

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549**

**FORM 10 - Q
QUARTERLY REPORT PURSUANT TO SECTION 13 or 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE QUARTER ENDED JUNE 30, 2019**

1-2360

(Commission file number)

INTERNATIONAL BUSINESS MACHINES CORPORATION

(Exact name of registrant as specified in its charter)

New York

(State of incorporation)

13-0871985

(IRS employer identification number)

Armonk, New York

(Address of principal executive offices)

10504

(Zip Code)

914-499-1900

(Registrant's telephone number)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol	Name of each exchange on which registered
Capital stock, par value \$.20 per share	IBM	New York Stock Exchange Chicago Stock Exchange
1.375% Notes due 2019	IBM 19B	New York Stock Exchange
2.750% Notes due 2020	IBM 20B	New York Stock Exchange
1.875% Notes due 2020	IBM 20A	New York Stock Exchange
0.500% Notes due 2021	IBM 21B	New York Stock Exchange
2.625% Notes due 2022	IBM 22A	New York Stock Exchange
1.25% Notes due 2023	IBM 23A	New York Stock Exchange
0.375% Notes due 2023	IBM 23B	New York Stock Exchange
1.125% Notes due 2024	IBM 24A	New York Stock Exchange
2.875% Notes due 2025	IBM 25A	New York Stock Exchange
0.950% Notes due 2025	IBM 25B	New York Stock Exchange
0.875% Notes due 2025	IBM 25C	New York Stock Exchange
0.300% Notes due 2026	IBM 26B	New York Stock Exchange
1.250% Notes due 2027	IBM 27B	New York Stock Exchange
1.750% Notes due 2028	IBM 28A	New York Stock Exchange
1.500% Notes due 2029	IBM 29	New York Stock Exchange
1.750% Notes due 2031	IBM 31	New York Stock Exchange
8.375% Debentures due 2019	IBM 19	New York Stock Exchange
7.00% Debentures due 2025	IBM 25	New York Stock Exchange
6.22% Debentures due 2027	IBM 27	New York Stock Exchange
6.50% Debentures due 2028	IBM 28	New York Stock Exchange
7.00% Debentures due 2045	IBM 45	New York Stock Exchange
7.125% Debentures due 2096	IBM 96	New York Stock Exchange

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The registrant had 885,875,161 shares of common stock outstanding at June 30, 2019.

Index

	<u>Page</u>
Part I - Financial Information:	
Item 1. Consolidated Financial Statements (Unaudited):	
Consolidated Statement of Earnings for the three and six months ended June 30, 2019 and 2018	3
Consolidated Statement of Comprehensive Income for the three and six months ended June 30, 2019 and 2018	4
Consolidated Statement of Financial Position at June 30, 2019 and December 31, 2018	5
Consolidated Statement of Cash Flows for the six months ended June 30, 2019 and 2018	7
Consolidated Statement of Changes in Equity for the three and six months ended June 30, 2019 and 2018	8
Notes to Consolidated Financial Statements	10
Item 2. Management's Discussion and Analysis of Results of Operations and Financial Condition	62
Item 4. Controls and Procedures	100
Part II - Other Information:	
Item 1. Legal Proceedings	101
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds and Issuer Repurchases of Equity Securities	101
Item 6. Exhibits	102

Part I - Financial Information

Item 1. Consolidated Financial Statements:

INTERNATIONAL BUSINESS MACHINES CORPORATION AND SUBSIDIARY COMPANIES CONSOLIDATED STATEMENT OF EARNINGS (UNAUDITED)

(Dollars in millions except per share amounts)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Revenue:				
Services	\$ 12,352	\$ 12,886	\$ 24,775	\$ 25,848
Sales	6,458	6,721	11,812	12,421
Financing	351	396	756	806
Total revenue	19,161	20,003	37,342	39,075
Cost:				
Services	8,272	8,645	16,631	17,479
Sales	1,651	1,869	3,167	3,591
Financing	228	290	492	559
Total cost	10,151	10,804	20,290	21,629
Gross profit	9,010	9,199	17,053	17,445
Expense and other (income):				
Selling, general and administrative	5,456	4,857	10,147	10,302
Research, development and engineering	1,407	1,364	2,840	2,769
Intellectual property and custom development income	(222)	(250)	(323)	(567)
Other (income) and expense	(747)	280	(820)	692
Interest expense	348	173	558	338
Total expense and other (income)	6,242	6,423	12,402	13,534
Income from continuing operations before income taxes	2,768	2,776	4,651	3,911
Provision for/(benefit from) income taxes	269	373	558	(166)
Income from continuing operations	\$ 2,499	\$ 2,402	\$ 4,093	\$ 4,078
Income/(loss) from discontinued operations, net of tax	(1)	1	(4)	5
Net income	\$ 2,498	\$ 2,404	\$ 4,089	\$ 4,083
Earnings/(loss) per share of common stock:				
Assuming dilution:				
Continuing operations	\$ 2.81	\$ 2.61	\$ 4.58	\$ 4.42
Discontinued operations	0.00	0.00	0.00	0.01
Total	\$ 2.81	\$ 2.61	\$ 4.58	\$ 4.43
Basic:				
Continuing operations	\$ 2.82	\$ 2.63	\$ 4.61	\$ 4.44
Discontinued operations	0.00	0.00	0.00	0.01
Total	\$ 2.82	\$ 2.63	\$ 4.61	\$ 4.45
Weighted-average number of common shares outstanding:				
(millions)				
Assuming dilution	890.8	919.4	892.4	922.4
Basic	886.3	915.1	887.9	917.9

(Amounts may not add due to rounding.)

(The accompanying notes are an integral part of the financial statements.)

**INTERNATIONAL BUSINESS MACHINES CORPORATION
AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
(UNAUDITED)**

<u>(Dollars in millions)</u>	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Net income	\$ 2,498	\$ 2,404	\$ 4,089	\$ 4,083
Other comprehensive income/(loss), before tax:				
Foreign currency translation adjustments	5	(347)	176	(513)
Net changes related to available-for-sale securities:				
Unrealized gains/(losses) arising during the period	(2)	0	(3)	(2)
Reclassification of (gains)/losses to net income	—	—	—	0
Total net changes related to available-for-sale securities	(2)	0	(3)	(2)
Unrealized gains/(losses) on cash flow hedges:				
Unrealized gains/(losses) arising during the period	(6)	(149)	(359)	(89)
Reclassification of (gains)/losses to net income	(168)	434	(70)	380
Total unrealized gains/(losses) on cash flow hedges	(175)	285	(429)	292
Retirement-related benefit plans:				
Prior service costs/(credits)	—	0	—	(1)
Net (losses)/gains arising during the period	116	82	113	84
Curtailments and settlements	3	6	4	6
Amortization of prior service (credits)/costs	(3)	(19)	(6)	(37)
Amortization of net (gains)/losses	460	741	924	1,494
Total retirement-related benefit plans	576	810	1,035	1,545
Other comprehensive income/(loss), before tax	405	748	779	1,322
Income tax (expense)/benefit related to items of other comprehensive income	(64)	(455)	(131)	(598)
Other comprehensive income/(loss), net of tax	340	294	649	724
Total comprehensive income/(loss)	\$ 2,839	\$ 2,697	\$ 4,738	\$ 4,807

(Amounts may not add due to rounding.)

(The accompanying notes are an integral part of the financial statements.)

**INTERNATIONAL BUSINESS MACHINES CORPORATION
AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENT OF FINANCIAL POSITION
(UNAUDITED)**

ASSETS

(Dollars in millions)	At June 30, 2019	At December 31, 2018
Assets:		
Current assets:		
Cash and cash equivalents	\$ 45,399	\$ 11,379
Restricted cash	135	225
Marketable securities	874	618
Notes and accounts receivable — trade (net of allowances of \$281 in 2019 and \$309 in 2018)	7,414	7,432
Short-term financing receivables (net of allowances of \$243 in 2019 and \$244 in 2018)	15,543	22,388
Other accounts receivable (net of allowances of \$39 in 2019 and \$38 in 2018)	1,781	743
Inventories, at lower of average cost or net realizable value:		
Finished goods	324	266
Work in process and raw materials	1,421	1,415
Total inventories	1,745	1,682
Deferred costs	2,217	2,300
Prepaid expenses and other current assets	2,409	2,378
Total current assets	77,517	49,146
Property, plant and equipment	31,843	32,460
Less: Accumulated depreciation	21,641	21,668
Property, plant and equipment — net	10,202	10,792
Operating right-of-use assets — net*	4,998	—
Long-term financing receivables (net of allowances of \$35 in 2019 and \$48 in 2018)	8,441	9,148
Prepaid pension assets	5,319	4,666
Deferred costs	2,662	2,676
Deferred taxes	5,274	5,216
Goodwill	35,284	36,265
Intangible assets — net	2,728	3,087
Investments and sundry assets	2,228	2,386
Total assets	\$ 154,652	\$ 123,382

* Reflects the adoption of the FASB guidance on leases. Refer to note 2, “Accounting Changes” and note 5, “Leases.”

(Amounts may not add due to rounding.)

(The accompanying notes are an integral part of the financial statements.)

**INTERNATIONAL BUSINESS MACHINES CORPORATION
AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENT OF FINANCIAL POSITION – (CONTINUED)
(UNAUDITED)**

LIABILITIES AND EQUITY

(Dollars in millions)	At June 30, 2019	At December 31, 2018
Liabilities:		
Current liabilities:		
Taxes	\$ 2,439	\$ 3,046
Short-term debt	14,594	10,207
Accounts payable	4,724	6,558
Compensation and benefits	3,556	3,310
Deferred income	11,261	11,165
Operating lease liabilities*	1,319	—
Other accrued expenses and liabilities	4,458	3,941
Total current liabilities	42,351	38,227
Long-term debt	58,445	35,605
Retirement and nonpension postretirement benefit obligations	16,471	17,002
Deferred income	3,474	3,445
Operating lease liabilities*	3,946	—
Other liabilities	12,190	12,174
Total liabilities	136,876	106,452
Equity:		
IBM stockholders' equity:		
Common stock, par value \$0.20 per share, and additional paid-in capital	55,404	55,151
Shares authorized: 4,687,500,000		
Shares issued: 2019 - 2,236,702,273		
2018 - 2,233,427,058		
Retained earnings	160,467	159,206
Treasury stock - at cost	(169,385)	(168,071)
Shares: 2019 - 1,350,827,113		
2018 - 1,340,947,648		
Accumulated other comprehensive income/(loss)	(28,841)	(29,490)
Total IBM stockholders' equity	17,645	16,796
Noncontrolling interests	131	134
Total equity	17,776	16,929
Total liabilities and equity	\$ 154,652	\$ 123,382

* Reflects the adoption of the FASB guidance on leases. Refer to note 2, "Accounting Changes" and note 5, "Leases."

(Amounts may not add due to rounding.)

(The accompanying notes are an integral part of the financial statements.)

**INTERNATIONAL BUSINESS MACHINES CORPORATION
AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENT OF CASH FLOWS
(UNAUDITED)**

(Dollars in millions)	Six Months Ended June 30,	
	2019	2018
Cash flows from operating activities:		
Net income	\$ 4,089	\$ 4,083
Adjustments to reconcile net income to cash provided by operating activities		
Depreciation	2,130	1,547
Amortization of intangibles	610	683
Stock-based compensation	248	242
Net (gain)/loss on asset sales and other	(787)	6
Changes in operating assets and liabilities, net of acquisitions/divestitures	1,410	336
Net cash provided by operating activities	7,700	6,896
Cash flows from investing activities:		
Payments for property, plant and equipment	(1,122)	(1,801)
Proceeds from disposition of property, plant and equipment	383	180
Investment in software	(305)	(275)
Acquisition of businesses, net of cash acquired	(43)	(122)
Divestitures of businesses, net of cash transferred	888	—
Non-operating finance receivables — net	3,828	422
Purchases of marketable securities and other investments	(1,803)	(2,811)
Proceeds from disposition of marketable securities and other investments	1,483	2,009
Net cash provided by/(used in) investing activities	3,309	(2,399)
Cash flows from financing activities:		
Proceeds from new debt	31,249	2,506
Payments to settle debt	(3,869)	(3,654)
Short-term borrowings/(repayments) less than 90 days — net	(307)	397
Common stock repurchases	(1,236)	(1,767)
Common stock repurchases for tax withholdings	(152)	(143)
Financing — other	41	52
Cash dividends paid	(2,833)	(2,819)
Net cash provided by/(used in) financing activities	22,894	(5,428)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	27	(344)
Net change in cash, cash equivalents and restricted cash	33,930	(1,274)
Cash, cash equivalents and restricted cash at January 1	11,604	12,234
Cash, cash equivalents and restricted cash at June 30	\$ 45,534	\$ 10,960

(Amounts may not add due to rounding.)

(The accompanying notes are an integral part of the financial statements.)

**INTERNATIONAL BUSINESS MACHINES CORPORATION
AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
(UNAUDITED)**

<u>(Dollars in millions)</u>	Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total IBM Stockholders' Equity	Non- Controlling Interests	Total Equity
Equity - April 1, 2019	\$ 55,287	\$ 159,396	\$ (169,021)	\$ (29,182)	\$ 16,481	\$ 126	\$ 16,607
Net income plus other comprehensive income/(loss):							
Net income		2,498			2,498		2,498
Other comprehensive income/(loss)				340	340		340
Total comprehensive income/(loss)					<u>\$ 2,839</u>		<u>\$ 2,839</u>
Cash dividends paid — common stock (\$1.62 per share)		(1,435)			(1,435)		(1,435)
Common stock issued under employee plans (1,883,226 shares)	117				117		117
Purchases (681,109 shares) and sales (330,849 shares) of treasury stock under employee plans — net		9	(49)		(40)		(40)
Other treasury shares purchased, not retired (2,300,679 shares)			(316)		(316)		(316)
Changes in noncontrolling interests						5	5
Equity - June 30, 2019	<u>\$ 55,404</u>	<u>\$ 160,467</u>	<u>\$ (169,385)</u>	<u>\$ (28,841)</u>	<u>\$ 17,645</u>	<u>\$ 131</u>	<u>\$ 17,776</u>

<u>(Dollars in millions)</u>	Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total IBM Stockholders' Equity	Non- Controlling Interests	Total Equity
Equity - April 1, 2018	\$ 54,712	\$ 156,371	\$ (164,334)	\$ (28,583)	\$ 18,166	\$ 124	\$ 18,290
Net income plus other comprehensive income/(loss):							
Net income		2,404			2,404		2,404
Other comprehensive income/(loss)				294	294		294
Total comprehensive income/(loss)					<u>\$ 2,697</u>		<u>\$ 2,697</u>
Cash dividends paid — common stock (\$1.57 per share)		(1,437)			(1,437)		(1,437)
Common stock issued under employee plans (1,840,520 shares)	115				115		115
Purchases (620,961 shares) and sales (305,613 shares) of treasury stock under employee plans — net		10	(51)		(41)		(41)
Other treasury shares purchased, not retired (6,725,289 shares)			(980)		(980)		(980)
Changes in noncontrolling interests						3	3
Equity - June 30, 2018	<u>\$ 54,827</u>	<u>\$ 157,349</u>	<u>\$ (165,366)</u>	<u>\$ (28,290)</u>	<u>\$ 18,520</u>	<u>\$ 128</u>	<u>\$ 18,648</u>

(Amounts may not add due to rounding.)

(The accompanying notes are an integral part of the financial statements.)

**INTERNATIONAL BUSINESS MACHINES CORPORATION
AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY – (CONTINUED)
(UNAUDITED)**

(Dollars in millions)	Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total IBM Stockholders' Equity	Non- Controlling Interests	Total Equity
Equity - January 1, 2019	\$ 55,151	\$ 159,206	\$ (168,071)	\$ (29,490)	\$ 16,796	\$ 134	\$ 16,929
Net income plus other comprehensive income/(loss):							
Net income		4,089			4,089		4,089
Other comprehensive income/(loss)				649	649		649
Total comprehensive income/(loss)					<u>\$ 4,738</u>		<u>\$ 4,738</u>
Cash dividends paid — common stock (\$3.19 per share)		(2,833)			(2,833)		(2,833)
Common stock issued under employee plans (3,275,215 shares)	254				254		254
Purchases (1,135,819 shares) and sales (413,711 shares) of treasury stock under employee plans — net		11	(99)		(88)		(88)
Other treasury shares purchased, not retired (9,157,357 shares)			(1,216)		(1,216)		(1,216)
Changes in other equity		(5)			(5)		(5)
Changes in noncontrolling interests						(3)	(3)
Equity - June 30, 2019	<u>\$ 55,404</u>	<u>\$ 160,467</u>	<u>\$ (169,385)</u>	<u>\$ (28,841)</u>	<u>\$ 17,645</u>	<u>\$ 131</u>	<u>\$ 17,776</u>

(Dollars in millions)	Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income/(Loss)	Total IBM Stockholders' Equity	Non- Controlling Interests	Total Equity
Equity - January 1, 2018	\$ 54,566	\$ 153,126	\$ (163,507)	\$ (26,592)	\$ 17,594	\$ 131	\$ 17,725
Cumulative effect of change in accounting principle:							
Revenue		524			524		524
Stranded tax effects/other *		2,422		(2,422)			
Net income plus other comprehensive income/(loss):							
Net income		4,083			4,083		4,083
Other comprehensive income/(loss)				724	724		724
Total comprehensive income/(loss)					<u>\$ 4,807</u>		<u>\$ 4,807</u>
Cash dividends paid — common stock (\$3.07 per share)		(2,819)			(2,819)		(2,819)
Common stock issued under employee plans (2,877,775 shares)	261				261		261
Purchases (946,596 shares) and sales (351,491 shares) of treasury stock under employee plans — net		12	(98)		(86)		(86)
Other treasury shares purchased, not retired (11,693,706 shares)			(1,761)		(1,761)		(1,761)
Changes in noncontrolling interests						(3)	(3)
Equity - June 30, 2018	<u>\$ 54,827</u>	<u>\$ 157,349</u>	<u>\$ (165,366)</u>	<u>\$ (28,290)</u>	<u>\$ 18,520</u>	<u>\$ 128</u>	<u>\$ 18,648</u>

* Reflects the adoption of the FASB guidance on stranded tax effects, hedging and financial instruments. Refer to note 2, "Accounting Changes."
(Amounts may not add due to rounding.)
(The accompanying notes are an integral part of the financial statements.)

Notes to Consolidated Financial Statements

1. Basis of Presentation:

The accompanying Consolidated Financial Statements and footnotes of the International Business Machines Corporation (IBM or the company) have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The financial statements and footnotes are unaudited. In the opinion of the company's management, these statements include all adjustments, which are only of a normal recurring nature, necessary to present a fair statement of the company's results of operations, financial position and cash flows.

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amount of assets, liabilities, revenue, costs, expenses and other comprehensive income/(loss) that are reported in the Consolidated Financial Statements and accompanying disclosures. These estimates are based on management's best knowledge of current events, historical experience, actions that the company may undertake in the future and on various other assumptions that are believed to be reasonable under the circumstances. As a result, actual results may be different from these estimates.

In the first quarter of 2019, the company made a number of changes to its organizational structure and management system. These changes impacted the company's reportable segments, but did not impact the company's Consolidated Financial Statements. Refer to note 8, "Segments," for additional information on the changes in reportable segments. The periods presented in this Form 10-Q are reported on a comparable basis. The company provided recast historical segment information reflecting these changes in a Form 8-K dated April 4, 2019.

Noncontrolling interest amounts of \$4.9 million and \$3.8 million, net of tax, for the three months ended June 30, 2019 and 2018, respectively, and \$11.9 million and \$11.7 million, net of tax, for the six months ended June 30, 2019 and 2018, respectively, are included as a reduction within other (income) and expense in the Consolidated Statement of Earnings.

Interim results are not necessarily indicative of financial results for a full year. The information included in this Form 10-Q should be read in conjunction with the company's 2018 Annual Report.

Within the financial statements and tables presented, certain columns and rows may not add due to the use of rounded numbers for disclosure purposes. Percentages presented are calculated from the underlying whole-dollar amounts. Certain prior year amounts have been reclassified to conform to the current year presentation. This is annotated where applicable.

2. Accounting Changes:

New Standards to be Implemented

In August 2018, the Financial Accounting Standards Board (FASB) issued guidance which changed the disclosure requirements for fair value measurements and defined benefit plans. The guidance is effective for each of the topics on January 1, 2020 and December 31, 2020, respectively, with early adoption of certain provisions permitted. The company early adopted the provision in the fair value guidance that removed the Level 1/Level 2 transfer disclosures. The company is evaluating the adoption date for the remaining changes. As the guidance is a change to disclosures only, the company does not expect the guidance to have a material impact in the consolidated financial results.

In January 2017, the FASB issued guidance that simplifies the goodwill impairment test by removing Step 2. The guidance also changes the requirements for reporting units with zero or negative carrying amounts and requires additional disclosures for these reporting units. The guidance is effective January 1, 2020 and early adoption is permitted. The company expects to adopt the guidance on a prospective basis on the effective date. The company is evaluating the impact of the guidance.

Notes to Consolidated Financial Statements — (continued)

In June 2016, with amendments in 2018 and 2019, the FASB issued guidance for credit impairment based on an expected loss model rather than an incurred loss model. The guidance requires the consideration of all available relevant information when estimating expected credit losses, including past events, current conditions and forecasts and their implications for expected credit losses. The new guidance expands the scope of financial instruments subject to impairment, including off-balance sheet commitments and residual value. The guidance is effective January 1, 2020 with one-year early adoption permitted. The company will adopt the guidance as of the effective date. A cross-functional team was established to evaluate the impact of the guidance on the financial instruments portfolio. All of the changes to systems, processes and policies are on track for completion before the effective date. The guidance is not expected to have a material impact in the consolidated financial results.

Standards Implemented

The FASB issued guidance in February 2016, with amendments in 2018 and 2019, which changed the accounting for leases. The guidance requires lessees to recognize right-of-use (ROU) assets and lease liabilities for most leases in the Consolidated Statement of Financial Position. The guidance also made some changes to lessor accounting, including elimination of the use of third-party residual value guarantee insurance in the lease classification test, and overall aligns with the new revenue recognition guidance. The guidance requires qualitative and quantitative disclosures to assess the amount, timing and uncertainty of cash flows arising from leases. The company adopted the guidance effective January 1, 2019, using the transition option whereby prior comparative periods were not retrospectively presented in the Consolidated Financial Statements. The company elected the package of practical expedients not to reassess prior conclusions related to contracts containing leases, lease classification and initial direct costs and the lessee practical expedient to combine lease and nonlease components for all asset classes. The company made a policy election to not recognize ROU assets and lease liabilities for short-term leases for all asset classes. The guidance had a material impact on the Consolidated Statement of Financial Position as of the effective date. As a lessee, at adoption, the company recognized operating and financing ROU assets of \$4.8 billion and \$0.2 billion, respectively, and operating and financing lease liabilities of \$5.1 billion and \$0.2 billion, respectively. The transition adjustment recognized in retained earnings on January 1, 2019 was not material. From a lessor perspective, the changes in lease termination guidance and removal of third-party residual value guarantee insurance in the lease classification test did not have a material impact in the consolidated financial results. Refer to note 5, "Leases," for additional information, including further discussion on the impact of adoption.

In August 2018, the FASB issued guidance on a customer's accounting for implementation costs incurred in cloud-computing arrangements that are hosted by a vendor. Certain types of implementation costs should be capitalized and amortized over the term of the hosting arrangement. The guidance is effective January 1, 2020 and early adoption is permitted. The company adopted the guidance on January 1, 2019 on a prospective basis. The guidance did not have a material impact in the consolidated financial results.

In February 2018, the FASB issued guidance that allows entities to elect an option to reclassify the stranded tax effects related to the application of U.S. tax reform from accumulated other comprehensive income/(loss) (AOCI) to retained earnings. The guidance was effective January 1, 2019 with early adoption permitted, and can be applied either in the period of adoption or retrospectively to all applicable periods. The company adopted the guidance effective January 1, 2018, and elected not to reclassify prior periods. In accordance with its accounting policy, the company releases income tax effects from AOCI once the reason the tax effects were established cease to exist (e.g., when available-for-sale debt securities are sold or if a pension plan is liquidated). This guidance allows for the reclassification of stranded tax effects as a result of the change in tax rates from U.S. tax reform to be recorded upon adoption of the guidance rather than at the actual cessation date. At adoption on January 1, 2018, \$2.4 billion was reclassified from AOCI to retained earnings, primarily comprised of amounts relating to retirement-related benefit plans.

In August 2017, the FASB issued guidance to simplify the application of hedge accounting in certain areas, better portray the economic results of an entity's risk management activities in its financial statements and make targeted improvements to presentation and disclosure requirements. The guidance was effective January 1, 2019 with early

Notes to Consolidated Financial Statements — (continued)

adoption permitted. The company adopted the guidance as of January 1, 2018, and it did not have a material impact in the consolidated financial results.

In March 2017, the FASB issued guidance that impacts the presentation of net periodic pension and postretirement benefit costs (net benefit cost). Under the guidance, the service cost component of net benefit cost continues to be presented within cost, SG&A expense and RD&E expense in the Consolidated Statement of Earnings, unless eligible for capitalization. The other components of net benefit cost are presented separately from service cost within other (income) and expense in the Consolidated Statement of Earnings. The guidance was effective January 1, 2018 with early adoption permitted. The company adopted the guidance as of the effective date. The guidance is primarily a change in financial statement presentation and did not have a material impact in the consolidated financial results. This presentation change was applied retrospectively upon adoption.

In January 2016, the FASB issued guidance which addresses aspects of recognition, measurement, presentation and disclosure of financial instruments. The guidance was effective January 1, 2018 and early adoption was not permitted except for limited provisions. The company adopted the guidance on the effective date. The guidance required certain equity investments to be measured at fair value with changes recognized in net income. The amendment also simplified the impairment test of equity investments that lack readily determinable fair value. The guidance did not have a material impact in the consolidated financial results.

The FASB issued guidance on the recognition of revenue from contracts with customers in May 2014 with amendments in 2015 and 2016. Revenue recognition depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The guidance also requires specific disclosures relating to revenue recognition. The company adopted the guidance effective January 1, 2018 using the modified retrospective transition method. At adoption, \$557 million was reclassified from notes and accounts receivable-trade and deferred income-current to prepaid expenses and other current assets to establish the opening balance for net contract assets. In-scope sales commission costs previously recorded in the Consolidated Statement of Earnings were capitalized in deferred costs in accordance with the transition guidance, in the amount of \$737 million. Deferred income of \$29 million was recorded for certain software licenses that will be recognized over time versus at point in time under previous guidance. Additionally, net deferred taxes were reduced by \$184 million in the Consolidated Statement of Financial Position, resulting in a cumulative-effect net increase to retained earnings of \$524 million. In the fourth quarter of 2018, the company recognized an additional impact to net deferred taxes and retained earnings of \$56 million, resulting in a total net increase to retained earnings of \$580 million. The decrease to net deferred taxes was the result of the company's election to include Global Intangible Low-Taxed Income (GILTI) in measuring deferred taxes. The revenue guidance did not have a material impact in the company's consolidated financial results. Refer to note 3, "Revenue Recognition," for additional information.

In March 2016, the FASB issued guidance which changed the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities and classification in the Consolidated Statement of Cash Flows. The guidance was effective and adopted by the company on January 1, 2017, and it did not have a material impact on the Consolidated Statement of Financial Position. The ongoing impact of the guidance could result in increased volatility in the provision for income taxes and earnings per share in the Consolidated Statement of Earnings, depending on the company's share price at exercise or vesting of share-based awards compared to grant date, however these impacts are not expected to be material. These impacts are recorded on a prospective basis. The company continues to estimate forfeitures in conjunction with measuring stock-based compensation cost. The guidance also requires cash payments on behalf of employees for shares directly withheld for taxes to be presented as financing outflows in the Consolidated Statement of Cash Flows. The FASB also issued guidance in May 2017 and June 2018, which relates to the accounting for modifications of share-based payment awards and accounting for share-based payments issued to non-employees, respectively. The company adopted the guidance for modifications in the second quarter of 2017, and guidance for non-employees' payments in the second quarter of 2018. The guidance had no impact in the consolidated financial results.

Notes to Consolidated Financial Statements — (continued)

3. Revenue Recognition:

Disaggregation of Revenue

The following tables provide details of revenue by major products/service offerings and by geography.

Revenue by Major Products/Service Offerings

(Dollars in millions) For the three months ended June 30, 2019:	Cloud & Cognitive Software	Global Business Services	Global Technology Services	Systems	Global Financing	Other	Total Revenue
Cognitive Applications	\$ 1,454	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 1,454
Cloud & Data Platforms	2,173	—	—	—	—	—	2,173
Transaction Processing Platforms	2,018	—	—	—	—	—	2,018
Consulting	—	1,978	—	—	—	—	1,978
Application Management	—	1,919	—	—	—	—	1,919
Global Process Services	—	258	—	—	—	—	258
Infrastructure & Cloud Services	—	—	5,174	—	—	—	5,174
Technology Support Services	—	—	1,663	—	—	—	1,663
Systems Hardware	—	—	—	1,328	—	—	1,328
Operating Systems Software	—	—	—	425	—	—	425
Global Financing*	—	—	—	—	351	—	351
Other Revenue	—	—	—	—	—	420	420
Total	\$ 5,645	\$ 4,155	\$ 6,837	\$ 1,753	\$ 351	\$ 420	\$ 19,161

* Contains lease and loan/working capital financing arrangements which are not subject to the guidance on revenue from contracts with customers.

Revenue by Geography

(Dollars in millions) For the three months ended June 30, 2019:	Total Revenue
Americas	\$ 8,806
Europe/Middle East/Africa	6,149
Asia Pacific	4,205
Total	\$ 19,161

Notes to Consolidated Financial Statements — (continued)

Revenue by Major Products/Service Offerings

(Dollars in millions) For the three months ended June 30, 2018:	Cloud & Cognitive Software*	Global Business Services*	Global Technology Services*	Systems	Global Financing	Other*	Total Revenue
Cognitive Applications	\$ 1,413	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 1,413
Cloud & Data Platforms	2,079	—	—	—	—	—	2,079
Transaction Processing Platforms	1,978	—	—	—	—	—	1,978
Consulting	—	1,931	—	—	—	—	1,931
Application Management	—	1,946	—	—	—	—	1,946
Global Process Services	—	258	—	—	—	—	258
Infrastructure & Cloud Services	—	—	5,575	—	—	—	5,575
Technology Support Services	—	—	1,750	—	—	—	1,750
Systems Hardware	—	—	—	1,756	—	—	1,756
Operating Systems Software	—	—	—	421	—	—	421
Global Financing**	—	—	—	—	394	—	394
Other Revenue	—	—	—	—	—	503	503
Total	\$ 5,470	\$ 4,135	\$ 7,325	\$ 2,177	\$ 394	\$ 503	\$ 20,003

* Recast to conform to 2019 presentation.

** Contains lease and loan/working capital financing arrangements which are not subject to the guidance on revenue from contracts with customers.

Revenue by Geography

(Dollars in millions) For the three months ended June 30, 2018:	Total Revenue
Americas	\$ 9,212
Europe/Middle East/Africa	6,407
Asia Pacific	4,384
Total	\$ 20,003

Notes to Consolidated Financial Statements — (continued)

Revenue by Major Products/Service Offerings

(Dollars in millions) For the six months ended June 30, 2019:	Cloud & Cognitive Software	Global Business Services	Global Technology Services	Systems	Global Financing	Other	Total Revenue
Cognitive Applications	\$ 2,762	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 2,762
Cloud & Data Platforms	4,090	—	—	—	—	—	4,090
Transaction Processing Platforms	3,830	—	—	—	—	—	3,830
Consulting	—	3,942	—	—	—	—	3,942
Application Management	—	3,827	—	—	—	—	3,827
Global Process Services	—	505	—	—	—	—	505
Infrastructure & Cloud Services	—	—	10,383	—	—	—	10,383
Technology Support Services	—	—	3,328	—	—	—	3,328
Systems Hardware	—	—	—	2,241	—	—	2,241
Operating Systems Software	—	—	—	840	—	—	840
Global Financing*	—	—	—	—	757	—	757
Other Revenue	—	—	—	—	—	837	837
Total	<u>\$ 10,682</u>	<u>\$ 8,274</u>	<u>\$ 13,711</u>	<u>\$ 3,081</u>	<u>\$ 757</u>	<u>\$ 837</u>	<u>\$ 37,342</u>

* Contains lease and loan/working capital financing arrangements which are not subject to the guidance on revenue from contracts with customers.

Revenue by Geography

(Dollars in millions) For the six months ended June 30, 2019:	Total Revenue
Americas	\$ 17,299
Europe/Middle East/Africa	11,876
Asia Pacific	8,167
Total	<u>\$ 37,342</u>

Notes to Consolidated Financial Statements — (continued)

Revenue by Major Products/Service Offerings

(Dollars in millions) For the six months ended June 30, 2018:	Cloud & Cognitive Software*	Global Business Services*	Global Technology Services*	Systems	Global Financing	Other*	Total Revenue
Cognitive Applications	\$ 2,699	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 2,699
Cloud & Data Platforms	4,029	—	—	—	—	—	4,029
Transaction Processing Platforms	3,858	—	—	—	—	—	3,858
Consulting	—	3,798	—	—	—	—	3,798
Application Management	—	3,948	—	—	—	—	3,948
Global Process Services	—	504	—	—	—	—	504
Infrastructure & Cloud Services	—	—	11,214	—	—	—	11,214
Technology Support Services	—	—	3,531	—	—	—	3,531
Systems Hardware	—	—	—	2,848	—	—	2,848
Operating Systems Software	—	—	—	828	—	—	828
Global Financing**	—	—	—	—	799	—	799
Other Revenue	—	—	—	—	—	1,017	1,017
Total	<u>\$ 10,586</u>	<u>\$ 8,250</u>	<u>\$ 14,746</u>	<u>\$ 3,676</u>	<u>\$ 799</u>	<u>\$ 1,017</u>	<u>\$ 39,075</u>

* Recast to conform to 2019 presentation.

** Contains lease and loan/working capital financing arrangements which are not subject to the guidance on revenue from contracts with customers.

Revenue by Geography

(Dollars in millions) For the six months ended June 30, 2018:	Total Revenue
Americas	\$ 17,919
Europe/Middle East/Africa	12,583
Asia Pacific	8,573
Total	<u>\$ 39,075</u>

Remaining Performance Obligations

The remaining performance obligation (RPO) disclosure provides the aggregate amount of the transaction price yet to be recognized as of the end of the reporting period and an explanation as to when the company expects to recognize these amounts in revenue. It is intended to be a statement of overall work under contract that has not yet been performed and does not include contracts in which the customer is not committed, such as certain as-a-Service, governmental, term software license and services offerings. The customer is not considered committed when they are able to terminate for convenience without payment of a substantive penalty. The disclosure includes estimates of variable consideration, except when the variable consideration is a sales-based or usage-based royalty promised in exchange for a license of intellectual property. Additionally, as a practical expedient, the company does not include contracts that have an original duration of one year or less. Remaining performance obligation estimates are subject to change and are affected by several factors, including terminations, changes in the scope of contracts, periodic revalidations, adjustment for revenue that has not materialized and adjustments for currency.

Notes to Consolidated Financial Statements — (continued)

At June 30, 2019, the aggregate amount of the transaction price allocated to RPO related to customer contracts that are unsatisfied or partially unsatisfied was \$119 billion. Given the profile of contract terms, approximately 60 percent of this amount is expected to be recognized as revenue over the next two years, approximately 35 percent between three and five years and the balance (mostly Infrastructure & Cloud Services) thereafter.

At December 31, 2018, the aggregate amount of the transaction price allocated to RPO related to customer contracts that were unsatisfied or partially unsatisfied was \$124 billion. Given the profile of contract terms, approximately 60 percent of this amount was expected to be recognized as revenue over the next two years, approximately 35 percent between three and five years and the balance (mostly Infrastructure & Cloud Services) thereafter.

Revenue Recognized for Performance Obligations Satisfied (or Partially Satisfied) in Prior Periods

For the three and six months ending June 30, 2019, revenue was reduced by \$22 million and \$35 million, respectively, for performance obligations satisfied (or partially satisfied) in previous periods mainly due to changes in estimates on percentage-of-completion based contracts.

For the three and six months ending June 30, 2018, the impact to revenue for performance obligations satisfied (or partially satisfied) in previous periods was immaterial.

Reconciliation of Contract Balances

The following table provides information about notes and accounts receivables — trade, contract assets and deferred income balances:

(Dollars in millions)	At June 30, 2019	At December 31, 2018
Notes and accounts receivable—trade (net of allowances of \$281 and \$309 at June 30, 2019 and December 31, 2018, respectively)	\$ 7,414	\$ 7,432
Contract assets ⁽¹⁾	594	470
Deferred income (current)	11,261	11,165
Deferred income (noncurrent)	3,474	3,445

(1) Included within prepaid expenses and other current assets in the Consolidated Statement of Financial Position.

The amount of revenue recognized during the three and six months ended June 30, 2019 that was included within the deferred income balance at March 31, 2019 and December 31, 2018 was \$3.8 billion and \$5.7 billion, respectively, and primarily related to services and software.

The amount of revenue recognized during the three and six months ended June 30, 2018 that was included within the deferred income balance at March 31, 2018 and January 1, 2018 was \$4.0 billion and \$6.0 billion, respectively, and primarily related to services and software.

4. Financial Instruments:

Fair Value Measurements

Accounting guidance defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Under this guidance, the company is required to classify certain assets and liabilities based on the following fair value hierarchy:

- Level 1—Quoted prices (unadjusted) in active markets for identical assets or liabilities that can be accessed at the measurement date;

Notes to Consolidated Financial Statements — (continued)

- Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly; and
- Level 3—Unobservable inputs for the asset or liability.

The guidance requires the use of observable market data if such data is available without undue cost and effort.

When available, the company uses unadjusted quoted market prices in active markets to measure the fair value and classifies such items as Level 1. If quoted market prices are not available, fair value is based upon internally developed models that use current market-based or independently sourced market parameters such as interest rates and currency rates. Items valued using internally generated models are classified according to the lowest level input or value driver that is significant to the valuation.

The determination of fair value considers various factors including interest rate yield curves and time value underlying the financial instruments. For derivatives and debt securities, the company uses a discounted cash flow analysis using discount rates commensurate with the duration of the instrument.

In determining the fair value of financial instruments, the company considers certain market valuation adjustments to the “base valuations” calculated using the methodologies described below for several parameters that market participants would consider in determining fair value:

- Counterparty credit risk adjustments are applied to financial instruments, taking into account the actual credit risk of a counterparty as observed in the credit default swap market to determine the true fair value of such an instrument.
- Credit risk adjustments are applied to reflect the company’s own credit risk when valuing all liabilities measured at fair value. The methodology is consistent with that applied in developing counterparty credit risk adjustments, but incorporates the company’s own credit risk as observed in the credit default swap market.

As an example, the fair value of derivatives is derived utilizing a discounted cash flow model that uses observable market inputs such as known notional value amounts, yield curves, spot and forward exchange rates as well as discount rates. These inputs relate to liquid, heavily traded currencies with active markets which are available for the full term of the derivative.

Certain assets that are measured at fair value on a recurring basis can be subject to nonrecurring fair value measurements. These assets include available-for-sale debt securities that are deemed to be other-than-temporarily impaired. In the event of an other-than-temporary impairment of a debt security, fair value is measured using a model described above.

Certain non-financial assets such as property, plant and equipment, operating right-of-use assets, land, goodwill and intangible assets are also subject to nonrecurring fair value measurements if they are deemed to be impaired. The impairment models used for non-financial assets depend on the type of asset. There were no material impairments of non-financial assets for the six months ended June 30, 2019 and 2018, respectively.

Accounting guidance permits the measurement of eligible financial assets, financial liabilities and firm commitments at fair value, on an instrument-by-instrument basis, that are otherwise not permitted to be accounted for at fair value under other accounting standards. This election is irrevocable. The company has not applied the fair value option to any eligible assets or liabilities.

Notes to Consolidated Financial Statements — (continued)

The following tables present the company's financial assets and financial liabilities that are measured at fair value on a recurring basis at June 30, 2019 and December 31, 2018.

(Dollars in millions)

At June 30, 2019

	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents ⁽¹⁾				
Time deposits and certificates of deposit	\$ —	\$ 19,095	\$ —	\$ 19,095 ⁽⁶⁾
Money market funds	6,001	—	—	6,001
Total	\$ 6,001	\$ 19,095	\$ —	\$ 25,096
Equity investments ⁽²⁾	0	1	—	1
Debt securities - current ⁽³⁾	—	873	—	873 ⁽⁶⁾
Derivative assets ⁽⁴⁾	4	415	—	419
Total assets	\$ 6,005	\$ 20,384	\$ —	\$ 26,390
Liabilities:				
Derivative liabilities ⁽⁵⁾	\$ —	\$ 589	\$ —	\$ 589

(1) Included within cash and cash equivalents in the Consolidated Statement of Financial Position.

(2) Included within investments and sundry assets in the Consolidated Statement of Financial Position.

(3) Included within marketable securities in the Consolidated Statement of Financial Position.

(4) The gross balances of derivative assets contained within prepaid expenses and other current assets, and investments and sundry assets in the Consolidated Statement of Financial Position at June 30, 2019 were \$204 million and \$215 million, respectively.

(5) The gross balances of derivative liabilities contained within other accrued expenses and liabilities, and other liabilities in the Consolidated Statement of Financial Position at June 30, 2019 were \$212 million and \$377 million, respectively.

(6) Available-for-sale debt securities with carrying values that approximate fair value.

(Dollars in millions)

At December 31, 2018

	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents ⁽¹⁾				
Time deposits and certificates of deposit	\$ —	\$ 7,679	\$ —	\$ 7,679 ⁽⁶⁾
Money market funds	25	—	—	25
Total	\$ 25	\$ 7,679	\$ —	\$ 7,704
Equity investments ⁽²⁾	0	—	—	0
Debt securities - current ⁽³⁾	—	618	—	618 ⁽⁶⁾
Derivative assets ⁽⁴⁾	1	731	—	731
Total assets	\$ 26	\$ 9,028	\$ —	\$ 9,053
Liabilities:				
Derivative liabilities ⁽⁵⁾	\$ 40	\$ 343	\$ —	\$ 383

(1) Included within cash and cash equivalents in the Consolidated Statement of Financial Position.

(2) Included within investments and sundry assets in the Consolidated Statement of Financial Position.

(3) Included within marketable securities in the Consolidated Statement of Financial Position.

(4) The gross balances of derivative assets contained within prepaid expenses and other current assets, and investments and sundry assets in the Consolidated Statement of Financial Position at December 31, 2018 were \$385 million and \$347 million, respectively.

(5) The gross balances of derivative liabilities contained within other accrued expenses and liabilities, and other liabilities in the Consolidated Statement of Financial Position at December 31, 2018 were \$177 million and \$206 million, respectively.

(6) Available-for-sale debt securities with carrying values that approximate fair value.

Notes to Consolidated Financial Statements — (continued)

Financial Assets and Liabilities Not Measured at Fair Value

Short-Term Receivables and Payables

Notes and other accounts receivable and other investments are financial assets with carrying values that approximate fair value. Accounts payable, other accrued expenses and short-term debt (excluding the current portion of long-term debt and including short-term finance lease liabilities) are financial liabilities with carrying values that approximate fair value. If measured at fair value in the financial statements, these financial instruments would be classified as Level 3 in the fair value hierarchy, except for short-term debt which would be classified as Level 2.

Loans and Long-Term Receivables

Fair values are based on discounted future cash flows using current interest rates offered for similar loans to clients with similar credit ratings for the same remaining maturities. At June 30, 2019 and December 31, 2018, the difference between the carrying amount and estimated fair value for loans and long-term receivables was immaterial. If measured at fair value in the financial statements, these financial instruments would be classified as Level 3 in the fair value hierarchy.

Long-Term Debt

Fair value of publicly-traded long-term debt is based on quoted market prices for the identical liability when traded as an asset in an active market. For other long-term debt (including long-term finance lease liabilities) for which a quoted market price is not available, an expected present value technique that uses rates currently available to the company for debt with similar terms and remaining maturities is used to estimate fair value. The carrying amount of long-term debt was \$58,445 million and \$35,605 million, and the estimated fair value was \$62,018 million and \$36,599 million at June 30, 2019 and December 31, 2018, respectively. If measured at fair value in the financial statements, long-term debt (including the current portion) would be classified as Level 2 in the fair value hierarchy.

Available-for-Sale Securities

There were no gross realized gains/losses from the sale of available-for-sale securities during the three and six month periods ended June 30, 2019 and gross realized gains/losses for the three and six months ended June 30, 2018 were immaterial. After-tax net unrealized holding gains/losses on available-for-sale securities that have been included in other comprehensive income/loss for the three and six month periods ended June 30, 2019 and 2018 were immaterial.

The contractual maturities of substantially all available-for-sale debt securities are less than one year at June 30, 2019.

Derivative Financial Instruments

The company operates in multiple functional currencies and is a significant lender and borrower in the global markets. In the normal course of business, the company is exposed to the impact of interest rate changes and foreign currency fluctuations, and to a lesser extent equity and commodity price changes and client credit risk. The company limits these risks by following established risk management policies and procedures, including the use of derivatives, and, where cost effective, financing with debt in the currencies in which assets are denominated. For interest rate exposures, derivatives are used to better align rate movements between the interest rates associated with the company's lease and other financial assets and the interest rates associated with its financing debt. Derivatives are also used to manage the related cost of debt. For foreign currency exposures, derivatives are used to better manage the cash flow volatility arising from foreign exchange rate fluctuations.

As a result of the use of derivative instruments, the company is exposed to the risk that counterparties to derivative contracts will fail to meet their contractual obligations. To mitigate the counterparty credit risk, the company has a

Notes to Consolidated Financial Statements — (continued)

policy of only entering into contracts with carefully selected major financial institutions based upon their overall credit profile. The company's established policies and procedures for mitigating credit risk on principal transactions include reviewing and establishing limits for credit exposure and continually assessing the creditworthiness of counterparties. The right of set-off that exists under certain of these arrangements enables the legal entities of the company subject to the arrangement to net amounts due to and from the counterparty reducing the maximum loss from credit risk in the event of counterparty default.

The company is also a party to collateral security arrangements with most of its major derivative counterparties. These arrangements require the company to hold or post collateral (cash or U.S. Treasury securities) when the derivative fair values exceed contractually established thresholds. Posting thresholds can be fixed or can vary based on credit default swap pricing or credit ratings received from the major credit agencies. The aggregate fair value of all derivative instruments under these collateralized arrangements that were in a liability position at June 30, 2019 and December 31, 2018 was \$325 million and \$74 million, respectively, for which \$8 million of collateral was posted by the company and reduced the position at June 30, 2019 and no collateral was posted at December 31, 2018. Full collateralization of these agreements would be required in the event that the company's credit rating falls below investment grade or if its credit default swap spread exceeds 250 basis points, as applicable, pursuant to the terms of the collateral security arrangements. The aggregate fair value of derivative instruments in asset positions at June 30, 2019 and December 31, 2018 was \$419 million and \$731 million, respectively. This amount represents the maximum exposure to loss at the reporting date if the counterparties failed to perform as contracted. This exposure was reduced by \$262 million and \$267 million at June 30, 2019 and December 31, 2018, respectively, of liabilities included in master netting arrangements with those counterparties. Additionally, at December 31, 2018, this exposure was reduced by \$70 million of cash collateral received from counterparties, and no collateral was received at June 30, 2019. There were no non-cash collateral balances received from counterparties in U.S. Treasury securities at June 30, 2019 and December 31, 2018. At June 30, 2019 and December 31, 2018, the net exposure related to derivative assets recorded in the Consolidated Statement of Financial Position was \$157 million and \$395 million, respectively. At June 30, 2019 and December 31, 2018, the net position related to derivative liabilities recorded in the Consolidated Statement of Financial Position was \$320 million and \$116 million, respectively.

In the Consolidated Statement of Financial Position, the company does not offset derivative assets against liabilities in master netting arrangements nor does it offset receivables or payables recognized upon payment or receipt of cash collateral against the fair values of the related derivative instruments. The amount recognized in other receivables for the right to reclaim cash collateral was \$8 million at June 30, 2019. No amount was recognized in other receivables at December 31, 2018 for the right to reclaim cash collateral. The amount recognized in accounts payable for the obligation to return cash collateral was \$70 million at December 31, 2018. No amount was recognized in accounts payable for the obligation to return cash collateral at June 30, 2019. The company restricts the use of cash collateral received to rehypothecation, and therefore reports it in restricted cash in the Consolidated Statement of Financial Position. No amount was rehypothecated at June 30, 2019 and December 31, 2018.

The company may employ derivative instruments to hedge the volatility in stockholders' equity resulting from changes in currency exchange rates of significant foreign subsidiaries of the company with respect to the U.S. dollar. These instruments, designated as net investment hedges, expose the company to liquidity risk as the derivatives have an immediate cash flow impact upon maturity which is not offset by a cash flow from the translation of the underlying hedged equity. The company monitors this cash loss potential on an ongoing basis and may discontinue some of these hedging relationships by de-designating or terminating the derivative instrument in order to manage the liquidity risk. Although not designated as accounting hedges, the company may utilize derivatives to offset the changes in the fair value of the de-designated instruments from the date of de-designation until maturity.

In its hedging programs, the company may use forward contracts, futures contracts, interest-rate swaps, cross-currency swaps, equity swaps, and options depending upon the underlying exposure. The company is not a party to leveraged derivative instruments.

A brief description of the major hedging programs, categorized by underlying risk, follows.

Notes to Consolidated Financial Statements — (continued)

Interest Rate Risk

Fixed and Variable Rate Borrowings

The company issues debt in the global capital markets to fund its operations and financing business. Access to cost-effective financing can result in interest rate mismatches with the underlying assets. To manage these mismatches and to reduce overall interest cost, the company may use interest-rate swaps to convert specific fixed-rate debt issuances into variable-rate debt (i.e., fair value hedges) and to convert specific variable-rate debt issuances into fixed-rate debt (i.e., cash flow hedges). At June 30, 2019 and December 31, 2018, the total notional amount of the company's interest-rate swaps was \$5.5 billion and \$7.6 billion, respectively. The weighted-average remaining maturity of these instruments at June 30, 2019 and December 31, 2018 was approximately 2.5 years and 3.5 years, respectively. These interest-rate contracts were accounted for as fair value hedges. The company did not have any cash flow hedges relating to this program outstanding at June 30, 2019 and December 31, 2018.

Forecasted Debt Issuance

The company is exposed to interest rate volatility on future debt issuances. To manage this risk, the company may use instruments such as forward starting interest-rate swaps to lock in the rate on the interest payments related to the forecasted debt issuances. On May 15, 2019, the company issued an aggregate of \$20 billion of indebtedness (see note 13, "Borrowings," for additional information). Following the receipt of the net proceeds from this debt offering, the company terminated \$5.5 billion of forward starting interest-rate swaps. These instruments were designated and accounted for as cash flow hedges for a portion of this issuance and hedged exposure to the variability in future cash flows over a maximum of 30 years. These swaps were the only instruments outstanding under this program at December 31, 2018, and there were no instruments outstanding at June 30, 2019.

In connection with cash flow hedges of forecasted interest payments related to the company's borrowings, the company recorded net losses of \$201 million and net losses of \$35 million (before taxes) at June 30, 2019 and December 31, 2018, respectively, in AOCI. The company estimates that \$18 million (before taxes) of the deferred net losses on derivatives in AOCI at June 30, 2019 will be reclassified to net income within the next 12 months, providing an offsetting economic impact against the underlying anticipated transactions.

Foreign Exchange Risk

Long-Term Investments in Foreign Subsidiaries (Net Investment)

A large portion of the company's foreign currency denominated debt portfolio is designated as a hedge of net investment in foreign subsidiaries to reduce the volatility in stockholders' equity caused by changes in foreign currency exchange rates in the functional currency of major foreign subsidiaries with respect to the U.S. dollar. The company also uses cross-currency swaps and foreign exchange forward contracts for this risk management purpose. At June 30, 2019 and December 31, 2018, the total notional amount of derivative instruments designated as net investment hedges was \$6.5 billion and \$6.4 billion, respectively. At June 30, 2019 and December 31, 2018, the weighted-average remaining maturity of these instruments was approximately 0.2 years at both periods.

Anticipated Royalties and Cost Transactions

The company's operations generate significant nonfunctional currency, third-party vendor payments and intercompany payments for royalties and goods and services among the company's non-U.S. subsidiaries and with the company. In anticipation of these foreign currency cash flows and in view of the volatility of the currency markets, the company selectively employs foreign exchange forward contracts to manage its currency risk. These forward contracts are accounted for as cash flow hedges. The maximum length of time over which the company has hedged its exposure to the variability in future cash flows is four years. At June 30, 2019 and December 31, 2018, the total notional amount of forward contracts designated as cash flow hedges of forecasted royalty and cost transactions was \$10.0 billion and \$9.8

Notes to Consolidated Financial Statements — (continued)

billion, respectively. At June 30, 2019 and December 31, 2018, the weighted-average remaining maturity of these instruments was approximately 0.8 years at both periods.

At June 30, 2019 and December 31, 2018, in connection with cash flow hedges of anticipated royalties and cost transactions, the company recorded net gains of \$238 million and net gains of \$342 million (before taxes), respectively, in AOCI. The company estimates that \$133 million (before taxes) of deferred net gains on derivatives in AOCI at June 30, 2019 will be reclassified to net income within the next 12 months, providing an offsetting economic impact against the underlying anticipated transactions.

Foreign Currency Denominated Borrowings

The company is exposed to exchange rate volatility on foreign currency denominated debt. To manage this risk, the company employs cross-currency swaps to convert fixed-rate foreign currency denominated debt to fixed-rate debt denominated in the functional currency of the borrowing entity. These swaps are accounted for as cash flow hedges. The maximum length of time over which the company has hedged its exposure to the variability in future cash flows is approximately 12 years. At June 30, 2019 and December 31, 2018, the total notional amount of cross-currency swaps designated as cash flow hedges of foreign currency denominated debt was \$12.2 billion and \$6.5 billion, respectively.

At June 30, 2019 and December 31, 2018, in connection with cash flow hedges of foreign currency denominated borrowings, the company recorded net losses of \$84 million and net gains of \$75 million (before taxes), respectively, in AOCI. The company estimates that \$305 million (before taxes) of deferred net gains on derivatives in AOCI at June 30, 2019 will be reclassified to net income within the next 12 months, providing an offsetting economic impact against the underlying exposure.

Subsidiary Cash and Foreign Currency Asset/Liability Management

The company uses its Global Treasury Centers to manage the cash of its subsidiaries. These centers principally use currency swaps to convert cash flows in a cost-effective manner. In addition, the company uses foreign exchange forward contracts to economically hedge, on a net basis, the foreign currency exposure of a portion of the company's nonfunctional currency assets and liabilities. The terms of these forward and swap contracts are generally less than one year. The changes in the fair values of these contracts and of the underlying hedged exposures are generally offsetting and are recorded in other (income) and expense in the Consolidated Statement of Earnings. At June 30, 2019 and December 31, 2018, the total notional amount of derivative instruments in economic hedges of foreign currency exposure was \$6.7 billion and \$5.2 billion, respectively.

Equity Risk Management

The company is exposed to market price changes in certain broad market indices and in the company's own stock primarily related to certain obligations to employees. Changes in the overall value of these employee compensation obligations are recorded in SG&A expense in the Consolidated Statement of Earnings. Although not designated as accounting hedges, the company utilizes derivatives, including equity swaps and futures, to economically hedge the exposures related to its employee compensation obligations. The derivatives are linked to the total return on certain broad market indices or the total return on the company's common stock, and are recorded at fair value with gains or losses also reported in SG&A expense in the Consolidated Statement of Earnings. At June 30, 2019 and December 31, 2018, the total notional amount of derivative instruments in economic hedges of these compensation obligations was \$1.2 billion at both periods.

Other Risks

The company may hold warrants to purchase shares of common stock in connection with various investments that are deemed derivatives because they contain net share or net cash settlement provisions. The company records the

Notes to Consolidated Financial Statements — (continued)

changes in the fair value of these warrants in other (income) and expense in the Consolidated Statement of Earnings. The company did not have any warrants qualifying as derivatives outstanding at June 30, 2019 and December 31, 2018.

The company is exposed to a potential loss if a client fails to pay amounts due under contractual terms. The company may utilize credit default swaps to economically hedge its credit exposures. The swaps are recorded at fair value with gains and losses reported in other (income) and expense in the Consolidated Statement of Earnings. The company did not have any derivative instruments relating to this program outstanding at June 30, 2019 and December 31, 2018.

The company is exposed to market volatility on certain investment securities. The company may utilize options or forwards to economically hedge its market exposure. The derivatives are recorded at fair value with gains and losses reported in other (income) and expense in the Consolidated Statement of Earnings. At June 30, 2019 and December 31, 2018, the company did not have any derivative instruments relating to this program outstanding.

The following tables provide a quantitative summary of the derivative and non-derivative instrument-related risk management activity at June 30, 2019 and December 31, 2018, as well as for the three and six months ended June 30, 2019 and 2018, respectively.

Notes to Consolidated Financial Statements — (continued)

Fair Values of Derivative Instruments in the Consolidated Statement of Financial Position

(Dollars in millions)	Fair Value of Derivative Assets			Fair Value of Derivative Liabilities		
	Balance Sheet Classification	6/30/2019	12/31/2018	Balance Sheet Classification	6/30/2019	12/31/2018
Designated as hedging instruments:						
Interest rate contracts	Prepaid expenses and other current assets	\$ 5	\$ 9	Other accrued expenses and liabilities	\$ —	\$ 4
	Investments and sundry assets	107	212	Other liabilities	1	76
Foreign exchange contracts	Prepaid expenses and other current assets	177	348	Other accrued expenses and liabilities	199	110
	Investments and sundry assets	108	135	Other liabilities	376	129
	Fair value of derivative assets	\$ 397	\$ 704	Fair value of derivative liabilities	\$ 576	\$ 320
Not designated as hedging instruments:						
Foreign exchange contracts	Prepaid expenses and other current assets	\$ 14	\$ 26	Other accrued expenses and liabilities	\$ 12	\$ 13
	Prepaid expenses and other current assets	8	2	Other accrued expenses and liabilities	1	51
	Fair value of derivative assets	\$ 22	\$ 28	Fair value of derivative liabilities	\$ 13	\$ 63
Total derivatives		<u>\$ 419</u>	<u>\$ 731</u>		<u>\$ 589</u>	<u>\$ 383</u>
Total debt designated as hedging instruments⁽¹⁾:						
Short-term debt		N/A	N/A		\$ —	\$ —
Long-term debt		N/A	N/A		6,265	6,261
		<u>N/A</u>	<u>N/A</u>		<u>\$ 6,265</u>	<u>\$ 6,261</u>
Total		<u>\$ 419</u>	<u>\$ 731</u>		<u>\$ 6,854</u>	<u>\$ 6,644</u>

(1) Debt designated as hedging instruments are reported at carrying value.
N/A - not applicable

At June 30, 2019 and December 31, 2018, the following amounts were recorded in the Consolidated Statement of Financial Position related to cumulative basis adjustments for fair value hedges:

(Dollars in millions)	June 30, 2019	December 31, 2018
Short-term debt:		
Carrying amount of the hedged item	\$ (1,128)	\$ (1,878)
Cumulative hedging adjustments included in the carrying amount - assets/(liabilities)	(3) ⁽¹⁾	(4) ⁽¹⁾
Long-term debt:		
Carrying amount of the hedged item	\$ (4,826)	\$ (6,004)
Cumulative hedging adjustments included in the carrying amount - assets/(liabilities)	(461) ⁽²⁾	(333) ⁽²⁾

(1) Includes (\$2) million and (\$6) million of hedging adjustments on discontinued hedging relationships at June 30, 2019 and December 31, 2018, respectively.

(2) Includes (\$388) million and (\$213) million of hedging adjustments on discontinued hedging relationships at June 30, 2019 and December 31, 2018, respectively.

Notes to Consolidated Financial Statements — (continued)

The Effect of Derivative Instruments in the Consolidated Statement of Earnings

The total amounts of income and expense line items presented in the Consolidated Statement of Earnings in which the effects of fair value hedges, cash flow hedges, net investment hedges and derivatives not designated as hedging instruments are recorded and the total effect of hedge activity on these income and expense line items are as follows:

(Dollars in millions) For the three months ended June 30:	Total		Gains/(Losses) of Total Hedge Activity	
	2019	2018	2019	2018
Cost of services	\$ 8,272	\$ 8,645	\$ 20	\$ 9
Cost of sales	1,651	1,869	11	(6)
Cost of financing	228	290	(18)	0 *
SG&A expense	5,456	4,857	38	10
Other (income) and expense	(747)	280	271	(435)
Interest expense	348	173	(39)	0 *

* Reclassified to conform to 2019 presentation.

Notes to Consolidated Financial Statements — (continued)

(Dollars in millions) For the three months ended June 30:	Consolidated Statement of Earnings Line Item	Gain (Loss) Recognized in Earnings			
		Recognized on Derivatives		Attributable to Risk Being Hedged ⁽²⁾	
		2019	2018	2019	2018
Derivative instruments in fair value hedges⁽¹⁾:					
Interest rate contracts	Cost of financing	\$ 23	\$ (32)	\$ (20)	\$ 42
	Interest expense	48	(28)	(43)	37
Derivative instruments not designated as hedging instruments:					
Foreign exchange contracts	Other (income) and expense	69	(38)	N/A	N/A
Equity contracts	SG&A expense	26	12	N/A	N/A
Total		<u>\$ 165</u>	<u>\$ (86)</u>	<u>\$ (64)</u>	<u>\$ 79</u>

(Dollars in millions) For the three months ended June 30:	Gain (Loss) Recognized in Earnings and Other Comprehensive Income						
	Recognized in OCI		Consolidated Statement of Earnings Line Item	Reclassified from AOCI		Amounts Excluded from Effectiveness Testing ⁽³⁾	
	2019	2018		2019	2018	2019	2018
Derivative instruments in cash flow hedges:							
Interest rate contracts	\$ 3	\$ —	Cost of financing	\$ (1)	\$ —	\$ —	\$ —
			Interest expense	(2)	—	—	—
Foreign exchange contracts	(10)	(149)	Cost of services	20	9	—	—
			Cost of sales	11	(6)	—	—
			Cost of financing	(24)	(20)*	—	—
			SG&A expense	12	(3)	—	—
			Other (income) and expense	202	(397)	—	—
			Interest expense	(51)	(18)*	—	—
Instruments in net investment hedges⁽⁴⁾:							
Foreign exchange contracts	(148)	627	Cost of financing	—	—	4	11 *
			Interest expense	—	—	9	9 *
Total	<u>\$ (154)</u>	<u>\$ 477</u>		<u>\$ 168</u>	<u>\$ (434)</u>	<u>\$ 13</u>	<u>\$ 20</u>

* Reclassified to conform to 2019 presentation.

(1) The amount includes changes in clean fair values of the derivative instruments in fair value hedging relationships and the periodic accrual for coupon payments required under these derivative contracts.

(2) The amount includes basis adjustments to the carrying value of the hedged item recorded during the period and amortization of basis adjustments recorded on de-designated hedging relationships during the period.

(3) The company's policy is to recognize all fair value changes in amounts excluded from effectiveness testing in net income each period.

(4) Instruments in net investment hedges include derivative and non-derivative instruments.

N/A - not applicable

(Dollars in millions) For the six months ended June 30:	Total		Gains/(Losses) of Total Hedge Activity	
	2019	2018	2019	2018
Cost of services	\$ 16,631	\$ 17,479	\$ 29	\$ 28
Cost of sales	3,167	3,591	30	(23)
Cost of financing	492	559	(36)	4 *
SG&A expense	10,147	10,302	179	(23)
Other (income) and expense	(820)	692	202	(386)
Interest expense	558	338	(59)	4 *

* Reclassified to conform to 2019 presentation.

Notes to Consolidated Financial Statements — (continued)

(Dollars in millions) For the six months ended June 30:	Gain (Loss) Recognized in Earnings				
	Consolidated Statement of Earnings Line Item	Recognized on Derivatives		Attributable to Risk Being Hedged ⁽²⁾	
		2019	2018	2019	2018
Derivative instruments in fair value hedges⁽¹⁾:					
Interest rate contracts	Cost of financing	\$ 55	\$ (112)	\$ (50)	\$ 138
	Interest expense	90	(101)	(82)	124
Derivative instruments not designated as hedging instruments:					
Foreign exchange contracts	Other (income) and expense	87	(93)	N/A	N/A
Equity contracts	SG&A expense	145	(2)	N/A	N/A
Total		<u>\$ 377</u>	<u>\$ (308)</u>	<u>\$ (132)</u>	<u>\$ 262</u>

(Dollars in millions) For the six months ended June 30:	Gain (Loss) Recognized in Earnings and Other Comprehensive Income						
	Recognized in OCI		Consolidated Statement of Earnings Line Item	Reclassified from AOCI		Amounts Excluded from Effectiveness Testing ⁽³⁾	
	2019	2018		2019	2018	2019	2018
Derivative instruments in cash flow hedges:							
Interest rate contracts	\$ (168)	\$ —	Cost of financing	\$ (1)	\$ —	\$ —	\$ —
			Interest expense	(1)	—	—	—
Foreign exchange contracts	(191)	(89)	Cost of services	29	28	—	—
			Cost of sales	30	(23)	—	—
			Cost of financing	(52)	(38)*	—	—
			SG&A expense	34	(21)	—	—
			Other (income) and expense	115	(293)	—	—
			Interest expense	(85)	(34)*	—	—
Instruments in net investment hedges⁽⁴⁾:							
Foreign exchange contracts	(128)	423	Cost of financing	—	—	12	17 *
			Interest expense	—	—	19	15 *
Total	<u>\$ (487)</u>	<u>\$ 334</u>		<u>\$ 70</u>	<u>\$ (380)</u>	<u>\$ 30</u>	<u>\$ 31</u>

* Reclassified to conform to 2019 presentation.

(1) The amount includes changes in clean fair values of the derivative instruments in fair value hedging relationships and the periodic accrual for coupon payments required under these derivative contracts.

(2) The amount includes basis adjustments to the carrying value of the hedged item recorded during the period and amortization of basis adjustments recorded on de-designated hedging relationships during the period.

(3) The company's policy is to recognize all fair value changes in amounts excluded from effectiveness testing in net income each period.

(4) Instruments in net investment hedges include derivative and non-derivative instruments.

N/A - not applicable

For the three and six months ending June 30, 2019 and 2018, there were no material gains or losses excluded from the assessment of hedge effectiveness (for fair value or cash flow hedges), or associated with an underlying exposure that did not or was not expected to occur (for cash flow hedges); nor are there any anticipated in the normal course of business.

5. Leases:

The company conducts business as both a lessee and a lessor. In its ordinary course of business, the company enters into leases as a lessee for property, plant and equipment. The company is also the lessor of certain equipment, mainly through its Global Financing segment.

Notes to Consolidated Financial Statements — (continued)

When procuring goods or services, or upon entering into a contract with its clients, the company determines whether an arrangement contains a lease at its inception. As part of that evaluation, the company considers whether there is an implicitly or explicitly identified asset in the arrangement and whether the company, as the lessee, or the client, if the company is the lessor, has the right to control that asset.

The company determines whether there is a right to control the use of the asset by assessing its rights, as the lessee, or the client's rights, if the company is the lessor, to obtain substantially all of the economic benefits from the use of the identified asset and the right to direct the use of the identified asset. If there is either an explicit or embedded lease within a contract, the company determines the classification of the lease (e.g., finance, operating, sales-type lease) at the lease commencement date.

Accounting for leases as a lessee

Effective January 1, 2019, when the company is the lessee, all leases with a term of more than 12 months are recognized as ROU assets and associated lease liabilities in the Consolidated Statement of Financial Position. The lease liabilities are measured at the lease commencement date and determined using the present value of the lease payments not yet paid and the company's incremental borrowing rate, which approximates the rate at which the company would borrow, on a secured basis, in the country where the lease was executed. The interest rate implicit in the lease is generally not determinable in transactions where the company is the lessee. The ROU asset equals the lease liability adjusted for any initial direct costs (IDCs), prepaid rent and lease incentives. Fixed and in-substance fixed payments are included in the recognition of ROU assets and lease liabilities, however, variable lease payments, other than those based on a rate or index, are recognized in the Consolidated Statement of Earnings in the period in which the obligation for those payments is incurred. The company's variable lease payments generally relate to payments tied to various indexes, non-lease components and payments above a contractual minimum fixed payment.

ROU assets represent the company's right to control the underlying assets under lease, and the lease liability is the obligation to make the lease payments related to the underlying assets under lease. Operating leases are included in operating right-of-use assets – net, current operating lease liabilities and operating lease liabilities in the Consolidated Statement of Financial Position. Finance leases are included in property, plant and equipment, short-term debt and long-term debt in the Consolidated Statement of Financial Position. At June 30, 2019, the total amount of ROU assets and lease liabilities for finance leases recognized in the Consolidated Statement of Financial Position in property, plant and equipment, short-term debt and long-term debt was \$63 million, \$7 million and \$65 million, respectively.

Finance lease ROU assets are generally amortized on a straight-line basis over the lease term with the interest expense on the lease liability recorded using the interest method. The amortization and interest expense are recorded separately in the Consolidated Statement of Earnings. For operating leases, the amortization of the ROU asset and the interest expense on the lease liability are not separately recorded; rather, the lease cost is recognized on a straight-line basis over the lease term as a single-line item in the Consolidated Statement of Earnings, unless the ROU asset is impaired. The company has elected to not recognize leases with a lease term of less than 12 months in the Consolidated Statement of Financial Position, including those acquired in a business combination, and lease costs for those short-term leases are recognized on a straight-line basis over the lease term in the Consolidated Statement of Earnings.

For all asset classes, the company has elected the lessee practical expedient to combine lease and non-lease components (e.g., maintenance services) and account for the combined unit as a single lease component. A significant portion of the company's lease portfolio is real estate, which are mainly accounted for as operating leases, and are primarily used for corporate offices and data centers. The average term of the real estate leases is approximately five years. Certain real estate leases have renewal and/or termination options, which are assessed to determine if those options would affect the duration of the lease term. The company also has equipment leases, such as IT equipment and vehicles, which have lease terms that range from two to five years. For certain equipment leases, the company applies a portfolio approach to account for the operating lease ROU assets and lease liabilities.

Notes to Consolidated Financial Statements — (continued)

The following tables present the various components of lease costs:

(Dollars in millions)	
For the three months ended June 30:	
	2019
Finance lease cost	\$ 2
Operating lease cost	434
Short-term lease cost	7
Variable lease cost	128
Sublease income	(6)
Total lease cost	<u>\$ 565</u>

(Dollars in millions)	
For the six months ended June 30:	
	2019
Finance lease cost	\$ 7
Operating lease cost	820
Short-term lease cost	16
Variable lease cost	256
Sublease income	(8)
Total lease cost	<u>\$ 1,090</u>

The company recorded net gains on sale and leaseback transactions of \$5 million and \$41 million for the three and six months ended June 30, 2019, respectively.

The following tables present supplemental information relating to the cash flows arising from lease transactions. Cash payments made from variable lease costs and short-term leases are not included in the measurement of operating and finance lease liabilities, and, as such, are excluded from the amounts below:

(Dollars in millions)	
For the six months ended June 30:	
	2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash outflows from finance leases	\$ 4
Financing cash outflows from finance leases	\$ 2
Operating cash outflows from operating leases	\$ 762
ROU assets obtained in exchange for new finance lease liabilities	\$ 77 *
ROU assets obtained in exchange for new operating lease liabilities	\$ 5,771 *

* Includes opening balance additions as a result of the adoption of the new lease guidance effective January 1, 2019. The post adoption addition of leases for the six months ended June 30, 2019 was \$927 million for operating leases and immaterial for finance leases.

The following table presents the weighted-average lease terms and discount rates for both finance and operating leases:

At June 30:	
	2019
Weighted-average remaining lease term — finance leases	7.2 yrs.
Weighted-average remaining lease term — operating leases	5.2 yrs.
Weighted-average discount rate — finance leases	2.46 %
Weighted-average discount rate — operating leases	3.13 %

Notes to Consolidated Financial Statements — (continued)

The following table presents a maturity analysis of the expected undiscounted cash out flows for operating and finance leases on an annual basis for the next five years and thereafter, at June 30, 2019:

<u>(Dollars in millions)</u>	<u>Remainder of</u> <u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>Beyond</u> <u>2023</u>	<u>Imputed</u> <u>Interest*</u>	<u>Total</u>
Finance leases	\$ 8	\$ 17	\$ 17	\$ 16	\$ 12	\$ 53	\$ (53)	\$ 71
Operating leases	\$ 819	\$ 1,372	\$ 1,054	\$ 777	\$ 551	\$ 1,064	\$ (371)	\$ 5,265

* Imputed interest represents the difference between undiscounted cash flows and discounted cash flows.

Prior to the adoption of the new lease guidance on January 1, 2019, ROU assets and lease liabilities for operating leases were not recognized in the Consolidated Statement of Financial Position. The company has elected the practical expedient to not provide comparable presentation in the Consolidated Statement of Financial Position for periods prior to adoption. Rental expense, including amounts charged to inventories and fixed assets, and excluding amounts previously reserved, was \$1,944 million for the year ended December 31, 2018. Rental expense in agreements with rent holidays and scheduled rent increases was previously recognized on a straight-line basis over the lease term. Contingent rentals were included in the determination of rental expense as accruable.

The following table, which was included in the company's 2018 Annual Report, depicts gross minimum rental commitments under noncancelable leases, amounts related to vacant space associated with workforce transformation, sublease income commitments and capital lease commitments at December 31, 2018.

<u>(Dollars in millions)</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>Beyond</u> <u>2023</u>
Operating lease commitments						
Gross minimum rental commitments (including vacant space below)	\$ 1,581	\$ 1,233	\$ 914	\$ 640	\$ 445	\$ 815
Vacant space	\$ 29	\$ 23	\$ 14	\$ 9	\$ 5	\$ 8
Sublease income commitments	\$ 11	\$ 7	\$ 5	\$ 4	\$ 4	\$ 2
Capital lease commitments	\$ 3	\$ 3	\$ 3	\$ 3	\$ 2	\$ 28

The difference between the company's total lease commitments as reported at December 31, 2018 compared to the January 1, 2019 ROU asset balance in the Consolidated Statement of Financial Position is primarily due to the required use of a discount factor (imputed interest) under the new lease guidance and certain amounts that are not included in the ROU asset under the new lease guidance (e.g., tenant incentives and vacant space).

Accounting for leases as a lessor

The company typically enters into leases as an alternative means of realizing value from equipment that it would otherwise sell. Assets under lease include new and used IBM equipment and certain OEM products. IBM equipment generally consists of IBM Z, Power Systems and Storage Systems products.

Lease payments due to IBM are typically fixed and paid in equal installments over the lease term. The majority of the company's leases do not contain variable payments that are dependent on an index or a rate. Variable lease payments that do not depend on an index or a rate (e.g., property taxes), that are paid directly by the company and are reimbursed by the client, are recorded as revenue, along with the related cost, in the period in which collection of these payments is probable. Payments that are made directly by the client to a third party, including certain property taxes and insurance, are not considered part of variable payments and therefore are not recorded by the company. The company has made a policy election to exclude from consideration in contracts all collections from sales and other similar taxes.

Notes to Consolidated Financial Statements — (continued)

The company's payment terms for leases are typically unconditional. Therefore, in an instance when the client requests to terminate the lease prior to the end of the lease term, the client would typically be required to pay the remaining lease payments in full. At the end of the lease term, the company allows the client to either return the equipment, purchase the equipment at the then-current fair market value or at a pre-stated purchase price or renew the lease based on mutually agreed upon terms.

When lease arrangements include multiple performance obligations, the company allocates the consideration in the contract between the lease components and the non-lease components on a relative standalone selling price basis.

The following tables present amounts included in the Consolidated Statement of Earnings related to lessor activity:

(Dollars in millions)	
For the three months ended June 30:	
	2019
Lease income — sales-type and direct financing leases	
Sales-type lease selling price	\$ 179
Less: Carrying value of underlying assets, excluding unguaranteed residual value	74
Gross profit	105
Interest income on lease receivables	73
Total sales-type and direct financing lease income	\$ 178
Lease income — operating leases	82
Variable lease income	9
Total lease income	<u>\$ 269</u>

(Dollars in millions)	
For the six months ended June 30:	
	2019
Lease income — sales-type and direct financing leases	
Sales-type lease selling price	\$ 328
Less: Carrying value of underlying assets, excluding unguaranteed residual value	129
Gross profit	199
Interest income on lease receivables	151
Total sales-type and direct financing lease income	\$ 350
Lease income — operating leases	172
Variable lease income	27
Total lease income	<u>\$ 548</u>

Sales-Type and Direct Financing Leases

If a lease is classified as a sales-type or direct financing lease, the carrying amount of the asset is derecognized from inventory and a net investment in the lease is recorded. For a sales-type lease, the net investment in the lease is measured at commencement date as the sum of the lease receivable and the estimated residual value of the equipment less unearned income and allowance for credit losses. At June 30, 2019, the unguaranteed residual value of sales-type and direct financing leases was \$582 million. For further information on the company's net investment in leases, including residual values, refer to note 6, "Financing Receivables." Any selling profit or loss arising from a sales-type lease is recorded at lease commencement. Selling profit or loss is presented on a gross basis when the company enters into a lease to realize value from a product that it would otherwise sell in its ordinary course of business, whereas in transactions where the company enters into a lease for the purpose of generating revenue by providing financing, the selling profit or loss is presented on a net basis. Under a sales-type lease, initial direct costs are expensed at lease commencement. Over the term of the lease, the company recognizes finance income on the net investment in the lease and any variable lease payments, which are not included in the net investment in the lease.

Notes to Consolidated Financial Statements — (continued)

For a direct financing lease, the investment in the lease is measured similarly to a sales-type lease, however, the net investment in the lease is reduced by any selling profit. In a direct financing lease, the selling profit and initial direct costs are deferred at commencement and recognized over the lease term. The company rarely enters into direct financing leases.

The estimated residual value represents the estimated fair value of the equipment under lease at the end of the lease. Estimating residual value is a risk unique to financing activities, and management of this risk is dependent upon the ability to accurately project future equipment values. The company has insight into product plans and cycles for the IBM products under lease. The company estimates the future fair value of leased equipment by using historical models, analyzing the current market for new and used equipment and obtaining forward-looking product information such as marketing plans and technology innovations.

The company optimizes the recovery of residual values by extending lease arrangements with, or selling leased equipment to existing clients. The company has historically managed residual value risk both through insight into its own product cycles and monitoring of OEM IT product announcements. The company periodically reassesses the realizable value of its lease residual values. Anticipated decreases in specific future residual values that are considered to be other-than-temporary are recognized immediately upon identification and are recorded as an adjustment to the residual value estimate. For sales-type and direct financing leases, this reduction lowers the recorded net investment and is recognized as a loss charged to finance income in the period in which the estimate is changed, as well as an adjustment to unearned income to reduce future-period financing activities. For the three and six months ended June 30, 2019 and June 30, 2018, respectively, impairment of residual values was immaterial.

The following table presents a maturity analysis of the lease payments due to IBM on sales-type and direct financing leases over the next five years and thereafter, as well as a reconciliation of the undiscounted cash flows to the financing receivables recognized in the Consolidated Statement of Financial Position at June 30, 2019:

(Dollars in millions)	Total
Remainder of 2019	\$ 1,496
2020	2,199
2021	1,426
2022	654
2023	166
Thereafter	25
Total undiscounted cash flows	\$ 5,967
Present value of lease payments (recognized as financing receivables)	5,494 *
Difference between undiscounted cash flows and discounted cash flows	\$ 473

* The present value of the lease payments will not equal the financing receivables balances in the Statement of Financial Position, due to certain items including IDC's, allowance for credit losses and residual values, which are included in the financing receivables balance, but are not included in the future lease payments.

Operating Leases

Equipment provided to clients under an operating lease is carried at cost within property, plant and equipment in the Consolidated Statement of Financial Position and depreciated over the lease term using the straight-line method, generally ranging from one to six years. The depreciable basis is the original cost of the equipment less the estimated residual value of the equipment at the end of the lease term. At June 30, 2019, the unguaranteed residual value of operating leases was \$97 million.

At commencement of an operating lease, IDCs are deferred. As lease payments are made, the company records sales revenue over the lease term. IDCs are amortized over the lease term on the same basis as lease income is recorded.

Notes to Consolidated Financial Statements — (continued)

The following table presents a maturity analysis of the undiscounted lease payments due to IBM on operating leases over the next five years and thereafter, at June 30, 2019:

(Dollars in millions)	Total
Remainder of 2019	\$ 153
2020	115
2021	31
2022	2
2023	0
Thereafter	0
Total undiscounted cash flows	\$ 301

Assets under operating leases are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The impairment test is based on undiscounted cash flows, and, if impaired, the asset is written down to fair value based on either discounted cash flows or appraised values. There were no material impairment losses incurred during the three and six months ended June 30, 2019 for assets under operating leases. These assets are included in “Property, plant and equipment — net” in the Consolidated Statement of Financial Position.

6. Financing Receivables:

Financing receivables primarily consist of client loan and installment payment receivables (loans), investment in sales-type and direct financing leases and commercial financing receivables. Client loan and installment payment receivables (loans) are provided primarily to clients to finance the purchase of hardware, software and services. Payment terms on these financing arrangements are generally for terms up to seven years. Client loans and installment payment financing contracts are priced independently at competitive market rates. Investment in sales-type and direct financing leases relates principally to the company’s Systems products and are for terms ranging generally from two to six years. Commercial financing receivables relate primarily to inventory and accounts receivable financing for dealers and remarketers of IBM and OEM products. Payment terms for inventory and accounts receivable financing generally range from 30 to 90 days. Beginning in the second quarter of 2019 and continuing throughout the year, the company is winding down the portion of its commercial financing operations which provides short-term working capital solutions for OEM information technology suppliers, distributors and resellers, which has resulted in a reduction of commercial financing receivables. This wind down is consistent with IBM’s capital allocation strategy and high-value focus. IBM Global Financing will continue to provide differentiated end-to-end financing solutions, including commercial financing in support of IBM partner relationships.

A summary of the components of the company’s financing receivables is presented as follows:

(Dollars in millions) At June 30, 2019:	Investment in Sales-Type and Direct Financing Leases	Commercial Financing Receivables	Client Loan and Installment Payment Receivables/ (Loans)	Total
Financing receivables, gross	\$ 5,978	\$ 5,936	\$ 12,800	\$ 24,714
Unearned income	(473)	(18)	(611)	(1,102)
Recorded investment	\$ 5,505	\$ 5,918	\$ 12,189	\$ 23,612
Allowance for credit losses	(89)	(15)	(175)	(278)
Unguaranteed residual value	582	—	—	582
Guaranteed residual value	68	—	—	68
Total financing receivables, net	\$ 6,066	\$ 5,903	\$ 12,014	\$ 23,984
Current portion	\$ 2,338	\$ 5,903	\$ 7,302	\$ 15,543
Noncurrent portion	\$ 3,728	\$ —	\$ 4,713	\$ 8,441

Notes to Consolidated Financial Statements — (continued)

(Dollars in millions) At December 31, 2018:	Investment in Sales-Type and Direct Financing Leases	Commercial Financing Receivables	Client Loan and Installment Payment Receivables/ (Loans)	Total
Financing receivables, gross	\$ 6,846	\$ 11,889	\$ 13,614	\$ 32,348
Unearned income	(526)	(37)	(632)	(1,195)
Recorded investment	\$ 6,320	\$ 11,852	\$ 12,981	\$ 31,153
Allowance for credit losses	(99)	(13)	(179)	(292)
Unguaranteed residual value	589	—	—	589
Guaranteed residual value	85	—	—	85
Total financing receivables, net	<u>\$ 6,895</u>	<u>\$ 11,838</u>	<u>\$ 12,802</u>	<u>\$ 31,536</u>
Current portion	\$ 2,834	\$ 11,838	\$ 7,716	\$ 22,388
Noncurrent portion	\$ 4,061	\$ —	\$ 5,086	\$ 9,148

The company utilizes certain of its financing receivables as collateral for nonrecourse borrowings. Financing receivables pledged as collateral for borrowings were \$938 million and \$710 million at June 30, 2019 and December 31, 2018, respectively.

The company did not have any financing receivables held for sale as of June 30, 2019 and December 31, 2018.

Notes to Consolidated Financial Statements — (continued)

Financing Receivables by Portfolio Segment

The following tables present the recorded investment by portfolio segment and by class, excluding commercial financing receivables and other miscellaneous financing receivables at June 30, 2019 and December 31, 2018. Commercial financing receivables are excluded from the presentation of financing receivables by portfolio segment, as they are short term in nature and the current estimated risk of loss and resulting impact to the company's financing results are not material. The company determines its allowance for credit losses based on two portfolio segments: lease receivables and loan receivables, and further segments the portfolio into three classes: Americas, Europe/Middle East/Africa (EMEA) and Asia Pacific.

(Dollars in millions)				
At June 30, 2019:				
	<u>Americas</u>	<u>EMEA</u>	<u>Asia Pacific</u>	<u>Total</u>
Recorded investment				
Lease receivables	\$ 3,336	\$ 1,149	\$ 1,020	\$ 5,505
Loan receivables	6,208	3,443	2,538	12,189
Ending balance	<u>\$ 9,544</u>	<u>\$ 4,592</u>	<u>\$ 3,558</u>	<u>\$ 17,694</u>
Recorded investment collectively evaluated for impairment	\$ 9,400	\$ 4,544	\$ 3,509	\$ 17,453
Recorded investment individually evaluated for impairment	\$ 144	\$ 48	\$ 49	\$ 241
<u>Allowance for credit losses</u>				
Beginning balance at January 1, 2019				
Lease receivables	\$ 53	\$ 22	\$ 24	\$ 99
Loan receivables	105	43	32	179
Total	<u>\$ 158</u>	<u>\$ 65</u>	<u>\$ 56</u>	<u>\$ 279</u>
Write-offs	\$ (11)	\$ (2)	\$ (3)	\$ (16)
Recoveries	0	0	0	0
Provision / (benefit)	(1)	(6)	0	(7)
Other*	6	0	0	6
Ending balance at June 30, 2019	<u>\$ 152</u>	<u>\$ 57</u>	<u>\$ 54</u>	<u>\$ 263</u>
Lease receivables	\$ 48	\$ 17	\$ 24	\$ 89
Loan receivables	\$ 104	\$ 41	\$ 30	\$ 175
Related allowance, collectively evaluated for impairment	\$ 31	\$ 12	\$ 5	\$ 48
Related allowance, individually evaluated for impairment	\$ 122	\$ 45	\$ 49	\$ 215

* Primarily represents translation adjustments.

Write-offs of lease receivables and loan receivables were \$8 million each, for the six months ended June 30, 2019. Provisions for credit losses recorded for lease receivables were a release of \$6 million for the six months ended June 30, 2019, with the remainder of the current period benefit released for loan receivables.

The average recorded investment of impaired leases and loans for Americas, EMEA and Asia Pacific were \$146 million, \$48 million and \$50 million, respectively, for the three months ended June 30, 2019 and \$128 million, \$55 million and \$78 million, respectively, for the three months ended June 30, 2018. Both interest income recognized and interest income recognized on a cash basis on impaired leases and loans were immaterial for the three months ended June 30, 2019 and 2018.

The average recorded investment of impaired leases and loans for Americas, EMEA and Asia Pacific were \$146 million, \$50 million and \$50 million, respectively, for the six months ended June 30, 2019 and \$128 million, \$56 million and \$80 million, respectively, for the six months ended June 30, 2018. Both interest income recognized and interest

Notes to Consolidated Financial Statements — (continued)

income recognized on a cash basis on impaired leases and loans were immaterial for the six months ended June 30, 2019 and 2018.

(Dollars in millions) At December 31, 2018:	Americas	EMEA	Asia Pacific	Total
Recorded investment				
Lease receivables	\$ 3,827	\$ 1,341	\$ 1,152	\$ 6,320
Loan receivables	6,817	3,675	\$ 2,489	\$ 12,981
Ending balance	<u>\$ 10,644</u>	<u>\$ 5,016</u>	<u>\$ 3,641</u>	<u>\$ 19,301</u>
Recorded investment collectively evaluated for impairment	\$ 10,498	\$ 4,964	\$ 3,590	\$ 19,052
Recorded investment individually evaluated for impairment	\$ 146	\$ 52	\$ 51	\$ 249
 <u>Allowance for credit losses</u>				
Beginning balance at January 1, 2018				
Lease receivables	\$ 63	\$ 9	\$ 31	\$ 103
Loan receivables	108	52	\$ 51	\$ 211
Total	<u>\$ 172</u>	<u>\$ 61</u>	<u>\$ 82</u>	<u>\$ 314</u>
Write-offs	\$ (10)	\$ (2)	\$ (23)	\$ (35)
Recoveries	0	0	\$ 2	\$ 2
Provision	7	9	\$ 0	\$ 16
Other*	(11)	(3)	\$ (4)	\$ (19)
Ending balance at December 31, 2018	<u>\$ 158</u>	<u>\$ 65</u>	<u>\$ 56</u>	<u>\$ 279</u>
Lease receivables	\$ 53	\$ 22	\$ 24	\$ 99
Loan receivables	\$ 105	\$ 43	\$ 32	\$ 179
Related allowance, collectively evaluated for impairment	\$ 39	\$ 16	\$ 5	\$ 59
Related allowance, individually evaluated for impairment	\$ 119	\$ 49	\$ 51	\$ 219

* Primarily represents translation adjustments.

Write-offs of lease receivables and loan receivables were \$15 million and \$20 million, respectively, for the year ended December 31, 2018. Provisions for credit losses recorded for lease receivables and loan receivables were \$14 million and \$2 million, respectively, for the year ended December 31, 2018.

When determining the allowances, financing receivables are evaluated either on an individual or a collective basis. For individually evaluated receivables, the company determines the expected cash flow for the receivable and calculates an estimate of the potential loss and the probability of loss. For those accounts in which the loss is probable, the company records a specific reserve. The company considers any receivable with an individually evaluated reserve as an impaired receivable.

In addition, the company records an unallocated reserve that is determined by applying a reserve rate to its different portfolios, excluding accounts that have been specifically reserved. This reserve rate is based upon credit rating, probability of default, term, characteristics (lease/loan) and loss history.

Past Due Financing Receivables

The company considers a client's financing receivable balance past due when any installment is aged over 90 days. The following table summarizes information about the recorded investment in lease and loan financing receivables,

Notes to Consolidated Financial Statements — (continued)

including recorded investments aged over 90 days and still accruing, billed invoices aged over 90 days and still accruing, and recorded investment not accruing.

(Dollars in millions) At June 30, 2019:	Total Recorded Investment	Recorded Investment > 90 Days ⁽¹⁾	Recorded Investment > 90 Days and Accruing ⁽¹⁾	Billed Invoices > 90 Days and Accruing	Recorded Investment Not Accruing ⁽²⁾
Americas	\$ 3,336	\$ 364	\$ 345	\$ 13	\$ 39
EMEA	1,149	31	12	4	19
Asia Pacific	1,020	25	13	2	13
Total lease receivables	<u>\$ 5,505</u>	<u>\$ 421</u>	<u>\$ 370</u>	<u>\$ 19</u>	<u>\$ 71</u>
Americas	\$ 6,208	\$ 204	\$ 105	\$ 17	\$ 120
EMEA	3,443	85	15	3	71
Asia Pacific	2,538	42	10	5	34
Total loan receivables	<u>\$ 12,189</u>	<u>\$ 330</u>	<u>\$ 129</u>	<u>\$ 25</u>	<u>\$ 224</u>
Total	<u>\$ 17,694</u>	<u>\$ 751</u>	<u>\$ 499</u>	<u>\$ 44</u>	<u>\$ 295</u>

(1) At a contract level, which includes total billed and unbilled amounts for financing receivables aged greater than 90 days.

(2) Of the recorded investment not accruing, \$241 million is individually evaluated for impairment with a related allowance of \$215 million.

(Dollars in millions) At December 31, 2018:	Total Recorded Investment	Recorded Investment > 90 Days ⁽¹⁾	Recorded Investment > 90 Days and Accruing ⁽¹⁾	Billed Invoices > 90 Days and Accruing	Recorded Investment Not Accruing ⁽²⁾
Americas	\$ 3,827	\$ 310	\$ 256	\$ 19	\$ 57
EMEA	1,341	25	9	1	16
Asia Pacific	1,152	49	27	3	24
Total lease receivables	<u>\$ 6,320</u>	<u>\$ 385</u>	<u>\$ 292</u>	<u>\$ 24</u>	<u>\$ 97</u>
Americas	\$ 6,817	\$ 259	\$ 166	\$ 24	\$ 99
EMEA	3,675	98	25	3	73
Asia Pacific	2,489	40	11	1	31
Total loan receivables	<u>\$ 12,981</u>	<u>\$ 397</u>	<u>\$ 202</u>	<u>\$ 29</u>	<u>\$ 203</u>
Total	<u>\$ 19,301</u>	<u>\$ 782</u>	<u>\$ 494</u>	<u>\$ 52</u>	<u>\$ 300</u>

(1) At a contract level, which includes total billed and unbilled amounts for financing receivables aged greater than 90 days.

(2) Of the recorded investment not accruing, \$249 million is individually evaluated for impairment with a related allowance of \$219 million.

Credit Quality Indicators

The company's credit quality indicators, which are based on rating agency data, publicly available information and information provided by customers, are reviewed periodically based on the relative level of risk. The resulting indicators are a numerical rating system that maps to Moody's Investors Service credit ratings as shown below. The company uses information provided by Moody's, where available, as one of many inputs in its determination of customer credit ratings.

The following tables present the recorded investment net of allowance for credit losses for each class of receivables, by credit quality indicator, at June 30, 2019 and December 31, 2018. Receivables with a credit quality indicator ranging

Notes to Consolidated Financial Statements — (continued)

from Aaa to Baa3 are considered investment grade. All others are considered non-investment grade. The credit quality indicators do not reflect mitigation actions that the company takes to transfer credit risk to third parties.

(Dollars in millions) At June 30, 2019:	Lease Receivables			Loan Receivables		
	Americas	EMEA	Asia Pacific	Americas	EMEA	Asia Pacific
Credit ratings:						
Aaa – Aa3	\$ 428	\$ 12	\$ 60	\$ 998	\$ 160	\$ 185
A1 – A3	750	137	488	859	219	834
Baa1 – Baa3	780	365	170	1,615	1,271	718
Ba1 – Ba2	834	412	127	1,554	947	556
Ba3 – B1	229	136	96	461	542	130
B2 – B3	251	65	50	589	240	77
Caa – D	18	4	5	27	23	9
Total	\$ 3,288	\$ 1,132	\$ 996	\$ 6,103	\$ 3,402	\$ 2,508

(Dollars in millions) At December 31, 2018:	Lease Receivables			Loan Receivables		
	Americas	EMEA	Asia Pacific	Americas	EMEA	Asia Pacific
Credit ratings:						
Aaa – Aa3	\$ 593	\$ 45	\$ 85	\$ 1,055	\$ 125	\$ 185
A1 – A3	678	158	413	1,206	436	901
Baa1 – Baa3	892	417	297	1,587	1,148	648
Ba1 – Ba2	852	426	191	1,516	1,175	417
Ba3 – B1	433	171	84	770	472	184
B2 – B3	299	90	50	531	249	109
Caa – D	26	10	7	47	28	15
Total	\$ 3,774	\$ 1,319	\$ 1,128	\$ 6,712	\$ 3,633	\$ 2,457

Troubled Debt Restructurings

The company did not have any significant troubled debt restructurings during the six months ended June 30, 2019 or for the year ended December 31, 2018 .

7. Stock-Based Compensation:

Stock-based compensation cost is measured at grant date, based on the fair value of the award, and is recognized over the employee requisite service period. The following table presents total stock-based compensation cost included in income from continuing operations.

(Dollars in millions)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Cost	\$ 22	\$ 21	\$ 42	\$ 41
Selling, general and administrative	93	88	167	169
Research, development and engineering	21	16	39	32
Pre-tax stock-based compensation cost	\$ 135	\$ 125	\$ 248	\$ 242
Income tax benefits	(29)	(24)	(54)	(59)
Total net stock-based compensation cost	\$ 106	\$ 102	\$ 194	\$ 183

Pre-tax stock-based compensation cost for the three months ended June 30, 2019 increased \$10 million compared to the corresponding period in the prior year. This was due to an increase related to restricted stock units (\$13 million), partially offset by decreases in performance share units (\$1 million), stock options (\$1 million) and the conversion of stock-based compensation previously issued by acquired entities (\$1 million).

Notes to Consolidated Financial Statements — (continued)

Pre-tax stock-based compensation cost for the six months ended June 30, 2019 increased \$7 million compared to the corresponding period in the prior year. This was due to an increase related to restricted stock units (\$16 million), partially offset by decreases in performance share units (\$5 million), stock options (\$2 million) and the conversion of stock-based compensation previously issued by acquired entities (\$2 million).

As of June 30, 2019, the total unrecognized compensation cost of \$1.0 billion related to non-vested awards was expected to be recognized over a weighted-average period of approximately 2.8 years.

There was no significant capitalized stock-based compensation cost at June 30, 2019 and 2018.

8. Segments:

In the first quarter of 2019, the company made a number of changes to its organizational structure and management system that brought cloud and cognitive software under one organization to more effectively address evolving client needs and to prepare for the acquisition of Red Hat, Inc. (Red Hat). With these changes, the company has revised its reportable segments, but did not impact its Consolidated Financial Statements. In addition, the company is presenting the results of its announced divestitures in an “Other” segment, as the realignment of these businesses allows for a better representation of management’s view of the company, as well as the ongoing operational performance of the reportable segments. The company’s segments are as follows:

2018 Segments	Changes (+/-)	2019 Segments
Cognitive Solutions	+ Integration Software + Security Services - Divested Select Software* + Red Hat (post closing)	Cloud & Cognitive Software
Global Business Services	- Divested Mortgage Servicing**	Global Business Services
Technology Services & Cloud Platforms	- Security Services - Integration Software	Global Technology Services
Systems		Systems
Global Financing		Global Financing
Other	+ Divested Mortgage Servicing** + Divested Select Software*	Other

* IBM completed the sales of select software products and marketing and platform commerce offerings (in the U.S.) on June 30, 2019. Refer to note 11, “Acquisitions/Divestitures,” for additional information.

** IBM completed the sale of the mortgage servicing business on February 28, 2019.

The tables below reflect the continuing operations results of the company’s segments consistent with the management and measurement system utilized within the company. Performance measurement is based on operating pre-tax income from continuing operations. The segments represent components of the company for which separate financial information is available that is utilized on a regular basis by the chief operating decision maker (the chief executive officer) in determining how to allocate resources and evaluate performance. The tables reflect the segment recast for the prior-year period.

Notes to Consolidated Financial Statements — (continued)

SEGMENT INFORMATION

<u>(Dollars in millions)</u>	<u>Cloud & Cognitive Software</u>	<u>Global Business Services</u>	<u>Global Technology Services</u>	<u>Systems</u>	<u>Global Financing</u>	<u>Total Segments</u>
For the three months ended						
June 30, 2019:						
External revenue	\$ 5,645	\$ 4,155	\$ 6,837	\$ 1,753	\$ 351	\$ 18,741
Internal revenue	607	69	302	171	281	1,430
Total revenue	<u>\$ 6,252</u>	<u>\$ 4,224</u>	<u>\$ 7,139</u>	<u>\$ 1,924</u>	<u>\$ 632</u>	<u>\$ 20,170</u>
Pre-tax income/(loss) from continuing operations	<u>\$ 2,001</u>	<u>\$ 300</u>	<u>\$ 235</u>	<u>\$ 61</u>	<u>\$ 239</u>	<u>\$ 2,836</u>
Revenue year-to-year change	(0.5)%	0.1 %	(4.7)%	(20.5)%	(27.1)%	(5.2)%
Pre-tax income year-to-year change	(1.4)%	(19.4)%	(47.9)%	(82.3)%	(33.1)%	(20.2)%
Pre-tax income/(loss) margin	32.0 %	7.1 %	3.3 %	3.2 %	37.8 %	14.1 %

For the three months ended

June 30, 2018:

External revenue	\$ 5,470 *	\$ 4,135 *	\$ 7,325 *	\$ 2,177	\$ 394	\$ 19,500 *
Internal revenue	811 *	83	169	242	473	1,778 *
Total revenue	<u>\$ 6,280 *</u>	<u>\$ 4,218 *</u>	<u>\$ 7,494 *</u>	<u>\$ 2,419</u>	<u>\$ 867</u>	<u>\$ 21,278 *</u>
Pre-tax income/(loss) from continuing operations	<u>\$ 2,029 *</u>	<u>\$ 372 *</u>	<u>\$ 451 *</u>	<u>\$ 346</u>	<u>\$ 357</u>	<u>\$ 3,556 *</u>
Pre-tax income/(loss) margin	32.3 %*	8.8 %*	6.0 %*	14.3 %	41.2 %	16.7 %*

* Recast to conform to 2019 presentation.

Reconciliations to IBM as Reported:

(Dollars in millions)

For the three months ended June 30:

<u>(Dollars in millions)</u>	<u>2019</u>	<u>2018</u>
Revenue:		
Total reportable segments	\$ 20,170	\$ 21,278 *
Other — divested businesses	363	457 *
Other revenue	57	45
Eliminations of internal transactions	<u>(1,430)</u>	<u>(1,778)*</u>
Total consolidated revenue	<u>\$ 19,161</u>	<u>\$ 20,003</u>
Pre-tax income from continuing operations:		
Total reportable segments	\$ 2,836	\$ 3,556 *
Amortization of acquired intangible assets	(169)	(203)
Acquisition-related (charges)/income	(102)	(1)
Non-operating retirement-related (costs)/income	(136)	(394)
Eliminations of internal transactions	(60)	(308)*
Other — divested businesses	557	188 *
Unallocated corporate amounts	<u>(156)</u>	<u>(62)</u>
Total pre-tax income from continuing operations	<u>\$ 2,768</u>	<u>\$ 2,776</u>

* Recast to conform to 2019 presentation.

Notes to Consolidated Financial Statements — (continued)

SEGMENT INFORMATION

<u>(Dollars in millions)</u>	<u>Cloud & Cognitive Software</u>	<u>Global Business Services</u>	<u>Global Technology Services</u>	<u>Systems</u>	<u>Global Financing</u>	<u>Total Segments</u>
For the six months ended						
June 30, 2019:						
External revenue	\$ 10,682	\$ 8,274	\$ 13,711	\$ 3,081	\$ 757	\$ 36,506
Internal revenue	<u>1,448</u>	<u>143</u>	<u>591</u>	<u>334</u>	<u>581</u>	<u>3,097</u>
Total revenue	<u>\$ 12,131</u>	<u>\$ 8,417</u>	<u>\$ 14,303</u>	<u>\$ 3,415</u>	<u>\$ 1,338</u>	<u>\$ 39,603</u>
Pre-tax income/(loss) from continuing operations	<u>\$ 3,768</u>	<u>\$ 615</u>	<u>\$ 510</u>	<u>\$ (141)</u>	<u>\$ 527</u>	<u>\$ 5,280</u>
Revenue year-to-year change	(1.6)%	(0.1)%	(5.0)%	(16.1)%	(21.3)%	(4.7)%
Pre-tax income year-to-year change	1.6 %	23.7 %	(1.4)%	(198.1)%	(28.1)%	(5.7)%
Pre-tax income/(loss) margin	31.1 %	7.3 %	3.6 %	(4.1)%	39.4 %	13.3 %
For the six months ended						
June 30, 2018:						
External revenue	\$ 10,586 *	\$ 8,250 *	\$ 14,746 *	\$ 3,676	\$ 799	\$ 38,057 *
Internal revenue	<u>1,741 *</u>	<u>172</u>	<u>310</u>	<u>395</u>	<u>902</u>	<u>3,521 *</u>
Total revenue	<u>\$ 12,327 *</u>	<u>\$ 8,422 *</u>	<u>\$ 15,055 *</u>	<u>\$ 4,072</u>	<u>\$ 1,701</u>	<u>\$ 41,578 *</u>
Pre-tax income/(loss) from continuing operations	<u>\$ 3,709 *</u>	<u>\$ 497 *</u>	<u>\$ 517 *</u>	<u>\$ 143</u>	<u>\$ 734</u>	<u>\$ 5,601 *</u>
Pre-tax income/(loss) margin	30.1 %*	5.9 %*	3.4 %*	3.5 %	43.1 %	13.5 %*

* Recast to conform to 2019 presentation.

Reconciliations to IBM as Reported:

<u>(Dollars in millions)</u>	<u>2019</u>	<u>2018</u>
For the six months ended June 30:		
Revenue:		
Total reportable segments	\$ 39,603	\$ 41,578 *
Other — divested businesses	706	903 *
Other revenue	131	114
Eliminations of internal transactions	<u>(3,097)</u>	<u>(3,521)*</u>
Total consolidated revenue	<u>\$ 37,342</u>	<u>\$ 39,075</u>
Pre-tax income from continuing operations:		
Total reportable segments	\$ 5,280	\$ 5,601 *
Amortization of acquired intangible assets	(343)	(406)
Acquisition-related (charges)/income	(141)	(1)
Non-operating retirement-related (costs)/income	(274)	(796)
Eliminations of internal transactions	(149)	(497)*
Other — divested businesses	502	202 *
Unallocated corporate amounts	<u>(224)</u>	<u>(192)</u>
Total pre-tax income from continuing operations	<u>\$ 4,651</u>	<u>\$ 3,911</u>

* Recast to conform to 2019 presentation.

Notes to Consolidated Financial Statements — (continued)

9. Equity Activity:

Reclassifications and Taxes Related to Items of Other Comprehensive Income

(Dollars in millions) For the three months ended June 30, 2019:	Before Tax Amount	Tax (Expense)/ Benefit	Net of Tax Amount
Other comprehensive income/(loss):			
Foreign currency translation adjustments	\$ 5	\$ 37	\$ 42
Net changes related to available-for-sale securities:			
Unrealized gains/(losses) arising during the period	\$ (2)	\$ 0	\$ (1)
Reclassification of (gains)/losses to other (income) and expense	—	—	—
Total net changes related to available-for-sale securities	<u>\$ (2)</u>	<u>\$ 0</u>	<u>\$ (1)</u>
Unrealized gains/(losses) on cash flow hedges:			
Unrealized gains/(losses) arising during the period	\$ (6)	\$ 2	\$ (4)
Reclassification of (gains)/losses to:			
Cost of services	(20)	5	(15)
Cost of sales	(11)	3	(8)
Cost of financing	25	(6)	18
SG&A expense	(12)	3	(9)
Other (income) and expense	(202)	51	(151)
Interest expense	52	(13)	39
Total unrealized gains/(losses) on cash flow hedges	<u>\$ (175)</u>	<u>\$ 45</u>	<u>\$ (129)</u>
Retirement-related benefit plans⁽¹⁾:			
Net (losses)/gains arising during the period	\$ 116	\$ (25)	\$ 92
Curtailments and settlements	3	0	3
Amortization of prior service (credits)/costs	(3)	0	(3)
Amortization of net (gains)/losses	460	(123)	337
Total retirement-related benefit plans	<u>\$ 576</u>	<u>\$ (147)</u>	<u>\$ 430</u>
Other comprehensive income/(loss)	<u>\$ 405</u>	<u>\$ (64)</u>	<u>\$ 340</u>

(1) These AOCI components are included in the computation of net periodic pension cost. Refer to note 10, "Retirement-Related Benefits," for additional information.

Notes to Consolidated Financial Statements — (continued)

Reclassifications and Taxes Related to Items of Other Comprehensive Income

(Dollars in millions) For the three months ended June 30, 2018:	Before Tax Amount	Tax (Expense)/ Benefit	Net of Tax Amount
Other comprehensive income/(loss):			
Foreign currency translation adjustments	\$ (347)	\$ (158)	\$ (505)
Net changes related to available-for-sale securities:			
Unrealized gains/(losses) arising during the period	\$ 0	\$ 0	\$ 0
Reclassification of (gains)/losses to other (income) and expense	—	—	—
Total net changes related to available-for-sale securities	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>
Unrealized gains/(losses) on cash flow hedges:			
Unrealized gains/(losses) arising during the period	\$ (149)	\$ 38	\$ (111)
Reclassification of (gains)/losses to:			
Cost of services	(9)	2	(7)
Cost of sales	6	(2)	5
Cost of financing*	20	(5)	15
SG&A expense	3	(1)	2
Other (income) and expense	397	(100)	297
Interest expense*	18	(4)	13
Total unrealized gains/(losses) on cash flow hedges	<u>\$ 285</u>	<u>\$ (71)</u>	<u>\$ 214</u>
Retirement-related benefit plans⁽¹⁾:			
Prior service costs/(credits)	\$ 0	\$ 0	\$ 0
Net (losses)/gains arising during the period	82	(23)	59
Curtailments and settlements	6	(2)	4
Amortization of prior service (credits)/costs	(19)	5	(13)
Amortization of net (gains)/losses	741	(207)	534
Total retirement-related benefit plans	<u>\$ 810</u>	<u>\$ (226)</u>	<u>\$ 584</u>
Other comprehensive income/(loss)	<u>\$ 748</u>	<u>\$ (455)</u>	<u>\$ 294</u>

* Reclassified to conform to current period presentation.

(1) These AOCI components are included in the computation of net periodic pension cost. Refer to note 10, "Retirement-Related Benefits," for additional information.

Notes to Consolidated Financial Statements — (continued)

Reclassifications and Taxes Related to Items of Other Comprehensive Income

(Dollars in millions) For the six months ended June 30, 2019:	Before Tax Amount	Tax (Expense)/ Benefit	Net of Tax Amount
Other comprehensive income/(loss):			
Foreign currency translation adjustments	\$ 176	\$ 38	\$ 214
Net changes related to available-for-sale securities:			
Unrealized gains/(losses) arising during the period	\$ (3)	\$ 1	\$ (2)
Reclassification of (gains)/losses to other (income) and expense	—	—	—
Total net changes related to available-for-sale securities	<u>\$ (3)</u>	<u>\$ 1</u>	<u>\$ (2)</u>
Unrealized gains/(losses) on cash flow hedges:			
Unrealized gains/(losses) arising during the period	\$ (359)	\$ 87	\$ (272)
Reclassification of (gains)/losses to:			
Cost of services	(29)	8	(22)
Cost of sales	(30)	8	(21)
Cost of financing	53	(13)	40
SG&A expense	(34)	9	(25)
Other (income) and expense	(115)	29	(86)
Interest expense	86	(22)	64
Total unrealized gains/(losses) on cash flow hedges	<u>\$ (429)</u>	<u>\$ 106</u>	<u>\$ (323)</u>
Retirement-related benefit plans⁽¹⁾:			
Net (losses)/gains arising during the period	\$ 113	\$ (24)	\$ 89
Curtailments and settlements	4	0	4
Amortization of prior service (credits)/costs	(6)	1	(5)
Amortization of net (gains)/losses	924	(252)	671
Total retirement-related benefit plans	<u>\$ 1,035</u>	<u>\$ (275)</u>	<u>\$ 760</u>
Other comprehensive income/(loss)	<u>\$ 779</u>	<u>\$ (131)</u>	<u>\$ 649</u>

(1) These AOCI components are included in the computation of net periodic pension cost. Refer to note 10, "Retirement-Related Benefits," for additional information.

Notes to Consolidated Financial Statements — (continued)

Reclassifications and Taxes Related to Items of Other Comprehensive Income

(Dollars in millions) For the six months ended June 30, 2018:	Before Tax Amount	Tax (Expense)/ Benefit	Net of Tax Amount
Other comprehensive income/(loss):			
Foreign currency translation adjustments	\$ (513)	\$ (106)	\$ (620)
Net changes related to available-for-sale securities:			
Unrealized gains/(losses) arising during the period	\$ (2)	\$ 0	\$ (1)
Reclassification of (gains)/losses to other (income) and expense	0	0	0
Total net changes related to available-for-sale securities	<u>\$ (2)</u>	<u>\$ 0</u>	<u>\$ (1)</u>
Unrealized gains/(losses) on cash flow hedges:			
Unrealized gains/(losses) arising during the period	\$ (89)	\$ 29	\$ (60)
Reclassification of (gains)/losses to:			
Cost of services	(28)	7	(21)
Cost of sales	23	(6)	17
Cost of financing*	38	(9)	28
SG&A expense	21	(6)	15
Other (income) and expense	293	(74)	219
Interest expense*	34	(9)	25
Total unrealized gains/(losses) on cash flow hedges	<u>\$ 292</u>	<u>\$ (68)</u>	<u>\$ 224</u>
Retirement-related benefit plans⁽¹⁾:			
Prior service costs/(credits)	\$ (1)	\$ 0	\$ (1)
Net (losses)/gains arising during the period	84	(23)	61
Curtailments and settlements	6	(2)	4
Amortization of prior service (credits)/costs	(37)	10	(27)
Amortization of net (gains)/losses	1,494	(410)	1,084
Total retirement-related benefit plans	<u>\$ 1,545</u>	<u>\$ (424)</u>	<u>\$ 1,121</u>
Other comprehensive income/(loss)	<u>\$ 1,322</u>	<u>\$ (598)</u>	<u>\$ 724</u>

* Reclassified to conform to current period presentation.

(1) These AOCI components are included in the computation of net periodic pension cost. Refer to note 10, "Retirement-Related Benefits," for additional information.

Accumulated Other Comprehensive Income/(Loss) (net of tax)

(Dollars in millions)	Net Unrealized Gains/(Losses) on Cash Flow Hedges	Foreign Currency Translation Adjustments*	Net Change Retirement- Related Benefit Plans	Net Unrealized Gains/(Losses) on Available- For-Sale Securities	Accumulated Other Comprehensive Income/(Loss)
January 1, 2019	\$ 284	\$ (3,690)	\$ (26,083)	\$ 0	\$ (29,490)
Other comprehensive income before reclassifications	(272)	214	89	(2)	29
Amount reclassified from accumulated other comprehensive income	(51)	—	671	—	620
Total change for the period	<u>\$ (323)</u>	<u>\$ 214</u>	<u>\$ 760</u>	<u>\$ (2)</u>	<u>\$ 649</u>
June 30, 2019	<u>\$ (39)</u>	<u>\$ (3,477)</u>	<u>\$ (25,323)</u>	<u>\$ (2)</u>	<u>\$ (28,841)</u>

* Foreign currency translation adjustments are presented gross except for any associated hedges which are presented net of tax.

Notes to Consolidated Financial Statements — (continued)

<u>(Dollars in millions)</u>	<u>Net Unrealized Gains/(Losses) on Cash Flow Hedges</u>	<u>Foreign Currency Translation Adjustments*</u>	<u>Net Change Retirement- Related Benefit Plans</u>	<u>Net Unrealized Gains/(Losses) on Available- For-Sale Securities</u>	<u>Accumulated Other Comprehensive Income/(Loss)</u>
January 1, 2018	\$ 35	\$ (2,834)	\$ (23,796)	\$ 3	\$ (26,592)
Cumulative effect of a change in accounting principle**	<u>5</u>	<u>46</u>	<u>(2,471)</u>	<u>(2)</u>	<u>(2,422)</u>
Other comprehensive income before reclassifications	(60)	(620)	64	(1)	(617)
Amount reclassified from accumulated other comprehensive income	284	—	1,057	—	1,340
Total change for the period	<u>\$ 224</u>	<u>\$ (620)</u>	<u>\$ 1,121</u>	<u>\$ (1)</u>	<u>\$ 724</u>
June 30, 2018	<u>\$ 264</u>	<u>\$ (3,408)</u>	<u>\$ (25,146)</u>	<u>\$ 0</u>	<u>\$ (28,290)</u>

* Foreign currency translation adjustments are presented gross except for any associated hedges which are presented net of tax.

** Reflects the adoption of the FASB guidance on stranded tax effects, hedging and financial instruments. Refer to note 2, "Accounting Changes."

Stock Repurchases

The Board of Directors authorizes the company to repurchase IBM common stock. At June 30, 2019, \$2,123 million of Board common stock repurchase authorization was available. The company had previously announced its intent to suspend its share repurchase program in 2020 and 2021 in order to reduce debt that it had issued to finance the Red Hat acquisition. The share repurchase program was suspended on July 9, 2019, which was earlier than the company previously stated.

10. Retirement-Related Benefits:

The company offers defined benefit pension plans, defined contribution pension plans, as well as nonpension postretirement plans primarily consisting of retiree medical benefits. The following tables provide the pre-tax cost for all retirement-related plans.

<u>(Dollars in millions)</u>			<u>Yr. to Yr. Percent Change</u>
<u>For the three months ended June 30:</u>	<u>2019</u>	<u>2018</u>	
Retirement-related plans — cost			
Defined benefit and contribution pension plans — cost	\$ 441	\$ 709	(37.7)%
Nonpension postretirement plans — cost	<u>53</u>	<u>49</u>	<u>7.3</u>
Total	<u>\$ 494</u>	<u>\$ 758</u>	<u>(34.8)%</u>

<u>(Dollars in millions)</u>			<u>Yr. to Yr. Percent Change</u>
<u>For the six months ended June 30:</u>	<u>2019</u>	<u>2018</u>	
Retirement-related plans — cost			
Defined benefit and contribution pension plans — cost	\$ 878	\$ 1,447	(39.3)%
Nonpension postretirement plans — cost	<u>107</u>	<u>100</u>	<u>6.9</u>
Total	<u>\$ 985</u>	<u>\$ 1,546</u>	<u>(36.3)%</u>

The following tables provide the components of the cost/(income) for the company's pension plans.

Notes to Consolidated Financial Statements — (continued)

Cost/(Income) of Pension Plans

(Dollars in millions) For the three months ended June 30:	U.S. Plans		Non-U.S. Plans	
	2019	2018	2019	2018
Service cost	\$ —	\$ —	\$ 93	\$ 101
Interest cost ⁽¹⁾	469	429	206	211
Expected return on plan assets ⁽¹⁾	(650)	(675)	(396)	(339)
Amortization of prior service costs/(credits) ⁽¹⁾	4	4	(7)	(21)
Recognized actuarial losses ⁽¹⁾	139	378	312	353
Curtailments and settlements ⁽¹⁾	—	—	3	6
Multi-employer plans	—	—	8	10
Other costs/(credits) ⁽¹⁾	—	—	6	4
Total net periodic pension (income)/cost of defined benefit plans	\$ (37)	\$ 136	\$ 225	\$ 325
Cost of defined contribution plans	140	145	114	103
Total defined benefit and contribution pension plans cost recognized in the Consolidated Statement of Earnings	\$ 103	\$ 281	\$ 339	\$ 428

(1) These components of net periodic pension cost are included in other (income) and expense in the Consolidated Statement of Earnings.

(Dollars in millions) For the six months ended June 30:	U.S. Plans		Non-U.S. Plans	
	2019	2018	2019	2018
Service cost	\$ —	\$ —	\$ 185	\$ 205
Interest cost ⁽¹⁾	941	859	413	426
Expected return on plan assets ⁽¹⁾	(1,300)	(1,351)	(795)	(687)
Amortization of prior service costs/(credits) ⁽¹⁾	8	8	(13)	(42)
Recognized actuarial losses ⁽¹⁾	279	763	626	712
Curtailments and settlements ⁽¹⁾	—	—	4	6
Multi-employer plans	—	—	17	20
Other costs/(credits) ⁽¹⁾	—	—	11	11
Total net periodic pension (income)/cost of defined benefit plans	\$ (71)	\$ 279	\$ 449	\$ 651
Cost of defined contribution plans	289	305	212	211
Total defined benefit and contribution pension plans cost recognized in the Consolidated Statement of Earnings	\$ 218	\$ 584	\$ 661	\$ 863

(1) These components of net periodic pension cost are included in other (income) and expense in the Consolidated Statement of Earnings.

As of 2019, substantially all the plan participants in the U.S. Qualified IBM Personal Pension Plan (PPP) are considered inactive. As required by U.S. GAAP, this resulted in a change in the amortization period of unrecognized actuarial losses to the average remaining life expectancy of inactive plan participants, which was 18 years as of December 31, 2018. Recognized actuarial losses decreased by approximately \$240 million and \$480 million for the three and six months ended June 30, 2019, respectively, compared to the corresponding periods in the prior year, primarily driven by the change in amortization period. There was no impact to funded status, retiree benefit payments or funding requirements of the U.S. Qualified PPP as a result of this change.

In 2019, the company expects to contribute approximately \$400 million to its non-U.S. defined benefit and multi-employer plans, the largest of which will be contributed to the defined benefit pension plans in Japan, Spain and Belgium. This amount generally represents the legally mandated minimum contribution. Total net contributions to the non-U.S. plans in the first six months of 2019 were \$128 million, of which \$63 million was in cash and \$65 million in U.S. Treasury securities. Total contributions to the non-U.S. plans in the first six months of 2018 were \$237 million, of which \$80 million was in cash and \$157 million in U.S. Treasury securities. The contribution of U.S. Treasury securities is considered a non-cash transaction in the Consolidated Statement of Cash Flows.

Notes to Consolidated Financial Statements — (continued)

The following tables provide the components of the cost for the company's nonpension postretirement plans.

Cost of Nonpension Postretirement Plans

(Dollars in millions) For the three months ended June 30:	U.S. Plan		Non-U.S. Plans	
	2019	2018	2019	2018
Service cost	\$ 3	\$ 3	\$ 1	\$ 1
Interest cost ⁽¹⁾	36	33	12	11
Expected return on plan assets ⁽¹⁾	—	—	(1)	(1)
Amortization of prior service costs/(credits) ⁽¹⁾	(1)	(2)	0	0
Recognized actuarial losses ⁽¹⁾	0	2	3	1
Curtailments and settlements ⁽¹⁾	—	—	—	0
Total nonpension postretirement plans cost recognized in Consolidated Statement of Earnings	<u>\$ 38</u>	<u>\$ 37</u>	<u>\$ 15</u>	<u>\$ 12</u>

(1) These components of net periodic pension cost are included in other (income) and expense in the Consolidated Statement of Earnings.

(Dollars in millions) For the six months ended June 30:	U.S. Plan		Non-U.S. Plans	
	2019	2018	2019	2018
Service cost	\$ 5	\$ 6	\$ 3	\$ 3
Interest cost ⁽¹⁾	73	66	25	24
Expected return on plan assets ⁽¹⁾	—	—	(3)	(3)
Amortization of prior service costs/(credits) ⁽¹⁾	(1)	(4)	0	0
Recognized actuarial losses ⁽¹⁾	0	5	5	3
Curtailments and settlements ⁽¹⁾	—	—	0	0
Total nonpension postretirement plans cost recognized in Consolidated Statement of Earnings	<u>\$ 77</u>	<u>\$ 74</u>	<u>\$ 30</u>	<u>\$ 26</u>

(1) These components of net periodic pension cost are included in other (income) and expense in the Consolidated Statement of Earnings.

The company contributed \$292 million in U.S. Treasury securities to the U.S. nonpension postretirement benefit and active employee medical trusts during the six months ended June 30, 2019, and \$215 million in U.S. Treasury securities during the six months ended June 30, 2018. The contribution of U.S. Treasury securities is considered a non-cash transaction in the Consolidated Statement of Cash Flows.

Notes to Consolidated Financial Statements — (continued)

11. Acquisitions/Divestitures:

Acquisitions

The company did not enter into any acquisition transactions during the six months ended June 30, 2019.

Red Hat - On July 9, 2019, the company completed the acquisition of all of the outstanding shares of Red Hat. Red Hat's vast portfolio of open-source technologies, innovative cloud development platform and developer community, combined with IBM's innovative hybrid cloud technology, industry expertise, and commitment to data, trust and security, will deliver the hybrid multicloud capabilities required to address the next chapter of cloud implementations as well as accelerate the company's growth. Red Hat's business model is based upon open-source software, which is an alternative to proprietary software in relation to the development and licensing of the commercial software code. For Red Hat's open-source software subscriptions, no revenue is recognized upfront from the licensing of the code itself, but rather, is recognized over time throughout the contract term as control of the promised product or service is transferred to the customer.

On the acquisition date, Red Hat shareholders were entitled to receive \$190 per share in cash, which represented a total equity value of approximately \$34 billion and was remitted to the paying agent. The company funded the transaction through a combination of cash on hand and proceeds from debt issuances. Refer to note 13, "Borrowings," for additional details on the financing of the transaction. The initial accounting for the Red Hat acquisition is not complete due to the limited amount of time since the acquisition date. In an acquisition, U.S. GAAP requires the company to record all assets acquired and liabilities assumed at the acquisition date fair value. This includes the acquired deferred revenue balance. This will result in a non-cash adjustment to the acquired deferred revenue balance and a reduction to reported revenue post-closing. The level of adjustment will reflect the high margin profile of Red Hat's business.

Divestitures

Select IBM Software Products – On December 6, 2018, IBM and HCL Technologies Limited (HCL) announced a definitive agreement, in which HCL would acquire select standalone Cloud and Cognitive Software products for \$1,775 million, inclusive of \$150 million of contingent consideration. The software products in-scope include AppScan, BigFix, Unica, Commerce, Portal, Notes, Domino and Connections. The transaction included commercial software, intellectual property and services offerings. In addition, the transaction includes transition services for IT and other services. The initial terms of the transition services are generally less than one year, however, HCL can renew certain services up to an additional year.

The transaction closed on June 30, 2019. The company received cash of \$812 million at closing and expects to receive an additional \$813 million within 12 months of closing. The company recognized a pre-tax gain on the sale of \$556 million on June 30, 2019 which was recorded in other (income) and expense in the Consolidated Statement of Earnings. The total gain on sale may change in the future due to contingent consideration or changes in other transaction estimates, however, material changes are not expected.

Select IBM Marketing Platform and Commerce Offerings – On April 4, 2019, IBM and Centerbridge Partners, L.P. (Centerbridge) announced a definitive agreement, in which Centerbridge would acquire select marketing platform and commerce offerings from IBM, including Customer Experience Analytics, Content Hub and Marketing Assistant, among others. The transaction included commercial software and services offerings. In addition, the company will provide Centerbridge with transition services including IT, supply chain management, and other services, with initial terms generally of nine months, with renewal options up to nine months. Upon closing, Centerbridge announced that this business would be re-branded under the name Acoustic. The closing completed for the U.S. on June 30, 2019. The company expects a subsequent closing for the remaining countries to occur within 12 months. The timing of the subsequent closing is subject to change as more information becomes available. The company received a net cash payment of \$240 million at the U.S. closing and expects to receive an additional \$150 million within 36 months.

Notes to Consolidated Financial Statements — (continued)

The company recognized an immaterial pre-tax gain on the sale on June 30, 2019. The amount of the pre-tax gain for the remaining countries will not be determinable until the valuation of the final balance sheet transferred is completed, however, it is not expected to be material.

Seterus – On January 3, 2019, IBM and Mr. Cooper Group announced a definitive agreement, in which Mr. Cooper Group acquired IBM’s Seterus home mortgage servicing platform business. The transaction closed in the first quarter of 2019. The financial terms related to this transaction were not material.

The above three divested businesses are reported in other – divested businesses. Refer to note 8, “Segments,” for additional information.

Other – In the fourth quarter of 2018, the Global Financing segment entered into a definitive agreement to sell certain commercial financing capabilities and assign a number of its commercial financing contracts, excluding related receivables which will be collected as they become due in the normal course of business. These commercial financing capabilities and contracts have been reported within IBM’s Global Financing segment. The transaction closed in the first quarter of 2019. The financial terms related to this transaction were not material.

12. Intangible Assets Including Goodwill:

Intangible Assets

The following table details the company's intangible asset balances by major asset class.

(Dollars in millions) <u>Intangible asset class</u>	At June 30, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Capitalized software	\$ 1,621	\$ (668)	\$ 953
Client relationships	1,876	(1,094)	782
Completed technology	1,903	(1,201)	701
Patents/trademarks	622	(358)	263
Other*	56	(27)	28
Total	<u>\$ 6,077</u>	<u>\$ (3,349)</u>	<u>\$ 2,728</u>

* Other intangibles are primarily acquired proprietary and non-proprietary business processes, methodologies and systems.

(Dollars in millions) <u>Intangible asset class</u>	At December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Capitalized software	\$ 1,568	\$ (629)	\$ 939
Client relationships	2,068	(1,123)	945
Completed technology	2,156	(1,296)	860
Patents/trademarks	641	(330)	311
Other*	56	(23)	32
Total	<u>\$ 6,489</u>	<u>\$ (3,402)</u>	<u>\$ 3,087</u>

* Other intangibles are primarily acquired proprietary and non-proprietary business processes, methodologies and systems.

The net carrying amount of intangible assets decreased \$360 million during the first six months of 2019, primarily due to intangible asset amortization, partially offset by additions resulting from capitalized software. The aggregate intangible amortization expense was \$307 million and \$610 million for the second quarter and first six months of 2019, respectively, versus \$342 million and \$683 million for the second quarter and first six months of 2018, respectively. In

Notes to Consolidated Financial Statements — (continued)

addition, in the first six months of 2019, the company retired \$433 million of fully amortized intangible assets, impacting both the gross carrying amount and accumulated amortization by this amount.

The amortization expense for each of the five succeeding years relating to intangible assets currently recorded in the Consolidated Statement of Financial Position is estimated to be the following at June 30, 2019:

(Dollars in millions)	Capitalized Software	Acquired Intangibles	Total
2019 (for Q3-Q4)	\$ 261	\$ 323	\$ 584
2020	410	550	961
2021	248	445	693
2022	33	382	415
2023	—	64	64

Goodwill

The change in the goodwill balances by segment, for the six months ended June 30, 2019 and for the year ended December 31, 2018 are as follows:

(Dollars in millions) Segment	Balance 1/1/2019	Goodwill Additions	Purchase Price Adjustments	Divestitures	Foreign Currency Translation And Other Adjustments*	Balance 6/30/2019
Cloud & Cognitive Software	\$ 24,594	\$ —	\$ 0	\$ —	\$ 89	\$ 24,683
Global Business Services	4,711	—	1	—	7	4,718
Global Technology Services	3,988	—	—	—	40	4,027
Systems	1,847	—	—	—	7	1,855
Other — divested businesses	1,126	—	—	(1,126)	—	—
Total	<u>\$ 36,265</u>	<u>\$ —</u>	<u>\$ 1</u>	<u>\$ (1,126)</u>	<u>\$ 143</u>	<u>\$ 35,284</u>

* Primarily driven by foreign currency translation.

(Dollars in millions) Segment	Balance 1/1/2018	Goodwill Additions	Purchase Price Adjustments	Divestitures	Foreign Currency Translation And Other Adjustments**	Balance 12/31/2018
Cloud & Cognitive Software*	\$ 24,973	\$ 9	\$ 0	\$ (1)	\$ (388)	\$ 24,594
Global Business Services*	4,782	24	(3)	—	(92)	4,711
Global Technology Services*	4,044	—	0	—	(56)	3,988
Systems	1,862	—	0	—	(15)	1,847
Other — divested businesses*	1,127	1	0	0	(2)	1,126
Total	<u>\$ 36,788</u>	<u>\$ 34</u>	<u>\$ (3)</u>	<u>\$ (1)</u>	<u>\$ (553)</u>	<u>\$ 36,265</u>

* Recast to conform to 2019 presentation.

** Primarily driven by foreign currency translation.

There were no goodwill impairment losses recorded during the first six months of 2019 or the full year of 2018 and the company has no accumulated impairment losses.

Purchase price adjustments recorded in the first six months of 2019 and full year 2018 were related to acquisitions that were still subject to the measurement period that ends at the earlier of 12 months from the acquisition date or when

Notes to Consolidated Financial Statements — (continued)

information becomes available. Net purchase price adjustments recorded during the first six months of 2019 and full year 2018 were not material.

13. Borrowings:

Short-Term Debt

<u>(Dollars in millions)</u>	<u>At June 30, 2019</u>	<u>At December 31, 2018</u>
Commercial paper	\$ 7,871	\$ 2,995
Short-term loans	192	161
Long-term debt — current maturities	6,530	7,051
Total	\$ 14,594	\$ 10,207

The commercial paper increase of \$4.9 billion from December 31, 2018 was primarily driven by new issuances used to partially fund the Red Hat acquisition. For further information on the financing of the Red Hat acquisition, see the long-term debt section below.

The weighted-average interest rate for commercial paper at June 30, 2019 and December 31, 2018 was 2.5 percent at both periods. The weighted-average interest rate for short-term loans was 5.0 percent and 4.3 percent at June 30, 2019 and December 31, 2018, respectively.

Notes to Consolidated Financial Statements — (continued)

Long-Term Debt

Pre-Swap Borrowing

<u>(Dollars in millions)</u>	<u>Maturities</u>	<u>Balance 6/30/2019</u>	<u>Balance 12/31/2018</u>
U.S. dollar debt (weighted-average interest rate at June 30, 2019):*			
4.3%	2019	\$ 2,155	\$ 5,465
2.5%	2020	4,331	4,344
2.9%	2021	8,537	5,529
2.7%	2022	6,273	3,536
3.2%	2023	2,399	2,428
3.2%	2024	5,059	2,037
6.9%	2025	611	600
3.3%	2026	4,350	1,350
4.7%	2027	969	969
6.5%	2028	313	313
3.5%	2029	3,250	—
3.7%	2030	33	32
5.9%	2032	600	600
8.0%	2038	83	83
4.5%	2039	2,745	745
4.0%	2042	1,107	1,107
7.0%	2045	27	27
4.7%	2046	650	650
4.3%	2049	3,000	—
7.1%	2096	316	316
		<u>\$ 46,808</u>	<u>\$ 30,131</u>
Other currencies (weighted-average interest rate at June 30, 2019, in parentheses):*			
Euros (1.3%)	2019–2031	\$ 15,669	\$ 10,011
Pound sterling (2.7%)	2020–2022	1,336	1,338
Japanese yen (0.2%)	2022–2026	1,349	1,325
Other (6.3%)	2020–2022	407	391
		<u>\$ 65,569</u>	<u>\$ 43,196</u>
Less: net unamortized discount		903	802
Less: net unamortized debt issuance costs		156	76
Add: fair value adjustment**		465	337
		<u>\$ 64,975</u>	<u>\$ 42,656</u>
Less: current maturities		<u>6,530</u>	<u>7,051</u>
Total		<u>\$ 58,445</u>	<u>\$ 35,605</u>

* Includes notes, debentures, bank loans, secured borrowings and finance lease obligations.

** The portion of the company's fixed-rate debt obligations that is hedged is reflected in the Consolidated Statement of Financial Position as an amount equal to the sum of the debt's carrying value and a fair value adjustment representing changes in the fair value of the hedged debt obligations attributable to movements in benchmark interest rates.

There are no debt securities issued and outstanding by IBM International Group Capital LLC, which is an indirect, 100 percent owned finance subsidiary of IBM, the parent. Any debt securities issued by IBM International Group Capital LLC would be fully and unconditionally guaranteed by the parent.

The company's indenture governing its debt securities and its various credit facilities each contain significant covenants which obligate the company to promptly pay principal and interest, limit the aggregate amount of secured indebtedness and sale and leaseback transactions to 10 percent of the company's consolidated net tangible assets, and

Notes to Consolidated Financial Statements — (continued)

restrict the company's ability to merge or consolidate unless certain conditions are met. The credit facilities also include a covenant on the company's consolidated net interest expense ratio, which cannot be less than 2.20 to 1.0, as well as a cross default provision with respect to other defaulted indebtedness of at least \$500 million.

The company is in compliance with all of its significant debt covenants and provides periodic certifications to its lenders. The failure to comply with its debt covenants could constitute an event of default with respect to the debt to which such provisions apply. If certain events of default were to occur, the principal and interest on the debt to which such event of default applied would become immediately due and payable.

In the fourth quarter of 2018, upon the company's announcement of its intent to acquire Red Hat, IBM entered into a commitment letter under which certain banks committed to provide the company with a 364-day unsecured bridge term loan facility in an aggregate principal amount of up to \$20 billion to fund the acquisition. The company also entered into a fee letter in connection with the 364-day bridge facility, under which the company incurred \$60 million in fees. These fees were capitalized and were fully amortized to SG&A in the Consolidated Statement of Earnings as of June 30, 2019.

On May 15, 2019, the company issued an aggregate of \$20 billion of indebtedness in the following eight tranches: \$1.5 billion of 2-year floating rate notes priced at 3 month LIBOR plus 40 basis points, \$1.5 billion of 2-year fixed rate notes with a 2.8 percent coupon, \$2.75 billion of 3-year fixed rate notes with a 2.85 percent coupon, \$3.0 billion of 5-year fixed rate notes with a 3.0 percent coupon, \$3.0 billion of 7-year fixed rate notes with a 3.3 percent coupon, \$3.25 billion of 10-year fixed rate notes with a 3.5 percent coupon, \$2.0 billion of 20-year fixed rate notes with a 4.15 percent coupon and \$3.0 billion of 30-year fixed rate notes with a 4.25 percent coupon. Following receipt of the net proceeds from this multi-tranche debt offering, on May 15, 2019, and in accordance with the terms of the commitment letter, IBM notified the banks of IBM's termination of all commitments under the commitment letter. There were no early termination penalties. The proceeds from these debt issuances were primarily used for the acquisition of Red Hat. For additional information on this transaction, see note 11, "Acquisitions/Divestitures."

Additionally, the long-term debt table above includes Euro bonds that were issued in the first quarter of 2019 to partially finance the acquisition of Red Hat upon closing.

Pre-swap annual contractual obligations of long-term debt outstanding at June 30, 2019, are as follows:

(Dollars in millions)	Total
2019 (for Q3-Q4)	\$ 3,486
2020	7,413
2021	9,742
2022	7,104
2023	5,395
2024 and beyond	32,429
Total	<u>\$ 65,569</u>

Interest on Debt

(Dollars in millions)	2019	2018
For the six months ended June 30:		
Cost of financing	\$ 343	\$ 375
Interest expense	558	338
Interest capitalized	3	3
Total interest paid and accrued	<u>\$ 904</u>	<u>\$ 717</u>

Notes to Consolidated Financial Statements — (continued)

Lines of Credit

On July 18, 2019, the company extended the maturity date of its existing \$10.25 billion Five-Year Credit Agreement. In addition, the company and IBM Credit LLC entered into a new \$2.5 billion 364-day Credit Agreement to replace the existing \$2.5 billion 364-day Credit Agreement, and also extended the maturity date of the existing \$2.5 billion Three-Year Credit Agreement. The new maturity dates for the Three-Year and Five-Year Credit Agreements are July 20, 2022 and July 20, 2024, respectively. Each of the facility sizes remain unchanged. As of June 30, 2019, there were no borrowings by the company, or its subsidiaries, under the Credit Facilities.

14. Contingencies:

As a company with a substantial employee population and with clients in more than 175 countries, IBM is involved, either as plaintiff or defendant, in a variety of ongoing claims, demands, suits, investigations, tax matters and proceedings that arise from time to time in the ordinary course of its business. The company is a leader in the information technology industry and, as such, has been and will continue to be subject to claims challenging its IP rights and associated products and offerings, including claims of copyright and patent infringement and violations of trade secrets and other IP rights. In addition, the company enforces its own IP against infringement, through license negotiations, lawsuits or otherwise. Also, as is typical for companies of IBM's scope and scale, the company is party to actions and proceedings in various jurisdictions involving a wide range of labor and employment issues (including matters related to contested employment decisions, country-specific labor and employment laws, and the company's pension, retirement and other benefit plans), as well as actions with respect to contracts, product liability, securities, foreign operations, competition law and environmental matters. These actions may be commenced by a number of different parties, including competitors, clients, current or former employees, government and regulatory agencies, stockholders and representatives of the locations in which the company does business. Some of the actions to which the company is party may involve particularly complex technical issues, and some actions may raise novel questions under the laws of the various jurisdictions in which these matters arise.

The company records a provision with respect to a claim, suit, investigation or proceeding when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Any recorded liabilities, including any changes to such liabilities for the quarter ended June 30, 2019 were not material to the Consolidated Financial Statements.

In accordance with the relevant accounting guidance, the company provides disclosures of matters for which the likelihood of material loss is at least reasonably possible. In addition, the company also discloses matters based on its consideration of other matters and qualitative factors, including the experience of other companies in the industry, and investor, customer and employee relations considerations.

With respect to certain of the claims, suits, investigations and proceedings discussed herein, the company believes at this time that the likelihood of any material loss is remote, given, for example, the procedural status, court rulings, and/or the strength of the company's defenses in those matters. With respect to the remaining claims, suits, investigations and proceedings discussed in this note, except as specifically discussed herein, the company is unable to provide estimates of reasonably possible losses or range of losses, including losses in excess of amounts accrued, if any, for the following reasons. Claims, suits, investigations and proceedings are inherently uncertain, and it is not possible to predict the ultimate outcome of these matters. It is the company's experience that damage amounts claimed in litigation against it are unreliable and unrelated to possible outcomes, and as such are not meaningful indicators of the company's potential liability. Further, the company is unable to provide such an estimate due to a number of other factors with respect to these claims, suits, investigations and proceedings, including considerations of the procedural status of the matter in question, the presence of complex or novel legal theories, and/or the ongoing discovery and development of information important to the matters. The company reviews claims, suits, investigations and proceedings at least quarterly, and decisions are made with respect to recording or adjusting provisions and disclosing reasonably possible losses or range of losses (individually or in the aggregate), to reflect the impact and status of settlement discussions, discovery, procedural and substantive rulings, reviews by counsel and other information pertinent to a particular matter.

Notes to Consolidated Financial Statements — (continued)

Whether any losses, damages or remedies finally determined in any claim, suit, investigation or proceeding could reasonably have a material effect on the company's business, financial condition, results of operations or cash flows will depend on a number of variables, including: the timing and amount of such losses or damages; the structure and type of any such remedies; the significance of the impact any such losses, damages or remedies may have in the Consolidated Financial Statements; and the unique facts and circumstances of the particular matter that may give rise to additional factors. While the company will continue to defend itself vigorously, it is possible that the company's business, financial condition, results of operations or cash flows could be affected in any particular period by the resolution of one or more of these matters.

The following is a summary of the more significant legal matters involving the company.

The company is a defendant in an action filed on March 6, 2003 in state court in Salt Lake City, Utah by the SCO Group (SCO v. IBM). The company removed the case to Federal Court in Utah. Plaintiff is an alleged successor in interest to some of AT&T's UNIX IP rights, and alleges copyright infringement, unfair competition, interference with contract and breach of contract with regard to the company's distribution of AIX and Dynix and contribution of code to Linux and the company has asserted counterclaims. On September 14, 2007, plaintiff filed for bankruptcy protection, and all proceedings in this case were stayed. The court in another suit, the SCO Group, Inc. v. Novell, Inc., held a trial in March 2010. The jury found that Novell is the owner of UNIX and UnixWare copyrights; the judge subsequently ruled that SCO is obligated to recognize Novell's waiver of SCO's claims against IBM and Sequent for breach of UNIX license agreements. On August 30, 2011, the Tenth Circuit Court of Appeals affirmed the district court's ruling and denied SCO's appeal of this matter. In June 2013, the Federal Court in Utah granted SCO's motion to reopen the SCO v. IBM case. In February 2016, the Federal Court ruled in favor of IBM on all of SCO's remaining claims, and SCO appealed. On October 30, 2017, the Tenth Circuit Court of Appeals affirmed the dismissal of all but one of SCO's remaining claims, which was remanded to the Federal Court in Utah.

On May 13, 2010, IBM and the State of Indiana (acting on behalf of the Indiana Family and Social Services Administration) sued one another in a dispute over a 2006 contract regarding the modernization of social service program processing in Indiana. After six weeks of trial, on July 18, 2012, the Indiana Superior Court in Marion County rejected the State's claims in their entirety and awarded IBM \$52 million plus interest and costs. On February 13, 2014, the Indiana Court of Appeals reversed portions of the trial judge's findings, found IBM in material breach, and ordered the case remanded to the trial judge to determine the State's damages, if any. The Indiana Court of Appeals also affirmed approximately \$50 million of the trial court's award of damages to IBM. On March 22, 2016, the Indiana Supreme Court affirmed the outcome of the Indiana Court of Appeals and remanded the case to the Indiana Superior Court. On August 7, 2017, the Indiana Superior Court awarded the State \$128 million, which it then offset against IBM's previously affirmed award of \$50 million, resulting in a \$78 million award to the State, plus interest. On September 28, 2018, the Indiana Court of Appeals affirmed the Superior Court's \$78 million award to the State, but reversed the Superior Court by awarding IBM interest on its previously affirmed \$50 million award. On June 26, 2019, the Indiana Supreme Court reversed the Indiana Court of Appeals' award of interest to IBM, but otherwise affirmed the Superior Court's and the Court of Appeals' awards. IBM has petitioned the Indiana Supreme Court for rehearing. The matter remains pending.

On March 9, 2017, the Commonwealth of Pennsylvania's Department of Labor and Industry sued IBM in Pennsylvania state court regarding a 2006 contract for the development of a custom software system to manage the Commonwealth's unemployment insurance benefits programs. The matter is pending in a Pennsylvania court.

Following the 2017 final judgment of the Appeal Court in London holding that IBM UK acted lawfully in 2010 in closing its UK defined benefit plans to future accruals for most participants and in implementing a new retirement policy, the Employment Tribunal in Southampton UK is expected to address approximately 290 individual actions alleging constructive dismissal and age discrimination brought against IBM UK in 2010 by employees who left the company at that time. The individual actions were previously stayed.

In May 2015, a putative class action was commenced in the United States District Court for the Southern District of New York related to the company's October 2014 announcement that it was divesting its global commercial

Notes to Consolidated Financial Statements — (continued)

semiconductor technology business, alleging violations of the Employee Retirement Income Security Act (ERISA). Management's Retirement Plans Committee and three current or former IBM executives are named as defendants. On September 29, 2017, the Court granted the defendants' motion to dismiss the first amended complaint. On December 10, 2018, the Second Circuit Court of Appeals reversed the District Court order. On June 3, 2019, the Supreme Court of the United States granted defendants' request to hear the case.

The company is party to, or otherwise involved in, proceedings brought by U.S. federal or state environmental agencies under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), known as "Superfund," or laws similar to CERCLA. Such statutes require potentially responsible parties to participate in remediation activities regardless of fault or ownership of sites. The company is also conducting environmental investigations, assessments or remediations at or in the vicinity of several current or former operating sites globally pursuant to permits, administrative orders or agreements with country, state or local environmental agencies, and is involved in lawsuits and claims concerning certain current or former operating sites.

The company is also subject to ongoing tax examinations and governmental assessments in various jurisdictions. Along with many other U.S. companies doing business in Brazil, the company is involved in various challenges with Brazilian tax authorities regarding non-income tax assessments and non-income tax litigation matters. The total potential amount related to all these matters for all applicable years is approximately \$950 million. The company believes it will prevail on these matters and that this amount is not a meaningful indicator of liability.

15. Commitments:

The company's extended lines of credit to third-party entities include unused amounts of \$4,783 million and \$7,368 million at June 30, 2019 and December 31, 2018, respectively. A portion of these amounts was available to the company's business partners to support their working capital needs. The decrease reflects the company's wind down of its OEM IT commercial financing operations. In addition, the company has committed to provide future financing to its clients in connection with client purchase agreements for approximately \$5,033 million and \$4,432 million at June 30, 2019 and December 31, 2018, respectively.

The company has applied the guidance requiring a guarantor to disclose certain types of guarantees, even if the likelihood of requiring the guarantor's performance is remote. The following is a description of arrangements in which the company is the guarantor.

The company is a party to a variety of agreements pursuant to which it may be obligated to indemnify the other party with respect to certain matters. Typically, these obligations arise in the context of contracts entered into by the company, under which the company customarily agrees to hold the party harmless against losses arising from a breach of representations and covenants related to such matters as title to the assets sold, certain intellectual property (IP) rights, specified environmental matters, third-party performance of nonfinancial contractual obligations and certain income taxes. In each of these circumstances, payment by the company is conditioned on the other party making a claim pursuant to the procedures specified in the particular contract, the procedures of which typically allow the company to challenge the other party's claims. While typically indemnification provisions do not include a contractual maximum on the company's payment, the company's obligations under these agreements may be limited in terms of time and/or nature of claim, and in some instances, the company may have recourse against third parties for certain payments made by the company.

It is not possible to predict the maximum potential amount of future payments under these or similar agreements due to the conditional nature of the company's obligations and the unique facts and circumstances involved in each particular agreement. Historically, payments made by the company under these agreements have not had a material effect on the company's business, financial condition or results of operations.

In addition, the company guarantees certain loans and financial commitments. The maximum potential future payment under these financial guarantees was \$25 million and \$26 million at June 30, 2019 and December 31, 2018,

Notes to Consolidated Financial Statements — (continued)

respectively. The fair value of the guarantees recognized in the Consolidated Statement of Financial Position is not material.

Changes in the company's warranty liability for standard warranties and deferred income for extended warranty are presented in the following tables.

Standard Warranty Liability

(Dollars in millions)	2019	2018
Balance at January 1	\$ 118	\$ 152
Accruals recorded in first quarter	19 *	25
Accrual adjustments to reflect actual experience	(1)*	(14)
Charges incurred in first quarter	(29)*	(32)
Balance at March 31	107	130
Current period accruals	26	37
Accrual adjustments to reflect actual experience	0	(9)
Charges incurred in current period	(30)	(31)
Balance at June 30	<u>\$ 103</u>	<u>\$ 126</u>

* Revised grossed-up amounts to conform to current presentation.

Extended Warranty Liability

(Dollars in millions)	2019	2018
Aggregate deferred revenue at January 1	\$ 533	\$ 566
Revenue deferred for new extended warranty contracts	81	111
Amortization of deferred revenue	(128)	(134)
Other*	0	(9)
Aggregate deferred revenue at June 30	<u>\$ 486</u>	<u>\$ 534</u>
Current portion	\$ 225	\$ 254
Noncurrent portion	\$ 260	\$ 280

* Other primarily consists of foreign currency translation adjustments.

Notes to Consolidated Financial Statements — (continued)

16. Earnings Per Share of Common Stock:

The following tables provide the computation of basic and diluted earnings per share of common stock for the three and six months ended June 30, 2019 and 2018.

	For the Three Months Ended	
	June 30, 2019	June 30, 2018
Number of shares on which basic earnings per share is calculated:		
Weighted-average shares outstanding during period	886,273,682	915,064,434
Add — Incremental shares under stock-based compensation plans	3,281,570	2,882,043
Add — Incremental shares associated with contingently issuable shares	1,276,549	1,452,129
Number of shares on which diluted earnings per share is calculated	<u>890,831,801</u>	<u>919,398,606</u>
Income from continuing operations (millions)	\$ 2,499	\$ 2,402
Income/(loss) from discontinued operations, net of tax (millions)	(1)	1
Net income on which basic earnings per share is calculated (millions)	<u>\$ 2,498</u>	<u>\$ 2,404</u>
Income from continuing operations (millions)	\$ 2,499	\$ 2,402
Net income applicable to contingently issuable shares (millions)	0	(1)
Income from continuing operations on which diluted earnings per share is calculated (millions)	\$ 2,500	\$ 2,401
Income/(loss) from discontinued operations, net of tax, on which basic and diluted earnings per share is calculated (millions)	(1)	1
Net income on which diluted earnings per share is calculated (millions)	<u>\$ 2,499</u>	<u>\$ 2,403</u>
Earnings/(loss) per share of common stock:		
Assuming dilution		
Continuing operations	\$ 2.81	\$ 2.61
Discontinued operations	0.00	0.00
Total	<u>\$ 2.81</u>	<u>\$ 2.61</u>
Basic		
Continuing operations	\$ 2.82	\$ 2.63
Discontinued operations	0.00	0.00
Total	<u>\$ 2.82</u>	<u>\$ 2.63</u>

Stock options to purchase 762,019 shares and 388,681 shares were outstanding as of June 30, 2019 and 2018, respectively, but were not included in the computation of diluted earnings per share because the options' exercise price during the respective period was greater than the average market price of the common shares, and, therefore, the effect would have been antidilutive.

Notes to Consolidated Financial Statements — (continued)

	For the Six Months Ended	
	June 30, 2019	June 30, 2018
Number of shares on which basic earnings per share is calculated:		
Weighted-average shares outstanding during period	887,927,612	917,872,328
Add — Incremental shares under stock-based compensation plans	3,327,015	3,217,574
Add — Incremental shares associated with contingently issuable shares	1,116,537	1,314,118
Number of shares on which diluted earnings per share is calculated	<u>892,371,164</u>	<u>922,404,020</u>
Income from continuing operations (millions)	\$ 4,093	\$ 4,078
Income/(loss) from discontinued operations, net of tax (millions)	(4)	5
Net income on which basic earnings per share is calculated (millions)	<u>\$ 4,089</u>	<u>\$ 4,083</u>
Income from continuing operations (millions)	\$ 4,093	\$ 4,078
Net income applicable to contingently issuable shares (millions)	0	(1)
Income from continuing operations on which diluted earnings per share is calculated (millions)	\$ 4,093	\$ 4,077
Income/(loss) from discontinued operations, net of tax, on which basic and diluted earnings per share is calculated (millions)	(4)	5
Net income on which diluted earnings per share is calculated (millions)	<u>\$ 4,090</u>	<u>\$ 4,082</u>
Earnings/(loss) per share of common stock:		
Assuming dilution		
Continuing operations	\$ 4.58	\$ 4.42
Discontinued operations	0.00	0.01
Total	<u>\$ 4.58</u>	<u>\$ 4.43</u>
Basic		
Continuing operations	\$ 4.61	\$ 4.44
Discontinued operations	0.00	0.01
Total	<u>\$ 4.61</u>	<u>\$ 4.45</u>

Stock options to purchase 949,519 shares and 202,775 shares (average of first and second quarter share amounts) were outstanding as of June 30, 2019 and 2018, respectively, but were not included in the computation of diluted earnings per share because the options' exercise price during the respective period was greater than the average market price of the common shares, and, therefore, the effect would have been antidilutive.

17. Subsequent Events:

On July 30, 2019, the company announced that the Board of Directors approved a quarterly dividend of \$1.62 per common share. The dividend is payable September 10, 2019 to shareholders of record on August 9, 2019.

Item 2.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF RESULTS OF OPERATIONS AND FINANCIAL CONDITION FOR THE THREE MONTHS ENDED JUNE 30, 2019

Snapshot

Financial Results Summary — Three Months Ended June 30:

(Dollars and shares in millions except per share amounts)			
For the three months ended June 30:	2019	2018	Yr. to Yr. Percent/ Margin Change
Revenue	\$ 19,161	\$ 20,003	(4.2)%*
Gross profit margin	47.0 %	46.0 %	1.0 pts.
Total expense and other (income)	\$ 6,242	\$ 6,423	(2.8)%
Income from continuing operations before income taxes	\$ 2,768	\$ 2,776	(0.3)%
Provision for income taxes from continuing operations	\$ 269	\$ 373	(28.0)%
Income from continuing operations	\$ 2,499	\$ 2,402	4.0 %
Income from continuing operations margin	13.0 %	12.0 %	1.0 pts.
Net income	\$ 2,498	\$ 2,404	3.9 %
Earnings per share from continuing operations - assuming dilution	\$ 2.81	\$ 2.61	7.7 %
Weighted-average shares outstanding - assuming dilution	890.8	919.4	(3.1)%

* (1.6) percent adjusted for currency.

Organization of Information:

Effective with the first quarter of 2019, the company made a number of changes to its organizational structure and management system. As a result of these changes, the company revised its reportable segments. There is no change to the company's Consolidated Financial Statements. Refer to note 8, "Segments" for additional information on the changes in reportable segments. The periods presented in this Form 10-Q are reported on a comparable basis. The company provided recast historical segment information reflecting these changes in a Form 8-K dated April 4, 2019.

Currency:

The references to "adjusted for currency" or "at constant currency" in the Management Discussion do not include operational impacts that could result from fluctuations in foreign currency rates. When the company refers to growth rates at constant currency or adjusts such growth rates for currency, it is done so that certain financial results can be viewed without the impact of fluctuations in foreign currency exchange rates, thereby facilitating period-to-period comparisons of its business performance. Financial results adjusted for currency are calculated by translating current period activity in local currency using the comparable prior year period's currency conversion rate. This approach is used for countries where the functional currency is the local currency. Generally, when the dollar either strengthens or weakens against other currencies, the growth at constant currency rates or adjusting for currency will be higher or lower than growth reported at actual exchange rates. Refer to "Currency Rate Fluctuations" for additional information.

Operating (non-GAAP) Earnings:

In an effort to provide better transparency into the operational results of the business, supplementally, the company separates business results into operating and non-operating categories. Operating earnings from continuing operations is a non-GAAP measure that excludes the effects of certain acquisition-related charges, intangible asset amortization expense resulting from basis differences on equity method investments, retirement-related costs and discontinued

Management Discussion – (continued)

operations and their related tax impacts. Due to the unique, non-recurring nature of the enactment of the U.S. Tax Cuts and Jobs Act (U.S. tax reform), the company characterizes the one-time provisional charge recorded in the fourth quarter of 2017 and adjustments to that charge as non-operating. Adjustments include true-ups, accounting elections, any changes to regulations, laws, audit adjustments, etc. that affect the recorded one-time charge. For acquisitions, operating (non-GAAP) earnings exclude the amortization of purchased intangible assets and acquisition-related charges such as in-process research and development, transaction costs, applicable restructuring and related expenses, tax charges related to acquisition integration and pre-closing charges, such as financing costs. These charges are excluded as they may be inconsistent in amount and timing from period to period and are significantly impacted by the size, type and frequency of the company's acquisitions. All other spending for acquired companies is included in both earnings from continuing operations and in operating (non-GAAP) earnings. Throughout the Management Discussion, the impact of acquisitions over the prior 12-month period may be a driver of higher expense year to year. For retirement-related costs, the company characterizes certain items as operating and others as non-operating, consistent with GAAP. The company includes defined benefit plan and nonpension postretirement benefit plan service costs, multi-employer plan costs and the cost of defined contribution plans in operating earnings. Non-operating retirement-related costs include defined benefit plan and nonpension postretirement benefit plan amortization of prior service costs, interest cost, expected return on plan assets, amortized actuarial gains/losses, the impacts of any plan curtailments/settlements and pension insolvency costs and other costs. Non-operating retirement-related costs are primarily related to changes in pension plan assets and liabilities which are tied to financial market performance, and the company considers these costs to be outside of the operational performance of the business.

Overall, the company believes that supplementally providing investors with a view of operating earnings as described above provides increased transparency and clarity into both the operational results of the business and the performance of the company's pension plans; improves visibility to management decisions and their impacts on operational performance; enables better comparison to peer companies; and allows the company to provide a long-term strategic view of the business going forward. The company's reportable segment financial results reflect pre-tax operating earnings from continuing operations, consistent with the company's management and measurement system. In addition, these non-GAAP measures provide a perspective consistent with areas of interest the company routinely receives from investors and analysts.

The following table provides the company's operating (non-GAAP) earnings for the second quarter of 2019 and 2018.

(Dollars in millions except per share amounts)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Net income as reported	\$ 2,498	\$ 2,404	3.9 %
Income/(loss) from discontinued operations, net of tax	(1)	1	nm
Income from continuing operations	\$ 2,499	\$ 2,402	4.0 %
Non-operating adjustments (net of tax):			
Acquisition-related charges	217	160	35.6
Non-operating retirement-related costs/(income)	97	286	(66.2)
U.S. tax reform charges	14	(14)	nm
Operating (non-GAAP) earnings*	<u>\$ 2,827</u>	<u>\$ 2,834</u>	<u>(0.3)%</u>
Diluted operating (non-GAAP) earnings per share	\$ 3.17	\$ 3.08	2.9 %

* Refer to page 98 for a more detailed reconciliation of net income to operating earnings.

nm - not meaningful

Financial Performance Summary — Three Months Ended June 30:

In the second quarter of 2019, the company reported \$19.2 billion in revenue, \$2.5 billion in income from continuing operations and operating (non-GAAP) earnings of \$2.8 billion, resulting in diluted earnings per share from continuing operations of \$2.81 as reported and \$3.17 on an operating (non-GAAP) basis. The company also generated

Management Discussion – (continued)

\$2.9 billion in cash from operations, \$2.4 billion in free cash flow and delivered shareholder returns of \$1.8 billion in gross common stock repurchases and dividends. This performance reflects improving fundamentals as the company continues to focus on investment prioritization shifting to higher value areas and the value the company provides to clients in their digital transformations and journey to the cloud. The company has taken significant actions to improve its position over time including the completion of the two software asset divestitures and workforce actions in the second quarter as well as the acquisition of Red Hat on July 9, 2019. This acquisition is an important milestone for the company, and one that will significantly impact the cloud landscape. It is clear that the next chapter of cloud will be about shifting mission-critical work to the cloud and optimizing everything from supply chains to core banking systems. This requires a hybrid, multicloud, open approach, to provide portability, management consistency and security for enterprise workloads.

Total consolidated revenue decreased 4.2 percent as reported and 2 percent adjusted for currency compared to the prior year. Cloud & Cognitive Software increased 3.2 percent as reported and 5 percent adjusted for currency with growth across all three business lines of the segment. Cognitive Applications grew 2.9 percent as reported and 5 percent adjusted for currency, Cloud & Data Platforms increased 4.5 percent as reported and 7 percent adjusted for currency and Transaction Processing Platforms grew 2.0 percent as reported and 4 percent adjusted for currency. Global Business Services (GBS) increased 0.5 percent as reported and 3 percent adjusted for currency led by Consulting which grew 2.4 percent (5 percent adjusted for currency). Global Technology Services (GTS) decreased 6.7 percent as reported (4 percent adjusted for currency), with declines in Infrastructure & Cloud Services and Technology Support Services reflecting actions taken to deemphasize lower-value contracts and third-party content. Systems decreased 19.5 percent as reported (18 percent adjusted for currency), with IBM Z declining 41.8 percent (41 percent adjusted for currency) year to year reflecting the product cycle dynamics. Storage Systems decreased year to year with declines in high-end product sales which is tied to the mainframe cycle and the ongoing competitive dynamics and pricing pressures in the mid-range. Power Systems grew as reported and adjusted for currency with the continued strong performance of POWER9.

Total cloud revenue of \$4.8 billion in the second quarter of 2019 grew 2 percent as reported and 5 percent adjusted for currency. Over the trailing 12 months, total cloud revenue was \$19.5 billion, up 5 percent (8 percent adjusted for currency) year to year. As-a-Service revenue increased 4 percent as reported and 7 percent adjusted for currency in the second quarter of 2019 compared to the prior-year period and grew 13 percent (16 percent adjusted for currency) over the trailing 12 months. The annual exit run rate for as-a-Service revenue was \$11.5 billion.

From a geographic perspective, Americas revenue declined 4.4 percent year to year as reported (3 percent adjusted for currency). Europe/Middle East/Africa (EMEA) decreased 4.0 percent, but grew 1 percent adjusted for currency. Asia Pacific declined 4.1 percent year to year as reported (2 percent adjusted for currency).

The consolidated gross margin of 47.0 percent increased 1.0 points year to year, and the operating (non-GAAP) gross margin of 47.4 percent increased 1.0 points versus the prior year, reflecting strong software growth, services productivity and cloud scale efficiencies.

Total expense and other (income) decreased 2.8 percent in the second quarter of 2019 compared to the prior year. The year-to-year performance was driven by gains from the divestitures (9 points), the impact of currency (4 points) and lower non-operating retirement-related costs (4 points), partially offset by a higher level of workforce rebalancing charges (7 points) and higher spending and litigation matters (5 points). Total operating (non-GAAP) expense and other (income) decreased 0.2 percent year to year, driven primarily by the same factors, excluding the non-operating retirement-related costs.

Pre-tax income from continuing operations of \$2.8 billion decreased 0.3 percent and the pre-tax margin was 14.4 percent, an increase of 0.6 points versus the prior-year period. The continuing operations effective tax rate for the second quarter of 2019 was 9.7 percent, a decrease of 3.7 points compared to the second quarter of 2018. The year-to-year change was primarily driven by an increase in tax benefits attributable to foreign audit activity (3.7 points). Net income of \$2.5 billion increased 3.9 percent and the net income margin was 13.0 percent, an increase of 1.0 points year to year.

Management Discussion – (continued)

Operating (non-GAAP) pre-tax income from continuing operations of \$3.2 billion decreased 5.9 percent year to year and the operating (non-GAAP) pre-tax margin from continuing operations decreased 0.3 points to 16.6 percent. The operating (non-GAAP) tax rate for the second quarter of 2019 was 11.0 percent, a decrease of 5.0 points compared to the second quarter of 2018. The change in the operating (non-GAAP) tax rate was primarily driven by the same factor mentioned above. Operating (non-GAAP) income from continuing operations of \$2.8 billion decreased 0.3 percent with an operating (non-GAAP) income margin from continuing operations of 14.8 percent, up 0.6 points year to year.

Diluted earnings per share from continuing operations of \$2.81 in the second quarter of 2019 increased 7.7 percent and operating (non-GAAP) diluted earnings per share of \$3.17 increased 2.9 percent versus the second quarter of 2018. In the second quarter of 2019, the company repurchased 2.3 million shares of its common stock at a cost of \$0.3 billion and had \$2.1 billion remaining in the current share repurchase authorization at June 30, 2019.

The company generated \$2.9 billion in cash flow provided by operating activities, an increase of \$0.6 billion compared to the second quarter of 2018, driven primarily by an increase in cash provided by financing receivables (\$0.7 billion). In the second quarter of 2019, investing activities were a net source of cash of \$4.2 billion compared to a net use of cash of \$0.6 billion in the prior year, primarily driven by an increase in cash provided by non-operating finance receivables (\$3.1 billion), an increase in cash provided by current year divestitures (\$0.9 billion) and a decrease in net capital expenditures (\$0.6 billion). In the second quarter of 2019, financing activities were a source of cash of \$21.0 billion compared to a use of cash of \$2.5 billion in the second quarter of 2018. The \$23.5 billion increase in financing cash flows year to year was driven by an increase in net cash sourced from debt transactions (\$22.9 billion) to fund the acquisition of Red Hat.

Refer to the Looking Forward section for information on the company's expectations.

Financial Results Summary — Six Months Ended June 30:

(Dollars and shares in millions except per share amounts)			Yr. to Yr. Percent/ Margin Change
For the six months ended June 30:	2019	2018	
Revenue	\$ 37,342	\$ 39,075	(4.4)%*
Gross profit margin	45.7 %	44.6 %	1.0 pts.
Total expense and other (income)	\$ 12,402	\$ 13,534	(8.4)%
Income from continuing operations before income taxes	\$ 4,651	\$ 3,911	18.9 %
Provision for/(benefit from) income taxes from continuing operations	\$ 558	\$ (166)	nm
Income from continuing operations	\$ 4,093	\$ 4,078	0.4 %
Income from continuing operations margin	11.0 %	10.4 %	0.5 pts.
Net income	\$ 4,089	\$ 4,083	0.2 %
Earnings per share from continuing operations - assuming dilution	\$ 4.58	\$ 4.42	3.6 %
Weighted-average shares outstanding - assuming dilution	892.4	922.4	(3.3)%
	<u>At 6/30/2019</u>	<u>At 12/31/2018</u>	
Assets	\$ 154,652	\$ 123,382	25.3 %
Liabilities	\$ 136,876	\$ 106,452	28.6 %
Equity	\$ 17,776	\$ 16,929	5.0 %

* (1.2) percent adjusted for currency.
nm - not meaningful

Management Discussion – (continued)

The following table provides the company's operating (non-GAAP) earnings for the first six months of 2019 and 2018.

(Dollars in millions except per share amounts) For the six months ended June 30:	2019	2018	Yr. to Yr. Percent Change
Net income as reported	\$ 4,089	\$ 4,083	0.2 %
Income/(loss) from discontinued operations, net of tax	(4)	5	nm
Income from continuing operations	\$ 4,093	\$ 4,078	0.4 %
Non-operating adjustments (net of tax):			
Acquisition-related charges	381	324	17.5
Non-operating retirement-related costs/(income)	208	611	(66.0)
U.S. tax reform charges	155	93	66.1
Operating (non-GAAP) earnings*	<u>\$ 4,836</u>	<u>\$ 5,106</u>	<u>(5.3)%</u>
Diluted operating (non-GAAP) earnings per share	\$ 5.42	\$ 5.53	(2.0)%

* Refer to page 99 for a more detailed reconciliation of net income to operating earnings.
nm - not meaningful

Financial Performance Summary — Six Months Ended June 30:

In the first six months of 2019, the company reported \$37.3 billion in revenue, \$4.1 billion in income from continuing operations and operating (non-GAAP) earnings of \$4.8 billion, resulting in diluted earnings per share from continuing operations of \$4.58 as reported and \$5.42 on an operating (non-GAAP) basis. The company also generated \$7.7 billion in cash from operations, \$4.1 billion in free cash flow and delivered shareholder returns of \$4.1 billion in gross common stock repurchases and dividends.

Total consolidated revenue decreased 4.4 percent as reported and 1 percent adjusted for currency compared to the prior year. Cloud & Cognitive Software increased 0.9 percent as reported and 4 percent adjusted for currency. Cognitive Applications grew 2.3 percent as reported and 5 percent adjusted for currency, Cloud & Data Platforms increased 1.5 percent as reported and 4 percent adjusted for currency and Transaction Processing Platforms declined 0.7 percent as reported, but grew 2 percent adjusted for currency. GBS grew 0.3 percent as reported and 4 percent adjusted for currency led by Consulting which grew 3.8 percent (7 percent adjusted for currency). GTS decreased 7.0 percent as reported (3 percent adjusted for currency), with declines in Infrastructure & Cloud Services and Technology Support Services. Systems decreased 16.2 percent as reported (14 percent adjusted for currency), with IBM Z declining 40.8 percent (40 percent adjusted for currency) year to year reflecting the product cycle dynamics. Storage Systems declined with continued competitive dynamics and pricing pressures, while Power Systems grew as reported and adjusted for currency. Total cloud revenue of \$9.3 billion in the first six months of 2019 grew 4 percent as reported and 8 percent adjusted for currency.

From a geographic perspective, Americas revenue declined 3.5 percent year to year as reported (2 percent adjusted for currency). Europe/Middle East/Africa (EMEA) decreased 5.6 percent, but was flat adjusted for currency. Asia Pacific declined 4.7 percent year to year as reported (2 percent adjusted for currency).

The consolidated gross margin of 45.7 percent increased 1.0 points year to year, and the operating (non-GAAP) gross margin of 46.1 percent increased 0.9 points versus the prior year. The improved margins in the first six months of 2019 reflect the actions the company has taken to focus on higher value and portfolio optimization while also driving productivity and operational efficiency.

Total expense and other (income) decreased 8.4 percent in the first six months of 2019 compared to the prior year. The year-to-year performance was driven by the impact of currency (5 points), gains from divestitures (4 points) and lower non-operating retirement-related costs (4 points), partially offset by a decrease in intellectual property (IP) income

Management Discussion – (continued)

(2 points) and higher spending (2 points). Total operating (non-GAAP) expense and other (income) decreased 5.8 percent year to year, driven primarily by the same factors excluding the non-operating retirement-related costs.

Pre-tax income from continuing operations of \$4.7 billion increased 18.9 percent and the pre-tax margin was 12.5 percent, an increase of 2.4 points versus 2018. The continuing operations effective tax rate for the first six months of 2019 was 12.0 percent, an increase of 16.3 points compared to the first six months of 2018. The year-to-year change was primarily driven by reduced audit resolution benefits compared to the prior year. Net income of \$4.1 billion increased 0.2 percent and the net income margin was 11.0 percent, up 0.5 points year to year. Operating (non-GAAP) pre-tax income from continuing operations of \$5.4 billion grew 5.8 percent year to year and the operating (non-GAAP) pre-tax margin from continuing operations increased 1.4 points to 14.5 percent. The operating (non-GAAP) tax rate for the first six months of 2019 was 10.6 percent, an increase of 10.4 points compared to the first six months of 2018. The change in the operating (non-GAAP) tax rate was primarily driven by the same factor mentioned above. Operating (non-GAAP) income from continuing operations of \$4.8 billion decreased 5.3 percent with an operating (non-GAAP) income margin from continuing operations of 13.0 percent, down 0.1 points year to year.

Diluted earnings per share from continuing operations of \$4.58 in the first six months of 2019 increased 3.6 percent and operating (non-GAAP) diluted earnings per share of \$5.42 decreased 2.0 percent versus the first six months of 2018. In the first six months of 2019, the company repurchased 9.2 million shares of its common stock at a cost of \$1.2 billion.

At June 30, 2019, the balance sheet remains strong and the company continues to be committed to maintaining a strong investment grade rating. Cash, restricted cash and marketable securities at quarter end were \$46.4 billion, an increase of \$34.2 billion from December 31, 2018. Cash and debt balances increased since year-end 2018, as the company prepared for the acquisition of Red Hat. Key drivers in the balance sheet and total cash flows were:

Total assets increased \$31.3 billion (\$30.9 billion adjusted for currency) from December 31, 2018 driven by:

- An increase of \$34.2 billion in cash, restricted cash and marketable securities, which was subsequently used to fund the Red Hat acquisition on July 9, 2019; and
- An increase in operating right-of-use assets of \$5.0 billion resulting from the adoption of the new leasing standard on January 1, 2019; partially offset by
- A decrease in total receivables of \$6.6 billion primarily driven by a decline in financing receivables due to the wind down of OEM IT commercial financing operations.

Total liabilities increased \$30.4 billion (\$30.2 billion adjusted for currency) from December 31, 2018 driven by:

- An increase in total debt of \$27.2 billion primarily driven by new issuances; and
- An increase in operating lease liabilities of \$5.3 billion resulting from the adoption of the new leasing standard.

Total equity of \$17.8 billion increased \$0.8 billion from December 31, 2018 as a result of:

- Increases from net income of \$4.1 billion and retirement related plans of \$0.8 billion; partially offset by
- Decreases from dividends of \$2.8 billion and gross share repurchases of \$1.2 billion.

The company generated \$7.7 billion in cash flow provided by operating activities, an increase of \$0.8 billion compared to the first six months of 2018, driven primarily by an increase in cash provided by financing receivables (\$0.8 billion). In the first six months of 2019, investing activities were a net source of cash of \$3.3 billion compared to a net use of cash of \$2.4 billion in the prior year. The year-to-year increase in investing cash flows was driven by an increase in cash provided by non-operating finance receivables (\$3.4 billion), cash provided by current year divestitures (\$0.9

Management Discussion – (continued)

billion) and a decrease in net capital expenditures (\$0.9 billion). In the first six months of 2019, financing activities were a source of cash of \$22.9 billion compared to a use of cash of \$5.4 billion in the first six months of 2018. The \$28.3 billion increase in financing cash flows year to year was driven by an increase in net cash sourced from debt transactions (\$27.8 billion) primarily driven by a higher level of issuances to fund the acquisition of Red Hat.

Second Quarter and First Six Months in Review

Results of Continuing Operations

Segment Details

The following is an analysis of the second quarter and first six months of 2019 versus the second quarter and first six months of 2018 reportable segment external revenue and gross margin results. Segment pre-tax income includes transactions between segments that are intended to reflect an arm's-length transfer price and excludes certain unallocated corporate items.

(Dollars in millions) For the three months ended June 30:	2019	2018	Yr. to Yr. Percent/Margin Change	Yr. to Yr. Percent Change Adjusted For Currency
Revenue:				
Cloud & Cognitive Software	\$ 5,645	\$ 5,470 *	3.2 %	5.4 %
Gross margin	77.3 %	77.7 %*	(0.4)pts.	
Global Business Services	4,155	4,135 *	0.5 %	3.4 %
Gross margin	26.0 %	26.0 %*	(0.1)pts.	
Global Technology Services	6,837	7,325 *	(6.7)%	(3.5)%
Gross margin	34.4 %	33.2 %*	1.2 pts.	
Systems	1,753	2,177	(19.5)%	(18.0)%
Gross margin	53.5 %	50.6 %	2.9 pts.	
Global Financing	351	394	(11.0)%	(8.5)%
Gross margin	35.0 %	26.6 %	8.3 pts.	
Other	420	503 *	(16.4)%	(14.2)%
Gross margin	36.5 %	45.7 %*	(9.2)pts.	
Total consolidated revenue	<u>\$ 19,161</u>	<u>\$ 20,003</u>	<u>(4.2)%</u>	<u>(1.6)%</u>
Total consolidated gross profit	\$ 9,010	\$ 9,199	(2.1)%	
Total consolidated gross margin	47.0 %	46.0 %	1.0 pts.	
Non-operating adjustments:				
Amortization of acquired intangible assets	73	94	(21.7)%	
Operating (non-GAAP) gross profit	<u>\$ 9,083</u>	<u>\$ 9,292</u>	<u>(2.3)%</u>	
Operating (non-GAAP) gross margin	47.4 %	46.5 %	1.0 pts.	

* Recast to reflect segment changes.

Management Discussion – (continued)

(Dollars in millions) For the six months ended June 30:	2019	2018	Yr. to Yr. Percent/Margin Change	Yr. to Yr. Percent Change Adjusted For Currency
Revenue:				
Cloud & Cognitive Software	\$ 10,682	\$ 10,586 *	0.9 %	3.6 %
Gross margin	76.3 %	77.1 %*	(0.8)pts.	
Global Business Services	8,274	8,250 *	0.3 %	3.9 %
Gross margin	26.1 %	24.7 %*	1.4 pts.	
Global Technology Services	13,711	14,746 *	(7.0)%	(3.3)%
Gross margin	34.1 %	32.9 %*	1.1 pts.	
Systems	3,081	3,676	(16.2)%	(14.2)%
Gross margin	50.3 %	47.8 %	2.6 pts.	
Global Financing	757	799	(5.3)%	(2.2)%
Gross margin	34.9 %	30.6 %	4.4 pts.	
Other	837	1,017 *	(17.8)%	(15.3)%
Gross margin	31.7 %	38.7 %*	(7.0)pts.	
Total consolidated revenue	<u>\$ 37,342</u>	<u>\$ 39,075</u>	<u>(4.4)%</u>	<u>(1.2)%</u>
Total consolidated gross profit	<u>\$ 17,053</u>	<u>\$ 17,445</u>	<u>(2.3)%</u>	
Total consolidated gross margin	45.7 %	44.6 %	1.0 pts.	
Non-operating adjustments:				
Amortization of acquired intangible assets	149	187	(20.2)%	
Operating (non-GAAP) gross profit	<u>\$ 17,202</u>	<u>\$ 17,633</u>	<u>(2.4)%</u>	
Operating (non-GAAP) gross margin	46.1 %	45.1 %	0.9 pts.	

* Recast to reflect segment changes.

Cloud & Cognitive Software

(Dollars in millions) For the three months ended June 30:	2019	2018*	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Cloud & Cognitive Software external revenue:	<u>\$ 5,645</u>	<u>\$ 5,470</u>	<u>3.2 %</u>	<u>5.4 %</u>
Cognitive Applications	\$ 1,454	\$ 1,413	2.9 %	4.9 %
Cloud & Data Platforms	2,173	2,079	4.5	6.8
Transaction Processing Platforms	2,018	1,978	2.0	4.5

* Recast to reflect segment changes.

(Dollars in millions) For the six months ended June 30:	2019	2018*	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Cloud & Cognitive Software external revenue:	<u>\$ 10,682</u>	<u>\$ 10,586</u>	<u>0.9 %</u>	<u>3.6 %</u>
Cognitive Applications	\$ 2,762	\$ 2,699	2.3 %	4.6 %
Cloud & Data Platforms	4,090	4,029	1.5	4.3
Transaction Processing Platforms	3,830	3,858	(0.7)	2.1

* Recast to reflect segment changes.

Management Discussion – (continued)

Cloud & Cognitive Software revenue of \$5,645 million increased 3.2 percent as reported and 5 percent adjusted for currency in the second quarter of 2019 compared to the prior year. There was year-to-year growth across all three business lines as reported and adjusted for currency. The company's portfolio of software offerings help clients securely deploy, run and manage data and applications on private and public clouds as well as on-premises. For the first six months of the year, Cloud & Cognitive Software revenue of \$10,682 million grew 0.9 percent as reported and 4 percent adjusted for currency. There was year-to-year growth in Cognitive Applications and Cloud & Data Platforms as reported and adjusted for currency. Transaction Processing Platforms decreased as reported, but grew 2 percent adjusted for currency.

Cognitive Applications includes software that addresses vertical and domain-specific solutions, increasingly infused with AI. This includes areas such as health, financial services, IOT solutions, The Weather Company and security software and services. In the second quarter, Cognitive Applications revenue of \$1,454 million grew 2.9 percent as reported (5 percent adjusted for currency) compared to the prior year, led by strong performance in the integrated security software and services portfolio and growth across many industry vertical solutions. The performance in Security included continued strong results in threat management software and services offerings, as well as managed security intelligence and data security solutions.

Cloud & Data Platforms includes the distributed middleware and data platform software critical for orchestration and integration of multicloud environments, inclusive of public and private clouds. This includes product areas such as WebSphere distributed, IBM Cloud Private, analytics platform software (e.g., DB2 distributed, information integration, and enterprise content management) and IOT, Blockchain and AI platforms. Cloud & Data Platforms second-quarter revenue of \$2,173 million increased 4.5 percent as reported and 7 percent adjusted for currency compared to the prior year. This growth was broad-based throughout the portfolio, including from several new offerings that help clients modernize their applications for hybrid cloud environments and their data for AI. Year-to-year growth in hybrid cloud continued as clients leverage the reliability and scalability of IBM Cloud Private, built on open source. IBM Cloud Private for Data, launched in 2018, continued to have strong client adoption and grew its install base nearly 40 percent since the first quarter of 2019.

Transaction Processing Platforms includes software that supports client mission critical on-premise workloads, including transaction processing software as well as analytics and integration software running on IBM operating systems. In the second quarter, Transaction Processing Platforms revenue of \$2,018 million increased 2.0 percent as reported and 4 percent adjusted for currency compared to the prior year. This growth was driven by strong performance in IBM Z middleware as clients continue to rely on this platform to predictably manage IT spending for their growing IBM Z mission critical workloads.

Within Cloud & Cognitive Software, cloud revenue of \$0.8 billion grew 6 percent as reported and 8 percent adjusted for currency in the second quarter of 2019, with an as-a-Service exit run rate of \$2.1 billion. For the first six months of 2019, cloud revenue of \$1.5 billion grew 7 percent as reported and 9 percent adjusted for currency.

(Dollars in millions)			Yr. to Yr. Percent/ Margin Change
For the three months ended June 30:	2019	2018*	
Cloud & Cognitive Software:			
External gross profit	\$ 4,364	\$ 4,252	2.6 %
External gross profit margin	77.3 %	77.7 %	(0.4)pts.
Pre-tax income	\$ 2,001	\$ 2,029	(1.4)%
Pre-tax margin	32.0 %	32.3 %	(0.3)pts.

* Recast to reflect segment changes.

Management Discussion – (continued)

(Dollars in millions)			Yr. to Yr. Percent/ Margin Change
For the six months ended June 30:	2019	2018*	
Cloud & Cognitive Software:			
External gross profit	\$ 8,146	\$ 8,158	(0.1)%
External gross profit margin	76.3 %	77.1 %	(0.8)pts.
Pre-tax income	\$ 3,768	\$ 3,709	1.6 %
Pre-tax margin	31.1 %	30.1 %	1.0 pts.

* Recast to reflect segment changes.

Cloud & Cognitive Software gross profit margin decreased 0.4 points to 77.3 percent in the second quarter of 2019 compared to the prior year, driven by portfolio mix. For the first six months of 2019, gross profit margin decreased 0.8 points to 76.3 percent, driven by the same factor.

In the second quarter, pre-tax income of \$2,001 million decreased 1.4 percent compared to the prior year. The pre-tax margin decreased 0.3 points to 32.0 percent in the second quarter, which included an impact of 2.1 points from workforce rebalancing actions in the second quarter of 2019. For the first six months of the year, pre-tax income of \$3,768 million increased 1.6 percent compared to the prior year and the pre-tax margin improved 1.0 points to 31.1 percent. The year-to-year improvement in the six-month period reflects strong transactional performance in high-value areas and a lower level of workforce actions year to year, partially offset by lower IP income and ongoing investments in key strategic areas in the first six months of 2019 as compared to the same period in 2018.

Global Business Services

(Dollars in millions)			Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
For the three months ended June 30:	2019	2018	Change	Currency
Global Business Services external revenue:	\$ 4,155	\$ 4,135 *	0.5 %	3.4 %
Consulting	\$ 1,978	\$ 1,931	2.4 %	5.1 %
Global Process Services	258	258 *	(0.1)	3.3
Application Management	1,919	1,946	(1.4)	1.8

* Recast to reflect segment changes.

(Dollars in millions)			Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
For the six months ended June 30:	2019	2018	Change	Currency
Global Business Services external revenue:	\$ 8,274	\$ 8,250 *	0.3 %	3.9 %
Consulting	\$ 3,942	\$ 3,798	3.8 %	7.1 %
Global Process Services	505	504 *	0.1	4.3
Application Management	3,827	3,948	(3.1)	0.7

* Recast to reflect segment changes.

Global Business Services revenue of \$4,155 million increased 0.5 percent as reported and 3 percent adjusted for currency in the second quarter of 2019 compared to the prior year. Growth was driven by engagement with clients on their digital reinvention journeys to become cloud and cognitive enterprises. GBS brings deep industry expertise, IBM's

Management Discussion – (continued)

innovative technology portfolio and third-party IT architectures together to deliver differentiated value to enterprises. For the first six months of the year, Global Business Services revenue of \$8,274 million increased 0.3 percent as reported and 4 percent adjusted for currency.

In the second quarter, Consulting revenue of \$1,978 million grew 2.4 percent as reported and 5 percent adjusted for currency, led by growth in the next generation enterprise applications, such as S4/Hana, and in Digital Strategy and iX offerings. Clients are also leveraging IBM Garage to help power their digital reinventions with AI and hybrid cloud.

Global Process Services second-quarter revenue of \$258 million was flat as reported, but grew 3 percent adjusted for currency.

Application Management revenue of \$1,919 million declined 1.4 percent as reported, but grew 2 percent adjusted for currency compared to the second-quarter 2018. Cloud Migration Factory continued to contribute to growth, offset by continued declines in traditional application management engagements.

Within GBS, cloud revenue of \$1.2 billion grew 14 percent as reported (17 percent adjusted for currency) in the second quarter of 2019, with an as-a-Service exit run rate of \$1.7 billion. For the first six months of the year, cloud revenue of \$2.5 billion grew 17 percent as reported (21 percent adjusted for currency).

(Dollars in millions) For the three months ended June 30:	2019	2018*	Yr. to Yr. Percent/ Margin Change
Global Business Services:			
External gross profit	\$ 1,079	\$ 1,077	0.2 %
External gross profit margin	26.0 %	26.0 %	(0.1)pts.
Pre-tax income	\$ 300	\$ 372	(19.4)%
Pre-tax margin	7.1 %	8.8 %	(1.7)pts.

* Recast to reflect segment changes.

(Dollars in millions) For the six months ended June 30:	2019	2018*	Yr. to Yr. Percent/ Margin Change
Global Business Services:			
External gross profit	\$ 2,157	\$ 2,039	5.8 %
External gross profit margin	26.1 %	24.7 %	1.4 pts.
Pre-tax income	\$ 615	\$ 497	23.7 %
Pre-tax margin	7.3 %	5.9 %	1.4 pts.

* Recast to reflect segment changes.

GBS second-quarter gross profit margin of 26.0 percent was flat on a year-to-year basis, with contribution from continued mix shift to higher-value offerings and from currency given the global delivery model. This was offset by a higher level of skill capacity investments to capture the market opportunity around Red Hat and digital reinvention. Pre-tax income decreased to \$300 million and pre-tax margin decreased 1.7 points to 7.1 percent in the second quarter of 2019 compared to the prior year. Pre-tax margin for the second quarter of 2019 included a 1.5 point impact from workforce rebalancing actions in the second quarter of 2019. For the first six months of the year, pre-tax income of \$615 million increased 23.7 percent and the pre-tax margin increased 1.4 points to 7.3 percent. The pre-tax margin for the first six months of 2019 included a lower level of workforce rebalancing charges year to year.

Management Discussion – (continued)

Global Technology Services

(Dollars in millions) For the three months ended June 30:	2019	2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Global Technology Services external revenue:	\$ 6,837	\$ 7,325 *	(6.7)%	(3.5)%
Infrastructure & Cloud Services	\$ 5,174	\$ 5,575 *	(7.2)%	(4.2)%
Technology Support Services	1,663	1,750	(4.9)	(1.5)

* Recast to reflect segment changes.

(Dollars in millions) For the six months ended June 30:	2019	2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Global Technology Services external revenue:	\$ 13,711	\$ 14,746 *	(7.0)%	(3.3)%
Infrastructure & Cloud Services	\$ 10,383	\$ 11,214 *	(7.4)%	(3.7)%
Technology Support Services	3,328	3,531	(5.7)	(1.8)

* Recast to reflect segment changes.

Global Technology Services revenue of \$6,837 million declined 6.7 percent as reported (4 percent adjusted for currency) in the second quarter of 2019 compared to the prior year. This performance reflects the actions the company has been taking to deemphasize lower-value contracts and third-party content, and to focus investments on higher-value segments of the IT market, such as hybrid cloud, to manage the business for increased margin, profit and cash contribution for the longer term. For the first six months of the year, Global Technology Services revenue of \$13,711 million declined 7.0 percent as reported (3 percent adjusted for currency).

In the second quarter, Infrastructure & Cloud Services revenue of \$5,174 million decreased 7.2 percent as reported (4 percent adjusted for currency) compared to the prior-year period, driven by declines across the portfolio. As this business is repositioned for the long term, the actions contribute to lower revenue in the short term, but are expected to enable the business to deliver sustained margin improvement. Technology Support Services second-quarter revenue of \$1,663 million decreased 4.9 percent as reported (2 percent adjusted for currency) due primarily to hardware cycle dynamics.

Within GTS, cloud revenue of \$2.0 billion grew 2 percent as reported (5 percent adjusted for currency) in the second quarter of 2019, with an as-a-Service exit run rate of \$7.4 billion. For the first six months of the year, cloud revenue of \$4.1 billion grew 5 percent as reported (9 percent adjusted for currency).

(Dollars in millions) For the three months ended June 30:	2019	2018*	Yr. to Yr. Percent/ Margin Change
Global Technology Services:			
External gross profit	\$ 2,353	\$ 2,435	(3.3)%
External gross profit margin	34.4 %	33.2 %	1.2 pts.
Pre-tax income	\$ 235	\$ 451	(47.9)%
Pre-tax margin	3.3 %	6.0 %	(2.7)pts.

* Recast to reflect segment changes.

Management Discussion – (continued)

(Dollars in millions)			Yr. to Yr. Percent/ Margin Change
For the six months ended June 30:	2019	2018*	
Global Technology Services:			
External gross profit	\$ 4,670	\$ 4,855	(3.8)%
External gross profit margin	34.1 %	32.9 %	1.1 pts.
Pre-tax income	\$ 510	\$ 517	(1.4)%
Pre-tax margin	3.6 %	3.4 %	0.1 pts.

* Recast to reflect segment changes.

Global Technology Services gross profit margin increased 1.2 points to 34.4 percent in the second quarter of 2019, primarily driven by scale efficiencies in the cloud, productivity improvements from infusion of AI and automation into service delivery models and the shift to higher-value areas. Second-quarter pre-tax income decreased to \$235 million and pre-tax margin decreased 2.7 points to 3.3 percent. Pre-tax margin in the second quarter of 2019 included a 3.1 point impact from workforce rebalancing actions in the second-quarter 2019. For the first six months of the year, pre-tax income of \$510 million decreased 1.4 percent and pre-tax margin of 3.6 percent improved modestly year to year, reflecting the improvements in gross profit margin.

Services Backlog and Signings

(Dollars in billions)	At June 30, 2019	At June 30, 2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Total backlog	\$ 111.2	\$ 116.5	(4.5)%	(3.5)%

The estimated total services backlog at June 30, 2019 was \$111 billion, a decrease of 4.5 percent as reported (4 percent adjusted for currency).

Total services backlog includes Infrastructure & Cloud Services, Security Services, Consulting, Global Process Services, Application Management and Technology Support Services. Total backlog is intended to be a statement of overall work under contract which is either non-cancellable, or which historically has very low likelihood of termination, given the criticality of certain services to the company's clients. Total backlog does not include as-a-Service arrangements that allow for termination under contractual commitment terms. Backlog estimates are subject to change and are affected by several factors, including terminations, changes in the scope of contracts, periodic revalidations, adjustments for revenue not materialized and adjustments for currency.

Services signings are management's initial estimate of the value of a client's commitment under a services contract. There are no third-party standards or requirements governing the calculation of signings. The calculation used by management involves estimates and judgments to gauge the extent of a client's commitment, including the type and duration of the agreement, and the presence of termination charges or wind-down costs.

Signings include Infrastructure & Cloud Services, Security Services, Consulting, Global Process Services and Application Management contracts. Contract extensions and increases in scope are treated as signings only to the extent of the incremental new value. Technology Support Services (TSS) are generally not included in signings as the maintenance contracts tend to be more steady state, where revenues equal renewals. Certain longer-term TSS contracts that have characteristics similar to outsourcing contracts are included in signings.

Management Discussion – (continued)

Contract portfolios purchased in an acquisition are treated as positive backlog adjustments provided those contracts meet the company's requirements for initial signings. A new signing will be recognized if a new services agreement is signed incidental or coincidental to an acquisition or divestiture.

(Dollars in millions) For the three months ended June 30:	2019	2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Total signings	\$ 9,687	\$ 11,528	(16.0)%	(14.2)%

(Dollars in millions) For the six months ended June 30:	2019	2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Total signings	\$ 17,324	\$ 20,836	(16.9)%	(14.0)%

Systems

(Dollars in millions) For the three months ended June 30:	2019	2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Systems external revenue:	\$ 1,753	\$ 2,177	(19.5)%	(18.0)%
Systems Hardware	\$ 1,328	\$ 1,756	(24.4)%	(23.1)%
IBM Z			(41.8)	(40.9)
Power Systems			1.0	2.9
Storage Systems			(22.0)	(20.7)
Operating Systems Software	425	421	1.0	3.3

(Dollars in millions) For the six months ended June 30:	2019	2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Systems external revenue:	\$ 3,081	\$ 3,676	(16.2)%	(14.2)%
Systems Hardware	\$ 2,241	\$ 2,848	(21.3)%	(19.6)%
IBM Z			(40.8)	(39.8)
Power Systems			3.1	5.7
Storage Systems			(18.6)	(16.7)
Operating Systems Software	840	828	1.4	4.2

Systems revenue of \$1,753 million decreased 19.5 percent as reported (18 percent adjusted for currency) in the second quarter of 2019 compared to the prior year. Systems Hardware revenue of \$1,328 million decreased 24.4 percent as reported (23 percent adjusted for currency). These declines were driven by IBM Z and Storage Systems, reflecting the late stage of the z14 product cycle, partially offset by growth in Power Systems. Operating Systems Software revenue of \$425 million grew 1.0 percent as reported (3 percent adjusted for currency) compared to the prior year. For the first six months of 2019, Systems revenue of \$3,081 million decreased 16.2 percent as reported (14 percent adjusted for currency) compared to the first six months of 2018, driven by the same factors as the quarter. Operating Systems Software revenue increased 1.4 percent as reported and 4 percent adjusted for currency.

IBM Z revenue declined 41.8 percent as reported (41 percent adjusted for currency) year to year reflecting the product cycle dynamics. The z14, announced two years ago, continued to track ahead of the prior program. Clients

Management Discussion – (continued)

continued to take advantage of the value of z14, such as pervasive encryption and connectivity to the cloud, and there is continued demand for technology underpinned by data protection and resiliency, with the ability to integrate across cloud environments.

Power Systems revenue grew 1.0 percent as reported (3 percent adjusted for currency) year to year. There was continued growth in high-end offerings and in Linux with HANA on Power, leveraging the performance of the POWER9-based systems. In the second quarter, the company announced IBM Power Systems Virtual Servers available in the IBM Cloud which provide clients with hybrid cloud scaleup compute for AIX and IBM i workloads. There was continued double-digit growth in the high-end Power systems, partially offset by declines in the low-end and midrange systems, as reported and adjusted for currency.

Storage Systems revenue decreased 22.0 percent as reported (21 percent adjusted for currency), reflecting a decline in high-end storage, which is tied to the mainframe cycle and the ongoing competitive dynamics and pricing pressures in the mid-range products.

In the second quarter, Operating Systems Software revenue of \$425 million increased 1.0 percent as reported and 3 percent adjusted for currency compared to the prior year. This growth was driven by strong performance in IBM Z operating system software as clients continue to rely on the IBM Z platform to manage predictable IT spending for mission critical workloads, partially offset by a decline in Power operating system software.

Within Systems, cloud revenue of \$0.7 billion declined 17 percent as reported (16 percent adjusted for currency) in the second quarter of 2019. For the first six months of the year, cloud revenue of \$1.1 billion declined 18 percent as reported (16 percent adjusted for currency).

(Dollars in millions)			Yr. to Yr. Percent/ Margin Change
For the three months ended June 30:	2019	2018	
Systems:			
External Systems Hardware gross profit	\$ 579	\$ 754	(23.2)%
External Systems Hardware gross profit margin	43.6 %	42.9 %	0.7 pts.
External Operating Systems Software gross profit	\$ 359	\$ 347	3.3 %
External Operating Systems Software gross profit margin	84.3 %	82.4 %	1.9 pts.
External total gross profit	\$ 937	\$ 1,101	(14.8)%
External total gross profit margin	53.5 %	50.6 %	2.9 pts.
Pre-tax income	\$ 61	\$ 346	(82.3)%
Pre-tax margin	3.2 %	14.3 %	(11.1)pts.

(Dollars in millions)			Yr. to Yr. Percent/ Margin Change
For the six months ended June 30:	2019	2018	
Systems:			
External Systems Hardware gross profit	\$ 843	\$ 1,066	(20.9)%
External Systems Hardware gross profit margin	37.6 %	37.4 %	0.2 pts.
External Operating Systems Software gross profit	\$ 707	\$ 690	2.5 %
External Operating Systems Software gross profit margin	84.2 %	83.3 %	0.9 pts.
External total gross profit	\$ 1,551	\$ 1,756	(11.7)%
External total gross profit margin	50.3 %	47.8 %	2.6 pts.
Pre-tax income	\$ (141)	\$ 143	(198.1)%
Pre-tax margin	(4.1)%	3.5 %	(7.6)pts.

Management Discussion – (continued)

Systems gross profit margin increased 2.9 points to 53.5 percent in the second quarter of 2019 compared to the prior year, reflecting margin expansion across the hardware brands and the IBM Z product cycle. Systems Hardware margin increased 0.7 points to 43.6 points year to year, with margin expansion across the portfolio. For the first six months of 2019, Systems gross profit margin increased 2.6 points to 50.3 percent compared to the prior year, driven by actions taken in 2018 to better position the systems cost structure over the longer term. Systems Hardware gross profit margin was flat year to year, with margin declines in Power Systems, partially offset by margin improvement in Storage Systems.

In the second quarter of 2019, pre-tax income of \$61 million declined 82.3 percent and pre-tax margin decreased 11.1 points year to year to 3.2 percent. The pre-tax margin is impacted by the IBM Z product cycle, and also included an impact of 1.5 points from workforce rebalancing actions in the second quarter of 2019. For the first six months of 2019, Systems had a pre-tax loss of \$141 million compared to pre-tax income of \$143 million in the first six months of the prior year. Pre-tax margin decreased 7.6 points year to year to (4.1) percent, primarily due to the IBM Z product cycle.

Global Financing

Global Financing is a reportable segment that is measured as a stand-alone entity. Global Financing facilitates IBM clients' acquisition of information technology systems, software and services by providing financing solutions in the areas where the company has the expertise, while generating strong returns on equity. Global Financing also optimizes the recovery of residual values by selling assets sourced from end of lease, leasing used equipment to new clients, or extending lease arrangements with current clients. Sales of equipment include equipment returned at the end of a lease, surplus internal equipment and used equipment purchased externally. Residual value is a risk unique to the financing business and management of this risk is dependent upon the ability to accurately project future equipment values at lease inception. Global Financing has insight into product plans and cycles for the IBM products under lease. Based upon this product information, Global Financing continually monitors projections of future equipment values and compares them with the residual values reflected in the portfolio.

Results of Operations

(Dollars in millions)			Yr. to Yr. Percent/ Margin Change
For the three months ended June 30:			
	2019	2018	
External revenue	\$ 351	\$ 394	(11.0)%
Internal revenue	281	473	(40.6)
Total revenue	\$ 632	\$ 867	(27.1)%
Pre-tax income	\$ 239	\$ 357	(33.1)%
(Dollars in millions)			Yr. to Yr. Percent/ Margin Change
For the six months ended June 30:			
	2019	2018	
External revenue	\$ 757	\$ 799	(5.3)%
Internal revenue	581	902	(35.6)
Total revenue	\$ 1,338	\$ 1,701	(21.3)%
Pre-tax income	\$ 527	\$ 734	(28.1)%

In the second quarter, Global Financing total revenue of \$632 million declined 27.1 percent compared to the prior year. Internal revenue decreased 40.6 percent, driven by a decrease in internal used equipment sales (down 49.4 percent to \$189 million), and internal financing (down 7.8 percent to \$92 million). External revenue decreased 11.0 percent (9 percent adjusted for currency), due to a decrease in external used equipment sales (down 32.1 percent to \$65 million), and a decrease in external financing (down 4.2 percent to \$286 million).

Management Discussion – (continued)

The decrease in total revenue of \$363 million in the first six months of 2019 compared to the same period of 2018 was due to a decrease in internal revenue of 35.6 percent, driven by a decrease in internal used equipment sales (down 46.0 percent to \$377 million), partially offset by an increase in internal financing (up 0.3 percent to \$205 million). External revenue decreased 5.3 percent (2 percent adjusted for currency), driven by a decline in external used equipment sales (down 28.2 percent to \$134 million), partially offset by an increase in external financing (up 1.7 percent to \$623 million).

The decrease in internal and external financing revenue in the second quarter of 2019 compared to the same period in 2018 was primarily due to lower average asset balances, partially offset by higher asset yields. The increase in internal and external financing revenue for the first six months of 2019 compared to the same period in 2018 was primarily due to higher asset yields, partially offset by lower average asset balances.

Total sales of used equipment represented 40.1 percent and 38.2 percent of Global Financing's revenue in the second quarter and first six months of 2019, respectively, compared to 54.0 percent and 52.0 percent in the second quarter and first six months of 2018, respectively. The decrease in both periods was due to lower volumes of both internal and external used equipment sales. The gross profit margin on used sales was 53.7 percent and 58.3 percent in the second quarter of 2019 and 2018, respectively, and 53.0 percent and 58.6 percent in the first six months of 2019 and 2018, respectively.

Global Financing pre-tax income decreased 33.1 percent to \$239 million in the second quarter of 2019 compared to the same period in 2018, due to lower gross profit of \$165 million, partially offset by a decrease in expense of \$47 million. The decline in expense was primarily due to a decrease in the provision for credit losses driven by lower reserve requirements in the current year. Pre-tax income decreased 28.1 percent to \$527 million in the first six months of 2019, compared to the same period in 2018, due to lower gross profit of \$299 million, partially offset by a decrease in expense of \$92 million, which included a lower provision for credit losses and the gain from the sale of certain commercial financing capabilities in the first quarter of 2019.

Global Financing return on equity was 24.9 percent and 19.2 percent for the three and six months ended June 30, 2019 compared to 31.2 percent and 31.9 percent for the three and six months ended June 30, 2018. The decrease in return on equity in both periods was driven by a decline in net income. Net income included higher tax expense in the first quarter of 2019 due to additional guidance issued by the U.S. Treasury regarding the U.S. tax reform repatriation tax. Refer to page 97 for the details of the after-tax income and return on equity calculation.

Geographic Revenue

In addition to the revenue presentation by reportable segment, the company also measures revenue performance on a geographic basis.

(Dollars in millions)			Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
For the three months ended June 30:	2019	2018		
Total Revenue	<u>\$ 19,161</u>	<u>\$ 20,003</u>	<u>(4.2)%</u>	<u>(1.6)%</u>
Americas	\$ 8,806	\$ 9,212	(4.4)%	(3.4)%
Europe/Middle East/Africa (EMEA)	6,149	6,407	(4.0)	1.0
Asia Pacific	4,205	4,384	(4.1)	(1.7)

Management Discussion – (continued)

(Dollars in millions) For the six months ended June 30:	2019	2018	Yr. to Yr. Percent Change	Yr. to Yr. Percent Change Adjusted For Currency
Total Revenue	\$ 37,342	\$ 39,075	(4.4)%	(1.2)%
Americas	\$ 17,299	\$ 17,919	(3.5)%	(2.2)%
Europe/Middle East/Africa (EMEA)	11,876	12,583	(5.6)	0.4
Asia Pacific	8,167	8,573	(4.7)	(1.7)

Total revenue of \$19,161 million decreased 4.2 percent as reported and 2 percent adjusted for currency in the second quarter compared to the prior year. Americas revenue of \$8,806 million decreased 4.4 percent as reported and 3 percent adjusted for currency. EMEA revenue of \$6,149 million decreased 4.0 percent as reported, but increased 1 percent adjusted for currency. Asia Pacific revenue of \$4,205 million decreased 4.1 percent as reported and 2 percent adjusted for currency.

Within Americas, the U.S. decreased 4.7 percent compared to the prior year. Canada increased 4.4 percent as reported and 8 percent adjusted for currency. Latin America decreased 9.1 percent as reported and 3 percent adjusted for currency, with Brazil down 22.2 percent as reported and 17 percent adjusted for currency.

In EMEA, Germany declined 9.4 percent as reported (4 percent adjusted for currency) and France declined 9.4 percent as reported (4 percent adjusted for currency). The UK increased 0.9 percent (7 percent adjusted for currency) and Italy increased 1.1 percent (7 percent adjusted for currency). The Middle East and Africa region decreased 2.3 percent as reported and was flat adjusted for currency.

Within Asia Pacific, Japan increased 2.1 percent as reported (3 percent adjusted for currency) compared to the prior year. Australia decreased 19.3 percent as reported (13 percent adjusted for currency), China decreased 9.4 percent as reported (6 percent adjusted for currency) and India decreased 6.0 percent as reported (3 percent adjusted for currency).

Total revenue of \$37,342 million decreased 4.4 percent as reported and 1 percent adjusted for currency in the first six months of 2019 compared to the prior year. Americas revenue of \$17,299 million decreased 3.5 percent as reported and 2 percent adjusted for currency. EMEA revenue of \$11,876 million decreased 5.6 percent as reported and was flat adjusted for currency. Asia Pacific revenue of \$8,167 million decreased 4.7 percent as reported and 2 percent adjusted for currency.

Within Americas, the U.S. decreased 3.8 percent compared to the prior year. Canada increased 2.2 percent as reported and 6 percent adjusted for currency. Latin America decreased 6.6 percent as reported, but increased 1 percent adjusted for currency, with Brazil down 14.6 percent as reported and 7 percent adjusted for currency.

In EMEA, Germany declined 8.5 percent as reported (2 percent adjusted for currency) and France declined 9.3 percent as reported (3 percent adjusted for currency). Italy decreased 2.7 percent as reported, but increased 4 percent adjusted for currency. The UK was flat as reported and increased 6 percent adjusted for currency. The Middle East and Africa region decreased 5.2 percent as reported and 2 percent adjusted for currency.

Within Asia Pacific, Japan increased 1.9 percent as reported (3 percent adjusted for currency) compared to the prior year. Australia decreased 16.4 percent as reported (9 percent adjusted for currency), China decreased 12.8 percent as reported (9 percent adjusted for currency) and India decreased 11.9 percent as reported (6 percent adjusted for currency).

Management Discussion – (continued)

Expense

Total Expense and Other (Income)

(Dollars in millions)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Total consolidated expense and other (income)	\$ 6,242	\$ 6,423	(2.8)%
Non-operating adjustments:			
Amortization of acquired intangible assets	\$ (96)	\$ (109)	(12.2)%
Acquisition-related charges	(102)	(1)	nm
Non-operating retirement-related (costs)/income	(136)	(394)	(65.4)
Operating (non-GAAP) expense and other (income)	\$ 5,907	\$ 5,918	(0.2)%
Total consolidated expense-to-revenue ratio	32.6 %	32.1 %	0.5 pts.
Operating (non-GAAP) expense-to-revenue ratio	30.8 %	29.6 %	1.2 pts.

nm - not meaningful

(Dollars in millions)			Yr. to Yr. Percent Change
For the six months ended June 30:	2019	2018	
Total consolidated expense and other (income)	\$ 12,402	\$ 13,534	(8.4)%
Non-operating adjustments:			
Amortization of acquired intangible assets	\$ (194)	\$ (219)	(11.6)%
Acquisition-related charges	(141)	(1)	nm
Non-operating retirement-related (costs)/income	(274)	(796)	(65.6)
Operating (non-GAAP) expense and other (income)	\$ 11,793	\$ 12,518	(5.8)%
Total consolidated expense-to-revenue ratio	33.2 %	34.6 %	(1.4)pts.
Operating (non-GAAP) expense-to-revenue ratio	31.6 %	32.0 %	(0.5)pts.

nm - not meaningful

Total expense and other (income) decreased 2.8 percent in the second quarter of 2019 versus the prior year primarily due to lower non-operating retirement-related costs (\$258 million) as a result of the amortization period change to the U.S. Pension Plan in the first quarter.

There were several nonrecurring items in the quarter. The closure of the two software divestitures resulted in a gain of \$578 million in other income. Within SG&A, the company took actions to revitalize skills and address structure and stranded costs associated with these divestitures, resulting in a workforce rebalancing charge of approximately \$500 million. In addition, the company took a charge for an unfavorable legal ruling received in late June, related to a case that had been under dispute for nearly a decade. Together, these gains and charges were essentially neutral to the company's total expense and profit in the second quarter.

For additional information regarding total expense and other (income) for both expense presentations, see the following analyses by category.

Management Discussion – (continued)

Selling, General and Administrative Expense

(Dollars in millions)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Selling, general and administrative expense:			
Selling, general and administrative — other	\$ 4,335	\$ 4,190	3.5 %
Advertising and promotional expense	421	407	3.3
Workforce rebalancing charges	495	23	nm
Amortization of acquired intangible assets	95	109	(12.8)
Stock-based compensation	93	88	5.8
Bad debt expense	17	40	(56.2)
Total consolidated selling, general and administrative expense	<u>\$ 5,456</u>	<u>\$ 4,857</u>	<u>12.3 %</u>
Non-operating adjustments:			
Amortization of acquired intangible assets	\$ (95)	\$ (109)	(12.8)%
Acquisition-related charges	(54)	(1)	nm
Operating (non-GAAP) selling, general and administrative expense	<u>\$ 5,307</u>	<u>\$ 4,746</u>	<u>11.8 %</u>

nm — not meaningful

(Dollars in millions)			Yr. to Yr. Percent Change
For the six months ended June 30:	2019	2018	
Selling, general and administrative expense:			
Selling, general and administrative — other	\$ 8,383	\$ 8,490	(1.3)%
Advertising and promotional expense	853	809	5.5
Workforce rebalancing charges	514	563	(8.7)
Amortization of acquired intangible assets	192	219	(12.2)
Stock-based compensation	167	169	(1.0)
Bad debt expense	37	52	(29.8)
Total consolidated selling, general and administrative expense	<u>\$ 10,147</u>	<u>\$ 10,302</u>	<u>(1.5)%</u>
Non-operating adjustments:			
Amortization of acquired intangible assets	\$ (192)	\$ (219)	(12.2)%
Acquisition-related charges	(81)	(1)	nm
Operating (non-GAAP) selling, general and administrative expense	<u>\$ 9,873</u>	<u>\$ 10,082</u>	<u>(2.1)%</u>

nm — not meaningful

Total selling, general and administrative (SG&A) expense increased 12.3 percent in the second quarter of 2019 versus the prior year driven primarily by the following factors:

- Higher workforce rebalancing charges (10 points); and
- Higher spending (4 points) including higher acquisition-related charges and litigation-related matters; partially offset by
- The effects of currency (2 points).

Operating (non-GAAP) expense increased 11.8 percent year to year primarily driven by the same factors.

SG&A expense decreased 1.5 percent in the first six months of 2019 versus the prior year driven primarily by the effects of currency (3 points).

Management Discussion – (continued)

Operating (non-GAAP) expense decreased 2.1 percent year to year, also primarily driven by the effects of currency.

Bad debt expense decreased \$16 million year to year in the first six months of 2019. The receivables provision coverage was 1.7 percent at June 30, 2019, an increase of 10 basis points from December 31, 2018 and a decrease of 10 basis points from June 30, 2018.

Research, Development and Engineering

(Dollars in millions)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Research, development and engineering expense	\$ 1,407	\$ 1,364	3.1 %

(Dollars in millions)			Yr. to Yr. Percent Change
For the six months ended June 30:	2019	2018	
Research, development and engineering expense	\$ 2,840	\$ 2,769	2.6 %

Research, development and engineering (RD&E) expense was 7.3 percent and 7.6 percent of revenue in the second quarter and first six months of 2019, respectively, compared to 6.8 percent and 7.1 percent in the prior-year periods, respectively.

RD&E expense in the second quarter of 2019 increased 3.1 percent year to year primarily driven by:

- Higher spending (4 points), including investment in the next generation mainframe; partially offset by
- The effects of currency (1 point).

RD&E expense in the first six months of 2019 increased 2.6 percent year to year primarily driven by:

- Higher spending (4 points); partially offset by
- The effects of currency (2 points).

Intellectual Property and Custom Development Income

(Dollars in millions)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Intellectual Property and Custom Development Income:			
Licensing of intellectual property including royalty-based fees	\$ 144	\$ 180	(20.2)%
Custom development income	62	66	(6.6)
Sales/other transfers of intellectual property	16	4	306.5
Total	\$ 222	\$ 250	(11.4)%

Management Discussion – (continued)

(Dollars in millions)			Yr. to Yr. Percent Change
For the six months ended June 30:	2019	2018	
Intellectual Property and Custom Development Income:			
Licensing of intellectual property including royalty-based fees	\$ 194	\$ 429	(54.8)%
Custom development income	113	134	(15.6)
Sales/other transfers of intellectual property	17	4	304.7
Total	<u>\$ 323</u>	<u>\$ 567</u>	<u>(43.0)%</u>

Licensing of intellectual property including royalty-based fees decreased 20.2 percent and 54.8 percent year to year in the second quarter and first six months of 2019, respectively. This was primarily due to a decline in new partnership agreements compared to the second quarter and first six months of 2018. The timing and amount of licensing, sales or other transfers of IP may vary significantly from period to period depending upon the timing of licensing agreements, economic conditions, industry consolidation and the timing of new patents and know-how development.

Other (Income) and Expense

(Dollars in millions)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Other (income) and expense:			
Foreign currency transaction losses/(gains)	\$ 172	\$ (414)	nm
(Gains)/losses on derivative instruments	(271)	435	nm
Interest income	(167)	(47)	259.1 %
Net (gains)/losses from securities and investment assets	(19)	(59)	(68.1)
Retirement-related costs/(income)	136	394	(65.4)
Other	(597)	(29)	nm
Total consolidated other (income) and expense	<u>\$ (747)</u>	<u>\$ 280</u>	<u>nm</u>
Non-operating adjustments:			
Amortization of acquired intangible assets	\$ (1)	\$ —	nm
Acquisition-related charges	120	—	nm
Non-operating retirement-related (costs)/income	(136)	(394)	(65.4)%
Operating (non-GAAP) other (income) and expense	<u>\$ (764)</u>	<u>\$ (115)</u>	<u>nm</u>

nm - not meaningful

(Dollars in millions)			Yr. to Yr. Percent Change
For the six months ended June 30:	2019	2018	
Other (income) and expense:			
Foreign currency transaction losses/(gains)	\$ (1)	\$ (273)	(99.7)%
(Gains)/losses on derivative instruments	(202)	386	nm
Interest income	(238)	(117)	102.9
Net (gains)/losses from securities and investment assets	(23)	(81)	(71.5)
Retirement-related costs/(income)	274	796	(65.6)
Other	(630)	(19)	nm
Total consolidated other (income) and expense	<u>\$ (820)</u>	<u>\$ 692</u>	<u>nm</u>
Non-operating adjustments:			
Amortization of acquired intangible assets	\$ (1)	\$ —	nm
Acquisition-related charges	144	—	nm
Non-operating retirement-related (costs)/income	(274)	(796)	(65.6)%
Operating (non-GAAP) other (income) and expense	<u>\$ (951)</u>	<u>\$ (104)</u>	<u>nm</u>

nm - not meaningful

Management Discussion – (continued)

Total consolidated other (income) and expense was income of \$747 million in the second quarter of 2019 compared to expense of \$280 million in the prior year. The \$1,027 million year-to-year change was primarily driven by:

- Higher gains reflected in Other from divestitures (\$578 million);
- Lower non-operating retirement-related costs (\$258 million). Refer to “Retirement-Related Plans” for additional information; and
- Net exchange gains (including derivative instruments) in the current year versus net exchange losses (including derivative instruments) in the prior year (\$120 million). These hedging gains help mitigate currency impacts in the Consolidated Statement of Earnings.

Operating (non-GAAP) other (income) and expense was \$764 million of income in the second quarter of 2019 and increased \$649 million compared to the prior-year period. The year-to-year change was driven primarily by the dynamics described above, excluding the lower non-operating retirement-related costs.

Total consolidated other (income) and expense was income of \$820 million in the first six months of 2019 compared to expense of \$692 million in the prior year. The \$1,512 million year-to-year change was primarily driven by:

- Higher gains reflected in Other from divestitures (\$578 million);
- Lower non-operating retirement-related costs (\$522 million). Refer to “Retirement-Related Plans” for additional information; and
- Net exchange gains (including derivative instruments) in the current year versus net exchange losses (including derivative instruments) in the prior year (\$316 million). These hedging gains help mitigate currency impacts in the Consolidated Statement of Earnings.

Operating (non-GAAP) other (income) and expense was \$951 million of income in the first six months of 2019 compared to income of \$104 million in the prior year. The year-to-year change was driven primarily by the dynamics described above, excluding the lower non-operating retirement-related costs.

Interest Expense

(Dollars in millions)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Interest expense	<u>\$ 348</u>	<u>\$ 173</u>	<u>100.8 %</u>
Non-operating adjustment:			
Acquisition-related charges	<u>\$ (168)</u>	<u>\$ —</u>	<u>nm</u>
Operating (non-GAAP) interest expense	<u>\$ 180</u>	<u>\$ 173</u>	<u>3.7 %</u>

nm - not meaningful

Management Discussion – (continued)

(Dollars in millions)			Yr. to Yr. Percent Change
For the six months ended June 30:	2019	2018	
Interest expense	\$ 558	\$ 338	64.9 %
Non-operating adjustment:			
Acquisition-related charges	\$ (204)	\$ —	nm
Operating (non-GAAP) interest expense	\$ 354	\$ 338	4.6 %

nm - not meaningful

Interest expense increased \$174 million and \$220 million year to year in the second quarter and first six months of 2019, respectively. Interest expense is presented in cost of financing in the Consolidated Statement of Earnings if the related external borrowings are to support the Global Financing external business. Overall interest expense (excluding capitalized interest) for the second quarter and first six months of 2019 was \$512 million and \$901 million, respectively, an increase of \$145 million and \$188 million versus the comparable prior-year periods, primarily driven by a higher average debt balance and higher average interest rates as the company issued debt for the Red Hat acquisition.

Operating (non-GAAP) interest expense increased \$6 million and \$16 million year to year in the second quarter and first six months of 2019, respectively, and excludes the Red Hat pre-closing debt financing costs.

Retirement-Related Plans

The following table provides the total pre-tax cost for all retirement-related plans. The operating cost amounts are included in the Consolidated Statement of Earnings within the caption (e.g., Cost, SG&A, RD&E) relating to the job function of the plan participants. The non-operating cost amounts are included in other (income) and expense.

(Dollars in millions)			Yr. to Yr. Percent Change
For the three months ended June 30:	2019	2018	
Retirement-related plans — cost:			
Service cost	\$ 96	\$ 106	(8.6)%
Multi-employer plans	8	10	(16.9)
Cost of defined contribution plans	253	248	2.0
Total operating costs/(income)	\$ 358	\$ 364	(1.6)%
Interest cost	\$ 723	\$ 684	5.8 %
Expected return on plan assets	(1,047)	(1,016)	3.1
Recognized actuarial losses	454	735	(38.2)
Amortization of prior service costs/(credits)	(3)	(19)	(84.2)
Curtailements/settlements	3	6	(48.3)
Other costs	6	4	32.5
Total non-operating costs/(income)	\$ 136	\$ 394	(65.4)%
Total retirement-related plans — cost	\$ 494	\$ 758	(34.8)%

Management Discussion – (continued)

(Dollars in millions)			Yr. to Yr. Percent Change
For the six months ended June 30:	2019	2018	
Retirement-related plans — cost:			
Service cost	\$ 193	\$ 214	(9.8)%
Multi-employer plans	17	20	(17.2)
Cost of defined contribution plans	501	516	(2.9)
Total operating costs/(income)	<u>\$ 711</u>	<u>\$ 750</u>	<u>(5.3)%</u>
Interest cost	\$ 1,451	\$ 1,376	5.5 %
Expected return on plan assets	(2,097)	(2,040)	2.8
Recognized actuarial losses	911	1,482	(38.5)
Amortization of prior service costs/(credits)	(6)	(37)	(84.4)
Curtailments/settlements	4	6	(29.5)
Other costs	11	11	(3.3)
Total non-operating costs/(income)	<u>\$ 274</u>	<u>\$ 796</u>	<u>(65.6)%</u>
Total retirement-related plans — cost	<u>\$ 985</u>	<u>\$ 1,546</u>	<u>(36.3)%</u>

Total pre-tax retirement-related plan cost decreased by \$264 million compared to the second quarter of 2018, driven by a decrease in recognized actuarial losses (\$281 million), primarily due to the change in the amortization period in the U.S. Qualified Personal Pension Plan and higher expected return on plan assets (\$31 million), partially offset by higher interest costs (\$40 million). Total cost for the first six months of 2019 decreased \$561 million versus the first six months of 2018, primarily driven by a decrease in recognized actuarial losses (\$570 million) primarily due to the amortization period change and higher expected return on plan assets (\$57 million); partially offset by higher interest costs (\$76 million).

As described in the “Operating (non-GAAP) Earnings” section, the company characterizes certain retirement-related costs as operating and others as non-operating. Utilizing this characterization, operating retirement-related costs in the second quarter of 2019 were \$358 million, a decrease of \$6 million compared to the second quarter of 2018. Non-operating costs of \$136 million in the second quarter of 2019 decreased \$258 million year to year, driven primarily by lower recognized actuarial losses (\$281 million) and a higher expected return on plan assets (\$31 million), partially offset by higher interest costs (\$40 million). For the first six months of 2019, operating retirement-related costs were \$711 million, a decrease of \$39 million and non-operating costs were \$274 million, a decrease of \$522 million compared to the prior year, driven primarily by the same factors as above.

Taxes

The continuing operations effective tax rate for the second quarter of 2019 was 9.7 percent, a decrease of 3.7 points compared to the second quarter of 2018. The continuing operations effective tax rate for the first six months of 2019 was 12.0 percent, an increase of 16.3 points compared to the first six months of 2018. The operating (non-GAAP) tax rate for the second quarter of 2019 was 11.0 percent, a decrease of 5.0 points compared to the second quarter of 2018. The operating (non-GAAP) tax rate for the first six months of 2019 was 10.6 percent, an increase of 10.4 points compared to the first six months of 2018.

The decrease in the continuing operations effective tax rate in the second quarter of 2019 was primarily driven by an increase in tax benefits attributable to foreign audit activity (3.7 points). The change in the continuing operations tax rate for the first six months of 2019 compared to 2018 was driven by reduced audit resolution benefits. The change in the operating (non-GAAP) tax rate was primarily driven by the same factors.

With respect to major U.S. state and foreign taxing jurisdictions, the company is generally no longer subject to tax examinations for years prior to 2014. The company's U.S. income tax returns for 2013 and 2014 continue to be examined by the IRS with specific focus on certain cross-border transactions in 2013. The company is no longer subject to income tax examination of its U.S. federal tax return for years prior to 2013. The company is involved in a number of income

Management Discussion – (continued)

tax-related matters in India challenging tax assessments issued by the India Tax Authorities. The open years contain matters that could be subject to differing interpretations of applicable tax laws and regulations as it relates to the amount and/or timing of income, deductions and tax credits. Although the outcome of tax audits is always uncertain, the company believes that adequate amounts of tax, interest and penalties have been provided for any adjustments that are expected to result for these years.

The amount of unrecognized tax benefits at June 30, 2019 is \$6,520 million which can be reduced by \$636 million of offsetting tax benefits associated with timing adjustments, U.S. tax credits, potential transfer pricing adjustments, and state income taxes. The net amount of \$5,884 million, if recognized, would favorably affect the company's effective tax rate.

Earnings Per Share

Basic earnings per share is computed on the basis of the weighted-average number of shares of common stock outstanding during the period. Diluted earnings per share is computed on the basis of the weighted-average number of shares of common stock outstanding plus the effect of dilutive potential common shares outstanding during the period using the treasury stock method. Dilutive potential common shares include outstanding stock options and stock awards.

	2019	2018	Yr. to Yr. Percent Change
For the three months ended June 30:			
<hr/>			
Earnings per share of common stock from continuing operations:			
Assuming dilution	\$ 2.81	\$ 2.61	7.7 %
Basic	\$ 2.82	\$ 2.63	7.2 %
Diluted operating (non-GAAP)	\$ 3.17	\$ 3.08	2.9 %
Weighted-average shares outstanding: (in millions)			
Assuming dilution	890.8	919.4	(3.1)%
Basic	886.3	915.1	(3.1)%
For the six months ended June 30:			
<hr/>			
Earnings per share of common stock from continuing operations:			
Assuming dilution	\$ 4.58	\$ 4.42	3.6 %
Basic	\$ 4.61	\$ 4.44	3.8 %
Diluted operating (non-GAAP)	\$ 5.42	\$ 5.53	(2.0)%
Weighted-average shares outstanding: (in millions)			
Assuming dilution	892.4	922.4	(3.3)%
Basic	887.9	917.9	(3.3)%

Actual shares outstanding at June 30, 2019 were 885.9 million. The weighted-average number of common shares outstanding assuming dilution during the second quarter and first six months of 2019 were 28.6 million (3.1 percent) and 30.0 million (3.3 percent) shares lower than the same periods of 2018. The decreases were primarily the result of the common stock repurchase program.

Financial Position

Dynamics

At June 30, 2019, the balance sheet remained strong with flexibility to support the business. Cash, restricted cash and marketable securities at quarter end were \$46,408 million compared to \$12,222 million at December 31, 2018, primarily due to incremental debt issuances to fund the Red Hat acquisition. On July 9, 2019, approximately \$34,000 million of cash was used to close the Red Hat acquisition. Total debt of \$73,039 million at June 30, 2019 increased

Management Discussion – (continued)

\$27,227 million from December 31, 2018, driven by new debt issuances of \$31,064 million to primarily be used to fund the Red Hat acquisition; partially offset by debt maturities of \$3,778 million. Within total debt, \$24,983 million is in support of the Global Financing business. The company continues to manage the investment portfolio to meet its capital preservation and liquidity objectives. In the first six months of 2019, the company generated \$7,700 million in net cash from operations, compared to \$6,896 million in the first six months of 2018. The company has consistently generated strong cash flows from operations and continues to have access to additional sources of liquidity through the capital markets and its credit facilities. The strong free cash flow generated by the company, portfolio actions taken and the suspension of share repurchases position IBM to return to its target leverage ratios within a couple of years.

The assets and debt associated with the Global Financing business are a significant part of the company's financial position, which reflects the wind down of its OEM IT commercial financing operations. The financial position amounts appearing on pages 5 and 6 are the consolidated amounts including Global Financing.

Global Financing Financial Position Key Metrics:

(Dollars in millions)	At June 30, 2019	At December 31, 2018
Cash and cash equivalents	\$ 1,738	\$ 1,833
Net investment in sales-type and direct financing leases ⁽¹⁾	6,091	6,924
Equipment under operating leases — external clients ⁽²⁾	337	444
Client loans	12,014	12,802
Total client financing assets	18,442	20,170
Commercial financing receivables	5,903	11,838
Intercompany financing receivables ^{(3) (4)}	3,952	4,873
Total assets	\$ 31,003	\$ 41,320
Debt	\$ 24,983	\$ 31,227
Total equity	\$ 2,780	\$ 3,470

(1) Includes deferred initial direct costs which are eliminated in IBM's consolidated results.

(2) Includes intercompany mark-up, priced on an arm's-length basis, on products purchased from the company's product divisions which is eliminated in IBM's consolidated results.

(3) Entire amount eliminated for purposes of IBM's consolidated results and therefore does not appear on pages 5 and 6.

(4) These assets, along with all other financing assets in this table, are leveraged at the value in the table using Global Financing debt.

At June 30, 2019, substantially all client and commercial financing assets were IT related assets, and approximately 57 percent of the total external portfolio was with investment grade clients with no direct exposure to consumers, an increase of 3 points year to year. This investment grade percentage is based on the credit ratings of the companies in the portfolio.

The company has a long-standing practice of taking mitigating actions, in certain circumstances, to transfer credit risk to third parties, including credit insurance, financial guarantees, non-recourse borrowings, transfers of receivables recorded as true sales in accordance with accounting guidance or sales of equipment under operating lease. Adjusting for the mitigation actions, the investment grade content would increase to 69 percent, a decrease of 1 point year to year.

IBM Working Capital

(Dollars in millions)	At June 30, 2019	At December 31, 2018
Current assets	\$ 77,517	\$ 49,146
Current liabilities	42,351	38,227
Working capital	<u>\$ 35,166</u>	<u>\$ 10,918</u>
Current ratio	1.83:1	1.29:1

Management Discussion – (continued)

Working capital increased \$24,248 million from the year-end 2018 position. The key changes are described below:

Current assets increased \$28,372 million (\$28,284 million adjusted for currency) due to:

- An increase of \$34,186 million (\$34,157 million adjusted for currency) in cash, restricted cash, and marketable securities; partially offset by
- A decline in receivables of \$5,826 million (\$5,856 million adjusted for currency) primarily driven by a decline in financing receivables of \$6,845 million primarily due to the wind down of OEM IT commercial financing; partially offset by an increase in other receivables of \$1,038 million primarily related to divestitures.

Current liabilities increased \$4,124 million (\$3,995 million adjusted for currency) as a result of:

- An increase in short-term debt of \$4,387 million due to debt issuances of \$5,307 million and reclassifications of \$3,149 million from long-term debt to reflect upcoming maturities; partially offset by maturities of \$3,778 million; and
- An increase in operating lease liabilities of \$1,319 million (\$1,313 million adjusted for currency) as a result of the adoption of the new leasing standard on January 1, 2019; partially offset by
- A decrease in accounts payable of \$1,834 million (\$1,850 million adjusted for currency) reflecting declines from seasonally higher year-end balances and the wind down of OEM IT commercial financing.

Receivables and Allowances

Roll Forward of Total IBM Receivables Allowance for Credit Losses (included in Total IBM)

(Dollars in millions)									
<u>January 1, 2019</u>		<u>Additions / (Releases) *</u>	<u>Write-offs **</u>	<u>Other ***</u>		<u>June 30, 2019</u>			
\$	639	\$	37	\$	(86)	\$	8	\$	597

* Additions for Allowance for Credit Losses are charged to expense.

** Refer to note A, "Significant Accounting Policies," in the company's 2018 Annual Report for additional information regarding Allowance for Credit Loss write-offs.

*** Primarily represents translation adjustments.

The total IBM receivables provision coverage was 1.7 percent at June 30, 2019, an increase of 10 basis points compared to December 31, 2018. The increase was driven by the overall decline in gross receivables. The majority of the write-offs during the six months ended June 30, 2019 related to receivables which had been previously reserved.

Management Discussion – (continued)

Global Financing Receivables and Allowances

The following table presents external Global Financing receivables excluding residual values, the allowance for credit losses and immaterial miscellaneous receivables.

<u>(Dollars in millions)</u>	<u>At June 30, 2019</u>	<u>At December 31, 2018</u>
Recorded investment ⁽¹⁾	\$ 23,637	\$ 31,182
Specific allowance for credit losses	222	220
Unallocated allowance for credit losses	56	72
Total allowance for credit losses	278	292
Net financing receivables	\$ 23,359	\$ 30,890
Allowance for credit losses coverage	1.2 %	0.9 %

(1) Includes deferred initial direct costs which are eliminated in IBM's consolidated results.

The percentage of Global Financing receivables reserved increased from 0.9 percent at December 31, 2018, to 1.2 percent at June 30, 2019. The increase was primarily driven by the overall decline in gross receivables. Unallocated reserves decreased 22 percent from \$72 million at December 31, 2018, to \$56 million at June 30, 2019. Specific reserves remained relatively flat at \$220 million at December 31, 2018, compared to \$222 million at June 30, 2019.

Roll Forward of Global Financing Receivables Allowance for Credit Losses

<u>(Dollars in millions)</u>		<u>Additions / (Releases)*</u>	<u>Write-offs **</u>	<u>Other ***</u>	<u>June 30, 2019</u>			
<u>January 1, 2019</u>	\$	292	\$	(16)	\$	7	\$	278

* Additions for Allowance for Credit Losses are charged to expense.

** Refer to note A, "Significant Accounting Policies," in the company's 2018 Annual Report for additional information regarding allowance for credit loss write-offs.

*** Primarily represents translation adjustments.

Global Financing's bad debt expense was a release of \$9 million for the three months ended June 30, 2019, compared to an addition of \$20 million for the same period in 2018, due to lower specific reserves and a higher unallocated reserve release in 2019.

Global Financing's bad debt expense was a release of \$5 million for the six months ended June 30, 2019, compared to an addition of \$24 million for the same period in 2018, also due to lower specific reserves and a higher unallocated reserve release in 2019.

Noncurrent Assets and Liabilities

<u>(Dollars in millions)</u>	<u>At June 30, 2019</u>	<u>At December 31, 2018</u>
Noncurrent assets	\$ 77,135	\$ 74,236
Long-term debt	\$ 58,445	\$ 35,605
Noncurrent liabilities (excluding debt)	\$ 36,081	\$ 32,621

Noncurrent assets increased \$2,899 million (\$2,617 million adjusted for currency) due to:

- An increase in operating right-of-use assets of \$4,998 million (\$4,989 million adjusted for currency) as a result of the adoption of the new leasing standard on January 1, 2019; partially offset by

Management Discussion – (continued)

- A decrease in goodwill of \$982 million (\$1,124 million adjusted for currency) resulting from divestitures; and
- A decrease in long-term financing receivables of \$707 million (\$751 million adjusted for currency) as a result of seasonal reductions from higher year-end balances.

Long-term debt increased \$22,840 million due to:

- Issuances of \$25,757 million primarily to finance the Red Hat acquisition; partially offset by
- Reclassifications to short-term debt of \$3,149 million to reflect upcoming maturities.

Noncurrent liabilities (excluding debt) increased \$3,460 million (\$3,366 million adjusted for currency) due to:

- An increase in long-term operating lease liabilities of \$3,946 million (\$3,942 million adjusted for currency) as a result of the adoption of the new leasing standard on January 1, 2019.

Debt

The company's funding requirements are continually monitored and strategies are executed to manage the overall asset and liability profile. Additionally, the company maintains sufficient flexibility to access global funding sources as needed.

(Dollars in millions)	At June 30, 2019	At December 31, 2018
Total company debt	\$ 73,039	\$ 45,812
Total Global Financing segment debt	\$ 24,983	\$ 31,227
Debt to support external clients	21,794	27,536
Debt to support internal clients	3,189	3,690
Non-Global Financing debt	\$ 48,056	\$ 14,585

Total debt of \$73,039 million increased \$27,227 million from December 31, 2018, driven by new debt issuances of \$31,064 million; partially offset by debt maturities of \$3,778 million.

Non-Global Financing debt of \$48,056 million increased \$33,471 million from December 31, 2018 primarily driven by issuances to fund the Red Hat acquisition.

Global Financing debt of \$24,983 million decreased \$6,244 million from December 31, 2018, partially due to the company's wind down of its OEM IT commercial financing operations.

Global Financing provides financing predominantly for the company's external client assets, as well as for assets under contract by other IBM units. These assets, primarily for Global Technology Services, generate long-term, stable revenue streams similar to the Global Financing asset portfolio. Based on their attributes, these Global Technology Services assets are leveraged with the balance of the Global Financing asset base.

The debt used to fund Global Financing assets is composed of intercompany loans and external debt. Total debt changes generally correspond with the level of client and commercial financing receivables, the level of cash and cash equivalents, the change in intercompany and external payables and the change in intercompany investment from IBM. The terms of the intercompany loans are set by the company to substantially match the term, currency and interest rate variability underlying the financing receivable and are based on arm's-length pricing. The Global Financing debt-to-equity ratio remained at 9.0 to 1 at June 30, 2019.

Management Discussion – (continued)

As previously stated, the company measures Global Financing as a stand-alone entity, and accordingly, interest expense relating to debt supporting Global Financing’s external client and internal business is included in the “Global Financing Results of Operations” and in note 8, “Segments.” In the company’s Consolidated Statement of Earnings, the external debt-related interest expense supporting Global Financing’s internal financing to the company is reclassified from cost of financing to interest expense.

Equity

Total equity increased \$847 million from December 31, 2018, primarily due to increases from net income (\$4,089 million) and retirement-related plans (\$760 million); partially offset by decreases from dividends paid (\$2,833 million) and an increase in treasury stock (\$1,315 million) primarily due to share repurchases.

Cash Flow

The company’s cash flows from operating, investing and financing activities, as reflected in the Consolidated Statement of Cash Flows on page 7, are summarized in the following table. These amounts include the cash flows associated with the Global Financing business.

(Dollars in millions)

For the six months ended June 30:

	2019	2018
Net cash provided by/(used in) continuing operations:		
Operating activities	\$ 7,700	\$ 6,896
Investing activities	3,309	(2,399)
Financing activities	22,894	(5,428)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	27	(344)
Net change in cash, cash equivalents and restricted cash	<u>\$ 33,930</u>	<u>\$ (1,274)</u>

Net cash provided by operating activities increased \$804 million as compared to the first six months of 2018 driven primarily by:

- An increase of \$799 million in cash provided by financing receivables.

Investing activities were a net source of cash of \$3,309 million in the first six months of 2019 compared to a net use of cash of \$2,399 million in the first six months of 2018. The year-to-year increase in cash flow of \$5,708 million was driven by:

- An increase of \$3,406 million in cash provided by net non-operating finance receivables primarily driven by the wind down of OEM IT commercial financing operations; and
- An increase in cash provided by current year divestitures of \$888 million; and
- A decrease in cash used for net capital expenditures of \$852 million.

Financing activities were a net source of cash of \$22,894 million in the first six months of 2019 compared to a net use of cash of \$5,428 million in the first six months of 2018. The year-to-year increase in cash flow of \$28,321 million was driven by:

- An increase in net cash sourced from debt transactions of \$27,824 million primarily driven by a higher level of issuances as the company prepared to close the Red Hat acquisition.

Management Discussion – (continued)

Looking Forward

The company's strategies, investments and actions are all made with an objective of optimizing long-term performance. A long-term perspective ensures that the company is well-positioned to take advantage of the major shifts in technology, business and the global economy.

As part of its long-term strategic model, the company expects to continue to allocate capital efficiently and effectively to investments, and to return value to shareholders. Over the last several years, the company has been making investments and shifting resources, embedding AI and cloud into its offerings while building new solutions and modernizing its existing platforms. These investments not only drive current performance, but will extend the company's innovation leadership into the future. The company's key differentiators are built around three pillars — innovative technology, industry expertise and trust and security, uniquely delivered through an integrated model.

The company is focused on the next chapter of cloud, which will shift mission-critical work to the cloud and optimize everything from supply chains to core banking systems. To address this opportunity, enterprises need to be able to move and manage data, services, and workflows across multiple clouds and on-premises. They also need to be able to address security concerns, data protection and protocols, availability, and cloud management. This requires a hybrid, multi-cloud, open approach. As a result, the company has been reshaping its business to address this opportunity, investing heavily to build capabilities.

On July 9, 2019, the company closed the Red Hat acquisition. Due to the timing of the closing, the company has not updated full year expectations to include Red Hat or Red Hat related activity. Full year expectations will be updated at an investor briefing webcast on August 2, 2019. Through the second quarter, the company remains on track to achieve GAAP earnings per share from continuing operations for 2019 of at least \$12.45. Excluding acquisition-related charges of \$0.76 per share, non-operating retirement-related items of \$0.45 per share and tax reform enactment impacts of \$0.24 per share, operating (non-GAAP) earnings per share is on track to be at least \$13.90. Earnings per share expectations do not include Red Hat or Red Hat related activity, other than pre-closing financing costs, which are included in GAAP results. The company remains on track to achieve free cash flow of approximately \$12 billion in 2019. The free cash flow expectation also does not include estimated impacts from Red Hat.

At closing, Red Hat shareholders were entitled to receive \$190 per share in cash, which represented a total equity value of approximately \$34 billion and was remitted to the paying agent. The company funded the transaction through a combination of cash on hand and proceeds from debt issuances. The company previously announced its intent to suspend its share repurchase program in 2020 and 2021. Upon closing of the Red Hat acquisition, the company suspended its share repurchase program, which was earlier than previously stated. With the strong free cash flow generated by the company, portfolio actions taken and the suspension of share repurchases, this positions IBM to return to its target leverage ratios within a couple of years. The company will continue with a disciplined financial policy and is committed to maintaining strong investment grade credit ratings and supporting a solid and growing dividend.

IBM's acquisition of Red Hat brings together the best-in-class hybrid cloud providers and will enable companies to securely unlock the full value of cloud for their businesses. The company has been building hybrid cloud capabilities across the business to address the next chapter of cloud and to prepare for this important milestone. IBM and Red Hat are strongly positioned to address this opportunity and accelerate hybrid cloud adoption. The acquisition of Red Hat reinforces IBM's high-value model, combining the power and flexibility of Red Hat's open hybrid cloud technologies with the scale and depth of IBM's innovation and industry expertise, which is expected to elevate all of IBM as Red Hat grows and the company sells more software and services.

As previously stated, the company continues to expect the acquisition of Red Hat, including related activity to be accretive to free cash flow in the first year, and accretive to operating (non-GAAP) earnings per share by the end of the second year after closing. Consistent with the acquisition of a highly profitable software business, non-cash purchase accounting adjustments will result in the acquisition being dilutive to full-year 2019 earnings per share expectations. In an acquisition, U.S. GAAP requires the company to record all assets acquired and liabilities assumed at the acquisition

Management Discussion – (continued)

date fair value. This includes the acquired deferred revenue balance. This will result in a non-cash adjustment to the acquired deferred revenue balance and a reduction to reported revenue post-closing. The level of adjustment will reflect the high margin profile of Red Hat's business, and deferred revenue is expected to be replenished over the subsequent two to three years, given Red Hat's high renewal rates and a stable and growing client base. Additional information will be provided when the company provides updated full-year 2019 expectations at the August 2nd briefing.

Beginning in the second quarter of 2019 and continuing throughout the year, IBM's Global Financing business is winding down the portion of its commercial financing operations, which provides short-term working capital solutions for OEM information technology suppliers, distributors and resellers. This is consistent with IBM's capital allocation strategy and high-value focus. IBM Global Financing will continue to provide differentiated end-to-end financing solutions, including commercial financing in support of IBM partner relationships. The wind down of this activity is expected to reduce IBM's revenue, with a nominal impact to profit, however it does not change the company's earnings per share and free cash flow expectations for 2019.

Beginning in 2019, within the IBM U.S. Qualified Personal Pension Plan, substantially all the plan participants are now considered inactive, which, as required by U.S. GAAP, resulted in a change in the amortization period of unrecognized actuarial losses, from the average remaining service period of active plan participants to the average remaining life expectancy of inactive plan participants. These periods are approximately 6 years and 18 years, respectively. As a result of this change, there will be a reduction to 2019 amortization expense of approximately \$900 million. Actuarial loss amortization is reported within non-operating pension costs. There will be no impact to 2019 operating (non-GAAP) retirement-related costs, funded status, retiree benefit payments or funding requirements of the U.S. Qualified Personal Pension Plan. However, there will be an impact to free cash flow realization.

The company expects 2019 pre-tax retirement-related plan cost to be approximately \$2.0 billion, a decrease of approximately \$1 billion compared to 2018. This estimate reflects current pension plan assumptions at December 31, 2018. Within total retirement-related plan cost, operating retirement-related plan cost is expected to be approximately \$1.5 billion, approximately flat versus 2018. Non-operating retirement-related plan cost is expected to be approximately \$0.6 billion, a decrease of approximately \$1 billion compared to 2018, primarily driven by lower actuarial loss amortization resulting from the change in amortization period for the U.S. plan. Contributions for all retirement-related plans are expected to be approximately \$2.3 billion in 2019, approximately flat compared to 2018.

Currency Rate Fluctuations

Changes in the relative values of non-U.S. currencies to the U.S. dollar (USD) affect the company's financial results and financial position. At June 30, 2019, currency changes resulted in assets and liabilities denominated in local currencies being translated into more dollars than at year-end 2018. The company uses financial hedging instruments to limit specific currency risks related to financing transactions and other foreign currency-based transactions.

During periods of sustained movements in currency, the marketplace and competition adjust to the changing rates. For example, when pricing offerings in the marketplace, the company may use some of the advantage from a weakening U.S. dollar to improve its position competitively, and price more aggressively to win the business, essentially passing on a portion of the currency advantage to its customers. Competition will frequently take the same action. Consequently, the company believes that some of the currency-based changes in cost impact the prices charged to clients. The company also maintains currency hedging programs for cash management purposes which temporarily mitigate, but do not eliminate, the volatility of currency impacts on the company's financial results.

The company translates revenue, cost and expense in its non-U.S. operations at current exchange rates in the reported period. References to "adjusted for currency" or "constant currency" reflect adjustments based upon a simple mathematical formula. However, this constant currency methodology that the company utilizes to disclose this information does not incorporate any operational actions that management could take to mitigate fluctuating currency rates. Currency movements impacted the company's year-to-year revenue and earnings per share growth in the first six months of 2019. Based on the currency rate movements in the first six months of 2019, total revenue decreased 4.4

Management Discussion – (continued)

percent as reported and 1.2 percent at constant currency versus the first six months of 2018. On an income from continuing operations before income tax basis, these translation impacts mitigated by the net impact of hedging activities resulted in a theoretical maximum (assuming no pricing or sourcing actions) increase of approximately \$160 million in the first six months of 2019 on an as-reported basis and an increase of approximately \$140 million on an operating (non-GAAP) basis. The same mathematical exercise resulted in an increase of approximately \$175 million in the first six months of 2018 on an as-reported basis and an increase of approximately \$200 million on an operating (non-GAAP) basis. The company views these amounts as a theoretical maximum impact to its as-reported financial results. Considering the operational responses mentioned above, movements of exchange rates, and the nature and timing of hedging instruments, it is difficult to predict future currency impacts on any particular period, but the company believes it could be substantially less than the theoretical maximum given the competitive pressure in the marketplace.

For non-U.S. subsidiaries and branches that operate in U.S. dollars or whose economic environment is highly inflationary, translation adjustments are reflected in results of operations. Generally, the company manages currency risk in these entities by linking prices and contracts to U.S. dollars.

Liquidity and Capital Resources

In the company's 2018 Annual Report, on pages 60 to 62, there is a discussion of the company's liquidity including two tables that present three years of data. The table presented on page 60 includes net cash from operating activities, cash, restricted cash and short-term marketable securities, and the size of the company's global credit facilities for each of the past three years. For the six months ended, or as of, as applicable, June 30, 2019, those amounts are \$7.7 billion of net cash from operating activities, \$46.4 billion of cash, restricted cash and short-term marketable securities and \$15.3 billion in global credit facilities, respectively.

The major rating agencies' ratings on the company's debt securities at June 30, 2019 appear in the following table:

<u>IBM and IBM Credit LLC ratings:</u>	<u>STANDARD AND POOR'S</u>	<u>MOODY'S INVESTORS SERVICE</u>	<u>FITCH RATINGS</u>
Senior long-term debt	A	A1	A
Commercial paper	A-1	Prime-1	F1

On July 9, 2019, the company completed the acquisition of all the outstanding shares of Red Hat for \$190 per share in cash, representing a total value of approximately \$34 billion. The transaction was funded through a combination of cash on hand and proceeds from debt issuances. In order to reduce this debt and return to target leverage ratios within a couple of years, the company suspended its share repurchase program at the time of the Red Hat acquisition closing. Refer to note 13, "Borrowings," for additional details of financing this transaction.

After closing the transaction, Moody's, as expected, downgraded IBM and IBM Credit LLC's long-term debt rating from A1 to A2 and improved its outlook to stable. The commercial paper rating from Moody's remains unchanged. Standard and Poor's ratings remain unchanged. Additionally, Fitch affirmed its rating before withdrawing coverage on IBM for commercial reasons.

IBM will continue with a disciplined financial policy and is committed to maintaining strong investment grade credit ratings. The company does not have "ratings trigger" provisions in its debt covenants or documentation, which would allow the holders to declare an event of default and seek to accelerate payments thereunder in the event of a change in credit rating. The company's contractual agreements governing derivative instruments contain standard market clauses which can trigger the termination of the agreement if the company's credit rating were to fall below investment grade. At June 30, 2019, the fair value of those instruments that were in a liability position was \$589 million, before any applicable netting, and this position is subject to fluctuations in fair value period to period based on the level of the

Management Discussion – (continued)

company's outstanding instruments and market conditions. The company has no other contractual arrangements that, in the event of a change in credit rating, would result in a material adverse effect on its financial position or liquidity.

In July 2017, the UK's Financial Conduct Authority, which regulates the London Interbank Offered Rate (LIBOR), announced that it intends to phase out LIBOR by the end of 2021. Various central bank committees and working groups continue to discuss replacement of benchmark rates, the process for amending existing LIBOR-based contracts, and the potential economic impacts of different alternatives. The Alternative Reference Rates Committee has identified the Secured Overnight Financing Rate (SOFR) as its preferred alternative rate for USD LIBOR. SOFR is a measure of the cost of borrowing cash overnight, collateralized by U.S. Treasury securities, and is based on directly observable U.S. Treasury-backed repurchase transactions. The company is evaluating the potential impact of the replacement of the LIBOR benchmark interest rate, including risk management, internal operational readiness and monitoring the FASB standard-setting process to address financial reporting issues that might arise in connection with transition from LIBOR to a new benchmark rate.

The company prepares its Consolidated Statement of Cash Flows in accordance with applicable accounting standards for cash flow presentation on page 7 of this Form 10-Q and highlights causes and events underlying sources and uses of cash in that format on page 92. For the purpose of running its business, the company manages, monitors and analyzes cash flows in a different manner.

Management uses free cash flow as a measure to evaluate its operating results, plan share repurchase levels, strategic investments and assess its ability and need to incur and service debt. The entire free cash flow amount is not necessarily available for discretionary expenditures. The company defines free cash flow as net cash from operating activities less the change in Global Financing receivables and net capital expenditures, including the investment in software. A key objective of the Global Financing business is to generate strong returns on equity, and increasing receivables is the basis for growth. Accordingly, management considers Global Financing receivables as a profit-generating investment, not as working capital that should be minimized for efficiency. Therefore, management includes presentations of both free cash flow and net cash from operating activities that exclude the effect of Global Financing receivables. Free cash flow guidance is derived using an estimate of profit, working capital and operational cash outflows. As previously noted, the company views Global Financing receivables as a profit-generating investment which it seeks to maximize and therefore it is not considered when formulating guidance for free cash flow. As a result the company does not estimate a GAAP Net Cash from Operations expectation metric.

The following is management's view of cash flows for the first six months of 2019 and 2018 prepared in a manner consistent with the description above.

(Dollars in millions)

For the six months ended June 30:

	<u>2019</u>	<u>2018</u>
Net cash from operating activities per GAAP	\$ 7,700	\$ 6,896
Less: change in Global Financing receivables	<u>2,577</u>	<u>1,778</u>
Net cash from operating activities, excluding Global Financing receivables	\$ 5,123	\$ 5,118
Capital expenditures, net	<u>(1,045)</u>	<u>(1,897)</u>
Free cash flow (FCF)	\$ 4,078	\$ 3,221
Acquisitions	(43)	(122)
Divestitures	888	—
Share repurchase	(1,236)	(1,767)
Common stock repurchases for tax withholdings	(152)	(143)
Dividends	(2,833)	(2,819)
Non-Global Financing debt	33,399	(611)
Other (includes Global Financing net receivables and Global Financing debt)	84	1,325
Change in cash, cash equivalents, restricted cash and short-term marketable securities	<u>\$ 34,186</u>	<u>\$ (916)</u>

Management Discussion – (continued)

In the first six months of 2019, the company generated free cash flow of \$4.1 billion, an increase of \$0.9 billion versus the prior year. In the first six months of 2019, the company continued to focus its cash utilization on returning value to shareholders including \$2.8 billion in dividends and \$1.2 billion in gross common stock repurchases (9.2 million shares).

Events that could temporarily change the historical cash flow dynamics discussed previously and in the company's 2018 Annual Report include significant changes in operating results, material changes in geographic sources of cash, unexpected adverse impacts from litigation, future pension funding requirements, periods of severe downturn in the capital markets or the timing of tax payments. Whether any litigation has such an adverse impact will depend on a number of variables, which are more completely described in note 14, "Contingencies," in this Form 10-Q. With respect to pension funding, the company expects to make legally mandated pension plan contributions to certain non-U.S. defined benefit plans of approximately \$400 million in 2019. Contributions related to all retirement-related plans are expected to be approximately \$2.3 billion in 2019. Financial market performance could increase the legally mandated minimum contributions in certain non-U.S. countries that require more frequent remeasurement of the funded status. The company is not quantifying any further impact from pension funding because it is not possible to predict future movements in the capital markets or pension plan funding regulations.

In 2019, the company is not legally required to make any contributions to the U.S. defined benefit pension plans.

The company's cash flows are sufficient to fund its current operations and obligations, including investing and financing activities such as dividends and debt service. When additional requirements arise, the company has several liquidity options available. These options may include the ability to borrow additional funds at reasonable interest rates and utilizing its committed global credit facilities.

Global Financing Return on Equity Calculation

(Dollars in millions)	For Three Months Ended June 30,		For Six Months Ended June 30,	
	2019	2018	2019	2018
Numerator				
Global Financing after-tax income*	\$ 188	\$ 272	\$ 304	\$ 556
Annualized after-tax income (1)	\$ 754	\$ 1,089	\$ 608	\$ 1,113
Denominator				
Average Global Financing equity (2)**	\$ 3,028	\$ 3,486	\$ 3,175	\$ 3,485
Global Financing return on equity (1)/(2)	24.9 %	31.2 %	19.2 %	31.9 %

* Calculated based upon an estimated tax rate principally based on Global Financing's geographic mix of earnings as IBM's provision for income taxes is determined on a consolidated basis.

** Average of the ending equity for Global Financing for the last two quarters and three quarters, for the three months ended June 30, and for the six months ended June 30, respectively.

Management Discussion – (continued)

GAAP Reconciliation

The tables below provide a reconciliation of the company’s income statement results as reported under GAAP to its operating earnings presentation which is a non-GAAP measure. The company’s calculation of operating (non-GAAP) earnings, as presented, may differ from similarly titled measures reported by other companies. Refer to the “Operating (non-GAAP) Earnings” section for the company’s rationale for presenting operating earnings information.

(Dollars in millions except per share amounts) For the three months ended June 30, 2019:	GAAP	Acquisition- Related Adjustments	Retirement- Related Adjustments	U.S. Tax Reform Charges**	Operating (non-GAAP)
Gross profit	\$ 9,010	\$ 73	\$ —	\$ —	\$ 9,083
Gross profit margin	47.0 %	0.4 pts.	— pts.	— pts.	47.4 %
S,G&A	\$ 5,456	\$ (149)	\$ —	\$ —	\$ 5,307
R,D&E	1,407	—	—	—	1,407
Other (income) and expense	(747)	119	(136)	—	(764)
Interest expense	348	(168)	—	—	180
Total expense and other (income)	6,242	(198)	(136)	—	5,907
Pre-tax income from continuing operations	2,768	272	136	—	3,176
Pre-tax margin from continuing operations	14.4 %	1.4 pts.	0.7 pts.	— pts.	16.6 %
Provision for income taxes*	\$ 269	\$ 55	\$ 40	\$ (14)	\$ 349
Effective tax rate	9.7 %	0.9 pts.	0.8 pts.	(0.4)pts.	11.0 %
Income from continuing operations	\$ 2,499	\$ 217	\$ 97	\$ 14	\$ 2,827
Income margin from continuing operations	13.0 %	1.1 pts.	0.5 pts.	0.1 pts.	14.8 %
Diluted earnings per share from continuing operations	\$ 2.81	\$ 0.24	\$ 0.11	\$ 0.01	\$ 3.17

* The tax impact on operating (non-GAAP) pre-tax income from continuing operations is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

** Operating (non-GAAP) earnings exclude charges associated with the enactment of U.S. tax reform due to their unique non-recurring nature.

(Dollars in millions except per share amounts) For the three months ended June 30, 2018:	GAAP	Acquisition- Related Adjustments	Retirement- Related Adjustments	U.S. Tax Reform Charges**	Operating (non-GAAP)
Gross profit	\$ 9,199	\$ 94	\$ —	\$ —	\$ 9,292
Gross profit margin	46.0 %	0.5 pts.	— pts.	— pts.	46.5 %
S,G&A	\$ 4,857	\$ (110)	\$ —	\$ —	\$ 4,746
R,D&E	1,364	—	—	—	1,364
Other (income) and expense	280	—	(394)	—	(115)
Interest expense	173	—	—	—	173
Total expense and other (income)	6,423	(110)	(394)	—	5,918
Pre-tax income from continuing operations	2,776	204	394	—	3,374
Pre-tax margin from continuing operations	13.9 %	1.0 pts.	2.0 pts.	— pts.	16.9 %
Provision for income taxes*	\$ 373	\$ 44	\$ 109	\$ 14	\$ 540
Effective tax rate	13.5 %	0.5 pts.	1.6 pts.	0.4 pts.	16.0 %
Income from continuing operations	\$ 2,402	\$ 160	\$ 286	\$ (14)	\$ 2,834
Income margin from continuing operations	12.0 %	0.8 pts.	1.4 pts.	(0.1)pts.	14.2 %
Diluted earnings per share from continuing operations	\$ 2.61	\$ 0.17	\$ 0.31	\$ (0.01)	\$ 3.08

* The tax impact on operating (non-GAAP) pre-tax income from continuing operations is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

** Operating (non-GAAP) earnings exclude charges associated with the enactment of U.S. tax reform due to their unique non-recurring nature.

Management Discussion – (continued)

(Dollars in millions except per share amounts) For the six months ended June 30, 2019:	GAAP	Acquisition- Related Adjustments	Retirement- Related Adjustments	U.S. Tax Reform Charges**	Operating (non-GAAP)
Gross profit	\$ 17,053	\$ 149	\$ —	\$ —	\$ 17,202
Gross profit margin	45.7 %	0.4 pts.	— pts.	— pts.	46.1 %
S,G&A	\$ 10,147	\$ (273)	\$ —	\$ —	\$ 9,873
R,D&E	2,840	—	—	—	2,840
Other (income) and expense	(820)	142	(274)	—	(951)
Interest expense	558	(204)	—	—	354
Total expense and other (income)	12,402	(335)	(274)	—	11,793
Pre-tax income from continuing operations	4,651	484	274	—	5,409
Pre-tax margin from continuing operations	12.5 %	1.3 pts.	0.7 pts.	— pts.	14.5 %
Provision for income taxes*	\$ 558	\$ 104	\$ 66	\$ (155)	\$ 574
Effective tax rate	12.0 %	0.8 pts.	0.6 pts.	(2.9)pts.	10.6 %
Income from continuing operations	\$ 4,093	\$ 381	\$ 208	\$ 155	\$ 4,836
Income margin from continuing operations	11.0 %	1.0 pts.	0.6 pts.	0.4 pts.	13.0 %
Diluted earnings per share from continuing operations	\$ 4.58	\$ 0.44	\$ 0.23	\$ 0.17	\$ 5.42

* The tax impact on operating (non-GAAP) pre-tax income from continuing operations is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

** Operating (non-GAAP) earnings exclude charges associated with the enactment of U.S. tax reform due to their unique non-recurring nature.

(Dollars in millions except per share amounts) For the six months ended June 30, 2018:	GAAP	Acquisition- Related Adjustments	Retirement- Related Adjustments	U.S. Tax Reform Charges**	Operating (non-GAAP)
Gross profit	\$ 17,445	\$ 187	\$ —	\$ —	\$ 17,633
Gross profit margin	44.6 %	0.5 pts.	— pts.	— pts.	45.1 %
S,G&A	\$ 10,302	\$ (220)	\$ —	\$ —	\$ 10,082
R,D&E	2,769	—	—	—	2,769
Other (income) and expense	692	—	(796)	—	(104)
Interest expense	338	—	—	—	338
Total expense and other (income)	13,534	(220)	(796)	—	12,518
Pre-tax income from continuing operations	3,911	407	796	—	5,114
Pre-tax margin from continuing operations	10.0 %	1.0 pts.	2.0 pts.	— pts.	13.1 %
Provision for (benefit from) income taxes*	\$ (166)	\$ 83	\$ 185	\$ (93)	\$ 8
Effective tax rate	(4.3)%	2.0 pts.	4.3 pts.	(1.8)pts.	0.2 %
Income from continuing operations	\$ 4,078	\$ 324	\$ 611	\$ 93	\$ 5,106
Income margin from continuing operations	10.4 %	0.8 pts.	1.6 pts.	0.2 pts.	13.1 %
Diluted earnings per share from continuing operations	\$ 4.42	\$ 0.35	\$ 0.66	\$ 0.10	\$ 5.53

* The tax impact on operating (non-GAAP) pre-tax income from continuing operations is calculated under the same accounting principles applied to the GAAP pre-tax income which employs an annual effective tax rate method to the results.

** Operating (non-GAAP) earnings exclude charges associated with the enactment of U.S. tax reform due to their unique non-recurring nature.

Management Discussion – (continued)

Forward-Looking and Cautionary Statements

Except for the historical information and discussions contained herein, statements contained in this Form 10-Q may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are based on the company's current assumptions regarding future business and financial performance. These statements involve a number of risks, uncertainties and other factors that could cause actual results to differ materially, including, but not limited to, the following: a downturn in economic environment and client spending budgets; the company's failure to meet growth and productivity objectives; a failure of the company's innovation initiatives; damage to the company's reputation; risks from investing in growth opportunities; failure of the company's intellectual property portfolio to prevent competitive offerings and the failure of the company to obtain necessary licenses; cybersecurity and data privacy considerations; fluctuations in financial results; impact of local legal, economic, political and health conditions; adverse effects from environmental matters, tax matters and the company's pension plans; ineffective internal controls; the company's use of accounting estimates; the company's ability to attract and retain key employees and its reliance on critical skills; impacts of relationships with critical suppliers; product quality issues; impacts of business with government clients; currency fluctuations and customer financing risks; impact of changes in market liquidity conditions and customer credit risk on receivables; reliance on third party distribution channels and ecosystems; the company's ability to successfully manage acquisitions, alliances and dispositions, including integration challenges, failure to achieve objectives, the assumption of liabilities, and higher debt levels; legal proceedings and investigatory risks; risk factors related to IBM securities; and other risks, uncertainties and factors discussed in the company's Form 10-Qs, Form 10-K and in the company's other filings with the U.S. Securities and Exchange Commission or in materials incorporated therein by reference. Any forward-looking statement in this Form 10-Q speaks only as of the date on which it is made. Except as required by law, the company assumes no obligation to update or revise any forward-looking statements.

Item 4. Controls and Procedures

The company's management evaluated, with the participation of the Chief Executive Officer and Chief Financial Officer, the effectiveness of the company's disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that the company's disclosure controls and procedures were effective as of the end of the period covered by this report. There has been no change in the company's internal control over financial reporting that occurred during the quarter covered by this report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting.

Part II — Other Information

Item 1. Legal Proceedings

Refer to note 14, “Contingencies,” in this Form 10-Q.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds and Issuer Repurchases of Equity Securities

The following table provides information relating to the company’s repurchase of common stock for the second quarter of 2019.

<u>Period</u>	<u>Total Number of Shares Purchased</u>	<u>Average Price Paid per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Program</u>	<u>Approximate Dollar Value of Shares that May Yet Be Purchased Under The Program*</u>
April 1, 2019 - April 30, 2019	741,693	\$ 141.70	741,693	\$ 2,333,748,955
May 1, 2019 - May 31, 2019	815,267	\$ 134.68	815,267	\$ 2,223,949,220
June 1, 2019 - June 30, 2019	<u>743,719</u>	<u>\$ 135.66</u>	<u>743,719</u>	<u>\$ 2,123,055,549</u>
Total	<u>2,300,679</u>	<u>\$ 137.26</u>	<u>2,300,679</u>	

* On October 30, 2018, the Board of Directors authorized \$4.0 billion in funds for use in the company’s common stock repurchase program. The company stated that it would repurchase shares on the open market or in private transactions depending on market conditions. The common stock repurchase program does not have an expiration date. This table does not include shares tendered to satisfy the exercise price in connection with cashless exercises of employee stock options or shares tendered to satisfy tax withholding obligations in connection with employee equity awards.

The company’s acquisition of Red Hat on July 9, 2019 was funded through a combination of debt and cash, with incremental debt issued earlier this year. The company suspended its share repurchase program at the time of closing.

Item 6. Exhibits

Exhibit Number

10.1	Form of LTTP equity awards agreement for stock options, restricted stock, restricted stock units, cash-settled restricted stock units, and SARS, as well as the Terms and Conditions of LTTP Equity Awards, effective July 15, 2019, in connection with the foregoing award agreement.
31.1	Certification by principal executive officer pursuant to Rule 13A-14(a) or 15D-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by principal financial officer pursuant to Rule 13A-14(a) or 15D-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification by principal executive officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification by principal financial officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document – the instance document does not appear on the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

International Business Machines Corporation
(Registrant)

Date: July 30, 2019

By: /s/ Robert F. Del Bene
Robert F. Del Bene
Vice President and Controller

CERTIFICATION PURSUANT TO RULE 13A-14(a) OR 15D-14(a) OF THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Virginia M. Rometty, certify that:

1. I have reviewed this quarterly report on Form 10-Q of International Business Machines Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 30, 2019

/s/ Virginia M. Rometty

Virginia M. Rometty
Chairman, President and Chief Executive Officer

CERTIFICATION PURSUANT TO RULE 13A-14(a) OR 15D-14(a) OF THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, James J. Kavanaugh, certify that:

1. I have reviewed this quarterly report on Form 10-Q of International Business Machines Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 30, 2019

/s/ James J. Kavanaugh

James J. Kavanaugh
Senior Vice President and Chief Financial Officer

INTERNATIONAL BUSINESS MACHINES CORPORATION

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of International Business Machines Corporation (the “Company”) on Form 10-Q for the period ending June 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Virginia M. Rometty, Chairman, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Virginia M. Rometty

Virginia M. Rometty
Chairman, President and Chief Executive Officer
July 30, 2019

A signed original of this written statement required by Section 906 has been provided to IBM and will be retained by IBM and furnished to the Securities and Exchange Commission or its staff upon request.

INTERNATIONAL BUSINESS MACHINES CORPORATION

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of International Business Machines Corporation (the “Company”) on Form 10-Q for the period ending June 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, James J. Kavanaugh, Senior Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ James J. Kavanaugh

James J. Kavanaugh
Senior Vice President and Chief Financial Officer
July 30, 2019

A signed original of this written statement required by Section 906 has been provided to IBM and will be retained by IBM and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBITS OMITTED FROM THIS DOCUMENT

Form of LTTP equity awards agreement for stock options, restricted stock, restricted stock units, cash-settled restricted stock units, and SARS, as well as the Terms and Conditions of LTTP Equity Awards, effective July 15, 2019, in connection with the foregoing award agreement.

Copies of this exhibit may be obtained without charge from Computershare Trust Company, N.A., P.O. Box 505005, Louisville, Kentucky 40233-5005.