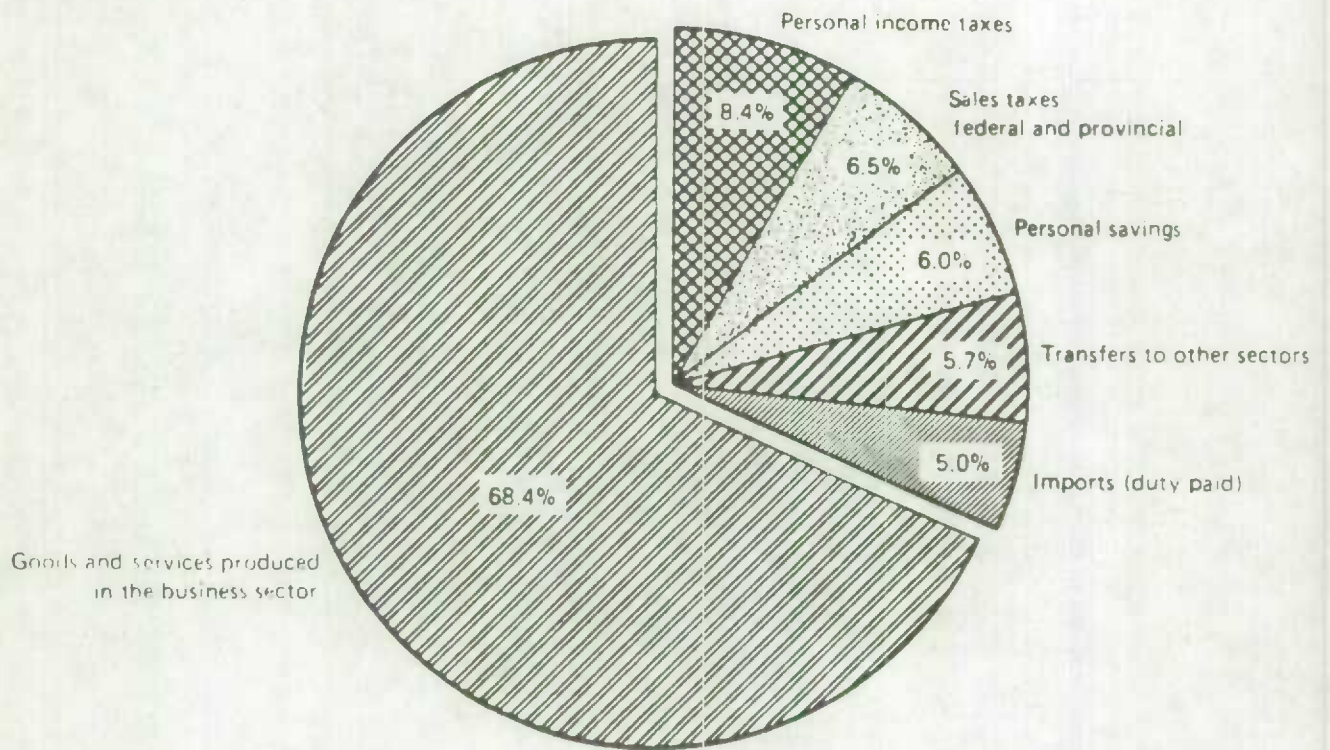
Chart 4.5.1 shows the breakdown of the initial \$1.0 million. Of this \$1.0 million, 684 thousand is spent on goods and services produced in the business sector. The remaining 316 thousand consists of taxes, savings, imports, and transfers.

The \$1.0 million of household income has the following impacts:

\$1.715	million household income (including the initial 1.0 million)
\$0.509	million government revenues net of subsidies paid
123	man-years of employment
\$0.951	million gross domestic product at factor cost
\$1.160	million gross domestic product at market prices
\$0.188	million imports
\$1.753	million gross production in the business sector.

Chart 4.5.1

% Distribution of Household Income (Initial Million \$)



Output Model Solutions #3 and #4 are impact analyses of a \$1.0 million expenditure on residential construction on the open and closed models respectively. These solutions show clearly the differences between the open and closed models. The impacts may be summarized as follows:

Impact on	Open	Closed
	<u>Model</u>	<u>Model</u>
	millions of dollars	
- GDP at factor cost	.79	1.43
- GDP at market prices	.89	1.66
- Labour income	.53	.86
- Imports	.11	.24
- Government revenue net of subsidies	.12	.46
- Gross production in the business sector	1.81	2.99

FOOTNOTES

Chapter 4

- [1] See Leontief [1951].
- [2] Commodity-by-industry accounting and related input-output models may be traced to Richard Stone (Stone [1961]). It was further developed in Canada by T. Gigantes, K. Levitt and T. Matuszewski and adopted by the United Nations as the recommended System of National Accounts (U.N. [1968]). Commodity-by-industry accounting has been implemented in Canada by the Quebec Bureau of Statistics (B.S.Q. [1970]), Statistics Canada (DRS [1969]) and the Atlantic Provinces (Levitt [1974]).
- [3] For a discussion of these possibilities see Gigantes [1970]. In these terms, the output determination models adopted by Statistics Canada have the mathematical structure of industry technology models with fixed market shares.
- [4] Other examples would be the CANDIDE model, the Wharton long term and industry forecasting model, Maryland model, and certain Battelle models.

Appendixes to Chapter 4

APPENDIX 4.1

Reconciliation between Personal Income and Outlay Account and the Household Sector for the Closed Model, 1966

<u>Income</u>	I-E ¹	I-O ²
Wages, salaries & Supplementary Labour Income	32,629	32,629
Net income of unincorporated business incl. income from farm operations	6,066	6,100
Interest, dividends, and misc. investment income from corporations and transfers from businesses	3,611	3,611
Exogenous income from governments and non-residents	<u>3,944</u>	<u>3,944</u>
Total	46,250	46,284

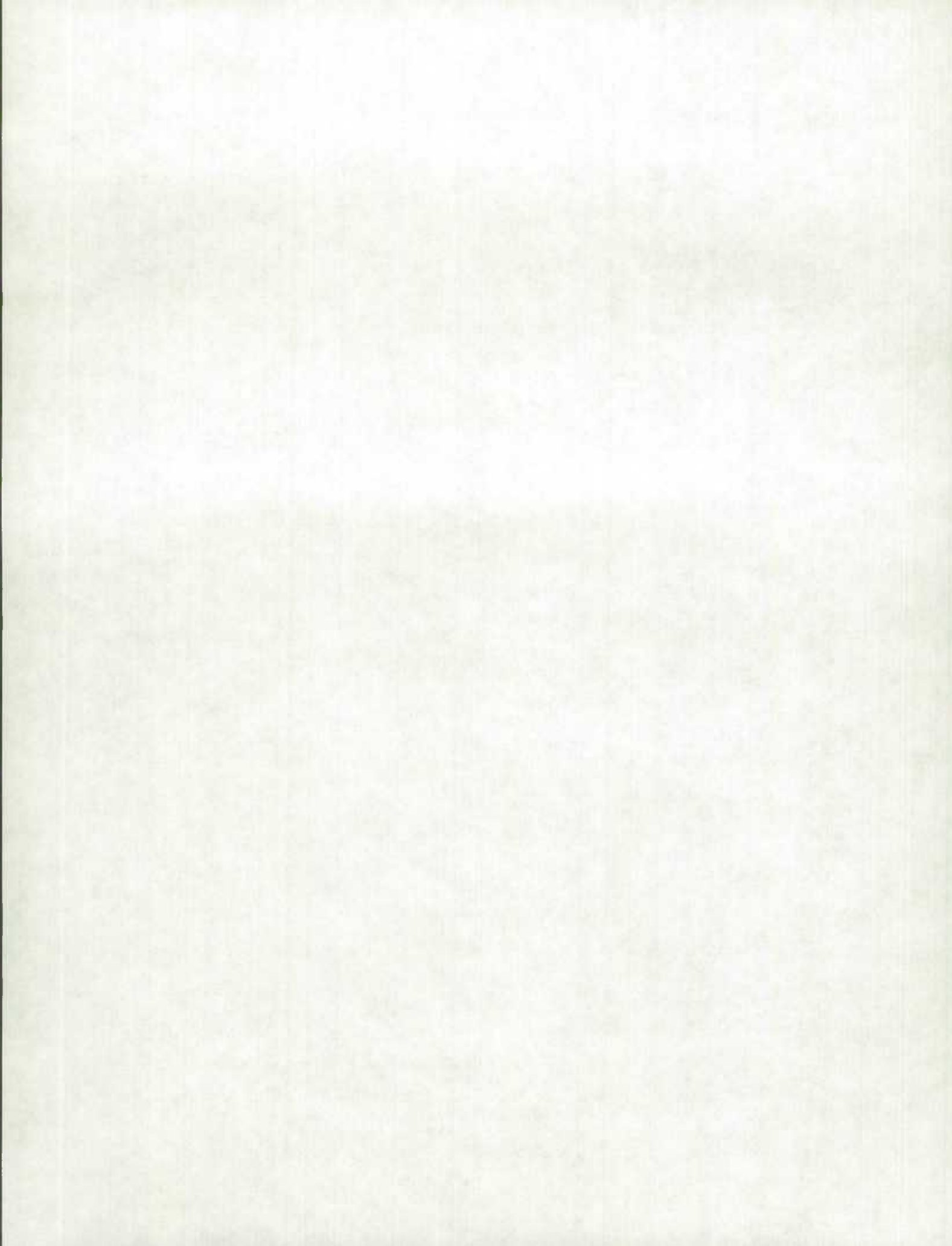
(Table 12 N.I. & E.)

Outlay

Purchases of consumer goods & services	36,890	36,962
Personal income taxes	3,903	3,903
Other transfers to government	2,290	2,290
Other transfers from persons	349	349
Personal savings	<u>2,818</u>	<u>2,780</u>
Total	46,250	46,284

(Table 13 N.I. & E.)

1. Source: Tables 12 & 13 (Income & Outlay - Government), National Income and Expenditure Accounts, revised, 1972.
2. Source: Input-Output Table 1966, revised January 1973, and Table 12 cited above.



On the Numerical Solution of the Rectangular Input-Output Model

In the input-output model, the relationship between industry outputs and final demand is a set of simultaneous linear equations. For a given vector of final demand, the total impact on all industries is determined by solving this set of equations. As derived in Section 3, these equations are of the form

$$g = (I-A)^{-1}b \quad (1)$$

where $A = D(I-\hat{p}-\hat{a})B \quad (2)$

and $b = D[(I-\hat{p}-\hat{a})Ei + (I-\hat{a})x] \quad (3)$

as shown in Equation 12 of that section. Because the matrices D and B are very large, it is impractical to calculate the inverse in 1). But, since D and B are relatively sparse, a computationally efficient algorithm for calculating g for any given b can be developed. The algorithm is based on the following matrix power series expansion for the inverse:

$$(I-A)^{-1} = I + A + A^2 + A^3 + \dots \quad (4)$$

The validity of this expansion, and its convergence properties, can be most easily seen by using eigenvalue analysis.

Matrices B and D , by definition, (Equations 3 and 5 of Section 3) have all non-negative elements between zero and one. Furthermore, the column sums of D are unity. It can easily be shown, therefore, that the matrix product DB column sums are the same as B . These column sums are less than unity since \hat{g} of Equation 3, Section 3, includes primary inputs. Now, since the non-zero elements of the diagonal matrix $I-\hat{p}-\hat{a}$ are between zero and one, the column sums

of the A matrix of (2) are between zero and one. This last fact is sufficient to guarantee that the eigenvalues of A are less than unity in magnitude, and so the series of (4) is summable. In the remainder of this discussion, it is assumed that the eigenvalues of A are distinct, an assumption that is not required for the analysis but simplifies the exposition.

Any square matrix with distinct eigenvalues can be expressed in the form

$$A = P Q P^{-1} \quad (5)$$

where Q is a diagonal matrix of eigenvalues and P is a matrix whose columns are the corresponding eigenvectors (in the same order as the eigenvalues) that is:

$$Q = \begin{bmatrix} \lambda_1 & & 0 \\ & \lambda_2 & \\ 0 & & \ddots \\ & & & \lambda_n \end{bmatrix} \quad P = \begin{bmatrix} p^1 & p^2 & \dots & p^n \end{bmatrix} \quad (6)$$

where $A p^1 = \lambda_1 p^1$ (definition of eigenvalue and eigenvector)

$$A p^2 = \lambda_2 p^2 \quad (7)$$

etc.

Assume for notational convenience that the eigenvalues are ordered by size so that

$$\lambda_1 > \lambda_2 > \lambda_3 \dots > \lambda_n$$

Now

$$\begin{aligned}
 (I-A)^{-1} &= (I - PQP^{-1})^{-1} \\
 &= (PIP^{-1} - PQP^{-1})^{-1} \\
 &= [P (I - Q) P^{-1}]^{-1} \quad (8)
 \end{aligned}$$

The inverse of a product is the product of the inverses in reverse order (provided all inverses exist) so that

$$\begin{aligned}
 (I-A)^{-1} &= (P^{-1})^{-1} (I - Q)^{-1} (P)^{-1} \quad (9) \\
 &= P (I - Q)^{-1} P^{-1}
 \end{aligned}$$

Since $I - Q$ is a diagonal matrix, the inverse can be written simply as

$$(I-Q)^{-1} = \begin{bmatrix} \frac{1}{1-\lambda_1} & & 0 \\ & \frac{1}{1-\lambda_2} & \\ 0 & & \frac{1}{1-\lambda_n} \end{bmatrix} \quad (10)$$

The right hand side of Equation 4 can be expressed as

$$I + A + A^2 + A^3 + \dots = I + PQP^{-1} + (PQP^{-1})^2 + \dots \quad (11)$$

The terms on the right of (11) can be simplified by noting that

$$(PQP^{-1})^2 = (PQP^{-1}) (PQ^1P^{-1}) = PQ^2P^{-1}$$

and, similarly,

$$(PQP^{-1})^n = PQ^nP^{-1} \quad (12)$$

Thus, (11) can be expressed as

$$I + A + A^2 + \dots = I + P Q P^{-1} + P Q^2 P^{-1} + P Q^3 P^{-1} + \dots \quad (13)$$

or, simply,

$$I + A + A^2 + \dots = P [I + Q + Q^2 + \dots] P^{-1} \quad (14)$$

Now Q^n is a diagonal matrix with elements λ_i^n so that

$$I + Q + Q^2 + \dots = \begin{bmatrix} 1 + \lambda_1 + \lambda_1^2 & \dots & 0 \\ & 1 + \lambda_2 + \lambda_2^2 & \dots \\ 0 & & 1 + \lambda_n + \lambda_n^2 + \dots \end{bmatrix} \quad (15)$$

Each scalar summation of (15) can be expressed in closed form so that

$$I + Q + Q^2 + \dots = \begin{bmatrix} \frac{1}{1 - \lambda_1} & & 0 \\ & \frac{1}{1 - \lambda_2} & \\ 0 & & \frac{1}{1 - \lambda_n} \end{bmatrix} \quad (16)$$

By substituting (16) into (14), the expression for $I + A + A^2 + \dots$ is identical with the expression for $(I - A)^{-1}$ of (9) and (10) and, hence, the validity of the series expansion of (4) has been confirmed.

Returning now to the solution of Equation 1, we have

$$\begin{aligned} g &= (I - A)^{-1} b \\ &= (I + A + A^2 + A^3 + \dots) b \end{aligned} \quad (17)$$

An algorithm for determining the solution g is to evaluate the series term by term so that

$$g = b + Ab + A^2 b + A^3 b + \dots \quad (18)$$

The summation is terminated after $k+1$ terms when $A^k b$ is sufficiently small.

To determine how fast A^k goes to zero, we can use the same eigenvalue analysis. We have from (14) and (17) that

$$g = P (I + Q + Q^2 + Q^3 + \dots) P^{-1} b$$

Define the n -dimensional vectors, v ,

$$\begin{aligned} v^0 &= P^{-1} b \\ v^1 &= Q P^{-1} b \\ &\vdots \\ v^k &= Q^k P^{-1} b \\ &\vdots \\ v^{k+1} &= Q^{k+1} P^{-1} b \end{aligned} \quad (19)$$

Clearly,

$$v^{k+1} = Q v^k \quad (20)$$

Now

$$Q^k = \begin{bmatrix} \lambda_1^k & & 0 \\ & \lambda_2^k & \\ 0 & & \lambda_n^k \end{bmatrix} \quad (21)$$

and, since λ_1 is the largest eigenvalue, for large k all the terms $\lambda_2^k, \lambda_3^k \dots \lambda_n^k$ are much smaller than λ_1^k , i.e.

$$Q^k = \begin{bmatrix} \lambda_1^k & & 0 \\ & 0 & \\ 0 & 0 & 0 \end{bmatrix} \quad (22)$$

for large k . Applying (22) to (19) shows that only the first element of v^k is non-zero (for large k) and that $v^{k+1} = \lambda_1 v^k$. In the application of the algorithm (18), the series of vectors, v^k , cannot be observed. Instead, another series of vectors is calculated. Denote these vectors by u , where

$$u^k = A^k b = P v^k \quad (23)$$

For large k , u^k has only one non-zero element so that $P v^k$ is simply a constant times the first column of P , that is, $u^k = a p^1$ where a is some constant and p^1 is the eigenvector corresponding to λ_1 . Define the ratio τ of successive $A^k b$ vectors by

$$\tau_i^k = \frac{u_{i+1}^k}{u_i^k} \quad (24)$$

where u_i^k means the i^{th} component of the vector u^k . Then the constant a cancels out and the ratio becomes λ_1 for each i since

$$\begin{aligned} u^{k+1} &= A^{k+1} b = A (A^k b) \\ &= A (a p^1) = a (A p^1) = a \lambda_1 p^1 \end{aligned} \quad (25)$$

by definition of eigenvalue and eigenvector. Also, since eigenvectors are unique only up to a multiplicative constant, the vector u^k is the eigenvector for λ_1 . If sufficient terms have been evaluated such that the effects of all the smaller eigenvalues are negligible then the sum of the remaining terms of the sequence can be approximated in closed form. Suppose k terms have been summed so that

$$g = u^0 + u^1 + \dots + u^k \quad (26)$$

Then the remaining terms can be approximated by

$$\begin{aligned} u^{k+1} + u^{k+2} + \dots &= A u^k + A^2 u^k + A^3 u^k + \dots \\ &= \lambda_1 u^k + \lambda_1^2 u^k + \dots \\ &= \sum_{i=1}^{\infty} \lambda_1^i u^k \end{aligned} \quad (27)$$

But

$$\sum_{i=1}^{\infty} \lambda_1^i = \frac{\lambda_1}{1-\lambda_1} \quad (28)$$

so that the final g vector is

$$g = u^0 + u^1 + \dots + u^k + \frac{\lambda_1}{1-\lambda_1} u^k \quad (29)$$

After many matrix multiplications, round-off errors may have injected some sizable error in the calculation of g . The original equation was (1)

$$g = (I-A)^{-1}b$$

or

$$(I-A)g = b \quad (30)$$

The current solution, \bar{g} , can be checked for accuracy by calculating $(I-A)\bar{g}$ and comparing it with b . Define the error vector ϵ

$$\epsilon = b - (I-A)\bar{g} \quad (31)$$

The magnitude of the error can be approximated by examining the ratio of the norm of ϵ to the norm of b where

$$\text{norm } \epsilon = \|\epsilon\| = \left(\sum_{i=1}^n \epsilon_i^2 \right)^{\frac{1}{2}}$$

If the ratio indicates that \bar{g} is not close enough to the true solution, then a correction term can be calculated. From (31).

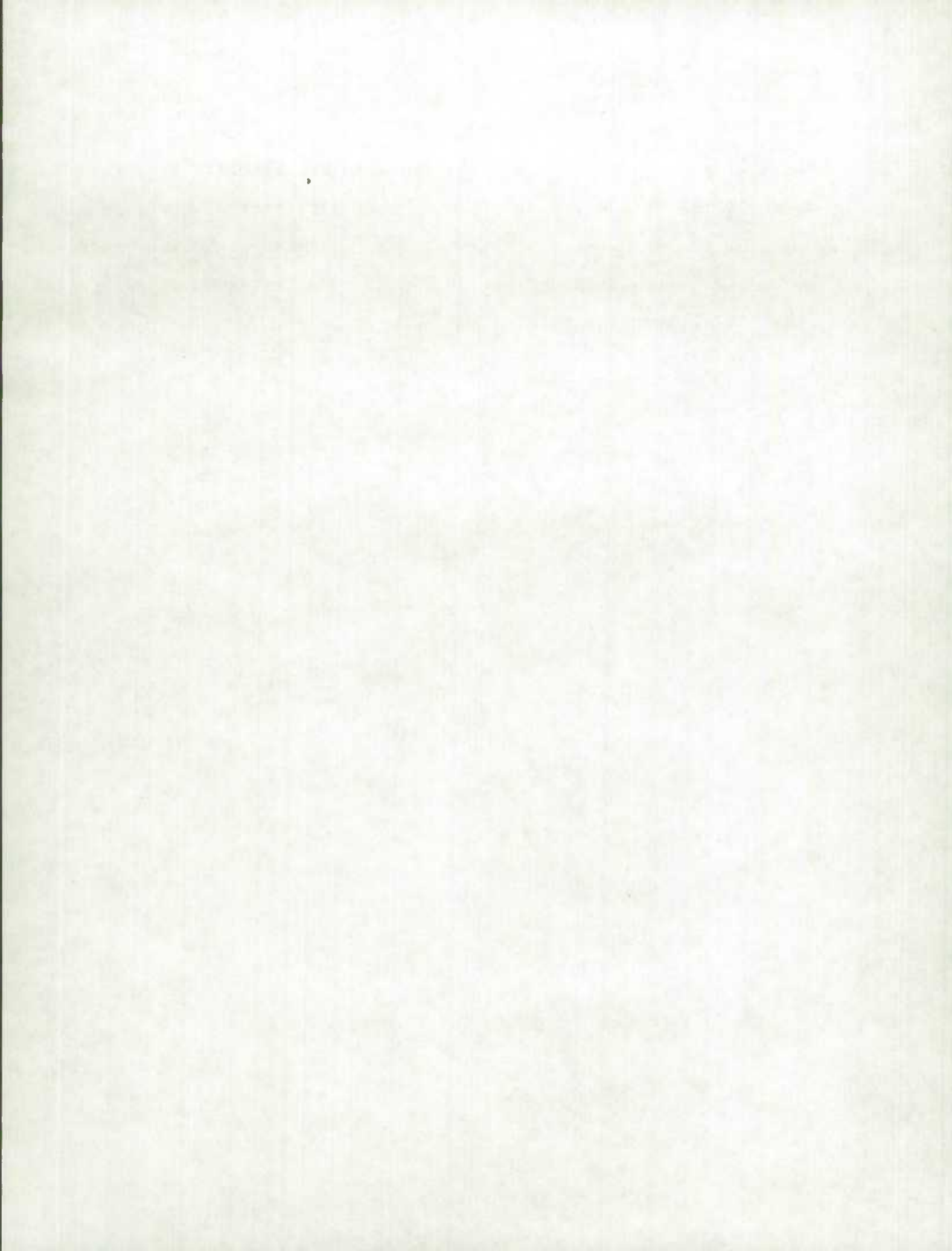
$$\epsilon = (I-A)g - (I-A)\bar{g} \quad (32)$$

where g is the true solution. Then, solving for g , yields

$$g = \bar{g} + (I-A)^{-1}\epsilon \quad (33)$$

So $(I-A)^{-1}\epsilon$ is the correction term for \bar{g} . Note that ϵ has already been calculated and presumably its components are much

smaller than \bar{g} . The correction $(I-A)^{-1}c$ can be calculated in exactly the same way as the \bar{g} was but fewer terms on the expansion will be needed since ϵ starts out small. This correction procedure eliminates some round-off error since the calculation is re-started with the original A matrix.



SECTION C: INC. & EXPDT. ACC'T (DOMESTIC)

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE	36966736.	WAGES, SALARIES, S.L.I.	32631040.
CAPITAL EXPENDITURE NET	5610200.	NET INCOME OF UNINCORP. BUS.	6103417.
CAPITAL EXPENDITURE CONSTA.	9750392.	SURPLUS	16448308.
INVENTORIES	1146255.	G.D.P. AT FACTOR COST	55182757.
GOV'T CURRENT EXPENDITURE	10499694.	TAXES & DUTIES LESS SUBSIDIES	8036701.
EXPORTS	12520499.		
IMPORTS LESS DUTIES	-12537000.		
GOV'T. REVENUE FROM PRODUCTION	-736548.		
TOTAL	63220176.		63219456.

SECTION D: HOUSEHOLD ACCOUNT

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE ON GDS	36966736.	WAGES & SALARIES	30784720.
PERSONAL INCOME TAXES	3903713.	SUPL. LABO'R INCOME	1846092.
PERSONAL SAVINGS	2779508.	NET INCOME OF UNINCORP. BUS.	6103396.
OTHER TRANSFERS TO GOVTS	2290618.	INVESTMENT INCOME	3611193.
OTHER TRANSFERS	349064.	TRANSFERS	3944060.
TOTAL	46289424.		46289392.

SECTION E: GOVERNMENT REVENUE

REVENUE	
COMMODITY TAXES	5039059.
NON-COMMODITY TAXES	2873065.
GOV'T GOODS & SERVICES	736598.
RESOURCE TAXES	249011.
IMPORT DUTIES	763255.
PERSONAL INCOME TAXES	3903713.
CORPORATION TAXES	2397689.
SUBSIDIES	-638678.
OTHER TRANSFERS FROM HHDS.	2290618.
TOTAL	17614130.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE	
GROSS PRODUCTION	95260368.	INTERMEDIATE GOODS & SERVICES	44511056.
SUBSIDIES	638678.	INDIRECT TAXES	4283551.
		WAGES, SALARIES & S.L.I.	25481120.
		NET INCOME OF UNINCORP. BUS.	6103417.
		INT. & DIV. PAID TO PERSONS	3611233.
		DEPLETION & MINING W.-D.	874721.
		CAPITAL COST ALLOWANCE	5996528.
		OTHER SURPLUS	5237417.
TOTAL	95899040.		95899040.

SECTION A1

BALANCING RUN

CLOSED

10303268

7607276031

1

1-0 MODEL COMMODITIES(120/10/75)-MEDIUM

	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
00100 GRAINS	1172900.	8337.	1164215.	45210.	1987.	453.	1503267.
70200 LIVE ANIMALS	76442.	-11.	76428.	14919.	654.	546.	1576743.
30300 OTHER AGRICULTURAL PRODUCTS	224758.	-7405.	231758.	294492.	9353.	5405.	1595568.
00400 FISH LANDINGS	41519.	8.	41469.	19471.	512.	200.	177605.
00500 HUNTING & TRAPPING PRODUCTS	13489.	-690.	14179.	13563.	0.	0.	14745.
00600 FORESTRY PRODUCTS	74590.	912.	73678.	25517.	3.	0.	1079952.
00700 IRON ORES & CONCENTRATES	316563.	4979.	311584.	57435.	0.	0.	387932.
00800 OTHER METAL ORES & CONCENTRATES	413780.	4404.	409376.	155451.	83.	0.	1225138.
00900 COAL	32501.	14951.	17550.	166528.	4472.	0.	50253.
01000 CRUDE MINERAL OILS	318185.	1216.	316969.	407738.	0.	0.	862589.
01100 NATURAL GAS	106105.	1805.	104300.	18631.	1237.	0.	164687.
01200 NON-METALLIC MINERALS	256823.	7236.	249583.	100283.	737.	22.	458265.
01300 SERVICES INCIDENTAL TO MINING	115000.	0.	115000.	0.	0.	0.	298277.
01400 MEAT PRODUCTS	149197.	-131.	149287.	105211.	4510.	0.	2319733.
01500 FISH PRODUCTS	171417.	1066.	170351.	19468.	2101.	0.	305051.
01600 DAIRY PRODUCTS	58822.	841.	57981.	24783.	3933.	0.	1169469.
01700 FRUITS & VEGETABLES PREPARATIONS	46018.	2583.	43435.	126256.	10149.	0.	499647.
01800 FEEDS	55065.	260.	54805.	29166.	291.	0.	581428.
01900 WHEAT, WHEAT, WHEAT & OTHER CEREALS	77515.	70.	77445.	9736.	769.	0.	221955.
02000 BREAKFAST CEREAL & BAKERY PRD.	12276.	81.	12195.	12447.	1049.	0.	622301.
02100 SUGAR	2736.	15.	2721.	2315.	247.	0.	130773.
02200 MILK, FOOD PRODUCTS	58360.	2867.	55493.	142132.	8127.	0.	775443.
02300 SOFT DRINKS	2485.	37.	2448.	3415.	774.	0.	47821.
02400 ALCOHOLIC BEVERAGES	167050.	9207.	157843.	94247.	45604.	0.	644071.
02900 TOBACCO PROCESSED UNMANUFACTURED	39117.	319.	38798.	6365.	604.	0.	124977.
32600 CIGARETTES & TOBACCO MFG.	4884.	-11.	4895.	7308.	2776.	0.	747433.
02700 TIRES & TUBES	17632.	891.	16741.	23760.	3744.	0.	270002.
02800 OTHER RUBBER PRODUCTS	18253.	4380.	13873.	77100.	9185.	0.	178218.
02900 LEATHER & LEATHER PRODUCTS	24753.	1287.	23466.	72457.	10563.	0.	375689.
03000 PLASTIC FABRICATED PRODUCTS	17520.	980.	16540.	80302.	7691.	0.	246059.
03100 YARNS & MAN MADE FIBRES	36232.	2100.	34132.	120718.	10130.	0.	339651.
03200 FABRICS	19148.	286.	18862.	309132.	55315.	0.	546728.
03300 OTHER TEXTILE PRODUCTS	74169.	10001.	64168.	114570.	13749.	100.	562695.
03400 HOSIERY, UNDERWEAR & SLEEPWEAR	2269.	307.	1962.	8481.	1658.	0.	184817.
03500 CLOTHING	76439.	3884.	72555.	126222.	25128.	300.	1268005.
03600 LUMBER & TIMBER	422633.	2198.	420435.	45316.	338.	302.	816623.
03700 VENEER & PLYWOOD	45011.	1929.	43082.	26944.	3687.	0.	244703.
03800 OTHER WOOD FABRICATED MATERIALS	57359.	2275.	55084.	23569.	1498.	0.	567497.
33900 FURNITURE & FIXTURES	188022.	9790.	178232.	43438.	7542.	0.	599415.
04010 PULP/PAPER DUMMY/INTRA-TRANSFERS	0.	0.	0.	0.	0.	0.	2330991.
04020 PULP	524347.	142.	524185.	9777.	1.	0.	630064.
04100 NEWSPRINT & OTHER PAPER STOCK	1027003.	844.	1026157.	54088.	7062.	0.	1658864.
04200 PAPER PRODUCTS	50250.	2837.	47413.	122733.	15729.	0.	986700.
04300 PRINTING & PUBLISHING	53202.	12547.	40653.	185286.	7571.	4371.	844152.
04400 ADVERTISING, PRINT MEDIA	0.	0.	0.	0.	0.	124.	358377.
04510 IRON/STEEL DUMMY/INTRA-TRANSFERS	0.	0.	0.	0.	0.	0.	1487021.
04520 IRON & STEEL PRODUCTS	224783.	2791.	221992.	275460.	14749.	0.	1650867.
04600 ALUMINUM PRODUCTS	356319.	-111.	356430.	76575.	3165.	0.	589129.
04700 COPPER & COPPER ALLOY PRODUCTS	264759.	-106.	264865.	28708.	2901.	0.	1104659.
04800 NICKEL PRODUCTS	402987.	-2793.	405780.	57950.	627.	0.	433000.

1988 MODEL COMMODITIES (20010/75)-PFDSUM	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
24000 OTHER NON FERROUS METAL PRODUCTS	225746.	-3246.	226491.	136507.	3526.	0.	422937.
04000 BOLTERS, TANKS, PLATES	67766.	3906.	63798.	19950.	2265.	0.	217182.
04100 FABRICATED STRUCTURAL METAL PROD	24037.	-1103.	25135.	81336.	7384.	0.	693823.
04200 OTHER METAL FABRICATED PRODUCTS	239234.	57497.	185731.	455224.	52044.	1400.	1653443.
04300 AGRICULTURAL MACHINERY	635509.	363804.	271705.	419522.	391.	0.	288900.
04400 OTHER INDUSTRIAL MACHINERY	1862571.	913202.	949273.	1407837.	115153.	100.	1386406.
04500 MOTOR VEHICLES	1151140.	124936.	1021204.	565037.	17202.	0.	2103723.
04600 MOTOR VEHICLE PARTS	455055.	42314.	410781.	1116180.	18431.	0.	1103492.
04700 OTHER TRANSPORT EQUIPMENT	1039217.	199244.	840027.	314412.	10066.	0.	1651872.
04800 APPLIANCES & OTHERS, HOUSEHOLD	168413.	42666.	125747.	210343.	31431.	3.	569947.
04900 OTHER ELECTRICAL PRODUCTS	887345.	176456.	710889.	586910.	72411.	0.	1672164.
05000 CEMENT & CONCRETE PRODUCTS	201374.	196.	19944.	3906.	129.	0.	603342.
05100 OTHER NON-METALLIC MINERAL PROD.	110246.	9019.	76266.	270758.	15541.	0.	522147.
05200 GASOLINE & FUEL OIL	29219.	601.	28618.	141136.	7313.	576.	1292766.
05300 OTHER PETROLEUM & COAL PROD.	235925.	7437.	228488.	317637.	17192.	101.	290522.
05400 INDUSTRIAL CHEMICALS	75252.	-754.	75010.	18433.	83.	0.	64246.
05500 FERTILIZERS	87350.	14729.	73054.	63766.	6835.	30.	161281.
05600 PHARMACEUTICALS	111803.	5656.	107147.	271772.	29281.	0.	286146.
05700 OTHER CHEMICAL PRODUCTS	383199.	163421.	219778.	383777.	24266.	15.	1171103.
05800 SCIENTIFIC EQUIPMENT	47060.	10113.	36947.	97929.	11152.	269.	334173.
05900 OTHER MANUFACTURED PRODUCTS	2179400.	0.	2179400.	0.	0.	0.	2179400.
06000 RESIDENTIAL CONSTRUCTION	6986447.	0.	6986447.	0.	0.	0.	6986447.
07000 NON-RESIDENTIAL CONSTRUCTION	931550.	0.	931550.	0.	0.	0.	1454711.
07100 PIPELINE TRANSPORTATION	93948.	1029.	92909.	40004.	0.	0.	267394.
07200 TRANSPORTATION & STORAGE	474069.	106.	473963.	85065.	0.	19245.	4573249.
07300 RADIO & TELEVISION BROADCASTING	10200.	0.	10200.	4300.	0.	0.	186602.
07400 TELEPHONE & TELEGRAPH	74650.	0.	74647.	0.	0.	79.	1116298.
07500 POSTAL SERVICES	29782.	497.	29285.	5001.	0.	0.	290285.
07600 ELECTRIC POWER	117801.	852.	116949.	10149.	0.	1257.	1224864.
07700 OTHER UTILITIES	31512.	0.	18766.	0.	0.	166781.	23305.
07800 WHOLESALE MARGINS	993930.	1662.	992068.	11401.	0.	0.	4447576.
07900 RETAIL MARGINS	149602.	0.	149602.	0.	0.	70.	4852321.
08000 TRANSPORTATION MARGINS	643353.	0.	643353.	0.	0.	0.	2186104.
08100 EMPLOYER RENT, OWNER OCCP. DWEL.	0.	0.	0.	0.	0.	0.	3395819.
08200 OTHER FINANC. INSL. REAL ESTATE	657169.	40972.	613606.	170984.	0.	88477.	6661637.
08300 BUSINESS SERVICES	276126.	31459.	242425.	257669.	0.	16160.	1549814.
08400 EDUCATION SERVICES	4200.	0.	3534.	0.	0.	24364.	124323.
08500 HEALTH SERVICES	109261.	0.	97778.	0.	0.	191658.	960881.
08600 AMUSEMENT & RECREATION SERVICES	11954.	0.	10651.	0.	0.	31348.	374452.
08700 ACCOMMODATION & FOOD SERVICES	0.	0.	0.	0.	0.	7877.	2403344.
08800 OTHER PERSONAL & MISC. SERVICES	165914.	1632.	164121.	12467.	0.	175023.	2694447.
08900 OPERATING, OFFICE, LAB. & FOOD	864220.	0.	864220.	0.	0.	0.	4364337.
09000 TRAVEL, ADVERTISING, & PROMOTION	228857.	0.	228857.	0.	0.	0.	2267730.
09100 NON-COMPETITIVE IMPORTS	54.	117.	471.	338890.	11594.	0.	0.
09200 UNALLOCATED IMPORTS & EXPORTS	1271573.	0.	1271573.	351025.	0.	0.	0.
09300 IMPORT DUTIES	602254.	0.	602254.	0.	0.	0.	0.
09400 SUBSIDIES	0.	0.	0.	0.	0.	0.	0.
09500 WAGES & SALARIES	5708162.	0.	5708162.	0.	0.	0.	30784720.
09600 SUPPLEMENTARY LABOR INCOME	480158.	0.	480158.	0.	0.	0.	1846092.

1-0 MARCE COMMODITIES (120/10/75)-PENIUM

	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
0990 NET INCOME, UNINC. BUSINESS	0.	0.	0.	0.	0.	0.	4103398.
10010 HOUSEHOLD INVESTMENT INCOME	0.	0.	0.	0.	0.	0.	3611193.
10020 DEPLETION & MINING WRITE-OFFS	0.	0.	0.	0.	0.	0.	0.
10030 CAPITAL COST ALLOWANCE	864357.	0.	864397.	0.	0.	0.	0.
10040 OTHER SURPLUS	0.	0.	0.	0.	0.	0.	0.
10100 TOTAL	19527040.	2129969.	37161696.	12028974.	763255.	736598.	190767008.

10-30000-INDUSTRY/COMMERCE/MEDICAL MEDIUM-	DIMESTIC FINAL DEMAND	TOTAL DOMESTIC OUTPUT	INDIRECT TAXES LESS SUBSIDIES	SALARIES & WAGES % S.L.E.	NET INCOME UNINCORP BUSINESS	SURPLUS	GROSS DOM PRODUCT @ FACTOR C91
1 AGRICULTURE	1478927.	4749761.	1812.	275582.	1976708.	727017.	2979306.0
2 LUMBER	74822.	1089649.	50412.	412384.	21000.	95957.	529340.8
3 FISHING, HUNTING & TRAPPING	55724.	192900.	2531.	42917.	93003.	18431.	114345.5
4 METAL MINES	671699.	1537318.	5942.	405072.	1223.	619516.	1025810.5
5 MINERAL FUELS	484520.	1174332.	22943.	148775.	111.	580703.	729587.9
7 NON-METAL MINES & QUARRIES	291776.	433970.	12456.	108247.	333.	157590.	269170.6
7 SERVICES, INCIDENTAL TO MINING	111177.	286748.	2349.	134180.	2645.	42770.	179595.5
8 FOOD & BEVERAGE INDUSTRIES	794514.	2751827.	63527.	1138836.	27005.	746401.	1907241.0
9 TOBACCO PRODUCTS INDUSTRIES	44228.	430911.	3868.	57463.	12.	65091.	122565.3
10 RUBBER & PLASTIC PRODUCTS IND.	72056.	812016.	7218.	221860.	398.	124225.	346482.5
11 LEATHER INDUSTRIES	25483.	375586.	3075.	126476.	788.	13930.	141194.1
12 TEXTILE INDUSTRIES	111955.	1333285.	11874.	344245.	2198.	132467.	478915.1
13 KNITTING MILLS	15754.	326250.	2694.	86732.	544.	32265.	119541.1
14 CLOTHING INDUSTRIES	71010.	1170090.	4914.	360643.	6472.	74040.	441154.1
15 WOOD INDUSTRIES	621785.	1621365.	13682.	464131.	8951.	132318.	605399.5
16 FURNITURE & FIXTURE INDUSTRIES	156156.	614508.	5437.	203279.	7013.	59260.	269551.9
17 PAPER & ALLIED INDUSTRIES	1621543.	5604275.	56643.	779414.	547.	559766.	1339726.0
18 PRINTING & PUBLISHING	45558.	1231560.	13648.	494478.	21040.	142212.	577729.9
19 PRIMARY METAL INDUSTRIES	1546099.	6330266.	40739.	756432.	620.	513486.	1270536.0
20 METAL FABRICATING INDUSTRIES	486843.	2858633.	21707.	869700.	7339.	355730.	1232769.0
21 MACHINERY INDUSTRIES	1056923.	1705223.	13384.	487060.	811.	249952.	737822.9
22 TRANSPORTATION EQUIPMENT INC.	2255121.	4372589.	33202.	1011763.	1451.	338200.	1351412.0
23 ELECTRICAL PRODUCTS INDUSTRIES	852102.	2398376.	17184.	710520.	386.	274636.	985541.8
24 NON-METALLIC MINERAL PROD. IND.	101036.	1154973.	18364.	313220.	2095.	235355.	550670.1
25 PETROLEUM & COAL PRODUCTS IND.	118338.	1537264.	11502.	98936.	0.	80482.	179418.1
26 CHEMICAL & CHEMICAL PROD. IND.	437157.	2256167.	32442.	483953.	625.	412852.	897470.8
27 MISC MANUFACTURING INDUSTRIES	243619.	826371.	7620.	274264.	6712.	113877.	394854.3
28 CONSTRUCTION INDUSTRY	9701848.	11201167.	643741.	3587229.	399006.	624210.	4610446.0
29 TRANSPORTATION & STORAGE	582671.	4956931.	58010.	1960616.	129266.	1129272.	3219158.0
30 COMMUNICATION	180755.	1709697.	-52648.	774439.	0.	569880.	1364318.0
31 ELECTRIC POWER, GAS, & OTHER UTILITIES	135628.	1479631.	43877.	328568.	0.	860547.	1189115.0
32 WHOLESALE TRADE	865010.	4180787.	80417.	1784628.	220918.	761341.	2768885.0
33 RETAIL TRADE	180109.	6028404.	167448.	2498277.	594290.	756834.	3849402.0
34 OWNER OCCUPIED DWELLINGS	0.	3395796.	887596.	0.	674319.	1359072.	2038390.0
35 OTHER FINANCE, INC. & REAL ESTATE	564800.	6426859.	723446.	1652138.	488549.	1844605.	3585292.0
36 EDUCATION & HEALTH SERVICES	101324.	1090583.	16277.	211077.	548269.	34692.	794037.4
37 AMUSEMENT & RECREATION SERVICES	11368.	424400.	18228.	48540.	33811.	57567.	189918.2
38 SERVICES TO BUSINESS MANAGEMENT	246839.	1768088.	17741.	708210.	423967.	240867.	1373052.0
39 ACCOMMODATION & FOOD SERVICES	2182.	2254864.	73520.	741035.	241742.	278856.	1261636.0
40 OTHER PERSONAL & MISC SERVICES	40341.	948581.	29357.	325755.	196249.	83614.	605618.9
41 TRANSPORTATION, SHIPPING	643353.	2186089.	0.	0.	0.	0.	0.0
42 OPERATING, MAINTENANCE & FOOD	864220.	4389345.	310984.	0.	0.	0.	0.0
43 TRAVEL & ADVERTISING, PROMOTION	228857.	2267727.	145500.	0.	0.	0.	0.0
44 HOUSEHOLD INDUSTRY	6188320.	46289440.	3076319.	961595.	0.	64012.	1025594.5
INDUSTRY TOTAL	34374016.	154710864.	6671193.	26442720.	6103417.	15583910.	48130032.0

1-0 MODEL INDUSTRIES(20/10/75)-MEDIUM-	WAGES & SALARIES	SUPPLEMENT LABOUR INCOME	PAID WORKERS ADJ O/A CONSTR	OTHER THAN PAID WORKERS	TOTAL EMPLOYMENT
1 AGRICULTURE	274201.	1381.	92758.2	446044.9	538803.7
2 FORESTRY	392385.	19998.	72189.4	7704.1	793976.6
3 FISHING, HUNTING & TRAPPING	41886.	1026.	7661.4	19654.0	27314.4
4 METAL MINES	176238.	28876.	61104.9	520.0	61624.9
5 MINERAL FUELS	141260.	7414.	20160.2	178.0	20338.2
6 NON-METAL MINES & QUARRIES	101697.	4950.	17943.7	152.0	18099.3
7 SERVICES INCIDENTAL TO MINING	127780.	6400.	17704.1	146.0	17850.1
8 FOOD & BEVERAGE INDUSTRIES	1077469.	61368.	226416.8	1429.5	229846.2
9 TOBACCO PRODUCTS INDUSTRIES	54596.	2866.	10159.7	3.0	10162.7
10 FURNITURE & PLASTICS PRODUCTS IND.	212156.	9664.	41204.6	70.0	41274.6
11 LEATHER INDUSTRIES	120320.	6156.	32472.1	154.0	32726.2
12 TEXTILE INDUSTRIES	927174.	17075.	74779.2	335.0	75114.3
13 KNITTING MILLS	83238.	3494.	23587.8	54.0	23641.8
14 CLOTHING INDUSTRIES	349478.	11165.	99695.9	817.1	100513.0
15 WHOLE INDUSTRIES	440619.	23512.	91590.9	2421.1	94011.9
16 FURNITURE & FIXTURE INDUSTRIES	194119.	9160.	43569.8	1561.2	45131.0
17 PAPER & ALLIED INDUSTRIES	738352.	41062.	117870.2	41.0	117911.2
18 PRINTING & PUBLISHING	474075.	20403.	81917.0	1590.2	83507.2
19 PRIMARY METAL INDUSTRIES	716572.	39860.	111949.4	65.0	112014.5
20 METAL FABRICATING INDUSTRIES	813706.	55994.	142887.4	1248.0	144135.5
21 MACHINERY INDUSTRIES	465287.	21772.	75267.4	75.0	75342.4
22 TRANSPORTATION EQUIPMENT IND.	939962.	71801.	146373.3	274.0	146647.3
23 ELECTRICAL PRODUCTS INDUSTRIES	679023.	31497.	124287.3	45.0	124332.3
24 NON-METALLIC MINERAL PROD. IND.	246098.	17162.	52796.7	350.0	53146.7
25 PETROLEUM & COAL PRODUCTS IND.	88041.	10895.	13934.3	0.0	13934.3
26 CHEMICAL & CHEMICAL PROD. IND.	460116.	23877.	72641.9	143.0	72784.9
27 MISC MANUFACTURING INDUSTRIES	259052.	15172.	53913.4	1219.1	55132.5
28 CONSTRUCTION INDUSTRY	3413721.	173909.	519769.8	60001.5	579771.4
29 TRANSPORTATION & STORAGE	1785006.	175611.	377376.4	21911.5	392888.0
30 COMMUNICATION	705242.	69197.	151845.5	10297.1	162142.7
31 ELEC POWER, GAS, OTHER UTILITIES	302921.	25648.	51028.7	638.1	51666.7
32 WHOLESALE TRADE	1716752.	67876.	330025.1	61771.4	391796.6
33 RETAIL TRADE	2401965.	96313.	612770.9	114727.4	727498.3
34 OWNER OCCUPIED DWELLINGS	0.	0.	0.0	0.0	0.0
35 OTHER FINANCE, INS. & REAL ESTATE	1553550.	98587.	264505.2	16366.1	280871.4
36 EDUCATION & HEALTH SERVICES	205437.	5640.	56195.0	10104.6	66299.6
37 AMUSEMENT & RECREATION SERVICES	45759.	2740.	38678.1	10002.6	48680.7
38 SERVICES TO BUSINESS MANAGEMENT	688457.	19713.	205996.2	52442.6	258437.8
39 ACCOMMODATION & FOOD SERVICES	720431.	20608.	199289.9	50872.6	250162.5
40 OTHER PERSONAL & MISC SERVICES	316656.	9059.	87847.5	22361.5	110228.9
41 TRANSPORTATION MARGINS	0.	0.	0.0	0.0	0.0
42 OPERATING OFFICE, LAB & FOOD	0.	0.	0.0	0.0	0.0
43 TRAVEL & ADVERTISING, PROMOTION	0.	0.	0.0	0.0	0.0
44 HOUSEHOLD INDUSTRY	471588.	0.	188729.4	0.0	188829.4
INDUSTRY TOTAL	1112744.	1330162.	5010896.0	919311.4	5930208.0

SECTION C: INCORPORATED, ACCIDENT DOMESTIC

EXPENDITURE		INCOME	
FINAL DEMAND	1369282.	WAGES, SALARIES, S.C.I.	491532.
IMPORTS LESS DUTIES	-188496.	NET INCOME OF UNINCORP. BUS.	151528.
GOVT. REVENUE FROM PRODUCTION	-20661.	SURPLUS	307749.
		G.U.P. AT FACTOR COST	650600.
		TAXES & DUTIES LESS SUBSIDIES	209309.
TOTAL	1160126.		1160114.

SECTION D: HOUSEHOLD ACCOUNT

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE ON GDS	1369282.	WAGES, SALARIES	467665.
PERSONAL INCOME TAXES	144598.	SUPPL. LABOR INCOME	73662.
PERSONAL SAVINGS	102955.	NET INCOME OF UNINCORP. BUS.	151528.
OTHER TRANSFERS TO GOVTS	84839.	INVESTMENT INCOME	71566.
OTHER TRANSFERS	12930.	TRANSFERS	100000.
TOTAL	1714602.		1714611.

SECTION E: GOVERNMENT REVENUE

REVENUE	
COMMODITY TAXES	129057.
NON-COMMODITY TAXES	78579.
GOVT. GOODS & SERVICES	20661.
RESOURCE TAXES	2704.
IMPORT DUTIES	14475.
PERSONAL INCOME TAXES	144598.
CORPORATION TAXES	46626.
SUBSIDIES	-12752.
OTHER TRANSFERS FROM HHDS.	84839.
TOTAL	508737.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE	
NET INCOME OF UNINCORP. BUS.	151528.	INTERMEDIATE GOODS & SERVICES	757627.
GOVT. TRANSFERS FROM PRODUCTION	12752.	INDIRECT TAXES	45539.
		WAGES, SALARIES & S.C.I.	455913.
		NET INCOME OF UNINCORP. BUS.	151528.
		INT. & DIV. PAID TO PERSONS	71567.
		DEPLETION & MINING W.-D.	6133.
		CAPITAL COST ALLOWANCE	125836.
		OTHER SURPLUS	101046.
TOTAL	1765982.		1765982.

COMMODITY SIZE/10751-MEDIUM	TOTAL FINAL DEMAND	DIRECT IMPRINTS	DOMESTIC FINAL DEMAND	TOTAL IMPRINTS	IMPACT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
20100 GRAINS	0.	0.	0.	941.	41.	2.	7513.
20200 LIVE ANIMALS	0.	0.	0.	430.	21.	17.	48077.
20300 OTHER AGRICULTURAL PRODUCTS	0.	0.	0.	9370.	523.	166.	47496.
20400 FISH LANDINGS	0.	0.	0.	312.	8.	3.	2245.
20500 HUNTING & TRAPPING PRODUCTS	0.	0.	0.	490.	0.	0.	13.
20600 FORESTRY PRODUCTS	0.	0.	0.	117.	0.	0.	6251.
20700 TANN ORES & CONCENTRATES	0.	0.	0.	376.	0.	0.	676.
20800 OTHER METAL ORES & CONCENTRATES	0.	0.	0.	370.	0.	0.	2013.
20900 COAL	0.	0.	0.	2086.	56.	0.	449.
21000 CRUDE MINERAL OILS	0.	0.	0.	9540.	0.	0.	11525.
21100 NATURAL GAS	0.	0.	0.	532.	35.	0.	1581.
21200 NON-METALLIC MINERALS	0.	0.	0.	739.	7.	0.	1176.
21300 SERVICES INCIDENTAL TO MINING	0.	0.	0.	0.	0.	0.	640.
21400 MEAT PRODUCTS	0.	0.	0.	3509.	152.	0.	75145.
21500 FISH PRODUCTS	0.	0.	0.	643.	69.	0.	4357.
21600 DAIRY PRODUCTS	0.	0.	0.	933.	132.	0.	38865.
21700 FRUITS & VEGETABLES PREPARATIONS	0.	0.	0.	4321.	350.	0.	16153.
21800 FEEDS	0.	0.	0.	640.	7.	0.	11735.
21900 FLOUR, WHEAT, RICE & OTHER CEREALS	0.	0.	0.	320.	26.	0.	4906.
22000 BREAKFAST CEREAL & BAKERY PRD.	0.	0.	0.	445.	37.	0.	22369.
22100 SUGAR	0.	0.	0.	78.	10.	0.	4349.
22200 MISC. FOOD PRODUCTS	0.	0.	0.	4575.	264.	0.	25041.
22300 BEER, DISTILL.	0.	0.	0.	117.	9.	0.	9062.
22400 ALCOHOLIC BEVERAGES	0.	0.	0.	2965.	1410.	0.	15931.
22500 TOBACCO PROCESSED, MANUFACTURED	0.	0.	0.	278.	22.	0.	3301.
22600 TOBACCO UNPROCESSED, MANUFACTURED	0.	0.	0.	269.	101.	0.	10856.
22700 TOBACCO UNPROCESSED, MANUFACTURED	0.	0.	0.	412.	66.	0.	4583.
22800 OTHER TOBACCO PRODUCTS	0.	0.	0.	1621.	208.	0.	3617.
22900 LEATHER & LEATHER PRODUCTS	0.	0.	0.	2524.	371.	0.	12584.
23000 PLASTIC FABRICATED PRODUCTS	0.	0.	0.	1525.	139.	0.	4677.
23100 YARNS & MAN-MADE FIBRES	0.	0.	0.	3604.	327.	0.	15471.
23200 FABRICS	0.	0.	0.	9135.	1691.	0.	15477.
23300 OTHER TEXTILE PRODUCTS	0.	0.	0.	2811.	372.	1.	13906.
23400 HATS, CAPS, GLOVES & SLIPPERMAN	0.	0.	0.	306.	60.	0.	1504.
23500 CLOTHING	0.	0.	0.	4532.	405.	10.	43524.
23600 HATS, CAPS, GLOVES & SLIPPERMAN	0.	0.	0.	316.	7.	1.	2677.
23700 VENNER & PLYWOOD	0.	0.	0.	204.	27.	0.	1344.
23800 OTHER WOOD FABRICATED MATERIALS	0.	0.	0.	257.	14.	0.	3901.
23900 FURNITURE & FIXTURES	0.	0.	0.	1171.	205.	0.	14428.
24000 PULP, PAPER, DUMMELINTRA-TRANSFERS	0.	0.	0.	7.	0.	0.	1500.
24100 PULP	0.	0.	0.	94.	0.	0.	1152.
24200 NEWSPRINT & OTHER PAPER STOCK	0.	0.	0.	1127.	146.	0.	13769.
24300 PAPER PRODUCTS	0.	0.	0.	7548.	315.	0.	23478.
24400 PRINTING & PUBLISHING	0.	0.	0.	5676.	193.	134.	20403.
24500 ADVERTISING, PRINT MEDIA	0.	0.	0.	0.	0.	3.	4497.
24600 INDUSTRIAL DUMMELINTRA-TRANSFERS	0.	0.	0.	0.	0.	0.	13034.
24700 IRON & STEEL PRODUCTS	0.	0.	0.	1393.	90.	0.	4538.
24800 ALUMINUM PRODUCTS	0.	0.	0.	651.	29.	0.	1834.
24900 COPPER & COPPER ALLOY PRODUCTS	0.	0.	0.	157.	13.	0.	3694.
25000 NICKEL PRODUCTS	0.	0.	0.	224.	6.	0.	124.

SECTION A: IMPACT OF BLMN EXOGENOUS INCOME (TRANSFERS), 1966 CLOSED I-O MODEL

10351107

76072760.1

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I-O MODEL COMMODITY SIZE/10/751-MEDIUM	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
0000 NET INCOME, UNIMP. BUSINESS	0.	0.	0.	0.	0.	0.	15152.
0010 HOUSEHOLD INVESTMENT INCOME	0.	0.	0.	0.	0.	0.	71556.
1010 DEPLETION & MINING WRITE-OFFS	0.	0.	0.	0.	0.	0.	0.
1020 CAPITAL GUST BALANCE	0.	0.	0.	0.	0.	0.	0.
1030 TRADE SURPLUS	0.	0.	0.	0.	0.	0.	0.
1040 TOTAL	1.	0.	1.	202932.	14425.	20661.	2642239.

1966 MODEL INDUSTRIES (70/10/75)-MEDIUM-	DOMESTIC FINAL DEMAND	TOTAL DOMESTIC OUTPUT	TAXES LESS SUBSIDIES	SALARIES & WAGES + S.O.L.I.	NET INCOME UNINCORP BUSINESS	SURPLUS	GROSS DOM PRODUCT @ FACTOR 2
1 AGRICULTURE	0.	101204.	50.	5872.	4211.	15451.	63480.0
2 FISHERY	0.	6835.	316.	7487.	132.	602.	3320.4
3 FISHING, HUNTING & TRAPPING	0.	2764.	30.	504.	622.	716.	1342.1
4 METAL MINES	0.	2748.	1.	740.	3.	1093.	1843.8
5 MINERAL FUJLS	0.	14630.	414.	1697.	1.	7302.	8999.9
6 NON-METAL MINES & QUARRIES	0.	1754.	63.	421.	16.	637.	1074.4
7 SERVICES, INCIDENTAL TO MINING	0.	652.	5.	306.	6.	97.	408.9
8 FOOD & BEVERAGE INDUSTRIES	0.	21670.	1041.	34942.	702.	21632.	57266.1
9 CHEMICAL PRODUCTS INDUSTRIES	0.	14218.	128.	2021.	0.	2267.	4267.7
10 RUBBER & PLASTIC PRODUCTS IND.	0.	15158.	132.	4264.	3.	2271.	6542.2
11 LEATHER INDUSTRIES	0.	12525.	92.	4230.	26.	454.	4715.6
12 TEXTILE INDUSTRIES	0.	34860.	307.	9065.	57.	3501.	12623.5
13 SPINNING MILLS	0.	11024.	91.	2446.	18.	1051.	4045.3
14 CLOTHING INDUSTRIES	0.	40022.	160.	12336.	221.	2533.	15089.5
15 WOOD INDUSTRIES	0.	8529.	72.	2527.	51.	711.	3289.1
16 FURNITURE & FIXTURE INDUSTRIES	0.	14351.	114.	4772.	144.	1271.	6237.4
17 PAPER & ALLIED INDUSTRIES	0.	56742.	612.	9176.	14.	5369.	14558.7
18 PRINTING & PUBLISHING	0.	29974.	322.	12012.	512.	3640.	15491.3
19 PRIMARY METAL INDUSTRIES	0.	31007.	169.	3643.	4.	2657.	6303.8
20 METAL FABRICATING INDUSTRIES	0.	23354.	170.	6910.	62.	2775.	9747.1
21 MACHINERY INDUSTRIES	0.	8134.	51.	2532.	4.	1513.	4049.3
22 TRANSPORTATION EQUIPMENT IND.	0.	56653.	455.	10344.	21.	4545.	14909.9
23 ELECTRICAL PRODUCTS INDUSTRIES	0.	27050.	204.	7144.	5.	2727.	9876.3
24 NON-METALLIC MINERAL PRDCT. IND.	0.	7490.	114.	2347.	19.	1337.	3701.7
25 PETROLEUM & COAL PRODUCTS IND.	0.	33675.	245.	2130.	0.	1703.	3632.4
26 CHEMICAL & CHEMICAL PRDCT. IND.	0.	41144.	535.	8688.	14.	6660.	15342.0
27 MISC MANUFACTURING INDUSTRIES	0.	14799.	136.	4665.	113.	1914.	6852.1
28 CONSTRUCTION INDUSTRY	0.	38561.	1793.	20380.	1452.	1500.	23332.3
29 TRANSPORTATION & STORAGE	0.	83179.	1588.	33372.	2357.	18706.	54434.4
30 COMMUNICATION	0.	42476.	-1037.	19164.	0.	14658.	33822.7
31 ELECT. POWER, GAS, OTHER UTILITIES	0.	25500.	1078.	7886.	0.	20569.	28474.6
32 WHOLESALE TRADE	0.	70562.	1357.	30120.	3729.	12850.	46498.3
33 RETAIL TRADE	0.	157068.	5474.	81668.	19427.	24741.	125836.4
34 OWNER OCCUPIED DWELLINGS	0.	125785.	32876.	0.	25163.	50342.	75504.8
35 OTHER FINANCE, INS. & REAL ESTATE	0.	177168.	20522.	46758.	13686.	47141.	107585.4
36 EDUCATION & HEALTH SERVICES	0.	36634.	544.	7231.	18239.	1175.	26445.5
37 AMUSEMENT & RECREATION SERVICES	0.	14314.	615.	3317.	1137.	1945.	6398.9
38 SERVICES TO BUSINESS MANAGEMENT	0.	28927.	294.	11728.	6876.	3885.	22489.8
39 ACCOMMODATION & FOOD SERVICES	0.	74574.	2431.	24508.	7995.	6222.	41725.6
40 OTHER PERSONAL & MISC SERVICES	0.	31774.	1006.	10784.	6525.	2787.	20095.9
41 TRANSPORTATION MARGINS	0.	30524.	0.	0.	0.	0.	0.0
42 CONTRACTING, OFFICE, LAB & FOOD	0.	65890.	4773.	0.	0.	0.	0.0
43 TRAVEL & ADVERTISING, PROMOTION	0.	46465.	2620.	0.	0.	0.	0.0
44 HOUSEHOLD INDUSTRY	0.	171403.	112098.	35614.	0.	2371.	37949.0
INDUSTRY TOTAL	1.	3642235.	194884.	491532.	151528.	307746.	950804.8

INDUSTRY	REVENUE	EMPLOYMENT FAHOUR INCOME	PAID WORK- ERS ADJ O/A MONTH	OTHER THAN PAID WORKERS	TOTAL EMPLOYMENT
1 AGRICULTURE	100.0	29.0	2.0	0.4	11.5
2 FORESTRY	471.0	125.0	0.5	0.0	0.5
3 FISHING, HUNTING, & TRAPPING	10.0	12.0	0.1	0.2	0.1
4 METAL MINES	10.0	52.0	0.1	0.0	0.1
5 MINERAL EXTRACTS	10.0	75.0	0.2	0.0	0.2
6 NON-METAL MINING & QUARRIES	10.0	75.0	0.1	0.0	0.1
7 SERVICES INCIDENTAL TO MINING	10.0	15.0	0.0	0.0	0.0
8 FOOD & BEVERAGE INDUSTRIES	100.0	1844.0	6.9	1.1	7.0
9 TOBACCO PRODUCTS INDUSTRIES	100.0	102.0	0.4	0.0	0.4
10 RUBBER & PLASTICS PRODUCTS IND.	100.0	187.0	0.8	0.0	0.8
11 LEATHER INDUSTRIES	100.0	205.0	1.1	0.0	1.1
12 TEXTILE INDUSTRIES	100.0	450.0	2.0	0.0	2.0
13 KNITTING MILLS	100.0	118.0	0.8	0.0	0.8
14 CLOTHING INDUSTRIES	100.0	382.0	3.4	0.0	3.4
15 WOOD INDUSTRIES	100.0	130.0	0.5	0.0	0.5
16 FURNITURE & FIXTURE INDUSTRIES	100.0	223.0	1.0	0.0	1.1
17 PAPER & ALLIED INDUSTRIES	100.0	499.0	1.5	0.0	1.5
18 PRINTING & PUBLISHING	100.0	456.0	2.0	0.0	2.0
19 PRIMARY METAL INDUSTRIES	100.0	175.0	0.5	0.0	0.5
20 METAL FABRICATING INDUSTRIES	100.0	497.0	1.1	0.0	1.2
21 MACHINERY INDUSTRIES	100.0	114.0	0.4	0.0	0.4
22 TRANSPORTATION EQUIPMENT INC.	100.0	490.0	1.4	0.0	1.4
23 ELECTRICAL PRODUCTS INDUSTRIES	100.0	159.0	1.3	0.0	1.3
24 NON-METALLIC MINERAL PROD. IND.	100.0	121.0	0.4	0.0	0.4
25 PETROLEUM & COAL PRODUCTS IND.	100.0	235.0	0.3	0.0	0.3
26 CHEMICAL & CHEMICAL PROD. IND.	100.0	429.0	1.3	0.0	1.3
27 METAL MANUFACTURING INDUSTRIES	100.0	482.0	1.0	0.0	1.0
28 CONSTRUCTION INDUSTRY	100.0	711.0	3.0	0.4	3.4
29 TRANSPORTATION & STORAGE	100.0	285.0	7.0	0.4	7.4
30 COMMUNICATION	100.0	172.0	3.8	0.3	4.0
31 ELECTRIC POWER, GAS, OTHER UTILITIES	100.0	417.0	1.3	0.0	1.3
32 WHOLESALE TRADE	100.0	1146.0	5.6	1.0	6.6
33 RETAIL TRADE	100.0	3146.0	20.0	3.4	23.4
34 OTHER FINANCE, INS. & REAL ESTATE	100.0	2814.0	7.5	0.5	7.9
35 EDUCATION & HEALTH SERVICES	100.0	193.0	1.9	0.7	2.2
36 AMUSEMENT & RECREATION SERVICES	100.0	52.0	1.3	0.3	1.6
37 SERVICES TO BUSINESS MANAGEMENT	100.0	327.0	3.4	0.9	4.7
38 ACCOMMODATION & FOOD SERVICES	100.0	482.0	6.6	1.7	8.3
39 OTHER PERSONAL & MISC SERVICES	100.0	300.0	2.9	0.7	3.7
40 HOUSEHOLD INDUSTRY	100.0	0.0	7.0	0.0	7.0
INDUSTRY TOTAL	4889.4	22537.0	102.4	20.3	122.7

SECTION C: INC. EXPDT. ACCY (DOMESTIC)

EXPENDITURE			
CAPITAL EXPENDITURE	0.	WAGES, SALARIES, & BENEFITS	529039.
CAPITAL EXPENDITURE NET	0.	NET INCOME OF DOMESTIC FIRMS	94852.
CAPITAL EXPENDITURE CONSTR.	1000000.	SURPLUS	170458.
INVENTORY	0.	G.D.P. AT FACTORY COST	794350.
GOVT. EXPENDITURE	0.	TAXES & DUTIES EXCEPT ON EXPORTS	92474.
GOVT. RECEIPTS	0.		
EXPORTS	-111195.		
IMPORTS	-1965.		
TOTAL	886840.		886824.

SECTION E: GOVERNMENT REVENUE

REVENUE	
PROPERTY TAXES	67833.
NONPROPERTY TAXES	19721.
GOVT. SERVICES	1965.
GOVT. SAVINGS	3377.
GOVT. INTEREST	5288.
RECREATION TAXES	26522.
NET TOTAL	-4367.
TOTAL	124338.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE	
EXPORTS	1814283.	INTERMEDIATE CONSUMPTION SERVICES	936747.
IMPORTS	4367.	INDIRECT TAXES	87553.
		WAGES-SALARIES & BENEFITS	529039.
		NET INCOME OF DOMESTIC FIRMS	94852.
		INT. & DIV. PAYMENTS TO FOREIGNERS	44245.
		DEPLETION & AMORTIZATION	3309.
		CAPITAL COST ALLOCATION	64572.
		OTHER SURPLUS	57933.
TOTAL	1818650.		1818650.

T-D MODEL COMMODITIES (20/10/75)-MEDIUM	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
00100 GRAINS	0.	0.	0.	93.	2.	0.	94.
00200 LIVE ANIMALS	0.	0.	0.	20.	1.	1.	1431.
00300 OTHER AGRICULTURAL PRODUCTS	0.	0.	0.	449.	29.	7.	1486.
00400 FISH LANDINGS	0.	0.	0.	16.	0.	0.	116.
00500 HUNTING & TRAPPING PRODUCTS	0.	0.	0.	0.	0.	0.	0.
00600 EXPLOSIVE PRODUCTS	0.	0.	0.	1118.	0.	0.	32323.
00700 FEED MIXES & CONCENTRATES	0.	0.	0.	809.	0.	0.	1172.
00800 OTHER METAL DRES. & CONCENTRATES	0.	0.	0.	989.	1.	0.	5659.
00900 COAL	0.	0.	0.	1859.	50.	0.	403.
01000 CRUDE MINERAL OILS	0.	0.	0.	3632.	0.	0.	4146.
01100 NATURAL GAS	0.	0.	0.	140.	9.	0.	415.
01200 NON-METALS & MINERALS	0.	0.	0.	1908.	11.	1.	3658.
01300 SERVICES, INCIDENTAL TO MINING	0.	0.	0.	6.	0.	0.	618.
01400 MEAT PRODUCTS	0.	0.	0.	89.	3.	0.	1144.
01500 FISH PRODUCTS	0.	0.	0.	29.	2.	0.	146.
01600 DAIRY PRODUCTS	0.	0.	0.	19.	2.	0.	580.
01700 FRUITS & VEGETABLES PREPARATIONS	0.	0.	0.	59.	4.	0.	154.
01800 APPLES	0.	0.	0.	47.	0.	0.	635.
01900 FLOUR, SEMI-FINISHED & OTHER CEREALS	0.	0.	0.	7.	1.	0.	128.
02000 WHOLESALE GENERAL & BAKERY SUPPL.	0.	0.	0.	3.	0.	0.	219.
02100 SUGAR	0.	0.	0.	1.	0.	0.	72.
02200 MISCELL. FOOD PRODUCTS	0.	0.	0.	184.	10.	0.	457.
02300 OTHER DRINKS	0.	0.	0.	2.	0.	0.	84.
02400 ALCOHOLIC BEVERAGES	0.	0.	0.	70.	37.	0.	270.
02500 TOBACCO UNDERESSED UNMANUFACTURED	0.	0.	0.	1.	0.	0.	11.
02600 CIGARETTES & TOBACCO MFG.	0.	0.	0.	0.	0.	0.	0.
02700 TILES & TUBES	0.	0.	0.	157.	32.	0.	2229.
02800 OTHER CERAMIC PRODUCTS	0.	0.	0.	907.	95.	0.	1911.
02900 LEATHER & LEATHER PRODUCTS	0.	0.	0.	37.	5.	0.	182.
03000 PLASTIC FABRICATED PRODUCTS	0.	0.	0.	1924.	209.	0.	5241.
03100 YARNS & MAN MADE FIBRES	0.	0.	0.	1004.	79.	0.	2336.
03200 FABRICS	0.	0.	0.	1803.	308.	0.	2645.
03300 OTHER TEXTILE PRODUCTS	0.	0.	0.	1355.	240.	0.	7074.
03400 HOSIERY, UNDERWEAR & SLEEPWEAR	0.	0.	0.	0.	0.	0.	0.
03500 CLOTHING	0.	0.	0.	12.	2.	0.	374.
03600 LUMBER & TIMBER	0.	0.	0.	5753.	40.	16.	40644.
03700 VENEER & PLYWOOD	0.	0.	0.	5864.	710.	0.	39307.
03800 OTHER WOOD FABRICATED MATERIALS	0.	0.	0.	2890.	306.	1.	76525.
03900 FURNITURE & FIXTURES	0.	0.	0.	29.	6.	0.	313.
04000 TELEVISION, RADIOS, RECORDERS, TRANSISTORS	0.	0.	0.	0.	0.	0.	15581.
04100 OTHER ELECTRONIC EQUIPMENT	0.	0.	0.	64.	0.	0.	747.
04200 TELEPHONE & OTHER WIRELESS	0.	0.	0.	1317.	161.	0.	16131.
04300 RADIO EQUIPMENT	0.	0.	0.	2007.	256.	0.	12418.
04400 REFRIGERATORS, FREEZERS, AIR CONDITIONERS	0.	0.	0.	459.	34.	2.	4901.
04500 TELEVISION, RADIOS, RECORDERS, TRANSISTORS	0.	0.	0.	0.	0.	1.	3024.
04600 TELEVISION, RADIOS, RECORDERS, TRANSISTORS	0.	0.	0.	0.	0.	0.	32355.
04700 TELEVISION, RADIOS, RECORDERS, TRANSISTORS	0.	0.	0.	7116.	697.	0.	25860.
04800 ALUMINUM PRODUCTS	0.	0.	0.	1754.	74.	0.	4857.
04900 COPPER & OTHER ALLOY PRODUCTS	0.	0.	0.	1117.	188.	0.	18322.
05000 OTHER METAL PRODUCTS	0.	0.	0.	2506.	17.	0.	384.

1-3 MODEL COMMODITY (12C/1077A)-PERIOD	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
04500 OTHER NON-FERROUS METAL PRODUCTS	0.	0.	0.	2622.	70.	0.	5582.
04600 METALS, PLATES & SHEETS	0.	0.	0.	1256.	187.	0.	13897.
04700 FABRICATED STRUCTURAL METAL PROD.	0.	0.	0.	2571.	260.	0.	27399.
04800 OTHER METAL FABRICATED PRODUCTS	0.	0.	0.	13428.	1764.	25.	60689.
04900 AGRICULTURAL MACHINERY	0.	0.	0.	133.	0.	0.	56.
05400 OTHER INDUSTRIAL MACHINERY	0.	0.	0.	7564.	648.	0.	9114.
05500 MOTOR VEHICLES	0.	0.	0.	24.	2.	0.	133.
05600 MOTOR VEHICLE PARTS	0.	0.	0.	3664.	67.	0.	2258.
05700 OTHER TRANSPORT EQUIPMENT	0.	0.	0.	551.	27.	0.	865.
05800 APPLIANCES, E. HOUSEHOLDERS, HOUSEHOLD	0.	0.	0.	1114.	169.	0.	3582.
05900 OTHER ELECTRICAL PRODUCTS	0.	0.	0.	5414.	819.	0.	16651.
06000 CEMENT & CEMENT PRODUCTS	0.	0.	0.	159.	6.	0.	32474.
06100 OTHER NON-METALLIC MINERAL PROD.	0.	0.	0.	12561.	874.	0.	40225.
06200 GASOLINE & FUEL OIL	0.	0.	0.	874.	40.	3.	8138.
06300 OTHER PETROLEUM & COAL PROD.	0.	0.	0.	1132.	41.	0.	4729.
06400 INDUSTRIAL CHEMICALS	0.	0.	0.	4826.	244.	1.	5304.
06500 FERTILIZERS	0.	0.	0.	35.	0.	0.	151.
06600 PHARMACEUTICALS	0.	0.	0.	47.	5.	0.	200.
06700 OTHER CHEMICAL PRODUCTS	0.	0.	0.	2477.	278.	0.	12825.
06800 SCIENTIFIC EQUIPMENT	0.	0.	0.	1572.	165.	0.	1346.
06900 OTHER MANUFACTURED PRODUCTS	0.	0.	0.	224.	24.	1.	622.
07000 RESIDENTIAL CONSTRUCTION	100000.	0.	100000.	0.	0.	0.	100000.
07100 NON-RESIDENTIAL CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
07200 REPAIR CONSTRUCTION	0.	0.	0.	0.	0.	0.	6932.
07300 PIPELINE TRANSPORTATION	0.	0.	0.	250.	0.	0.	1520.
07400 TRANSPORTATION & STORAGE	0.	0.	0.	938.	0.	112.	44782.
07500 RADIO & TELEVISION BROADCASTING	0.	0.	0.	38.	0.	0.	1465.
07600 TELEPHONE & TELEGRAPH	0.	0.	0.	0.	0.	0.	6142.
07700 POSTAL SERVICES	0.	0.	0.	27.	0.	0.	1546.
07800 ELECTRIC POWER	0.	0.	0.	53.	0.	7.	6453.
07900 OTHER UTILITIES	0.	0.	0.	0.	0.	308.	1446.
08000 WHOLESALE MARGINS	0.	0.	0.	226.	0.	0.	62174.
08100 RETAIL MARGINS	0.	0.	0.	0.	0.	0.	17700.
08200 TRANSPORTATION MARGINS	0.	0.	0.	0.	0.	0.	30377.
08300 IMPLIED RENT, OWNERS OCC. DWELL.	0.	0.	0.	0.	0.	0.	0.
08400 OTHER FINANCIALS, INS., REAL ESTATE	0.	0.	0.	765.	0.	58.	25135.
08500 BUSINESS SERVICES	0.	0.	0.	2466.	0.	144.	15410.
08600 EDUCATION SERVICES	0.	0.	0.	0.	0.	0.	0.
08700 HEALTH SERVICES	0.	0.	0.	0.	0.	0.	4.
08800 HOUSING & MAINTENANCE SERVICES	0.	0.	0.	0.	0.	27.	162.
08900 RECREATION & FOOD SERVICES	0.	0.	0.	0.	0.	17.	4037.
09000 OTHER PERSONAL & HOUSE SERVICES	0.	0.	0.	121.	0.	65.	1810.
09100 OPERATING, SERVICE, LAB. & FOOD	0.	0.	0.	0.	0.	0.	4764.
09200 TRAVEL, ADVERTISING & PROMOTION	0.	0.	0.	0.	0.	0.	2521.
09300 OTHER BUSINESS SERVICES	0.	0.	0.	801.	0.	0.	0.
09400 UNALLOCATED IMPORTS & EXPORTS	0.	0.	0.	3747.	0.	0.	0.
09500 INCOME TAXES	0.	0.	0.	0.	0.	0.	0.
09600 SUBSIDIES	0.	0.	0.	0.	0.	0.	0.
09700 WAGES & SALARIES	0.	0.	0.	0.	0.	0.	0.
09800 SUPPLEMENTARY SOCIAL SECURITY	0.	0.	0.	0.	0.	0.	0.

I-D MODEL COMMODITY (1972/10/74) - MEDIUM	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
0990 NET INCOME, UNINC. BUSINESS	0.	0.	0.	0.	0.	0.	0.
10010 HOUSEHOLD INVESTMENT INCOME	0.	0.	0.	0.	0.	0.	0.
10020 DEPLETION & MINING WRITE-OFFS	0.	0.	0.	0.	0.	0.	0.
10030 CAPITAL COST SURPLUS	0.	0.	0.	0.	0.	0.	0.
10040 OTHER SURPLUS	0.	0.	0.	0.	0.	0.	0.
10100 TOTAL	1000000.	0.	1000000.	120451.	9288.	1965.	1459555.

1-0 MODEL INDUSTRIES 12/10/751-PETUM

	DOMESTIC FINAL DEMAND	TOTAL DOMESTIC OUTPUT	INDIRECT TAXES LESS SUBSIDIES	SALARIES & WAGES @ S.L.L.	NET INCOME UNINCORP BUSINESS	SURPLUS	GROSS DOM PRODUCT @ FACTOR COST
1 AGRICULTURE	0.	4230.	7.	245.	1760.	147.	2653.4
2 FISHING	0.	31822.	1472.	12043.	613.	2910.	15459.0
3 FISHING, FUR, & TRAPPING	0.	122.	7.	27.	34.	1.	72.4
4 METAL MINES	0.	6654.	91.	1636.	4.	31.	4648.7
5 NON-METAL MINES	0.	9353.	-13.	836.	1.	257.	3415.6
6 NON-METAL MINES & QUARTZ	0.	3783.	95.	1019.	78.	1105.	2203.1
7 LUMBER & WOOD PRODUCTS	0.	621.	7.	251.	7.	57.	389.4
8 LUMBER & WOOD PRODUCTS INDUSTRIES	0.	6680.	47.	940.	27.	671.	1675.6
9 PAPER & ALUMINUM PRODUCTS IND.	0.	49.	0.	7.	0.	0.	14.6
10 PAPER & ALUMINUM PRODUCTS	0.	11256.	47.	3056.	7.	177.	4620.2
11 TEXTILE INDUSTRIES	0.	288.	1.	6.	1.	1.	111.4
12 TEXTILE INDUSTRIES	0.	12081.	7.	64.	1.	1.	111.4
13 PRINTING & PUBLISHING	0.	12081.	7.	64.	1.	1.	111.4
14 PRINTING & PUBLISHING	0.	12081.	7.	64.	1.	1.	111.4
15 PRINTING & PUBLISHING	0.	12081.	7.	64.	1.	1.	111.4
16 PRINTING & PUBLISHING	0.	12081.	7.	64.	1.	1.	111.4
17 FOOD INDUSTRIES	0.	403.	0.	100.	1.	60.	140.8
18 FOOD INDUSTRIES	0.	438.	0.	135.	2.	79.	165.0
19 FOOD INDUSTRIES	0.	146366.	1178.	41945.	823.	13170.	55930.6
20 FURNITURE & FURNITURE INDUSTRIES	0.	6114.	51.	2055.	88.	571.	2652.8
21 PAPER & ALLIED INDUSTRIES	0.	43421.	500.	7208.	4.	6674.	11885.4
22 PRINTING & PUBLISHING	0.	7664.	85.	3084.	131.	861.	4099.7
23 PRIMARY METAL INDUSTRIES	0.	90729.	496.	11717.	19.	719.	19434.1
24 METAL FABRICATING INDUSTRIES	0.	94558.	837.	28355.	209.	10774.	39342.5
25 METAL INDUSTRIES	0.	13635.	94.	3935.	4.	1895.	5830.7
26 TRANSPORTATION EQUIPMENT IND.	0.	9111.	81.	2508.	3.	71.	3243.0
27 ELECTRIC & ELECTRONICS INDUSTRIES	0.	27524.	215.	7545.	7.	2460.	10532.1
28 NON-METALIC GENERAL PROD. IND.	0.	72273.	1184.	19275.	104.	1573.	34763.0
29 CHEMICAL & CHEMICAL PROD. IND.	0.	12321.	94.	803.	7.	471.	1663.2
30 CHEMICAL & CHEMICAL PROD. IND.	0.	22187.	317.	4760.	3.	34.	8705.7
31 CHEMICAL & CHEMICAL PROD. IND.	0.	5441.	54.	1877.	51.	913.	2165.8
32 CHEMICAL & CHEMICAL PROD. IND.	0.	5441.	54.	1877.	51.	913.	2165.8
33 CHEMICAL & CHEMICAL PROD. IND.	0.	5441.	54.	1877.	51.	913.	2165.8
34 CHEMICAL & CHEMICAL PROD. IND.	0.	5441.	54.	1877.	51.	913.	2165.8
35 CONSTRUCTION INDUSTRY	1000000.	1007673.	65968.	286783.	79739.	44711.	407240.1
36 TRANSPORTATION & STORAGE	0.	46686.	471.	18644.	1345.	6870.	29858.6
37 COMMUNICATION	0.	9654.	-545.	4475.	0.	3275.	7754.4
38 ELECTRIC, GAS, & OTHER UTILITIES	0.	7718.	216.	1715.	0.	471.	6236.5
39 WHOLESALE TRADE	0.	78976.	1919.	33712.	4173.	1478.	52266.8
40 RETAIL TRADE	0.	22190.	616.	9196.	2180.	211.	14169.4
41 OWNER OCCUPIED DWELLINGS	0.	0.	0.	0.	0.	0.	0.0
42 OTHER FINANCE, INS. & REAL ESTATE	0.	27819.	2780.	6768.	1849.	978.	18270.1
43 FINANCE & REAL ESTATE SERVICES	0.	0.	0.	1.	4.	0.	4.8
44 AMUSEMENT, RECREATION SERVICES	0.	573.	25.	131.	44.	74.	254.3
45 SERVICES TO BUSINESS MANAGEMENT	0.	17960.	170.	7246.	4713.	2125.	14147.7
46 ACCOMMODATION & FOOD SERVICES	0.	4839.	153.	1560.	519.	0.	2707.2
47 OTHER PERSONAL & MISC SERVICES	0.	1214.	26.	465.	281.	113.	859.4
48 TRANSPORTATION MARGINS	0.	30370.	0.	0.	0.	0.	0.0
49 OPERATING MARGINS, LAB & FOOD	0.	47469.	327.	0.	0.	0.	0.0
50 TRAVEL & ADVERTISING, PROMOTION	0.	21501.	1457.	0.	0.	0.	0.0
INDUSTRY TOTAL	1000000.	1959552.	83186.	529039.	94857.	17000.	754349.5

INDUSTRY	WAGES & SALARIES	SUPPLEMENT LAYOFF INCOME	PAID WORKERS ADJ O/A CONSTR	OTHER THAN PAID WORKERS	TOTAL EMPLOYMENT
1 AGRICULTURE	744.	1.	0.1	0.4	0.5
2 FORESTRY	11459.	586.	2.1	0.7	2.3
3 FISHING, HUNTING & TRAPPING	27.	1.	0.0	0.0	0.0
4 METAL MINES	1917.	119.	0.2	0.0	0.2
5 MINERAL FUJLS	752.	43.	0.1	0.0	0.1
6 NON-METAL MINES & QUARRIES	969.	50.	0.2	0.0	0.2
7 SERVICES INCIDENTAL TO MINING	277.	14.	0.0	0.0	0.0
8 FOOD & BEVERAGE INDUSTRIES	889.	51.	0.2	0.0	0.2
9 TOBACCO PRODUCTS INDUSTRIES	7.	0.	0.0	0.0	0.0
10 PAPER & PLASTICS PRODUCTS IND.	2923.	133.	0.6	0.0	0.6
11 LEATHER INDUSTRIES	51.	5.	0.0	0.0	0.0
12 TEXTILE INDUSTRIES	2865.	148.	0.6	0.0	0.6
13 KNITTING MILLS	56.	4.	0.0	0.0	0.0
14 CLOTHING INDUSTRIES	131.	4.	0.0	0.0	0.0
15 WOOD INDUSTRIES	39713.	2232.	8.3	0.2	8.5
16 FURNITURE & FIXTURE INDUSTRIES	1920.	96.	0.4	0.0	0.5
17 PAPER & ALLIED INDUSTRIES	6852.	356.	1.1	0.0	1.1
18 PRINTING & PUBLISHING	2556.	127.	0.5	0.0	0.5
19 PRIMARY METAL INDUSTRIES	11115.	602.	1.8	0.0	1.8
20 METAL FABRICATING INDUSTRIES	26627.	1728.	4.7	0.0	4.7
21 MACHINERY INDUSTRIES	3767.	169.	0.6	0.0	0.6
22 TRANSPORTATION EQUIPMENT INC.	2320.	189.	0.4	0.0	0.4
23 ELECTRICAL PRODUCTS INDUSTRIES	7157.	388.	1.3	0.0	1.3
24 NON-METALLIC MINERAL PROD. IND.	18173.	1103.	3.2	0.0	3.2
25 PETROLEUM & COAL PRODUCTS IND.	716.	80.	0.1	0.0	0.1
26 CHEMICAL & CHEMICAL PROD. IND.	4525.	234.	0.7	0.0	0.7
27 MISC MANUFACTURING INDUSTRIES	1778.	99.	0.4	0.0	0.4
28 CONSTRUCTION INDUSTRY	270837.	15946.	42.8	4.9	47.7
29 TRANSPORTATION & STORAGE	18871.	1773.	3.2	0.2	3.4
30 COMMUNICATION	4087.	392.	0.9	0.1	0.9
31 ELEC POWER, GAS, OTHER UTILITIES	1581.	134.	0.2	0.0	0.2
32 WHOLESALE TRADE	32430.	1282.	6.2	1.2	7.4
33 RETAIL TRADE	8841.	355.	2.3	0.4	2.7
34 OWNER OCCUPIED DWELLINGS	0.	0.	0.0	0.0	0.0
35 OTHER FINANCE, INS. & REAL ESTATE	6360.	408.	1.1	0.1	1.1
36 EDUCATION & HEALTH SERVICES	1.	0.	0.0	0.0	0.0
37 AMUSEMENT & RECREATION SERVICES	127.	4.	0.1	0.0	0.1
38 SERVICES TO BUSINESS MANAGEMENT	7044.	202.	2.1	0.5	2.6
39 ACCOMMODATION & FOOD SERVICES	1546.	44.	0.4	0.1	0.5
40 OTHER PERSONAL & MISC SERVICES	452.	13.	0.1	0.0	0.2
41 TRANSPORTATION MARGINS	0.	0.	0.0	0.0	0.0
42 OPERATING, OFFICE, LAB & FOOD	0.	0.	0.0	0.0	0.0
43 TRAVEL & ADVERTISING, PROTECTION	0.	0.	0.0	0.0	0.0
INDUSTRY TOTAL	499918.	29121.	87.2	8.5	95.7

SECTION C: INC. EXPDY. ACC'T (DOMESTIC)

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE	914869.	WAGES, SALARIES, S.L.I.	857448.
CAPITAL EXPENDITURE M&E	0.	NET INCOME OF UNINCORP. BUS.	196093.
CAPITAL EXPENDITURE CONSTR.	1000000.	SURPLUS	376074.
INVENTORIES	0.	G.D.P. AT FACTOR COST	1429815.
GOV'T CURRENT EXPENDITURE	0.	TAXES & DUTIES LESS SUBSIDIES	232321.
EXPORTS	0.		
IMPORTS LESS DUTIES	-237139.		
GOV'T. REVENUE FROM PRODUCTION	-15769.		
TOTAL	1661960.		1661936.

SECTION D: HOUSEHOLD ACCOUNT

EXPENDITURE		INCOME	
CONSUMER EXPENDITURE ON G&S	914869.	WAGES & SALARIES	812380.
PERSONAL INCOME TAXES	96611.	SUPPL. LABOUR INCOME	45064.
PERSONAL SAVINGS	68788.	NET INCOME OF UNINCORP. BUS.	196092.
OTHER TRANSFERS TO GOV'T	56684.	INVESTMENT INCOME	92054.
OTHER TRANSFERS	8639.	TRANSFERS	0.
TOTAL	1145590.		1145586.

SECTION E: GOVERNMENT REVENUE

REVENUE	
COMMODITY TAXES	154061.
NON-COMMODITY TAXES	72222.
GOV'T GOODS & SERVICES	15769.
RESOURCE TAXES	5184.
IMPORT DUTIES	18926.
PERSONAL INCOME TAXES	96611.
CORPORATION TAXES	57674.
SUBSIDIES	-12887.
OTHER TRANSFERS FROM HHDS.	56684.
TOTAL	464243.

SECTION F: BUSINESS SECTOR ACCOUNT

REVENUE		EXPENDITURE	
CROSS PRODUCTION	298566.	INTERMEDIATE GOODS & SERVICES	1442934.
SUBSIDIES	12887.	INDIRECT TAXES	151386.
		WAGES, SALARIES & S.L.I.	833650.
		NET INCOME OF UNINCORP. BUS.	196093.
		INT. & DIV. PAID TO PERSONS	92054.
		DEPLETION & MINING W.-D.	7407.
		CAPITAL COST ALLOWANCE	149048.
		OTHER SURPLUS	125981.
TOTAL	2998553.		2998553.

I-O MODEL COMMODITY (SIC/10/79)-PRIMUM	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
00100 GRAINS	0.	0.	0.	709.	30.	2.	5667.
00200 LIVE ANIMALS	0.	0.	0.	341.	15.	12.	34353.
00300 OTHER AGRICULTURAL PRODUCTS	0.	0.	0.	6855.	240.	116.	30546.
00400 FISH LANDINGS	0.	0.	0.	225.	6.	2.	2616.
00500 HUNTING & TRAPPING PRODUCTS	0.	0.	0.	335.	0.	0.	0.
00600 FORESTRY PRODUCTS	0.	0.	0.	1356.	0.	0.	36494.
00700 IRON ORES & CONCENTRATES	0.	0.	0.	1023.	0.	0.	1409.
00800 OTHER METAL ORES & CONCENTRATES	0.	0.	0.	1237.	1.	0.	7004.
00900 COAL	0.	0.	0.	3253.	87.	0.	703.
01000 CRUDE MINERAL OILS	0.	0.	0.	9806.	0.	0.	11846.
01100 NATURAL GAS	0.	0.	0.	495.	33.	0.	1471.
01200 NON-METALLIC MINERALS	0.	0.	0.	2402.	15.	1.	4482.
01300 SERVICES INCIDENTAL TO MINING	0.	0.	0.	0.	0.	0.	1046.
01400 MEAT PRODUCTS	0.	0.	0.	2417.	105.	0.	51352.
01500 FISH PRODUCTS	0.	0.	0.	451.	49.	0.	3057.
01600 DAIRY PRODUCTS	0.	0.	0.	572.	90.	0.	26561.
01700 FRUITS & VEGETABLES PREPARATIONS	0.	0.	0.	2942.	238.	0.	10946.
01800 FEEDS	0.	0.	0.	474.	5.	0.	6476.
01900 FLOUR, WHEAT, MEAL & OTHER CEREALS	0.	0.	0.	227.	18.	0.	3409.
02000 BREAKFAST CEREAL & BAKERY PROD.	0.	0.	0.	229.	25.	0.	15165.
02100 SUGAR	0.	0.	0.	24.	7.	0.	2487.
02200 MISC. FOOD PRODUCTS	0.	0.	0.	3241.	186.	0.	17228.
02300 SOFT DRINKS	0.	0.	0.	60.	6.	0.	6139.
02400 ALCOHOLIC BEVERAGES	0.	0.	0.	204.	979.	0.	10316.
02500 TOBACCO PROCESSED UNMANUFACTURED	0.	0.	0.	113.	15.	0.	2216.
02600 CIGARETTES & TOBACCO PFG.	0.	0.	0.	160.	64.	0.	7254.
02700 TIRES & TUBES	0.	0.	0.	473.	77.	0.	5251.
02800 OTHER RUBBER PRODUCTS	0.	0.	0.	1950.	234.	0.	4407.
02900 LEATHER & LEATHER PRODUCTS	0.	0.	0.	1727.	253.	0.	5569.
03000 PLASTIC FABRICATED PRODUCTS	0.	0.	0.	2943.	294.	0.	6365.
03100 YARNS & MAN MADE FIBRES	0.	0.	0.	3413.	297.	0.	6254.
03200 FABRICS	0.	0.	0.	7907.	1438.	0.	13285.
03300 OTHER TEXTILE PRODUCTS	0.	0.	0.	3233.	488.	1.	16305.
03400 HOSIERY, UNDERWEAR & SLEEPWEAR	0.	0.	0.	204.	40.	0.	4346.
03500 CLOTHING	0.	0.	0.	3040.	607.	7.	29454.
03600 LUMBER & TIMBER	0.	0.	0.	5631.	42.	17.	42230.
03700 VENEER & PLYWOOD	0.	0.	0.	6024.	767.	0.	40242.
03800 OTHER WOOD FABRICATED MATERIALS	0.	0.	0.	3061.	315.	0.	79137.
03900 FURNITURE & FIXTURES	0.	0.	0.	808.	141.	0.	4953.
04010 PULP/PAPER DUMMY/INTRA-TRANSFERS	0.	0.	0.	0.	0.	0.	25941.
04020 PULP	0.	0.	0.	130.	0.	0.	1512.
04100 NEWSPRINT & OTHER PAPER STOCK	0.	0.	0.	2065.	259.	0.	25464.
04200 PAPER PRODUCTS	0.	0.	0.	3770.	507.	0.	26104.
04300 PRINTING & PUBLISHING	0.	0.	0.	4098.	167.	52.	18267.
04400 ADVERTISING, PRINT MEDIA	0.	0.	0.	0.	0.	3.	8701.
04510 IRON/STEEL DUMMY/INTRA-TRANSFERS	0.	0.	0.	0.	0.	0.	41263.
04520 IRON & STEEL PRODUCTS	0.	0.	0.	8245.	757.	0.	36242.
04600 ALUMINUM PRODUCTS	0.	0.	0.	2256.	54.	0.	6082.
04700 COPPER & COPPER ALLOY PRODUCTS	0.	0.	0.	1224.	109.	0.	20833.
04800 NICKEL PRODUCTS	0.	0.	0.	848.	21.	0.	467.

T-C MODEL COMMODITIES 120/10/791-PEDIUM

	TOTAL FINAL DEMAND	DIRECT IMPORTS	DOMESTIC FINAL DEMAND	TOTAL IMPORTS	IMPORT DUTIES	TOTAL GOVERNMENT REVENUES	TOTAL DOMESTIC OUTPUT
09900 NET INCOME, UNINC. BUSINESS	0.	0.	0.	0.	0.	0.	196092.
10010 HOUSEHOLD INVESTMENT INCOME	0.	0.	0.	0.	0.	0.	92054.
10020 DEPLETION & MINING WRITE-OFFS	0.	0.	0.	0.	0.	0.	0.
10030 CAPITAL COST ALLOWANCE	0.	0.	0.	0.	0.	0.	0.
10040 OTHER SURPLUS	0.	0.	0.	0.	0.	0.	0.
10100 TOTAL	100000.	0.	100000.	256077.	18926.	15762.	4393062.

I-O MODEL INDUSTRIES (20/10/75)-MEDIUM-	DOMESTIC FINAL DEMAND	TOTAL DOMESTIC OUTPUT	INDIRECT TAXES LESS SUBSIDIES	SALARIES & WAGES + S.L.L.	NET INCOME UNINCORP BUSINESS	SURPLUS	GROSS DOM PRODUCT @ FACTOR CST
1 AGRICULTURE	0.	71849.	28.	4169.	29901.	10997.	45067.4
2 FORESTRY	0.	36390.	1664.	13772.	701.	3205.	17676.0
3 FISHING, HUNTING, & TRAPPING	0.	1635.	21.	364.	449.	156.	969.1
4 METAL MINES	0.	8565.	81.	2136.	5.	3740.	5881.6
5 MINERAL FUELS	0.	15128.	256.	1970.	2.	7498.	9428.9
6 NON-METAL MINES & QUARRIES	0.	4955.	127.	1301.	89.	1931.	2920.9
7 SERVICES INCIDENTAL TO MINING	0.	1096.	9.	455.	10.	158.	662.7
8 FOOD & BEVERAGE INDUSTRIES	0.	191296.	1274.	24279.	490.	15119.	39886.8
9 TOBACCO PRODUCTS INDUSTRIES	0.	9549.	86.	1357.	0.	1522.	2879.3
10 RUBBER & PLASTICS PRODUCTS IND.	0.	21383.	185.	5905.	12.	3274.	9181.2
11 LEATHER INDUSTRIES	0.	8657.	69.	2922.	19.	322.	3262.0
12 TEXTILE INDUSTRIES	0.	35373.	301.	8869.	54.	3765.	12626.6
13 KNITTING MILLS	0.	7771.	64.	2062.	13.	769.	2834.6
14 CLOTHING INDUSTRIES	0.	27178.	114.	8377.	190.	1720.	10264.6
15 WOOD INDUSTRIES	0.	152064.	1226.	43633.	857.	13638.	58128.3
16 FURNITURE & FIXTURE INDUSTRIES	0.	15650.	131.	5244.	218.	1400.	8861.3
17 PAPER & ALLIED INDUSTRIES	0.	81246.	909.	13339.	14.	8261.	21614.0
18 PRINTING & PUBLISHING	0.	27666.	307.	11114.	473.	3167.	14783.5
19 PRIMARY METAL INDUSTRIES	0.	111449.	599.	14152.	20.	9476.	23648.0
20 METAL FABRICATING INDUSTRIES	0.	110188.	956.	32671.	251.	12633.	45854.9
21 MACHINERY INDUSTRIES	0.	19537.	131.	5627.	10.	2899.	8536.1
22 TRANSPORTATION EQUIPMENT INC.	0.	46589.	365.	9419.	17.	3768.	13204.7
23 ELECTRICAL PRODUCTS INDUSTRIES	0.	45596.	351.	12318.	10.	4802.	17130.5
24 NON-METALLIC MINERAL PROD. IND.	0.	77277.	1264.	20843.	116.	16276.	37236.2
25 PETROLEUM & COAL PRODUCTS IND.	0.	34820.	258.	2225.	0.	1758.	4023.6
26 CHEMICAL & CHEMICAL PROD. IND.	0.	49677.	674.	10551.	17.	8388.	16955.9
27 MISC MANUFACTURING INDUSTRIES	0.	15329.	145.	5127.	126.	2097.	7350.6
28 CONSTRUCTION INDUSTRY	100000.	1033437.	67166.	300400.	76709.	45721.	422829.4
29 TRANSPORTATION & STORAGE	0.	102240.	1481.	40941.	2919.	22367.	66227.8
30 COMMUNICATION	0.	38034.	-1236.	17283.	0.	13069.	30352.3
31 ELECT. POWER, GAS, OTHER UTILITIES	0.	31437.	947.	6984.	0.	18278.	25261.7
32 WHOLESALE TRADE	0.	126119.	2426.	53636.	6664.	22967.	83467.0
33 RETAIL TRADE	0.	153856.	4274.	63761.	15167.	19316.	58243.7
34 OWNER OCCUPIED DWELLINGS	0.	84040.	21955.	0.	16812.	33635.	50446.7
35 OTHER FINANCE, INS. & REAL ESTATE	0.	146190.	16491.	38008.	10993.	61149.	90131.2
36 EDUCATION & HEALTH SERVICES	0.	24483.	364.	4832.	12190.	785.	17807.4
37 AMUSEMENT & RECREATION SERVICES	0.	10137.	436.	2347.	804.	1378.	4529.7
38 SERVICES TO BUSINESS MANAGEMENT	0.	37267.	367.	15082.	9307.	4781.	25165.6
39 ACCOMMODATION & FOOD SERVICES	0.	54663.	1782.	17965.	5860.	6710.	30585.1
40 OTHER PERSONAL & MISC SERVICES	0.	22443.	694.	7670.	4841.	1975.	14286.0
41 TRANSPORTATION MARGINS	0.	50764.	0.	0.	0.	0.	0.0
42 OPERATING, OFFICE, LAB & FOOD	0.	51487.	477.	0.	0.	0.	0.0
43 TRAVEL & ADVERTISING, PROMOTION	0.	52549.	3247.	0.	0.	0.	0.0
44 HOUSEHOLD INDUSTRY	0.	1145541.	74477.	23746.	0.	1564.	25381.6
INDUSTRY TOTAL	100000.	4393060.	213365.	857448.	194093.	376074.	1429614.0

I-II MODEL	INDUSTRIES (1970/10/75)-PERIUM-	WAGES & SALARIES	SUPPLEMENT LABOUR INCOME	PAID WORKERS ADJ O/A CONSTR	OTHER TEAM PAID WORKERS	TOTAL EMPLOYMENT
1	AGRICULTURE	4148.	21.	1.4	6.7	8.2
2	FORESTRY	13104.	668.	2.4	0.2	2.7
3	FISHING, HUNTING & TRAPPING	355.	0.	0.1	0.2	0.2
4	METAL MINES	1982.	154.	0.3	0.0	0.3
5	MINERAL FUELS	1070.	100.	0.3	0.0	0.3
6	NON-METAL MINES & QUARRIES	1224.	67.	0.2	0.0	0.2
7	SERVICES INCIDENTAL TO MINING	471.	24.	0.1	0.0	0.1
8	FOOD & BEVERAGE INDUSTRIES	22982.	1296.	4.8	0.1	4.9
9	TOBACCO PRODUCTS INDUSTRIES	1288.	69.	0.2	0.0	0.2
10	RUBBER & PLASTICS PRODUCTS IND.	5647.	258.	1.1	0.0	1.1
11	LEATHER INDUSTRIES	2781.	141.	0.8	0.0	0.8
12	TEXTILE INDUSTRIES	8421.	448.	1.9	0.0	1.9
13	KNITTING MILLS	1979.	83.	0.6	0.0	0.6
14	CLOTHING INDUSTRIES	8117.	259.	2.3	0.0	2.3
15	WOOD INDUSTRIES	41314.	2319.	8.7	0.2	8.9
16	FURNITURE & FIXTURE INDUSTRIES	4999.	245.	1.1	0.0	1.2
17	PAPER & ALLIED INDUSTRIES	12620.	690.	2.1	0.0	2.1
18	PRINTING & PUBLISHING	10655.	459.	1.8	0.0	1.9
19	PRIMARY METAL INDUSTRIES	13430.	722.	2.2	0.0	2.2
20	METAL FABRICATING INDUSTRIES	30910.	2061.	5.5	0.0	5.5
21	MACHINERY INDUSTRIES	5382.	245.	0.9	0.0	0.9
22	TRANSPORTATION EQUIPMENT IND.	8770.	649.	1.3	0.0	1.3
23	ELECTRICAL PRODUCTS INDUSTRIES	11650.	628.	2.2	0.0	2.2
24	NON-METALLIC MINERAL PRD. IND.	19660.	1184.	3.5	0.0	3.5
25	PETROLEUM & COAL PRODUCTS IND.	1980.	245.	0.3	0.0	0.3
26	CHEMICAL & CHEMICAL PRD. IND.	10020.	521.	1.6	0.0	1.6
27	MISC MANUFACTURING INDUSTRIES	4852.	274.	1.0	0.0	1.0
28	CONSTRUCTION INDUSTRY	283919.	16421.	44.8	5.2	50.0
29	TRANSPORTATION & STORAGE	37233.	3708.	7.9	0.5	8.4
30	COMMUNICATION	15741.	1543.	3.4	0.2	3.6
31	ELEC POWER, GAS, OTHER UTILITIES	8438.	546.	1.1	0.0	1.1
32	WHOLESALE TRADE	51788.	2048.	10.0	1.9	11.8
33	RETAIL TRADE	61362.	2458.	15.6	2.9	18.6
34	OWNER OCCUPIED DWELLINGS	0.	0.	0.0	0.0	0.0
35	OTHER FINANCE, INS. & REAL ESTATE	35720.	2288.	6.1	0.4	6.5
36	EDUCATION & HEALTH SERVICES	4763.	129.	1.3	0.2	1.5
37	AMUSEMENT & RECREATION SERVICES	2282.	65.	0.9	0.2	1.2
38	SERVICES TO BUSINESS MANAGEMENT	14662.	420.	4.4	1.1	5.5
39	ACCOMMODATION & FOOD SERVICES	17465.	500.	4.8	1.2	6.1
40	OTHER PERSONAL & MISC SERVICES	7457.	213.	2.1	0.5	2.6
41	TRANSPORTATION MACHINS	0.	0.	0.0	0.0	0.0
42	OPERATING, OFFICE, LAB & FOOD	0.	0.	0.0	0.0	0.0
43	TRAVEL & ADVERTISING, PRODUCTION	0.	0.	0.0	0.0	0.0
44	HOUSEHOLD INDUSTRY	23758.	0.	4.7	0.0	4.7
	INDUSTRY TOTAL	813269.	44179.	155.6	22.1	177.7

COMMODITY CONCORDANCE: LINK TO MEDIUM

1 GRAINS

6	00600 RICE,UNMILLED	7	00700 WHEAT,UNMILLED
8	00800 GRAIN UNMILLED EXC WHEAT		

2 LIVE ANIMALS

1	00100 CATTLE AND CALVES	3	00300 HOGS
2	00200 SHEEP AND LAMES	4	00400 POULTRY
5	00500 OTHER LIVE ANIMALS		

3 OTHER AGRICULTURAL PRODUCTS

9	00900 MILK,WHOLE,FLUID,UNPROCESSED	16	01600 SEEDS EXC OIL AND SEED GRADES
10	01000 EGGS IN THE SHELL	17	01700 NURSERY STOCK,RELATED MATERIAL
11	01100 HONEY AND BEESWAX	18	01800 OIL SEEDS,NUTS AND KERNELS
12	01200 NUTS,EDIBLE,NOT SHELLED	19	01900 HOPS INC LUPULIN
13	01300 FRUITS,FRESH, EXC TROPICAL	20	02000 TOBACCO,RAW
14	01400 VEGETABLES,FRESH	21	02100 HIDE SKINS,RANCH,UNDRESSED
15	01500 HAY,FORAGE,AND STRAW	22	02200 WOOL IN GREASE
23	02300 SERVICES AGRICULTURE,FORESTRY		

4 FORESTRY PRODUCTS

24	02400 LOGS AND BOLTS	26	02600 PULPHOOD
25	02500 POLES,PIT PROPS,FENCE-POSTS ETC	27	02700 OTHER CRUDE WOOD MATERIALS
28	02800 CUSTOM FORESTRY		

5 FISH LANDINGS

29	02900 FISH LANDINGS
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6 HUNTING & TRAPPING PRODUCTS

30	03000 HUNTING AND TRAPPING PRODUCTS
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7 IRON ORES & CONCENTRATES

34	03400 IRON ORES AND CONCENTRATES
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COMMODITY CONCORDANCE: LINK TO MEDIUM

8 OTHER METAL. ORES & CONCENTRATES

31	03100 GOLD ORES	33	03300 RADIO-ACTIVE ORES,CONCENTRATES
32	03200 GOLD AND ALLOYS IN PRIMARY FORM	35	03500 BAUXITE AND ALUMINA
36	03600 METAL ORES AND CONCENTRATES NES		

9 COAL

37	03700 COAL	40	04000 CRUDE BITUMINOUS SUBSTANCES NES
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10 CRUDE MINERAL OILS

38	03800 CRUDE MINERAL OILS		
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11 NATURAL GAS

39	03900 NATURAL GAS		
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12 NON-METALLIC MINERALS

41	04100 SULPHUR,CRUDE AND REFINED	46	04600 CRUDE REFRACTORY MATERIALS NES
42	04200 ASBESTOS,UNMANUF.,CRUDE,FIBROUS	47	04700 NATURAL ABRASIVES,INC.DIAMONDS
43	04300 GYPSUM	48	04800 CRUDE NON-METALLIC MINERALS NES
44	04400 SALT	49	04900 SAND AND GRAVEL
45	04500 PEATMOSS	50	05000 STONE,CRUDE

13 SERVICES INCIDENTAL TO MINING

51	05100 SERVICES INCIDENTAL TO MINING		
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14 MEAT PRODUCTS

52	05200 MEAT EXC FOULTRY	59	05900 SAUSAGE CASINGS,NAT.,SYNTHETIC
53	05300 HORSE MEAT,FRESH,CHILLED,FRDZEN	60	06000 PRIMARY TANNAGE
54	05400 MEAT,CURED	61	06100 FEEDS OF ANIMAL ORIGIN NES
55	05500 MEAT PREP.,COOKED,NOT CANNED	62	06200 HIDES AND SKINS,RAW,NES
56	05600 MEAT PREPARATIONS,CANNED	63	06300 CRUDE ANIMAL PRODUCTS NES
57	05700 ANIMAL OILS AND FATS AND LARD	64	06400 CUSTOM WORK MEAT AND FOOD
58	05800 MARGARINE,SHORTENING	65	06500 POULTRY,FRESH,CHILLED,FROZEN
66	06600 POULTRY,CANNED		

COMMODITY CONCORDANCE: LINK TO MEDIUM

15 DAIRY PRODUCTS

67	06700 MILK,WHOLE,FLUID,PROCESSED	71	07100 MILK,EVAPORATED
68	06800 CREAM,FRESH	72	07200 ICE CREAM
69	06900 BUTTER	73	07300 OTHER DAIRY PRODUCTS
70	07000 CHEESE,INC PROCESS CHEESE	74	07400 MUSTARD,SALAD DRESSINGS,SPREADS

16 FISH PRODUCTS

75	07500 PROCESSED FISH AND FISH PRODUCTS
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17 FRUITS & VEGETABLES PREPARATIONS

76	07600 FRUITS,BERRIES,PROC.,NOT CANNED	80	08000 SOUPS,CANNED
77	07700 FRUITS AND PREPARATIONS,CANNED	81	08100 INFANT AND JUNIOR FOODS,CANNED
78	07800 VEGETABLES,PROCESSED,NOT CANNED	82	08200 PICKLES,RELISHES,OTHER SAUCES
79	07900 VEGETABLES,PREPARATIONS,CANNED	83	08300 VINEGAR
84	08400 OTHER FOOD PREPARATIONS		

18 FEEDS

85	08500 PRIMARY OR CONCENTRATED FEEDS	89	08900 FET FEEDS
86	08500 FEED FOR COMMERCIAL LIVESTOCK	100	10000 BEET PULP
87	08700 FEEDS, GRAIN ORIGIN, NES	103	10300 OILSEED,MEAL AND CAKE
88	08800 FEEDS OF VEGETABLE ORIGIN NES	118	11800 BREWERS' AND DISTILLERS' GRAINS

19 FLOUR,WHEAT,MEAL & OTHER CEREALS

90	09000 WHEAT FLOUR	91	09100 MEAL,FLOUR,GRAH,GRAIN FEEDS,NES
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20 BREAKFAST CEREAL & BAKERY PROD.

92	09200 BREAKFAST CEREAL PRODUCTS	94	09400 BREAD AND ROLLS
93	09300 BISCUIT PRODUCTS	95	09500 OTHER BAKERY PRODUCTS

21 SUGAR

101	10100 SUGAR,REFINED
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COMMODITY CONCORDANCE: LINK TO MEDIUM

22 MISC. FOOD PRODUCTS

96	09600 COCOA AND CHOCOLATE	107	10700 MAPLE SUGAR AND SYRUP
97	09700 NUTS AND SEEDS, EDIBLE, PROCESSED	108	10800 PREPARED CAKE AND SIMILAR MIXES
98	09800 CHOCOLATE CONFECTIONERY	109	10900 SOUPS, DRIED, SOUP MIXES AND BASES
99	09900 OTHER CONFECTIONERY	110	11000 COFFEE, ROASTED, GROUND, PREPARED
102	10200 MOLASSES, SUGAR REFINERY PRODUCTS	111	11100 TEA
104	10400 VEGETABLE OILS, FATS ETC REFINED	112	11200 POTATO CHIPS, SIMILAR PRODUCTS
106	10600 MALT, MALT FLOUR AND WHEAT STARCH	113	11300 FOOD PRODUCTS AND BYPRODUCTS NES

23 SOFT DRINKS

114	11400 CONCENTRATES FOR SOFT DRINKS	115	11500 CARBONATED BEVERAGES
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24 ALCOHOLIC BEVERAGES

116	11600 ALCOHOLIC BEVERAGES DISTILLED	119	11900 ALE, BEER, STOUT AND PORTER
120	12000 WINES		

25 TOBACCO PROCESSED UNMANUFACTURED

121	12100 TOBACCO, PROCESSED, UNMANUFACTURED		
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26 CIGARETTES & TOBACCO MFG.

122	12200 CIGARETTES	123	12300 TOBACCO, MANUF. EXC CIGARETTES
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27 TIRES & TUBES

125	12500 TIRES AND TUBES, PASSENGER CARS	127	12700 TIRES AND TUBES NES
126	12600 TIRES AND TUBES, TRUCKS AND BUSES	128	12800 SOLID TIRES, TIRE PRODUCTS NES

28 OTHER RUBBER PRODUCTS

124	12400 FOOTWEAR, RUBBER AND PLASTIC	131	13100 RUBBER FABRICATED MATERIALS NES
129	12900 RECLAIMED RUBBER	132	13200 HOSE AND TUBING, MAINLY RUBBER
130	13000 RUBBER BELTS AND COATED FABRICS	133	13300 RUBBER WASTE AND SCRAP
134	13400 RUBBER END PRODUCTS NES		

COMMODITY CONCORDANCE: LINK TO MEDIUM

29 PLASTIC FABRICATED PRODUCTS

135	13500 PLASTIC FILM,SHEET,BASIC SHAPES	137	13700 PREFAB. BLDGS AND STRUCTURES NES
136	13600 PLASTIC CONTAINERS,BOTTLE CAPS	138	13800 PLASTIC HOSE,END PRODUCTS NES

30 LEATHER & LEATHER PRODUCTS

139	13900 LEATHER	142	14200 LEATHER FABRICATED MATERIALS NES
140	14000 FOOTWEAR EXC RUBBER AND PLASTIC	143	14300 LUGGAGE
141	14100 LEATHER GLOVES,MITTENS EXC SPORT	144	14400 LEATHER PRODUCTS NES

31 YARNS & MAN MADE FIBRES

145	14500 YARN, COTTON	155	15500 POLYAMIDE RESINS (NYLON)
146	14600 YARNS,MIXED,ALL FIBRES	156	15600 YARNS,SYNTHETIC FIBRES AND SILK
151	15100 YARN OF WOOL AND HAIR	157	15700 TIRE YARNS
154	15400 MAN MADE FIBRES	161	16100 WOOL,FINE ANIMAL HAIR,SPINNING
164	16400 YARN,THREAD,VEGETABLE FIBRES NES		

32 FABRICS

147	14700 FABRICS, BROAD WOVEN OF COTTON	159	15900 FABRICS,WOVEN,SYNTHETIC,BLENDS
148	14800 TIRE CORD AND TIRE FABRICS	167	16700 NARROW FABRICS
152	15200 FABRICS,WOVEN,WOOL,WOOL MIXTURES	168	16800 LACE FABRICS,BOEBINET AND NET
153	15800 FABRICS,WOVEN,NON-WOVEN NES	181	18100 FABRICS,KNITTED,NETTED,ELASTIC
182	18200 FABRICS, KNITTED, NES		

33 OTHER TEXTILE PRODUCTS

149	14900 NETS AND NETTING	170	17000 FLOOR COVERINGS,TEXTILE
150	15000 BLANKETS,SHEETS,TOWELS,CLOTHS	171	17100 TEXTILE DYEING,FINISHING SERVICE
153	15300 PAPERMAKERS' FELTS	172	17200 AWNINGS, OF CLOTH AND PLASTIC
160	16000 COTTON WASTE;TEXTILE MATERIAL	173	17300 TENTS,HAMMOCKS,SLEEP BAGS,SAILS
162	16200 THREAD,OF COTTON FIBRES	174	17400 TARPAULINS AND OTHER COVERS
163	16300 THREAD, OF MAN-MADE FIBRES	175	17500 TEXTILE CONTAINERS
165	16500 BALER AND BINDER TWINE	176	17600 VEGETABLE TEXTILE FIBRES NES
166	16600 OTHER CORDAGE, TWINE AND ROPE	177	17700 TEXTILE FABRICATED MATERIALS NES
169	16900 FELTS EXC PAPERMAKERS' FELTS	178	17800 HOUSEHOLD TEXTILES NES
179	17900 TEXTILE END PRODUCTS NES		

COMMODITY CONCORDANCE: LINK TO MEDIUM

34 HOSIERY & KNITTED WEAR

180	18000 HOSIERY	183	18300 KNITTED WEAR
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35 CLOTHING & ACCESSORIES

184	18400 CLOTHING, WOVEN FABRICS	187	18700 FUR PLATES, MATS AND LININGS
185	18500 APPAREL ACCESSORIES, MATERIAL NES	188	18800 FUR APPAREL
186	18600 FURS, DRESSED	189	18900 CUSTOM TAILORING

36 LUMBER & TIMBER

191	19100 LUMBER AND TIMBER
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37 VENEER & PLYWOOD

195	19500 VENEER AND PLYWOOD
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38 OTHER WOOD FABRICATED MATERIALS

190	19000 PULFWOOD CHIPS	193	19600 PREFABRICATED WOOD STRUCTURES
192	19200 RAILWAY TIES	199	19900 WOOD CONTAINERS AND PALLETS
193	19300 WOOD WASTE	200	20000 CASKETS, OTHER MORTICIANS' GOODS
194	19400 CUSTOM WOOD WORKING AND MILLWORK	201	20100 WOOD FABRICATED MATERIALS NES
196	19600 MILLWORK (WOODWORK)	202	20200 BARRELS AND EGGS OF WOOD
197	19700 FABRICATED WOOD FOR STRUCTURES	203	20300 WOOD END PRODUCTS NES

39 FURNITURE & FIXTURES

204	20400 HOUSEHOLD FURNITURE	206	20600 SPECIAL PURPOSE FURNITURE
205	20500 OFFICE FURNITURE	207	20700 FURNITURE AND FIXTURES NES
208	20800 PORTABLE LAMPS RESIDENTIAL TYPE		

40 PULP

209	20900 PULP
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COMMODITY CONCORDANCE: LINK TO MEDIUM

41 NEWSPRINT & OTHER PAPER STOCK

210	21000 NEWSPRINT PAPER	213	21300 TISSUE AND SANITARY PAPER
211	21100 OTHER PAPER FOR PRINTING	214	21400 WRAPPING PAPER
212	21200 FINE PAPER	215	21500 PAPER BOARD
216	21600 BUILDING PAPER AND BOARD		

42 PAPER PRODUCTS

217	21700 TOWELS, NAPKINS AND TOILET PAPER	222	22200 PAPER, GUMMED, WAXED, OR PRINTED
218	21800 VANILLIN	223	22300 CONVERTED ALUMINUM FOIL
219	21900 PAPER MATERIALS, BYPRODUCTS NES	224	22400 FACIAL TISSUES, SANITARY NAPKINS
220	22000 FLOORING, VINYL-ASBESTOS, ASHFHALT	225	22500 PAPER CONTAINERS NES
221	22100 PAPER CARTONS, BAGS, CANS, BOTTLES	226	22600 OFFICE AND STATIONERY SUPPLIES
227	22700 PAPER END PRODUCTS NES		

43 PRINTING & PUBLISHING

228	22800 NEWSPAPERS, MAGAZINES, PERIODICALS	231	23100 OTHER PRINTED MATTER
229	22900 BOOKS, PAMPHLETS, MAPS, PICTURES	233	23300 SPECIALIZED PUBLISHING SERVICE
230	23000 BANKNOTES, BONDS, DRAFTS ETC	234	23400 TYPE SETTING, BINDING SERVICES

44 ADVERTISING, PRINT MEDIA

232	23200 ADVERTISING, PRINT MEDIA		
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45 IRON & STEEL PRODUCTS

235	23500 FERRO-ALLOYS	243	24300 GALVANIZED STEEL SHEET AND STRIP
236	23600 PIG IRON AND STEEL INGOTS	244	24400 PAILS AND TRACK MATERIAL, STEEL
237	23700 STEEL BLOOMS, BILLETS AND SLABS	247	24700 MECHANICAL STEEL TUBING
238	23800 STEEL CASTINGS	248	24800 OIL COUNTRY GOODS
239	23900 STEEL BARS AND RODS	249	24900 LINE PIPE, STEEL, FOR OIL AND GAS
240	24000 STEEL PLATES, NOT FABRICATED	250	25000 STEEL PIPES AND TUBES NES
241	24100 CARBON STEEL SHEET, STRIP	251	25100 IRON CASTINGS
242	24200 TINPLATE	252	25200 PIPES AND FITTINGS, CAST IRON

46 ALUMINUM PRODUCTS

257	25700 ALUMINUM, ALLOYS IN PRIMARY FORMS	264	26400 ALUMINUM AND ALLOYS, FORMED
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COMMODITY CONCORDANCE: LINK TO MEDIUM

47 COPPER & COPPER ALLOY PRODUCTS

254	25400 COPPER,ALLOYS IN PRIMARY FORMS	265	26500 COPPER,CAST,ROLLED,OR EXTRUDED
266	26600 COPPER ALLOYS,FORMED		

48 NICKEL PRODUCTS

253	25300 NICKEL IN PRIMARY FORMS	268	26800 NICKEL AND ALLOYS,FABRICATED
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49 OTHER NON FERROUS METAL PRODUCTS

246	24600 GRAPHITE AND CARBON PRODUCTS	261	26100 ALUM.,SODIUM ALUMINUM FLUORIDES
255	25500 LEAD AND ALLOYS IN PRIMARY FORMS	262	26200 METALLIC OXIDES AND BASES NES
256	25600 ZINC AND ALLOYS IN PRIMARY FORMS	263	26300 SCRAP AND WASTE MATERIALS NES
258	25800 TIN,TIN ALLOYS IN PRIMARY FORMS	267	26700 LEAD AND ALLOYS,FORMED
259	25900 SILVER,PLATINUM IN PRIMARY FORMS	269	26900 TIN AND TIN ALLOYS,FABRICATED
260	26000 BASE METALS IN PRIMARY FORMS NES	270	27000 ZINC AND ZINC ALLOYS,FABRICATED
271	27100 SOLDERS		

50 BOILERS, TANKS & PLATES

272	27200 PLATES, STEEL, FABRICATED	274	27400 POWER BOILERS
273	27300 TANKS	275	27500 BOILERS, MARINE TYPE
300	30000 HEAT EQUIPMENT,HOT WATER,STEAM		

51 FABRICATED STRUCTURAL METAL PROD

276	27600 STRUCTURAL STEEL INC FABRICATED	278	27800 PREFABRICATED STRUCTURES,METAL
277	27700 SCAFFOLD EQUIPMENT,DEHOUNTABLE	279	27900 ARCHITECTURAL METAL PRODUCTS NES

COMMODITY CONCORDANCE: LINK TO MEDIUM

52 OTHER METAL FABRICATED PRODUCTS

280	28000 STEEL SHEET, STRIP PROCESSED	296	29600 METAL CUTTING TOOLS, SAWING MACH.
281	28100 CULVERT PIPE, CORRUGATED METAL	297	29700 HAND TOOLS
282	28200 STAMPINS, BASIC METAL PRODUCTS	298	29800 INDUSTRIAL CUTLERY, RAZORS, BLADES
283	28300 PIPES, SIDING, SHEET METAL W/ NES	301	30100 HEAT EQUIPMENT, WARM AIR, EXC PIPE
284	28400 METAL AWNINGS, ASH CANS, PAILS ETC	302	30200 UNIT AND WATER TANK HEATERS
285	28500 HOUSEHOLD UTENSILS, MAINLY METAL	303	30300 FUEL BURNING EQUIPMENT
286	28600 CONTAINERS, BOTTLE CAPS OF METAL	304	30400 COM. FOOD COOKING EQUIPMENT
287	28700 WIRE AND WIRE ROPE, OF STEEL	305	30500 CUSTOM METAL WORKING
288	28800 WIRE FENCING, SCREENING, NETTING	306	30600 FORGINGS OF CARBON, ALLOY STEEL
289	28900 CHAIN EXC POWER TRANSMISSION	307	30700 VALVES
290	29000 WELDING RODS, WIRE, AND ELECTRODES	308	30800 PLUMBING FIXTURES, BRASS FITTINGS
291	29100 SPRINGS, EXC AUTOMOTIVE	309	30900 GAS METERS AND WATER METERS
292	29200 NAILS, BOLTS, SCREWS, STAPLES	310	31000 MUNICIPAL EQUIPMENT
293	29300 BUILDERS' HARDWARE	311	31100 CONTROL INSTRUMENTS; LADDERS
294	29400 CABINET HARDWARE	312	31200 FIREARMS AND MILITARY HARDWARE
295	29500 BASIC HARDWARE NES	313	31300 COLLAPSIBLE TUBES, METAL

53 AGRICULTURAL MACHINERY

314	31400 TRACTORS, FARM AND GARDEN TYPE	315	31500 AGRICULTURAL MACH. EXC TRACTORS
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54 OTHER INDUSTRIAL MACHINERY

316	31600 MECH. POWER TRANSMISSION EQUIP.	323	32300 INDUSTRY-SPECIFIC MACHINERY
317	31700 PUMPS, COMPRESSORS, BLOWERS ETC	324	32400 POWER OPEN HAND TOOLS
318	31800 CONVEYORS, HOISTING MACHINERY	325	32500 METAL END PRODUCTS NES
319	31900 MATERIALS HANDLING EQUIPMENT NES	326	32600 AIR COOLERS, REFRIGERATORS NES
320	32000 FANS, AIR CIRCULATING MACHINERY	327	32700 SCALES AND BALANCES
321	32100 PACKAGING, AIR CLEANING, MACH. NES	328	32800 VENDING MACHINES
322	32200 INDUSTRIAL FURNACES, KILNS, OVENS	329	32900 OFFICE MACHINES AND EQUIPMENT

55 MOTOR VEHICLES

334	33400 PASSENGER AUTOMOBILES	337	33700 MOTOR VEHICLES NES
335	33500 TRUCKS, TRUCK TRACTORS, COMMERCIAL	338	33800 MOBILE HOMES
336	33600 BUSES	339	33900 TRAILERS AND SEMI TRAILERS

COMMODITY CONCORDANCE: LINK TO MEDIUM

56 MOTOR VEHICLE PARTS

340	34000 BODIES AND CABS FOR TRUCKS	342	34200 ELECTRICAL EQUIPMENT FOR ENGINES
341	34100 MOTOR VEHICLE ENGINES AND PARTS	343	34300 MOTOR VEHICLE PARTS,ACCESSORIES
344	34400 AUTCHOTIVE HARDWARE, EXC SPRINGS		

57 OTHER TRANSPORT EQUIPMENT

330	33000 AIRCRAFT, ALL TYPES	347	34700 PARTS FOR RAILWAY ROLLING STOCK
331	33100 AIRCRAFT ENGINES	348	34800 SHIPS AND COMMERCIAL VESSELS
332	33200 SPECIALIZED AIRCRAFT EQUIPMENT	349	34900 PARTS,ASSEMBLIES FOR SHIPS,BOATS
333	33300 AIRCRAFT REPAIR SERVICES	350	35000 SHIP REPAIRS
345	34500 RAILWAY LOCOMOTIVE,ROLLING STOCK	351	35100 SNOWMOBILES;NON-MOTOR VEHICLES
346	34600 SELF PROPELLED RAILWAY CARS	352	35200 CANOES,BOATS,CRUISERS,YACHTS

58 APPLIANCES & RECEIVERS,HOUSEHOLD

299	29900 DOM. APPLIANCES EXC COOK,HAND	355	35500 REFRIGERATORS,FREEZERS,DOMESTIC
353	35300 SMALL ELECTRICAL APPLIANCES,DOM.	356	35600 STOVES,RANGES,AND OVENS,DOMESTIC
354	35400 SPACE HEATERS,ELEC.,FUEL BURNING	357	35700 TELEVISION,RADIO,AUDIO EQUIPMENT

59 OTHER ELECTRICAL PRODUCTS

358	35800 TELECOMMUNICATION EQUIPMENT	366	36600 MOTORS,GENERATORS,ENGINES NES
359	35900 RADIO,TELEVISION COM. EQUIPMENT	367	36700 ELECTRICAL TRANSFORMERS NES
360	36000 RADAR AND RELATED EQUIPMENT	368	36800 ELECTRICAL EQUIPMENT NES
361	36100 ELECTRONIC TUBES,SEMI CONDUCTORS	369	36900 BATTERIES
362	36200 ELECTRONIC EQUIPMENT COMPONENTS	370	37000 WIRE AND CABLE, INSULATED
363	36300 INTERIOR ALARM,SIGNAL SYSTEMS	371	37100 WIRE AND CABLE,ALUM.,NOT INS.
364	36400 POLE LINE HARDWARE	372	37200 CONDUIT,SWITCHES,WIRING DEVICES
365	36500 WELDING MACHINERY AND EQUIPMENT	373	37300 ELECTRIC LIGHT BULBS AND TUBES
374	37400 ELECTRIC LIGHTING FIXTURES NES		

60 CEMENT & CONCRETE PRODUCTS

375	37500 CEMENT	378	37800 SAND LIME BRICKS AND BLOCKS
377	37700 CONCRETE BASIC PRODUCTS	379	37900 READY-MIX CONCRETE

COMMODITY CONCORDANCE: LINK TO MEDIUM

61 OTHER NON-METALLIC MINERAL PROD.

376	37600 LIME	386	38600 GYPSUM PRODUCTS
380	38000 BRICKS AND TILES, CLAY	387	38700 INSULATION MATERIALS NES
381	38100 ELECTRICAL FITTINGS, PORCELAIN	388	38800 ASB. AND ASB.-CEMENT PRODUCTS
382	38200 PLUMBING FIXTURES, ARTWARE, CHINA	389	38900 NON-METALLIC MINERAL PRODUCTS NE
383	38300 REFRACTORIES	390	39000 GLASS INC FIBROUS BASIC PRODUCTS
384	38400 NATURAL STONE BASIC PRODUCTS	391	39100 GLASS CONTAINERS
385	38500 STONE, CLAY, CONCRETE PRODUCTS NES	392	39200 GLASS TABLEWARE, END PRODUCTS NES
393	39300 ABRASIVE BASIC PRODUCTS		

62 GASOLINE & FUEL OIL

394	39400 AVIATION GASOLINE	395	39500 MOTOR GASOLINE
396	39600 FUEL OIL		

63 OTHER PETROLEUM & COAL PROD.

245	24500 COAL TAR	400	40000 NAPHTHA
397	39700 LUBRICATING OILS AND GREASES	401	40100 ASPHALT, COAL PRODUCTS NES
398	39800 BENZENE, TOLUENE AND XYLENE	402	40200 FEEDSTOCKS, OIL PRODUCTS NES
399	39900 LIQUIFIED PETROLEUM GASES, GASES	548	54800 COKE

COMMODITY CONCORDANCE: LINK TO MEDIUM

64 INDUSTRIAL CHEMICALS

117	11700 ALCOHOL, NATURAL, ETHYL	442	44200 PERCHLOROETHYLENE
404	40400 PLASTIC RESINS, NOT SHAPED	443	44300 FLUORINATED HALOGEN HYDROCARBONS
405	40500 FILM, SHEET, CELLULOSIC PLASTIC	444	44400 HYDROCARBONS, ACID TREATED
406	40600 ETHANOLAMINES	445	44500 METHYL ALCOHOL
407	40700 ETHYLENE GLYCOL, MONO	446	44600 PROPYL AND ISOPROPYL ALCOHOLS
411	41100 GLYCERIN, REFINED	447	44700 BUTYL AND ISOBUTYL ALCOHOLS
416	41600 CHLORINE	448	44800 PENTERYTHRITOL
417	41700 OXYGEN	449	44900 ALCOHOLS, ACID TREATED NES
418	41800 PHOSPHORUS	450	45000 PHENOL
419	41900 CHEMICAL ELEMENTS NES	451	45100 PHENOLS; ALCOHOLS, DERIVATIVES NES
420	42000 SULPHURIC ACID	452	45200 ETHER, ACETALS, DERIVATIVES NES
421	42100 CARBON DIOXIDE (GAS AND DRY ICE)	453	45300 KETONE, ALDEHYDE COMPOUNDS NES
422	42200 INORGANIC ACIDS, COMPOUNDS NES	454	45400 ACETONE
423	42300 AMMONIA, ANHYDROUS AND AQUA	455	45500 ACETIC ACID
424	42400 CAUSTIC SODA (SOD. HYDROXIDE) DRY	456	45600 ACETIC ANHYDRIDE
425	42500 CALCIUM CHLORIDE	457	45700 ADIPIC ACID
426	42600 SODIUM CHLORIDE	458	45800 CITRIC ACIDS
427	42700 ALUMINUM SULPHATE	459	45900 ORGANIC ACIDS, DERIVATIVES NES
428	42800 SODIUM PHOSPHATES	460	46000 HEXAMETHYLENEDIAMINE
429	42900 SODIUM CARBONATE (SODA ASH)	461	46100 SODIUM GLUTAMATE, MONO
430	43000 SODIUM CYANIDE	462	46200 DICYANDIAMIDE
431	43100 SODIUM SILICATE	463	46300 ORGANO-INORGANIC COMPOUNDS NES
432	43200 METALLIC SALTS OF ACIDS NES	464	46400 ORGANIC CHEMICALS NES
433	43300 INORGANIC CHEM. NES; PHOTOGRAPHIC	465	46500 TITANIUM DIOXIDE
434	43400 ETHYLENE	466	46600 BLACKS, ACETYLENE AND CARBON
435	43500 BUTYLENES	467	46700 PIGMENTS, LAKES, TONERS, PROPER
436	43600 BUTADIENE	468	46800 IRON OXIDES
437	43700 ACETYLENE	469	46900 FERTILIZER CHEMICALS
438	43800 STYRENE MONOMER	470	47000 SYNTHETIC RUBBER
439	43900 CARBON TETRACHLORIDE	473	47300 GLYCERINE, CRUDE
440	44000 VINYLCHLORIDE MONOMER	474	47400 RUBBER, PLASTIC COMPOUNDING AGTS
441	44100 TRICHLOROETHYLENE	479	47900 CRUDE VEG. MATERIALS, EXTRACTS
480	48000 PHTHALIC ANHYDRIDE		

65 FERTILIZERS

403 40300 FERTILIZERS

66 PHARMACEUTICALS

408 40800 PHARMACEUTICALS

COMMODITY CONCORDANCE: LINK TO MEDIUM

67 OTHER CHEMICAL PRODUCTS

105	10500 NITROGEN FUNCTION COMPOUNDS NES	482	48000 ADHESIVES
409	40900 PAINTS AND RELATED PRODUCTS	483	48300 AUTOMOTIVE CHEM. EXC ANTIFREEZE
410	41000 VEGETABLE OILS, REFINED, EXC CORN	484	48400 CONCRETE ADDITIVES
412	41200 DENTIFRICES, ALL KINDS	485	48500 BOILER CHEMICALS
413	41300 SOAPS, CLEANING, HOUSEHOLD CHEM.	486	48600 COMPOUND CATALYSTS
414	41400 INDUSTRIAL CHEMICAL PREP. NES	487	48700 METAL WORKING COMPOUNDS
415	41500 TOILET PREPARATIONS, COSMETICS	488	48800 PRINTING AND OTHER INKS
471	47100 ANTIFREEZE COMPOUNDS	489	48900 TEXTILE SPECIALTY CHEMICALS
472	47200 ADDITIVES FOR MINERAL OILS NES	490	49000 POLISHES, WAXES, COMPOUNDS ETC
475	47500 EXPLOSIVES, FUSES AND CAPS	491	49100 WAXES, ANIMAL, VEGETABLE, OTHER
476	47600 AMMUNITION, NON-MILITARY	492	49200 ESSENTIAL OILS, NAT. OR SYNTHETIC
477	47700 AMMUNITION, ORDNANCE, MILITARY	493	49300 TANNING MATERIALS AND DYESTUFFS
478	47800 PYROTECHNIC ARTICLES, FIREWORKS	494	49400 FATS AND CHEMICAL MIXTURES
481	48100 AGRICULTURAL CHEMICALS	495	49500 EMBALMING CHEMICALS, PREPARATIONS
496	49600 MATCHES		

68 SCIENTIFIC EQUIPMENT

497	49700 AIRCRAFT, NAUTICAL INSTRUMENTS	500	50000 MEDICAL AND RELATED INSTRUMENTS
498	49800 LABORATORY, SCIENTIFIC APPARATUS	501	50100 SAFETY EQUIPMENT
499	49900 MEASURING, CONTROL INSTR., NES	502	50200 WATCHES, CLOCKS, CHRONOMETERS ETC
503	50300 PHOTOGRAPHIC EQUIPMENT AND FILM		

69 OTHER MANUFACTURED PRODUCTS

504	50400 JEWELRY, GEM STONES	513	51300 SHADES AND BLINDS
505	50500 TABLE CUTLERY	514	51400 FUR DRESSING AND DYEING SERVICES
506	50600 BROOMS, MOPS, CLEANING EQUIPMENT	515	51500 CUSTOM WORK, MISCELLANEOUS
507	50700 CHILDREN'S VEHICLES AND PARTS	516	51600 ICE
508	50800 SPORTING AND PLAYGROUND EQUIPMENT	517	51700 ANIMAL HAIR, FEATHERS, QUILLS, ETC.
509	50900 TOYS AND GAME SETS	518	51800 FABRICATED MATERIALS NES
510	51000 FABRICS, COATED, IMPREGNATED NES	519	51900 HATINGS, INC BUTTONS, NEEDLES, PINS
511	51100 FLOOR, WALL COVERS, RUBBER, PLASTIC	520	52000 ENDS PRODUCTS NES
512	51200 SIGNS AND ADVERTISING DISPLAYS	521	52100 HOUSEHOLD ORNAMENTAL OBJECTS, ART

70 RESIDENTIAL CONSTRUCTION

523	52300 RESIDENTIAL CONSTRUCTION
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COMMODITY CONCORDANCE: LINK TO MEDIUM

71 NON-RESIDENTIAL CONSTRUCTION

524	52400 NON-RESIDENTIAL CONSTRUCTION	527	52700 DAMS AND IRRIGATION PROJECTS
525	52500 ROAD HIGHWAY AIRSTRIP CONSTR.	528	52800 RAILWAY, COMMUNICATIONS CONSTR.
526	52600 GAS, OIL FACILITY CONSTRUCTION	529	52900 OTHER ENGINEERING CONSTRUCTION

72 REPAIR CONSTRUCTION

522 52200 REPAIR CONSTRUCTION

73 PIPELINE TRANSPORTATION

540 54000 PIPELINE TRANSPORTATION

74 TRANSPORTATION & STORAGE

530	53000 AIR TRANSPORTATION	536	53600 TRUCK TRANSPORTATION
531	53100 OTHER TRANSPORTATION	537	53700 BUS TRANSPORT, INTERURBAN, RURAL
532	53200 SERVICES TO TRANSPORTATION NES	538	53800 URBAN TRANSIT
533	53300 WATER TRANSPORTATION	539	53900 TAXICAB TRANSPORTATION
534	53400 SERVICES TO WATER TRANSPORTATION	541	54100 HIGHWAY AND BRIDGE MAINTENANCE
535	53500 RAILWAY TRANSPORTATION	542	54200 STORAGE

75 RADIO & TELEVISION BROADCASTING

543 54300 RADIO, TELEVISION BROADCASTING

76 TELEPHONE & TELEGRAPH

544 54400 TELEPHONE AND TELEGRAPH

77 POSTAL SERVICES

545 54500 POSTAL SERVICES

78 ELECTRIC POWER

546 54600 ELECTRIC POWER

COMMODITY CONCORDANCE: LINK TO MEDIUM

79 OTHER UTILITIES

547	54700 GAS DISTRIBUTION	549	54900 WATER AND OTHER UTILITIES
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80 WHOLESALE MARGINS

550	55000 WHOLESALING MARGINS
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81 RETAIL MARGINS

553	55300 RETAILING MARGINS
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82 IMPUTED RENT OWNER OCPO. DWEL.

557	55700 IMPUTED RENT ON OWNERS'DWELLINGS
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83 OTHER FINANCE,INS.,REAL ESTATE

554	55400 IMPUTED SERVICE. BANKS	558	55800 CASH RESIDENTIAL RENT
555	55500 REAL ESTATE,FIN. SERVICES NES	559	55900 OTHER RENT
556	55600 INSURANCE,WORKMEN'S COMPENSATION	560	56000 GOV'T NATURAL RESOURCE ROYALTIES

84 BUSINESS SERVICES

566	56600 SERVICES TO BUSINESS MANAGEMENT	575	57500 RENTAL DATA PROCESSING EQUIPMENT
567	56700 ADVERTISING SERVICES	576	57600 BUSINESS,PERSONAL SERVICES, NES

85 EDUCATION SERVICES

561	56100 EDUCATION SERVICES
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86 HEALTH SERVICES

562	56200 HOSPITAL SERVICES	563	56300 HEALTH SERVICES
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COMMODITY CONCORDANCE: LINK TO MEDIUM

87 AMUSEMENT & RECREATION SERVICES

564	56400 MOTION PICTURE ENTERTAINMENT	565	56500 OTHER RECREATIONAL SERVICES
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88 ACCOMMODATION & FOOD SERVICES

569	56900 ACCOMMODATION SERVICES	570	57000 MEALS
571	57100 SERV.MARG.ON ALCOHOLIC BEVERAGES		

89 OTHER PERSONAL & MISC. SERVICES

551	55100 REPAIR SERVICE	574	57400 SERVICES TO BUILDINGS, DWELLINGS
552	55200 RENTAL OF OFFICE EQUIPMENT	577	57700 RENTAL OF AUTOMOBILES AND TRUCKS
568	56800 LAUNDRY AND CLEANING SERVICES	578	57800 TRADE ASSOCIATION DUES
572	57200 PERSONAL SERVICES	579	57900 MACHINERY, EQUIPMENT RENTAL, NES
573	57300 PHOTOGRAPHIC SERVICES	595	59500 GOVERNMENT GOODS AND SERVICES

90 TRANSPORTATION MARGINS

583	58300 TRANSPORTATION MARGINS		
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91 OPERATING, OFFICE, LAB. & FOOD

580	58000 EQUIPMENT MAINTENANCE SUPPLIES	582	58200 CAFETERIA SUPPLIES
581	58100 OFFICE SUPPLIES	584	58400 LABORATORY EQUIPMENT, SUPPLIES
587	58700 EQUIPMENT REPAIR SERVICES		

92 TRAVEL, ADVERTISING & PROMOTION

585	58500 TRAVELLING AND ENTERTAINMENT	586	58600 ADVERTISING AND PROMOTION
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93 NON-COMPETING IMPORTS

588	58800 COTTON RAW AND SEMI-PROCESSED	591	59100 COCOA BEANS, UNROASTED
589	58900 NATURAL RUBBER AND ALLIED GUMS	592	59200 GREEN COFFEE
590	59000 SUGAR, RAW	593	59300 TROPICAL FRUIT

INDUSTRY CONCORDANCE: LINK TO MEDIUM

1 AGRICULTURE

1 00100 AGRICULTURE

2 FORESTRY

2 00200 FORESTRY

3 FISHING, HUNTING & TRAPPING

3 00300 FISHING, HUNTING & TRAPPING

4 METAL MINES

4 00400 GOLD MINES
5 00500 URANIUM MINES

6 00600 IRON MINES
7 00700 BASE METAL & OTHER METAL MINES

5 MINERAL FUELS

8 00800 COAL MINES

9 00900 PETROLEUM & GAS WELLS

6 NON-METAL MINES & QUARRIES

10 01000 ASBESTOS MINES
11 01100 GYPSUM MINES
14 01400 QUARRIES & SAND PITS

12 01200 SALT MINES
13 01300 OTHER NON-METAL MINES

7 SERVICES INCIDENTAL TO MINING

15 01500 SERVICES INCIDENTAL TO MINING

INDUSTRY CONCORDANCE: LINK TO MEDIUM

8 FOOD & BEVERAGE INDUSTRIES

16	01600	SLAUGHTERING & MEAT PROCESSORS	24	02400	BAKERIES
17	01700	POULTRY PROCESSORS	25	02500	CONFECTIONERY MFGRS.
18	01800	DAIRY FACTORIES	26	02600	SUGAR REFINERIES
19	01900	FISH PRODUCTS INDUSTRY	27	02700	VEGETABLE OIL MILLS
20	02000	FRUIT & VEGETABLE PROCESSING	28	02800	MISCELLANEOUS FOOD INDUSTRIES
21	02100	FEED MFGRS.	29	02900	SOFT DRINK MFGRS.
22	02200	FLOUR & BREAKFAST CEREALS IND.	30	03000	DISTILLERIES
23	02300	BISCUIT MFGRS.	31	03100	BREWERIES
32	03200	WINERIES			

9 TOBACCO PRODUCTS INDUSTRIES

33	03300	LEAF TOBACCO PROCESSING	34	03400	TOBACCO PRODUCTS MFGRS.
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10 RUBBER & PLASTICS PRODUCTS IND.

35	03500	RUBBER FOOTWEAR MFGRS.	37	03700	OTHER RUBBER INDUSTRIES
36	03600	TIRE & TUBE MFGRS.	38	03800	PLASTIC FABRICATORS, NES.

11 LEATHER INDUSTRIES

39	03900	LEATHER TANNERIES	41	04100	LEATHER GLOVE FACTORIES
40	04000	SHOE FACTORIES	42	04200	SMALL LEATHER GOODS MFGRS.

12 TEXTILE INDUSTRIES

43	04300	COTTON YARN & CLOTH MILLS	49	04900	NARROW FABRIC MILLS
44	04400	WOL, YARN & CLOTH MILLS	50	05000	PRESSED & PUNCHED FELT MILLS
45	04500	SYNTHETIC TEXTILE MILLS	51	05100	CARPET, MAT & RUG INDUSTRY
46	04600	FIBRE PREPARING MILLS	52	05200	TEXTILE DYEING & FINISHING
47	04700	THREAD MILLS	53	05300	CANVAS PRODUCTS INDUSTRY
48	04800	CORDAGE & TWINE INDUSTRY	54	05400	COTTON & JUTE BAG INDUSTRY
55	05500	MISCELLANEOUS TEXTILE IND.			

13 KNITTING MILLS

56	05600	HOSIERY MILLS	57	05700	OTHER KNITTING MILLS
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INDUSTRY CONCORDANCE: LINK TO MEDIUM

14 CLOTHING INDUSTRIES

58 05800 CLOTHING INDUSTRIES

15 WOOD INDUSTRIES

59	05900 SAWMILLS	62	06200 WOODEN BOX FACTORIES
60	06000 VENEER & PLYWOOD MILLS	63	06300 COFFIN & CASKET INDUSTRY
61	06100 SASH & DOOR & PLANING MILLS	64	06400 MISCELLANEOUS WOOD INDUSTRIES

16 FURNITURE & FIXTURE INDUSTRIES

65	06500 HOUSEHOLD FURNITURE INDUSTRY	67	06700 OTHER FURNITURE INDUSTRIES
66	06600 OFFICE FURNITURE INDUSTRY	68	06800 ELECTRIC LAMP & SHADE INDUSTRY

17 PAPER & ALLIED INDUSTRIES

69	06900 PULP & PAPER INDUSTRY	71	07100 PAPER BOX & BAG MFGRS.
70	07000 ASPHALT AND RELATED PRODUCTS	72	07200 OTHER PAPER CONVERTERS

18 PRINTING & PUBLISHING

73	07300 PRINTING & PUBLISHING	74	07400 ENGRAVING, STEREOTYPING IND.
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19 PRIMARY METAL INDUSTRIES

75	07500 IRON & STEEL INDUSTRY	79	07900 OTHER SMELTING & REFINING
76	07600 STEEL PIPE & TUBE MILLS	80	08000 ALUMINUM ROLLING & EXTRUDING
77	07700 IRON FOUNDRIES	81	08100 COPPER & ALLOY ROLLING
78	07800 ALUMINUM SMELTING & REFINING	82	08200 METAL CASTING & EXTRUDING NES

INDUSTRY CONCORDANCE: LINK TO MEDIUM

20 METAL FABRICATING INDUSTRIES

83	08300 BOILER & PLATE WORKS	87	08700 WIRE & WIRE PRODUCTS MFGRS.
84	08400 FABRICATED STRUCT. METAL IND.	88	08800 HARDWARE TOOL & CUTLERY MFGRS.
85	08500 ORNAMENTAL & ARCH. METAL IND.	89	08900 HEATING EQUIPMENT MFGRS.
86	08600 METAL STAMP. PRESS. & COAT.IND	90	09000 MACHINE SHOPS
91	09100 MISC. METAL FABRICATING IND.		

21 MACHINERY INDUSTRIES

92	09200 AGRICULTURAL IMPLEMENT IND.	94	09400 COM'M. REFRIG & AIR COND. MFGRS
93	09300 MISC. MACHINERY & EQUIP. MFGRS	95	09500 OFFICE & STORE MACHINERY MFGRS

22 TRANSPORTATION EQUIPMENT IND.

96	09600 AIRCRAFT & PARTS MFGRS.	99	09900 MOTOR VEH. PTS & ACCESS. MFGRS
97	09700 MOTOR VEHICLE MFGRS.	100	10000 RAILROAD ROLLING STOCK IND.
98	09800 TRUCK BODY & TRAILER MFGRS.	101	10100 SHIPBUILDING & REPAIR
102	10200 MISC. TRANSP. EQUIP. IND.		

23 ELECTRICAL PRODUCTS INDUSTRIES

103	10300 SMALL ELECTRICAL APPLIANCES	107	10700 MFGRS OF ELECT. IND. EQUIP.
104	10400 MAJOR APPLIANCES ELECT. & NON.	108	10800 BATTERY MFGRS.
105	10500 RADIO & TELEVISION RECEIVERS	109	10900 MFGRS OF ELECTRIC WIRE & CABLE
106	10600 COMMUNICATIONS EQUIPMENT MFGRS	110	11000 MFGRS OF MISC. ELECT. PRODUCTS

24 NON-METALLIC MINERAL PROD. IND.

111	11100 CEMENT MFGRS	116	11600 REFRACTORIES MFGRS
112	11200 LIME MFGRS	117	11700 STONE PRODUCTS MFGRS
113	11300 CONCRETE PRODUCTS MFGRS	118	11800 OTHER NON-METALLIC PRODUCTS IND.
114	11400 READY-MIX CONCRETE MFGRS	119	11900 GLASS & GLASS PRODUCTS MFGRS
115	11500 CLAY PRODUCTS MFGRS	120	12000 ABRASIVES MFGRS

25 PETROLEUM & COAL PRODUCTS IND.

121	12100 PETROLEUM REFINERIES	122	12200 OTHER PETROL & COAL PROD. IND.
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INDUSTRY CONCORDANCE: LINK TO MEDIUM

26 CHEMICAL & CHEMICAL PROD. IND.

123	12300 MFGRS. OF MIXED FERTILIZERS	127	12700 MFGRS. OF SOAP & CLEANING COMP
124	12400 MFGRS. OF PLAST. & SYNTH. RES.	128	12800 MFGRS. OF TOILET PREPARATIONS
125	12500 MFGRS. OF PHARM. & MEDICINES	129	12900 MFGRS. OF INDUSTRIAL CHEMICALS
126	12600 PAINT & VARNISH MFGRS.	130	13000 OTHER CHEMICAL INDUSTRIES

27 MISC MANUFACTURING INDUSTRIES

131	13100 SCIENT. & PROF. EQUIP. MFGRS.	134	13400 SPORTING GOODS & TOY INDUSTRY
132	13200 JEWELRY & SILVERWARE MFGRS.	135	13500 LINOLEUM & COATED FABRICS IND.
133	13300 BROOM BRUSH & HOP INDUSTRY	136	13600 SIGNS & DISPLAYS INDUSTRY
137	13700 MISC. MANUFACTURING IND. NES		

28 CONSTRUCTION INDUSTRY

138	13800 REPAIR CONSTRUCTION	142	14200 GAS AND OIL FACILITY CONST.
139	13900 RESIDENTIAL CONSTRUCTION	143	14300 DAMS AND IRRIGATION PROJECTS
140	14000 NON-RESIDENTIAL CONSTRUCTION	144	14400 RAILWAY TELEPHONE TELEGRAPH CON.
141	14100 ROAD HIGHWAY AIRSTRIP CONST.	145	14500 OTHER ENGINEERING CONSTRUCTION
146	14600 CONSTRUCTION OTHER ACTIVITIES.		

29 TRANSPORTATION & STORAGE

147	14700 AIR TRANSPORT	152	15200 BUS TRANSP. INTERURBAN & RURAL
148	14800 SERVICES INCIDENTAL TO TRANSP.	153	15300 URBAN TRANSIT SYSTEMS
149	14900 WATER TRANSPORT	154	15400 TAXICAB OPERATIONS
150	15000 RAILWAY TRANSPORT	155	15500 PIPELINE TRANSPORT
151	15100 TRUCK TRANSPORT	156	15600 HIGHWAY & BRIDGE MAINTENANCE
157	15700 STORAGE		

30 COMMUNICATION

158	15800 RADIO & TEL. BROADCASTING	159	15900 COMMUNICATION INDUSTRIES, NES.
160	16000 POST OFFICE		

31 ELEC POWER, GAS, OTHER UTILITIES

161	16100 ELECTRIC POWER	162	16200 GAS DISTRIBUTION
163	16300 WATER & OTHER UTILITIES		

INDUSTRY CONCORDANCE: LINK TO MEDIUM

32 WHOLESALE TRADE

164 16400 WHOLESALE TRADE

33 RETAIL TRADE

165 16500 RETAIL TRADE

34 OWNER OCCUPIED DWELLINGS

166 16600 OWNER OCCUPIED DWELLINGS

35 OTHER FINANCE, INS. & REAL ESTATE

167	16700 GOVT. ROYALTIES ON NAT.RESOURCES	169	16900 INSURANCE
168	16800 BANKS AND CREDIT UNIONS	170	17000 OTHER FIN. INS. & REAL ESTATE

36 EDUCATION & HEALTH SERVICES

171	17100 EDUCATION & RELATED SERVICES	172	17200 HOSPITALS
173	17300 HEALTH SERVICES		

37 AMUSEMENT & RECREATION SERVICES

174	17400 MOTION PICTURE THEATRES	175	17500 OTHER RECREATIONAL SERVICES
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38 SERVICES TO BUSINESS MANAGEMENT

176	17600 PROF. SERVICES TO BUSINESS	177	17700 ADVERTISING SERVICES
183	18300 MISC. SERVICES TO BUS. & PERS.		

39 ACCOMMODATION & FOOD SERVICES

179 17900 ACCOMMODATION & FOOD SERVICES

INDUSTRY CONCORDANCE: LINK TO MEDIUM

40 OTHER PERSONAL & MISC SERVICES

178	17800 LAUNDRIES & CLEANERS	181	18100 PHOTOGRAPHY
180	18000 OTHER PERSONAL SERVICES	182	18200 MISC. REPAIR & MAINTENANCE

41 TRANSPORTATION MARGINS

187 18700 TRANSPORTATION MARGINS

42 OPERATING, OFFICE, LAB & FOOD

184	18400 OPERATING SUPPLIES	186	18600 CAFETERIA REQU.
185	18500 OFFICE SUPPLIES	188	18800 LABORATORY SUPPLIES
191	19100 MACHINERY REPAIR SERVICES		

43 TRAVEL & ADVERTISING, PROMOTION

189	18900 TRAVEL & ENTERTAINMENT	190	19000 ADVERTISING & PROMOTION
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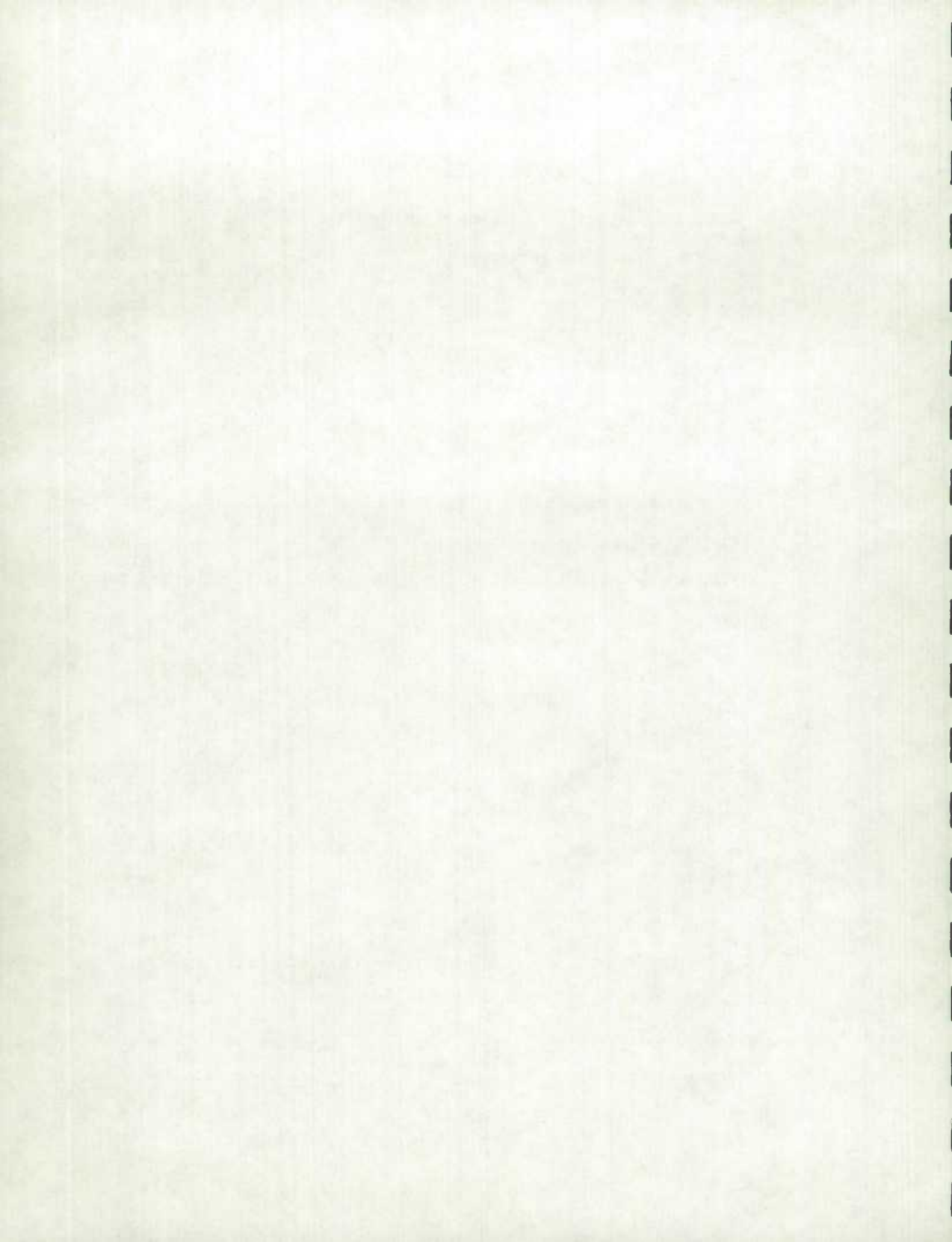
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CHAPTER 5

THE ENERGY MODEL

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5.1 Introduction

The Energy Model is an extended input-output model which calculates the flows of energy commodities required to satisfy a specified final demand in the Canadian economy. The Energy Model thus operates within the same analytical framework as the input-output models described in Chapter 3 of this volume; it is a highly disaggregated structural model whose parameters are based on a detailed cross sectional data base and which may be used to perform simulations of a comparative static nature.

The major additional assumption of the Energy Model is that inputs of energy in physical quantities are proportional to the (constant dollar) value of industry output. Thus the model is a hybrid of physical quantity and value data.

The Energy Model is intended to serve the following ends:

- i) Net energy accounting of energy-producing projects.
- ii) Calculation of "energy intensities" of goods, that is, the total energy used per dollar of final consumption of a given commodity.
- iii) Impact analysis, a means of measuring the impact on the energy system of a change in final demand.

It should be noted that this is a model of economic behaviour, and so may be distinguished from energy accounting based on "process analysis". As an example of the difference, whereas a process analysis of the Iron and Steel Industry can measure the energy required to produce a ton of steel, the Energy Model will account not only for this energy, but as well for the

energy required by the fact that a demand for a ton of steel stimulates the production of more than one ton of steel, as the Iron and Steel Industry supplies the intermediate demands of its supplying industries.

The consumption of energy commodities required to satisfy a final demand will hereafter be referred to as the energy requirement and may be defined precisely as the total use of fuels and electricity (both as an energy source and as a feedstock) as intermediate inputs to the processes of production necessary to meet that final demand. This definition excludes any attempt to measure the energy attributed to goods by the energy embodied in the capital equipment necessary for their production.

In the case of the energy commodities it is important to distinguish between the energy requirement of a unit of a good, and the "energy content" of this unit. For instance, the energy content of a gallon of gasoline may be defined as its enthalpy of combustion, but the energy requirement of a gallon of gasoline is the total use of all energy commodities necessary to satisfy a demand for a gallon of gasoline.

This model is based on ideas contained in the paper referred to in Reference 1.

5.2 A Simple Algebraic Expression of the Model

5.2.1 The Basic Formulation

In addition to the arrays of parameters D , B , H , μ , and α , which embody

the assumptions of industry technology, market shares, import shares, etc. in the Input-Output Model, we define the following matrix:

W - of order $NE \times NI$, where NE is the number of energy commodities, such that w_{ij} is the input in physical quantity per dollar of industry output of the i th fuel to the j th industry.

The model assumption is that for every industry j , w_{ij} is fixed for each fuel i and any level of activity on the part of industry j ; it follows that the product of w_{ij} and the value of the j th industry's output in satisfying a demand e , $g_j(e)$, equals the input of fuel i to industry j in satisfying demand e , $t_{ij}(e)$. In matrix notation,

$$T(e) = \widehat{Wg}(e), \quad 5.1$$

where $T(e)$ is a matrix of order $NE \times NI$ representing the inputs of each fuel to each industry in meeting final demand e .

The Input-Output Model serves to calculate industry outputs as a function of final demand, $g(e)$, given the structural arrays D, B, μ, α as:

$$g(e) = (I - D(I - \widehat{\mu} - \widehat{\alpha})B)^{-1} De \quad 5.2$$

Here the final demand vector e may be gross demand or demand net of direct imports and government revenues.

The vector of energy requirements by fuel type in satisfying demand e is obtained by taking the row sum of $T(e)$,

$$\begin{aligned} t(e) &= T(e) \mathbf{i} & 5.3 \\ &= W \hat{g}(e) \mathbf{i} \\ &= W g(e) \quad , \end{aligned}$$

from which may be obtained, by substitution of 5.2,

$$t(e) = W(I - D(I - \hat{\mu} - \hat{\kappa})B)^{-1} De \quad 5.4$$

The form of the above expressions makes the transformation of results into Joules simple to represent. Define a vector c of order NE of Joule conversion factors for each fuel, and denote the fact that a given array is in Joules by the superscript '*'. Then it follows that:

$$T^*(e) = \hat{c} T(e) \quad 5.5$$

and

$$t^*(e) = \hat{c} t(e) \quad 5.6$$

5.2.2 Imports

In an economy as open as the Canadian economy, with large values of imports and exports, the problem of measuring the energy requirement of a given final demand is not straightforward. Expression 5.4 represents a

measure of gross energy requirements when imports correctly measure the energy requirements in terms of Canadian energy resources, since the statement that imports are allowed implies in particular that imports of energy commodities are allowed. This leaves this measure of energy requirements in the position of measuring imported direct energy but not imported embodied energy. The Canadian energy requirements should therefore be defined as,

$$t(e) = (I - \hat{\mu}) W(I - D(I - \hat{\mu} - \hat{\alpha})B)^{-1} De \quad 5.7$$

where $\hat{\mu}$ is a vector of energy commodity import coefficients (of length NE).

The expression for energy requirements in the "no import" case, and neglecting for simplicity government revenues, is

$$t(e) = W(I - DB)^{-1} De \quad 5.8$$

This definition of energy requirements represents a measure of the energy cost of a final demand in a hypothetical closed Canadian economy; it expresses the best proxy for the total energy requirements of a final demand, with the restriction that only Canadian resources and technology may be used.

5.2.3 Energy Intensities

A matrix of energy intensities would have as its (i,j)th element the total use of fuel i in delivering one dollar of commodity j to final demand.

Expressions 5.4, 5.7 and 5.8 could all serve to define this matrix depending on the particular treatment of imports desired. For simplicity consider expression 5.8. A final demand of only one dollar on the first commodity, i.e., $e = (1, 0, \dots, 0)$, would produce $t(e)$ equalling the first column of the matrix $W(I-DB)^{-1}D$, and the i th element of this vector would be the energy intensity of commodity 1 with respect to fuel i , i.e. the direct and indirect requirements of fuel i to satisfy \$1 demand for commodity 1. Repeating this operation for each of the NC commodities leads to the conclusion that the matrix $W(I-DB)^{-1}D$ is in fact the matrix of energy intensities.

A more comprehensive mathematical treatment of this model is given in the paper referred to in Reference 2.

5.3 The Data Base

The data requirements for this model are essentially a compilation of the inputs in physical quantities of each energy commodity to each of the 191 industries in the disaggregated LINK industry classification, and the value of output of each of these industries. The latter are, of course, available from the input-output tables, and information on the preparation of the fuel input data is contained in the paper referred to in Reference 3. The matrix of energy coefficients, W , is calculated by dividing the observed fuel inputs into each industry by the value of industry output, that is,

$$W = T^y (\hat{g}^y)^{-1}, \quad y = \text{year}$$

The 15 fuels identified in the data base are:

1. Canadian Bituminous
2. Imported Bituminous
3. Sub-Bituminous
4. Anthracite
5. Lignite
6. Coke
7. Gasoline
8. Fuel Oil
9. Natural Gas
10. Liquefied Petroleum Gases
11. Still Gas (Natural Gasoline)
12. Purchased Steam
13. Purchased Electricity
14. Industry Generated Hydro Electricity
15. Industry Generated Thermal Electricity

5.4 Model Operation and Reporting

5.4.1 Operation

As is obvious from the mathematics, the Energy Model is in essence a multiplication of a matrix of energy input coefficients by a vector of industry outputs, the latter being calculated by the input-output models described in Chapter 3. The Model is therefore run as a simple adjunct to an input-output model run, with the advantage that final demand

specification is the same for both models, as is selection of the level of imports, and so on.

5.4.2 Transformations - A Modification of the Model Assumption

The use of market shares to relate commodity production to industry output in a rectangular I/O system implies that there cannot be a fixed proportional relationship between inputs and a given product or subset of products for a typical industry. This is a drawback for industries which transform primary fuels to secondary fuels, where technologically constrained conversion efficiencies can be defined. Therefore the transformation of crude oil to refined products, of coal to coke, and of fossil fuels to electricity, is effected by dropping the assumption that fuel inputs are a fixed proportion of the value of industry output, and instead performing a "back-calculation" of fuels converted using acceptable conversion efficiencies and the total disposition of secondary energy commodities.

This methodology leads to a minor distortion in the model, in that the value of fuel inputs, $u_{ij}(e)$, and the calculated quantity of fuel inputs, $t_{ij}(e)$, do not vary at the same rate for the converting industries. However this distortion, since it relates to a secondary effect, is much smaller than that which is introduced by strictly maintaining the usual I-O model assumption to measure transformations.

5.4.3 Model Options

In addition to the options offered the user in specifying an input-output model run, the associated Energy Model calculation offers the following choices:

- i) Model results may be printed in natural units for each fuel, or in Joules.
- ii) The Joule conversion factors may be user specified, depending on whether, for instance, a "higher heating value", "lower heating value", or enthalpy of combustion of each fuel is desired. The default conversion factors represent higher heating values.
- iii) Changes in fuel use technology may be represented by user-specified modification of the energy inputs per dollar of output in any subset of industries, that is, a modification of Matrix W. If no change in the implicit prices of fuels is desired, there must be a corresponding adjustment of Matrix B before proceeding with the Model calculation. This option in the Energy Model clearly lends itself to analyses of the effects of fuel substitutions.

5.4.4 The Model Report

The reports produced by an Energy Model simulation are designed to provide the user with fairly detailed supply and disposition accounts for each fuel, and to allow very flexible accounting of the total heating equivalents of fuels and electricity used in any simulation. There are three basic elements in a model report:

- i) a title page giving an 80 character description of each simulation, the heating equivalents and natural units for each energy type, the fraction of purchased electricity which was thermally generated, and the average efficiency of thermal generation of electricity;
- ii) tables of supply and disposition by energy type, giving the total equivalent Joules of primary thermal energy for each category;
- iii) an optional table of industrial energy disposition at the LINK (191) industry level, by fuel type, including the total equivalent Joules of primary thermal energy input to each industry.

The "total equivalent primary thermal energy" for any vector of fuels is calculated on the following basis:

- i) coal, crude oil, and natural gas are measured at their higher heating values;
- ii) coke is measured as the heating value of coal needed for its production;
- iii) refined petroleum products are measured as the heating value of crude oil necessary for their production;
- iv) all electricity is measured as the input thermal energy which would be needed for its production, using the historical average transformation efficiency.

A fixed conversion efficiency of crude oil to refined products is chosen purely as a convention - in fact this efficiency varies with the proportions of distillate fuel oil, gasoline, and other products in the output. The treatment of electricity is an internationally accepted convention. It

attaches a premium to the use of electricity corresponding to the almost 100% convertibility of electricity into work which is a major distinguishing characteristic of this energy type.

A detailed mathematical formulation of the primary energy calculation is given in an appendix to this chapter.

The supply table has the following elements:

1. Domestic Production (DP)
2. Imports (M)
3. Exports (X)
4. Final Use (F)
5. Transformed to Secondary (T)
6. Total Net Supply (TNS)

Strictly speaking, the only supplies of energy are from domestic production and imports. The rest of this table corresponds to the particular classification of energy disposition employed: energy can be exported, consumed by final users (in the National Accounts sense), transformed to secondary energy forms (e.g. coke), or consumed by the industrial sector. The total net supply is defined as total supply less exports, final use, and transformations, and is therefore exactly equal to the total industrial disposition. Being at heart an energy disposition calculator, the Energy Model computes the supply of each energy type on the basis of identities: imports are calculated as fixed proportions of total domestic disposition (as in the static I/O Model) and domestic production is calculated as:

$$DP = TNS + T + FU + X - M.$$

The "transformed to secondary" column calculates the total primary energies which would have been transformed to secondary fuels assuming fixed transformation efficiencies and, in the case of electricity, historical thermal fractions and patterns of fuels.

The equivalent primary thermal energy is measured as outlined previously for the vectors of imports, exports, final use, and total net supply, with "transformed to secondary" being set to zero as a convention since this item is subsumed in the primary energy calculation. Domestic production of equivalent primary thermal energy is calculated using the identity above. It should be noted that this accounting convention measures imported secondary energy as the equivalent primary thermal energy which would have been required had the energy been domestically produced.

The structure of the supply table permits the user great flexibility in answering the question, "What is the total energy required to satisfy a given demand?". The expressions which follow may be interpreted either for an individual fuel or for the equivalent primary thermal energy:

- F - the energy content of the final consumption bill of goods
- X - the energy content of the export bill of goods
- TNS - the total energy requirement of goods going to final consumption or exports
- DP - the total energy produced
- DP + M - the total supply (which is equal to the total

disposition) of energy
DP + M-X - the total domestic supply (equalling total domestic
disposition) of energy.

One final point worth noting for the supply table concerns the version of the static I/O Model which is closed to households. Rather than treating households as an industry and placing their energy consumption in the industrial sector (which is operationally how this Model is implemented), all consumption by this sector is added to the vector of final use in the energy report.

The disposition table has a much simpler structure. The categories of disposition distinguished in it are:

1. Non-Energy Use
2. Energy Supply Industries
3. Primary Industries
4. Manufacturing Industries
5. Commercial, Transport, and Other
6. Total Industrial Disposition

The total industrial disposition is exactly equal to the total net supply arrived at in the supply table, and is simply the sum of the preceding categories. Two of these components differ from the usual broad categorization of the industrial sector: non-energy use is in fact of a subset of the total manufacturing energy use, corresponding to employment of energy commodities as raw materials rather than as energy sources (coke used

in steel-making is included in this category, although it functions both as a reducing agent and as a significant source of heat); and the energy supply industries are distinguished from the primary and secondary categories in which they are typically found. The energy consumed by the energy supply industries is distinct from that transformed to secondary energy which appears in the supply table - rather, this is literally the energy consumed directly to produce energy (e.g. coal used in coal mines to operate machinery).

The final (optional) report is essentially a disaggregation of the disposition table. As such, no fuels transformed to secondary types appear, and so, for instance, only the coke used to produce steel is measured, and not the coal needed to produce it. Since crude oil is not used directly as a fuel it has been omitted from this table, and an extra entry for the total equivalent primary thermal energy (in Joules) used by each industry has been included.

The user has access in this report to results at the LINK (191) level of industry aggregation. There are a variety of options open in specifying this report:

- i) results may be printed sorted or unsorted with respect to equivalent primary thermal energy (the rank with respect to this quantity is always printed out);
- ii) all 191 industries may be printed;
- iii) a specified list of industries can be printed;
- iv) the N largest users of energy (with respect to equivalent primary

thermal energy) may be printed, (O<N<192);

- v) the lowest proportion X of energy users (O<X<1) may be eliminated from the printout.

The only figure which may appear surprising in this report is the use of electricity by the electric power industry. This corresponds to line losses in the transport of electric power, and is calculated using the historical average proportion of line losses to electric power consumption.

5.5 Example Energy Model Runs

To give some flavour of the results and reports of the Energy Model, three sample solutions are appended to this chapter. Their complete specifications are as follows:

(1) Final demand - 1000 passenger automobiles, valued at "factory-gate" prices

Imports - none

I/O Model version - open

Units of measure - Joules

Detailed disposition report - lists top 50 sectors, sorted

(2) Final demand - 1000 passenger automobiles, valued at "factory-gate" prices

Imports - indirect only

I/O Model version - closed

Units of measure - natural units

Detailed disposition report - cut off lowest 10%, print unsorted

(3) Final demand - \$1 million worth of electric power, producer's value

Imports - none

I/O Model version - open

Units of measure - Joules

Detailed disposition report - cut off lowest 1%, sorted

The two automobile simulations represent very different calculations of the energy requirements of a car. The first, being a "no import" calculation, shows the total energy requirements to be 183 gigajoules (GJ) per car, with the domestic production of energy being equal to the industrial disposition. In the second case the domestic production is similar at 171 GJ, but there is considerable imported energy leading to a domestic supply of 266 GJ of primary energy. Moreover, since in this case the model is closed to household expenditures, there is in fact more energy going to final users (139 GJ) than to industrial use (127 GJ). The latter figure is lower than for case 1, in spite of its reflecting re-spending of household income, owing to the imports of intermediate goods.

The third simulation shows that the energy content of \$1 (1971) worth of electricity is 0.414 GJ, which has a primary thermal equivalent of 1.252 GJ. The energy requirement of this \$1 of electricity is only 0.159 GJ, of which 0.139 GJ are line losses. The detailed disposition report shows that the intermediate energy used in producing electricity is largely limited to a few sectors: 99% of the total primary energy is consumed by only 24 industries.

SUMMARY ENERGY REPORT FOR THE FOLLOWING FINAL DEMAND :

RUN # 1 1000 PASSENGER AUTOS, OPEN MODEL, NO IMPORTS
 RUN # 2
 RUN # 3
 RUN # 4
 RUN # 5
 RUN # 6
 RUN # 7
 RUN # 8
 RUN # 9
 RUN #10
 RUN #11
 RUN #12
 RUN #13
 RUN #14
 RUN #15

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 FUEL CONVERSION FACTORS

CANADIAN BITUMINOUS	- 26.5885 GIGAJOULES PER TON
IMPORTED BITUMINOUS	- 27.2216 GIGAJOULES PER TON
SUB-BITUMINOUS	- 17.9367 GIGAJOULES PER TON
ANTHRACITE	- 26.7995 GIGAJOULES PER TON
LIGNITE	- 13.9273 GIGAJOULES PER TON
COKE	- 26.1665 GIGAJOULES PER TON
GASOLINE	- 0.1574 GIGAJOULES PER IMP. GALLON
FUEL OIL	- 0.1800 GIGAJOULES PER IMP. GALLON
NATURAL GAS	- 1.0815 GIGAJOULES PER THOUSAND CUBIC FT.
LIQ. PETROLEUM GASES	- 0.1234 GIGAJOULES PER IMP. GALLON
STILL GAS	- 0.1895 GIGAJOULES PER IMP. GALLON
PURCHASED STEAM	- 1.2138 GIGAJOULES PER THOUSAND LB.
PURCHASED ELECTRICITY	- 3.6000 GIGAJOULES PER THOUSAND KWH
INDUSTRY GENERATED HYDRO	- 3.6000 GIGAJOULES PER THOUSAND KWH
INDUSTRY GENERATED THERMAL	- 3.6000 GIGAJOULES PER THOUSAND KWH
CRUDE OIL	- 6.1229 GIGAJOULES PER BARREL OF 35 I.G.

 THERMAL ELECTRIC FRACTION = 27.5 %

ELECTRIC GENERATION EFFICIENCY = .33

ALL FIGURES FOR PRIMARY GIGAJOULES COUNT JOULES OF ELECTRICITY
 AS 1/.33 JOULES OF PRIMARY THERMAL ENERGY

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SUPPLY

	DOMESTIC PRODUCTION	IMPORTS	EXPORTS	FINAL USE	TRANSFORMED TO SECONDARY	TOTAL NET SUPPLY
CRUDE OIL	46180.	0.	0.	0.	46180.	0.
COAL	45968.	0.	0.	0.	39326.	6643.
NATURAL GAS	38786.	0.	0.	0.	2144.	36642.
ELECTRICITY	21632.	0.	0.	0.	0.	21632.
COKE	21098.	0.	0.	0.	0.	21098.
GASOLINE	8095.	0.	0.	0.	14.	6081.
FUEL OIL	32135.	0.	0.	0.	2185.	29950.
L.P.G.	1649.	0.	0.	0.	3.	1646.
STILL GAS	1473.	0.	0.	0.	0.	1473.
PRIMARY GIGAJOULES	183335.	0.	0.	0.	0.	183335.

DISPOSITION

	NON-ENERGY USE	ENERGY SUPPLY INDUSTRIES	PRIMARY INDUSTRIES	MANUFACTURING INDUSTRIES	COMMERCIAL TRANSPORT & OTHER	TOTAL INDUSTRIAL DISPOSITION
CRUDE OIL	0.	0.	0.	0.	0.	0.
COAL	1421.	93.	52.	4919.	158.	6643.
NATURAL GAS	3319.	4674.	978.	26162.	1509.	36642.
ELECTRICITY	0.	2323.	1045.	17479.	785.	21632.
COKE	20739.	1.	1.	353.	4.	21098.
GASOLINE	42.	86.	268.	1031.	6654.	6081.
FUEL OIL	284.	1633.	1757.	18322.	7954.	29950.
L.P.G.	823.	50.	28.	387.	359.	1646.
STILL GAS	0.	1473.	0.	0.	0.	1473.
PRIMARY GIGAJOULES	33607.	15274.	6529.	106858.	21067.	183335.

DETAILED DISPOSITION, GIGAJOULES, RUN # 1 1000 PASSENGER AUTOS, OPEN MODEL, NO IMPORTS

RANK		COAL	NATURAL GAS	ELEC-TRICITY	COKE	GASOLINE	FUEL OIL	L. P. G.	STILL GAS	PRIMARY GIGA-JOULES
1	07500 IRON & STEEL INDUSTRY	933.	5011.	2760.	17001.	27.	3928.	31.	0.	41556.
2	12900 MFGPS. OF INDUSTRIAL CHEMICALS	282.	7596.	2828.	462.	15.	1801.	886.	0.	20023.
3	09900 MOTOR VEH. PTS & ACCESS. MFGRS	829.	5015.	2690.	1525.	384.	1605.	50.	0.	18328.
4	09700 MOTOR VEHICLE MFGRS.	2705.	2769.	1819.	0.	248.	2174.	34.	0.	13769.
5	07600 ALUMINUM SMELTING & REFINING	0.	8.	1966.	571.	4.	450.	3.	0.	7234.
6	16100 ELECTRIC POWER	0.	0.	1867.	0.	0.	0.	0.	0.	5643.
7	06900 PULP & PAPER INDUSTRY	160.	668.	699.	5.	4.	1582.	6.	0.	5367.
8	07900 OTHER SMELTING & REFINING	584.	745.	840.	272.	2.	379.	29.	0.	4596.
9	15100 TRUCK TRANSPORT	0.	39.	43.	0.	2252.	1074.	170.	0.	4135.
10	12100 PETROLEUM REFINERIES	0.	224.	123.	0.	18.	1403.	43.	1359.	3619.
11	16400 WHOLESALE TRADE	4.	286.	177.	0.	1383.	562.	104.	0.	3149.
12	07700 IRON FOUNDRIES	76.	449.	298.	989.	21.	190.	15.	0.	3002.
13	00600 IRON MINES	0.	344.	475.	1.	9.	989.	0.	0.	2919.
14	15000 RAILWAY TRANSPORT	53.	16.	9.	4.	30.	2394.	0.	0.	2866.
15	12400 MFGRS. OF PLAST. & SYNTH. RES.	0.	574.	387.	0.	5.	758.	2.	0.	2616.
16	00900 PETROLEUM & GAS WELLS	0.	2359.	71.	0.	0.	0.	0.	0.	2572.
17	11900 GLASS & GLASS PRODUCTS MFGRS	1.	1645.	163.	0.	8.	120.	17.	0.	2301.
18	04500 SYNTHETIC TEXTILE MILLS	0.	412.	265.	0.	2.	710.	25.	0.	2049.
19	14700 AIR TRANSPORT	0.	8.	8.	0.	107.	1595.	12.	0.	1974.
20	15500 PIPELINE TRANSPORT	0.	1693.	40.	0.	0.	11.	0.	114.	1941.
21	18900 TRAVEL & ENTERTAINMENT	0.	0.	0.	0.	1689.	0.	0.	0.	1926.
22	14900 WATER TRANSPORT	89.	7.	5.	0.	1.	1509.	18.	0.	1850.
23	03600 PLASTIC FABRICATORS, NES.	9.	322.	330.	0.	30.	354.	5.	0.	1772.
24	16500 RETAIL TRADE	0.	601.	196.	0.	291.	159.	1.	0.	1707.
25	03600 TIRE & TUBE MFGRS.	0.	218.	226.	0.	3.	679.	6.	0.	1685.
26	00700 BASE METAL & OTHER METAL MINES	28.	64.	405.	0.	13.	245.	14.	0.	1626.
27	00800 COAL MINES	93.	334.	215.	1.	62.	220.	7.	0.	1406.
28	11800 OTHER NON-METALLIC PRODUCTS IN	53.	575.	82.	52.	6.	363.	6.	0.	1372.
29	12000 ABRASIVES MFGRS	5.	18.	229.	180.	1.	6.	1.	0.	963.
30	17000 OTHER FIN. INS. & REAL ESTATE	0.	426.	109.	0.	57.	109.	0.	0.	945.
31	05500 MISCELLANEOUS TEXTILE IND.	0.	145.	128.	0.	21.	246.	1.	0.	640.
32	08700 WIRE & WIRE PRODUCTS MFGRS.	0.	343.	123.	0.	12.	78.	20.	0.	839.
33	01300 OTHER NON-METAL MINES	5.	532.	83.	0.	4.	34.	2.	0.	831.
34	07600 STEEL PIPE & TUBE MILLS	0.	296.	122.	0.	4.	91.	0.	0.	775.
35	04300 COTTON YARN & CLOTH MILLS	6.	29.	116.	0.	0.	269.	9.	0.	702.
36	09000 ALUMINUM ROLLING & EXTRUDING	0.	165.	98.	0.	2.	167.	1.	0.	654.
37	03700 OTHER RUBBER INDUSTRIES	0.	65.	102.	0.	3.	233.	1.	0.	645.
38	09100 MISC. METAL FABRICATING IND.	13.	239.	70.	9.	12.	105.	7.	0.	617.
39	08600 METAL STAMP. PRESS. & COAT. IND.	4.	263.	71.	0.	20.	85.	4.	0.	607.
40	12200 OTHER PETROL & COAL PROD. IND.	496.	21.	3.	0.	4.	36.	0.	0.	573.
41	13500 LINOLEUM & COATED FABRICS IND.	3.	115.	61.	0.	2.	172.	6.	0.	507.
42	13000 OTHER CHEMICAL INDUSTRIES	9.	50.	42.	0.	50.	227.	0.	0.	504.
43	11200 LIME MFGRS	77.	157.	9.	0.	2.	139.	0.	0.	422.
44	09300 MISC. MACHINERY & EQUIP. MFGRS	15.	120.	60.	7.	11.	69.	2.	0.	418.
45	17900 ACCOMMODATION & FOOD SERVICES	0.	60.	46.	0.	3.	178.	11.	0.	416.
46	18300 MISC. SERVICES TO BUS. & PERS.	0.	0.	29.	0.	192.	89.	5.	0.	412.
47	00100 AGRICULTURE	4.	13.	18.	0.	90.	189.	8.	0.	399.
48	08200 METAL CASTING & EXTRUDING NES	2.	149.	24.	9.	8.	66.	3.	0.	324.
49	11500 CLAY PRODUCTS MFGRS	4.	197.	13.	0.	3.	48.	1.	0.	297.
50	08100 COPPER & ALLOY ROLLING	0.	70.	51.	0.	2.	60.	2.	0.	297.

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SUMMARY ENERGY REPORT FOR THE FOLLOWING FINAL DEMAND :

RUN # 1 1000 PASSENGER AUTOS, CLOSED MODEL, INDIRECT IMPORTS
 RUN # 2
 RUN # 3
 RUN # 4
 RUN # 5
 RUN # 6
 RUN # 7
 RUN # 8
 RUN # 9
 RUN #10
 RUN #11
 RUN #12
 RUN #13
 RUN #14
 RUN #15

Revised September 1981

 FUEL CONVERSION FACTORS

CANADIAN BITUMINOUS	- 26.5885 GIGAJOULES PER TON
IMPORTED BITUMINOUS	- 27.2216 GIGAJOULES PER TON
SUB-BITUMINOUS	- 17.9367 GIGAJOULES PER TON
ANTHRACITE	- 26.7995 GIGAJOULES PER TON
LIGNITE	- 13.9273 GIGAJOULES PER TON
COKE	- 26.1665 GIGAJOULES PER TON
GASOLINE	- 0.1574 GIGAJOULES PER IMP. GALLON
FUEL OIL	- 0.1800 GIGAJOULES PER IMP. GALLON
NATURAL GAS	- 1.0815 GIGAJOULES PER THOUSAND CUBIC FT.
LIQ. PETROLEUM GASES	- 0.1234 GIGAJOULES PER IMP. GALLON
STILL GAS	- 0.1395 GIGAJOULES PER IMP. GALLON
PURCHASED STEAM	- 1.2138 GIGAJOULES PER THOUSAND LB.
PURCHASED ELECTRICITY	- 3.6000 GIGAJOULES PER THOUSAND KWH
INDUSTRY GENERATED HYDRO	- 3.6000 GIGAJOULES PER THOUSAND KWH
INDUSTRY GENERATED THERMAL	- 3.6000 GIGAJOULES PER THOUSAND KWH
CRUDE OIL	- 6.1229 GIGAJOULES PER BARREL OF 35 I.G.

 THERMAL ELECTRIC FRACTION = 27.5 %

ELECTRIC GENERATION EFFICIENCY = .33

ALL FIGURES FOR PRIMARY GIGAJOULES COUNT JOULES OF ELECTRICITY
 AS 1/.33 JOULES OF PRIMARY THERMAL ENERGY

Sample Solution # 2

SUPPLY

	DOMESTIC PRODUCTION	IMPORTS	EXPORTS	FINAL USE	TRANSFORMED TO SECONDARY	TOTAL NET SUPPLY
CRUDE OIL	9126.	8287.	0.	0.	17414.	0.
COAL	152.	1040.	0.	33.	1004.	156.
NATURAL GAS	47983.	419.	0.	22808.	3083.	22511.
ELECTRICITY	8055.	296.	0.	4491.	0.	3861.
COKE	189.	28.	0.	0.	0.	216.
GASOLINE	188510.	4549.	0.	121498.	137.	71425.
FUEL OIL	311789.	64329.	0.	201577.	18866.	155674.
L.P.G.	22655.	1988.	0.	14274.	33.	10337.
STILL GAS	13703.	0.	0.	0.	0.	13703.
PRIMARY GIGAJOULES	171085.	94944.	0.	139376.	0.	126653.

DISPOSITION

	NON-ENERGY USE	ENERGY SUPPLY INDUSTRIES	PRIMARY INDUSTRIES	MANUFACTURING INDUSTRIES	COMMERCIAL TRANSPORT & OTHER	TOTAL INDUSTRIAL DISPOSITION
CRUDE OIL	0.	0.	0.	0.	0.	0.
COAL	14.	0.	4.	128.	9.	156.
NATURAL GAS	1115.	4422.	407.	11655.	4912.	22511.
ELECTRICITY	0.	908.	144.	2153.	656.	3861.
COKE	211.	0.	0.	4.	0.	216.
GASOLINE	136.	299.	8175.	5454.	57361.	71425.
FUEL OIL	586.	14321.	16250.	57126.	67392.	155674.
L.P.G.	2431.	637.	875.	1762.	4633.	10337.
STILL GAS	0.	13703.	0.	0.	0.	13703.
PRIMARY GIGAJOULES	9382.	20343.	6991.	52554.	37383.	126653.

RANK		COAL	NATURAL GAS	ELEC-TRICITY	COKE	GASOLINE	FUEL OIL	L.P.G.	STILL GAS	PRIMARY GIGA-JOULES
9	00100 AGRICULTURE	4.	149.	62.	0.	7027.	12817.	809.	0.	4885.
25	00600 IRON MINES	0.	81.	33.	0.	15.	1392.	1.	0.	740.
32	00700 BASE METAL & OTHER METAL MINES	0.	18.	34.	0.	24.	411.	35.	0.	490.
16	00900 PETROLEUM & GAS WELLS	0.	2152.	19.	0.	0.	0.	0.	0.	2539.
31	01600 SLAUGHTERING & MEAT PROCESSORS	0.	190.	14.	0.	195.	640.	16.	0.	523.
26	01800 DAIRY FACTORIES	0.	115.	13.	0.	637.	1139.	161.	0.	643.
38	02800 MISCELLANEOUS FOOD INDUSTRIES	0.	157.	10.	0.	97.	479.	21.	0.	399.
23	03600 TIRE & TUBE MFGRS.	0.	166.	52.	0.	17.	3107.	38.	0.	1389.
36	03800 PLASTIC FABRICATORS, NES.	0.	69.	21.	0.	44.	458.	10.	0.	412.
37	04300 COTTON YARN & CLOTH MILLS	0.	15.	18.	0.	1.	853.	41.	0.	401.
24	04500 SYNTHETIC TEXTILE MILLS	0.	203.	39.	0.	5.	2098.	108.	0.	1091.
7	05900 PULP & PAPER INDUSTRY	7.	630.	255.	0.	27.	8954.	47.	0.	5471.
2	07500 IRON & STEEL INDUSTRY	10.	1262.	210.	177.	47.	5943.	68.	0.	11322.
28	07700 IRON FOUNDRIES	1.	76.	15.	7.	24.	193.	22.	0.	547.
22	07800 ALUMINUM SMELTING & REFINING	0.	1.	106.	4.	6.	483.	4.	0.	1398.
21	07900 OTHER SMELTING & REFINING	7.	215.	73.	3.	5.	657.	72.	0.	1466.
30	08700 WIRE & WIRE PRODUCTS MFGRS.	0.	200.	22.	0.	47.	273.	104.	0.	529.
1	09700 MOTOR VEHICLE MFGRS.	97.	2479.	489.	0.	1526.	11689.	265.	0.	13332.
9	09900 MOTOR VEH. PTS & ACCESS. MFGRS	7.	1124.	181.	14.	591.	2161.	98.	0.	4443.
29	11800 OTHER NON-METALLIC PRODUCTS IN	1.	210.	9.	1.	15.	796.	18.	0.	542.
20	11900 GLASS & GLASS PRODUCTS MFGRS	0.	1042.	31.	0.	33.	458.	96.	0.	1577.
6	12100 PETROLEUM REFINERIES	0.	376.	62.	0.	203.	14153.	632.	13020.	6572.
27	12400 MFGRS. OF PLAST. & SYNTH. PES.	0.	118.	24.	0.	7.	938.	4.	0.	583.
5	12900 MFGRS. OF INDUSTRIAL CHEMICALS	4.	2561.	286.	6.	35.	3648.	2617.	0.	7301.
11	14700 AIR TRANSPORT	0.	15.	4.	0.	1339.	17293.	196.	0.	3877.
41	14900 SERVICES INCIDENTAL TO TRANSP.	0.	62.	2.	0.	1350.	2.	0.	0.	328.
19	14900 WATER TRANSPORT	3.	6.	1.	0.	4.	7506.	130.	0.	1657.
14	15000 RAILWAY TRANSPORT	3.	14.	3.	0.	187.	12946.	0.	0.	2791.
10	15100 TRUCK TRANSPORT	0.	35.	12.	0.	13975.	5826.	1343.	0.	4040.
39	15300 URBAN TRANSIT SYSTEMS	0.	0.	10.	0.	94.	948.	217.	0.	348.
34	15400 TAXICAB OPERATIONS	0.	0.	3.	0.	2475.	30.	9.	0.	485.
17	15500 PIPELINE TRANSPORT	0.	1782.	13.	0.	0.	67.	0.	683.	2209.
3	16100 ELECTRIC POWER	0.	0.	806.	0.	0.	0.	0.	0.	8773.
33	16300 WATER & OTHER UTILITIES	0.	0.	9.	0.	2140.	0.	0.	0.	487.
12	16400 WHOLESALE TRADE	0.	294.	55.	0.	9782.	3473.	935.	0.	3505.
4	16500 RETAIL TRADE	0.	2520.	247.	0.	8376.	3982.	55.	0.	7745.
13	17000 OTHER FIN. INS. & REAL ESTATE	0.	1391.	107.	0.	1275.	2139.	0.	0.	3338.
43	17200 HOSPITALS	1.	85.	8.	0.	15.	543.	86.	0.	320.
42	17500 OTHER RECREATIONAL SERVICES	0.	5.	20.	0.	59.	394.	25.	0.	321.
35	17800 LAUNDRIES & CLEANERS	0.	6.	10.	0.	183.	1301.	191.	0.	445.
15	17900 ACCOMMODATION & FOOD SERVICES	0.	344.	79.	0.	135.	6136.	570.	0.	2587.
40	18300 MISC. SERVICES TO BUS. & PERS.	0.	0.	7.	0.	1002.	407.	33.	0.	338.
18	18900 TRAVEL & ENTERTAINMENT	0.	0.	0.	0.	10498.	0.	0.	0.	1884.

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SUMMARY ENERGY REPORT FOR THE FOLLOWING FINAL DEMAND :

RUN # 1 \$1 MILLION ELECTRIC POWER, OPEN MODEL, NO IMPORTS
 RUN # 2
 RUN # 3
 RUN # 4
 RUN # 5
 RUN # 6
 RUN # 7
 RUN # 8
 RUN # 9
 RUN #10
 RUN #11
 RUN #12
 RUN #13
 RUN #14
 RUN #15

FUEL CONVERSION FACTORS

CANADIAN BITUMINOUS - 26.5885 GIGAJOULES PER TON
 IMPORTED BITUMINOUS - 27.2216 GIGAJOULES PER TON
 SUB-BITUMINOUS - 17.9367 GIGAJOULES PER TON
 ANTHRACITE - 26.7995 GIGAJOULES PER TON
 LIGNITE - 13.9273 GIGAJOULES PER TON
 COKE - 26.1665 GIGAJOULES PER TON
 GASOLINE - 0.1574 GIGAJOULES PER IMP. GALLON
 FUEL OIL - 0.1800 GIGAJOULES PER IMP. GALLON
 NATURAL GAS - 1.0815 GIGAJOULES PER THOUSAND CUBIC FT.
 LIQ. PETROLEUM GASES - 0.1234 GIGAJOULES PER IMP. GALLON
 STILL GAS - 0.1895 GIGAJOULES PER IMP. GALLON
 PURCHASED STEAM - 1.2138 GIGAJOULES PER THOUSAND LB.
 PURCHASED ELECTRICITY - 3.6000 GIGAJOULES PER THOUSAND KWH
 INDUSTRY GENERATED HYDRO - 3.6000 GIGAJOULES PER THOUSAND KWH
 INDUSTRY GENERATED THERMAL - 3.6000 GIGAJOULES PER THOUSAND KWH
 CRUDE OIL - 6.1229 GIGAJOULES PER BARREL OF 35 I.G.

THERMAL ELECTRIC FRACTION = 27.5 %

ELECTRIC GENERATION EFFICIENCY = .33

ALL FIGURES FOR PRIMARY GIGAJOULES COUNT JOULES OF ELECTRICITY
 AS 1/.33 JOULES OF PRIMARY THERMAL ENERGY

ENERGY SUPPLY AND DISPOSITION, GIGAJOULES, RUN # 1 \$1 MILLION ELECTRIC POWER, OPEN MODEL, NO IMPORTS

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SUPPLY

	DOMESTIC PRODUCTION	IMPORTS	EXPORTS	FINAL USE	TRANSFORMED TO SECONDARY	TOTAL NET SUPPLY
CRUDE OIL	67390.	0.	0.	0.	67390.	0.
COAL	279249.	0.	0.	0.	277734.	515.
NATURAL GAS	57191.	0.	0.	0.	53021.	4170.
ELECTRICITY	462575.	0.	0.	414000.	0.	48576.
COKE	706.	0.	0.	0.	0.	706.
GASOLINE	1452.	0.	0.	0.	342.	1109.
FUEL OIL	57620.	0.	0.	0.	54000.	3600.
L.P.G.	217.	0.	0.	0.	65.	152.
STILL GAS	776.	0.	0.	0.	0.	776.
PRIMARY GIGAJOULES	1410489.	0.	0.	1251696.	0.	158793.

DISPOSITION

	NON-ENERGY USE	ENERGY SUPPLY INDUSTRIES	PRIMARY INDUSTRIES	MANUFACTURING INDUSTRIES	COMMERCIAL TRANSPORT & OTHER	TOTAL INDUSTRIAL DISPOSITION
CRUDE OIL	0.	0.	0.	0.	0.	0.
COAL	57.	278.	34.	100.	46.	515.
NATURAL GAS	159.	2994.	62.	778.	178.	4170.
ELECTRICITY	0.	46911.	99.	1477.	89.	48576.
COKE	689.	2.	0.	16.	1.	706.
GASOLINE	4.	197.	83.	31.	794.	1109.
FUEL OIL	14.	1412.	219.	921.	1033.	3600.
L.P.G.	39.	43.	5.	14.	51.	152.
STILL GAS	0.	776.	0.	0.	0.	776.
PRIMARY GIGAJOULES	1193.	147763.	746.	6463.	2629.	158793.

DETAILED DISPOSITION, GIGAJOULES, RUN # 1 \$1 MILLION ELECTRIC POWER, OPEN MODEL, NO IMPORTS

RANK		COAL	NATURAL GAS	ELEC-TRICITY	COKE	GASOLINE	FUEL OIL	L.P.G.	STILL GAS	PRIMARY GIGA-JOULES
1	16100 ELECTRIC POWER	0.	0.	46149.	0.	0.	0.	0.	0.	139529.
2	00800 COAL MINES	278.	994.	641.	2.	184.	654.	20.	0.	4188.
3	07800 ALUMINUM SMELTING & REFINING	0.	4.	950.	276.	2.	218.	1.	0.	3496.
4	12100 PETROLEUM REFINERIES	0.	120.	66.	0.	9.	754.	23.	730.	1945.
5	00900 PETROLEUM & GAS WELLS	0.	1155.	35.	0.	0.	0.	0.	0.	1261.
6	10900 MFGRS. OF INDUSTRIAL CHEMICALS	13.	361.	134.	22.	1.	86.	42.	0.	951.
7	07500 IRON & STEEL INDUSTRY	20.	107.	59.	361.	1.	83.	1.	0.	883.
8	06900 PULP & PAPER INDUSTRY	25.	105.	142.	1.	1.	249.	1.	0.	846.
9	15500 PIPELINE TRANSPORT	0.	687.	16.	0.	0.	4.	0.	46.	787.
10	15100 TRUCK TRANSPORT	0.	5.	6.	0.	296.	141.	22.	0.	543.
11	15000 RAILWAY TRANSPORT	8.	2.	1.	1.	5.	162.	0.	0.	434.
12	16400 WHOLESALE TRADE	0.	26.	16.	0.	126.	51.	9.	0.	289.
13	07900 OTHER SMELTING & REFINING	35.	44.	50.	16.	0.	23.	2.	0.	279.
14	14900 WATER TRANSPORT	12.	1.	1.	0.	0.	209.	2.	0.	256.
15	13800 REPAIR CONSTRUCTION	25.	0.	5.	0.	124.	37.	11.	0.	236.
16	17000 OTHER FIN. INS. & REAL ESTATE	0.	84.	21.	0.	11.	21.	0.	0.	186.
17	14700 AIR TRANSPORT	0.	1.	1.	0.	10.	147.	1.	0.	183.
18	00600 IRON MINES	0.	20.	27.	0.	1.	57.	0.	0.	167.
19	11100 CEMENT MFGRS	13.	61.	11.	0.	0.	50.	0.	0.	163.
20	01500 SERVICES INCIDENTAL TO MINING	0.	0.	12.	0.	51.	49.	0.	0.	150.
21	18900 TRAVEL & ENTERTAINMENT	0.	0.	0.	0.	123.	0.	0.	0.	140.
22	00500 URANIUM MINES	31.	0.	20.	0.	1.	27.	2.	0.	126.
23	16500 RETAIL TRADE	0.	44.	14.	0.	21.	11.	0.	0.	124.
24	00700 BASE METAL & OTHER METAL MINES	2.	4.	26.	0.	1.	16.	1.	0.	104.

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APPENDIX 5.1

Primary Energy Calculation

For any final demand e , the use of primary energy is back-calculated by performing the following steps:

1. Start with a coefficient matrix \bar{W} which alters the following elements of W :
 - (a) Zero the use of imported bituminous coal for coking by industry 75 (iron and steel).
 - (b) Zero all energy inputs to industry 161 (electric power).
2. Calculate fuel use as a function of final demand,

$$\bar{t}(e) = \bar{W} (I - DB)^{-1} De .$$

3. Measure coal used in coking as

$$d(e) = \frac{\bar{t}_{l'}(e) \cdot c_{l'}}{c_c \cdot r_c} , l' = \text{coke}$$

where c_c is the conversion factor (from tons to Joules) of imported bituminous coal, and r_c is the gross conversion efficiency of coal to coke.

4. Measure line losses for electric power as

$$l(e) = \lambda \bar{t}_{k'}(e) , k' = \text{electricity}$$

where λ is the line loss factor.

5. Calculate fuels used to generate thermal electricity as

$$f(e) = (l(e) + t_{k'}(e)) \cdot F$$

where F is a vector of fuels used for thermal generation per thousand kwh of total electric utility output.

6. Measure total crude oil requirements as

$$O(e) = \frac{\sum_{j \in s} c_j (F_j(e) + f_j(e)) + pc_{j'} (E_{j'}(e) + f_{j'}(e))}{c_o \cdot r_o}$$

where: s is the set of indices for gasoline and fuel oil

j' is the index of LPG

p is the proportion of LPG produced in refineries

c_j is the conversion factor (for fuel j) from natural unit to Joules

c_o is the equivalent of c_j for crude oil

r_o is the gross conversion efficiency of crude oil to gasoline, fuel oil, and LPG

7. The required parameters are as follows:

$$\lambda = 0.093$$

F = the vector of fuel inputs excluding line losses to the electric power industry, divided by total electricity production, i.e.

$$F_j = T_{jk} / E_k \quad \begin{array}{l} j \text{ excludes electricity, } k \text{ is} \\ \text{the index of the electric power} \\ \text{industry, } E_k \text{ is its output in thousand} \\ \text{kwh.} \end{array}$$

$$r_c = 0.75$$

$$r_o = 0.877$$

$$p = 0.308$$

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2. Hamilton, K., and B. McInnis, Gross Energy Requirements for the Production of Goods - An I-O Baseline, Structural Analysis Division Working Paper 75-06-01.
3. Hamilton, K., and J. Deachman, Energy Availability, Detailed Disposition, and Industrial Demand Coefficients for Canada, 1971, Structural Analysis Division Working Paper 78-08-01.

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6. The Price Models

6.1 Introduction

The Statistics Canada price models belong to the family of cost push models traditionally associated with input-output models. These models are in effect the dual of the output determination models. Instead of analysing the propagation of demand throughout the economic system the price model serves to analyse the propagation of factor prices throughout the system.

The characteristic common to all price models of this family is the assumption of cost-push behaviour. It is assumed that, when an industry is faced with a change in the costs of its raw material or primary inputs, it will adjust its product price in such a way as to offset the increase in costs. To the extent that an industry's product is an intermediate input into other industries, the other industries must adjust their product prices as well.

The cost structures of each industry are described by a set of fixed coefficients that represent costs per unit of output. These coefficients are the familiar input coefficients of the input-output models. Because they are

invariant with respect to price, it is implied that changes in prices do not give rise to substitution among inputs. In short, there is no price induced substitution.

Because the Statistics Canada price models utilize the commodity-by-industry accounting framework of the Canadian input-output tables, it is necessary to specify a relationship between industry costs and product prices. In these models it is assumed that each industry will change the prices of all the commodities it produces in the same proportion. It follows then that a commodity price is a linear combination of industry cost prices - the weights being the market share of each industry in the production of the commodity.

At the time of writing, the input and market share coefficients are calculated from the 1966 input-output tables. The models make use of the most detailed of the tables available. Thus, all calculations are performed at the level of the 211 industries and 680 commodities as listed in appendix 2.1 and 2.2.

The price models are traditionally used to determine the impact on all industry selling prices and commodity prices of a change in primary factor or import prices. The Statistics

Canada price models have been extended so that they may be used to determine the impact of a change in commodity and industry prices as well.

Like the input-output models, the price models are models of comparative statics. They do not describe the time sequence of the propagation of prices.

The price models can also be used to calculate factor or import intensity.

Two variants of the price model are available: the first variant maintains profit margins in real terms (constant dollars) while the second maintains them in current dollars.

As is the case with the output models, the price models are fully operational in the sense that a computer system has been developed to solve the models and prepare reports of the results. The model is solved by an iterative method which is analogous to the solution methodology of the output models.

6.2 Algebraic Expression

The price model makes use of the same accounting identities (equation 3.1 and 3.2) and the same structural parameters - market share coefficients, D , import share coefficients, μ , and input coefficients, B and H - as the output model. The definitions of these parameters and the procedures for estimating them are described in chapter 4.

All of the price variables in the system are index numbers. The base of the index numbers is before a hypothesized change in the exogenous prices; accordingly changes in the exogenous variables are registered as changes from 1.0 and the impact is registered on the endogenous variables as changes from 1.0.

The following price variables may then be defined:

p_g is a NI order vector of industry selling price indexes.

p_{qd} is a NC order vector of domestically - produced - commodity price indexes.

p_m is a NC order vector of import price indexes.

p_y is a NY by NI matrix of primary input prices.

The model is expressed as follows:

$$p'_g = p'_{qd} (I - \hat{\mu}) B + p'_m \hat{\mu} B + \sum_{i=1}^{NI} p'_{yi} H_i \quad 6.1$$

where p'_{yi} is the i th column of the matrix p'_y and H_i is an NY by NI matrix, which is formed by setting the i th column of H_i equal to the i th column in H and all other elements equal to zero.

This is the cost equation. It states that an industry selling price index is a linear combination of input prices - intermediate commodities both domestically produced and imported and primary inputs. The weights are the appropriate input coefficients. It is to be noted that, when all of the prices on the right hand side take the value of 1.0, the elements in p'_g take the value of 1.0 also.

$$\text{i.e. } i' (I - \hat{\mu}) B + i' \hat{\mu} B + i' H = i'$$

$$p'_{qd} = p'_g D \quad 6.2$$

This equation serves to transform industry selling price indexes into domestically produced commodity price indexes, under the assumption that a commodity price index is a linear combination of industry selling price indexes, the weights being the market share coefficients.

The set of NI+NC equations represented by 6.1 and 6.2 may be used to determine p_g and p_{qd} in terms of p_m and p_y .

The solution for p_g may be written as

$$p'_g = (p'_m \hat{u} B + \sum_{i=1}^{NI} p'_y i H_i) (I - D(I - \hat{u})B)^{-1} \quad 6.3$$

p_{qd} may then be obtained from equation 6.2.

Variant 2 of the model which maintains profit margins in current dollars may be formed by modifying equation 6.2, to read:

$$p'_g = p'_{qd} (I - \hat{u})B + p'_m \hat{u}B + \sum_{i=1}^{NI} \bar{p}'_y i \bar{H}_i + \Pi \quad 6.4$$

where \bar{p}_y and \bar{H} are obtained by dropping the 'profit' row from p_y and H , and Π is a NI order vector of current dollar profit margins.

i.e. $\Pi' = p'_\pi \hat{u}_\pi$ where p_π is a vector of 'profit' prices' and u_π is the profit row of the u matrix.

$$\Pi = p'_g \hat{u}_\pi \quad 6.5$$

This equation states that profit margins are maintained in current dollars, or in other words that the ratio of profits to industry selling price indexes in each industry is equal to the initial value of the profit coefficient.

$$\text{e.g. } p'_\pi \hat{u}_\pi \hat{p}_g^{-1} = H'_\pi$$

Equations 6.2, 6.4 and 6.5 may then be solved for p_q , p_{qd} and Π .

$$p'_q = p'_{qd} (I - \hat{\mu}) + p'_m \hat{\mu} \quad 6.6$$

This equation calculates the commodity price indexes as a linear combination of domestically produced commodity price indexes and import commodity price indexes, the weights being the domestic and import share coefficients respectively.

6.3 The Operational Models

From an operational point of view, the computer system supporting the price model has a number of characteristics in common with that of the input/output models. Both are solved by means of iterative procedures, not requiring the calculation of an inverse; parameter arrays are stored and manipulated in compact form; the systems facilitate the changing of structural parameters, the preparation of exogenous variables and the generation of reports.

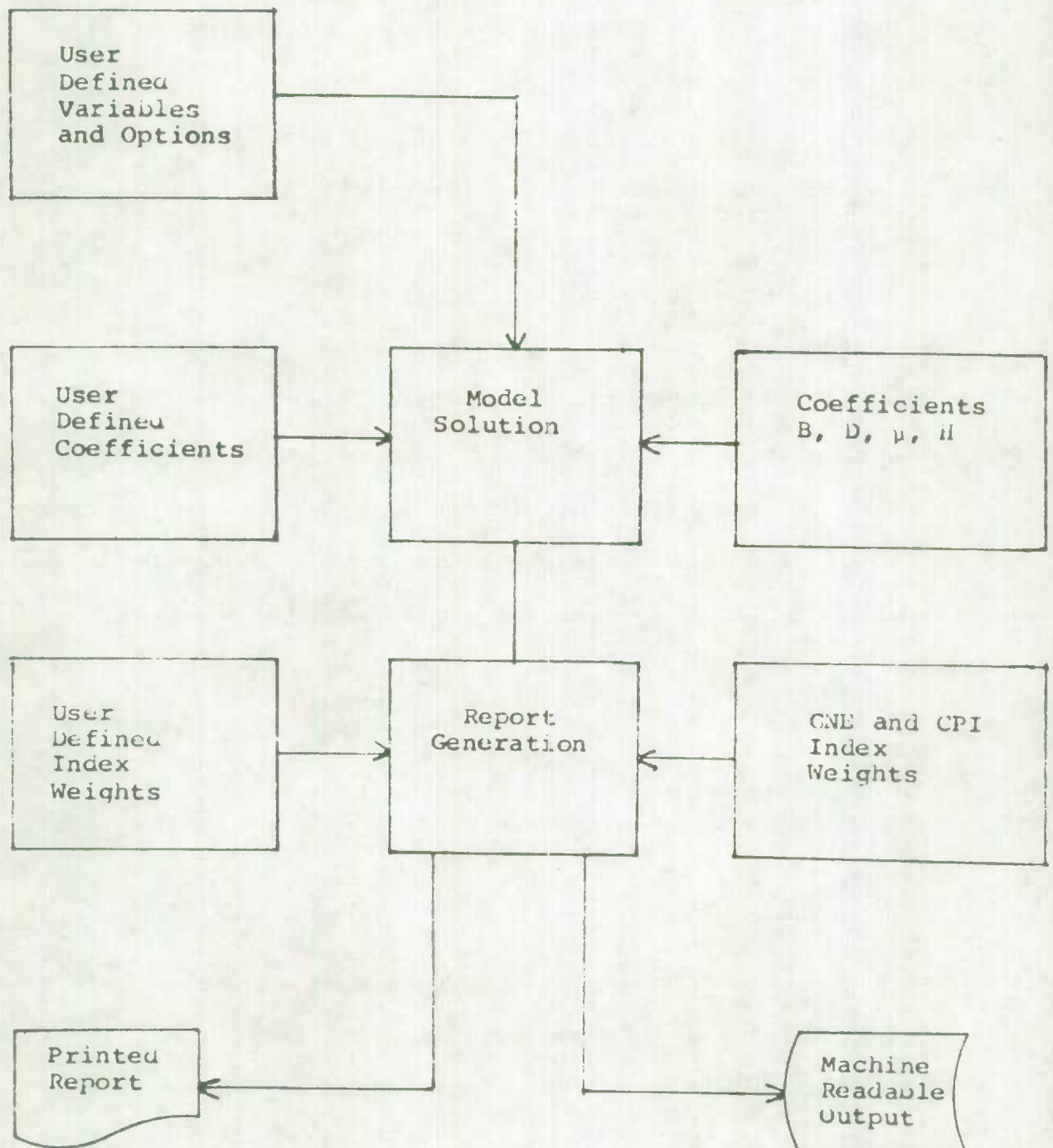
The price model system enables the user to override or exogenize selected endogenous variables. This feature is of importance because it facilitates the use of the model to simulate the impact of a change in the selling price index of

an industry or group of industries and the impact of a change in a commodity price index. This feature is discussed in chapter 6.3.1.

The computer system also enables the user to, in effect, mix the profit behaviour in variants 1) and 2). The user may prespecify which industries maintain profit margins in current dollars and which maintain them in constant dollars.

The price model system is depicted in chart 6.1.

Chart 6.1: The Price Model System



6.3.1 User determined commodity and Industry Selling Price Indexes

The user may set predetermined values for selected commodities or industry prices. When this option is used the models calculate the impact of a change in an industry selling price or a commodity price on the other prices.

When this option is exercised the industry whose price is predetermined or the industries that produce the commodity whose price is predetermined no longer have cost-push price setting behaviour, and it is not necessary that they maintain their profit margins. In this case profits become the slack variable. The model calculates the new profit margin as the difference between the selling price index and the cost index.

When an industry selling price index is assigned a predetermined value, the corresponding element in the vector p_g takes the value \bar{p}_g .

When a domestic commodity price index is assigned a predetermined value, the corresponding element in the vector p_{qd} takes the value \bar{p}_{qd} . In this case, it is necessary to adjust the industry selling price indexes of all the industries that

produce commodities with predetermined prices. These industry selling price indexes are a weighted combination of the predetermined \bar{p}_{qd} 's and the p_g 's that reflect the costs of commodities produced by those industries whose values are not predetermined. The weights reflect the product-mix in the base year. The following equation represents this calculation.

$$\hat{p} = \hat{p}_g (C_B i) + C_A p_{qd} \quad 6.7$$

Where C is the product-mix matrix as defined in equation 3.6. C_A and C_B such that $C_A + C_B = C$, are formed by putting the columns of C that correspond to commodities whose price has been predetermined into corresponding columns of C_A and the rest of the columns of C into corresponding columns of C_B . The rest of the elements of C_A and C_B are equal to zero.

A new profit coefficient $\hat{\pi}$ is then calculated as follows.

$$\hat{\pi} = \bar{p}_g - (p'_{qd} (I - \hat{\mu}) B + p'_m \hat{\mu} B + \sum_{i=1}^{NI} \bar{p}_{y_i} \bar{H}_i) \quad 6.8$$

$$= \bar{p}_g - (p_g - \pi)$$

The ratio of new to old profit coefficients is then calculated.

$$I_{\pi} = (\hat{u}_{\pi})^{-1} \bar{u}_{\pi}$$

6.9

6.3.2 Final Expenditure Price Indexes

Given calculated values for p_{qd} and p_g , and exogenous values for p_m and final demand coefficients, the computer program calculates a variety of GNP deflators and final demand deflators:

- a) Consumer expenditure price index which is a weighted sum of the commodity prices by total consumer expenditures coefficients.¹

$$\frac{NC + NY}{\sum_{i=1} p_{qi} CE_i} \quad \text{Where } CE_i = \text{total consumer expenditure for commodity } i. \quad 6.10$$

- b) A GDP at market prices index (assuming the 1966 pattern of Total Final Expenditure and the 1966 import proportions).

$$= \frac{NC + NY}{\sum_{i=1} (x_i p_{qd_i} + (1-\nu_i) FD_i p_{qd_i} + \nu_i FD_i p_{m_i} - M_i p_{m_i})} \quad 6.11$$

$$\frac{NC + NY}{\sum_{i=1} x_i} + \frac{NC + NY}{\sum_{i=1} FD_i} - \frac{NC + NY}{\sum_{i=1} M_i}$$

1. The same type of calculation is done for "machinery and equipment" and "Construction".

Where FD = total final demand minus imports and exports.

X = Exports

M = Imports

- c) The TFE price index (assuming the 1966 pattern of Total Final Expenditure).

$$= \frac{NC + NY \sum_{i=1} (X_i p_{qd_i} + (1-\nu_i) FD_i p_{qd_i} + \nu_i FD_i p_{m_i})}{\begin{matrix} NC + NY & NC + NY \\ \sum_{i=1} X_i & + & \sum_{i=1} FD_i \end{matrix}} \quad 6.12$$

- d) The program calculates also final demand price indexes for each category except for government revenue.

$$\frac{NC + NY \sum_{i=1} p_i q_i S_i}{\begin{matrix} NC + NY \\ \sum_{i=1} S_i \end{matrix}} \quad 6.13$$

Where S_i = coefficient representing commodity i for a category of final demand.

The program calculates also the Canadian Consumer Price Index based on 1967 expenditures. The special set of weights used

for that purpose reconciles the Input-Output classification with Family Expenditure Survey classification.

Specifically, the Consumer Price Index measures the percentage change through time in the cost of purchasing a constant "basket" of goods and services representing the purchases made by a particular population group in a specified time period.

The Consumer Price Index is also calculated by major groups. These are: food; housing; clothing; transportation; health and personal care; recreation, education and reading; and tobacco and alcohol.

Another convenient group to calculate the index on is non-food. This large group has been added on to the major groups because many users showed some interest in it.

Essentially the $CPI = \sum_i w_i p_{qi}$ where w_i is the weight used for the i th commodity and p_{qi} is the commodity price for the same commodity. This formula applies for any group using their respective set of weights.

The Consumer Price Index items are also classified into two major categories, goods and services, depending on which is

their most characteristic or dominant attribute. We calculate the Consumer Price Index for eleven groups of commodities covering the goods and services classification.

For each group previously mentioned, the weights corresponding to each commodity came from the original set of weights and were normalized, thereafter.

It is optional to print the details of calculation of the Consumer Price Index or any of the major groups.

6.3.3 User Determined Variables

The user defined variables are import prices p_m and primary prices p_y . As indicated in chapter 6.3.1, the user may set predetermined values for selected elements of p_g and p_{qd} .

The default value for all exogenous variables is 1.0. Accordingly, the user need specify only these elements that he wishes to be different from 1.0.

Import prices must be specified by commodity according to the commodity codes listed in Appendix 2.1. Should one wish to change all import prices, the default value can be changed without specifying commodity identification. Import prices

of commodities may be specified on a "from to" basis - i.e., with an instruction such as "set import prices for commodities from 00100 to 02400 equal to 1.1".

Primary input prices (factor prices) may be specified by primary input or by primary input by industry.

The primary input classification is presented on page 21 and the industry classification in appendix 2.2. Industries may be specified on a "from-to" basis, as well.

Industry selling price indexes or commodity price indexes to be given a predetermined value must be classified in terms of the appropriate industry or commodity classification codes. (Appendixes 2.2 and 2.1).

6.3.4 Model Solution

The models are solved by means of the iterative procedures outlined in the flowchart at the end of this chapter.

Block 1 initializes industry selling prices ($p_g=1$) in the first iteration. It also sets the values of any p_g or p_{qd} which are predetermined to a value at \bar{p}_g or \bar{p}_{qd} .

Block 2 calculates p_{qd} according to equation 6.2.

Block 3 is used to override selected elements of p_{qd} with values prespecified by the user. In this way selected commodity prices may be exogenized.

Block 4 is specific to the second variant of the price model. It calculates current dollar profit margins at each iteration according to equation 6.5.

Block 5 calculates industry selling price indexes p_g according to either equations 6.1 or 6.4. In the first iteration p_g takes a starting value of one. If the second variant is being used, Π takes a starting value equal to Π_π .

Block 6 is analogous to block 3. It allows the user to prespecify selected elements in p_g by replacing values in p_g by corresponding values in \bar{p}_g .

Block 7 tests for convergence. The calculations iterate over blocks (2), (3), (5), (6) and (4) in the case of variant 2, until a solution is reached. For a more detailed discussion of convergence criteria, see the discussion describing convergence in the output models.

Block 8 is required only if the option to override values in p_{qd} is exercised.

Block 9 calculates commodity price indexes according to equation 6.6

Block 10 calculates GNE deflators and final demand deflators as described in chapter 6.3.3.

Block 11 calculates consumer price indexes (see the description in chapter 6.3.3)

6.3.5 Report generation

The price model report consists of five sections, the first one describing the exogenous variables, the other four sections describing the endogenously calculated variables and the related calculations.

In this version of the model, the results are based on 1966 technology. It is possible, however, to change the structure on the input or the output side.

Section 1: Exogenous variables

This section describes in detail the general and specific prices. The general import price is printed first followed by the general primary input prices. Then the specific price changes would be in the following order if any or all of these options are exercised. First the specific import prices and/or specific import proportions are printed. Secondly, the specific primary input prices are detailed by industry and by primary inputs. Thirdly, if the option to override p_{qd} is used, we print the fixed prices for these commodities.

Section 2: GNE deflators and CPI

The results of GNE deflators and consumer price indexes are printed here. See description in section 6.3.3.

Section 3: The industry space results

Under this heading appears the industry selling price indexes p_g and the profit index by industry which is optional (see equation 6.9). The results are available in two aggregated versions - 211 industries and 41 industries.

Section 4: The final demand space results

Final demand price indexes are weighted sums of commodity prices the weights being final demand coefficients by category (see equation 6.12). A price index for each category of final demand is calculated except for inventories and government revenues. This means 128 final demand price indexes, i.e., 40 categories of consumer expenditures, 39 categories of machinery and equipment, 40 categories of construction; the last two groups covering investment, 6 categories of government current expenditures, exports, re-exports and imports.

There is no interest in calculating indexes for inventories and government revenues. These items are too volatile (specially inventories) to have any meaning.

This section is not printed in the aggregated version.

Section 2 provides the important aggregates of final demand price indexes.

The final demand price deflators can be calculated with a special set of primary prices if the price content of primary inputs is different for final demand than it is in the intermediate part of the model.

We can then calculate the intermediate effects or the total effects on final demand.

Section 5: The commodity space results

The commodity space results usually consist of four vectors although it is optional to add other results which belong to this space. The four vectors are the domestic commodity prices p_{qd} , the commodity prices p_q , the import prices p_m and the import proportions μ . The results are available in two standard levels of aggregation - 682 commodities and 99 commodities. This includes the primary inputs.

It is possible to provide to the model a new vector of import proportions μ or a new vector of import prices p_m which is previously calculated or predetermined.

The details of calculations involving the commodity prices such as the consumer price index can also be printed.

6.4 Experiments using the Price Models

The first four experiments presented here analyse changes due to an impact in import prices and in wage and salary rates. The fifth experiment is an example of factor intensity calculation. In all these experiments the profit margins are

calculated in constant dollars (variant 1) unless specified. The results are produced at a level of aggregation for 100 commodities and 42 industries. [2]

In the first experiment we increase the import price and the domestic commodity price of crude petroleum by 100%. Petroleum and coal products industry increases by 63% since its main input is crude mineral oil. On the output side the industry selling price of "petroleum and gas wells" increases by 77%, i.e., in the same proportion as crude mineral oil which constitutes its main output.

The other industries which respond to this increase are readily identifiable. On the consumer side, 'fuels and petroleum' and 'other petroleum and coal products' are increased by 63% and 43%, respectively. The CPI calculations show that the cost of transportation is increased by 4%.

In the second experiment the rates of wages and salaries and supplementary labour income are increased by 10% for all industries. Labour intensive industries react obviously more to this increase than capital intensive industries. We note, in particular, that 'printing and publishing', 'wood industries' and 'construction' are strongly affected by this

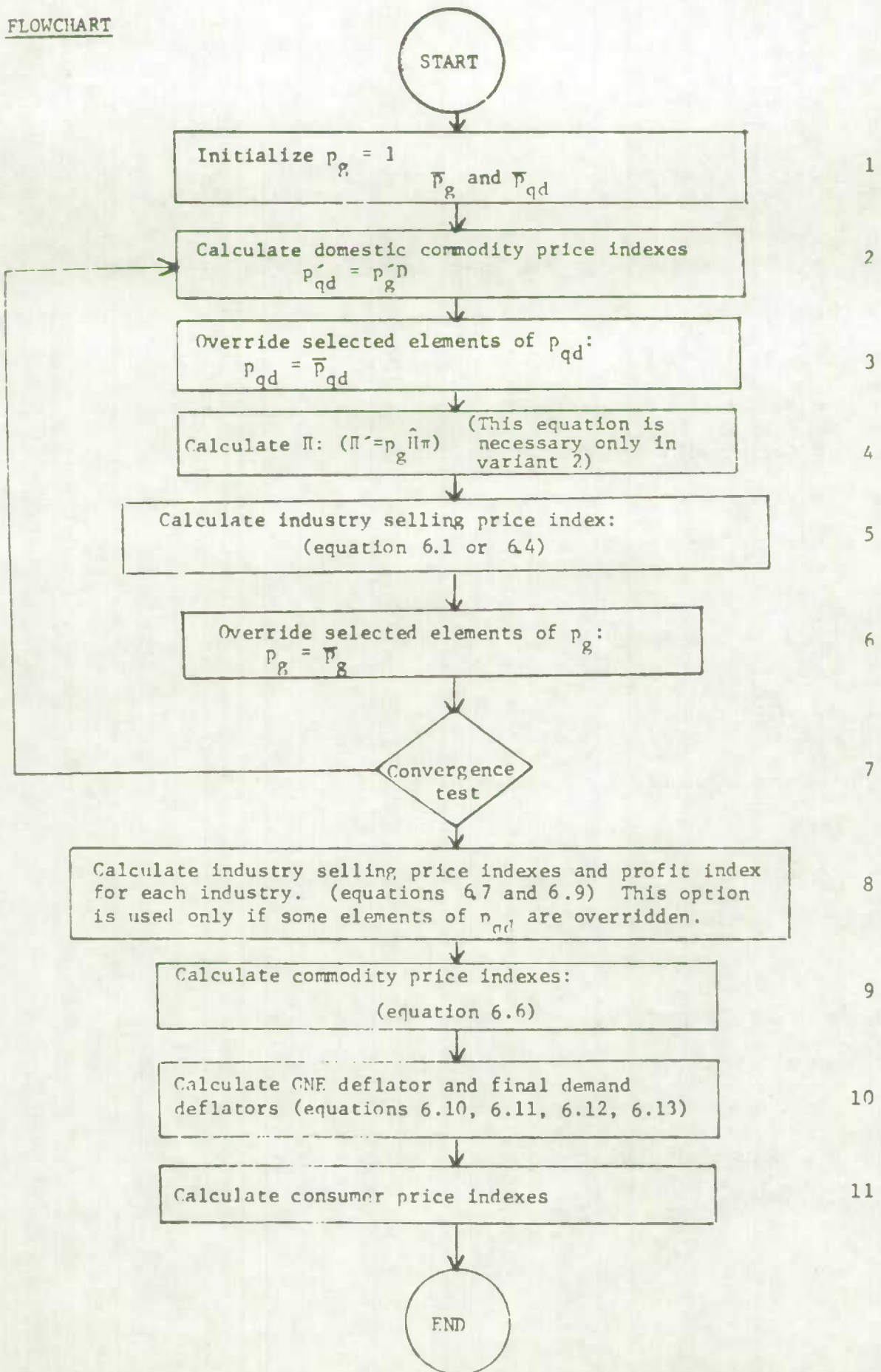
increase while 'petroleum and coal products' and 'agriculture' are affected only slightly.

The third experiment is the same as the second experiment, the profit margins for industries being calculated this time in current dollars. The results are higher than in the previous experiment as was expected and the remarks of the second experiment still apply. However the difference will be higher between both sets of results for industries that have a higher proportion of surplus in their input structure.

The fourth experiment is an increase of 10% in the import prices for all commodities. The industries that are mostly affected by these increases are those for which the main inputs are imported in a large proportion. 'Motor vehicle' industry and 'petroleum and coal products' show the greatest impact while the increase in agriculture and in the paper industry is negligible.

In the fifth experiment we use the price model to calculate the import intensity of a commodity. We are interested in the content of imported crude oil for all industries. The results obtained give the import content of crude oil in the production of each industry.

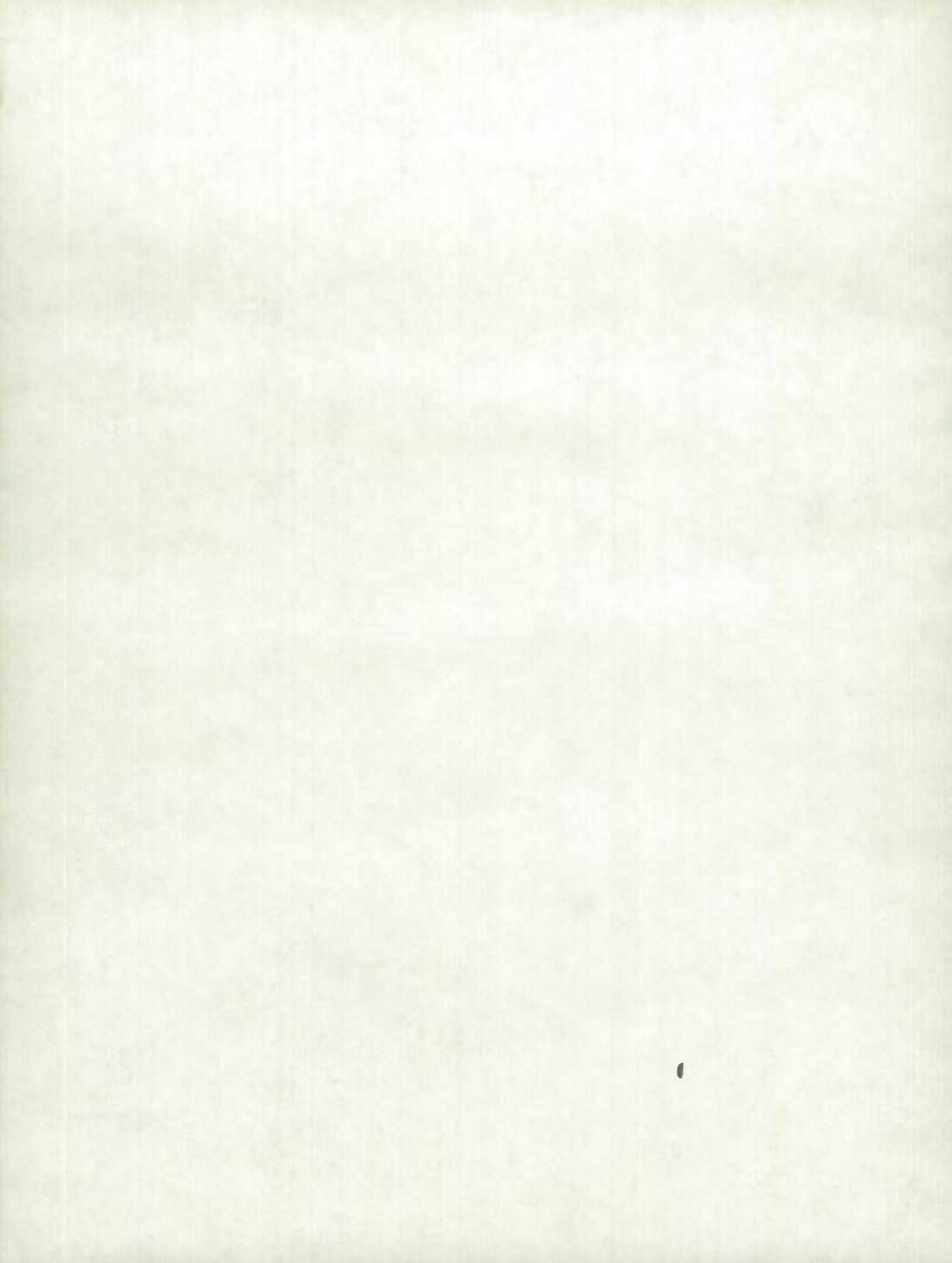
FLOWCHART



FOOTNOTES

Chapter 6

- [2] The calculations have been done at the most disaggregated level, i.e., 211 industries, 680 commodities; and have been aggregated thereafter.



APPENDIXES TO CHAPTER 6

APPENDIX 6.1

SECTION 1 : EXOGENOUS VARIABLES : FIRST EXPERIMENT

GENERAL DEFAULT PRICES

IMPORT PRICE : 1.0000

PRIMARY INPUT PRICES

UNALLOCATED IMPORTS & EXPORTS : 1.0000
 GOVERNMENT GOODS AND SERVICES : 1.0000
 COMMODITY INDIRECT TAXES : 1.0000
 SUBSIDIES : 1.0000
 OTHER INDIRECT TAXES : 1.0000
 WAGES AND SALARIES : 1.0000
 SUPPLEMENTARY LABOUR INCOME : 1.0000
 NET INCOME UNINCORP BUSINESS : 1.0000
 HOUSEHOLD INVESTMENT INCOME : 1.0000
 DEPLETION & MINING WRITE-OFFS : 1.0000
 CAPITAL COST ALLOWANCE : 1.0000
 OTHER SURPLUS : 1.0000

SPECIFIC IMPORT PRICE CHANGES

COMMODITY IDENTIFICATION	CHANGE	MU
03800 CRUDE MINERAL OILS	2.000000	0.452882

EXOGENOUSLY DETERMINED PQCS

COMMODITY IDENTIFICATION	VALUE
03800 CRUDE MINERAL OILS	2.000000

SECTION 2 : GNE DEFLATORS AND CPI

CONSUMER EXPENDITURE PRICE INDEX	:	1.015680
MACHINERY & EQUIPMENT PRICE INDEX	:	1.003665
CONSTRUCTION PRICE INDEX	:	1.011994
GOVT. CURRENT EXP. PRICE INDEX	:	1.006176
EXPORT PRICE INDEX	:	1.037543
IMPORT PRICE INDEX	:	1.032507
GROSS DOM. PROD. PRICE INDEX AT MARKET PRICE	:	1.018957
TOTAL FINAL EXPENDITURE PRICE INDEX	:	1.016713
AVERAGE PRICE OF COMMODITIES	:	1.017634

CONSUMER PRICE INDEX	:	1.015316
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CPI FOOD	:	1.012339
CPI HOUSING	:	0.015414
CPI CLOTHING	:	1.005610
CPI TRANSPORTATION	:	1.039102
CPI HEALTH	:	1.005975
CPI RECREATION EDUCATION AND READING	:	1.005132
CPI TOBACCO AND ALCOHOL	:	1.003804
CPI NON-FOOD	:	1.016296

I-0 MODEL INDUSTRIES(20/10/75)-MEDIUM

PG

1 AGRICULTURE	1.0241
2 FORESTRY	1.0162
3 FISHING, HUNTING & TRAPPING	1.0260
4 METAL MINES	1.0076
5 MINERAL FUELS	1.7359
6 NON-METAL MINES & QUARRIES	1.0146
7 SERVICES INCIDENTAL TO MINING	1.0160
8 FOOD & BEVERAGE INDUSTRIES	1.0148
9 TOBACCO PRODUCTS INDUSTRIES	1.0138
10 RUBBER & PLASTICS PRODUCTS IND.	1.0085
11 LEATHER INDUSTRIES	1.0048
12 TEXTILE INDUSTRIES	1.0070
13 KNITTING MILLS	1.0051
14 CLOTHING INDUSTRIES	1.0040
15 WOOD INDUSTRIES	1.0106
16 FURNITURE & FIXTURE INDUSTRIES	1.0055
17 PAPER & ALLIED INDUSTRIES	1.0146
18 PRINTING & PUBLISHING	1.0050
19 PRIMARY METAL INDUSTRIES	1.0082
20 METAL FABRICATING INDUSTRIES	1.0054
21 MACHINERY INDUSTRIES	1.0048
22 TRANSPORTATION EQUIPMENT IND.	1.0040
23 ELECTRICAL PRODUCTS INDUSTRIES	1.0045
24 NON-METALLIC MINERAL PROD. IND.	1.0121
25 PETROLEUM & COAL PRODUCTS IND.	1.6255
26 CHEMICAL & CHEMICAL PRD. IND.	1.0210
27 MISC MANUFACTURING INDUSTRIES	1.0055
28 CONSTRUCTION INDUSTRY	1.0114
29 TRANSPORTATION & STORAGE	1.0230
30 COMMUNICATION	1.0031
31 ELEC POWER, GAS, OTHER UTILITIES	1.0054
32 WHOLESALE TRADE	1.0083
33 RETAIL TRADE	1.0063
34 OWNER OCCUPIED DWELLINGS	1.0008
35 OTHER FINANCE, INS. & REAL ESTATE	1.0022
36 EDUCATION & HEALTH SERVICES	1.0038
37 AMUSEMENT & RECREATION SERVICES	1.0052
38 SERVICES TO BUSINESS MANAGEMENT	1.0021
39 ACCOMMODATION & FOOD SERVICES	1.0062
40 OTHER PERSONAL & MISC SERVICES	1.0078
41 TRANSPORTATION MARGINS	1.0254
42 OPERATING, OFFICE, LAB & FCCO	1.0069
43. TRAVEL & ADVERTISING, PROMOTION	1.0148

SECTION 5: COMMODITY SPACE RESULTS

15-48-10 JUN. 11/76

1-6 MODEL COMMODITIES(120/16751)-MEDIUM	PQD	PQ	PM	MU
00100 GRAINS	1.0241	1.0235	1.0000	0.0272
00200 LIVE ANIMALS	1.0241	1.0239	1.0000	0.0093
01300 OTHER AGRICULTURAL PRODUCTS	1.0240	1.0197	1.0000	0.1773
00400 FISH (LANDINGS)	1.0268	1.0235	1.0000	0.1219
00500 HUNTING & TRAPPING PRODUCTS	1.0268	1.0007	1.0000	0.9746
00600 FORESTRY PRODUCTS	1.0163	1.0159	1.0000	0.0229
00700 IRON ORES & CONCENTRATES	1.0155	1.0092	1.0000	0.4073
00800 OTHER METAL ORES & CONCENTRATES	1.0051	1.0046	1.0000	0.0801
00900 COAL	1.0169	1.0046	1.0000	0.8203
01000 CRUDE MINERAL OILS	2.0000	2.0000	2.0000	0.4529
01100 NATURAL GAS	1.0037	1.0028	1.0000	0.2519
01200 NON-METALLIC MINERALS	1.0154	1.0119	1.0000	0.2531
01300 SERVICES INCIDENTAL TO MINING	1.0155	1.0155	1.0000	0.0
01400 MEAT PRODUCTS	1.0163	1.0155	1.0000	0.0505
01500 FISH PRODUCTS	1.0168	1.0147	1.0000	0.1287
01600 DAIRY PRODUCTS	1.0220	1.0215	1.0000	0.0214
01700 FRUITS & VEGETABLES PREPARATIONS	1.0107	1.0090	1.0000	0.1643
01800 FEEDS	1.0140	1.0137	1.0000	0.0495
01900 FLOUR, WHEAT, MEAL & OTHER CEREALS	1.0174	1.0170	1.0000	0.0269
02000 BREAKFAST CEREAL & BAKERY PROD.	1.0134	1.0132	1.0000	0.0190
02100 SUGAR	1.0071	1.0070	1.0000	0.0176
02200 MISC. FOOD PRODUCTS	1.0082	1.0071	1.0000	0.1351
02300 SOFT DRINKS	1.0113	1.0112	1.0000	0.0129
02400 ALCOHOLIC BEVERAGES	1.0067	1.0055	1.0000	0.1720
02500 TOBACCO PROCESSED UNMANUFACTURED	1.0211	1.0197	1.0000	0.0647
02600 CIGARETTES & TOBACCO PFG.	1.0106	1.0103	1.0000	0.0233
02700 TIRES & TUBES	1.0083	1.0077	1.0000	0.0780
02800 OTHER RUBBER PRODUCTS	1.0084	1.0059	1.0000	0.3018
02900 LEATHER & LEATHER PRODUCTS	1.0049	1.0040	1.0000	0.1648
03000 PLASTIC FABRICATED PRODUCTS	1.0094	1.0070	1.0000	0.2494
03100 YARNS & MAN MADE FIBRES	1.0091	1.0070	1.0000	0.2272
03200 FIBRICS	1.0066	1.0043	1.0000	0.3426
03300 OTHER TEXTILE PRODUCTS	1.0069	1.0059	1.0000	0.1514
03400 HOSIERY, UNDERWEAR & SLEEPWEAR	1.0048	1.0046	1.0000	0.0428
03500 CLOTHING	1.0042	1.0039	1.0000	0.0855
03600 LUMBER & TIMBER	1.0121	1.0107	1.0000	0.1176
03700 VENEER & PLYWOOD	1.0089	1.0077	1.0000	0.1302
03800 OTHER WOOD FABRICATED MATERIALS	1.0093	1.0090	1.0000	0.0385
03900 FURNITURE & FIXTURES	1.0056	1.0052	1.0000	0.0674
04010 PULP/PAPER DUMMGINTRA-TRANSFERS	1.0142	1.0142	1.0000	0.0
04020 PULP	1.0151	1.0139	1.0000	0.0790
04100 NEWSPRINT & OTHER PAPER STOCK	1.0150	1.0145	1.0000	0.0331
04200 PAPER PRODUCTS	1.0129	1.0116	1.0000	0.1000
04300 PRINTING & PUBLISHING	1.0060	1.0051	1.0000	0.1543
04400 ADVERTISING, PRINT MEDIA	1.0060	1.0060	1.0000	0.0
04510 IRON/STEEL DUMMGINTRA-TRANSFERS	1.0095	1.0095	1.0000	0.0
04520 IRON & STEEL PRODUCTS	1.0088	1.0076	1.0000	0.1404
04600 ALUMINUM PRODUCTS	1.0094	1.0079	1.0000	0.1773
04700 COPPER & COPPER ALLOY PRODUCTS	1.0057	1.0055	1.0000	0.0306
04800 NICKEL PRODUCTS	1.0056	1.0015	1.0000	0.7279

1-0 MODEL COMMODITIES (20/10/75) - MEDIUM	P40	P4	PM	MU
04900 OTHER NON FERROUS METAL PRODUCTS	1.0061	1.0041	1.0000	0.3236
05000 BOILERS, TANKS & PLATES	1.0050	1.0046	1.0000	0.0865
05100 FABRICATED STRUCTURAL METAL PROD	1.0057	1.0050	1.0000	0.0905
05200 OTHER METAL FABRICATED PRODUCTS	1.0057	1.0046	1.0000	0.1861
05300 AGRICULTURAL MACHINERY	1.0050	1.0018	1.0000	0.6362
05400 OTHER INDUSTRIAL MACHINERY	1.0053	1.0026	1.0000	0.5090
05500 MOTOR VEHICLES	1.0033	1.0025	1.0000	0.2577
05600 MOTOR VEHICLE PARTS	1.0046	1.0019	1.0000	0.6004
05700 OTHER TRANSPORT EQUIPMENT	1.0055	1.0039	1.0000	0.3082
05800 APPLIANCES & REFRIGERS, HOUSEHOLD	1.0047	1.0035	1.0000	0.2669
05900 OTHER ELECTRICAL PRODUCTS	1.0045	1.0035	1.0000	0.2361
06000 CEMENT & CONCRETE PRODUCTS	1.0143	1.0142	1.0000	0.0061
06100 OTHER NON-METALLIC MINERAL PROD.	1.0096	1.0074	1.0000	0.2685
06200 GASOLINE & FUEL OIL	1.6323	1.5662	1.0000	0.1045
06300 OTHER PETROLEUM & COAL PROD.	1.4331	1.3671	1.0000	0.1730
06400 INDUSTRIAL CHEMICALS	1.0296	1.0226	1.0000	0.2235
06500 FERTILIZERS	1.0113	1.0091	1.0000	0.1894
06600 PHARMACEUTICALS	1.0086	1.0072	1.0000	0.1782
06700 OTHER CHEMICAL PRODUCTS	1.0148	1.0123	1.0000	0.1530
06800 SCIENTIFIC EQUIPMENT	1.0039	1.0016	1.0000	0.5681
06900 OTHER MANUFACTURED PRODUCTS	1.0065	1.0045	1.0000	0.2995
07000 RESIDENTIAL CONSTRUCTION	1.0076	1.0076	1.0000	0.0
07100 NON-RESIDENTIAL CONSTRUCTION	1.0139	1.0139	1.0000	0.0
07200 MARINA CONSTRUCTION	1.0060	1.0060	1.0000	0.0
07300 PIPELINE TRANSPORTATION	1.0015	1.0013	1.0000	0.1601
07400 TRANSPORTATION & STORAGE	1.0244	1.0238	1.0000	0.0242
07500 RADIO & TELEVISION BROADCASTING	1.0052	1.0051	1.0000	0.0238
07600 TELEPHONE & TELEGRAPH	1.0017	1.0017	1.0000	0.0
07700 POSTAL SERVICES	1.0080	1.0079	1.0000	0.0171
07800 ELECTRIC POWER	1.0049	1.0048	1.0000	0.0081
07900 OTHER UTILITIES	1.0091	1.0091	1.0000	0.0
08000 WHOLESALE MARGINS	1.0096	1.0095	1.0000	0.0027
08100 RETAIL MARGINS	1.0063	1.0063	1.0000	0.0
08200 TRANSPORTATION MARGINS	1.0254	1.0254	1.0000	0.0
08300 IMPUTED RENTAL/LEASE DEPRIVATION	1.0000	1.0000	1.0000	0.0
08400 OTHER FINANCING, UNREAL ESTATE	1.0040	1.0040	1.0000	0.0232
08500 BUSINESS SERVICES	1.0035	1.0030	1.0000	0.1449
08600 EDUCATION SERVICES	1.0046	1.0046	1.0000	0.0
08700 HEALTH SERVICES	1.0037	1.0037	1.0000	0.0
08800 AMUSEMENT & RECREATION SERVICES	1.0052	1.0052	1.0000	0.0
08900 ACCOMMODATION & FOOD SERVICES	1.0065	1.0065	1.0000	0.0
09000 OTHER PERSONAL & HOUSEHOLD SERVICES	1.0072	1.0071	1.0000	0.0044
09100 OPERATING, OFFICE, TRAVEL & FOOD	1.0069	1.0069	1.0000	0.0
09200 TRAVEL, ADVERTISING & PROMOTION	1.0148	1.0148	1.0000	0.0
09300 NON-COMMERCE IMPORTS	1.0000	1.0000	1.0000	1.0000
09400 UNALLOCATED IMPORTS & EXPORTS	0.0	0.0	0.0	0.0
09500 INDIRECT TAXES	1.0000	0.0	0.0	0.0
09600 SUBSIDIES	1.0000	0.0	0.0	0.0
09700 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09800 SUPPLEMENTARY LABOUR INCOME	1.0000	0.0	0.0	0.0
09900 NET INCOME, UNINC. BUSINESSES	1.0000	0.0	0.0	0.0
10010 HOUSEHOLD INVESTMENT INCOME	1.0000	0.0	0.0	0.0
10020 DEPRECIATION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
10030 CAPITAL COST ALLOWANCE	1.0000	0.0	0.0	0.0
10040 OTHER SURPLUS	1.0000	0.0	0.0	0.0

SECTION 1 : EXOGENOUS VARIABLES : SECOND EXPERIMENT

GENERAL DEFAULT PRICES

IMPORT PRICE : 1.0000

PRIMARY INPUT PRICES

UNALLOCATED IMPORTS & EXPORTS	:	1.0000
GOVERNMENT GOODS AND SERVICES	:	1.0000
COMMODITY INDIRECT TAXES	:	1.0000
SUBSIDIES	:	1.0000
OTHER INDIRECT TAXES	:	1.0000
WAGES AND SALARIES	:	1.1000
SUPPLEMENTARY LABOUR INCOME	:	1.1000
NET INCOME UNINCORP BUSINESS	:	1.0000
HOUSEHOLD INVESTMENT INCOME	:	1.0000
DEPLETION & MINING WRITE-OFFS	:	1.0000
CAPITAL COST ALLOWANCE	:	1.0000
OTHER SURPLUS	:	1.0000

SECTION 2 : GNE DEFLATORS AND CPI

CONSUMER EXPENDITURE PRICE INDEX	:	1.033898
MACHINERY & EQUIPMENT PRICE INDEX	:	1.030088
CONSTRUCTION PRICE INDEX	:	1.051541
GOVT. CURRENT EXP. PRICE INDEX	:	1.013391
EXPORT PRICE INDEX	:	1.037559
IMPORT PRICE INDEX	:	1.000000
GROSS DOM. PRCD. PRICE INDEX AT MARKET PRICE	:	1.028861
TOTAL FINAL EXPENDITURE PRICE INDEX	:	1.033640
AVERAGE PRICE OF COMMODITIES	:	1.038122

CONSUMER PRICE INDEX : 1.035698

CPI FOOD	:	1.039221
CPI HOUSING	:	1.030185
CPI CLOTHING	:	1.045966
CPI TRANSPORTATION	:	1.035613
CPI HEALTH	:	1.040628
CPI RECREATION EDUCATION AND READING	:	1.040847
CPI TOBACCO AND ALCOOL	:	1.021257
CPI NON-FOOD	:	1.034534

1-0 MODEL INDUSTRIES(20/10/75)-MEDIUM

PG

1 AGRICULTURE	1.0188
2 FORESTRY	1.0548
3 FISHING,HUNTING & TRAPPING	1.0384
4 METAL MINES	1.0393
5 MINERAL FUELS	1.0230
6 NON-METAL MINES & QUARRIES	1.0386
7 SERVICES INCIDENTAL TO MINING	1.0604
8 FOOD & BEVERAGE INDUSTRIES	1.0370
9 TOBACCO PRODUCTS INDUSTRIES	1.0335
10 RUBBER & PLASTICS PRODUCTS IND.	1.0452
11 LEATHER INDUSTRIES	1.0541
12 TEXTILE INDUSTRIES	1.0460
13 KNITTING MILLS	1.0511
14 CLOTHING INDUSTRIES	1.0529
15 WOOD INDUSTRIES	1.0589
16 FURNITURE & FIXTURE INDUSTRIES	1.0567
17 PAPER & ALLIED INDUSTRIES	1.0487
18 PRINTING & PUBLISHING	1.0611
19 PRIMARY METAL INDUSTRIES	1.0411
20 METAL FABRICATING INDUSTRIES	1.0523
21 MACHINERY INDUSTRIES	1.0486
22 TRANSPORTATION EQUIPMENT IND.	1.0428
23 ELECTRICAL PRODUCTS INDUSTRIES	1.0514
24 NON-METALLIC MINERAL PROD. IND.	1.0455
25 PETROLEUM & COAL PRODUCTS IND.	1.0205
26 CHEMICAL & CHEMICAL PROD. IND.	1.0422
27 MISC MANUFACTURING INDUSTRIES	1.0520
28 CONSTRUCTION INDUSTRY	1.0553
29 TRANSPORTATION & STORAGE	1.0541
30 COMMUNICATION	1.0568
31 ELEC POWER,GAS,OTHER UTILITIES	1.0292
32 WHOLESALE TRADE	1.0564
33 RETAIL TRADE	1.0545
34 OWNER OCCUPIED DWELLINGS	1.0095
35 OTHER FINANCE,INS. & REAL ESTATE	1.0382
36 EDUCATION & HEALTH SERVICES	1.0298
37 AMUSEMENT & RECREATION SERVICES	1.0431
38 SERVICES TO BUSINESS MANAGEMENT	1.0488
39 ACCOMMODATION & FOOD SERVICES	1.0481
40 OTHER PERSONAL & MISC SERVICES	1.0471
41 TRANSPORTATION MARGINS	1.0575
42 OPERATING,OFFICE,LAB & FOOD	1.0322
43 TRAVEL & ADVERTISING, PROMOTION	1.0494

SECTION 5: COMMODITY SPACE RESULTS.

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I-U MODEL COMMODITIES(20/10/75)-MEDIUM	PQD	PQ	PM	MU
00100 TRAINS	1.0188	1.0183	1.0000	0.0272
00200 LIVE ANIMALS	1.0188	1.0186	1.0000	0.0093
00300 OTHER AGRICULTURAL PRODUCTS	1.0190	1.0157	1.0000	0.1773
00400 FISH LANDINGS	1.0384	1.0337	1.0000	0.1219
00500 HUNTING & TRAPPING PRODUCTS	1.0384	1.0010	1.0000	C.9746
00600 FURRIERY PRODUCTS	1.0541	1.0529	1.0000	0.0229
00700 IRON ORES & CONCENTRATES	1.0429	1.0254	1.0000	0.4073
00800 OTHER METAL ORES & CONCENTRATES	1.0376	1.0350	1.0000	C.C801
00900 TITAN	1.1050	1.0186	1.0000	0.8203
01000 CRUDE MINERAL OILS	1.0191	1.0104	1.0000	0.4529
01100 NATURAL GAS	1.0191	1.0143	1.0000	0.2519
01200 NON-METALLIC MINERALS	1.0384	1.0293	1.0000	0.2531
01300 SERVICES INCIDENTAL TO MINING	1.0599	1.0599	1.0000	0.0
01400 MEAT PRODUCTS	1.0351	1.0333	1.0000	0.0505
01500 FISH PRODUCTS	1.0482	1.0420	1.0000	0.1287
01600 DAIRY PRODUCTS	1.0358	1.0350	1.0000	0.0214
01700 FRUITS & VEGETABLES PREPARATIONS	1.0416	1.0344	1.0000	0.1643
01800 FEEDS	1.0310	1.0303	1.0000	0.0495
01900 FLOUR, WHEAT, MEAL & OTHER CEREALS	1.0332	1.0323	1.0000	C.C269
02000 BREAKFAST CEREAL & BAKERY PROD.	1.0511	1.0501	1.0000	0.0190
02100 SUGAR	1.0213	1.0209	1.0000	0.0176
02200 MISC. FOOD PRODUCTS	1.0361	1.0315	1.0000	0.1351
02300 SOFT DRINKS	1.0532	1.0525	1.0000	0.0129
02400 ALCOHOLIC BEVERAGES	1.0372	1.0317	1.0000	0.1729
02500 TOBACCO PROCESSED UNMANUFACTURED	1.0240	1.0224	1.0000	0.0647
02600 CIGARETTES & TOBACCO MFG.	1.0377	1.0368	1.0000	0.0233
02700 TIRES & TUBES	1.0411	1.0379	1.0000	C.C780
02800 OTHER RUBBER PRODUCTS	1.0483	1.0337	1.0000	0.3018
02900 LEATHER & LEATHER PRODUCTS	1.0541	1.0455	1.0000	0.1648
03000 PLASTIC FABRICATED PRODUCTS	1.0476	1.0358	1.0000	0.2494
03100 YARNS & MAN MADE FIBRES	1.0462	1.0358	1.0000	0.2272
03200 FABRICS	1.0461	1.0305	1.0000	0.3426
03300 OTHER TEXTILE PRODUCTS	1.0469	1.0399	1.0000	0.1514
03400 HOSIERY, UNDERWEAR & SLEEPWEAR	1.0534	1.0512	1.0000	0.0428
03500 CLOTHING	1.0525	1.0480	1.0000	0.0855
03600 LUMBER & TIMBER	1.0588	1.0519	1.0000	0.1170
03700 VENEER & PLYWOOD	1.0599	1.0521	1.0000	0.1302
03800 OTHER WOOD FABRICATED MATERIALS	1.0579	1.0557	1.0000	C.C385
03900 FURNITURE & FIXTURES	1.0561	1.0523	1.0000	0.0674
04000 PULP/PAPER DUMMYS/INTRA-TRANSFERS	1.0482	1.0482	1.0000	0.0
04020 PULP	1.0495	1.0456	1.0000	C.C790
04100 NEWS/PRINT & OTHER PAPER STOCK	1.0479	1.0463	1.0000	0.0331
04200 PAPER PRODUCTS	1.0513	1.0462	1.0000	0.1009
04300 PRINTING & PUBLISHING	1.0609	1.0515	1.0000	C.1543
04400 ADVERTISING, PRINT MEDIA	1.0606	1.0606	1.0000	0.0
04500 IRON/STEEL DUMMYS/INTRA-TRANSFERS	1.0434	1.0434	1.0000	0.0
04520 IRON & STEEL PRODUCTS	1.0443	1.0379	1.0000	0.1404
04600 ALUMINUM PRODUCTS	1.0344	1.0280	1.0000	0.1773
04700 COPPER & COPPER ALLOY PRODUCTS	1.0397	1.0380	1.0000	C.C306
04800 NICKEL PRODUCTS	1.0386	1.0105	1.0000	0.7279

I-C MODEL COMMODITIES (20/10/75)-MEDIUM	PQD	PQ	PH	MU
01900 OTHER NON FERROUS METAL PRODUCTS	1.0396	1.0265	1.0000	0.1236
05000 ROLLERS, TAMS & PLATES	1.0533	1.0486	1.0000	0.0865
05100 FABRICATED STRUCTURAL METAL PROD	1.0494	1.0452	1.0000	0.0905
05200 OTHER METAL FABRICATED PRODUCTS	1.0522	1.0424	1.0000	0.1861
05300 AGRICULTURAL MACHINERY	1.0490	1.0178	1.0000	0.0362
05400 OTHER INDUSTRIAL MACHINERY	1.0501	1.0247	1.0000	0.5090
05500 MOTOR VEHICLES	1.0350	1.0260	1.0000	0.2577
05600 MOTOR VEHICLE PARTS	1.0469	1.0189	1.0000	0.6094
05700 OTHER TRANSPORT EQUIPMENT	1.0549	1.0373	1.0000	0.3082
05800 APPLIANCES & RECEIVERS, HOUSEHOLD	1.0495	1.0362	1.0000	0.2669
05900 OTHER ELECTRICAL PRODUCTS	1.0512	1.0387	1.0000	0.2361
06000 CEMENT & CONCRETE PRODUCTS	1.0417	1.0414	1.0000	0.0066
06100 OTHER NON-METALLIC MINERAL PROD.	1.0498	1.0366	1.0000	0.2695
06200 GASOLINE & FUEL OIL	1.0203	1.0181	1.0000	0.1045
06300 OTHER PETROLEUM & COAL PROD.	1.0245	1.0196	1.0000	0.1730
06400 INDUSTRIAL CHEMICALS	1.0376	1.0290	1.0000	0.2235
06500 FERTILIZERS	1.0356	1.0200	1.0000	0.1894
06600 PHARMACEUTICALS	1.0524	1.0431	1.0000	0.1782
06700 OTHER CHEMICAL PRODUCTS	1.0455	1.0387	1.0000	0.1530
06800 SCIENTIFIC EQUIPMENT	1.0522	1.0215	1.0000	0.5881
06900 OTHER MANUFACTURED PRODUCTS	1.0523	1.0367	1.0000	0.2995
07000 RESIDENTIAL CONSTRUCTION	1.0530	1.0530	1.0000	0.0
07100 NON-RESIDENTIAL CONSTRUCTION	1.0523	1.0523	1.0000	0.0
07200 REPAIR CONSTRUCTION	1.0693	1.0693	1.0000	0.0
07300 PIPELINE TRANSPORTATION	1.0123	1.0104	1.0000	0.1601
07400 TRANSPORTATION & STORAGE	1.0566	1.0551	1.0000	0.0242
07500 RADIO & TELEVISION BROADCASTING	1.0956	1.0933	1.0000	0.0238
07600 TELEPHONE & TELEGRAPH	1.0421	1.0421	1.0000	0.0
07700 POSTAL SERVICES	1.0936	1.0920	1.0000	0.0171
07800 ELECTRIC POWER	1.0295	1.0293	1.0000	0.0092
07900 OTHER UTILITIES	1.0302	1.0302	1.0000	0.0
08000 WHOLESALE MARGINS	1.0547	1.0545	1.0000	0.0027
08100 RETAIL MARGINS	1.0544	1.0544	1.0000	0.0
08200 TRANSPORTATION MARGINS	1.0575	1.0575	1.0000	0.0
08300 IMPUTED RENT, OWNER O.P.O.D.M.E.L.	1.0095	1.0095	1.0000	0.0
08400 OTHER FINANCE, INS., REAL ESTATE	1.0385	1.0376	1.0000	0.0232
08500 BUSINESS SERVICES	1.0487	1.0416	1.0000	0.1449
08600 EDUCATION SERVICES	1.0635	1.0635	1.0000	0.0
08700 HEALTH SERVICES	1.0253	1.0253	1.0000	0.0
08800 AMUSEMENT & RECREATION SERVICES	1.0432	1.0432	1.0000	0.0
08900 ACCOMMODATION & FOOD SERVICES	1.0485	1.0485	1.0000	0.0
09000 OTHER PERSONAL & MED. SERVICES	1.0501	1.0499	1.0000	0.0004
09100 CATERING, OFFICE, LAB. & FOOD	1.0355	1.0355	1.0000	0.0
09200 TRAVEL, ADVERTISING & PROMOTION	1.0494	1.0494	1.0000	0.0
09300 NON-COMPETING IMPORTS	1.0000	1.0000	1.0000	1.0000
09400 UNALLOCATED IMPORTS & EXPORTS	1.0000	0.0	0.0	0.0
09500 INDIRECT TAXES	1.0000	0.0	0.0	0.0
09600 SUBSIDIES	1.0000	0.0	0.0	0.0
09700 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09800 SUPPLEMENTARY LABOUR INCOME	1.0000	0.0	0.0	0.0
09900 NET INCOME, UNINC. BUSINESS	1.0000	0.0	0.0	0.0
10000 HOUSEHOLD INVESTMENT INCOME	1.0000	0.0	0.0	0.0
10000 DEPLETION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
10000 CAPITAL COST ALLOWANCE	1.0000	0.0	0.0	0.0
10000 OTHER SURPLUS	1.0000	0.0	0.0	0.0

APPENDIX 6.3

SECTION 1 : EXOGENOUS VARIABLES : THIRD EXPERIMENT

GENERAL DEFAULT PRICES

IMPORT PRICE : 1.0000

PRIMARY INPUT PRICES

UNALLOCATED IMPORTS & EXPORTS : 1.0000
 GOVERNMENT GOODS AND SERVICES : 1.0000
 COMMODITY INDIRECT TAXES : 1.0000
 SUBSIDIES : 1.0000
 OTHER INDIRECT TAXES : 1.0000
 WAGES AND SALARIES : 1.1000
 SUPPLEMENTARY LABOUR INCOME : 1.1000
 NET INCOME UNINCORP BUSINESS : 1.0000
 HOUSEHOLD INVESTMENT INCOME : 1.0000
 DEPLETION & MINING WRITE-OFFS : 1.0000
 CAPITAL COST ALLOWANCE : 1.0000
 OTHER SURPLUS : 1.0000

SECTION 2 : GNE DEFLATORS AND CPI

CONSUMER EXPENDITURE PRICE INDEX : 1.046474
 MACHINERY & EQUIPMENT PRICE INDEX : 1.040039
 CONSTRUCTION PRICE INDEX : 1.065568
 GOVT. CURRENT EXP. PRICE INDEX : 1.017825
 EXPORT PRICE INDEX : 1.055604
 IMPORT PRICE INDEX : 1.000000
 GROSS DOM. PRDD. PRICE INDEX AT MARKET PRICE : 1.039455
 TOTAL FINAL EXPENDITURE PRICE INDEX : 1.045988
 AVERAGE PRICE OF COMMODITIES : 1.052264

CONSUMER PRICE INDEX : 1.048278

CPI FOOD : 1.052124
 CPI HOUSING : 1.044909
 CPI CLOTHING : 1.057243
 CPI TRANSPORTATION : 1.046206
 CPI HEALTH : 1.052389
 CPI RECREATION EDUCATION AND READING : 1.052154
 CPI TOBACCO AND ALCOOL : 1.030836
 CPI NON-FOOD : 1.047010

L-0 MODEL INDUSTRIES (S12C/10/75)-MEDIUM

PG

1 AGRICULTURE	1.0291
2 FORESTRY	1.0661
3 FISHING, HUNTING & TRAPPING	1.0480
4 METAL MINING	1.0755
5 NONMETAL FUELS	1.0504
6 NON-METAL MINING & QUARRIES	1.0699
7 SERVICES INCIDENTAL TO MINING	1.0775
8 FOOD & BEVERAGE INDUSTRIES	1.0517
9 TEXTILE PRODUCTS INDUSTRIES	1.0509
10 RUBBER & PLASTICS PRODUCTS IND.	1.0629
11 LEATHER INDUSTRIES	1.0629
12 FERTILE INDUSTRIES	1.0595
13 KNITTING MILLS	1.0656
14 FUR & SKIN INDUSTRIES	1.0640
15 WOOD INDUSTRIES	1.0733
16 FURNITURE & FIXTURE INDUSTRIES	1.0720
17 PAPER & ALLIED INDUSTRIES	1.0743
18 PRINTING & PUBLISHING	1.0788
19 PRIMARY METAL INDUSTRIES	1.0677
20 METAL FABRICATING INDUSTRIES	1.0718
21 MACHINERY INDUSTRIES	1.0667
22 TRANSPORTATION EQUIPMENT IND.	1.0543
23 ELECTRICAL PRODUCTS INDUSTRIES	1.0685
24 NON-METALLIC MINERAL PRODS. IND.	1.0703
25 PETROLEUM & COAL PRODUCTS IND.	1.0379
26 CHEMICAL & CHEMICAL PRODS. IND.	1.0641
27 WASTE MANUFACTURING INDUSTRIES	1.0691
28 CONSTRUCTION INDUSTRY	1.0680
29 TRANSPORTATION & STORAGE	1.0769
30 COMMUNICATION	1.0910
31 ELECTRIC, GAS, & OTHER UTILITIES	1.0760
32 WHEAT SALES TRADE	1.0760
33 RETAIL TRADE	1.0699
34 FINANCIAL INSTITUTIONS	1.0176
35 OTHER FINANCE, INCL. REAL ESTATE	1.0561
36 EDUCATION & HEALTH SERVICES	1.0355
37 AMUSEMENT & RECREATION SERVICES	1.0604
38 SERVICES TO BUSINESS MANAGEMENT	1.0610
39 ACCOMMODATION & FOOD SERVICES	1.0614
40 OTHER PERSONAL & HOME SERVICES	1.0574
41 TRANSPORTATION SERVICES	1.0790
42 OPERATING, MERCHANDISE & FOOD	1.0476
43 TRAVEL & ADVERTISING, PROMOTION	1.0643

SECTION 51 COMMODITY SPACE RESULTS

09.24.47 JUN. 15/76

1.0 MIDDLE COMMODITIES (20/10/75)-MEDIUM	POD	PG	PM	MU
0100 GRAINS	1.0291	1.0283	1.0000	0.0272
0200 LIVE ANIMALS	1.0291	1.0288	1.0000	0.0093
0300 OTHER AGRICULTURAL PRODUCTS	1.0294	1.0242	1.0000	0.1773
0400 FISH LANDINGS	1.0480	1.0421	1.0000	0.1219
0500 HUNTING & TRAPPING PRODUCTS	1.0480	1.0012	1.0000	0.9746
0600 FORESTRY PRODUCTS	1.0655	1.0640	1.0000	0.0229
0700 IRON ORES & CONCENTRATES	1.0663	1.0393	1.0000	0.4073
0800 OTHER METAL, ORES & CONCENTRATES	1.0768	1.0715	1.0000	0.0801
0900 COAL	1.1357	1.0241	1.0000	0.8203
1000 CRUDE MINERAL OILS	1.0463	1.0253	1.0000	0.4529
1100 NATURAL GAS	1.0463	1.0346	1.0000	0.2519
1200 NON-METALLIC MINERALS	1.0686	1.0517	1.0000	0.2531
1300 SERVICES INCIDENTAL TO MINING	1.0779	1.0779	1.0000	0.0
1400 MEAT PRODUCTS	1.0471	1.0448	1.0000	0.0505
1500 FISH PRODUCTS	1.0600	1.0529	1.0000	0.1287
1600 DAIRY PRODUCTS	1.0487	1.0477	1.0000	0.0254
1700 FRUITS & VEGETABLES PREPARATIONS	1.0579	1.0484	1.0000	0.1643
1800 EGGS	1.0452	1.0442	1.0000	0.2495
1900 FLOUR, WHEAT, MEAL & OTHER CEREALS	1.0469	1.0455	1.0000	0.0269
2000 BREAKFAST CEREAL & BAKERY PROD.	1.0662	1.0649	1.0000	0.0190
2100 SUGAR	1.0311	1.0305	1.0000	0.0176
2200 MISC. FOOD PRODUCTS	1.0508	1.0444	1.0000	0.1351
2300 SOFT DRINKS	1.0733	1.0724	1.0000	0.0129
2400 ALCOHOLIC BEVERAGES	1.0653	1.0550	1.0000	0.1720
2500 TOBACCO, PROCESSED UNMANUFACTURED	1.0362	1.0339	1.0000	0.0647
2600 CIGARETTES & TOBACCO MFG.	1.0573	1.0560	1.0000	0.0233
2700 TIRES & TUBES	1.0580	1.0535	1.0000	0.0780
2800 OTHER RUBBER PRODUCTS	1.0657	1.0458	1.0000	0.3014
2900 LEATHER & LEATHER PRODUCTS	1.0630	1.0530	1.0000	0.1648
3000 PLASTIC FABRICATED PRODUCTS	1.0682	1.0497	1.0000	0.2494
3100 YARNS & MAN MADE FIBRES	1.0616	1.0478	1.0000	0.2272
3200 FIBRICS	1.0600	1.0397	1.0000	0.3426
3300 OTHER TEXTILE PRODUCTS	1.0602	1.0511	1.0000	0.1514
3400 HOSIERY, UNDERWEAR & SLEEPWEAR	1.0668	1.0640	1.0000	0.0428
3500 CLOTHING	1.0640	1.0585	1.0000	0.0855
3600 LUMBER & TIMBER	1.0727	1.0641	1.0000	0.1176
3700 VENEER & PLYWOOD	1.0745	1.0648	1.0000	0.1302
3800 OTHER WOOD FABRICATED MATERIALS	1.0734	1.0706	1.0000	0.0385
3900 FURNITURE & FIXTURES	1.0718	1.0670	1.0000	0.0674
4000 PULP/PAPER DUMMY/INTRA-TRANSFERS	1.0768	1.0768	1.0000	0.0
4100 PULP	1.0734	1.0676	1.0000	0.0790
4200 NEWSPRINT & OTHER PAPER STOCK	1.0732	1.0708	1.0000	0.0331
4300 PAPER PRODUCTS	1.0709	1.0640	1.0000	0.1000
4400 PRINTING & PUBLISHING	1.0786	1.0665	1.0000	0.1543
4500 ADVERTISING, PRINT MEDIA	1.0785	1.0785	1.0000	0.0
4600 IRON/STEEL DUMMY/INTRA-TRANSFERS	1.0719	1.0719	1.0000	0.0
4700 IRON & STEEL PRODUCTS	1.0698	1.0600	1.0000	0.1474
4800 ALUMINUM PRODUCTS	1.0507	1.0411	1.0000	0.1773
4900 COPPER & COPPER ALLOY PRODUCTS	1.0664	1.0663	1.0000	0.0306
5000 NICKEL PRODUCTS	1.0689	1.0188	1.0000	0.7279

COMMODITY	PQD	PW	PM	MU
10000	1.0644	1.0637	1.0000	0.3236
10001	1.0714	1.0657	1.0000	0.0885
10002	1.0700	1.0657	1.0000	0.0905
10003	1.0715	1.0587	1.0000	0.1881
10004	1.0644	1.0235	1.0000	0.6382
10005	1.0684	1.0336	1.0000	0.5090
10006	1.0650	1.0335	1.0000	0.2577
10007	1.0617	1.0249	1.0000	0.6004
10008	1.0673	1.0468	1.0000	0.3082
10009	1.0647	1.0470	1.0000	0.2669
10010	1.0703	1.0536	1.0000	0.2361
10011	1.0712	1.0707	1.0000	0.0966
10012	1.0697	1.0510	1.0000	0.2685
10013	1.0376	1.0337	1.0000	0.1045
10014	1.0436	1.0355	1.0000	0.1730
10015	1.0632	1.0491	1.0000	0.2235
10016	1.0619	1.0502	1.0000	0.1894
10017	1.0692	1.0569	1.0000	0.1782
10018	1.0640	1.0544	1.0000	0.1530
10019	1.0691	1.0284	1.0000	0.5881
10020	1.0695	1.0487	1.0000	0.2995
10021	1.0640	1.0640	1.0000	0.0
10022	1.0667	1.0667	1.0000	0.0
10023	1.0771	1.0771	1.0000	0.0
10024	1.0613	1.0515	1.0000	0.1601
10025	1.0777	1.0757	1.0000	0.0242
10026	1.1423	1.1389	1.0000	0.0238
10027	1.0831	1.0831	1.0000	0.0
10028	1.0905	1.0890	1.0000	0.0171
10029	1.0761	1.0755	1.0000	0.0082
10030	1.0738	1.0738	1.0000	0.0
10031	1.0737	1.0735	1.0000	0.0027
10032	1.0689	1.0689	1.0000	0.0
10033	1.0790	1.0790	1.0000	0.0
10034	1.0176	1.0176	1.0000	0.0
10035	1.0564	1.0553	1.0000	0.0232
10036	1.0604	1.0515	1.0000	0.1449
10037	1.0703	1.0703	1.0000	0.0
10038	1.0308	1.0308	1.0000	0.0
10039	1.0608	1.0608	1.0000	0.0
10040	1.0620	1.0620	1.0000	0.0
10041	1.0656	1.0653	1.0000	0.0044
10042	1.0475	1.0475	1.0000	0.0
10043	1.0663	1.0663	1.0000	0.0
10044	1.0000	1.0000	1.0000	1.0000
10045	1.0000	0.0	0.0	0.0
10046	1.0000	0.0	0.0	0.0
10047	1.0000	0.0	0.0	0.0
10048	1.0000	0.0	0.0	0.0
10049	1.0000	0.0	0.0	0.0
10050	1.0000	0.0	0.0	0.0
10051	1.0000	0.0	0.0	0.0
10052	1.0000	0.0	0.0	0.0
10053	1.0000	0.0	0.0	0.0
10054	1.0000	0.0	0.0	0.0
10055	1.0000	0.0	0.0	0.0
10056	1.0000	0.0	0.0	0.0
10057	1.0000	0.0	0.0	0.0
10058	1.0000	0.0	0.0	0.0
10059	1.0000	0.0	0.0	0.0
10060	1.0000	0.0	0.0	0.0
10061	1.0000	0.0	0.0	0.0
10062	1.0000	0.0	0.0	0.0
10063	1.0000	0.0	0.0	0.0
10064	1.0000	0.0	0.0	0.0
10065	1.0000	0.0	0.0	0.0
10066	1.0000	0.0	0.0	0.0
10067	1.0000	0.0	0.0	0.0
10068	1.0000	0.0	0.0	0.0
10069	1.0000	0.0	0.0	0.0
10070	1.0000	0.0	0.0	0.0
10071	1.0000	0.0	0.0	0.0
10072	1.0000	0.0	0.0	0.0
10073	1.0000	0.0	0.0	0.0
10074	1.0000	0.0	0.0	0.0
10075	1.0000	0.0	0.0	0.0
10076	1.0000	0.0	0.0	0.0
10077	1.0000	0.0	0.0	0.0
10078	1.0000	0.0	0.0	0.0
10079	1.0000	0.0	0.0	0.0
10080	1.0000	0.0	0.0	0.0
10081	1.0000	0.0	0.0	0.0
10082	1.0000	0.0	0.0	0.0
10083	1.0000	0.0	0.0	0.0
10084	1.0000	0.0	0.0	0.0
10085	1.0000	0.0	0.0	0.0
10086	1.0000	0.0	0.0	0.0
10087	1.0000	0.0	0.0	0.0
10088	1.0000	0.0	0.0	0.0
10089	1.0000	0.0	0.0	0.0
10090	1.0000	0.0	0.0	0.0
10091	1.0000	0.0	0.0	0.0
10092	1.0000	0.0	0.0	0.0
10093	1.0000	0.0	0.0	0.0
10094	1.0000	0.0	0.0	0.0
10095	1.0000	0.0	0.0	0.0
10096	1.0000	0.0	0.0	0.0
10097	1.0000	0.0	0.0	0.0
10098	1.0000	0.0	0.0	0.0
10099	1.0000	0.0	0.0	0.0
10100	1.0000	0.0	0.0	0.0

APPENDIX 6.4

SECTION 1 : EXOGENOUS VARIABLES : FOURTH EXPERIMENT

GENERAL DEFAULT PRICES

IMPORT PRICE	:	1.1000
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PRIMARY INPUT PRICES

UNALLOCATED IMPORTS & EXPORTS	:	1.0000
GOVERNMENT GOODS AND SERVICES	:	1.0000
COMMODITY INDIRECT TAXES	:	1.0000
SUBSIDIES	:	1.0000
OTHER INDIRECT TAXES	:	1.0000
WAGES AND SALARIES	:	1.0000
SUPPLEMENTARY LABOUR INCOME	:	1.0000
NET INCOME UNINCORP BUSINESS	:	1.0000
HOUSEHOLD INVESTMENT INCOME	:	1.0000
DEPLETION & MINING WRITE-OFFS	:	1.0000
CAPITAL COST ALLOWANCE	:	1.0000
OTHER SURPLUS	:	1.0000

SECTION 2 : GNE DEFLATORS AND CPI

CONSUMER EXPENDITURE PRICE INDEX	:	1.014549
MACHINERY & EQUIPMENT PRICE INDEX	:	1.042109
CONSTRUCTION PRICE INDEX	:	1.013109
GOVT. CURRENT EXP. PRICE INDEX	:	1.006914
EXPORT PRICE INDEX	:	1.012981
IMPORT PRICE INDEX	:	1.099998
GROSS DOM. PROD. PRICE INDEX AT MARKET PRICE	:	1.027464
TOTAL FINAL EXPENDITURE PRICE INDEX	:	1.015454
AVERAGE PRICE OF COMMODITIES	:	1.016301

CONSUMER PRICE INDEX	:	1.014702
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CPI FOOD	:	1.016250
CPI HOUSING	:	1.008772
CPI CLOTHING	:	1.018390
CPI TRANSPORTATION	:	1.023019
CPI HEALTH	:	1.011427
CPI RECREATION EDUCATION AND READING	:	1.021126
CPI TOBACCO AND ALCOOL	:	1.006453
CPI NON-FOOD	:	1.014190

1-0 MODEL INDUSTRIES (120/10/75)-MEDIUM

PG.

1 AGRICULTURE	1.0079
2 FORESTRY	1.0071
3 FISHING, HUNTING & TRAPPING	1.0120
4 METAL MINES	1.0071
5 MINERAL FUELS	1.0034
6 NON-METAL MINES & QUARRIES	1.0077
7 SERVICES INCIDENTAL TO MINING	1.0091
8 FOOD & BEVERAGE INDUSTRIES	1.0157
9 TOBACCO PRODUCTS INDUSTRIES	1.0087
10 RUBBER & PLASTICS PRODUCTS IND.	1.0224
11 LEATHER INDUSTRIES	1.0269
12 TEXTILE INDUSTRIES	1.0281
13 KNITTING MILLS	1.0221
14 CLOTHING INDUSTRIES	1.0253
15 WOOD INDUSTRIES	1.0092
16 FURNITURE & FIXTURE INDUSTRIES	1.0153
17 PAPER & ALLIED INDUSTRIES	1.0089
18 PRINTING & PUBLISHING	1.0078
19 PRIMARY METAL INDUSTRIES	1.0188
20 METAL FABRICATING INDUSTRIES	1.0162
21 MACHINERY INDUSTRIES	1.0205
22 TRANSPORTATION EQUIPMENT IND.	1.0349
23 ELECTRICAL PRODUCTS INDUSTRIES	1.0195
24 NON-METALLIC MINERAL PROD. IND.	1.0126
25 PETROLEUM & COAL PRODUCTS IND.	1.0353
26 CHEMICAL & CHEMICAL PROD. IND.	1.0178
27 MISC MANUFACTURING INDUSTRIES	1.0177
28 CONSTRUCTION INDUSTRY	1.0121
29 TRANSPORTATION & STORAGE	1.0069
30 COMMUNICATION	1.0028
31 ELEC. POWER, GAS, OTHER UTILITIES	1.0031
32 WHOLESALE TRADE	1.0043
33 RETAIL TRADE	1.0042
34 OWNER OCCUPIED DWELLINGS	1.0009
35 OTHER FINANCE, INS. & REAL ESTATE	1.0031
36 EDUCATION & HEALTH SERVICES	1.0049
37 AMUSEMENT & RECREATION SERVICES	1.0071
38 SERVICES TO BUSINESS MANAGEMENT	1.0030
39 ACCOMMODATION & FOOD SERVICES	1.0076
40 OTHER PERSONAL & MISC SERVICES	1.0077
41 TRANSPORTATION MARGINS	1.0089
42 OPERATING, OFFICE, LAB & FOOD	1.0297
43 TRAVEL & ADVERTISING, PROMOTION	1.0103

SECTION 5: COMMODITY SPACE RESULTS

09.37.06 JUN. 15/76

1-11 MODEL COMMODITY(S) (20/10/75) - MEDIUM	PQD	PQ	PK	MU
0100 GRAIN	1.0079	1.0104	1.1000	0.0272
10200 LIVE ANIMALS	1.0079	1.0087	1.1000	0.0073
05100 OTHER AGRICULTURAL PRODUCTS	1.0080	1.0243	1.1000	0.1773
06400 FISH CATCHING	1.0120	1.0227	1.1000	0.1219
00500 HUNTING & TRAPPING PRODUCTS	1.0120	1.0978	1.1000	0.9746
00600 FUR SKIN PRODUCTS	1.0072	1.0093	1.1000	0.0229
01700 FERTILISERS & CONCENTRATES	1.0120	1.0478	1.1000	0.4073
00800 OTHER METALS, ORES & CONCENTRATES	1.0071	1.0140	1.1000	0.0801
00900 COAL	1.0126	1.0843	1.1000	0.8203
01000 CRUDE MINERAL OILS	1.0030	1.0469	1.1000	0.4529
01100 NATURAL GAS	1.0030	1.0274	1.1000	0.2519
01200 NON-METALLIC MINERALS	1.0077	1.0312	1.1000	0.2531
01300 SERVICES INCIDENTAL TO MINING	1.0090	1.0090	1.1000	0.0
01400 MEAT PRODUCTS	1.0096	1.0142	1.1000	0.0505
01500 FISH PRODUCTS	1.0153	1.0262	1.1000	0.1287
01600 DAIRY PRODUCTS	1.0094	1.0113	1.1000	0.0214
01700 FRUITS & VEGETABLES PREPARATIONS	1.0202	1.0332	1.1000	0.1643
01800 FEEDS	1.0252	1.0270	1.1000	0.0495
01900 FLOUR, WHEAT, MEAL & OTHER CEREALS	1.0096	1.0119	1.1000	0.0269
11000 BREAKFAST CEREAL & RAFFIN PROD.	1.0122	1.0138	1.1000	0.0190
02100 SUGAR	1.0476	1.0485	1.1000	0.0176
02200 MISC. FOOD PRODUCTS	1.0278	1.0369	1.1000	0.1351
02300 SOFT DRINKS	1.0117	1.0129	1.1000	0.0129
02400 ALCOHOLIC BEVERAGES	1.0094	1.0249	1.1000	0.1720
02500 TOBACCO PROCESSED UNMANUFACTURED	1.0073	1.0133	1.1000	0.0647
02600 CIGARETTES & TOBACCO MFG.	1.0093	1.0115	1.1000	0.0233
02700 TYRES & TUBES	1.0265	1.0322	1.1000	0.0780
02800 OTHER RUBBER PRODUCTS	1.0201	1.0442	1.1000	0.3018
02900 LEATHER & LEATHER PRODUCTS	1.0268	1.0385	1.1000	0.1648
03000 PLASTIC FABRICATED PRODUCTS	1.0192	1.0394	1.1000	0.2494
03100 YARNS & MAN MADE FIBRES	1.0254	1.0422	1.1000	0.2272
03200 FABRICS	1.0277	1.0521	1.1000	0.3426
03300 OTHER TEXTILE PRODUCTS	1.0260	1.0373	1.1000	0.1514
03400 HOSIERY, UNDERWEAR & SLEEPWEAR	1.0215	1.0249	1.1000	0.0428
03500 CLOTHING	1.0249	1.0313	1.1000	0.0855
03600 LUMBER & TIMBER	1.0082	1.0190	1.1000	0.1176
03700 VENEE & PLYWOOD	1.0093	1.0211	1.1000	0.1302
03800 OTHER WOOD FABRICATED MATERIALS	1.0107	1.0141	1.1000	0.0385
03900 FURNITURE & FIXTURES	1.0154	1.0211	1.1000	0.0674
04000 WOOD-PAPER DUMMIES, INTRA-TRANSFERS	1.0065	1.0065	1.1000	0.0
04100 PAPER	1.0078	1.0151	1.1000	0.0790
04200 NEWSPRINT & OTHER PAPER STOCK	1.0097	1.0127	1.1000	0.0331
04300 PAPER PRODUCTS	1.0143	1.0227	1.1000	0.1000
04400 PRINTING & PUBLISHING	1.0080	1.0222	1.1000	0.1543
04500 ADVERTISING, PRINT MEDIA	1.0079	1.0079	1.1000	0.0
04600 IRON-STEEL DUMMIES, INTRA-TRANSFERS	1.0162	1.0162	1.1000	0.0
04700 IRON & STEEL PRODUCTS	1.0181	1.0297	1.1000	0.1404
04800 ALUMINUM PRODUCTS	1.0296	1.0423	1.1000	0.1773
04900 COPPER & COPPER ALLOY PRODUCTS	1.0171	1.0196	1.1000	0.0306
05000 NICKEL PRODUCTS	1.0167	1.0773	1.1000	0.7279

1-6 MODEL COMMODITIES(20/10/75)-MEDIUM	PQD	PQ	PM	MU
04000 OTHER NON-FERROUS METAL PRODUCTS	1.0212	1.0469	1.1000	0.5236
04000 MOLYBDENUM, TANTALUM & PLATINUM	1.0174	1.0246	1.1000	0.5865
05100 FABRICATED STRUCTURAL METAL PROD.	1.0179	1.0253	1.1000	0.0905
05200 OTHER METAL FABRICATED PRODUCTS	1.0163	1.0318	1.1000	0.1861
05300 AGRICULTURAL MACHINERY	1.0233	1.0721	1.1000	0.6362
05400 OTHER INDUSTRIAL MACHINERY	1.0190	1.0603	1.1000	0.5090
05500 MOTOR VEHICLES	1.0447	1.0581	1.1000	0.2577
05600 MOTOR VEHICLE PARTS	1.0273	1.0706	1.1000	0.6004
05700 OTHER TRANSPORT EQUIPMENT	1.0224	1.0459	1.1000	0.3082
05800 APPLIANCES & RECEIVERS, HOUSEHOLD	1.0244	1.0446	1.1000	0.2669
05900 OTHER ELECTRICAL PRODUCTS	1.0173	1.0367	1.1000	0.2361
06000 CEMENT & CONCRETE PRODUCTS	1.0096	1.0107	1.1000	0.0066
06100 OTHER NON-METALLIC MINERAL PROD.	1.0160	1.0381	1.1000	0.2685
06200 GASOLINE & FUEL OIL	1.0355	1.0422	1.1000	0.1045
06300 OTHER PETROLEUM & COAL PROD.	1.0302	1.0418	1.1000	0.1730
06400 INDUSTRIAL CHEMICALS	1.0166	1.0351	1.1000	0.2235
06500 FERTILIZERS	1.0156	1.0316	1.1000	0.1894
06600 PHARMACEUTICALS	1.0143	1.0295	1.1000	0.1782
06700 OTHER CHEMICAL PRODUCTS	1.0200	1.0322	1.1000	0.1530
06800 SCIENTIFIC EQUIPMENT	1.0186	1.0665	1.1000	0.5881
06900 OTHER MANUFACTURED PRODUCTS	1.0173	1.0422	1.1000	0.2995
07000 RESIDENTIAL CONSTRUCTION	1.0117	1.0117	1.1000	0.0
07100 NON-RESIDENTIAL CONSTRUCTION	1.0138	1.0138	1.1000	0.0
07200 REPAIR CONSTRUCTION	1.0069	1.0069	1.1000	0.0
07300 PIPELINE TRANSPORTATION	1.0019	1.0176	1.1000	0.1601
07400 TRANSPORTATION & STORAGE	1.0072	1.0094	1.1000	0.0242
07500 RADIO & TELEVISION BROADCASTING	1.0059	1.0081	1.1000	0.0238
07600 TEL. PHONE & TELEGRAPH	1.0022	1.0022	1.1000	0.0
07700 POSTAL SERVICES	1.0031	1.0048	1.1000	0.0171
07800 ELECTRIC POWER	1.0037	1.0044	1.1000	0.0082
07900 OTHER UTILITIES	1.0025	1.0025	1.1000	0.0
08000 WHOLESALE MARGINS	1.0072	1.0074	1.1000	0.0027
08100 RETAIL MARGINS	1.0042	1.0042	1.1000	0.0
08200 TRANSPORTATION MARGINS	1.0089	1.0089	1.1000	0.0
08300 EMPLOYER RENT, OWNER (ICPD, DWEL.)	1.0009	1.0009	1.1000	0.0
08400 OTHER FINANCE, INS., REAL ESTATE	1.0033	1.0056	1.1000	0.0232
08500 BUSINESS SERVICES	1.0047	1.0182	1.1000	0.1449
08600 EDUCATION SERVICES	1.0071	1.0071	1.1000	0.0
08700 HEALTH SERVICES	1.0045	1.0045	1.1000	0.0
08800 AMUSEMENT & RECREATION SERVICES	1.0070	1.0070	1.1000	0.0
08900 ACCOMMODATION & FOOD SERVICES	1.0075	1.0075	1.1000	0.0
09000 OTHER PERSONAL & MISC. SERVICES	1.0066	1.0071	1.1000	0.0044
09100 OPERATING EXPENSES, LAB. & FOOD	1.0265	1.0265	1.1000	0.0
09200 TRAVEL, ADVERTISING, PROMOTION	1.0103	1.0103	1.1000	0.0
09300 NON-EXHAUSTING IMPORTS	1.0000	1.0000	1.0000	1.0000
09400 UNALLOYED & IMPURE & EXPORTS	1.0000	0.0	0.0	0.0
09500 INTEREST TAXES	1.0000	0.0	0.0	0.0
09600 SURPLUS	1.0000	0.0	0.0	0.0
09700 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09800 SUPPLEMENTARY LABOUR INCOME	1.0000	0.0	0.0	0.0
09900 NET INCOME, UNINC. BUSINESS	1.0000	0.0	0.0	0.0
10000 HOUSEHOLD INVESTMENT INCOME	1.0000	0.0	0.0	0.0
10020 DEPLETION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
10030 CAPITAL GAIN ALLOWANCE	1.0000	0.0	0.0	0.0
10040 OTHER SURPLUS	1.0000	0.0	0.0	0.0

APPENDIX 6.5

SECTION 1 : EXOGENOUS VARIABLES : FIFTH EXPERIMENT

GENERAL DEFAULT PRICES

IMPORT PRICE : 0.0

PRIMARY INPUT PRICES

UNALLOCATED IMPORTS & EXPORTS : 0.0
 GOVERNMENT GOODS AND SERVICES : 0.0
 COMMODITY INDIRECT TAXES : C.C
 SUBSIDIES : 0.0
 OTHER INDIRECT TAXES : 0.0
 WAGES AND SALARIES : 0.0
 SUPPLEMENTARY LABOUR INCOME : 0.0
 NET INCOME UNINCORP BUSINESS : 0.0
 HOUSEHOLD INVESTMENT INCOME : C.C
 DEPLETION & MINING WRITE-OFFS : 0.0
 CAPITAL COST ALLOWANCE : 0.0
 OTHER SURPLUS : 0.0

SPECIFIC IMPORT PRICE CHANGES

COMMODITY IDENTIFICATION	CHANGE	MU
03800 CRUDE MINERAL OILS	1.000000	0.452882

SECTION 2 : GNE DEFLATORS AND CPI

CONSUMER EXPENDITURE PRICE INDEX : 0.117377
 MACHINERY & EQUIPMENT PRICE INDEX : 0.098745
 CONSTRUCTION PRICE INDEX : 0.005446
 GOVT. CURRENT EXP. PRICE INDEX : 0.684643
 EXPORT PRICE INDEX : 0.109057
 IMPORT PRICE INDEX : 0.032508
 GROSS DOM. PROD. PRICE INDEX AT MARKET PRICE : 0.155409
 TOTAL FINAL EXPENDITURE PRICE INDEX : 0.175757
 AVERAGE PRICE OF COMMODITIES : 0.008004

CONSUMER PRICE INDEX : 0.156381

CPI FOOD : 0.012402
 CPI HOUSING : 0.246997
 CPI CLOTHING : 0.093886
 CPI TRANSPORTATION : 0.179678
 CPI HEALTH : 0.060936
 CPI RECREATION EDUCATION AND READING : 0.079428
 CPI TOBACCO AND ALCOHOL : 0.497916
 CPI NON-FOOD : 0.203866

1-0 MODEL INDUSTRIES(20/10/75)-MEDIUM

PG

1 AGRICULTURE	0.0110
2 FORESTRY	0.0074
3 FISHING, HUNTING & TRAPPING	0.0122
4 METAL MINES	0.0035
5 MINERAL FUELS	0.0018
6 NON-METAL MINES & QUARRIES	0.0066
7 SERVICES INCIDENTAL TO MINING	0.0073
8 FOOD & BEVERAGE INDUSTRIES	0.0067
9 TOBACCO PRODUCTS INDUSTRIES	0.0062
10 RUBBER & PLASTICS PRODUCTS IND.	0.0038
11 LEATHER INDUSTRIES	0.0022
12 TEXTILE INDUSTRIES	0.0032
13 KNITTING MILLS	0.0023
14 CLOTHING INDUSTRIES	0.0018
15 WOOD INDUSTRIES	0.0048
16 FURNITURE & FIXTURE INDUSTRIES	0.0025
17 PAPER & LABEL INDUSTRIES	0.0066
18 PRINTING & PUBLISHING	0.0026
19 PRIMARY METAL INDUSTRIES	0.0037
20 METAL FABRICATING INDUSTRIES	0.0025
21 MACHINERY INDUSTRIES	0.0022
22 TRANSPORTATION EQUIPMENT IND.	0.0018
23 ELECTRICAL PRODUCTS INDUSTRIES	0.0020
24 NON-METALLIC MINERAL PROD. IND.	0.0055
25 PETROLEUM & COAL PRODUCTS IND.	0.2838
26 CHEMICAL & CHEMICAL PROD. IND.	0.0095
27 MISC MANUFACTURING INDUSTRIES	0.0025
28 CONSTRUCTION INDUSTRY	0.0052
29 TRANSPORTATION & STORAGE	0.0104
30 COMMUNICATION	0.0014
31 ELEC POWER, GAS, OTHER UTILITIES	0.0025
32 WHOLESALE TRADE	0.0038
33 RETAIL TRADE	0.0024
34 OWNER-OCCUPIED DWELLING	0.0004
35 OTHER FINANCE, INS. & REAL ESTATE	0.0010
36 EDUCATION & HEALTH SERVICES	0.0017
37 AMUSEMENT & RECREATION SERVICES	0.0024
38 SERVICES TO BUSINESS MANAGEMENT	0.0012
39 ACCOMMODATION & FOOD SERVICES	0.0028
40 OTHER PERSONAL & MISC SERVICES	0.0035
41 TRANSPORTATION MARGINS	0.0115
42 OPERATION, MAINTENANCE & REPAIR	0.0032
43 TRAVEL & ADVERTISING, PROMOTION	0.0067

SECTION 5: COMMODITY SPACE RESULTS

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1-0 MODEL COMMODITIES(70/10/75)-MEDIUM	PQU	PQ	PM	PL
00400 GRAINS	0.0110	0.0107	0.0	0.0272
00200 LIVE ANIMALS	0.0110	0.0139	0.0	0.0093
00300 OTHER AGRICULTURAL PRODUCTS	0.0109	0.0090	0.0	0.1773
00400 FISH LANDINGS	0.0122	0.0107	0.0	0.1219
00500 HUNTING & TRAPPING PRODUCTS	0.0122	0.0003	0.0	0.9746
00600 FORESTRY PRODUCTS	0.0074	0.0072	0.0	0.0229
00700 IRON ORES & CONCENTRATES	0.0071	0.0042	0.0	0.4073
00800 OTHER METAL ORES & CONCENTRATES	0.0023	0.0021	0.0	0.0801
00900 COAL	0.0077	0.0021	0.0	0.0203
01000 CRUDE MINERAL OILS	0.0016	0.4538	1.0000	0.4529
01100 NATURAL GAS	0.0017	0.0013	0.0	0.2519
01200 NON-METALLIC MINERALS	0.0070	0.0054	0.0	0.2531
01300 SERVICES INCIDENTAL TO MINING	0.0070	0.0070	0.0	0.0
01400 MEAT PRODUCTS	0.0074	0.0070	0.0	0.0505
01500 FISH PRODUCTS	0.0076	0.0067	0.0	0.1287
01600 DAIRY PRODUCTS	0.0100	0.0098	0.0	0.0214
01700 FRUITS & VEGETABLES PREPARATIONS	0.0049	0.0041	0.0	0.1643
01800 FEEDS	0.0064	0.0062	0.0	0.0495
01900 FLOUR, WHEAT MEAL & OTHER CEREALS	0.0079	0.0077	0.0	0.0269
02000 BREAKFAST CEREAL & BAKERY PROD.	0.0061	0.0060	0.0	0.0190
02100 SUGAR	0.0032	0.0032	0.0	0.0176
02200 MISC. FOOD PRODUCTS	0.0037	0.0032	0.0	0.1351
02300 SOFT DRINKS	0.0051	0.0051	0.0	0.0129
02400 ALCOHOLIC BEVERAGES	0.0030	0.0025	0.0	0.1720
02500 TOBACCO PROCESSED UNMANUFACTURED	0.0096	0.0090	0.0	0.0647
02600 CIGARETTES & TOBACCO MFG.	0.0048	0.0047	0.0	0.0233
02700 TIRES & TUBES	0.0038	0.0035	0.0	0.0780
02800 OTHER RUBBER PRODUCTS	0.0038	0.0027	0.0	0.3018
02900 LEATHER & LEATHER PRODUCTS	0.0022	0.0018	0.0	0.1648
03000 PLASTIC FABRICATED PRODUCTS	0.0043	0.0032	0.0	0.2494
03100 YARNS & MAN MADE FIBRES	0.0041	0.0032	0.0	0.2272
03200 FABRICS	0.0030	0.0020	0.0	0.3426
03300 OTHER TEXTILE PRODUCTS	0.0031	0.0027	0.0	0.1514
03400 HOSIERY, UNDERWEAR & SLEEPWEAR	0.0022	0.0021	0.0	0.0428
03500 CLOTHING	0.0019	0.0018	0.0	0.0855
03600 LUMBER & TIMBER	0.0055	0.0048	0.0	0.1176
03700 VENEER & PLYWOOD	0.0040	0.0035	0.0	0.1302
03800 OTHER WOOD FABRICATED MATERIALS	0.0042	0.0041	0.0	0.0385
03900 FURNITURE & FIXTURES	0.0025	0.0024	0.0	0.0674
04000 PULP, PAPER, LUMBER, INTRA-TRANSFERS	0.0064	0.0064	0.0	0.0
04020 PULP	0.0068	0.0063	0.0	0.0740
04100 NEWSPRINT & OTHER PAPER STOCK	0.0068	0.0066	0.0	0.0331
04200 PAPER PRODUCTS	0.0058	0.0053	0.0	0.1000
04300 PRINTING & PUBLISHING	0.0027	0.0023	0.0	0.1543
04400 ADVERTISING, PRINT MEDIA	0.0027	0.0027	0.0	0.0
04500 IRON/STEEL OURNY, INTRA-TRANSFERS	0.0043	0.0043	0.0	0.0
04520 IRON & STEEL PRODUCTS	0.0040	0.0035	0.0	0.1404
04600 ALUMINUM PRODUCTS	0.0044	0.0036	0.0	0.1773
04700 COPPER & COPPER ALLOY PRODUCTS	0.0026	0.0025	0.0	0.0306
04800 NICKEL PRODUCTS	0.0025	0.0007	0.0	0.7279

SECTION 5: COMMODITY SPACE RESULTS

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I-O MODEL COMMODITY TEST (20/10/75) - MEDIUM	PQD	PQ	PM	MU
04500 OTHER NON FERROUS METAL PRODUCTS	0.0020	0.0019	0.0	0.3236
05000 BOILERS, TANKS, & PLATES	0.0023	0.0021	0.0	0.0565
05100 FABRICATED STRUCTURAL METAL PROD	0.0026	0.0023	0.0	0.0405
05200 OTHER METAL FABRICATED PRODUCTS	0.0026	0.0021	0.0	0.1861
05300 AGRICULTURAL MACHINERY	0.0023	0.0008	0.0	0.6362
05400 OTHER INDUSTRIAL MACHINERY	0.0024	0.0012	0.0	0.5090
05500 MOTOR VEHICLES	0.0015	0.0011	0.0	0.2577
05600 MOTOR VEHICLE PARTS	0.0021	0.0008	0.0	0.6004
05700 OTHER TRANSPORT EQUIPMENT	0.0025	0.0018	0.0	0.3082
05800 APPLIANCES & RECEIVERS, INC. EXCLD	0.0021	0.0016	0.0	0.2669
05900 OTHER ELECTRICAL PRODUCTS	0.0020	0.0016	0.0	0.2361
06000 CEMENT & CONCRETE PRODUCTS	0.0065	0.0065	0.0	0.0066
06100 OTHER NON-METALLIC MINERAL PROD.	0.0044	0.0033	0.0	0.2683
06200 GASOLINE & FUEL OIL	0.2869	0.2576	0.0	0.1045
06300 OTHER PETROLEUM & CRUD PROD.	0.1965	0.1666	0.0	0.1730
06400 INDUSTRIAL CHEMICALS	0.0134	0.0103	0.0	0.2235
06500 FERTILIZERS	0.0051	0.0041	0.0	0.1694
06600 PHARMACEUTICALS	0.0040	0.0035	0.0	0.1782
06700 OTHER CHEMICAL PRODUCTS	0.0067	0.0056	0.0	0.1535
06800 SCIENTIFIC EQUIPMENT	0.0018	0.0007	0.0	0.5681
06900 OTHER MANUFACTURED PRODUCTS	0.0029	0.0020	0.0	0.2955
07000 RESIDENTIAL CONSTRUCTION	0.0034	0.0034	0.0	0.0
07100 NON-RESIDENTIAL CONSTRUCTION	0.0063	0.0063	0.0	0.0
07200 REPAIR CONSTRUCTION	0.0027	0.0027	0.0	0.0
07300 PIPELINE TRANSPORTATION	0.0007	0.0006	0.0	0.1601
07400 TRANSPORTATION & STORAGE	0.0111	0.0108	0.0	0.0242
07500 RADIO & TELEVISION BROADCASTING	0.0024	0.0023	0.0	0.0238
07600 TELEPHONE & TELEGRAPH	0.0008	0.0008	0.0	0.0
07700 POSTAL SERVICES	0.0036	0.0036	0.0	0.0171
07800 ELECTRIC POWER	0.0022	0.0022	0.0	0.0082
07900 OTHER UTILITIES	0.0041	0.0041	0.0	0.0
08000 WHOLESALE MARGINS	0.0043	0.0043	0.0	0.0027
08100 RETAIL MARGINS	0.0029	0.0029	0.0	0.0
08200 TRANSPORTATION MARGINS	0.0115	0.0115	0.0	0.0
08300 IMPUTED RENT, OWNER OCC. DWELL.	0.0004	0.0004	0.0	0.0
08400 OTHER FINANCE, INS., REAL ESTATE	0.0018	0.0018	0.0	0.0232
08500 BUSINESS SERVICES	0.0016	0.0014	0.0	0.1449
08600 EDUCATIONAL SERVICES	0.0021	0.0021	0.0	0.0
08700 HEALTH SERVICES	0.0017	0.0017	0.0	0.0
08800 AMUSEMENT & RECREATION SERVICES	0.0024	0.0024	0.0	0.0
08900 ACCOMMODATION & FOOD SERVICES	0.0029	0.0029	0.0	0.0
09000 OTHER PERSONAL & MISC. SERVICES	0.0032	0.0032	0.0	0.1044
09100 OPERATING EXPENSES, LAB. & FOOD	0.0031	0.0031	0.0	0.0
09200 TRAVEL, ADVERTISING & PROMOTION	0.0067	0.0067	0.0	0.0
09300 NON-MERCHANDISE IMPORTS	1.0000	1.0000	1.0000	1.0000
09400 UNALLOCATED IMPORTS & EXPORTS	1.0000	0.0	0.0	0.0
09500 INFLUENT TARIFFS	1.0000	0.0	0.0	0.0
09600 SUBSIDIES	1.0000	0.0	0.0	0.0
09700 WAGES & SALARIES	1.0000	0.0	0.0	0.0
09800 SUPPLEMENTARY LABOR INCOME	1.0000	0.0	0.0	0.0
09900 NET INCOME, UNINC. BUSINESS	1.0000	0.0	0.0	0.0
10010 MISCELLANEOUS INVESTMENT INCOME	1.0000	0.0	0.0	0.0
10020 DEPLETION & MINING WRITE-OFFS	1.0000	0.0	0.0	0.0
10030 CAPITAL COST ALLOWANCE	1.0000	0.0	0.0	0.0
10040 OTHER SURPLUS	1.0000	0.0	0.0	0.0

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CHAPTER 7

INTERPROVINCIAL MODEL

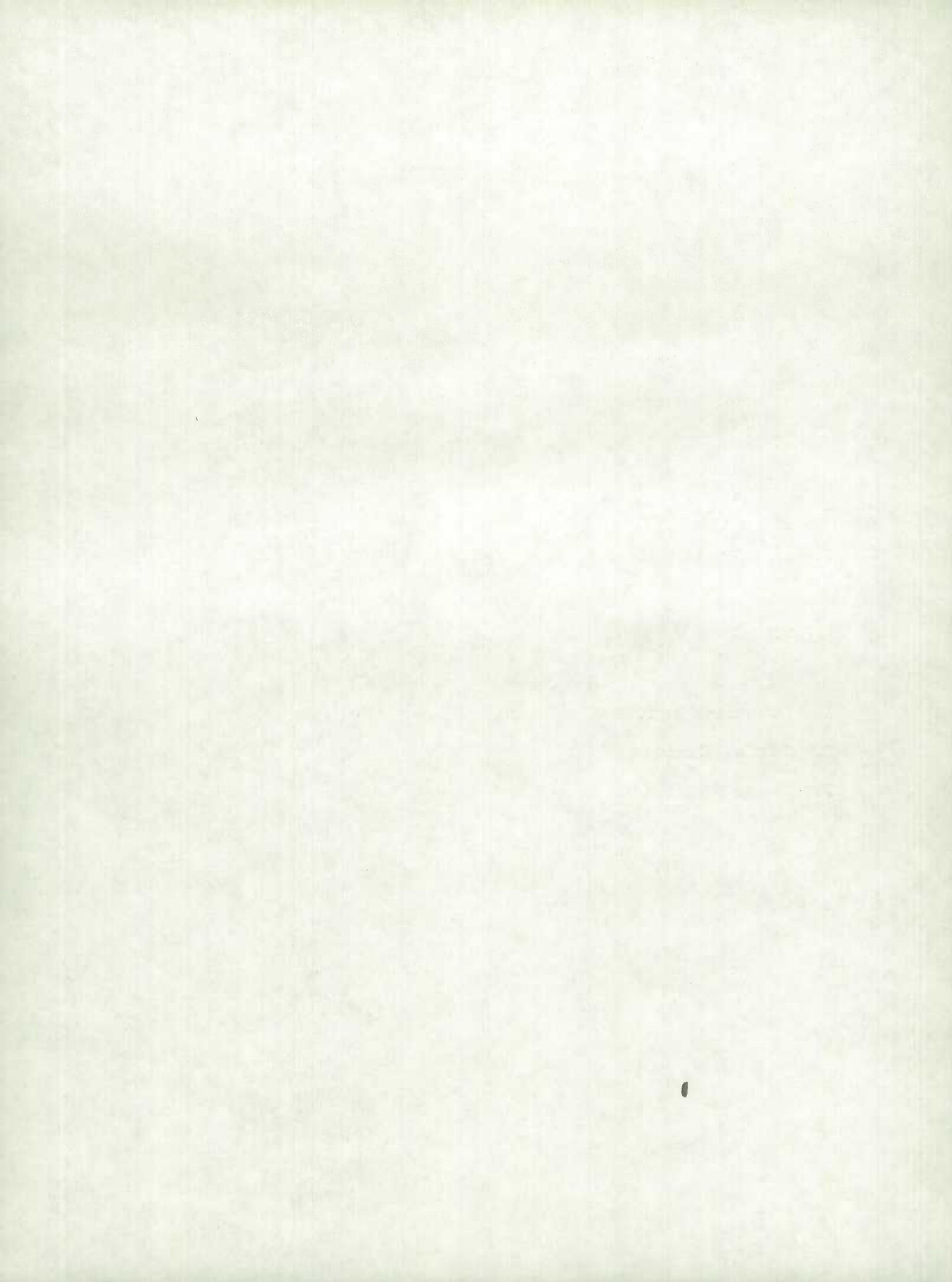


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7. Interprovincial Model

7.1 Introduction

The Statistics Canada Interprovincial Input-Output Models belong to a family of interregional input-output models that are used to analyse the propagation of demand throughout an economic system disaggregated both regionally and industrially. Among the most familiar members of this class are the national-international model of Leontief (6), the Leontief - Strout gravity model (7) and those models associated with Chenery (1), Isard (5) and Moses (8).

The Interprovincial Model can be thought of as an extension of the national input-output models described in Chapter 4 of the volume. The commodity-by-industry 'rectangular' accounting framework used in the national model has been extended or disaggregated to include a provincial dimension in the supply and disposition tables and an interprovincial trade matrix for each commodity. The mathematical structure and the computational procedures that are used in the Interprovincial Model are similar to those used in the national models. The use of a single solution algorithm and the handling of large arrays of coefficients in compact form make the solution of a very large system feasible and provide the capability to perform structural simulations.

7.2 The Accounting Framework

The accounting framework plays two distinct roles in input-output modelling. First, and most importantly, the accounting framework defines the variables which are used to quantify those aspects of the economy thought to be relevant for analysing a class of problems. It also defines the relationships (identities) among the variables in the accounting framework. The accounting framework provides a means of organizing historical data in such a way that the identities or accounting balances are satisfied. An analysis is performed by predicting (or at least conditionally predicting) values of the variables defined in the accounting framework. Different sets of predicted values of the variables can then be compared one with the other or with historical values. Secondly, historical data compiled according to the accounting framework are used to estimate the parameters or coefficients of the models.

The accounting framework used in the Interprovincial Model is an extension of the national input-output accounting framework described in Chapter 2 of this document. It distinguishes the (approximately) 200 industries and 600 commodities of the L level of classification. The industry and commodity classifications are presented in the appendices to Chapter 2. Eleven regions are represented: the ten provinces and the two territories combined to form the eleventh region.

The accompanying figures depict the accounting framework for the Interprovincial Model.

Figure 1 details the source or supply of commodities. Commodities (goods and services) are produced by industries in provinces or are imported from abroad. This table is a simple disaggregation of the national output table in which the industry dimension has been expanded to be industries in provinces; this disaggregation results in a separate output table for each province; international imports are unchanged as is the total supply of commodities.

Figure 2 details the disposition or use of commodities in industries, as final demands in provinces, and international exports. Analogously, this table is a provincial disaggregation of the national disposition table which results in a separate input table and a separate domestic final demand table for each province; international exports and total use of commodities are unchanged.

The commodity balance identities - namely that the total supply of commodities is equal to the total disposition - are maintained as at the national level, as are the industry balance identities: the total output of each industry is equal to the total input. However in the interprovincial accounting framework there is one industry balance identity for each industry in each province.

The accounting framework is completed by a set of interprovincial trade tables consisting of one table such as that depicted in Figure 3, for each commodity. The rows of the table show the destination of a provincial output and imports. The columns of the table show the source of the commodity consumed by each province and exports. The marginal totals which

FIGURE 1

SOURCE (SUPPLY) TABLE

COMMODITIES	PROVINCE 1 INDUSTRIES		PROVINCE 2 INDUSTRIES		...	PROVINCE 11 INDUSTRIES		INTERNATIONAL IMPORTS	TOTAL SUPPLY OF COMMODITIES
	PRODUCTION		PRODUCTION			PRODUCTION			
	OF		OF			OF			
	COMMODITIES		COMMODITIES			COMMODITIES			
	BY		BY			BY			
	INDUSTRIES		INDUSTRIES			INDUSTRIES			
	IN		IN			IN			
	PROVINCE 1		PROVINCE 2			PROVINCE 11			
	SUBTOTAL - PRODUCTION OF COMMODITIES IN PROVINCE 1		SUBTOTAL - PRODUCTION OF COMMODITIES IN PROVINCE 2		...	SUBTOTAL - PRODUCTION OF COMMODITIES IN PROVINCE 11			
	TOTAL OUTPUT OF INDUSTRIES IN PROVINCE 1		TOTAL OUTPUT OF INDUSTRIES IN PROVINCE 2			TOTAL OUTPUT OF INDUSTRIES IN PROVINCE 11			

FIGURE 2

DISPOSITION (USE) TABLE

DISPOSITION	PROVINCE 1			PROVINCE 2			PROVINCE 11				
	INDUSTRIES	DOMESTIC FINAL DEMANDS		INDUSTRIES	DOMESTIC FINAL DEMANDS		INDUSTRIES	DOMESTIC FINAL DEMANDS			
COMMODITIES	USE OF COMMODITIES BY INDUSTRIES IN PROVINCE 1	USE OF COMMODITIES AS FINAL DEMAND IN PROVINCE 1	SUBTOTAL - USE OF COMMODITIES IN PROVINCE 1	USE OF COMMODITIES BY INDUSTRIES IN PROVINCE 2	USE OF COMMODITIES AS FINAL DEMAND IN PROVINCE 2	SUBTOTAL - USE OF COMMODITIES IN PROVINCE 2	USE OF COMMODITIES BY INDUSTRIES IN PROVINCE 11	USE OF COMMODITIES AS FINAL DEMAND IN PROVINCE 11	SUBTOTAL - USE OF COMMODITIES IN PROVINCE 11	INTERNATIONAL EXPORTS	TOTAL USE OF COMMODITIES
PRIMARY INPUTS											
	TOTAL INPUT OF INDUSTRIES IN PROVINCE 1			TOTAL INPUT OF INDUSTRIES IN PROVINCE 2			TOTAL INPUT OF INDUSTRIES IN PROVINCE 11				

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FIGURE 3

INTERPROVINCIAL TRADE TABLE
(ONE FOR EACH COMMODITY)

	NFLD	NS	NB	PEI	QUE	ONT	MAN	SASK	ALTA	BC	YK & NWT		
NFLD												EXPORTS TO OTHER COUNTRIES	TOTAL PRODUCTION BY PROVINCE
NS													
NB													
PEI													
QUE													
ONT													
MAN													
SASK													
ALTA													
BC													
YK & NWT													
IMPORTS FROM OTHER COUNTRIES												RE-EXPORTS	TOTAL IMPORTS
TOTAL USE BY PROVINCE												TOTAL EXPORTS	

TOTAL SUPPLY = TOTAL DISPOSITION

correspond to total output, total imports, total input, and total exports match the corresponding entries in Figures 1 and 2.

7.3 Notes Concerning the Compilation of the 1974 Data Base

Data for the year 1974 has been compiled within the accounting framework outlined above. See References 3 and 4 for notes on the sources of data and methodology used in this compilation.

1. Inter-provincial trade flows of goods have been estimated from numerous sources and have been made consistent with supply and use constraints of goods by province.
2. Data on interprovincial trade of services is virtually non-existent. To make the model operative we have grouped services into those of a local nature: personal services, retail trade, construction, and those of a national nature: wholesale trade, transportation, finance, etc. We have assumed that local services are produced in-province. For "national" services we have used as a proxy for the trade flows the total economy wide inter-provincial movements of manufactured goods. Albeit arbitrary, this trade pattern can be justified to a certain extent by the close association of manufacturing and this category of service. The pattern reflects the predominance of Ontario as a national supplier followed to a lesser extent by Quebec and at the same time allows for more local intraregional movements.
3. Production and use have been completely disaggregated by province and

industry. Provincial data has been used where available and to the extent possible. Input structures vary in their degree of provincial content from 75 - 100% in manufacturing to zero content in some service sectors. Where no provincial data exists national input patterns have been weighted by provincial output levels.

4. "National" sectors - some sectors of a national character such as transportation have no simple representation at a provincial level. The preliminary version of our model relies upon the "national" trade pattern described in No. 2 above to allocate demand for transport services to provinces. The national input pattern is then assumed. Although this is not a realistic approach there is little that one can do short of developing a separate transportation model which combines ton-miles, rates, and unit costs of bulk commodities into a framework that relates revenues by route to expenses in all provinces. We will consider the development of this type of a model in the near future.
5. Factor incomes have been estimated for all sectors although we lay no claim to accuracy, especially with respect to operating surplus which was obtained residually after estimating proportional service inputs into manufacturing. The assumption of regionally proportional service inputs in this sector may be erroneous in cases where head office services are "sold" to establishments of multi-provincial companies. For service sectors (i.e. all tertiary sectors) operating surplus is estimated according to the Canada average proportion to total output.

7.4 The Interprovincial Model

The Interprovincial Input-Output Model traces the propagation of demand throughout the Canadian economy that is provincially as well as industrially disaggregated; it takes into account interdependence among provinces as well as among industries. For example production in one province may require inputs from another province; in turn the input producing industry may require inputs from the first province. The provincial interdependence is accomplished by adding a set of interprovincial trade relationships to the set market share and input relationships used in the national model. These interprovincial trade relationships allocate the demand for commodities to the provinces that produce the commodities or to international imports. The relationships are linear and proportional - implying that marginal trade patterns are the same as average patterns. This is a major assumption and should be born in mind when performing simulations.

In all other respects, the Interprovincial Model is similar to the National Input-Output Model: it is linear and proportional throughout; it is static; it assumes that supply of intermediate and primary factors is perfectly elastic without additions to capital stock. These points and their implication are discussed more fully in Chapter 1. The Interprovincial Model shares with the National Model the assumptions of industry technology and fixed market shares. Like the National Model, the Interprovincial Model can be used for impact analysis, for final demand conversion, and for structural simulations. These application are discussed in the introduction to Chapter 4.

Two versions of the Interprovincial Model have been implemented: an 'open' input-output model and an input-output model closed with respect to the household sector. The structure of these two versions are described in some detail in the following sections.

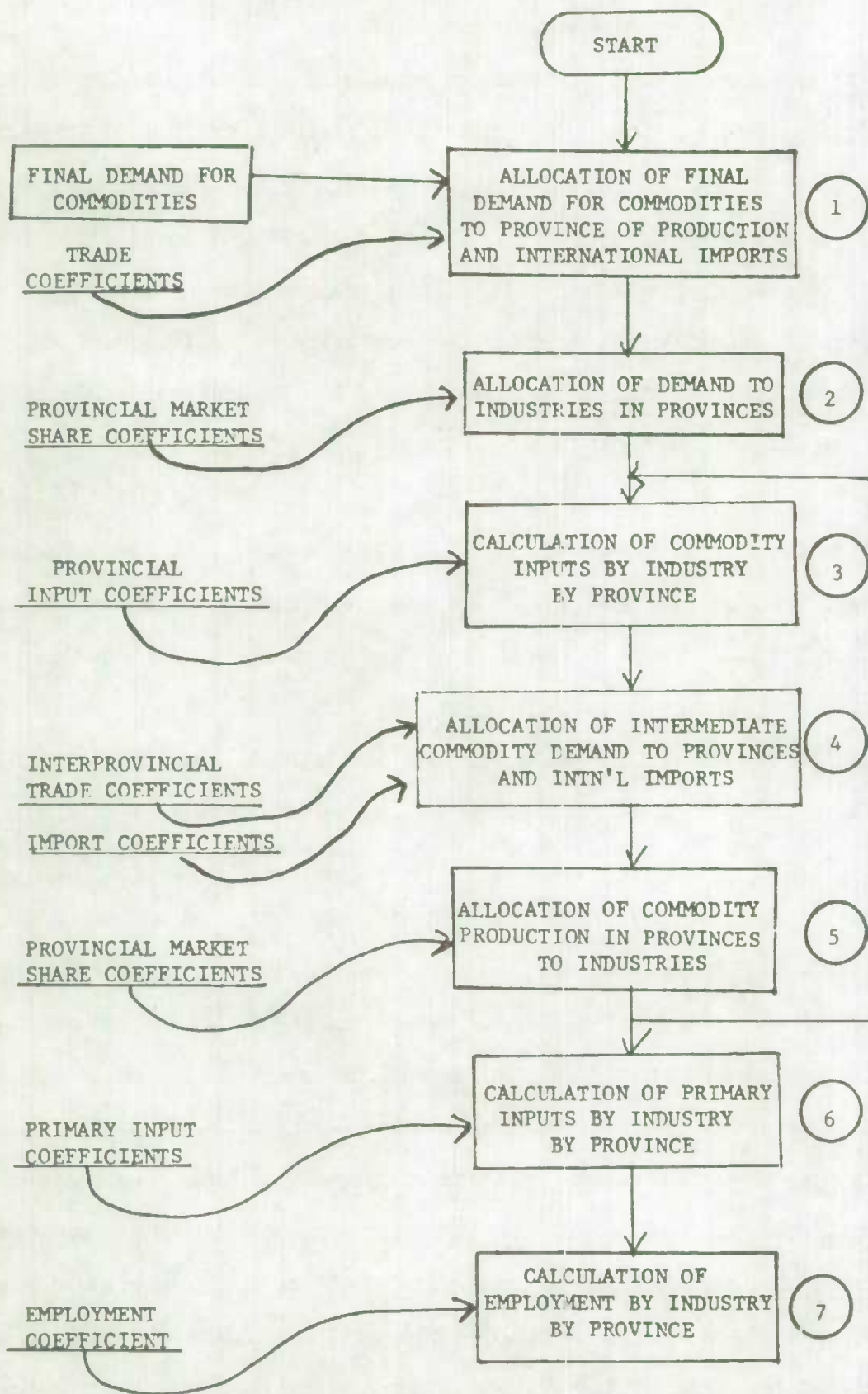
7.4.1 The Structure of the Open Interprovincial Model

Figure 4 depicts the structure of the Open Model. In the 'Open' Model demand is propagated throughout the business sector of the economy. Incomes generated in the business sector accruing to the household, government, capital, and foreign sectors are 'leakages' in the sense that they are not explicitly respent.

Each of the blocks described in the following paragraphs corresponds to a self-contained set of computations in the model solution algorithm. Iterating through Blocks 3, 4, and 5, accumulating the results, and continuing until a criterion of convergence is met provides the model solution.

Block 1 allocates user specified final demands for commodities to the provinces that produce the commodities and/or to international imports. Final demands for commodities should be specified in terms of 1974 producers values and coded according to the L level of commodity classification. Final demands specified in other than 1974 prices must be inflated (or deflated) appropriately. Final demands may⁰ be specified in terms of final demand categories. These will be transformed to commodity space using appropriate convertor matrices.

STRUCTURE OF THE OPEN INTERPROVINCIAL INPUT-OUTPUT MODEL



The user may specify the initial source of supply - province of production or imports. Alternatively the interprovincial trade coefficients may be used to perform this allocation. Refer to Block 4 for an explanation of interprovincial trade coefficients. If the user does not specify province of production or if the user specifies final demand categories, they must also specify the province in which the commodity is to be consumed. A report showing final demands by commodity and the allocation to source of supply is produced for each simulation.

Block 2 allocates the final demand for commodities produced in a province to the industries in the province that produce the commodities in question. The user may direct the final demands to industries in provinces, or, alternatively, they may let this allocation take place according to the provincial market share coefficients. Refer to Block 5 for a description of provincial market share coefficients.

Block 3 calculates the commodities required as inputs in industries in each province. This calculation is performed by multiplying the vectors of input coefficients (calculated by the industry technology assumption) by the corresponding activity level of each industry in each province and summing the commodity requirements in each province. Note that each industry in each province may have its unique set of input coefficients: it is not assumed that provincial input patterns are the same as input patterns at the national level. The input coefficients are obtained from the 1974 accounting data by dividing each entry in the industry section of the Disposition Table (Figure 2) by the appropriate industry output total.

Block 4 allocates the demand for commodities in provinces to the provinces that produce the commodities or to international imports. This transformation from province of use to province of supply is accomplished by multiplying the total use of a commodity in a province by the corresponding set of interprovincial trade coefficients. The interprovincial trade coefficients are obtained from the 1974 accounting data by dividing each entry in the interprovincial trade tables (Figure 3) by the corresponding column total. The import coefficients are obtained by dividing the entries in the import row by the corresponding column totals. Note that there may be a unique supply pattern for each commodity used in each province and that import shares are province-specific as well.

Block 5 allocates the production of commodities in provinces to the industries within each province. This allocation is accomplished by making use of a set of coefficients for each province which show the industrial shares of commodity production. These provincial market share coefficients are obtained using the 1974 accounting data from the supply tables (Figure 1) by dividing each element in the production tables by the corresponding element in the provincial subtotal columns. This calculation yields a market share matrix unique to each province.

Block 6 calculates the primary inputs by industry and province by multiplying the activity levels of each industry in each province by corresponding primary input coefficients. The primary input coefficients are obtained using the 1974 accounting data from the disposition tables presented in Figure 2 by dividing the elements in the primary input tables

by the corresponding column totals.

Block 7 calculates employment in man-years by industry by province. The employment coefficients are obtained by dividing estimates of employment by industry and province for 1974 by the observed levels of output by industry and province.

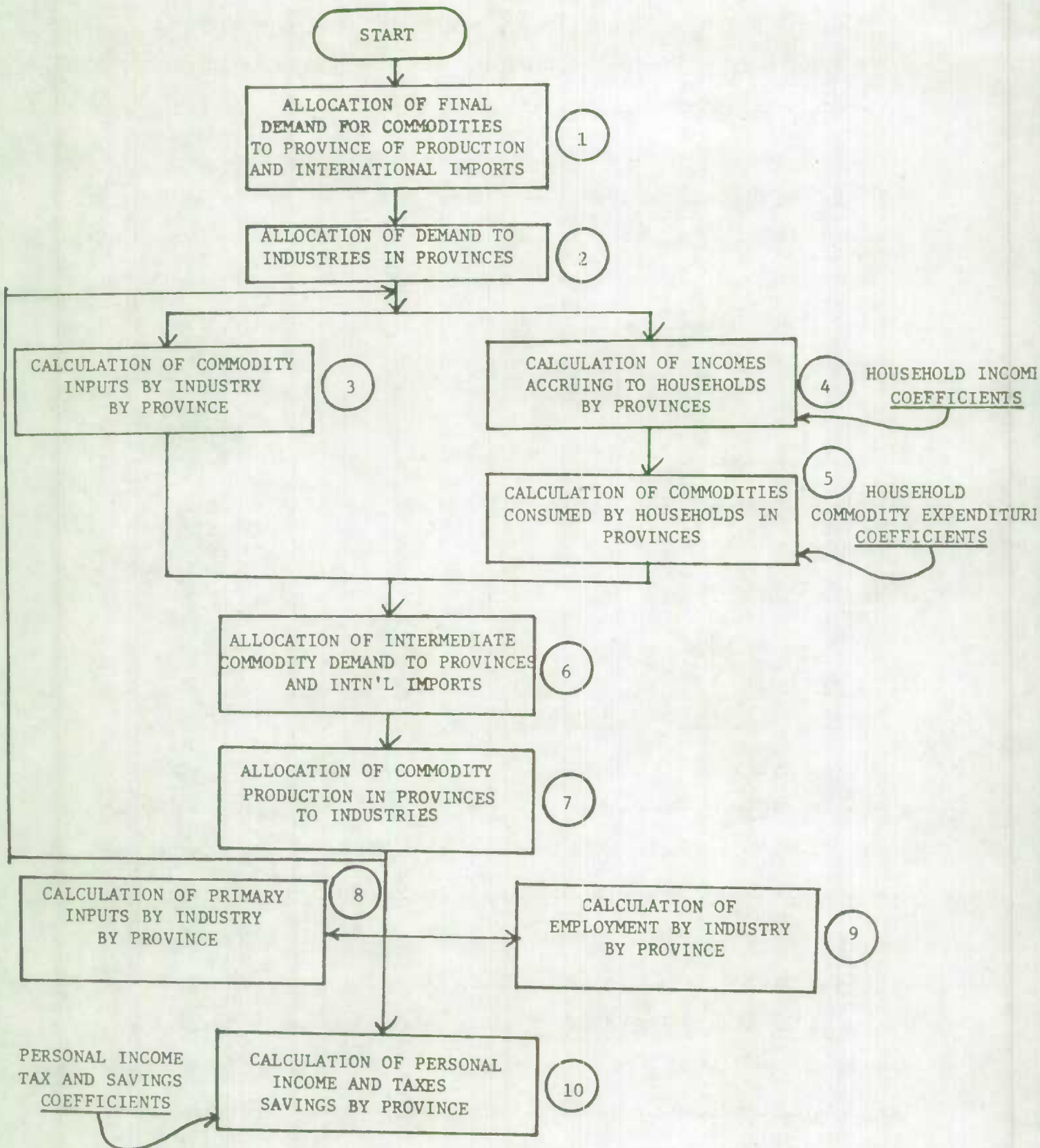
7.4.2 The Structure of the Closed Interprovincial Model

Figure 5 depicts the structure of the Closed Interprovincial Input-Output Model. This variant of the model is closed to the household sector only: incomes accruing to households that are generated by the final demands are respent on consumer goods and services, taxed, or saved. Personal income taxes and savings are leakages from the household sector.

Blocks 1, 2, and 3 are as described for the open model.

Block 4 calculates the incomes generated in the business sector that accrue to households. Household incomes consist of wages and salaries, supplementary labour income, net income of unincorporated businesses and interest and dividend payments to Canadian households. Incomes accruing to households from outside the business sector, for example transfer payments, are considered to be an exogenous variable. These provincial household incomes are obtained by multiplying the levels of activity of industries in provinces by a corresponding household income coefficient. The household income coefficients are obtained by summing the primary input coefficients corresponding to wages and salaries, supplementary

STRUCTURE OF THE CLOSED INTERPROVINCIAL
INPUT-OUTPUT MODEL



labour incomes, and net income of unincorporated businesses and the fraction of the other surplus coefficient that corresponds to interest and dividends paid to individuals.

Block 5 calculates the demand for consumer goods and services in each province as a function of household income in each province. The household expenditure coefficients are obtained by dividing the provincial consumer expenditure vectors in Figure 3 by the corresponding incomes using the 1974 data.

Blocks 6, 7, 8, and 9 correspond to blocks 4, 5, 6 and 7 in the Open Model description.

Block 10 calculates personal income taxes and savings by province.

7.5 An Algebraic Expression of the Model and Its Solution

The Regional Model is most simply conceived as a set of equations involving matrices of $NR \times NR$ blocks or submatrices, each block being of appropriate industry or commodity dimensions (NR is the number of regions, in this case 11). The provincial submatrices of the market share matrix are calculated as in the National Model: an industry by commodity matrix of outputs is normalized by its column sums, i.e. by total commodity production. Similarly the provincial submatrices of the industry technology matrix are calculated as commodity by industry matrices of inputs of produced goods normalized by total industry inputs. The complete inter-regional market

share matrix is given as:

$$D = \begin{pmatrix} D_1 & & & \\ & D_2 & & \\ & & \dots & \\ & & & D_{11} \end{pmatrix}$$

, D_i market share matrix for region i .

The inter-regional industry technology matrix is therefore:

$$B = \begin{pmatrix} B_1 & & & \\ & B_2 & & \\ & & \dots & \\ & & & B_{11} \end{pmatrix}$$

, B_i industry technology matrix for region i .

The regional commodity share matrix is structured as follows:

$$R = \begin{pmatrix} R_{1,1} & R_{1,2} & \dots & R_{1,11} \\ R_{2,1} & R_{2,2} & \dots & R_{2,11} \\ \vdots & & & \vdots \\ R_{11,1} & R_{11,2} & \dots & R_{11,11} \end{pmatrix}$$

where $R_{i,j}$ is a diagonal commodity by commodity matrix representing the shares of total supply of commodities consumed in region j which were

produced in region i .

The regional import share matrix is given as:

$$M = \begin{pmatrix} M_{1,1} & & & & \\ & M_{2,2} & & & \\ & & \dots & & \\ & & & \dots & \\ & & & & M_{11,11} \end{pmatrix}$$

where $M_{i,i}$ is a diagonal commodity by commodity matrix representing the shares of total supply of commodities consumed in region i which were imported from a foreign country.

To write the model equations requires the definition of the following vectors:

t - a regional concatenation of commodity length vectors of total demand for goods in each region.

e - a regional concatenation of commodity length vectors of total exogenous demand for goods in each region (excluding exports).

q - a regional concatenation of commodity length vectors of total production of goods in each region.

m - a regional concatenation of commodity length vectors of total imports of foreign goods into each region.

g - a regional concatenation of industry length vectors of total industry production in each region.

The model is now defined using the identities which follow:

$$(1) \quad t = Bg + e$$

$$(2) \quad q = Rt$$

$$(3) \quad m = Mt$$

$$(4) \quad g = Dq$$

Substituting (4) and (2) into (1) gives:

$$t = BDRt + e$$

$$\text{or} \quad t = (I - BDR)^{-1}e$$

Regional industry and commodity production and imports in response to any exogenous final demand e are therefore given by:

$$g = DR(I - BDR)^{-1}e = (I - DRB)^{-1}DR e$$

$$q = R(I - BDR)^{-1}e$$

$$m = M(I - BDR)^{-1}e$$

The logic of the model equations is fairly easily comprehended. Equation (1) states that total demand in each region is the sum of intermediate demand and final demand. Equation (2) states that the total production in each region must equal the sum of within-region and out-of-region total demands. Imports, according to Equation (3), are simply the product of regional import shares and regional total demands. And finally, Equation (4) states that regional industry outputs are the product of regional market shares and regional commodity production. The relationship of t , q , and m is clear if we define an aggregation matrix which sums concatenated regional vectors into a single "national total" vector.

Let $N = (I \ I \dots I)$, i.e. a concatenation of commodity-dimensioned identity matrices.

Then $Nq = q^N$, the commodity length total national output of commodities.

Since the sum of regional production shares and import shares for any commodity must be one by definition, i.e.

$$i'R + i'M = i' \quad \text{where } i' = (1, 1, \dots, 1),$$

it follows that

$$N(q+m) = Nt.$$

In other words, total supply at the national level equals total demand at

the national level - matrices R and M merely re-allocate total demands among regions in a manner consistent with this national level equality.

Closing the Regional Model to household income involves defining new relationships in the following matrices:

$$W = \begin{pmatrix} \boxed{W_1} & & & & \\ & \boxed{W_2} & & & \\ & & \dots & & \\ & & & & \boxed{W_{11}} \end{pmatrix}$$

where W_i is the industry length vector of household incomes per dollar of industry output in region i (i.e. the sum of the coefficients of wages and salaries, supplementary labour income, net income of unincorporated business, and a share of other surplus).

$$E = \begin{pmatrix} \boxed{E_1} & & & & \\ & \boxed{E_2} & & & \\ & & \dots & & \\ & & & & \boxed{E_{11}} \end{pmatrix}$$

where E_i is the commodity length vector of consumers expenditures on goods and services normalized to total personal income in region i .

Defining the region-length vector h to be the household income vector, so that h_i is the total household income in region i , the closed system may be solved by modifying one of the system identities and adding one new one:

$$(1a) \quad t = Bg + e + Eh$$

$$(5) \quad h = Wg$$

The resulting model may be solved for an exogenous specification of h in (1a), or with household income and expenditure completely endogenized.

International exports are calculated as direct demands for the production of individual provinces, and therefore must be treated separately from other exogenous demands. The trade flow accounts allow the definition of a regional export share matrix X , where

$$X = \begin{pmatrix} x_1 \\ x_2 \\ \vdots \\ x_{11} \end{pmatrix}$$

and x_i is a diagonal matrix of the shares of national-level commodity exports produced in region i . If these national-level exports are represented as vector w , then the concatenation of regional exports, vector x , is given by

$$(6) \quad x = Xw$$

Whether regional exports are calculated using (6) or specified exogenously, the regional commodity production identity must be modified as follows:

$$(2a) \quad q = R_t + x$$

Using (2a) in place of (2) gives the following solutions for commodity and industry outputs respectively:

$$q = (I - RBD)^{-1} (Re + x)$$

$$g = (I - DRB)^{-1} D (Re + x) .$$

7.6 Sample Solutions

The results of model calculations are presented in a series of computer generated reports. At the present time a single model solution produces four individual reports: the first report summarizes the final demand that the user specified; the remaining three reports show the resulting gross production, employment in man-years and gross domestic product at factor cost by industry and province.

The set of reports will be expanded to include consolidated income and expenditure accounts, household and business sector income and outlay accounts, government revenue accounts, interprovincial trade accounts and selected results in commodity space. Because of the large number of reports potentially available, a number of reports will be produced only if requested.

Results in industry and commodity space can be produced at varying levels of aggregation. Unless otherwise specified the standard level of aggregation will be the M level which distinguishes 43 industries and 93 commodities. All results are calculated and are available at the L level which distinguishes 191 industries and 595 commodities; any non-standard aggregation of industries and commodities that is defined in terms of L level classifications can be produced.

Two sample simulations are appended to this chapter in order to demonstrate the report types that have been implemented.

The first sample, which appears as Appendix 2, consists of a Closed Model simulation of \$1.0 million of final demand for the residential construction industry in Nova Scotia. Note that in the industry space results for the Closed Model 'households' are reported as a forty-fourth industry. The "gross output" for this sector corresponds to total household income before taxes. Reading from the 44th row of the gross production table, \$1.0 million of residential construction in Nova Scotia generates \$523.5 thousand of household income in Nova Scotia of a total of \$894.9 thousand for Canada. It generates total production of \$1,491.3 thousand in Nova Scotia and \$2,607.2 thousand in Canada. These numbers are obtained by adding the first 40 rows of the gross production table (noting that industries 41, 42, and 43 are dummy industries). The employment table shows that of the 78.8 man-years of employment generated by the \$1.0 million in residential construction, 41.6 are in Nova Scotia, 18.0 are in Ontario, and the remainder are in the other provinces.

Appendix 3 contains the reports generated by an Open Model simulation of \$1.0 million of consumer expenditures in British Columbia. The final demand table in this case shows the commodity composition of final demand in column 1 and the allocation of direct production of the final demand to British Columbia, the rest of Canada, international imports, and an unallocated category. The three results tables are analogous to those of Appendix 2. Note that the 'household' sector is not included in Open Model simulations.

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* INDUSTRIES ACTIVE IN EACH PROVINCE 1974

	NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	YUKWT
00100 AGRICULTURE	1	1	1	1	1	1	1	1	1	1	0
00200 FORESTRY	1	1	1	1	1	1	1	1	1	1	1
00300 FISHING, HUNTING & TRAPPING	1	1	1	1	1	1	1	1	1	1	1
00400 GOLD MINES	0	0	0	0	1	1	0	0	0	0	1
00500 URANIUM MINES	0	0	0	0	0	1	0	1	0	0	0
00600 IRON MINES	1	0	0	0	1	1	0	0	0	1	0
00700 BASE METAL & OTHER METAL MINES	1	0	0	1	1	1	1	1	0	1	1
00800 COAL MINES	0	0	1	1	0	0	0	1	1	1	0
00900 PETROLEUM & GAS WELLS	0	0	0	1	1	1	1	1	1	1	1
01000 ASBESTOS MINES	1	0	0	0	1	1	0	0	0	1	1
01100 GYPSUM MINES	1	0	1	1	0	1	1	0	0	1	0
01200 SALT MINES	0	0	1	0	1	1	0	1	1	0	0
01300 OTHER NON-METAL MINES	1	0	1	1	1	1	1	1	1	1	0
01400 QUARRIES & SAND PITS	1	1	1	1	1	1	1	1	1	1	0
01500 SERVICES INCIDENTAL TO MINING	1	0	1	1	1	1	1	1	1	1	1
01600 SLAUGHTERING & MEAT PROCESSORS	1	1	1	1	1	1	1	1	1	1	0
01700 POULTRY PROCESSORS	1	1	1	1	1	1	1	1	1	1	0
01800 DAIRY FACTORIES	1	1	1	1	1	1	1	1	1	1	0
01900 FISH PRODUCTS INDUSTRY	1	1	1	1	1	1	1	1	1	1	1
02000 FRUIT & VEGETABLE PROCESSING	1	1	1	1	1	1	1	1	1	1	0
02100 FEED MFGRS.	1	1	1	1	1	1	1	1	1	1	0
02200 FLOUR & BREAKFAST CEREALS IND.	0	0	1	0	1	1	1	1	1	1	0
02300 BISCUIT MFGRS.	1	0	0	1	1	1	1	1	1	1	0
02400 BAKERIES	1	1	1	1	1	1	1	1	1	1	1
02500 CONFECTIONERY MFGRS.	0	0	1	1	1	1	1	0	1	1	0
02600 SUGAR REFINERIES	0	0	0	1	1	1	1	0	1	1	0
02700 VEGETABLE OIL MILLS	0	0	0	0	0	1	1	1	1	0	0
02800 MISCELLANEOUS FOOD INDUSTRIES	1	0	1	1	1	1	1	1	1	1	0
02900 SOFT DRINK MFGRS.	1	1	1	1	1	1	1	1	1	1	1
03000 DISTILLERIES	0	0	1	1	1	1	1	1	1	1	0
03100 BREWERIES	1	0	1	1	1	1	1	1	1	1	0
03200 WINERIES	0	0	1	1	1	1	1	1	1	1	0
03300 LEAF TOBACCO PROCESSING	0	0	0	0	1	1	0	0	0	0	0
03400 TOBACCO PRODUCTS MFGRS.	0	0	0	0	1	1	0	0	0	0	0
03500 RUBBER FOOTWEAR MFGRS.	0	0	0	0	1	1	0	0	0	0	0
03600 TIRE & TUBE MFGRS.	0	0	1	0	1	1	0	0	1	0	0
03700 OTHER RUBBER INDUSTRIES	0	0	0	0	1	1	1	0	1	1	0
03800 PLASTIC FABRICATORS, NES.	0	0	1	1	1	1	1	1	1	1	0
03900 LEATHER TANNERIES	0	0	0	0	1	1	1	0	1	1	0
04000 SHOE FACTORIES	1	0	0	1	1	1	1	1	1	1	0
04100 LEATHER GLOVE FACTORIES	0	0	0	0	1	1	1	0	1	1	0
04200 SMALL LEATHER GOODS MFGRS.	1	1	0	1	1	1	1	1	1	1	0
04300 COTTON YARN & CLOTH MILLS	0	0	1	1	1	1	0	0	0	0	0
04400 WOOL, YARN & CLOTH MILLS	0	1	0	1	1	1	1	0	1	1	0
04500 SYNTHETIC TEXTILE MILLS	0	0	1	1	1	1	0	0	1	1	0
04600 FIBRE PREPARING MILLS	0	0	0	0	1	1	1	0	0	1	0
04700 THREAD MILLS	0	0	0	0	1	1	0	0	0	0	0
04800 CORDAGE & TWINE INDUSTRY	1	1	0	1	1	1	0	1	1	1	0
04900 NARROW FABRIC MILLS	0	0	0	0	1	1	0	0	0	0	0
05000 PRESSED & PUNCHED FELT MILLS	0	0	0	0	1	1	0	0	0	1	0
05100 CARPET, MAT & RUG INDUSTRY	0	0	1	0	1	1	1	0	0	1	0
05200 TEXTILE DYEING & FINISHING	0	0	0	0	1	1	1	0	0	1	0

* INDUSTRIES ACTIVE IN EACH PROVINCE 1974

	NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	Y+NWT
05300 CANVAS PRODUCTS INDUSTRY	1	0	1	1	1	1	1	1	1	1	0
05400 COTTON & JUTE BAG INDUSTRY	0	1	0	0	1	1	1	0	1	1	0
05500 MISCELLANEOUS TEXTILE IND.	0	0	1	1	1	1	1	1	1	1	0
05600 HOSIERY MILLS	0	0	0	0	1	1	0	0	0	0	0
05700 OTHER KNITTING MILLS	0	0	1	1	1	1	1	0	1	1	0
05800 CLOTHING INDUSTRIES	1	0	1	1	1	1	1	1	1	1	1
05900 SAWMILLS	1	1	1	1	1	1	1	1	1	1	1
06000 VENEER & PLYWOOD MILLS	1	0	0	1	1	1	0	0	1	1	1
06100 SASH & DOOR & PLANING MILLS	1	1	1	1	1	1	1	1	1	1	0
06200 WOODEN BOX FACTORIES	0	1	1	1	1	1	1	1	1	1	0
06300 COFFIN & CASNET INDUSTRY	1	0	1	1	1	1	1	1	1	1	0
06400 MISCELLANEOUS WOOD INDUSTRIES	1	1	1	1	1	1	1	1	1	1	1
06500 HOUSEHOLD FURNITURE INDUSTRY	1	1	1	1	1	1	1	1	1	1	1
06600 OFFICE FURNITURE INDUSTRY	0	0	0	0	1	1	0	0	1	1	0
06700 OTHER FURNITURE INDUSTRIES	1	0	1	1	1	1	1	1	1	1	0
06800 ELECTRIC LAMP & SHADE INDUSTRY	0	0	0	0	1	1	1	0	0	1	0
06900 PULP & PAPER INDUSTRY	1	0	1	1	1	1	1	1	1	1	0
07000 ASPHALT AND RELATED PRODUCTS	0	0	0	0	1	1	1	0	1	1	0
07100 PAPER BOX & BAG MFGRS.	1	0	1	1	1	1	1	1	1	1	0
07200 OTHER PAPER CONVERTERS	0	0	1	0	1	1	1	1	1	1	0
07300 PRINTING & PUBLISHING	1	1	1	1	1	1	1	1	1	1	1
07400 ENGRAVING, STEREOTYPING IND.	0	0	1	1	1	1	1	1	1	1	0
07500 IRON & STEEL INDUSTRY	0	0	1	0	1	1	1	0	1	1	0
07600 STEEL PIPE & TUBE MILLS	0	0	0	0	1	1	1	1	1	1	0
07700 IRON FOUNDRIES	0	0	1	1	1	1	1	1	1	1	0
07800 ALUMINUM SMELTING & REFINING	0	0	0	0	1	0	0	0	0	1	0
07900 OTHER SMELTING & REFINING	0	0	0	1	1	1	1	1	1	1	0
08000 ALUMINUM ROLLING & EXTRUDING	0	0	0	1	1	1	0	0	1	1	0
08100 COPPER & ALLOY ROLLING	0	0	0	0	1	1	0	0	1	1	0
08200 METAL CASTING & EXTRUDING NES	0	0	1	1	1	1	0	0	1	1	0
08300 BOILER & PLATE WORKS	0	0	1	1	1	1	1	1	1	1	0
08400 FABRICATED STRUCT. METAL IND.	1	0	1	1	1	1	1	1	1	1	0
08500 ORNAMENTAL & ARCH. METAL IND.	1	0	1	1	1	1	1	1	1	1	0
08600 METAL STAMP, PRESS. & COAT. IND.	1	1	1	1	1	1	1	1	1	1	0
08700 WIRE & WIRE PRODUCTS MFGRS.	0	0	1	1	1	1	1	0	1	1	0
08800 HARDWARE TOOL & CUTLERY MFGRS.	0	0	1	1	1	1	1	1	1	1	0
08900 HEATING EQUIPMENT MFGRS.	0	0	0	1	1	1	1	0	1	1	0
09000 MACHINE SHOPS	1	1	1	1	1	1	1	0	1	1	0
09100 MISC. METAL FABRICATING IND.	0	0	1	1	1	1	1	1	1	1	0
09200 AGRICULTURAL IMPLEMENT IND.	0	1	0	1	1	1	1	1	1	1	0
09300 MISC. MACHINERY & EQUIP. MFGRS	0	0	1	1	1	1	1	1	1	1	0
09400 COMM. REFRIG & AIR COND. MFGRS	0	0	0	1	1	1	0	0	1	1	0
09500 OFFICE & STORE MACHINERY MFGRS	0	0	0	0	1	1	0	0	1	1	0
09600 AIRCRAFT & PARTS MFGRS.	0	0	1	1	1	1	1	1	1	1	0
09700 MOTOR VEHICLE MFGRS.	0	0	1	0	1	1	1	0	0	1	0
09800 TRUCK BODY & TRAILER MFGRS.	1	0	1	1	1	1	1	1	1	1	0
09900 MOTOR VEH. PTS & ACCESS. MFGRS	0	0	0	0	1	1	1	1	1	1	0
10000 RAILROAD ROLLING STOCK IND.	0	0	1	0	1	1	1	0	0	0	0
10100 SHIPBUILDING & REPAIR	1	1	1	1	1	1	1	0	0	1	0
10200 MISC. TRANSP. EQUIP. IND.	1	1	1	1	1	1	1	1	1	1	0
10300 SMALL ELECTRICAL APPLIANCES	0	0	0	0	1	1	1	0	0	1	0
10400 MAJOR APPLIANCES ELECT. & NON.	0	0	0	1	1	1	0	0	0	0	0

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* INDUSTRIES ACTIVE IN EACH PROVINCE 1974

	NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	Y+NT
10500 RADIO & TELEVISION RECEIVERS	0	0	0	0	1	1	0	0	0	0	0
10600 COMMUNICATIONS EQUIPMENT MFGRS	0	0	1	1	1	1	1	1	1	1	0
10700 MFGRS OF ELECT. IND. EQUIP.	0	0	1	1	1	1	1	1	1	1	0
10800 BATTERY MFGRS.	0	0	1	0	1	1	1	0	1	1	0
10900 MFGRS OF ELECTRIC WIRE & CABLE	0	0	1	1	1	1	1	1	1	1	0
11000 MFGRS OF MISC. ELECT. PRODUCTS	0	0	1	0	1	1	1	0	1	1	0
11100 CEMENT MFGRS	1	0	1	1	1	1	1	1	1	1	0
11200 LIME MFGRS	0	0	0	1	1	1	1	0	1	1	0
11300 CONCRETE PRODUCTS MFGRS	1	1	1	1	1	1	1	1	1	1	0
11400 READY-MIX CONCRETE MFGRS	1	0	1	1	1	1	1	1	1	1	0
11500 CLAY PRODUCTS MFGRS	1	0	1	1	1	1	1	1	1	1	0
11600 REFRACTORIES MFGRS	0	0	0	0	1	1	0	1	0	1	0
11700 STONE PRODUCTS MFGRS	1	1	1	1	1	1	1	0	1	1	0
11800 OTHER NON-METALLIC PRODUCTS IN	1	0	1	1	1	1	1	1	1	1	0
11900 GLASS & GLASS PRODUCTS MFGRS	0	0	0	1	1	1	1	1	1	1	0
12000 ABRASIVES MFGRS	0	0	0	0	1	1	0	0	0	0	0
12100 PETROLEUM REFINERIES	1	0	1	1	1	1	1	1	1	1	0
12200 OTHER PETROL & COAL PROD. IND.	0	0	0	1	1	1	1	1	1	1	0
12300 MFGRS. OF MIXED FERTILIZERS	0	1	1	1	1	1	0	0	1	1	0
12400 MFGRS. OF PLAST. & SYNTH. RES.	0	0	0	1	1	1	0	0	1	1	0
12500 MFGRS. OF PHARM. & MEDICINES	0	0	1	0	1	1	1	0	0	1	0
12600 PAINT & VARNISH MFGRS.	1	1	1	0	1	1	1	1	1	1	0
12700 MFGRS. OF SOAP & CLEANING COMP	0	0	0	1	1	1	1	1	1	1	0
12800 MFGRS. OF TOILET PREPARATIONS	0	0	0	0	1	1	0	0	0	0	0
12900 MFGRS. OF INDUSTRIAL CHEMICALS	1	0	1	1	1	1	1	1	1	1	1
13000 OTHER CHEMICAL INDUSTRIES	1	1	1	1	1	1	1	1	1	1	1
13100 SCIENT. & PROC. EQUIP. MFGRS.	1	1	1	1	1	1	1	1	1	1	0
13200 JEWELRY & SILVERWARE MFGRS.	0	0	0	0	1	1	1	0	1	1	1
13300 BROOM BRUSH & MOP INDUSTRY	0	0	0	1	1	1	1	1	1	1	0
13400 SPORTING GOODS & TOY INDUSTRY	0	0	0	1	1	1	1	1	1	1	0
13500 LINOLEUM & COATED FABRICS IND.	0	0	0	0	1	1	0	0	0	0	0
13600 SIGNS & DISPLAYS INDUSTRY	1	1	1	1	1	1	1	1	1	1	0
13700 MISC. MANUFACTURING IND. NES	1	1	1	1	1	1	1	1	1	1	0
13800 REPAIR CONSTRUCTION	1	1	1	1	1	1	1	1	1	1	1
13900 RESIDENTIAL CONSTRUCTION	1	1	1	1	1	1	1	1	1	1	1
14000 NON-RESIDENTIAL CONSTRUCTION	1	1	1	1	1	1	1	1	1	1	1
14100 ROAD HIGHWAY AIRSTRIP CONST.	1	1	1	1	1	1	1	1	1	1	1
14200 GAS AND OIL FACILITY CONST.	1	1	1	1	1	1	1	1	1	1	1
14300 DAMS AND IRRIGATION PROJECTS	1	1	1	1	1	1	1	1	1	1	1
14400 RAILWAY TELEPHONE TELEGRAPH CO	1	1	1	1	1	1	1	1	1	1	1
14500 OTHER ENGINEERING CONSTRUCTION	1	1	1	1	1	1	1	1	1	1	1
14700 AIR TRANSPORT	1	1	1	1	1	1	1	1	1	1	1
14800 SERVICES INCIDENTAL TO TRANSP.	1	1	1	1	1	1	1	1	1	1	1
14900 WATER TRANSPORT	1	1	1	1	1	1	1	1	1	1	1
15000 RAILWAY TRANSPORT	1	1	1	1	1	1	1	1	1	1	1
15100 TRUCK TRANSPORT	1	1	1	1	1	1	1	1	1	1	1
15200 BUS TRANSP. INTERURBAN & RURAL	1	0	1	1	1	1	1	1	1	1	0
15300 URBAN TRANSIT SYSTEMS	1	0	1	1	1	1	1	1	1	1	0
15400 TAXICAB OPERATIONS	1	0	1	1	1	1	1	1	1	1	1
15500 PIPELINE TRANSPORT	0	0	0	1	1	1	1	1	1	1	1
15600 HIGHWAY & BRIDGE MAINTENANCE	1	1	1	1	1	1	1	1	1	1	1
15700 STORAGE	1	0	1	1	1	1	1	1	1	1	0

INDUSTRIES ACTIVE IN EACH PROVINCE 1974

	Nfld	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	Y+NTT
15800 RADIO & TEL. BROADCASTING	1	1	1	1	1	1	1	1	1	1	1
15900 COMMUNICATION INDUSTRIES, NES.	1	1	1	1	1	1	1	1	1	1	1
16000 POST OFFICE	1	1	1	1	1	1	1	1	1	1	1
16100 ELECTRIC POWER	1	1	1	1	1	1	1	1	1	1	1
16200 GAS DISTRIBUTION	0	0	0	1	1	1	1	1	1	1	0
16300 WATER & OTHER UTILITIES	0	1	0	0	1	1	1	0	1	1	0
16400 WHOLESALE TRADE	1	1	1	1	1	1	1	1	1	1	1
16500 RETAIL TRADE	1	1	1	1	1	1	1	1	1	1	1
16600 OWNER OCCUPIED DWELLINGS	1	1	1	1	1	1	1	1	1	1	1
16700 GOVT. ROYALTIES ON NAT. RESOURC	1	0	1	1	1	1	1	1	1	1	1
16800 BANKS AND CREDIT UNIONS	1	1	1	1	1	1	1	1	1	1	1
16900 INSURANCE	1	1	1	1	1	1	1	1	1	1	1
17000 OTHER FIN. INS. & REAL ESTATE	1	1	1	1	1	1	1	1	1	1	1
17100 EDUCATION & RELATED SERVICES	1	0	1	1	1	1	1	1	1	1	0
17200 HOSPITALS	0	0	0	0	1	1	1	0	0	1	1
17300 HEALTH SERVICES	1	1	1	1	1	1	1	1	1	1	1
17400 MOTION PICTURE THEATRES	1	1	1	1	1	1	1	1	1	1	1
17500 OTHER RECREATIONAL SERVICES	1	1	1	1	1	1	1	1	1	1	1
17600 PROF. SERVICES TO BUSINESS	1	1	1	1	1	1	1	1	1	1	1
17700 ADVERTISING SERVICES	1	1	1	1	1	1	1	1	1	1	0
17800 LAUNDRIES & CLEANERS	1	1	1	1	1	1	1	1	1	1	1
17900 ACCOMMODATION & FOOD SERVICES	1	1	1	1	1	1	1	1	1	1	1
18000 OTHER PERSONAL SERVICES	1	1	1	1	1	1	1	1	1	1	1
18100 PHOTOGRAPHY	1	1	1	1	1	1	1	1	1	1	1
18200 MISC. REPAIR & MAINTENANCE	1	1	1	1	1	1	1	1	1	1	1
18300 MISC. SERVICES TO BUS. & PERS.	1	1	1	1	1	1	1	1	1	1	1
18400 OPERATING SUPPLIES	1	1	1	1	1	1	1	1	1	1	1
18500 OFFICE SUPPLIES	1	1	1	1	1	1	1	1	1	1	1
18600 CAFETERIA PERU.	1	1	1	1	1	1	1	1	1	1	1
18700 TRANSPORTATION MARGINS	1	1	1	1	1	1	1	1	1	1	1
18800 LABORATORY SUPPLIES	1	1	1	1	1	1	1	1	1	1	1
18900 TRAVEL & ENTERTAINMENT	1	1	1	1	1	1	1	1	1	1	1
19000 ADVERTISING & PROMOTION	1	1	1	1	1	1	1	1	1	1	1
19100 MACHINERY REPAIR SERVICES	1	1	1	1	1	1	1	1	1	1	1
TOTAL	105	80	131	143	186	188	160	133	157	170	66

Revised September 1980

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
*
* FINAL DEMAND BY INDUSTRY
*
* \$1 MILLION ON RESIDENTIAL CONSTRUCTION
* NOVA SCOTIA CLOSED MODEL

NS CANADA

28 CONSTRUCTION INDUSTRY	1000000	1000000
TOTAL	1000000	1000000

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
*
* GROSS PRODUCTION BY PROVINCE AND INDUSTRY ("SHIPMENTS")
*
* \$1 MILLION ON RESIDENTIAL CONSTRUCTION
* NOVA SCOTIA CLOSED MODEL
* 1974 DATA BASE VERSION 1

	Nfld	PEI	NS	NS	QUE	ONT	MAN	SASK	ALTA	BC	Y+NT	CANADA
1 AGRICULTURE	131	1465	11648	1465	6107	12275	3012	5381	2259	538	0	44281
2 FORESTRY	33	4	10613	2020	4476	1531	60	204	117	5938	0	25823
3 FISHING, HUNTING & TRAPPING	14	44	1257	127	58	10	6	4	4	102	0	1626
4 METAL MINES	19	0	0	61	1993	3824	508	59	0	147	89	6700
5 MINERAL FUELS	0	0	1686	137	0	19	100	937	9219	105	0	12343
6 NON-METAL MINES & QUARRIES	40	1	4120	88	856	661	8	117	9	92	0	5993
7 SERVICES INCIDENTAL TO MINING	3	0	383	4	62	75	44	22	258	20	1	872
8 FOOD & BEVERAGE INDUSTRIES	101	2126	24820	8184	23293	35844	4392	2793	2535	1682	0	105771
9 TOBACCO PRODUCTS INDUSTRIES	0	0	0	0	2823	2823	0	0	0	0	0	5352
10 RUBBER & PLASTICS PRODUCTS IND	0	0	1965	184	5216	11997	85	8	78	122	0	19855
11 LEATHER INDUSTRIES	8	1	0	21	1829	1917	90	1	12	17	0	3897
12 TEXTILE INDUSTRIES	0	103	246	31	12336	11956	76	33	113	101	0	25044
13 KNITTING MILLS	0	0	454	13	3597	1041	99	0	6	44	0	5853
14 CLOTHING INDUSTRIES	2	0	73	210	11823	3017	622	93	244	149	0	16329
15 WOOD INDUSTRIES	57	2164	53204	15468	27715	13142	60	1242	635	15755	0	129482
16 FURNITURE & FIXTURE INDUSTRIES	0	31	784	269	3340	3913	64	4	22	61	0	8489
17 PAPER & ALLIED INDUSTRIES	102	0	3900	1726	19283	14614	379	79	91	780	0	42892
18 PRINTING & PUBLISHING	12	55	4470	410	6163	8127	210	68	79	258	0	19882
19 PRIMARY METAL INDUSTRIES	0	0	1715	56	18591	34829	793	74	103	737	0	58707
20 METAL FABRICATING INDUSTRIES	4	190	16247	2789	28285	67820	323	41	99	1489	0	111832
21 MACHINERY INDUSTRIES	0	6	732	58	2509	7816	112	13	53	239	0	11642
22 TRANSPORTATION EQUIPMENT IND.	2	5	3499	383	3260	17879	193	15	52	143	0	28159
23 ELECTRICAL PRODUCTS INDUSTRIES	0	0	1838	1402	9147	18515	283	9	31	64	0	31288
24 NON-METALLIC MINERAL PROD. IND	2553	1	36322	3735	8139	19275	39	28	63	71	0	70037
25 PETROLEUM & COAL PRODUCTS IND.	430	0	26650	3655	9554	6080	351	381	519	512	0	50127
26 CHEMICAL & CHEMICAL PROD. IND.	174	113	1122	797	12332	22474	92	30	443	497	0	32069
27 MISC MANUFACTURING INDUSTRIES	3	1	500	256	5207	9223	28	11	15	58	0	15303
28 CONSTRUCTION INDUSTRY	57	175	1011757	1009	4852	7240	279	281	524	650	2	1028886
29 TRANSPORTATION & STORAGE	90	582	20193	4342	24402	35425	1171	701	659	2104	0	92012
30 COMMUNICATION	49	182	13183	1289	6492	8240	281	253	277	630	1	31844
31 ELEC POWER, GAS, OTHER UTILITIES	448	155	11435	1031	4438	6287	278	243	249	571	2	25849
32 WHOLESALE TRADE	87	833	34237	5844	27319	32823	1403	1072	814	2216	0	128501
33 RETAIL TRADE	196	670	64025	3177	14741	20245	694	934	653	1973	2	107311
34 OWNER OCCUPIED DWELLINGS	87	255	40182	1382	4817	13125	326	359	282	1154	1	62724
35 OTHER FINANCE, INS. & REAL ESTA	67	779	26725	5935	32059	50613	1687	1442	3717	3167	2	129173
36 EDUCATION & HEALTH SERVICES	9	37	5034	257	1536	2066	79	64	52	203	0	9917
37 AMUSEMENT & RECREATION SERVICE	8	63	4643	337	1611	3054	49	45	63	201	0	10034
38 SERVICES TO BUSINESS MANAGEMEN	38	465	16166	2962	15512	21786	700	514	572	1042	0	61079
39 ACCOMMODATION & FOOD SERVICES	70	226	21581	1108	7863	9288	312	331	329	859	3	41249
40 OTHER PERSONAL & MISC SERVICES	18	47	6983	304	1835	2897	78	104	76	230	0	12602
41 TRANSPORTATION MARGINS	213	209	27701	1056	5564	7804	232	180	176	705	0	43541
42 OPERATING, OFFICE, LAB & FOOD	245	305	29742	2751	13585	18244	539	514	591	2433	7	89243
43 TRAVEL & ADVERTISING, PROMOTION	99	202	15978	1570	8013	10882	327	253	283	651	1	40991
44 HOUSEHOLDS	1269	3458	523538	23030	124258	195822	6522	6785	5061	15440	18	694911
TOTAL	6738	15008	2081099	101936	530342	772194	26648	25754	31733	64097	129	3655877

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
 * * *
 * EMPLOYMENT IN MANYEARS BASED UPON 1974 PROVINCIAL JOB OUTPUT RATIOS
 * * *
 * \$1 MILLION ON RESIDENTIAL CONSTRUCTION
 * NOVA SCOTIA CLOSED MODEL
 * * *

	NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	Y+NW	CANADA
1 AGRICULTURE	0.0	0.0	0.4	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.8
2 FORESTRY	0.0	0.0	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.7
3 FISHING, HUNTING & TRAPPING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 METAL MINES	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
5 MINERAL FUELS	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
6 NON-METAL MINES & QUARRIES	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
7 SERVICES INCIDENTAL TO MINING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 FOOD & BEVERAGE INDUSTRIES	0.0	0.0	0.6	0.2	0.3	0.5	0.0	0.0	0.0	0.0	0.0	1.8
9 TOBACCO PRODUCTS INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
10 RUBBER & PLASTICS PRODUCTS IND.	0.0	0.0	0.1	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.6
11 LEATHER INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
12 TEXTILE INDUSTRIES	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.7
13 KNITTING MILLS	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
14 CLOTHING INDUSTRIES	0.0	0.0	0.0	0.0	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.8
15 WOOD INDUSTRIES	0.0	0.1	2.1	0.5	0.8	0.4	0.0	0.0	0.0	0.4	0.0	4.4
16 FURNITURE & FIXTURE INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.4
17 PAPER & ALLIED INDUSTRIES	0.0	0.0	9.1	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.8
18 PRINTING & PUBLISHING	0.0	0.0	0.2	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.8
19 PRIMARY METAL INDUSTRIES	0.0	0.0	0.1	0.0	0.2	0.6	0.0	0.0	0.0	0.2	0.0	0.9
20 METAL FABRICATING INDUSTRIES	0.0	0.0	0.6	0.1	0.3	1.0	0.0	0.0	0.0	0.0	0.0	3.2
21 MACHINERY INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.3
22 TRANSPORTATION EQUIPMENT IND.	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.4
23 ELECTRICAL PRODUCTS INDUSTRIES	0.0	0.0	0.1	0.1	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.9
24 NON-METALLIC MINERAL PROD. IND.	0.1	0.0	0.9	0.1	0.2	0.5	0.0	0.0	0.0	0.0	0.0	1.3
25 PETROLEUM & COAL PRODUCTS IND.	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
26 CHEMICAL & CHEMICAL PROD. IND.	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.7
27 MISC MANUFACTURING INDUSTRIES	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.5
28 CONSTRUCTION INDUSTRY	0.0	0.0	19.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	19.3
29 TRANSPORTATION & STORAGE	0.0	0.0	1.0	0.2	1.0	1.3	0.0	0.0	0.0	0.1	1.0	3.7
30 COMMUNICATION	0.0	0.0	1.0	0.1	0.4	0.4	0.0	0.0	0.0	0.0	0.0	1.9
31 ELEC. POWER, GAS, OTHER UTILITIES	0.0	0.0	0.3	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.7
32 WHOLESALE TRADE	0.0	0.1	0.6	0.5	1.7	1.0	0.1	0.1	0.0	0.1	0.0	7.1
33 RETAIL TRADE	0.0	0.0	3.9	0.2	0.8	1.3	0.0	0.0	0.0	0.1	0.0	6.5
35 OTHER FINANCE, INS. & REAL EST.	0.0	0.0	0.7	0.1	0.8	1.4	0.0	0.0	0.0	0.1	0.0	3.1
36 EDUCATION & HEALTH SERVICES	0.0	0.0	3.3	0.2	0.6	1.4	0.0	0.0	0.0	0.1	0.0	5.0
37 AMUSEMENT & RECREATION SERVICE	0.0	0.0	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.4
38 SERVICES TO BUSINESS MANAGERMEN	0.0	0.0	1.1	0.2	1.1	1.2	0.1	0.0	0.0	0.1	0.0	4.5
39 ACCOMMODATION & FOOD SERVICES	0.0	0.0	1.9	0.1	0.4	0.5	0.0	0.0	0.0	0.1	0.0	3.1
40 OTHER PERSONAL & MISC SERVICES	0.0	0.0	0.6	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.9
TOTAL	0.1	0.5	41.6	2.9	12.9	19.0	0.6	0.4	0.4	1.3	0.0	78.6

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
 * * * * *
 * GROSS DOMESTIC PRODUCT AT FACTOR COST
 * * * * *
 * \$1 MILLION ON RESIDENTIAL CONSTRUCTION
 * NOVA SCOTIA GLOMO HOTEL
 * * * * *
 * *** SURPLUS IS ON A "HEADLINE EARNINGS BASIS AND IS BASED UPON
 * AN ASSUMPTION OF CANADIAN AVERAGE SERVICE COSTS PER INDUSTRY

	NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	YUKWT	CANADA
1 AGRICULTURE	67	808	5651	609	2814	7315	1948	4545	1494	291	0	25752
2 FORESTRY	17	3	4435	1215	2316	740	30	23	70	2035	0	11167
3 FISHING, HUNTING & TRAPPING	9	24	802	58	41	8	5	3	0	68	0	1040
4 METAL MINES	12	0	0	45	1103	2517	383	37	0	174	62	4809
5 MINERAL FUELS	0	0	3017	97	0	14	59	402	5028	42	0	3215
6 NON-METAL MINES & QUARRIES	50	0	2310	51	483	402	5	21	6	49	0	3723
7 SERVICES INCIDENTAL TO MINING	2	0	284	3	6	55	53	19	14	15	1	443
8 FOOD & BEVERAGE INDUSTRIES	35	538	6070	2457	5112	6849	619	458	224	450	0	25169
9 TOBACCO PRODUCTS INDUSTRIES	0	0	0	0	1134	668	0	0	0	0	0	1800
10 RUBBER & PLASTICS PRODUCTS IND	0	0	639	69	2013	5131	29	2	31	53	0	6012
11 LEATHER INDUSTRIES	4	1	0	7	735	739	34	0	4	8	0	1502
12 TEXTILE INDUSTRIES	0	42	159	11	4127	623	27	13	4	2	0	6559
13 KNITTING MILLS	0	0	191	5	1003	423	33	0	3	0	0	1897
14 CLOTHING INDUSTRIES	1	0	26	133	4502	1365	233	24	107	70	0	6597
15 WOOD INDUSTRIES	24	500	2192	5559	10399	5227	204	570	212	504	0	52139
16 FURNITURE & FICTURE INDUSTRIES	0	28	222	109	1231	1222	29	7	29	26	0	3027
17 PAPER & ALLIED INDUSTRIES	43	0	1839	646	7871	5924	160	43	39	216	0	19748
18 PRINTING & PUBLISHING	8	33	2632	235	3275	4518	120	23	25	121	0	12293
19 PRIMARY METAL INDUSTRIES	0	0	744	133	4744	12029	124	22	24	221	0	17223
20 METAL FABRICATING INDUSTRIES	2	59	2233	1120	12660	27220	143	21	43	737	0	52233
21 MACHINERY INDUSTRIES	0	2	331	21	1210	3028	47	7	21	127	0	6225
22 TRANSPORTATION EQUIPMENT IND.	1	2	1239	123	723	1227	24	5	12	127	0	6221
23 ELECTRICAL PRODUCTS INDUSTRIES	0	0	333	42	1229	7229	22	3	9	211	0	12223
24 NON-METALLIC MINERAL PROD. IND	933	0	16415	2227	3223	6211	17	14	33	33	0	32223
25 PETROLEUM & COAL PRODUCTS IND.	31	0	4230	124	1223	221	31	37	119	224	0	7212
26 CHEMICAL & CHEMICAL PROD. IND.	56	19	323	224	4221	7222	27	9	124	122	0	12228
27 MISC MANUFACTURING INDUSTRIES	2	1	242	117	2222	3222	14	6	7	31	0	6222
28 CONSTRUCTION INDUSTRY	30	91	43321	527	3223	3223	145	14	23	322	1	42223
29 TRANSPORTATION & STORAGE	44	268	12232	2220	14224	12223	623	222	224	1122	1	42226
30 COMMUNICATION	40	133	12232	1016	3224	7223	122	122	220	423	1	22223
31 ELEC POWER, GAS, OTHER UTILITIES	392	73	6227	623	3229	5227	222	123	223	722	1	12227
32 WHOLESALE TRADE	62	623	24222	4223	12223	22223	1220	224	221	1221	1	72224
33 RETAIL TRADE	124	339	43222	2117	6223	12227	512	222	229	122	1	72229
34 OWNER OCCUPIED DWELLINGS	49	143	22224	727	2729	7229	122	222	227	223	0	32224
35 OTHER FINANCE, INS. & REAL ESTA	29	301	13227	2212	12223	31221	1229	227	222	2122	2	72229
36 EDUCATION & HEALTH SERVICES	8	29	3220	123	1121	1222	22	23	23	123	0	7223
37 AMUSEMENT & RECREATION SERVICE	3	27	2149	123	224	1222	22	22	22	22	0	4223
38 SERVICES TO BUSINESS MANAGEMENT	27	305	11223	2223	11221	12222	521	223	224	724	0	42224
39 ACCOMMODATION & FOOD SERVICES	40	122	12129	523	7223	1227	123	122	122	222	0	22222
40 OTHER PERSONAL & MISC SERVICES	12	32	4224	123	1223	1223	21	22	22	121	0	2229
44 HOUSEHOLDS	34	99	17222	627	2223	5222	149	121	122	243	0	27431
TOTAL	2185	4791	699743	34133	181146	273144	9322	10530	14312	21226	71	1250734

Revised September 1980

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
*
* DISTRIBUTION OF DEMAND DIRECTED TO PROVINCE BC
*
* IMPACT OF \$1,000,000 ON CONSUMER EXPENDITURES
* DIRECTED TO BC OPEN MODEL

	GROSS DEMAND	UN-ALLOD	REST OF CANADA	REST OF WORLD	NET DEMAND BC
2 LIVE ANIMALS	1934	0	199	101	1635
3 OTHER AGPICULTURAL PRODUCTS	13174	0	391	3712	9071
4 FORESTRY PRODUCTS	242	0	0	41	202
5 FISH LANDINGS	261	0	0	87	174
9 COAL	61	0	0	1	60
11 NATURAL GAS	1092	0	1065	0	827
12 NON-METALLIC MINERALS	260	0	43	113	103
14 MEAT PRODUCTS	37685	0	18165	2806	16695
15 DAIRY PRODUCTS	17841	0	3831	1910	11949
16 FISH PRODUCTS	2095	0	191	1116	783
17 FRUITS & VEGETABLES PREPARATIONS	11335	0	4507	3641	3187
18 FEEDS	2541	0	1830	12	698
19 FLOUR,WHEAT,MEAL & OTHER CEREALS	861	0	611	249	0
20 BREAKFAST CEREAL & BAKERY PROD.	11909	0	5739	744	5426
21 SUGAR	2809	0	11	194	2604
22 MISC. FOOD PRODUCTS	17389	0	10024	2904	4401
23 SOFT DRINKS	3317	0	280	15	3022
24 ALCOHOLIC BEVERAGES	13131	0	1071	2951	9109
26 CIGARETTES & TOBACCO MFG.	4503	0	4522	81	0
27 TILES & GLASS	2270	0	646	1632	0
28 OTHER RUBBER PRODUCTS	1210	0	444	664	73
29 PLASTIC FABRICATED PRODUCTS	1725	0	711	323	691
30 LEATHER & LEATHER PRODUCTS	7113	0	2832	3957	353
31 YARNS & MAN MADE FIBRES	516	0	300	214	1
32 FABRICS	1912	0	890	964	58
35 OTHER TEXTILE PRODUCTS	8107	0	4215	2699	1193
34 HOSIERY & KNITTED WEAR	9176	0	5550	3066	560
35 CLOTHING & ACCESSORIES	20354	0	12893	5607	1860
36 LUMBER & TIMBER	471	0	14	89	368
37 VENEER & PLYWOOD	328	0	12	73	243
38 OTHER WOOD FABRICATED MATERIALS	533	0	5	17	515
39 FURNITURE & FIXTURES	13102	0	4832	4139	4132
41 NEWSPRINT & OTHER PAPER STOCK	106	0	9	18	79
42 PAPER PRODUCTS	4817	3	2094	759	1971
43 PRINTING & PUBLISHING	6028	0	1487	3115	3405
49 OTHER NON FERROUS METAL PRODUCTS	47	0	28	8	11
51 FABRICATED STRUCTURAL METAL PROD	23	0	8	3	13
52 OTHER METAL FABRICATED PRODUCTS	4532	0	1959	2068	507
53 AGRICULTURAL MACHINERY	495	0	1	494	0
54 OTHER INDUSTRIAL MACHINERY	986	0	285	512	188
55 MOTOR VEHICLES	29692	0	7192	20535	1965
56 MOTOR VEHICLE PARTS	4029	0	532	3321	205
57 OTHER TRANSPORT EQUIPMENT	4177	0	789	1529	1940
58 APPLIANCES & RECEIVERS,HOUSEHOLD	24403	0	6615	15659	129
59 OTHER ELECTRICAL PRODUCTS	2728	0	1416	1164	329
60 CEMENT & CONCRETE PRODUCTS	69	0	10	2	57
61 OTHER NON-METALLIC MINERAL PROD.	2026	0	315	1409	302

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
 *
 * DISTRIBUTION OF DEMAND DIRECTED TO PROVINCE EC
 *
 * IMPACT OF \$1,000,000 ON CONSUMER EXPENDITURES
 * DIRECTED TO EC OPEN MODEL

	GROSS DEMAND	UN-ALLOC	REST OF CANADA	REST OF WORLD	NET DEMAND EC
62 GASOLINE & FUEL OIL	15609	0	1531	794	13234
63 OTHER PETROLEUM & COAL PROD.	833	0	203	237	444
64 INDUSTRIAL CHEMICALS	109	0	33	63	13
65 FERTILIZERS	42	0	1	24	17
66 PHARMACEUTICALS	4393	0	2319	1725	278
67 OTHER CHEMICAL PRODUCTS	8647	0	7078	751	819
68 SCIENTIFIC EQUIPMENT	6586	0	2057	4153	341
69 OTHER MANUFACTURED PRODUCTS	14406	0	4916	6040	1450
72 REPAIR CONSTRUCTION	369	0	0	0	369
73 PIPELINE TRANSPORTATION	896	0	412	0	484
74 TRANSPORTATION & STORAGE	26453	0	4537	0	16916
75 RADIO & TELEVISION BROADCASTING	2702	0	1243	0	1459
76 TELEPHONE & TELEGRAPH	12730	0	0	0	12730
77 POSTAL SERVICES	1684	0	0	0	1684
78 ELECTRIC POWER	13610	0	9	1	13600
79 OTHER UTILITIES	6371	0	0	0	6371
80 WHOLESALE MARGINS	34950	0	16081	0	18879
81 RETAIL MARGINS	110175	0	0	0	110175
82 IMPUTED RENT OWNER OCPD. DWEL.	101012	0	0	0	101012
83 OTHER FINANCE, INS., REAL ESTATE	63250	0	38085	0	44955
84 BUSINESS SERVICES	5113	0	2382	0	2761
85 EDUCATION SERVICES	3617	0	0	0	3617
86 HEALTH SERVICES	13841	0	0	0	13841
87 AMUSEMENT & RECREATION SERVICES	12455	0	0	0	12455
88 ACCOMMODATION & FOOD SERVICES	78347	0	0	0	78347
89 OTHER PERSONAL & MISC. SERVICES	30977	753	54	0	32170
90 TRANSPORTATION MARGINS	9519	0	0	0	9519
91 OPERATING, OFFICE, LAB. & FOOD	2681	0	0	0	2681
92 TRAVEL, ADVERTISING & PROMOTION	1677	0	0	0	1677
93 NON-COMPETING IMPORTS	1636	0	0	1636	0
94 UNALLOCATED IMPORTS & EXPORTS	410	410	0	0	0
95 INDIRECT TAXES	67744	67744	0	0	0
97 WAGES & SALARIES	27012	0	0	0	27012
98 SUPPLEMENTARY LABOUR INCOME	1557	0	0	0	1557
100 OTHER OPERATING SURPLUS	1994	1994	0	0	0
TOTAL	999999	70905	196840	112268	619957

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
*
* FINAL DEMAND BY INDUSTRY
*
* IMPACT OF \$1,000,000 ON CONSUMER EXPENDITURES
* DIRECTED TO BC OPEN MODEL

	NFLD	PEI	NS	NO	QUE	ONT	MAN	SASK	ALTA	BC	CANADA
1 AGRICULTURE	0	0	0	0	91	25	53	89	797	10791	11835
2 FORESTRY	0	0	0	0	4	1	0	0	0	1625	1631
3 FISHING, HUNTING & TRAPPING	0	0	1	1	0	0	0	0	0	187	190
4 METAL MINES	0	0	0	0	7	24	0	0	0	110	142
5 MINERAL FUELS	0	0	0	0	0	0	0	13	1068	1036	2117
6 NON-METAL MINES & QUARRIES	0	0	0	0	1	4	0	44	9	135	193
7 SERVICES INCIDENTAL TO MINING	0	0	0	0	1	3	0	0	15	12	30
8 FOOD & BEVERAGE INDUSTRIES	7	1	321	230	6154	17471	2370	1464	17776	55308	101103
9 TOBACCO PRODUCTS INDUSTRIES	0	0	0	0	2163	2360	0	0	0	0	4523
10 RUBBER & PLASTICS PRODUCTS IND.	0	0	0	1	439	1800	14	1	353	912	3519
11 LEATHER INDUSTRIES	6	0	0	0	1366	1312	40	0	29	346	3093
12 TEXTILE INDUSTRIES	0	8	11	7	2642	2795	53	3	32	1433	6983
13 KNITTING MILLS	0	0	269	6	2095	1000	74	0	57	292	3784
14 CLOTHING INDUSTRIES	0	0	7	0	9637	2964	1135	248	736	1886	16613
15 WOOD INDUSTRIES	0	0	0	3	75	101	25	2	99	1742	2045
16 FURNITURE & FIXTURE INDUSTRIES	0	0	0	40	1559	2082	347	17	288	3544	7873
17 PAPER & ALLIED INDUSTRIES	0	0	30	0	425	1083	510	2	68	2221	4345
18 PRINTING & PUBLISHING	0	0	0	0	295	1001	53	8	14	3457	5028
19 PRIMARY METAL INDUSTRIES	0	0	0	0	10	63	9	1	10	213	305
20 METAL FABRICATING INDUSTRIES	0	0	0	0	404	2161	21	17	103	1361	4069
21 MACHINERY INDUSTRIES	0	0	0	0	119	987	8	8	36	475	1632
22 TRANSPORTATION EQUIPMENT IND.	0	0	246	1	1395	7018	42	47	625	4223	13597
23 ELECTRICAL PRODUCTS INDUSTRIES	0	0	0	83	2808	6803	52	0	63	414	10023
24 NON-METALLIC MINERAL PROD. IND.	0	0	0	0	159	299	3	1	61	510	1033
25 PETROLEUM & COAL PRODUCTS IND.	0	0	0	0	19	123	2	30	1675	13658	15507
26 CHEMICAL & CHEMICAL PROD. IND.	0	0	1	0	2983	6399	38	7	102	1196	10706
27 MISC MANUFACTURING INDUSTRIES	0	0	0	45	1253	5300	23	12	53	1342	6118
28 CONSTRUCTION INDUSTRY	0	0	0	0	0	0	0	0	0	369	359
29 TRANSPORTATION & STORAGE	0	0	0	0	2167	5402	218	217	1953	18396	26352
30 COMMUNICATION	0	0	0	0	271	677	27	27	244	15970	17215
31 ELEC POWER, GAS, OTHER UTILITIES	0	0	0	0	4	10	0	2	10	19280	19305
32 WHOLESALE TRADE	0	0	0	1	2910	5375	324	333	2923	21661	34028
33 RETAIL TRADE	0	0	0	0	15	78	24	104	690	124502	125413
34 OWNER OCCUPIED DWELLINGS	0	0	0	0	0	0	0	0	0	101012	101012
35 OTHER FINANCE, INS. & REAL ESTATE	0	0	0	0	8054	20635	825	817	7421	45021	62973
36 EDUCATION & HEALTH SERVICES	0	0	0	0	0	1	0	0	0	17461	17463
37 AMUSEMENT & RECREATION SERVICES	0	0	0	0	35	175	0	0	1	13454	13655
38 SERVICES TO BUSINESS MANAGEMENT	0	0	0	0	537	1348	53	55	531	4048	6571
39 ACCOMMODATION & FOOD SERVICES	0	0	0	0	0	0	0	0	0	73078	73078
40 OTHER PERSONAL & MISC SERVICES	0	0	0	0	1	3	0	0	1	14872	14877
41 TRANSPORTATION MARGINS	0	0	0	0	0	0	0	0	0	9519	9519
42 OPERATING, OFFICE, LAB & FOOD	0	0	0	0	0	0	0	0	0	2681	2681
43 TRAVEL & ADVERTISING, PROMOTION	0	0	0	0	0	0	0	0	0	1677	1677
TOTAL	13	10	889	419	50080	97677	6343	3568	37842	591419	788258

Revised September 1980

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
*
* GROSS PRODUCTION BY PROVINCE AND INDUSTRY ("SHIPMENTS")
*
* IMPACT OF \$1,000,000 ON CONSUMER EXPENDITURES
* DIRECTED TO BC OPEN MODEL
* 1974 DATA BASE VERSION 1

	Nfld	P.E.I.	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	Y+NTT	CANADA
1 AGRICULTURE	0	58	21	59	1979	4599	2186	6144	19699	28139	0	62883
2 FORESTRY	11	0	13	38	510	434	39	21	33	4231	0	5327
3 FISHING, HUNTING & TRAPPING	5	3	80	34	32	3	2	3	12	881	0	1054
4 METAL MINES	3	0	0	14	354	1103	66	35	0	206	83	1683
5 MINERAL FUELS	0	0	13	4	0	5	100	1904	14805	6401	0	23232
6 NON-METAL MINES & QUARRIES	5	0	7	1	70	125	65	331	52	410	0	1065
7 SERVICES INCIDENTAL TO MINING	0	0	0	0	9	26	6	89	345	205	6	739
8 FOOD & BEVERAGE INDUSTRIES	13	28	407	762	9855	25464	4010	3895	31523	72484	0	148446
9 TOBACCO PRODUCTS INDUSTRIES	0	0	0	0	2220	3529	0	0	0	0	0	5749
10 PAPER & PLASTICS PRODUCTS IND.	0	0	28	3	1311	4591	40	22	531	1303	0	7849
11 LEATHER INDUSTRIES	6	0	0	0	1571	1404	130	0	65	369	0	4045
12 TEXTILE INDUSTRIES	0	10	89	16	7682	6305	175	27	139	1783	0	16237
13 KNITTING MILLS	0	0	299	27	3272	1353	119	0	57	300	0	5427
14 CLOTHING INDUSTRIES	0	0	7	0	10513	5165	1089	262	774	2070	0	18001
15 WOOD INDUSTRIES	1	0	13	44	618	626	73	55	271	4832	0	6534
16 FURNITURE & FIXTURE INDUSTRIES	0	0	1	42	1699	2313	367	19	305	3824	0	8375
17 PAPER & ALLIED INDUSTRIES	39	0	223	149	4166	7312	1084	73	476	10143	0	21274
18 PRINTING & PUBLISHING	0	0	9	6	1900	4803	239	132	377	8009	0	16267
19 PRIMARY METAL INDUSTRIES	0	0	81	3	2010	5046	147	77	266	1053	0	8374
20 METAL FABRICATING INDUSTRIES	0	0	15	23	1763	3453	185	113	452	4083	0	13901
21 MACHINERY INDUSTRIES	0	0	1	2	480	2500	56	50	146	1303	0	4537
22 TRANSPORTATION EQUIPMENT IND.	0	0	263	2	1692	9882	110	64	704	4453	0	17240
23 ELECTRICAL PRODUCTS INDUSTRIES	0	0	9	94	3867	9576	130	19	135	1052	0	14482
24 NON-METALLIC MINERAL PROD. IND.	0	0	1	5	524	1443	20	53	501	2252	0	4788
25 PETROLEUM & COAL PRODUCTS IND.	49	0	66	69	1323	2176	178	515	3892	19009	0	27318
26 CHEMICAL & CHEMICAL PROD. IND.	9	4	29	28	5476	13389	141	185	970	3018	0	23250
27 MISC MANUFACTURING INDUSTRIES	0	0	1	67	1854	7251	57	24	99	1991	0	11344
28 CONSTRUCTION INDUSTRY	3	2	16	17	1006	2396	169	425	1547	25190	1	30991
29 TRANSPORTATION & STORAGE	1	2	105	110	8022	18303	783	1077	5172	32582	0	68347
30 COMMUNICATION	1	1	31	29	1909	4117	225	310	1376	24702	0	30699
31 ELEC POWER, GAS, OTHER UTILITIES	60	1	23	14	648	1432	116	217	687	25130	1	28380
32 WHOLESALE TRADE	1	2	37	80	6004	11825	716	834	4848	28715	0	53113
33 RETAIL TRADE	1	2	23	16	892	1646	174	473	1675	131685	1	136777
34 OWNER OCCUPIED DWELLINGS	0	0	0	0	0	0	0	0	0	101012	0	101012
35 OTHER FINANCE, INS. & REAL ESTA	1	1	113	123	15069	34976	1560	2353	14603	62853	1	131371
36 EDUCATION & HEALTH SERVICES	0	0	0	0	15	26	1	2	11	17526	0	17581
37 AMUSEMENT & RECREATION SERVICE	0	0	3	3	268	656	18	30	93	15425	0	16575
38 SERVICES TO BUSINESS MANAGEMENT	1	1	70	64	3014	8435	344	419	2308	10858	0	26312
39 ACCOMMODATION & FOOD SERVICES	0	0	7	5	551	1107	54	105	266	75822	0	77816
40 OTHER PERSONAL & MISC SERVICES	0	0	1	1	106	234	15	36	83	15990	0	16467
41 TRANSPORTATION MARGINS	2	3	30	23	1025	2347	193	281	976	14412	0	18413
42 OPERATING, OFFICE, LAB & FOOD	6	3	66	53	3039	6851	391	700	2449	24784	5	33377
43 TRAVEL & ADVERTISING, PROMOTION	1	1	40	35	3002	6034	314	366	1564	17339	0	28797
TOTAL	222	121	2304	2064	110768	226076	16060	21643	114464	808801	99	1305421

Revised September 1980

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL

 *** EMPLOYMENT IN MANYEARS BASED UPON 1974 PROVINCIAL JOB OUTPUT RATIOS

 *** IMPACT OF \$1,000,000 ON CONSUMER EXPENDITURES
 *** DIRECTED TO EC OPEN MODEL
 **

	Nfld	PET	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	YUKON	CANADA
1 AGRICULTURE	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.6	0.0	0.0
2 FORESTRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
3 FISHING, HUNTING & TRAPPING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 METAL MINES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 MINERAL FUELS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 NON-METAL MINES & QUARRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 SERVICES INCIDENTAL TO MINING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 FOOD & BEVERAGE INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.0	0.3	1.2	0.0	0.1
9 TOBACCO PRODUCTS INDUSTRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 RUBBER & PLASTICS PRODUCTS IND.	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
11 LEATHER INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
12 TEXTILE INDUSTRIES	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.0
13 KNITTING MILLS	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
14 CLOTHING INDUSTRIES	0.0	0.0	0.0	0.0	0.5	0.2	0.1	0.0	0.0	0.1	0.0	0.0
15 WOOD INDUSTRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
16 FURNITURE & FIXTURE INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
17 PAPER & ALLIED INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.2	0.0	0.0
18 PRINTING & PUBLISHING	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.3	0.0	0.0
19 PRIMARY METAL INDUSTRIES	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
20 METAL FABRICATING INDUSTRIES	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.0
21 MACHINERY INDUSTRIES	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
22 TRANSPORTATION EQUIPMENT IND.	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
23 ELECTRICAL PRODUCTS INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
24 NON-METALLIC MINERAL PROD. IND.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
25 PETROLEUM & COAL PRODUCTS IND.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 CHEMICAL & CHEMICAL PROD. IND.	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0
27 MISC MANUFACTURING INDUSTRIES	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0
28 CONSTRUCTION INDUSTRY	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5	0.0	0.0
29 TRANSPORTATION & STORAGE	0.0	0.0	0.0	0.0	0.3	0.6	0.0	0.0	0.2	1.5	0.0	0.0
30 COMMUNICATION	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	1.2	0.0	0.0
31 ELEC POWER, GAS, OTHER UTILITIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
32 WHOLESALE TRADE	0.0	0.0	0.0	0.0	0.4	0.7	0.0	0.1	0.3	1.5	0.0	0.0
33 RETAIL TRADE	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	6.9	0.0	0.0
35 OTHER FINANCE, INS. & REAL ESTA	0.0	0.0	0.0	0.0	0.4	0.9	0.0	0.0	0.2	1.5	0.0	0.0
36 EDUCATION & HEALTH SERVICES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0
37 AMUSEMENT & RECREATION SERVICE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
39 SERVICES TO BUSINESS MANAGEMENT	0.0	0.0	0.0	0.0	0.3	0.7	0.0	0.0	0.1	0.9	0.0	0.0
39 ACCOMMODATION & FOOD SERVICES	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	5.8	0.0	0.0
40 OTHER PERSONAL & MISC SERVICES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
TOTAL	0.0	0.0	0.1	0.1	3.4	6.2	0.4	0.3	1.8	33.2	0.0	45.6

* STATISTICS CANADA 1974 INTER-PROVINCIAL INPUT-OUTPUT MODEL
*
* GROSS DOMESTIC PRODUCT AT FACTOR COST
*
* IMPACT OF \$1,000,000 ON CONSUMER EXPENDITURES
* DIRECTED TO BC OPEN MODEL
* *** SURPLUS IS ON A "PROVINCE EARNED" BASIS AND IS BASED UPON
* AN ASSUMPTION OF CANADIAN AVERAGE SERVICE COSTS PER INDUSTRY

	Nfld	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC	Y+NT	CANADA
1 AGRICULTURE	0	33	11	28	912	2741	1413	4961	13028	15219	0	38344
2 FORESTRY	5	0	5	15	284	205	19	9	13	1636	0	2173
3 FISHING, HUNTING & TRAPPING	3	1	52	15	22	3	2	3	11	592	0	764
4 METAL MINES	0	0	0	10	211	781	45	23	0	134	53	1359
5 MINERAL FUELS	0	0	26	3	0	4	70	735	8210	3405	0	12452
6 NON-METAL MINES & QUARRIES	4	0	4	0	39	77	43	226	33	232	0	657
7 SERVICES INCIDENTAL TO MINING	0	0	0	0	7	21	4	66	292	151	5	546
8 FOOD & BEVERAGE INDUSTRIES	6	6	104	244	2129	6593	872	652	4243	19470	0	54319
9 TOBACCO PRODUCTS INDUSTRIES	0	0	0	0	892	1093	0	0	0	0	0	1885
10 RUBBER & PLASTICS PRODUCTS IND	0	0	8	1	513	1987	12	3	198	578	0	3500
11 LEATHER INDUSTRIES	3	0	0	0	629	899	47	0	24	190	0	1582
12 TEXTILE INDUSTRIES	0	4	40	5	2673	2484	59	11	52	622	0	5331
13 KNITTING MILLS	0	0	126	10	1167	567	40	0	27	148	0	2859
14 CLOTHING INDUSTRIES	0	0	3	0	4076	1432	452	99	341	976	0	7363
15 WOOD INDUSTRIES	0	0	0	16	254	272	31	20	63	1733	0	2619
16 FURNITURE & FIXTURE INDUSTRIES	0	0	0	14	722	945	144	8	140	1545	0	2667
17 PAPER & ALLIED INDUSTRIES	19	0	106	63	1668	2954	440	33	196	4472	0	6280
18 PRINTING & PUBLISHING	0	0	5	4	988	2405	165	76	219	5047	0	6243
19 PRIMARY METAL INDUSTRIES	0	0	21	1	446	1761	41	16	45	373	0	2447
20 METAL FABRICATING INDUSTRIES	0	0	6	11	767	2853	86	53	203	1427	0	3759
21 MACHINERY INDUSTRIES	0	0	0	1	251	911	22	20	59	533	0	1427
22 TRANSPORTATION EQUIPMENT IND.	0	0	7	1	322	2439	47	22	203	1576	0	2467
23 ELECTRICAL PRODUCTS INDUSTRIES	0	0	5	34	1475	3781	48	3	36	355	0	5737
24 NON-METALLIC MINERAL PROD. IND	0	0	0	2	259	745	9	21	272	1180	0	2537
25 PETROLEUM & COAL PRODUCTS IND.	4	9	11	3	167	244	26	128	891	2216	0	3467
26 CHEMICAL & CHEMICAL PROD. IND.	3	1	8	7	2125	4339	42	59	371	1135	0	5201
27 MISC MANUFACTURING INDUSTRIES	0	0	1	30	684	2780	23	13	48	919	0	4485
28 CONSTRUCTION INDUSTRY	2	1	3	9	639	1240	83	222	829	13124	0	14145
29 TRANSPORTATION & STORAGE	1	1	42	53	4521	9763	459	539	2924	16731	0	34692
30 COMMUNICATION	1	1	27	23	1776	3751	161	242	1005	15141	0	22716
31 ELEC POWER, GAS, OTHER UTILITIES	54	1	12	9	571	1135	29	123	542	19221	0	22463
32 WHOLESALE TRADE	1	1	22	57	4420	8222	513	544	3454	20452	0	34240
33 RETAIL TRADE	1	1	15	11	593	1092	123	247	1166	62165	0	65490
34 OWNER OCCUPIED DWELLINGS	9	0	0	0	0	0	0	0	0	62540	0	62540
35 OTHER FINANCE, INS. & REAL ESTA	1	0	60	58	8197	22169	935	1546	9186	34897	1	81214
36 EDUCATION & HEALTH SERVICES	0	0	0	0	12	20	1	1	19	13197	0	1340
37 AMUSEMENT & RECREATION SERVICE	0	0	1	1	122	340	10	15	45	7354	0	8086
38 SERVICES TO BUSINESS MANAGER	1	1	50	45	2777	6343	270	310	1673	8224	0	19434
39 ACCOMMODATION & FOOD SERVICES	0	0	4	3	799	617	30	56	162	43261	0	45261
40 OTHER PERSONAL & MISC SERVICES	0	0	1	1	63	153	10	29	56	10262	0	12577
TOTAL	103	51	845	789	47654	100675	6559	11243	50025	450193	60	648587

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