GOLDMAN SACHS GROUP INC
Form 10-Q
August 03, 2018
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

# Form 10-Q

**QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the quarterly period ended June 30, 2018**

**or**

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the transition period from to**

**Commission File Number: 001-14965**

**The Goldman Sachs Group, Inc.**

(Exact name of registrant as specified in its charter)

| | |
|---|---|
| Delaware<br>(State or other jurisdiction of<br>incorporation or organization) | 13-4019460<br>(I.R.S. Employer<br>Identification No.) |
| 200 West Street, New York, N.Y.<br>(Address of principal executive offices) | 10282<br>(Zip Code) |

(212) 902-1000

(Registrant s telephone number, including area code)

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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 Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company) 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

**APPLICABLE ONLY TO CORPORATE ISSUERS**

As of July 20, 2018, there were 377,556,226 shares of the registrant s common stock outstanding.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

QUARTERLY REPORT ON FORM 10-Q FOR THE QUARTER ENDED JUNE 30, 2018

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**PART I. FINANCIAL INFORMATION**

**Item 1. Financial Statements (Unaudited)**

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Consolidated Statements of Earnings**

**(Unaudited)**

| | Three Months Ended June | | Six Months Ended June | |
|---|---|---|---|---|
| *in millions, except per share amounts* | **2018** | 2017 | **2018** | 2017 |
| **Revenues** | | | | |
| Investment banking | **$2,045** | $1,730 | **$ 3,838** | $ 3,433 |
| Investment management | **1,728** | 1,433 | **3,367** | 2,830 |
| Commissions and fees | **795** | 794 | **1,657** | 1,565 |
| Market making | **2,546** | 1,915 | **5,750** | 4,333 |
| Other principal transactions | **1,286** | 1,227 | **2,906** | 2,448 |
| Total non-interest revenues | **8,400** | 7,099 | **17,518** | 14,609 |
| Interest income | **4,920** | 3,220 | **9,150** | 5,966 |
| Interest expense | **3,918** | 2,432 | **7,230** | 4,662 |
| Net interest income | **1,002** | 788 | **1,920** | 1,304 |
| Net revenues, including net interest income | **9,402** | 7,887 | **19,438** | 15,913 |
| **Operating expenses** | | | | |
| Compensation and benefits | **3,466** | 3,233 | **7,581** | 6,524 |
| Brokerage, clearing, exchange and distribution fees | **812** | 741 | **1,656** | 1,433 |
| Market development | **183** | 141 | **365** | 275 |
| Communications and technology | **260** | 224 | **511** | 447 |
| Depreciation and amortization | **335** | 265 | **634** | 522 |
| Occupancy | **197** | 190 | **391** | 366 |
| Professional fees | **223** | 229 | **458** | 434 |
| Other expenses | **650** | 355 | **1,147** | 864 |
| Total non-compensation expenses | **2,660** | 2,145 | **5,162** | 4,341 |
| Total operating expenses | **6,126** | 5,378 | **12,743** | 10,865 |
| Pre-tax earnings | **3,276** | 2,509 | **6,695** | 5,048 |
| Provision for taxes | **711** | 678 | **1,298** | 962 |

| | | | | |
|---|---|---|---|---|
| Net earnings | **2,565** | 1,831 | **5,397** | 4,086 |
| Preferred stock dividends | **217** | 200 | **312** | 293 |
| **Net earnings applicable to common shareholders** | **$2,348** | $1,631 | **$ 5,085** | $ 3,793 |
| | | | | |
| **Earnings per common share** | | | | |
| Basic | **$ 6.04** | $ 4.00 | **$ 13.07** | $ 9.24 |
| Diluted | **$ 5.98** | $ 3.95 | **$ 12.93** | $ 9.10 |
| | | | | |
| **Dividends declared per common share** | **$ 0.80** | $ 0.75 | **$ 1.55** | $ 1.40 |
| | | | | |
| **Average common shares** | | | | |
| Basic | **387.8** | 406.1 | **388.4** | 409.3 |
| Diluted | **392.6** | 413.3 | **393.2** | 416.7 |

The accompanying notes are an integral part of these consolidated financial statements.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Consolidated Statements of Comprehensive Income**

**(Unaudited)**

| | Three Months Ended June | | Six Months Ended June | |
|---|---|---|---|---|
| *$ in millions* | **2018** | 2017 | **2018** | 2017 |
| Net earnings | **$2,565** | $1,831 | **$5,397** | $4,086 |
| Other comprehensive income/(loss) adjustments, net of tax: | | | | |
| Currency translation | **(2)** | 29 | | 13 |
| Debt valuation adjustment | **878** | (275) | **1,148** | (414) |
| Pension and postretirement liabilities | **(1)** | | **(5)** | 1 |
| Available-for-sale securities | **(63)** | 1 | **(221)** | 1 |
| Other comprehensive income/(loss) | **812** | (245) | **922** | (399) |
| **Comprehensive income** | **$3,377** | $1,586 | **$6,319** | $3,687 |

The accompanying notes are an integral part of these consolidated financial statements.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Consolidated Statements of Financial Condition**

**(Unaudited)**

| | As of | |
|---|---|---|
| *$ in millions* | **June 2018** | December 2017 |
| **Assets** | | |
| Cash and cash equivalents | **$131,417** | $110,051 |
| Collateralized agreements: | | |
| Securities purchased under agreements to resell (includes **$135,035** and $120,420 at fair value) | **135,180** | 120,822 |
| Securities borrowed (includes **$42,198** and $78,189 at fair value) | **162,825** | 190,848 |
| Receivables: | | |
| Brokers, dealers and clearing organizations | **28,859** | 24,676 |
| Customers and counterparties (includes **$1,967** and $3,526 at fair value) | **59,778** | 60,112 |
| Loans receivable | **74,082** | 65,933 |
| Financial instruments owned (at fair value and includes **$71,384** and $50,335 pledged as collateral) | **347,959** | 315,988 |
| Other assets | **28,510** | 28,346 |
| **Total assets** | **$968,610** | $916,776 |
| | | |
| **Liabilities and shareholders equity** | | |
| Deposits (includes **$25,634** and $22,902 at fair value) | **$153,441** | $138,604 |
| Collateralized financings: | | |
| Securities sold under agreements to repurchase (at fair value) | **93,219** | 84,718 |
| Securities loaned (includes **$6,351** and $5,357 at fair value) | **16,300** | 14,793 |
| Other secured financings (includes **$26,260** and $24,345 at fair value) | **26,379** | 24,788 |
| Payables: | | |
| Brokers, dealers and clearing organizations | **9,579** | 6,672 |
| Customers and counterparties | **183,038** | 171,497 |
| Financial instruments sold, but not yet purchased (at fair value) | **112,747** | 111,930 |
| Unsecured short-term borrowings (includes **$19,598** and $16,904 at fair value) | **44,390** | 46,922 |
| Unsecured long-term borrowings (includes **$41,944** and $38,638 at fair value) | **227,354** | 217,687 |
| Other liabilities (includes **$108** and $268 at fair value) | **15,564** | 16,922 |
| Total liabilities | **882,011** | 834,533 |
| | | |
| **Commitments, contingencies and guarantees** | | |
| | | |
| **Shareholders equity** | | |
| Preferred stock; aggregate liquidation preference of **$11,203** and $11,853 | **11,203** | 11,853 |

| | | |
|---|---|---|
| Common stock; **890,582,030** and 884,592,863 shares issued, and **377,879,137** and 374,808,805 shares outstanding | **9** | 9 |
| Share-based awards | **2,581** | 2,777 |
| Nonvoting common stock; no shares issued and outstanding | | |
| Additional paid-in capital | **54,000** | 53,357 |
| Retained earnings | **95,941** | 91,519 |
| Accumulated other comprehensive loss | **(958)** | (1,880) |
| Stock held in treasury, at cost; **512,702,895** and 509,784,060 shares | **(76,177)** | (75,392) |
| Total shareholders equity | **86,599** | 82,243 |
| **Total liabilities and shareholders equity** | **$968,610** | $916,776 |

The accompanying notes are an integral part of these consolidated financial statements.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Consolidated Statements of Changes in Shareholders Equity**

**(Unaudited)**

| *$ in millions* | **Six Months Ended June 2018** | Year Ended December 2017 |
|---|---|---|
| **Preferred stock** | | |
| Beginning balance | **$ 11,853** | $ 11,203 |
| Issued | | 1,500 |
| Redeemed | **(650)** | (850) |
| Ending balance | **11,203** | 11,853 |
| **Common stock** | | |
| Beginning balance | **9** | 9 |
| Issued | | |
| Ending balance | **9** | 9 |
| **Share-based awards** | | |
| Beginning balance, as previously reported | **2,777** | 3,914 |
| Cumulative effect of the change in accounting principle related to forfeiture of share-based awards | | 35 |
| Beginning balance, adjusted | **2,777** | 3,949 |
| Issuance and amortization of share-based awards | **991** | 1,810 |
| Delivery of common stock underlying share-based awards | **(1,148)** | (2,704) |
| Forfeiture of share-based awards | **(29)** | (89) |
| Exercise of share-based awards | **(10)** | (189) |
| Ending balance | **2,581** | 2,777 |
| **Additional paid-in capital** | | |
| Beginning balance | **53,357** | 52,638 |
| Delivery of common stock underlying share-based awards | **1,677** | 2,934 |
| Cancellation of share-based awards in satisfaction of withholding tax requirements | **(1,049)** | (2,220) |
| Preferred stock issuance costs, net of reversals upon redemption | **15** | 8 |
| Cash settlement of share-based awards | | (3) |
| Ending balance | **54,000** | 53,357 |
| **Retained earnings** | | |
| Beginning balance, as previously reported | **91,519** | 89,039 |
| Cumulative effect of the change in accounting principle related to: | | |
| Revenue recognition from contracts with clients, net of tax | **(53)** | |
| Forfeiture of share-based awards, net of tax | | (24) |
| Beginning balance, adjusted | **91,466** | 89,015 |
| Net earnings | **5,397** | 4,286 |
| Dividends and dividend equivalents declared on common stock and share-based awards | **(610)** | (1,181) |
| Dividends declared on preferred stock | **(297)** | (587) |
| Preferred stock redemption premium | **(15)** | (14) |

| | | |
|---|---|---|
| Ending balance | **95,941** | 91,519 |
| **Accumulated other comprehensive loss** | | |
| Beginning balance | **(1,880)** | (1,216) |
| Other comprehensive income/(loss) | **922** | (664) |
| Ending balance | **(958)** | (1,880) |
| **Stock held in treasury, at cost** | | |
| Beginning balance | **(75,392)** | (68,694) |
| Repurchased | **(800)** | (6,721) |
| Reissued | **16** | 34 |
| Other | **(1)** | (11) |
| Ending balance | **(76,177)** | (75,392) |
| **Total shareholders equity** | **$ 86,599** | $ 82,243 |

The accompanying notes are an integral part of these consolidated financial statements.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Consolidated Statements of Cash Flows**

**(Unaudited)**

| | Six Months Ended June | |
|---|---|---|
| *$ in millions* | **2018** | 2017 |
| **Cash flows from operating activities** | | |
| Net earnings | **$ 5,397** | $ 4,086 |
| Adjustments to reconcile net earnings to net cash provided by/(used for) operating activities: | | |
| Depreciation and amortization | **634** | 522 |
| Share-based compensation | **1,505** | 1,452 |
| Gain related to extinguishment of subordinated borrowings | | (108) |
| Changes in operating assets and liabilities: | | |
| Receivables and payables (excluding loans receivable), net | **10,355** | (14,527) |
| Collateralized transactions (excluding other secured financings), net | **23,673** | 23,971 |
| Financial instruments owned (excluding available-for-sale securities) | **(31,730)** | (31,864) |
| Financial instruments sold, but not yet purchased | **645** | 472 |
| Other, net | **(2,845)** | 1,899 |
| Net cash provided by/(used for) operating activities | **7,634** | (14,097) |
| **Cash flows from investing activities** | | |
| Purchase of property, leasehold improvements and equipment | **(3,751)** | (1,520) |
| Proceeds from sales of property, leasehold improvements and equipment | **1,946** | 202 |
| Net cash used for business acquisitions | **(149)** | (1,086) |
| Purchase of investments | **(3,200)** | (728) |
| Proceeds from sales and paydowns of investments | **303** | 888 |
| Loans receivable, net | **(7,952)** | (4,462) |
| Net cash used for investing activities | **(12,803)** | (6,706) |
| **Cash flows from financing activities** | | |
| Unsecured short-term borrowings, net | **1,954** | (28) |
| Other secured financings (short-term), net | **3,623** | (881) |
| Proceeds from issuance of other secured financings (long-term) | **2,458** | 4,683 |
| Repayment of other secured financings (long-term), including the current portion | **(4,691)** | (3,151) |
| Purchase of Trust Preferred Securities | **(35)** | (62) |
| Proceeds from issuance of unsecured long-term borrowings | **31,128** | 31,654 |
| Repayment of unsecured long-term borrowings, including the current portion | **(20,045)** | (19,335) |
| Derivative contracts with a financing element, net | **702** | 1,002 |
| Deposits, net | **14,837** | 1,446 |
| Preferred stock redemption | **(650)** | |
| Common stock repurchased | **(800)** | (2,969) |
| Settlement of share-based awards in satisfaction of withholding tax requirements | **(1,049)** | (1,507) |
| | **(907)** | (876) |

| | | |
|---|---|---|
| Dividends and dividend equivalents paid on common stock, preferred stock and share-based awards | | |
| Proceeds from issuance of common stock, including exercise of share-based awards | **10** | 7 |
| Cash settlement of share-based awards | | (3) |
| Net cash provided by financing activities | **26,535** | 9,980 |
| Net increase/(decrease) in cash and cash equivalents | **21,366** | (10,823) |
| Cash and cash equivalents, beginning balance | **110,051** | 121,711 |
| **Cash and cash equivalents, ending balance** | **$131,417** | $110,888 |

**SUPPLEMENTAL DISCLOSURES:**

Cash payments for interest, net of capitalized interest, were $7.62 billion and $6.28 billion, and cash payments for income taxes, net of refunds, were $547 million and $464 million during the six months ended June 2018 and June 2017, respectively. Cash flows related to common stock repurchased includes common stock repurchased in the prior period for which settlement occurred during the current period and excludes common stock repurchased during the current period for which settlement occurred in the following period.

*Non-cash activities during the six months ended June 2018:*

The firm received $419 million of loans receivable and $90 million of held-to-maturity securities in connection with the securitization of financial instruments owned and held for sale loans included in receivables from customers and counterparties.

The firm exchanged $35 million of Trust Preferred Securities and common beneficial interests for $35 million of certain of the firm s junior subordinated debt.

*Non-cash activities during the six months ended June 2017:*

The firm received $226 million of loans receivable in connection with the securitization of financial instruments owned.

The firm exchanged $62 million of Trust Preferred Securities and common beneficial interests for $67 million of the firm s junior subordinated debt.

The accompanying notes are an integral part of these consolidated financial statements.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Notes to Consolidated Financial Statements**

**(Unaudited)**

**Note 1.**

**Description of Business**

The Goldman Sachs Group, Inc. (Group Inc. or parent company), a Delaware corporation, together with its consolidated subsidiaries (collectively, the firm), is a leading global investment banking, securities and investment management firm that provides a wide range of financial services to a substantial and diversified client base that includes corporations, financial institutions, governments and individuals. Founded in 1869, the firm is headquartered in New York and maintains offices in all major financial centers around the world.

The firm reports its activities in the following four business segments:

**Investment Banking**

The firm provides a broad range of investment banking services to a diverse group of corporations, financial institutions, investment funds and governments. Services include strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings, spin-offs and risk management, and debt and equity underwriting of public offerings and private placements, including local and cross-border transactions and acquisition financing, as well as derivative transactions directly related to these activities.

**Institutional Client Services**

The firm facilitates client transactions and makes markets in fixed income, equity, currency and commodity products, primarily with institutional clients such as corporations, financial institutions, investment funds and governments. The firm also makes markets in and clears client transactions on major stock, options and futures exchanges worldwide and provides financing, securities lending and other prime brokerage services to institutional clients.

**Investing & Lending**

The firm invests in and originates loans to provide financing to clients. These investments and loans are typically longer-term in nature. The firm makes investments, some of which are consolidated, including through its Merchant Banking business and its Special Situations Group, in debt securities and loans, public and private equity securities, infrastructure and real estate entities. Some of these investments are made indirectly through funds that the firm manages. The firm also makes unsecured and secured loans to retail clients through its digital platforms, *Marcus: by Goldman Sachs* (Marcus) and *Goldman Sachs Private Bank Select* (GS Select), respectively.

**Investment Management**

The firm provides investment management services and offers investment products (primarily through separately managed accounts and commingled vehicles, such as mutual funds and private investment funds) across all major asset classes to a diverse set of institutional and individual clients. The firm also offers wealth advisory services provided by the firm s subsidiary, The Ayco Company, L.P., including portfolio management and financial planning and counseling, and brokerage and other transaction services to high-net-worth individuals and families.

**Note 2.**

**Basis of Presentation**

These consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP) and include the accounts of Group Inc. and all other entities in which the firm has a controlling financial interest. Intercompany transactions and balances have been eliminated.

These consolidated financial statements are unaudited and should be read in conjunction with the audited consolidated financial statements included in the firm s Annual Report on Form 10-K for the year ended December 31, 2017. References to the 2017 Form 10-K are to the firm s Annual Report on Form 10-K for the year ended December 31, 2017. Certain disclosures included in the annual financial statements have been condensed or omitted from these financial statements as they are not required for interim financial statements under U.S. GAAP and the rules of the Securities and Exchange Commission.

These unaudited consolidated financial statements reflect all adjustments that are, in the opinion of management, necessary for a fair statement of the results for the interim periods presented. These adjustments are of a normal, recurring nature. Interim period operating results may not be indicative of the operating results for a full year.

All references to June 2018, March 2018 and June 2017 refer to the firm s periods ended, or the dates, as the context requires, June 30, 2018, March 31, 2018 and June 30, 2017, respectively. All references to December 2017 refer to the date December 31, 2017. Any reference to a future year refers to a year ending on December 31 of that year. Certain reclassifications have been made to previously reported amounts to conform to the current presentation.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Notes to Consolidated Financial Statements**

**(Unaudited)**

**Note 3.**

**Significant Accounting Policies**

The firm s significant accounting policies include when and how to measure the fair value of assets and liabilities, accounting for goodwill and identifiable intangible assets, and when to consolidate an entity. See Notes 5 through 8 for policies on fair value measurements, Note 13 for policies on goodwill and identifiable intangible assets, and below and Note 12 for policies on consolidation accounting. All other significant accounting policies are either described below or included in the following footnotes:

| | |
|---|---|
| Financial Instruments Owned and Financial Instruments Sold, But Not Yet Purchased | Note 4 |
| Fair Value Measurements | Note 5 |
| Cash Instruments | Note 6 |
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| Long-Term Borrowings | Note 16 |
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| Shareholders Equity | Note 19 |

**Consolidation**

The firm consolidates entities in which the firm has a controlling financial interest. The firm determines whether it has a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity (VIE).

**Voting Interest Entities.** Voting interest entities are entities in which (i) the total equity investment at risk is sufficient to enable the entity to finance its activities independently and (ii) the equity holders have the power to direct the activities of the entity that most significantly impact its economic performance, the obligation to absorb the losses of the entity and the right to receive the residual returns of the entity. The usual condition for a controlling financial interest in a voting interest entity is ownership of a majority voting interest. If the firm has a controlling majority voting interest in a voting interest entity, the entity is consolidated.

**Variable Interest Entities.** A VIE is an entity that lacks one or more of the characteristics of a voting interest entity. The firm has a controlling financial interest in a VIE when the firm has a variable interest or interests that provide it with (i) the power to direct the activities of the VIE that most significantly impact the VIE s economic performance and (ii) the obligation to absorb losses of the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. See Note 12 for further information about VIEs.

**Equity-Method Investments.** When the firm does not have a controlling financial interest in an entity but can exert significant influence over the entity s operating and financial policies, the investment is accounted for either (i) under the equity method of accounting or (ii) at fair value by electing the fair value option available under U.S. GAAP. Significant influence generally exists when the firm owns 20% to 50% of the entity s common stock or in-substance common stock.

In general, the firm accounts for investments acquired after the fair value option became available, at fair value. In certain cases, the firm applies the equity method of accounting to new investments that are strategic in nature or closely related to the firm s principal business activities, when the firm has a significant degree of involvement in the cash flows or operations of the investee or when cost-benefit considerations are less significant. See Note 13 for further information about equity-method investments.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Notes to Consolidated Financial Statements**

**(Unaudited)**

**Investment Funds.** The firm has formed numerous investment funds with third-party investors. These funds are typically organized as limited partnerships or limited liability companies for which the firm acts as general partner or manager. Generally, the firm does not hold a majority of the economic interests in these funds. These funds are usually voting interest entities and generally are not consolidated because third-party investors typically have rights to terminate the funds or to remove the firm as general partner or manager. Investments in these funds are generally measured at net asset value (NAV) and are included in financial instruments owned. See Notes 6, 18 and 22 for further information about investments in funds.

**Use of Estimates**

Preparation of these consolidated financial statements requires management to make certain estimates and assumptions, the most important of which relate to fair value measurements, accounting for goodwill and identifiable intangible assets, discretionary compensation accruals, income tax expense related to the Tax Cuts and Jobs Act (Tax Legislation), provisions for losses that may arise from litigation and regulatory proceedings (including governmental investigations), the allowance for losses on loans receivable and lending commitments held for investment, and provisions for losses that may arise from tax audits. These estimates and assumptions are based on the best available information but actual results could be materially different.

**Revenue Recognition**

**Financial Assets and Financial Liabilities at Fair Value.** Financial instruments owned and financial instruments sold, but not yet purchased are recorded at fair value either under the fair value option or in accordance with other U.S. GAAP. In addition, the firm has elected to account for certain of its other financial assets and financial liabilities at fair value by electing the fair value option. The fair value of a financial instrument is the amount 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. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. Fair value gains or losses are generally included in market making for positions in Institutional Client Services and other principal transactions for positions in Investing & Lending. See Notes 5 through 8 for further information about fair value measurements.

**Revenue from Contracts with Clients.** Beginning in January 2018, the firm accounts for revenue earned from contracts with clients for services such as investment banking, investment management, and execution and clearing (contracts with clients) under ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). As such, revenues for these services are recognized when the performance obligations related to the underlying transaction are completed. See Recent Accounting Developments Revenue from Contracts with Customers (ASC 606) for further information.

The firm s net revenues from contracts with clients subject to this ASU represent approximately 50% and 45% of the firm s total net revenues for the three and six months ended June 2018, respectively. This includes approximately 80% of the firm s investment banking revenues, substantially all of the investment management revenues, and commissions and fees for both the three and six months ended June 2018. See Note 25 for information about the firm s net revenues by business segment.

***Investment Banking***

**Advisory.** Fees from financial advisory assignments are recognized in revenues when the services related to the underlying transaction are completed under the terms of the assignment. Beginning in January 2018, non-refundable deposits and milestone payments in connection with financial advisory assignments are recognized in revenues upon completion of the underlying transaction or when the assignment is otherwise concluded. Prior to January 2018, non-refundable deposits and milestone payments were recognized in revenues in accordance with the terms of the contract.

Beginning in January 2018, non-compensation expenses associated with financial advisory assignments are recognized when incurred. Client reimbursements for such expenses are included in financial advisory revenues. Prior to January 2018, such expenses were deferred until the related revenue was recognized or the assignment was otherwise concluded and were presented net of client reimbursements.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

**Notes to Consolidated Financial Statements**

**(Unaudited)**

**Underwriting.** Fees from underwriting assignments are recognized in revenues upon completion of the underlying transaction based on the terms of the assignment.

Non-compensation expenses associated with underwriting assignments are deferred until the related revenue is recognized or the assignment is otherwise concluded. Beginning in January 2018, such expenses are presented as non-compensation expenses. Prior to January 2018, such expenses were presented net within underwriting revenues.

***Investment Management***

The firm earns management fees and incentive fees for investment management services, which are included in investment management revenues. The firm makes payments to brokers and advisors related to the placement of the firm s investment funds (distribution fees), which are included in brokerage, clearing, exchange and distribution fees.

**Management Fees.** Management fees for mutual funds are calculated as a percentage of daily net asset value and are received monthly. Management fees for hedge funds and separately managed accounts are calculated as a percentage of month-end net asset value and are generally received quarterly. Management fees for private equity funds are calculated as a percentage of monthly invested capital or committed capital and are received quarterly, semi-annually or annually, depending on the fund. Management fees are recognized over time in the period the investment management services are provided.

Distribution fees paid by the firm are calculated based on either a percentage of the management fee, the investment fund s net asset value or the committed capital. Beginning in January 2018, the firm presents such fees in brokerage, clearing, exchange and distribution fees. Prior to January 2018, where the firm was considered an agent to the arrangement, such fees were presented on a net basis in investment management revenues.

**Incentive Fees.** Incentive fees are calculated as a percentage of a fund s or separately managed account s return, or excess return above a specified benchmark or other performance target. Incentive fees are generally based on investment performance over a twelve-month period or over the life of a fund. Fees that are based on performance over a twelve-month period are subject to adjustment prior to the end of the measurement period. For fees that are based on investment performance over the life of the fund, future investment underperformance may require fees previously distributed to the firm to be returned to the fund.

Beginning in January 2018, incentive fees earned from a fund or separately managed account are recognized when it is probable that a significant reversal of such fees will not occur, which is generally when such fees are no longer subject to fluctuations in the market value of investments held by the fund or separately managed account. Therefore, incentive fees recognized during the period may relate to performance obligations satisfied in previous periods. Prior to January 2018, incentive fees were recognized only when all material contingencies were resolved.

***Commissions and Fees***

The firm earns commissions and fees from executing and clearing client transactions on stock, options and futures markets, as well as over-the-counter (OTC) transactions. Commissions and fees are recognized on the day the trade is executed. The firm also provides third-party research services to clients in connection with certain soft-dollar arrangements.

Beginning in January 2018, costs incurred by the firm for research are presented net within commissions and fees. Prior to January 2018, costs incurred by the firm for research for certain soft-dollar arrangements were presented in brokerage, clearing, exchange and distribution fees.

***Remaining Performance Obligations***

Remaining performance obligations are services that the firm has committed to perform in the future in connection with its contracts with clients. The firm s remaining performance obligations are generally related to its financial advisory assignments and certain investment management activities. Revenues associated with remaining performance obligations relating to financial advisory assignments cannot be determined until the outcome of the transaction. For the firm s investment management activities, where fees are calculated based on the net asset value of the fund or separately managed account, future revenues associated with remaining performance obligations cannot be determined as such fees are subject to fluctuations in the market value of investments held by the fund or separately managed account.

The firm is able to determine the future revenues associated with management fees calculated based on committed capital. As of June 2018, substantially all of the firm s future net revenues associated with remaining performance obligations will be recognized through 2023. Annual revenues associated with such performance obligations average less than $250 million through 2023.

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**Transfers of Financial Assets**

Transfers of financial assets are accounted for as sales when the firm has relinquished control over the assets transferred. For transfers of financial assets accounted for as sales, any gains or losses are recognized in net revenues. Assets or liabilities that arise from the firm s continuing involvement with transferred financial assets are initially recognized at fair value. For transfers of financial assets that are not accounted for as sales, the assets are generally included in financial instruments owned and the transfer is accounted for as a collateralized financing, with the related interest expense recognized over the life of the transaction. See Note 10 for further information about transfers of financial assets accounted for as collateralized financings and Note 11 for further information about transfers of financial assets accounted for as sales.

**Cash and Cash Equivalents**

The firm defines cash equivalents as highly liquid overnight deposits held in the ordinary course of business. As of June 2018 and December 2017, cash and cash equivalents included $13.17 billion and $10.79 billion, respectively, of cash and due from banks, and $118.25 billion and $99.26 billion, respectively, of interest-bearing deposits with banks. The firm segregates cash for regulatory and other purposes related to client activity. As of June 2018 and December 2017, $22.62 billion and $18.44 billion, respectively, of cash and cash equivalents were segregated for regulatory and other purposes. In addition, the firm segregates securities for regulatory and other purposes related to client activity. See Note 10 for further information about segregated securities.

**Receivables from and Payables to Brokers, Dealers and Clearing Organizations**

Receivables from and payables to brokers, dealers and clearing organizations are accounted for at cost plus accrued interest, which generally approximates fair value. While these receivables and payables are carried at amounts that approximate fair value, they are not accounted for at fair value under the fair value option or at fair value in accordance with other U.S. GAAP and therefore are not included in the firm s fair value hierarchy in Notes 6 through 8. Had these receivables and payables been included in the firm s fair value hierarchy, substantially all would have been classified in level 2 as of both June 2018 and December 2017.

**Receivables from Customers and Counterparties**

Receivables from customers and counterparties generally relate to collateralized transactions. Such receivables primarily consist of customer margin loans, certain transfers of assets accounted for as secured loans rather than purchases at fair value and collateral posted in connection with certain derivative transactions. Substantially all of these receivables are accounted for at amortized cost net of estimated uncollectible amounts. Certain of the firm s receivables from customers and counterparties are accounted for at fair value under the fair value option, with changes in fair value generally included in market making revenues. See Note 8 for further information about receivables from customers and counterparties accounted for at fair value under the fair value option. In addition, as of June 2018 and December 2017, the firm s receivables from customers and counterparties included $6.25 billion and $4.63 billion, respectively, of loans held for sale, accounted for at the lower of cost or fair value. See Note 5 for an overview of the firm s fair value measurement policies.

As of both June 2018 and December 2017, the carrying value of receivables not accounted for at fair value generally approximated fair value. While these receivables are carried at amounts that approximate fair value, they are not accounted for at fair value under the fair value option or at fair value in accordance with other U.S. GAAP and therefore are not included in the firm s fair value hierarchy in Notes 6 through 8. Had these receivables been included in the firm s fair value hierarchy, substantially all would have been classified in level 2 as of both June 2018 and December 2017. Interest on receivables from customers and counterparties is recognized over the life of the transaction and included in interest income.

Receivables from customers and counterparties includes receivables from contracts with clients and, beginning in January 2018, also includes contract assets. Contract assets represent the firm s right to receive consideration for services provided in connection with its contracts with clients for which collection is conditional and not merely subject to the passage of time. As of June 2018, the firm s receivables from contracts with clients were $1.93 billion and contract assets were not material.

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**Payables to Customers and Counterparties**

Payables to customers and counterparties primarily consist of customer credit balances related to the firm s prime brokerage activities. Payables to customers and counterparties are accounted for at cost plus accrued interest, which generally approximates fair value. While these payables are carried at amounts that approximate fair value, they are not accounted for at fair value under the fair value option or at fair value in accordance with other U.S. GAAP and therefore are not included in the firm s fair value hierarchy in Notes 6 through 8. Had these payables been included in the firm s fair value hierarchy, substantially all would have been classified in level 2 as of both June 2018 and December 2017. Interest on payables to customers and counterparties is recognized over the life of the transaction and included in interest expense.

**Offsetting Assets and Liabilities**

To reduce credit exposures on derivatives and securities financing transactions, the firm may enter into master netting agreements or similar arrangements (collectively, netting agreements) with counterparties that permit it to offset receivables and payables with such counterparties. A netting agreement is a contract with a counterparty that permits net settlement of multiple transactions with that counterparty, including upon the exercise of termination rights by a non-defaulting party. Upon exercise of such termination rights, all transactions governed by the netting agreement are terminated and a net settlement amount is calculated. In addition, the firm receives and posts cash and securities collateral with respect to its derivatives and securities financing transactions, subject to the terms of the related credit support agreements or similar arrangements (collectively, credit support agreements). An enforceable credit support agreement grants the non-defaulting party exercising termination rights the right to liquidate the collateral and apply the proceeds to any amounts owed. In order to assess enforceability of the firm s right of setoff under netting and credit support agreements, the firm evaluates various factors including applicable bankruptcy laws, local statutes and regulatory provisions in the jurisdiction of the parties to the agreement.

Derivatives are reported on a net-by-counterparty basis (i.e., the net payable or receivable for derivative assets and liabilities for a given counterparty) in the consolidated statements of financial condition when a legal right of setoff exists under an enforceable netting agreement. Resale and repurchase agreements and securities borrowed and loaned transactions with the same term and currency are presented on a net-by-counterparty basis in the consolidated statements of financial condition when such transactions meet certain settlement criteria and are subject to netting agreements.

In the consolidated statements of financial condition, derivatives are reported net of cash collateral received and posted under enforceable credit support agreements, when transacted under an enforceable netting agreement. In the consolidated statements of financial condition, resale and repurchase agreements, and securities borrowed and loaned, are not reported net of the related cash and securities received or posted as collateral. See Note 10 for further information about collateral received and pledged, including rights to deliver or repledge collateral. See Notes 7 and 10 for further information about offsetting.

**Share-based Compensation**

The cost of employee services received in exchange for a share-based award is generally measured based on the grant-date fair value of the award. Share-based awards that do not require future service (i.e., vested awards, including awards granted to retirement-eligible employees) are expensed immediately. Share-based awards that require future service are amortized over the relevant service period. Forfeitures are recorded when they occur. See Recent Accounting Developments Improvements to Employee Share-Based Payment Accounting (ASC 718) for further information.

Cash dividend equivalents paid on outstanding restricted stock units (RSUs) are charged to retained earnings. If RSUs that require future service are forfeited, the related dividend equivalents originally charged to retained earnings are reclassified to compensation expense in the period in which forfeiture occurs.

The firm generally issues new shares of common stock upon delivery of share-based awards. In certain cases, primarily related to conflicted employment (as outlined in the applicable award agreements), the firm may cash settle share-based compensation awards accounted for as equity instruments. For these awards, whose terms allow for cash settlement, additional paid-in capital is adjusted to the extent of the difference between the value of the award at the time of cash settlement and the grant-date value of the award.

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**Foreign Currency Translation**

Assets and liabilities denominated in non-U.S. currencies are translated at rates of exchange prevailing on the date of the consolidated statements of financial condition and revenues and expenses are translated at average rates of exchange for the period. Foreign currency remeasurement gains or losses on transactions in nonfunctional currencies are recognized in earnings. Gains or losses on translation of the financial statements of a non-U.S. operation, when the functional currency is other than the U.S. dollar, are included, net of hedges and taxes, in the consolidated statements of comprehensive income.

**Recent Accounting Developments**

**Revenue from Contracts with Customers (ASC 606).** In May 2014, the FASB issued ASU No. 2014-09. This ASU, as amended, provides comprehensive guidance on the recognition of revenue earned from contracts with customers arising from the transfer of goods and services, guidance on accounting for certain contract costs and new disclosures.

The firm adopted this ASU in January 2018 under a modified retrospective approach. As a result of adopting this ASU, the firm, among other things, delays recognition of non-refundable and milestone payments on financial advisory assignments until the assignments are completed, and recognizes certain investment management fees earlier than under the firm s previous revenue recognition policies.

The firm also prospectively changed the presentation of certain costs from a net presentation within revenues to a gross basis, and vice versa. Beginning in 2018, certain underwriting expenses, which were netted against investment banking revenues and certain distribution fees, which were netted against investment management revenues, are presented gross as non-compensation expenses. Costs incurred in connection with certain soft-dollar arrangements, which were presented gross as non-compensation expenses, are presented net within commissions and fees.

Net revenues and non-compensation expenses both increased by approximately $80 million and $130 million for the three and six months ended June 2018, respectively, due to the changes in the presentation of certain costs from a net presentation within revenues to a gross basis. In addition, net revenues increased by approximately $40 million for both the three and six months ended June 2018, reflecting certain investment management fees which are now recognized earlier than under the firm s previous revenue recognition policies.

**Recognition and Measurement of Financial Assets and Financial Liabilities (ASC 825).** In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments (Topic 825) Recognition and Measurement of Financial Assets and Financial Liabilities. This ASU amends certain aspects of recognition, measurement, presentation and disclosure of financial instruments. It includes a requirement to present separately in other comprehensive income changes in fair value attributable to a firm s own credit spreads (debt valuation adjustment or DVA), net of tax, on financial liabilities for which the fair value option was elected.

In January 2016, the firm early adopted this ASU for the requirements related to DVA and reclassified the cumulative DVA, a gain of $305 million (net of tax), from retained earnings to accumulated other comprehensive loss. The adoption of the remaining provisions of the ASU in January 2018 did not have a material impact on the firm s financial condition, results of operations or cash flows.

**Leases (ASC 842).** In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). This ASU requires that, for leases longer than one year, a lessee recognize in the statements of financial condition a right-of-use asset, representing the right to use the underlying asset for the lease term, and a lease liability, representing the liability to make lease payments. It also requires that for finance leases, a lessee recognize interest expense on the lease liability, separately from the amortization of the right-of-use asset in the statements of earnings, while for operating leases, such amounts should be recognized as a combined expense. It also requires that for qualifying sale-leaseback transactions the seller recognize the gain or loss at the time control of the asset is transferred instead of amortizing it over the lease period. In addition, this ASU requires expanded disclosures about the nature and terms of lease agreements.

The ASU is effective for the firm in January 2019 under a modified retrospective approach. Early adoption is permitted. The firm s implementation efforts include reviewing the terms of existing leases and service contracts, which may include embedded leases. Based on the implementation efforts to date, the firm expects a gross up of approximately $2 billion on its consolidated statements of financial condition upon recognition of the right-of-use assets and lease liabilities.

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**Improvements to Employee Share-Based Payment Accounting (ASC 718).** In March 2016, the FASB issued ASU No. 2016-09, Compensation Stock Compensation (Topic 718) Improvements to Employee Share-Based Payment Accounting. This ASU includes a requirement that the tax effect related to the settlement of share-based awards be recorded in income tax benefit or expense in the statements of earnings rather than directly to additional paid-in capital. This change has no impact on total shareholders equity and is required to be adopted prospectively. The ASU also allows for forfeitures to be recorded when they occur rather than estimated over the vesting period. This change is required to be applied on a modified retrospective basis.

The firm adopted the ASU in January 2017 and subsequent to the adoption, the tax effect related to the settlement of share-based awards is recognized in the statements of earnings rather than directly to additional paid-in capital. The firm also elected to account for forfeitures as they occur, rather than to estimate forfeitures over the vesting period, and the cumulative effect of this election upon adoption was an increase of $35 million to share-based awards and a decrease of $24 million (net of tax of $11 million) to retained earnings.

In addition, the ASU modifies the classification of certain share-based payment activities within the statements of cash flows. Upon adoption, the firm reclassified amounts related to such activities within the consolidated statements of cash flows, on a retrospective basis.

**Measurement of Credit Losses on Financial Instruments (ASC 326).** In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments. This ASU amends several aspects of the measurement of credit losses on financial instruments, including replacing the existing incurred credit loss model and other models with the Current Expected Credit Losses (CECL) model and amending certain aspects of accounting for purchased financial assets with deterioration in credit quality since origination.

Under CECL, the allowance for losses for financial assets that are measured at amortized cost reflects management s estimate of credit losses over the remaining expected life of the financial assets. Expected credit losses for newly recognized financial assets, as well as changes to expected credit losses during the period, would be recognized in earnings. For certain purchased financial assets with deterioration in credit quality since origination, an initial allowance would be recorded for expected credit losses and recognized as an increase to the purchase price rather than as an expense. Expected credit losses, including losses on off-balance-sheet exposures such as lending commitments, will be measured based on historical experience, current conditions and forecasts that affect the collectability of the reported amount.

The ASU is effective for the firm in January 2020 under a modified retrospective approach. Early adoption is permitted in January 2019. Adoption of the ASU will result in earlier recognition of credit losses and an increase in the recorded allowance for certain purchased loans with deterioration in credit quality since origination with a corresponding increase to their gross carrying value. The firm is currently in the process of identifying and developing the changes to the firm s existing allowance models and processes that will be required under CECL. The impact of adoption of this ASU on the firm s financial condition, results of operations and cash flows will depend on, among other things, the economic environment and the type of financial assets held by the firm on the date of adoption.

**Classification of Certain Cash Receipts and Cash Payments (ASC 230).** In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230) Classification of Certain Cash Receipts and Cash Payments. This ASU provides guidance on the disclosure and classification of certain items within the statements of cash flows.

The firm adopted this ASU in January 2018 under a retrospective approach. The impact of adoption was an increase of \$244 million to net cash used for operating activities, a decrease of \$236 million to net cash used for investing activities and an increase of \$8 million to net cash provided by financing activities for the six months ended June 2017.

**Clarifying the Definition of a Business (ASC 805).** In January 2017, the FASB issued ASU No. 2017-01, Business Combinations (Topic 805) Clarifying the Definition of a Business. The ASU amends the definition of a business and provides a threshold which must be considered to determine whether a transaction is an acquisition (or disposal) of an asset or a business.

The firm adopted this ASU in January 2018 under a prospective approach. Adoption of the ASU did not have a material impact on the firm s financial condition, results of operations or cash flows. The firm expects that fewer transactions will be treated as acquisitions (or disposals) of businesses as a result of adopting this ASU.

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**Simplifying the Test for Goodwill Impairment (ASC 350).** In January 2017, the FASB issued ASU No. 2017-04, Intangibles Goodwill and Other (Topic 350) Simplifying the Test for Goodwill Impairment. The ASU simplifies the quantitative goodwill impairment test by eliminating the second step of the test. Under this ASU, impairment will be measured by comparing the estimated fair value of the reporting unit with its carrying value.

The ASU is effective for the firm in 2020. The firm early adopted this ASU in the fourth quarter of 2017. Adoption of the ASU did not have a material impact on the results of the firm s goodwill impairment test.

**Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets (ASC 610-20).** In February 2017, the FASB issued ASU No. 2017-05, Other Income Gains and Losses from the Derecognition of Nonfinancial Assets (Subtopic 610-20) Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets. The ASU clarifies the scope of guidance applicable to sales of nonfinancial assets and also provides guidance on accounting for partial sales of such assets.

The firm adopted this ASU in January 2018 under a modified retrospective approach. Adoption of the ASU did not have an impact on the firm s financial condition, results of operations or cash flows.

**Targeted Improvements to Accounting for Hedging Activities (ASC 815).** In August 2017, the FASB issued ASU No. 2017-12, Derivatives and Hedging (Topic 815) Targeted Improvements to Accounting for Hedging Activities. The ASU amends certain rules for hedging relationships, expands the types of strategies that are eligible for hedge accounting treatment to more closely align the results of hedge accounting with risk management activities and amends disclosure requirements related to fair value and net investment hedges.

The firm early adopted this ASU in January 2018 under a modified retrospective approach for hedge accounting treatment, and under a prospective approach for the amended disclosure requirements. Adoption of this ASU did not have a material impact on the firm s financial condition, results of operations or cash flows. See Note 7 for further information.

**Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income (ASC 220).** In February 2018, the FASB issued ASU No. 2018-02, Income Statement Reporting Comprehensive Income (Topic 220) Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. This ASU permits a reporting entity to reclassify the income tax effects of Tax Legislation on items within accumulated other comprehensive income to retained earnings.

The ASU is effective for the firm in January 2019 under a retrospective or a modified retrospective approach. Early adoption is permitted. Since this ASU only permits reclassification within shareholders equity, adoption of this ASU will not have a material impact on the firm s financial condition.

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**Note 4.**

**Financial Instruments Owned and Financial Instruments Sold, But Not Yet Purchased**

Financial instruments owned and financial instruments sold, but not yet purchased are accounted for at fair value either under the fair value option or in accordance with other U.S. GAAP. See Note 8 for information about other financial assets and financial liabilities at fair value.

The table below presents the firm s financial instruments owned and financial instruments sold, but not yet purchased.

| *$ in millions* | Financial Instruments Owned | Financial Instruments Sold, But Not Yet Purchased |
|---|---|---|
| **As of June 2018** | | |
| Money market instruments | **$ 3,274** | **$** |
| Government and agency obligations: | | |
| U.S. | **86,660** | **11,207** |
| Non-U.S. | **38,561** | **24,068** |
| Loans and securities backed by: | | |
| Commercial real estate | **3,842** | |
| Residential real estate | **10,386** | **6** |
| Corporate debt instruments | **35,072** | **11,020** |
| State and municipal obligations | **1,653** | |
| Other debt obligations | **1,933** | **1** |
| Equity securities | **109,961** | **28,903** |
| Commodities | **5,109** | |
| Investments in funds at NAV | **4,020** | |
| Subtotal | **300,471** | **75,205** |
| Derivatives | **47,488** | **37,542** |
| **Total** | **$347,959** | **$112,747** |

| As of December 2017 | | |
|---|---|---|
| Money market instruments | $ 1,608 | $ |
| Government and agency obligations: | | |
| U.S. | 76,418 | 17,911 |
| Non-U.S. | 33,956 | 23,311 |
| Loans and securities backed by: | | |
| Commercial real estate | 3,436 | 1 |
| Residential real estate | 11,993 | |
| Corporate debt instruments | 33,683 | 7,153 |
| State and municipal obligations | 1,471 | |
| Other debt obligations | 2,164 | 1 |
| Equity securities | 96,132 | 23,882 |
| Commodities | 3,194 | 40 |
| Investments in funds at NAV | 4,596 | |
| Subtotal | 268,651 | 72,299 |
| Derivatives | 47,337 | 39,631 |
| Total | $315,988 | $111,930 |

In the table above:

Money market instruments includes commercial paper, certificates of deposit and time deposits, substantially all of which have a maturity of less than one year.

Corporate debt instruments includes corporate loans and debt securities.

Equity securities includes public and private equities, exchange-traded funds and convertible debentures. Such amounts include investments accounted for at fair value under the fair value option where the firm would otherwise apply the equity method of accounting of $8.85 billion as of June 2018 and $8.49 billion as of December 2017.

**Gains and Losses from Market Making and Other Principal Transactions**

The table below presents market making revenues by major product type, as well as other principal transactions revenues.

| | Three Months Ended June | | Six Months Ended June | |
|---|---|---|---|---|
| *$ in millions* | **2018** | 2017 | **2018** | 2017 |
| Interest rates | **$(3,222)** | $ 2,625 | **$(2,317)** | $ 3,989 |
| Credit | **548** | 382 | **866** | 926 |
| Currencies | **3,093** | (2,422) | **3,495** | (2,740) |
| Equities | **2,025** | 1,293 | **3,161** | 1,871 |
| Commodities | **102** | 37 | **545** | 287 |
| **Market making** | **2,546** | 1,915 | **5,750** | 4,333 |
| **Other principal transactions** | **1,286** | 1,227 | **2,906** | 2,448 |
| **Total** | **$ 3,832** | $ 3,142 | **$ 8,656** | $ 6,781 |

In the table above:

Gains/(losses) include both realized and unrealized gains and losses, and are primarily related to the firm s financial instruments owned and financial instruments sold, but not yet purchased, including both derivative and non-derivative financial instruments.

Gains/(losses) exclude related interest income and interest expense. See Note 23 for further information about interest income and interest expense.

Gains/(losses) on other principal transactions are included in the firm s Investing & Lending segment. See Note 25 for net revenues, including net interest income, by product type for Investing & Lending, as well as the amount of net interest income included in Investing & Lending.

Gains/(losses) are not representative of the manner in which the firm manages its business activities because many of the firm s market-making and client facilitation strategies utilize financial instruments across various product types. Accordingly, gains or losses in one product type frequently offset gains or losses in other product types. For example, most of the firm s longer-term derivatives across product types are sensitive to changes in interest rates and may be economically hedged with interest rate swaps. Similarly, a significant portion of the firm s cash instruments and derivatives across product types has exposure to foreign currencies and may be economically hedged with foreign currency contracts.

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**Note 5.**

**Fair Value Measurements**

The fair value of a financial instrument is the amount 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. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. The firm measures certain financial assets and financial liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks).

The best evidence of fair value is a quoted price in an active market. If quoted prices in active markets are not available, fair value is determined by reference to prices for similar instruments, quoted prices or recent transactions in less active markets, or internally developed models that primarily use market-based or independently sourced inputs including, but not limited to, interest rates, volatilities, equity or debt prices, foreign exchange rates, commodity prices, credit spreads and funding spreads (i.e., the spread or difference between the interest rate at which a borrower could finance a given financial instrument relative to a benchmark interest rate).

U.S. GAAP has a three-level hierarchy for disclosure of fair value measurements. This hierarchy prioritizes inputs to the valuation techniques used to measure fair value, giving the highest priority to level 1 inputs and the lowest priority to level 3 inputs. A financial instrument s level in this hierarchy is based on the lowest level of input that is significant to its fair value measurement. In evaluating the significance of a valuation input, the firm considers, among other factors, a portfolio s net risk exposure to that input. The fair value hierarchy is as follows:

**Level 1.** Inputs are unadjusted quoted prices in active markets to which the firm had access at the measurement date for identical, unrestricted assets or liabilities.

**Level 2.** Inputs to valuation techniques are observable, either directly or indirectly.

**Level 3.** One or more inputs to valuation techniques are significant and unobservable.

The fair values for substantially all of the firm s financial assets and financial liabilities are based on observable prices and inputs and are classified in levels 1 and 2 of the fair value hierarchy. Certain level 2 and level 3 financial assets and financial liabilities may require appropriate valuation adjustments that a market participant would require to arrive at fair value for factors such as counterparty and the firm s credit quality, funding risk, transfer restrictions, liquidity and bid/offer spreads. Valuation adjustments are generally based on market evidence.

See Notes 6 through 8 for further information about fair value measurements of cash instruments, derivatives and other financial assets and financial liabilities at fair value.

The table below presents financial assets and financial liabilities accounted for at fair value under the fair value option or in accordance with other U.S. GAAP.

| | | As of | |
|---|---|---|---|
| *$ in millions* | **June 2018** | March 2018 | December 2017 |
| Total level 1 financial assets | **$180,345** | $169,447 | $155,086 |
| Total level 2 financial assets | **378,977** | 404,152 | 395,606 |
| Total level 3 financial assets | **20,516** | 21,057 | 19,201 |
| Investments in funds at NAV | **4,020** | 4,043 | 4,596 |
| Counterparty and cash collateral netting | **(56,699)** | (59,502) | (56,366) |
| **Total financial assets at fair value** | **$527,159** | $539,197 | $518,123 |
| Total assets | **$968,610** | $973,535 | $916,776 |
| Total level 3 financial assets divided by: | | | |
| Total assets | **2.1%** | 2.2% | 2.1% |
| Total financial assets at fair value | **3.9%** | 3.9% | 3.7% |
| Total level 1 financial liabilities | **$ 62,401** | $ 73,176 | $ 63,589 |
| Total level 2 financial liabilities | **279,805** | 289,362 | 261,719 |
| Total level 3 financial liabilities | **21,193** | 20,256 | 19,620 |
| Counterparty and cash collateral netting | **(37,538)** | (42,652) | (39,866) |
| **Total financial liabilities at fair value** | **$325,861** | $340,142 | $305,062 |
| Total level 3 financial liabilities divided by total financial liabilities at fair value | **6.5%** | 6.0% | 6.4% |

In the table above:

Counterparty netting among positions classified in the same level is included in that level.

Counterparty and cash collateral netting represents the impact on derivatives of netting across levels of the fair value hierarchy.

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**(Unaudited)**

The table below presents a summary of level 3 financial assets.

| | As of | | |
|---|---|---|---|
| *$ in millions* | **June 2018** | March 2018 | December 2017 |
| Cash instruments | **$16,216** | $16,942 | $15,395 |
| Derivatives | **4,293** | 4,114 | 3,802 |
| Other financial assets | **7** | 1 | 4 |
| **Total** | **$20,516** | $21,057 | $19,201 |

Level 3 financial assets as of June 2018 decreased compared with March 2018, reflecting a decrease in level 3 cash instruments. Level 3 financial assets as of June 2018 increased compared with December 2017, primarily reflecting an increase in level 3 cash instruments. See Notes 6 through 8 for further information about level 3 financial assets (including information about unrealized gains and losses related to level 3 financial assets and financial liabilities, and transfers in and out of level 3).

**Note 6.**

**Cash Instruments**

Cash instruments include U.S. government and agency obligations, non-U.S. government and agency obligations, mortgage-backed loans and securities, corporate debt instruments, equity securities, investments in funds at NAV, and other non-derivative financial instruments owned and financial instruments sold, but not yet purchased. See below for the types of cash instruments included in each level of the fair value hierarchy and the valuation techniques and significant inputs used to determine their fair values. See Note 5 for an overview of the firm s fair value measurement policies.

**Level 1 Cash Instruments**

Level 1 cash instruments include certain money market instruments, U.S. government obligations, most non-U.S. government obligations, certain government agency obligations, certain corporate debt instruments and actively traded listed equities. These instruments are valued using quoted prices for identical unrestricted instruments in active markets.

The firm defines active markets for equity instruments based on the average daily trading volume both in absolute terms and relative to the market capitalization for the instrument. The firm defines active markets for debt instruments based on both the average daily trading volume and the number of days with trading activity.

**Level 2 Cash Instruments**

Level 2 cash instruments include most money market instruments, most government agency obligations, certain non-U.S. government obligations, most mortgage-backed loans and securities, most corporate debt instruments, most state and municipal obligations, most other debt obligations, restricted or less liquid listed equities, commodities and certain lending commitments.

Valuations of level 2 cash instruments can be verified to quoted prices, recent trading activity for identical or similar instruments, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or firm) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Valuation adjustments are typically made to level 2 cash instruments (i) if the cash instrument is subject to transfer restrictions and/or (ii) for other premiums and liquidity discounts that a market participant would require to arrive at fair value. Valuation adjustments are generally based on market evidence.

**Level 3 Cash Instruments**

Level 3 cash instruments have one or more significant valuation inputs that are not observable. Absent evidence to the contrary, level 3 cash instruments are initially valued at transaction price, which is considered to be the best initial estimate of fair value. Subsequently, the firm uses other methodologies to determine fair value, which vary based on the type of instrument. Valuation inputs and assumptions are changed when corroborated by substantive observable evidence, including values realized on sales.

**Valuation Techniques and Significant Inputs of Level 3 Cash Instruments**

Valuation techniques of level 3 cash instruments vary by instrument, but are generally based on discounted cash flow techniques. The valuation techniques and the nature of significant inputs used to determine the fair values of each type of level 3 cash instrument are described below:

**Loans and Securities Backed by Commercial Real Estate.** Loans and securities backed by commercial real estate are directly or indirectly collateralized by a single commercial real estate property or a portfolio of properties, and may include tranches of varying levels of subordination. Significant inputs are generally determined based on relative value analyses and include:

- Market yields implied by transactions of similar or related assets and/or current levels and changes in market indices such as the CMBX (an index that tracks the performance of commercial mortgage bonds);

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- Transaction prices in both the underlying collateral and instruments with the same or similar underlying collateral;

- A measure of expected future cash flows in a default scenario (recovery rates) implied by the value of the underlying collateral, which is mainly driven by current performance of the underlying collateral, capitalization rates and multiples. Recovery rates are expressed as a percentage of notional or face value of the instrument and reflect the benefit of credit enhancements on certain instruments; and

- Timing of expected future cash flows (duration) which, in certain cases, may incorporate the impact of other unobservable inputs (e.g., prepayment speeds).

**Loans and Securities Backed by Residential Real Estate.** Loans and securities backed by residential real estate are directly or indirectly collateralized by portfolios of residential real estate and may include tranches of varying levels of subordination. Significant inputs are generally determined based on relative value analyses, which incorporate comparisons to instruments with similar collateral and risk profiles. Significant inputs include:

- Market yields implied by transactions of similar or related assets;

- Transaction prices in both the underlying collateral and instruments with the same or similar underlying collateral;

- Cumulative loss expectations, driven by default rates, home price projections, residential property liquidation timelines, related costs and subsequent recoveries; and

- Duration, driven by underlying loan prepayment speeds and residential property liquidation timelines.

**Corporate Debt Instruments.** Corporate debt instruments includes corporate loans and debt securities. Significant inputs for corporate debt instruments are generally determined based on relative value analyses, which incorporate comparisons both to prices of credit default swaps that reference the same or similar underlying instrument or entity and to other debt instruments for the same issuer for which observable prices or broker quotations are available. Significant inputs include:

- Market yields implied by transactions of similar or related assets and/or current levels and trends of market indices, such as the CDX (an index that tracks the performance of corporate credit);

Current performance and recovery assumptions and, where the firm uses credit default swaps to value the related cash instrument, the cost of borrowing the underlying reference obligation; and

Duration.

**Equity Securities.** Equity securities includes private equity securities and convertible debentures. Recent third-party completed or pending transactions (e.g., merger proposals, tender offers, debt restructurings) are considered to be the best evidence for any change in fair value. When these are not available, the following valuation methodologies are used, as appropriate:

Industry multiples (primarily EBITDA multiples) and public comparables;

Transactions in similar instruments;

Discounted cash flow techniques; and

Third-party appraisals.

The firm also considers changes in the outlook for the relevant industry and financial performance of the issuer as compared to projected performance. Significant inputs include:

Market and transaction multiples;

Discount rates and capitalization rates; and

For equity securities with debt-like features, market yields implied by transactions of similar or related assets, current performance and recovery assumptions, and duration.

**Other Cash Instruments.** Other cash instruments consists of non-U.S. government and agency obligations, state and municipal obligations, and other debt obligations. Significant inputs are generally determined based on relative value analyses, which incorporate comparisons both to prices of credit default swaps that reference the same or similar underlying instrument or entity and to other debt instruments for the same issuer for which observable prices or broker quotations are available. Significant inputs include:

Market yields implied by transactions of similar or related assets and/or current levels and trends of market indices;

Current performance and recovery assumptions and, where the firm uses credit default swaps to value the related cash instrument, the cost of borrowing the underlying reference obligation; and

Duration.

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**Fair Value of Cash Instruments by Level**

The tables below present cash instrument assets and liabilities at fair value by level within the fair value hierarchy.

| | As of June 2018 | | | |
|---|---|---|---|---|
| *$ in millions* | **Level 1** | **Level 2** | **Level 3** | **Total** |
| **Assets** | | | | |
| Money market instruments | **$ 1,039** | **$ 2,235** | **$** | **$ 3,274** |
| Government and agency obligations: | | | | |
| U.S. | **58,191** | **28,469** | | **86,660** |
| Non-U.S. | **31,211** | **7,345** | **5** | **38,561** |
| Loans and securities backed by: | | | | |
| Commercial real estate | | **2,748** | **1,094** | **3,842** |
| Residential real estate | | **9,597** | **789** | **10,386** |
| Corporate debt instruments | **601** | **31,080** | **3,391** | **35,072** |
| State and municipal obligations | | **1,618** | **35** | **1,653** |
| Other debt obligations | | **1,592** | **341** | **1,933** |
| Equity securities | **89,287** | **10,113** | **10,561** | **109,961** |
| Commodities | | **5,109** | | **5,109** |
| Subtotal | **$180,329** | **$ 99,906** | **$16,216** | **$296,451** |
| Investments in funds at NAV | | | | **4,020** |
| **Total cash instrument assets** | | | | **$300,471** |
| **Liabilities** | | | | |
| Government and agency obligations: | | | | |
| U.S. | **$ (11,170)** | **$ (37)** | **$** | **$ (11,207)** |
| Non-U.S. | **(22,336)** | **(1,732)** | | **(24,068)** |
| Loans and securities backed by residential real estate | | **(6)** | | **(6)** |
| Corporate debt instruments | **(10)** | **(10,973)** | **(37)** | **(11,020)** |
| Other debt obligations | | **(1)** | | **(1)** |
| Equity securities | **(28,875)** | **(12)** | **(16)** | **(28,903)** |
| **Total cash instrument liabilities** | **$ (62,391)** | **$(12,761)** | **$ (53)** | **$ (75,205)** |

| | As of December 2017 | | | |
|---|---|---|---|---|
| *$ in millions* | Level 1 | Level 2 | Level 3 | Total |
| **Assets** | | | | |
| Money market instruments | $ 398 | $ 1,209 | $ 1 | $ 1,608 |
| Government and agency obligations: | | | | |

| | | | | |
|---|---|---|---|---|
| U.S. | 50,796 | 25,622 | | 76,418 |
| Non-U.S. | 27,070 | 6,882 | 4 | 33,956 |
| Loans and securities backed by: | | | | |
| Commercial real estate | | 2,310 | 1,126 | 3,436 |
| Residential real estate | | 11,325 | 668 | 11,993 |
| Corporate debt instruments | 752 | 29,661 | 3,270 | 33,683 |
| State and municipal obligations | | 1,401 | 70 | 1,471 |
| Other debt obligations | | 1,812 | 352 | 2,164 |
| Equity securities | 76,044 | 10,184 | 9,904 | 96,132 |
| Commodities | | 3,194 | | 3,194 |
| Subtotal | $155,060 | $ 93,600 | $15,395 | $264,055 |
| Investments in funds at NAV | | | | 4,596 |
| Total cash instrument assets | | | | $268,651 |
| **Liabilities** | | | | |
| Government and agency obligations: | | | | |
| U.S. | $ (17,845) | $ (66) | $ | $ (17,911) |
| Non-U.S. | (21,820) | (1,491) | | (23,311) |
| Loans and securities backed by commercial real estate | | (1) | | (1) |
| Corporate debt instruments | (2) | (7,099) | (52) | (7,153) |
| Other debt obligations | | (1) | | (1) |
| Equity securities | (23,866) | | (16) | (23,882) |
| Commodities | | (40) | | (40) |
| Total cash instrument liabilities | $ (63,533) | $ (8,698) | $ (68) | $ (72,299) |

In the tables above:

Cash instrument assets and liabilities are included in financial instruments owned and financial instruments sold, but not yet purchased, respectively.

Cash instrument assets are shown as positive amounts and cash instrument liabilities are shown as negative amounts.

Money market instruments includes commercial paper, certificates of deposit and time deposits, substantially all of which have a maturity of less than one year.

Corporate debt instruments includes corporate loans and debt securities.

Equity securities includes public and private equities, exchange-traded funds and convertible debentures.

As of both June 2018 and December 2017, substantially all of the firm s level 3 equity securities consisted of private equity securities.

Total cash instrument assets included collateralized loan obligations backed by corporate obligations of $746 million and $912 million in level 2, and $220 million and $166 million in level 3 as of June 2018 and

December 2017, respectively. Collateralized debt obligations (CDOs) included in cash instruments were not material as of both June 2018 and December 2017.

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**Significant Unobservable Inputs**

The table below presents the amount of level 3 assets, and ranges and weighted averages of significant unobservable inputs used to value the firm s level 3 cash instruments.

| | Level 3 Assets and Range of Significant Unobservable Inputs (Weighted Average) as of | |
|---|---|---|
| | **June** | December |
| *$ in millions* | **2018** | 2017 |
| **Loans and securities backed by commercial real estate** | | |
| Level 3 assets | **$1,094** | $1,126 |
| Yield | **3.3% to 22.5% (11.9%)** | 4.6% to 22.0% (13.4%) |
| Recovery rate | **11.3% to 90.6% (56.5%)** | 14.3% to 89.0% (43.8%) |
| Duration (years) | **0.6 to 6.2 (2.4)** | 0.8 to 6.4 (2.1) |
| **Loans and securities backed by residential real estate** | | |
| Level 3 assets | **$789** | $668 |
| Yield | **2.4% to 16.6% (9.5%)** | 2.3% to 15.0% (8.3%) |
| Cumulative loss rate | **8.6% to 38.3% (18.6%)** | 12.5% to 43.0% (21.8%) |
| Duration (years) | **1.4 to 14.8 (6.7)** | 0.7 to 14.0 (6.9) |
| **Corporate debt instruments** | | |
| Level 3 assets | **$3,391** | $3,270 |
| Yield | **1.8% to 30.2% (11.9%)** | 3.6% to 24.5% (12.3%) |
| Recovery rate | **0.0% to 85.0% (56.1%)** | 0.0% to 85.3% (62.8%) |
| Duration (years) | **0.3 to 6.6 (3.2)** | 0.5 to 7.6 (3.2) |
| **Equity securities** | | |
| Level 3 assets | **$10,561** | $9,904 |
| Multiples | **1.1x to 33.1x (8.5x)** | 1.1x to 30.5x (8.9x) |
| Discount rate/yield | **6.1% to 25.0% (14.9%)** | 3.0% to 20.3% (14.0%) |
| Capitalization rate | **4.3% to 12.5% (6.1%)** | 4.3% to 12.0% (6.1%) |
| **Other cash instruments** | | |
| Level 3 assets | **$381** | $427 |
| Yield | **4.1% to 10.3% (8.9%)** | 4.0% to 11.7% (8.4%) |
| Duration (years) | **3.4 to 6.2 (4.4)** | 3.5 to 11.4 (5.1) |

In the table above:

Ranges represent the significant unobservable inputs that were used in the valuation of each type of cash instrument.

Weighted averages are calculated by weighting each input by the relative fair value of the cash instruments.

The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one cash instrument. For example, the highest multiple for private equity securities is appropriate for valuing a specific private equity security but may not be appropriate for valuing any other private equity security. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of the firm s level 3 cash instruments.
Increases in yield, discount rate, capitalization rate, duration or cumulative loss rate used in the valuation of the firm s level 3 cash instruments would result in a lower fair value measurement, while increases in recovery rate or multiples would result in a higher fair value measurement. Due to the distinctive nature of each of the firm s level 3 cash instruments, the interrelationship of inputs is not necessarily uniform within each product type.

Loans and securities backed by commercial and residential real estate, corporate debt instruments and other cash instruments are valued using discounted cash flows, and equity securities are valued using market comparables and discounted cash flows.

The fair value of any one instrument may be determined using multiple valuation techniques. For example, market comparables and discounted cash flows may be used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.

**Transfers Between Levels of the Fair Value Hierarchy**

Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. See Level 3 Rollforward below for information about transfers between level 2 and level 3.

During the three and six months ended June 2018, transfers into level 2 from level 1 of cash instruments were $70 million and $22 million, respectively, reflecting transfers of public equity securities due to decreased market activity in these instruments. Transfers into level 1 from level 2 of cash instruments during the three and six months ended June 2018, were $23 million and $57 million, respectively, reflecting transfers of public equity securities due to increased market activity in these instruments.

During the three and six months ended June 2017, transfers into level 2 from level 1 of cash instruments were $66 million and $168 million, respectively, reflecting transfers of public equity securities due to decreased market activity in these instruments. Transfers into level 1 from level 2 of cash instruments during the three and six months ended June 2017, were $138 million and $178 million, respectively, reflecting transfers of public equity securities due to increased market activity in these instruments.

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**Level 3 Rollforward**

The table below presents a summary of the changes in fair value for level 3 cash instrument assets and liabilities.

| | Three Months Ended June | | Six Months Ended June | |
|---|---|---|---|---|
| *$ in millions* | **2018** | 2017 | **2018** | 2017 |
| **Total cash instrument assets** | | | | |
| Beginning balance | **$16,942** | $18,324 | **$15,395** | $18,035 |
| Net realized gains/(losses) | **114** | 119 | **278** | 230 |
| Net unrealized gains/(losses) | **(126)** | 554 | **143** | 892 |
| Purchases | **702** | 518 | **1,168** | 1,026 |
| Sales | **(882)** | (693) | **(1,152)** | (1,299) |
| Settlements | **(833)** | (697) | **(1,208)** | (1,281) |
| Transfers into level 3 | **1,852** | 774 | **3,292** | 1,717 |
| Transfers out of level 3 | **(1,553)** | (2,703) | **(1,700)** | (3,124) |
| **Ending balance** | **$16,216** | $16,196 | **$16,216** | $16,196 |
| **Total cash instrument liabilities** | | | | |
| Beginning balance | **$ (39)** | $ (49) | **$ (68)** | $ (62) |
| Net realized gains/(losses) | **2** | 1 | | |
| Net unrealized gains/(losses) | **5** | (1) | **3** | 3 |
| Purchases | **15** | 40 | **22** | 50 |
| Sales | **(17)** | (27) | **(24)** | (33) |
| Settlements | **(2)** | (5) | **17** | (1) |
| Transfers into level 3 | **(20)** | (6) | **(11)** | (2) |
| Transfers out of level 3 | **3** | 5 | **8** | 3 |
| **Ending balance** | **$ (53)** | $ (42) | **$ (53)** | $ (42) |

In the table above:

Changes in fair value are presented for all cash instrument assets and liabilities that are classified in level 3 as of the end of the period.

Net unrealized gains/(losses) relates to instruments that were still held at period-end.

Purchases includes originations and secondary purchases.

If a cash instrument asset or liability was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.

For level 3 cash instrument assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 cash instrument liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.

Level 3 cash instruments are frequently economically hedged with level 1 and level 2 cash instruments and/or level 1, level 2 or level 3 derivatives. Accordingly, gains or losses that are classified in level 3 can be partially offset by gains or losses attributable to level 1 or level 2 cash instruments and/or level 1, level 2 or level 3 derivatives. As a result, gains or losses included in the level 3 rollforward below do not necessarily represent the overall impact on the firm s results of operations, liquidity or capital resources.

The table below disaggregates, by product type, the information for cash instrument assets included in the summary table above.

| | Three Months Ended June | | Six Months Ended June | |
|---|---|---|---|---|
| *$ in millions* | **2018** | 2017 | **2018** | 2017 |
| **Loans and securities backed by commercial real estate** | | | | |
| Beginning balance | **$ 1,266** | $ 1,604 | **$ 1,126** | $ 1,645 |
| Net realized gains/(losses) | **21** | 12 | **48** | 23 |
| Net unrealized gains/(losses) | **(26)** | 57 | **(27)** | 78 |
| Purchases | **56** | 116 | **85** | 166 |
| Sales | **(28)** | (60) | **(67)** | (110) |
| Settlements | **(181)** | (167) | **(247)** | (298) |
| Transfers into level 3 | **97** | 82 | **293** | 134 |
| Transfers out of level 3 | **(111)** | (244) | **(117)** | (238) |
| **Ending balance** | **$ 1,094** | $ 1,400 | **$ 1,094** | $ 1,400 |
| **Loans and securities backed by residential real estate** | | | | |
| Beginning balance | **$ 673** | $ 830 | **$ 668** | $ 845 |
| Net realized gains/(losses) | **13** | 11 | **35** | 27 |
| Net unrealized gains/(losses) | **2** | 60 | **4** | 80 |
| Purchases | **47** | 93 | **118** | 121 |
| Sales | **(93)** | (158) | **(140)** | (214) |
| Settlements | **(59)** | (38) | **(80)** | (69) |
| Transfers into level 3 | **281** | 38 | **255** | 40 |
| Transfers out of level 3 | **(75)** | (29) | **(71)** | (23) |
| **Ending balance** | **$ 789** | $ 807 | **$ 789** | $ 807 |
| **Corporate debt instruments** | | | | |
| Beginning balance | **$ 3,358** | $ 4,553 | **$ 3,270** | $ 4,640 |
| Net realized gains/(losses) | **52** | 55 | **117** | 105 |
| Net unrealized gains/(losses) | **(109)** | 20 | **(66)** | 108 |
| Purchases | **364** | 200 | **491** | 491 |

| | | | | |
|---|---|---|---|---|
| Sales | **(164)** | (212) | **(294)** | (630) |
| Settlements | **(301)** | (289) | **(517)** | (507) |
| Transfers into level 3 | **597** | 527 | **765** | 806 |
| Transfers out of level 3 | **(406)** | (1,209) | **(375)** | (1,368) |
| **Ending balance** | **$ 3,391** | $ 3,645 | **$ 3,391** | $ 3,645 |
| **Equity securities** | | | | |
| Beginning balance | **$11,246** | $10,715 | **$ 9,904** | $10,263 |
| Net realized gains/(losses) | **28** | 38 | **74** | 65 |
| Net unrealized gains/(losses) | **(3)** | 402 | **223** | 618 |
| Purchases | **205** | 90 | **431** | 186 |
| Sales | **(588)** | (256) | **(627)** | (290) |
| Settlements | **(253)** | (163) | **(289)** | (330) |
| Transfers into level 3 | **877** | 124 | **1,974** | 726 |
| Transfers out of level 3 | **(951)** | (1,117) | **(1,129)** | (1,405) |
| **Ending balance** | **$10,561** | $ 9,833 | **$10,561** | $ 9,833 |
| **Other cash instruments** | | | | |
| Beginning balance | **$ 399** | $ 622 | **$ 427** | $ 642 |
| Net realized gains/(losses) | | 3 | **4** | 10 |
| Net unrealized gains/(losses) | **10** | 15 | **9** | 8 |
| Purchases | **30** | 19 | **43** | 62 |
| Sales | **(9)** | (7) | **(24)** | (55) |
| Settlements | **(39)** | (40) | **(75)** | (77) |
| Transfers into level 3 | | 3 | **5** | 11 |
| Transfers out of level 3 | **(10)** | (104) | **(8)** | (90) |
| **Ending balance** | **$ 381** | $ 511 | **$ 381** | $ 511 |

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**Level 3 Rollforward Commentary**

**Three Months Ended June 2018.** The net realized and unrealized losses on level 3 cash instrument assets of $12 million (reflecting $114 million of net realized gains and $126 million of net unrealized losses) for the three months ended June 2018 included gains/(losses) of approximately $4 million, $(171) million and $155 million reported in market making, other principal transactions and interest income, respectively.

The net unrealized losses on level 3 cash instrument assets for the three months ended June 2018 primarily reflected losses on certain corporate debt instruments, principally driven by weak corporate performance and company-specific events.

Transfers into level 3 during the three months ended June 2018 primarily reflected transfers of certain private equity securities and corporate debt instruments from level 2, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments.

Transfers out of level 3 during the three months ended June 2018 primarily reflected transfers of certain private equity securities and corporate debt instruments to level 2, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments, and transfers of certain other corporate debt instruments to level 2, principally due to certain unobservable yield and duration inputs no longer being significant to the valuation of these instruments.

**Six Months Ended June 2018.** The net realized and unrealized gains on level 3 cash instrument assets of $421 million (reflecting $278 million of net realized gains and $143 million of net unrealized gains) for the six months ended June 2018 included gains/(losses) of approximately $(2) million, $180 million and $243 million reported in market making, other principal transactions and interest income, respectively.

The net unrealized gains on level 3 cash instrument assets for the six months ended June 2018 reflected gains on private equity securities, principally driven by strong corporate performance and company-specific events.

Transfers into level 3 during the six months ended June 2018 primarily reflected transfers of certain private equity securities and corporate debt instruments from level 2, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments.

Transfers out of level 3 during the six months ended June 2018 primarily reflected transfers of certain private equity securities and corporate debt instruments to level 2, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments and transfers of certain other corporate debt instruments to level 2, principally due to certain unobservable yield and duration inputs no longer being significant to the valuation of these instruments.

**Three Months Ended June 2017.** The net realized and unrealized gains on level 3 cash instrument assets of $673 million (reflecting $119 million of net realized gains and $554 million of net unrealized gains) for the three months ended June 2017 included gains/(losses) of approximately $(26) million, $556 million and $143 million reported in market making, other principal transactions and interest income, respectively.

The net unrealized gains on level 3 cash instrument assets for the three months ended June 2017 primarily reflected gains on private equity securities, principally driven by strong corporate performance and company-specific events.

Transfers into level 3 during the three months ended June 2017 primarily reflected transfers of certain corporate debt instruments from level 2, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments.

Transfers out of level 3 during the three months ended June 2017 primarily reflected transfers of certain corporate debt instruments to level 2, principally due to certain unobservable yield and duration inputs no longer being significant to the valuation of these instruments, and transfers of certain private equity securities and corporate debt instruments to level 2, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments.

**Six Months Ended June 2017.** The net realized and unrealized gains on level 3 cash instrument assets of $1.12 billion (reflecting $230 million of net realized gains and $892 million of net unrealized gains) for the six months ended June 2017 included gains/(losses) of approximately $(35) million, $884 million and $273 million reported in market making, other principal transactions and interest income, respectively.

The net unrealized gains on level 3 cash instrument assets for the six months ended June 2017 primarily reflected gains on private equity securities, principally driven by strong corporate performance and company-specific events.

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Transfers into level 3 during the six months ended June 2017 primarily reflected transfers of certain corporate debt instruments and private equity securities from level 2, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments.

Transfers out of level 3 during the six months ended June 2017 primarily reflected transfers of certain private equity securities and corporate debt instruments to level 2, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments, and transfers of certain corporate debt instruments to level 2, principally due to certain unobservable yield and duration inputs no longer being significant to the valuation of these instruments.

**Available-for-Sale Securities**

The table below presents details about cash instruments that are accounted for as available-for-sale.

| *$ in millions* | Amortized Cost | Fair Value | Weighted Average Yield |
|---|---|---|---|
| **As of June 2018** | | | |
| Less than 5 years | **$ 5,994** | **$ 5,856** | **2.10%** |
| Greater than 5 years | **6,224** | **6,053** | **2.44%** |
| **Total U.S. government obligations** | **12,218** | **11,909** | **2.28%** |
| Greater than 5 years | **10** | **10** | **5.03%** |
| **Total other available-for-sale securities** | **10** | **10** | **5.03%** |
| **Total available-for-sale securities** | **$12,228** | **$11,919** | **2.28%** |
| | | | |
| As of December 2017 | | | |
| Less than 5 years | $ 3,834 | $ 3,800 | 1.95% |
| Greater than 5 years | 5,207 | 5,222 | 2.41% |
| Total U.S. government obligations | 9,041 | 9,022 | 2.22% |
| Less than 5 years | 19 | 19 | 0.43% |
| Greater than 5 years | 233 | 235 | 4.62% |
| Total other available-for-sale securities | 252 | 254 | 4.30% |
| Total available-for-sale securities | $ 9,293 | $ 9,276 | 2.27% |

In the table above:

U.S. government obligations were classified in level 1 of the fair value hierarchy as of both June 2018 and December 2017.

Other available-for-sale securities includes corporate debt securities that were classified in level 2 of the fair value hierarchy as of June 2018. As of December 2017, other available-for-sale securities includes corporate debt securities, other debt obligations, securities backed by commercial real estate and money market instruments, substantially all of which were classified in level 2 of the fair value hierarchy.

The gross unrealized losses included in accumulated other comprehensive loss were $309 million as of June 2018 and related to U.S. government obligations, which were in a continuous unrealized loss position for less than a year. Such losses were not material as of December 2017.

**Investments in Funds at Net Asset Value Per Share**

Cash instruments at fair value include investments in funds that are measured at NAV of the investment fund. The firm uses NAV to measure the fair value of its fund investments when (i) the fund investment does not have a readily determinable fair value and (ii) the NAV of the investment fund is calculated in a manner consistent with the measurement principles of investment company accounting, including measurement of the investments at fair value.

Substantially all of the firm s investments in funds at NAV consist of investments in firm-sponsored private equity, credit, real estate and hedge funds where the firm co-invests with third-party investors.

Private equity funds primarily invest in a broad range of industries worldwide, including leveraged buyouts, recapitalizations, growth investments and distressed investments. Credit funds generally invest in loans and other fixed income instruments and are focused on providing private high-yield capital for leveraged and management buyout transactions, recapitalizations, financings, refinancings, acquisitions and restructurings for private equity firms, private family companies and corporate issuers. Real estate funds invest globally, primarily in real estate companies, loan portfolios, debt recapitalizations and property. Private equity, credit and real estate funds are closed-end funds in which the firm s investments are generally not eligible for redemption. Distributions will be received from these funds as the underlying assets are liquidated or distributed.

The firm also invests in hedge funds, primarily multi-disciplinary hedge funds that employ a fundamental bottom-up investment approach across various asset classes and strategies. The firm s investments in hedge funds primarily include interests where the underlying assets are illiquid in nature, and proceeds from redemptions will not be received until the underlying assets are liquidated or distributed.

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Many of the funds described above are covered funds as defined in the Volcker Rule of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). The Board of Governors of the Federal Reserve System (FRB) extended the conformance period to July 2022 for the firm s investments in, and relationships with, certain legacy illiquid funds (as defined in the Volcker Rule) that were in place prior to December 2013. This extension is applicable to substantially all of the firm s remaining investments in, and relationships with, covered funds in the table below.

The table below presents the fair value of the firm s investments in funds at NAV and the related unfunded commitments.

| *$ in millions* | Fair Value of Investments | Unfunded Commitments |
|---|---|---|
| **As of June 2018** | | |
| Private equity funds | **$2,906** | **$ 608** |
| Credit funds | **352** | **958** |
| Hedge funds | **190** | |
| Real estate funds | **572** | **202** |
| **Total** | **$4,020** | **$1,768** |
| As of December 2017 | | |
| Private equity funds | $3,478 | $ 614 |
| Credit funds | 266 | 985 |
| Hedge funds | 223 | |
| Real estate funds | 629 | 201 |
| Total | $4,596 | $1,800 |

**Note 7.**

**Derivatives and Hedging Activities**

**Derivative Activities**

Derivatives are instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors. Derivatives may be traded on an exchange (exchange-traded) or they may be privately negotiated contracts, which are usually referred to as OTC derivatives. Certain of the firm s OTC derivatives are cleared and settled through central clearing counterparties (OTC-cleared), while others are bilateral contracts between two counterparties (bilateral OTC).

**Market Making.** As a market maker, the firm enters into derivative transactions to provide liquidity to clients and to facilitate the transfer and hedging of their risks. In this role, the firm typically acts as principal and is required to commit capital to provide execution, and maintains inventory in response to, or in anticipation of, client demand.

**Risk Management.** The firm also enters into derivatives to actively manage risk exposures that arise from its market-making and investing and lending activities in derivative and cash instruments. The firm s holdings and exposures are hedged, in many cases, on either a portfolio or risk-specific basis, as opposed to an instrument-by-instrument basis. The offsetting impact of this economic hedging is reflected in the same business segment as the related revenues. In addition, the firm may enter into derivatives designated as hedges under U.S. GAAP. These derivatives are used to manage interest rate exposure in certain fixed-rate unsecured long-term and short-term borrowings, and deposits, and to manage foreign currency exposure on the net investment in certain non-U.S. operations.

The firm enters into various types of derivatives, including:

**Futures and Forwards.** Contracts that commit counterparties to purchase or sell financial instruments, commodities or currencies in the future.

**Swaps.** Contracts that require counterparties to exchange cash flows such as currency or interest payment streams. The amounts exchanged are based on the specific terms of the contract with reference to specified rates, financial instruments, commodities, currencies or indices.

**Options.** Contracts in which the option purchaser has the right, but not the obligation, to purchase from or sell to the option writer financial instruments, commodities or currencies within a defined time period for a specified price.

Derivatives are reported on a net-by-counterparty basis (i.e., the net payable or receivable for derivative assets and liabilities for a given counterparty) when a legal right of setoff exists under an enforceable netting agreement (counterparty netting). Derivatives are accounted for at fair value, net of cash collateral received or posted under enforceable credit support agreements (cash collateral netting). Derivative assets and liabilities are included in financial instruments owned and financial instruments sold, but not yet purchased, respectively. Realized and unrealized gains and losses on derivatives not designated as hedges are included in market making and other principal transactions in Note 4.

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The tables below present the gross fair value and the notional amounts of derivative contracts by major product type, the amounts of counterparty and cash collateral netting in the consolidated statements of financial condition, as well as cash and securities collateral posted and received under enforceable credit support agreements that do not meet the criteria for netting under U.S. GAAP.

| | **As of June 2018** | | As of December 2017 | |
|---|---|---|---|---|
| *$ in millions* | **Derivative Assets** | **Derivative Liabilities** | Derivative Assets | Derivative Liabilities |
| **Not accounted for as hedges** | | | | |
| Exchange-traded | **$ 1,018** | **$ 1,134** | $ 554 | $ 644 |
| OTC-cleared | **2,174** | **1,592** | 5,392 | 2,773 |
| Bilateral OTC | **245,694** | **222,731** | 274,986 | 249,750 |
| **Total interest rates** | **248,886** | **225,457** | 280,932 | 253,167 |
| OTC-cleared | **4,989** | **4,682** | 5,727 | 5,670 |
| Bilateral OTC | **14,661** | **13,102** | 16,966 | 15,600 |
| **Total credit** | **19,650** | **17,784** | 22,693 | 21,270 |
| Exchange-traded | **37** | **168** | 23 | 363 |
| OTC-cleared | **1,625** | **1,362** | 988 | 847 |
| Bilateral OTC | **102,805** | **96,729** | 94,481 | 95,127 |
| **Total currencies** | **104,467** | **98,259** | 95,492 | 96,337 |
| Exchange-traded | **4,852** | **4,695** | 4,135 | 3,854 |
| OTC-cleared | **268** | **249** | 197 | 197 |
| Bilateral OTC | **11,957** | **13,048** | 9,748 | 12,097 |
| **Total commodities** | **17,077** | **17,992** | 14,080 | 16,148 |
| Exchange-traded | **9,352** | **9,215** | 10,552 | 10,335 |
| Bilateral OTC | **41,750** | **45,243** | 40,735 | 45,253 |
| **Total equities** | **51,102** | **54,458** | 51,287 | 55,588 |
| **Subtotal** | **441,182** | **413,950** | 464,484 | 442,510 |
| **Accounted for as hedges** | | | | |
| OTC-cleared | **4** | | 21 | |
| Bilateral OTC | **1,605** | **10** | 2,309 | 3 |
| **Total interest rates** | **1,609** | **10** | 2,330 | 3 |
| OTC-cleared | **150** | **4** | 15 | 30 |
| Bilateral OTC | **142** | **12** | 34 | 114 |
| **Total currencies** | **292** | **16** | 49 | 144 |
| **Subtotal** | **1,901** | **26** | 2,379 | 147 |
| **Total gross fair value** | **$ 443,083** | **$ 413,976** | $ 466,863 | $ 442,657 |
| **Offset in consolidated statements of financial condition** | | | | |

| | | | | |
|---|---|---|---|---|
| Exchange-traded | **$ (12,237)** | **$ (12,237)** | $ (12,963) | $ (12,963) |
| OTC-cleared | **(7,705)** | **(7,705)** | (9,267) | (9,267) |
| Bilateral OTC | **(319,693)** | **(319,693)** | (341,824) | (341,824) |
| **Counterparty netting** | **(339,635)** | **(339,635)** | (364,054) | (364,054) |
| OTC-cleared | **(1,103)** | **(10)** | (2,423) | (180) |
| Bilateral OTC | **(54,857)** | **(36,789)** | (53,049) | (38,792) |
| **Cash collateral netting** | **(55,960)** | **(36,799)** | (55,472) | (38,972) |
| **Total amounts offset** | **$(395,595)** | **$(376,434)** | $(419,526) | $(403,026) |
| **Included in consolidated statements of financial condition** | | | | |
| Exchange-traded | **$ 3,022** | **$ 2,975** | $ 2,301 | $ 2,233 |
| OTC-cleared | **402** | **174** | 650 | 70 |
| Bilateral OTC | **44,064** | **34,393** | 44,386 | 37,328 |
| **Total** | **$ 47,488** | **$ 37,542** | $ 47,337 | $ 39,631 |
| **Not offset in consolidated statements of financial condition** | | | | |
| Cash collateral | **$ (704)** | **$ (1,463)** | $ (602) | $ (2,375) |
| Securities collateral | **(13,381)** | **(8,228)** | (13,947) | (8,722) |
| **Total** | **$ 33,403** | **$ 27,851** | $ 32,788 | $ 28,534 |

| | Notional Amounts as of | |
|---|---|---|
| | **June** | December |
| *$ in millions* | **2018** | 2017 |
| **Not accounted for as hedges** | | |
| Exchange-traded | **$12,260,282** | $10,212,510 |
| OTC-cleared | **16,945,938** | 14,739,556 |
| Bilateral OTC | **16,874,426** | 12,862,328 |
| **Total interest rates** | **46,080,646** | 37,814,394 |
| OTC-cleared | **371,496** | 386,163 |
| Bilateral OTC | **755,967** | 868,226 |
| **Total credit** | **1,127,463** | 1,254,389 |
| Exchange-traded | **6,443** | 10,450 |
| OTC-cleared | **121,541** | 98,549 |
| Bilateral OTC | **7,116,915** | 7,331,516 |
| **Total currencies** | **7,244,899** | 7,440,515 |
| Exchange-traded | **303,740** | 239,749 |
| OTC-cleared | **3,431** | 3,925 |
| Bilateral OTC | **268,593** | 250,547 |
| **Total commodities** | **575,764** | 494,221 |
| Exchange-traded | **664,462** | 655,485 |
| Bilateral OTC | **1,229,565** | 1,127,812 |
| **Total equities** | **1,894,027** | 1,783,297 |
| **Subtotal** | **56,922,799** | 48,786,816 |
| **Accounted for as hedges** | | |
| OTC-cleared | **79,624** | 52,785 |
| Bilateral OTC | **9,964** | 15,188 |
| **Total interest rates** | **89,588** | 67,973 |
| OTC-cleared | **2,727** | 2,210 |
| Bilateral OTC | **7,125** | 8,347 |
| **Total currencies** | **9,852** | 10,557 |
| **Subtotal** | **99,440** | 78,530 |
| **Total notional amounts** | **$57,022,239** | $48,865,346 |

In the tables above:

Gross fair values exclude the effects of both counterparty netting and collateral, and therefore are not representative of the firm s exposure.

Where the firm has received or posted collateral under credit support agreements, but has not yet determined such agreements are enforceable, the related collateral has not been netted.

Notional amounts, which represent the sum of gross long and short derivative contracts, provide an indication of the volume of the firm s derivative activity and do not represent anticipated losses.

Total gross fair value of derivatives included derivative assets and derivative liabilities of $11.19 billion and $10.68 billion, respectively, as of June 2018, and $11.24 billion and $13.00 billion, respectively, as of December 2017, which are not subject to an enforceable netting agreement or are subject to a netting agreement that the firm has not yet determined to be enforceable.

During the second quarter of 2018, consistent with the rules of a clearing organization, the firm elected to consider its transactions with that clearing organization as settled each day. The impact of this change would have been a reduction in gross interest rate derivative assets and liabilities as of December 2017 of $3.6 billion and $1.9 billion, respectively, and a corresponding decrease in counterparty and cash collateral netting, with no impact to the consolidated statements of financial condition.

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**Valuation Techniques for Derivatives**

The firm s level 2 and level 3 derivatives are valued using derivative pricing models (e.g., discounted cash flow models, correlation models, and models that incorporate option pricing methodologies, such as Monte Carlo simulations). Price transparency of derivatives can generally be characterized by product type, as described below.

**Interest Rate.** In general, the key inputs used to value interest rate derivatives are transparent, even for most long-dated contracts. Interest rate swaps and options denominated in the currencies of leading industrialized nations are characterized by high trading volumes and tight bid/offer spreads. Interest rate derivatives that reference indices, such as an inflation index, or the shape of the yield curve (e.g., 10-year swap rate vs. 2-year swap rate) are more complex, but the key inputs are generally observable.

**Credit.** Price transparency for credit default swaps, including both single names and baskets of credits, varies by market and underlying reference entity or obligation. Credit default swaps that reference indices, large corporates and major sovereigns generally exhibit the most price transparency. For credit default swaps with other underliers, price transparency varies based on credit rating, the cost of borrowing the underlying reference obligations, and the availability of the underlying reference obligations for delivery upon the default of the issuer. Credit default swaps that reference loans, asset-backed securities and emerging market debt instruments tend to have less price transparency than those that reference corporate bonds. In addition, more complex credit derivatives, such as those sensitive to the correlation between two or more underlying reference obligations, generally have less price transparency.

**Currency.** Prices for currency derivatives based on the exchange rates of leading industrialized nations, including those with longer tenors, are generally transparent. The primary difference between the price transparency of developed and emerging market currency derivatives is that emerging markets tend to be observable for contracts with shorter tenors.

**Commodity.** Commodity derivatives include transactions referenced to energy (e.g., oil and natural gas), metals (e.g., precious and base) and soft commodities (e.g., agricultural). Price transparency varies based on the underlying commodity, delivery location, tenor and product quality (e.g., diesel fuel compared to unleaded gasoline). In general, price transparency for commodity derivatives is greater for contracts with shorter tenors and contracts that are more closely aligned with major and/or benchmark commodity indices.

**Equity.** Price transparency for equity derivatives varies by market and underlier. Options on indices and the common stock of corporates included in major equity indices exhibit the most price transparency. Equity derivatives generally have observable market prices, except for contracts with long tenors or reference prices that differ significantly from current market prices. More complex equity derivatives, such as those sensitive to the correlation between two or more individual stocks, generally have less price transparency.

Liquidity is essential to observability of all product types. If transaction volumes decline, previously transparent prices and other inputs may become unobservable. Conversely, even highly structured products may at times have trading volumes large enough to provide observability of prices and other inputs. See Note 5 for an overview of the firm s fair value measurement policies.

**Level 1 Derivatives**

Level 1 derivatives include short-term contracts for future delivery of securities when the underlying security is a level 1 instrument, and exchange-traded derivatives if they are actively traded and are valued at their quoted market price.

**Level 2 Derivatives**

Level 2 derivatives include OTC derivatives for which all significant valuation inputs are corroborated by market evidence and exchange-traded derivatives that are not actively traded and/or that are valued using models that calibrate to market-clearing levels of OTC derivatives.

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The selection of a particular model to value a derivative depends on the contractual terms of and specific risks inherent in the instrument, as well as the availability of pricing information in the market. For derivatives that trade in liquid markets, model selection does not involve significant management judgment because outputs of models can be calibrated to market-clearing levels.

Valuation models require a variety of inputs, such as contractual terms, market prices, yield curves, discount rates (including those derived from interest rates on collateral received and posted as specified in credit support agreements for collateralized derivatives), credit curves, measures of volatility, prepayment rates, loss severity rates and correlations of such inputs. Significant inputs to the valuations of level 2 derivatives can be verified to market transactions, broker or dealer quotations or other alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or firm) and the relationship of recent market activity to the prices provided from alternative pricing sources.

**Level 3 Derivatives**

Level 3 derivatives are valued using models which utilize observable level 1 and/or level 2 inputs, as well as unobservable level 3 inputs. The significant unobservable inputs used to value the firm s level 3 derivatives are described below.

For level 3 interest rate and currency derivatives, significant unobservable inputs include correlations of certain currencies and interest rates (e.g., the correlation between Euro inflation and Euro interest rates). In addition, for level 3 interest rate derivatives, significant unobservable inputs include specific interest rate volatilities.

For level 3 credit derivatives, significant unobservable inputs include illiquid credit spreads and upfront credit points, which are unique to specific reference obligations and reference entities, recovery rates and certain correlations required to value credit derivatives (e.g., the likelihood of default of the underlying reference obligation relative to one another).

For level 3 commodity derivatives, significant unobservable inputs include volatilities for options with strike prices that differ significantly from current market prices and prices or spreads for certain products for which the product quality or physical location of the commodity is not aligned with benchmark indices.

For level 3 equity derivatives, significant unobservable inputs generally include equity volatility inputs for options that are long-dated and/or have strike prices that differ significantly from current market prices. In addition, the valuation of certain structured trades requires the use of level 3 correlation inputs, such as the correlation of the price performance of two or more individual stocks or the correlation of the price performance for a basket of stocks to another asset class such as commodities.

Subsequent to the initial valuation of a level 3 derivative, the firm updates the level 1 and level 2 inputs to reflect observable market changes and any resulting gains and losses are classified in level 3. Level 3 inputs are changed when corroborated by evidence such as similar market transactions, third-party pricing services and/or broker or dealer quotations or other empirical market data. In circumstances where the firm cannot verify the model value by reference to market transactions, it is possible that a different valuation model could produce a materially different estimate of fair value. See below for further information about significant unobservable inputs used in the valuation of level 3 derivatives.

**Valuation Adjustments**

Valuation adjustments are integral to determining the fair value of derivative portfolios and are used to adjust the mid-market valuations produced by derivative pricing models to the appropriate exit price valuation. These adjustments incorporate bid/offer spreads, the cost of liquidity, credit valuation adjustments and funding valuation adjustments, which account for the credit and funding risk inherent in the uncollateralized portion of derivative portfolios. The firm also makes funding valuation adjustments to collateralized derivatives where the terms of the agreement do not permit the firm to deliver or repledge collateral received. Market-based inputs are generally used when calibrating valuation adjustments to market-clearing levels.

In addition, for derivatives that include significant unobservable inputs, the firm makes model or exit price adjustments to account for the valuation uncertainty present in the transaction.

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**Fair Value of Derivatives by Level**

The tables below present the fair value of derivatives on a gross basis by level and major product type, as well as the impact of netting, included in the consolidated statements of financial condition.

| | | **As of June 2018** | | |
|---|---|---|---|---|
| *$ in millions* | **Level 1** | **Level 2** | **Level 3** | **Total** |
| **Assets** | | | | |
| Interest rates | **$ 11** | **$ 250,067** | **$ 417** | **$ 250,495** |
| Credit | | **16,127** | **3,523** | **19,650** |
| Currencies | | **104,382** | **377** | **104,759** |
| Commodities | | **16,728** | **349** | **17,077** |
| Equities | **5** | **50,537** | **560** | **51,102** |
| Gross fair value | **16** | **437,841** | **5,226** | **443,083** |
| Counterparty netting in levels | | **(337,963)** | **(933)** | **(338,896)** |
| Subtotal | **$ 16** | **$ 99,878** | **$ 4,293** | **$ 104,187** |
| Cross-level counterparty netting | | | | **(739)** |
| Cash collateral netting | | | | **(55,960)** |
| **Net fair value** | | | | **$ 47,488** |
| **Liabilities** | | | | |
| Interest rates | **$ (2)** | **$(224,882)** | **$ (583)** | **$(225,467)** |
| Credit | | **(16,040)** | **(1,744)** | **(17,784)** |
| Currencies | | **(98,116)** | **(159)** | **(98,275)** |
| Commodities | | **(17,791)** | **(201)** | **(17,992)** |
| Equities | **(8)** | **(52,647)** | **(1,803)** | **(54,458)** |
| Gross fair value | **(10)** | **(409,476)** | **(4,490)** | **(413,976)** |
| Counterparty netting in levels | | **337,963** | **933** | **338,896** |
| Subtotal | **$(10)** | **$ (71,513)** | **$(3,557)** | **$ (75,080)** |
| Cross-level counterparty netting | | | | **739** |
| Cash collateral netting | | | | **36,799** |
| **Net fair value** | | | | **$ (37,542)** |

| | | As of December 2017 | | |
|---|---|---|---|---|
| *$ in millions* | Level 1 | Level 2 | Level 3 | Total |
| **Assets** | | | | |
| Interest rates | $ 18 | $ 282,933 | $ 311 | $ 283,262 |
| Credit | | 19,053 | 3,640 | 22,693 |

| | | | | |
|---|---|---|---|---|
| Currencies | | 95,401 | 140 | 95,541 |
| Commodities | | 13,727 | 353 | 14,080 |
| Equities | 8 | 50,870 | 409 | 51,287 |
| Gross fair value | 26 | 461,984 | 4,853 | 466,863 |
| Counterparty netting in levels | | (362,109) | (1,051) | (363,160) |
| Subtotal | $ 26 | $ 99,875 | $ 3,802 | $ 103,703 |
| Cross-level counterparty netting | | | | (894) |
| Cash collateral netting | | | | (55,472) |
| Net fair value | | | | $ 47,337 |
| **Liabilities** | | | | |
| Interest rates | $ (28) | $ (252,421) | $ (721) | $ (253,170) |
| Credit | | (19,135) | (2,135) | (21,270) |
| Currencies | | (96,160) | (321) | (96,481) |
| Commodities | | (15,842) | (306) | (16,148) |
| Equities | (28) | (53,902) | (1,658) | (55,588) |
| Gross fair value | (56) | (437,460) | (5,141) | (442,657) |
| Counterparty netting in levels | | 362,109 | 1,051 | 363,160 |
| Subtotal | $ (56) | $ (75,351) | $ (4,090) | $ (79,497) |
| Cross-level counterparty netting | | | | 894 |
| Cash collateral netting | | | | 38,972 |
| Net fair value | | | | $ (39,631) |

In the tables above:

The gross fair values exclude the effects of both counterparty netting and collateral netting, and therefore are not representative of the firm s exposure.

Counterparty netting is reflected in each level to the extent that receivable and payable balances are netted within the same level and is included in counterparty netting in levels. Where the counterparty netting is across levels, the netting is included in cross-level counterparty netting.

Derivative assets are shown as positive amounts and derivative liabilities are shown as negative amounts.

**Significant Unobservable Inputs**

The table below presents the amount of level 3 assets (liabilities), and ranges, averages and medians of significant unobservable inputs used to value the firm s level 3 derivatives.

| | Level 3 Assets (Liabilities) and Range of Significant Unobservable Inputs (Average/Median) as of | |
|---|---|---|
| | **June** | December |
| *$ in millions* | **2018** | 2017 |
| **Interest rates, net** | **$(166)** | $(410) |
| | **(10)% to 95% (77%/81%)** | (10)% to 95% (71%/79%) |

| | | |
|---|---|---|
| Correlation | | |
| Volatility (bps) | **31 to 150 (83/77)** | 31 to 150 (84/78) |
| **Credit, net** | **$1,779** | $1,505 |
| Correlation | **N/A** | 28% to 84% (61%/60%) |
| Credit spreads (bps) | **1 to 509 (81/46)** | 1 to 633 (69/42) |
| Upfront credit points | **2 to 97 (43/40)** | 0 to 97 (42/38) |
| Recovery rates | **25% to 70% (44%/41%)** | 22% to 73% (68%/73%) |
| **Currencies, net** | **$218** | $(181) |
| Correlation | **10% to 70% (40%/33%)** | 49% to 72% (61%/62%) |
| **Commodities, net** | **$148** | $47 |
| Volatility | **8% to 46% (24%/25%)** | 9% to 79% (24%/24%) |
| Natural gas spread | **$(1.93) to $2.86 ($(0.37)/$(0.39))** | $(2.38) to $3.34 ($(0.22)/$(0.12)) |
| Oil spread | **$(4.23) to $4.10 ($2.02/$2.01)** | $(2.86) to $23.61 ($6.47/$2.35) |
| **Equities, net** | **$(1,243)** | $(1,249) |
| Correlation | **(68)% to 95% (45%/47%)** | (36)% to 94% (50%/52%) |
| Volatility | **4% to 97% (22%/20%)** | 4% to 72% (24%/22%) |

In the table above:

Derivative assets are shown as positive amounts and derivative liabilities are shown as negative amounts.

Ranges represent the significant unobservable inputs that were used in the valuation of each type of derivative.

Averages represent the arithmetic average of the inputs and are not weighted by the relative fair value or notional of the respective financial instruments. An average greater than the median indicates that the majority of inputs are below the average. For example, the difference between the average and the median for credit spreads indicates that the majority of the inputs fall in the lower end of the range.

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The ranges, averages and medians of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one derivative. For example, the highest correlation for interest rate derivatives is appropriate for valuing a specific interest rate derivative but may not be appropriate for valuing any other interest rate derivative. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of the firm s level 3 derivatives.

Interest rates, currencies and equities derivatives are valued using option pricing models, credit derivatives are valued using option pricing, correlation and discounted cash flow models, and commodities derivatives are valued using option pricing and discounted cash flow models.

The fair value of any one instrument may be determined using multiple valuation techniques. For example, option pricing models and discounted cash flows models are typically used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.

Correlation was not significant to the valuation of level 3 credit derivatives as of June 2018.

Correlation within currencies and equities includes cross-product type correlation.

Natural gas spread represents the spread per million British thermal units of natural gas.

Oil spread represents the spread per barrel of oil and refined products.

**Range of Significant Unobservable Inputs**

The following is information about the ranges of significant unobservable inputs used to value the firm s level 3 derivative instruments:

**Correlation.** Ranges for correlation cover a variety of underliers both within one product type (e.g., equity index and equity single stock names) and across product types (e.g., correlation of an interest rate and a currency), as well as across regions. Generally, cross-product type correlation inputs are used to value more complex instruments and are lower than correlation inputs on assets within the same derivative product type.

**Volatility.** Ranges for volatility cover numerous underliers across a variety of markets, maturities and strike prices. For example, volatility of equity indices is generally lower than volatility of single stocks.

**Credit spreads, upfront credit points and recovery rates.** The ranges for credit spreads, upfront credit points and recovery rates cover a variety of underliers (index and single names), regions, sectors, maturities and credit qualities (high-yield and investment-grade). The broad range of this population gives rise to the width of the ranges of significant unobservable inputs.

**Commodity prices and spreads.** The ranges for commodity prices and spreads cover variability in products, maturities and delivery locations.

**Sensitivity of Fair Value Measurement to Changes in Significant Unobservable Inputs**

The following is a description of the directional sensitivity of the firm s level 3 fair value measurements to changes in significant unobservable inputs, in isolation:

**Correlation.** In general, for contracts where the holder benefits from the convergence of the underlying asset or index prices (e.g., interest rates, credit spreads, foreign exchange rates, inflation rates and equity prices), an increase in correlation results in a higher fair value measurement.

**Volatility.** In general, for purchased options, an increase in volatility results in a higher fair value measurement.

**Credit spreads, upfront credit points and recovery rates.** In general, the fair value of purchased credit protection increases as credit spreads or upfront credit points increase or recovery rates decrease. Credit spreads, upfront credit points and recovery rates are strongly related to distinctive risk factors of the underlying reference obligations, which include reference entity-specific factors such as leverage, volatility and industry, market-based risk factors, such as borrowing costs or liquidity of the underlying reference obligation, and macroeconomic conditions.

**Commodity prices and spreads.** In general, for contracts where the holder is receiving a commodity, an increase in the spread (price difference from a benchmark index due to differences in quality or delivery location) or price results in a higher fair value measurement.

Due to the distinctive nature of each of the firm s level 3 derivatives, the interrelationship of inputs is not necessarily uniform within each product type.

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**Level 3 Rollforward**

The table below presents a summary of the changes in fair value for all level 3 derivatives.

| | Three Months Ended June | | Six Months Ended June | |
|---|---|---|---|---|
| *$ in millions* | **2018** | 2017 | **2018** | 2017 |
| **Total level 3 derivatives** | | | | |
| Beginning balance | **$ 408** | $ 97 | **$(288)** | $(1,217) |
| Net realized gains/(losses) | **(1)** | (125) | **35** | (163) |
| Net unrealized gains/(losses) | **358** | 103 | **537** | (43) |
| Purchases | **108** | 75 | **248** | 234 |
| Sales | **(524)** | (200) | **(625)** | (313) |
| Settlements | **237** | 506 | **496** | 1,681 |
| Transfers into level 3 | **104** | (39) | **153** | 25 |
| Transfers out of level 3 | **46** | 543 | **180** | 756 |
| **Ending balance** | **$ 736** | $ 960 | **$ 736** | $ 960 |

In the table above:

Changes in fair value are presented for all derivative assets and liabilities that are classified in level 3 as of the end of the period.

Net unrealized gains/(losses) relates to instruments that were still held at period-end.

If a derivative was transferred into level 3 during a reporting period, its entire gain or loss for the period is classified in level 3. Transfers between levels are reported at the beginning of the reporting period in which they occur.

Positive amounts for transfers into level 3 and negative amounts for transfers out of level 3 represent net transfers of derivative assets. Negative amounts for transfers into level 3 and positive amounts for transfers out of level 3 represent net transfers of derivative liabilities.

A derivative with level 1 and/or level 2 inputs is classified in level 3 in its entirety if it has at least one significant level 3 input.

If there is one significant level 3 input, the entire gain or loss from adjusting only observable inputs (i.e., level 1 and level 2 inputs) is classified in level 3.

Gains or losses that have been classified in level 3 resulting from changes in level 1 or level 2 inputs are frequently offset by gains or losses attributable to level 1 or level 2 derivatives and/or level 1, level 2 and level 3 cash instruments. As a result, gains/(losses) included in the level 3 rollforward below do not necessarily represent the overall impact on the firm s results of operations, liquidity or capital resources.

The table below disaggregates, by major product type, the information for level 3 derivatives included in the summary table above.

| | Three Months Ended June | | Six Months Ended June | |
|---|---|---|---|---|
| *$ in millions* | **2018** | 2017 | **2018** | 2017 |
| **Interest rates, net** | | | | |
| Beginning balance | **$ (249)** | $ (282) | **$ (410)** | $ (381) |
| Net realized gains/(losses) | **(10)** | (6) | **(23)** | (24) |
| Net unrealized gains/(losses) | **(63)** | (45) | **40** | 56 |
| Purchases | **3** | 1 | **9** | 3 |
| Sales | **(1)** | | **(1)** | (3) |
| Settlements | **145** | (5) | **183** | 40 |
| Transfers into level 3 | **1** | 7 | **33** | (10) |
| Transfers out of level 3 | **8** | 11 | **3** | |
| **Ending balance** | **$ (166)** | $ (319) | **$ (166)** | $ (319) |
| **Credit, net** | | | | |
| Beginning balance | **$ 1,282** | $ 2,239 | **$ 1,505** | $ 2,504 |
| Net realized gains/(losses) | **11** | 10 | **(2)** | 60 |
| Net unrealized gains/(losses) | **211** | 1 | **(38)** | (192) |
| Purchases | **8** | 9 | **38** | 64 |
| Sales | **(22)** | (17) | **(33)** | (66) |
| Settlements | **217** | (177) | **202** | (334) |
| Transfers into level 3 | **56** | 48 | **24** | 49 |
| Transfers out of level 3 | **16** | (114) | **83** | (86) |
| **Ending balance** | **$ 1,779** | $ 1,999 | **$ 1,779** | $ 1,999 |
| **Currencies, net** | | | | |
| Beginning balance | **$ 169** | $ 24 | **$ (181)** | $ 3 |
| Net realized gains/(losses) | **(7)** | (7) | **(14)** | (33) |
| Net unrealized gains/(losses) | **64** | (13) | **165** | (20) |
| Purchases | | 1 | **1** | 4 |
| Sales | **(3)** | | | |
| Settlements | **(3)** | 18 | **215** | 66 |
| Transfers into level 3 | | 2 | **32** | |
| Transfers out of level 3 | **(2)** | | | 5 |
| **Ending balance** | **$ 218** | $ 25 | **$ 218** | $ 25 |

| | | | | |
|---|---|---|---|---|
| **Commodities, net** | | | | |
| Beginning balance | **$ 73** | $ 78 | **$ 47** | $ 73 |
| Net realized gains/(losses) | **2** | 1 | **63** | 10 |
| Net unrealized gains/(losses) | **50** | 63 | **93** | 131 |
| Purchases | **13** | 6 | **48** | 23 |
| Sales | **(27)** | (39) | **(46)** | (51) |
| Settlements | **(11)** | 21 | **(121)** | (37) |
| Transfers into level 3 | **39** | (32) | **58** | (38) |
| Transfers out of level 3 | **9** | 20 | **6** | 7 |
| **Ending balance** | **$ 148** | $ 118 | **$ 148** | $ 118 |
| **Equities, net** | | | | |
| Beginning balance | **$ (867)** | $(1,962) | **$(1,249)** | $(3,416) |
| Net realized gains/(losses) | **3** | (123) | **11** | (176) |
| Net unrealized gains/(losses) | **96** | 97 | **277** | (18) |
| Purchases | **84** | 58 | **152** | 140 |
| Sales | **(471)** | (144) | **(545)** | (193) |
| Settlements | **(111)** | 649 | **17** | 1,946 |
| Transfers into level 3 | **8** | (64) | **6** | 24 |
| Transfers out of level 3 | **15** | 626 | **88** | 830 |
| **Ending balance** | **$(1,243)** | $ (863) | **$(1,243)** | $ (863) |

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**Level 3 Rollforward Commentary**

**Three Months Ended June 2018.** The net realized and unrealized gains on level 3 derivatives of $357 million (reflecting $1 million of net realized losses and $358 million of net unrealized gains) for the three months ended June 2018 included gains of $327 million and $30 million reported in market making and other principal transactions, respectively.

The net unrealized gains on level 3 derivatives for the three months ended June 2018 were primarily attributable to gains on certain credit derivatives, reflecting the impact of changes in credit spreads and foreign exchange rates, and gains on certain equity derivatives, reflecting the impact of increases in equity prices.

Transfers into level 3 derivatives during the three months ended June 2018 primarily reflected transfers of certain credit derivative assets from level 2, primarily due to unobservable credit spread inputs becoming significant to the net risk of certain portfolios.

Transfers out of level 3 derivatives during the three months ended June 2018 were not material.

**Six Months Ended June 2018.** The net realized and unrealized gains on level 3 derivatives of $572 million (reflecting $35 million of net realized gains and $537 million of net unrealized gains) for the six months ended June 2018 included gains of $461 million and $111 million reported in market making and other principal transactions, respectively.

The net unrealized gains on level 3 derivatives for the six months ended June 2018 were primarily attributable to gains on certain equity derivatives, reflecting the impact of changes in equity prices, and gains on certain currency derivatives, primarily reflecting the impact of changes in foreign exchange rates.

Transfers into level 3 derivatives during the six months ended June 2018 reflected transfers of certain commodity derivative assets from level 2, principally due to increased significance of unobservable volatility inputs used to value these derivatives.

Transfers out of level 3 derivatives during the six months ended June 2018 primarily reflected transfers of certain equity derivative liabilities to level 2, principally due to increased transparency of volatility and correlation inputs used to value these derivatives and transfers of certain credit derivative liabilities to level 2, primarily due to unobservable credit spread inputs no longer being significant to the net risk of certain portfolios.

**Three Months Ended June 2017.** The net realized and unrealized losses on level 3 derivatives of $22 million (reflecting $125 million of net realized losses and $103 million of net unrealized gains) for the three months ended June 2017 included gains/(losses) of $59 million and $(81) million reported in market making and other principal transactions, respectively.

The net unrealized gains on level 3 derivatives for the three months ended June 2017 were primarily attributable to gains on certain equity derivatives, reflecting the impact of changes in the prices of underlying indices.

Transfers into level 3 derivatives during the three months ended June 2017 were not material.

Transfers out of level 3 derivatives during the three months ended June 2017 primarily reflected transfers of certain equity derivative liabilities to level 2, principally due to certain unobservable inputs no longer being significant to the valuation of these derivatives.

**Six Months Ended June 2017.** The net realized and unrealized losses on level 3 derivatives of $206 million (reflecting $163 million of net realized losses and $43 million of net unrealized losses) for the six months ended June 2017 included losses of $33 million and $173 million reported in market making and other principal transactions, respectively.

The net unrealized losses on level 3 derivatives for the six months ended June 2017 were primarily attributable to losses on certain credit derivatives, reflecting the impact of tighter credit spreads, partially offset by gains on certain commodity derivatives, reflecting the impact of a decrease in commodity prices.

Transfers into level 3 derivatives during the six months ended June 2017 were not material.

Transfers out of level 3 derivatives during the six months ended June 2017 primarily reflected transfers of certain equity derivative liabilities to level 2, principally due to certain unobservable inputs no longer being significant to the valuation of these derivatives.

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**OTC Derivatives**

The table below presents the fair values of OTC derivative assets and liabilities by tenor and major product type.

| *$ in millions* | Less than 1 Year | 1 - 5 Years | Greater than 5 Years | Total |
|---|---|---|---|---|
| **As of June 2018** | | | | |
| **Assets** | | | | |
| Interest rates | **$ 3,987** | **$14,622** | **$50,873** | **$ 69,482** |
| Credit | **838** | **3,956** | **3,058** | **7,852** |
| Currencies | **15,850** | **5,913** | **7,884** | **29,647** |
| Commodities | **4,715** | **2,520** | **198** | **7,433** |
| Equities | **5,254** | **6,350** | **1,493** | **13,097** |
| Counterparty netting in tenors | **(3,541)** | **(4,503)** | **(2,807)** | **(10,851)** |
| Subtotal | **$27,103** | **$28,858** | **$60,699** | **$116,660** |
| Cross-tenor counterparty netting | | | | **(16,234)** |
| Cash collateral netting | | | | **(55,960)** |
| **Total** | | | | **$ 44,466** |
| **Liabilities** | | | | |
| Interest rates | **$ 5,247** | **$ 8,275** | **$30,817** | **$ 44,339** |
| Credit | **1,415** | **3,323** | **1,248** | **5,986** |
| Currencies | **11,603** | **7,084** | **4,345** | **23,032** |
| Commodities | **3,516** | **2,325** | **2,664** | **8,505** |
| Equities | **7,114** | **6,524** | **2,951** | **16,589** |
| Counterparty netting in tenors | **(3,541)** | **(4,503)** | **(2,807)** | **(10,851)** |
| Subtotal | **$25,354** | **$23,028** | **$39,218** | **$ 87,600** |
| Cross-tenor counterparty netting | | | | **(16,234)** |
| Cash collateral netting | | | | **(36,799)** |
| **Total** | | | | **$ 34,567** |

| | | | | |
|---|---|---|---|---|
| As of December 2017 | | | | |
| **Assets** | | | | |
| Interest rates | $ 3,717 | $15,445 | $57,200 | $ 76,362 |
| Credit | 760 | 4,079 | 3,338 | 8,177 |
| Currencies | 12,184 | 6,219 | 7,245 | 25,648 |
| Commodities | 3,175 | 2,526 | 181 | 5,882 |
| Equities | 4,969 | 5,607 | 1,387 | 11,963 |

| | | | | |
|---|---|---|---|---|
| Counterparty netting in tenors | (3,719) | (4,594) | (2,807) | (11,120) |
| Subtotal | $21,086 | $29,282 | $66,544 | $116,912 |
| Cross-tenor counterparty netting | | | | (16,404) |
| Cash collateral netting | | | | (55,472) |
| Total | | | | $ 45,036 |
| **Liabilities** | | | | |
| Interest rates | $ 4,517 | $ 8,471 | $33,193 | $ 46,181 |
| Credit | 2,078 | 3,588 | 1,088 | 6,754 |
| Currencies | 14,326 | 7,119 | 4,802 | 26,247 |
| Commodities | 3,599 | 2,167 | 2,465 | 8,231 |
| Equities | 6,453 | 6,647 | 3,381 | 16,481 |
| Counterparty netting in tenors | (3,719) | (4,594) | (2,807) | (11,120) |
| Subtotal | $27,254 | $23,398 | $42,122 | $ 92,774 |
| Cross-tenor counterparty netting | | | | (16,404) |
| Cash collateral netting | | | | (38,972) |
| Total | | | | $ 37,398 |

In the table above:

Tenor is based on remaining contractual maturity.

Counterparty netting within the same product type and tenor category is included within such product type and tenor category.

Counterparty netting across product types within the same tenor category is included in counterparty netting in tenors. Where the counterparty netting is across tenor categories, the netting is included in cross-tenor counterparty netting.

**Credit Derivatives**

The firm enters into a broad array of credit derivatives in locations around the world to facilitate client transactions and to manage the credit risk associated with market-making and investing and lending activities. Credit derivatives are actively managed based on the firm s net risk position.

Credit derivatives are generally individually negotiated contracts and can have various settlement and payment conventions. Credit events include failure to pay, bankruptcy, acceleration of indebtedness, restructuring, repudiation and dissolution of the reference entity.

The firm enters into the following types of credit derivatives:

**Credit Default Swaps.** Single-name credit default swaps protect the buyer against the loss of principal on one or more bonds, loans or mortgages (reference obligations) in the event the issuer (reference entity) of the reference obligations suffers a credit event. The buyer of protection pays an initial or periodic premium to the seller and receives protection for the period of the contract. If there is no credit event, as defined in the contract, the seller of protection makes no payments to the buyer of protection. However, if a credit event occurs, the seller of protection is required to make a payment to the buyer of protection, which is calculated in accordance with the terms of the contract.

**Credit Options.** In a credit option, the option writer assumes the obligation to purchase or sell a reference obligation at a specified price or credit spread. The option purchaser buys the right, but does not assume the obligation, to sell the reference obligation to, or purchase it from, the option writer. The payments on credit options depend either on a particular credit spread or the price of the reference obligation.

**Credit Indices, Baskets and Tranches.** Credit derivatives may reference a basket of single-name credit default swaps or a broad-based index. If a credit event occurs in one of the underlying reference obligations, the protection seller pays the protection buyer. The payment is typically a pro-rata portion of the transaction s total notional amount based on the underlying defaulted reference obligation. In certain transactions, the credit risk of a basket or index is separated into various portions (tranches), each having different levels of subordination. The most junior tranches cover initial defaults and once losses exceed the notional amount of these junior tranches, any excess loss is covered by the next most senior tranche in the capital structure.

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**Total Return Swaps.** A total return swap transfers the risks relating to economic performance of a reference obligation from the protection buyer to the protection seller. Typically, the protection buyer receives from the protection seller a floating rate of interest and protection against any reduction in fair value of the reference obligation, and in return the protection seller receives the cash flows associated with the reference obligation, plus any increase in the fair value of the reference obligation.

The firm economically hedges its exposure to written credit derivatives primarily by entering into offsetting purchased credit derivatives with identical underliers. Substantially all of the firm s purchased credit derivative transactions are with financial institutions and are subject to stringent collateral thresholds. In addition, upon the occurrence of a specified trigger event, the firm may take possession of the reference obligations underlying a particular written credit derivative, and consequently may, upon liquidation of the reference obligations, recover amounts on the underlying reference obligations in the event of default.

As of June 2018, written and purchased credit derivatives had total gross notional amounts of $551.83 billion and $575.66 billion, respectively, for total net notional purchased protection of $23.83 billion. As of December 2017, written and purchased credit derivatives had total gross notional amounts of $611.04 billion and $643.37 billion, respectively, for total net notional purchased protection of $32.33 billion. Substantially all of the firm s written and purchased credit derivatives are credit default swaps.

The table below presents certain information about credit derivatives.

| | Credit Spread on Underlier (basis points) | | | | |
|---|---|---|---|---|---|
| *$ in millions* | 0 - 250 | 251 - 500 | 501 - 1,000 | Greater than 1,000 | Total |
| **As of June 2018** | | | | | |
| **Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor** | | | | | |
| Less than 1 year | **$132,550** | **$ 8,930** | **$ 656** | **$ 3,492** | **$145,628** |
| 1 5 years | **317,052** | **19,421** | **8,999** | **5,390** | **350,862** |
| Greater than 5 years | **48,109** | **6,338** | **795** | **94** | **55,336** |
| **Total** | **$497,711** | **$34,689** | **$10,450** | **$ 8,976** | **$551,826** |
| **Maximum Payout/Notional Amount of Purchased Credit Derivatives** | | | | | |
| Offsetting | **$434,958** | **$23,710** | **$ 9,527** | **$ 8,187** | **$476,382** |
| Other | **88,370** | **9,028** | **1,038** | **839** | **99,275** |
| **Fair Value of Written Credit Derivatives** | | | | | |
| Asset | **$ 11,028** | **$ 694** | **$ 147** | **$ 78** | **$ 11,947** |
| Liability | **1,483** | **1,173** | **781** | **2,609** | **6,046** |
| **Net asset/(liability)** | **$ 9,545** | **$ (479)** | **$ (634)** | **$ (2,531)** | **$ 5,901** |

As of December 2017

| | | | | | |
|---|---|---|---|---|---|
| **Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor** | | | | | |
| Less than 1 year | $182,446 | $ 8,531 | $ 705 | $ 4,067 | $195,749 |
| 1 5 years | 335,872 | 10,201 | 8,747 | 7,553 | 362,373 |
| Greater than 5 years | 49,440 | 2,142 | 817 | 519 | 52,918 |
| Total | $567,758 | $20,874 | $10,269 | $12,139 | $611,040 |
| **Maximum Payout/Notional Amount of Purchased Credit Derivatives** | | | | | |
| Offsetting | $492,325 | $13,424 | $ 9,395 | $10,663 | $525,807 |
| Other | 99,861 | 14,483 | 1,777 | 1,442 | 117,563 |
| **Fair Value of Written Credit Derivatives** | | | | | |
| Asset | $ 14,317 | $ 513 | $ 208 | $ 155 | $ 15,193 |
| Liability | 896 | 402 | 752 | 3,920 | 5,970 |
| Net asset/(liability) | $ 13,421 | $ 111 | $ (544) | $ (3,765) | $ 9,223 |

In the table above:

Fair values exclude the effects of both netting of receivable balances with payable balances under enforceable netting agreements, and netting of cash received or posted under enforceable credit support agreements, and therefore are not representative of the firm s credit exposure.

Tenor is based on remaining contractual maturity.

The credit spread on the underlier, together with the tenor of the contract, are indicators of payment/performance risk. The firm is less likely to pay or otherwise be required to perform where the credit spread and the tenor are lower.

Offsetting purchased credit derivatives represent the notional amount of purchased credit derivatives that economically hedge written credit derivatives with identical underliers.

Other purchased credit derivatives represent the notional amount of all other purchased credit derivatives not included in offsetting.

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**Impact of Credit Spreads on Derivatives**

On an ongoing basis, the firm realizes gains or losses relating to changes in credit risk through the unwind of derivative contracts and changes in credit mitigants.

The net gain, including hedges, attributable to the impact of changes in credit exposure and credit spreads (counterparty and the firm s) on derivatives was $59 million and $8 million for the three months ended June 2018 and June 2017, respectively, and $211 million and $19 million for the six months ended June 2018 and June 2017, respectively.

**Bifurcated Embedded Derivatives**

The table below presents the fair value and the notional amount of derivatives that have been bifurcated from their related borrowings.

| | As of | |
|---|---|---|
| | **June** | December |
| *$ in millions* | **2018** | 2017 |
| Fair value of assets | **$ 925** | $ 882 |
| Fair value of liabilities | **1,384** | 1,200 |
| **Net liability** | **$ 459** | $ 318 |
| Notional amount | **$9,302** | $9,578 |

In the table above, these derivatives, which are recorded at fair value, primarily consist of interest rate, equity and commodity products and are included in unsecured short-term borrowings and unsecured long-term borrowings with the related borrowings. See Note 8 for further information.

**Derivatives with Credit-Related Contingent Features**

Certain of the firm s derivatives have been transacted under bilateral agreements with counterparties who may require the firm to post collateral or terminate the transactions based on changes in the firm s credit ratings. The firm assesses the impact of these bilateral agreements by determining the collateral or termination payments that would occur assuming a downgrade by all rating agencies. A downgrade by any one rating agency, depending on the agency s relative ratings of the firm at the time of the downgrade, may have an impact which is comparable to the impact of a downgrade by all rating agencies.

The table below presents the aggregate fair value of net derivative liabilities under such agreements (excluding application of collateral posted to reduce these liabilities), the related aggregate fair value of the assets posted as collateral and the additional collateral or termination payments that could have been called by counterparties in the event of a one-notch and two-notch downgrade in the firm s credit ratings.

| | As of | |
|---|---|---|
| | **June** | December |
| *$ in millions* | **2018** | 2017 |
| Net derivative liabilities under bilateral agreements | **$27,970** | $29,877 |