

Quarterly Report on Bank Trading and Derivatives Activities

Fourth Quarter 2019

Office of the Comptroller of the Currency
Washington, D.C.

March 2020

Contents

About This Report	1
Executive Summary	1
Revenue	2
Insured U.S. Commercial Banks and Savings Associations' Trading Revenue.....	2
Holding Company Trading Revenue	2
Bank Trading Revenue as a Percentage of Consolidated Holding Company Trading Revenue.....	3
Counterparty Credit Risk	3
Market Risk.....	8
Value-at-Risk	8
Volatility Index	9
Level 3 Trading Assets	9
Notional Amounts of All Derivative Contracts	10
Credit Derivatives	11
Compression Activity	12
Centrally Cleared Derivative Contracts	13
Glossary of Terms	14
Index of Tables and Figures.....	16
Appendix: Supplementary Graphs and Tables.....	17

About This Report

The Office of the Comptroller of the Currency's (OCC) quarterly report on bank trading and derivatives activities is based on call report information provided by all insured U.S. commercial banks and savings associations; reports filed by U.S. financial holding companies; and other published data. A total of 1,324¹ insured U.S. commercial banks and savings associations reported trading and derivatives activities at the end of the fourth quarter of 2019. A small group of large financial institutions continues to dominate trading and derivatives activity in the U.S. commercial banking system. During the fourth quarter of 2019, four large commercial banks represented 85.7 percent of the total banking industry notional amounts and 83.2 percent of industry net current credit exposure (NCCE) (see tables 1 and 4 in the appendix).

The OCC and other supervisors have dedicated examiners at the largest banks to continuously evaluate the credit, market, operational, reputation, and compliance risks of bank trading and derivatives activities. In addition to the OCC's supervisory activities, the OCC works with other financial supervisors and major market participants to address infrastructure, clearing, and margining issues in over-the-counter (OTC) derivatives. OCC activities include development of objectives and milestones for stronger trade processing and improved market transparency across derivative categories, migration of certain highly liquid products to clearinghouses, and requirements for posting and collecting margin.

This is the 97th edition of the OCC's *Quarterly Report on Bank Trading and Derivatives Activities*. The first report was published in 1995. Please send any comments or feedback on the structure and content of this report to the OCC by email: QuarterlyDerivatives@occ.treas.gov.

Executive Summary

- Insured U.S. commercial banks and savings associations (collectively, banks) reported trading revenue of \$7.2 billion in the fourth quarter of 2019, \$4 million less (0.1 percent) than in the previous quarter and \$3.2 billion more (78.5 percent) than a year earlier (see table 1).
- Credit exposure from derivatives decreased in the fourth quarter of 2019 compared with the third quarter of 2019. NCCE decreased \$57.3 billion, or 13.5 percent, to \$368 billion (see table 5).
- Derivative notional amounts decreased in the fourth quarter of 2019 by \$29.8 trillion, or 14.8 percent, to \$171.5 trillion (see table 10).
- Derivative contracts remained concentrated in interest rate products, which totaled \$125.1 trillion or 72.9 percent of total derivative notional amounts (see table 10).

¹ Institutions with total assets of less than \$5 billion have the option to file the FFIEC 051 call report. Due to the limited amount of derivatives data provided by FFIEC 051 call report filers, this report provides this information separately and distinctly in table 13 in the appendix.

Revenue

Insured U.S. Commercial Banks and Savings Associations' Trading Revenue

Insured U.S. commercial banks and savings associations reported \$7.2 billion in trading revenue in the fourth quarter of 2019, \$4 million less (0.1 percent) than in the previous quarter and \$3.2 billion more (78.5 percent) than a year earlier (see table 1). The year-over-year increase in trading revenue was primarily driven by increases in equity derivatives and combined interest rate and foreign exchange derivatives. For a historical view of quarterly bank trading revenue by instrument, see graph 9a in the appendix.

Table 1: Quarterly Bank Trading Revenue, in Millions of Dollars

	4Q 2019	3Q 2019	Q/Q Change	Q/Q % Change	4Q 2018	Y/Y Change	Y/Y % Change
Interest rate and foreign exchange	\$5,133	\$4,241	\$892	21.0%	\$4,276	\$858	20.1%
Equity	\$1,427	\$1,805	-\$378	-21.0%	-\$43	\$1,470	-3387.8%
Commodity and other	\$600	\$1,109	-\$510	-45.9%	\$274	\$326	118.8%
Credit	\$34	\$43	-\$9	-20.4%	-\$476	\$510	-107.1%
Total trading revenue	\$7,194	\$7,198	-\$4	-0.1%	\$4,030	\$3,163	78.5%

Source: Call reports, Schedule RI

Holding Company Trading Revenue

Consolidated bank holding company (BHC) trading performance provides a more complete picture of trading revenue in the banking system. As shown in table 2, consolidated holding company trading revenue of \$15.4 billion in the fourth quarter of 2019 was \$1.0 billion (6.1 percent) lower than in the previous quarter. The quarter-over-quarter decrease in trading revenue was driven by decreases in combined interest rate and foreign exchange derivatives and credit derivatives. Year-over-year holding company trading revenue increased by \$9.9 billion (179.7 percent). For a historical view of quarterly holding company trading revenue by instrument, see graph 9b in the appendix.

Table 2: Quarterly Holding Company Trading Revenue, in Millions of Dollars

	4Q 2019	3Q 2019	Q/Q change	Q/Q % change	4Q 2018	Y/Y change	Y/Y % change
Interest rate and foreign exchange	\$6,893	\$9,604	-\$2,711	-28.2%	\$4,527	\$2,366	52.3%
Equity	\$7,388	\$4,548	\$2,840	62.4%	\$502	\$6,886	1371.7%
Commodity and other	\$981	\$1,045	-\$64	-6.1%	\$508	\$473	93.1%
Credit	\$158	\$1,226	-\$1,068	-87.1%	-\$25	\$183	-732.0%
Total HC trading revenue	\$15,419	\$16,423	-\$1,003	-6.1%	\$5,513	\$9,906	179.7%

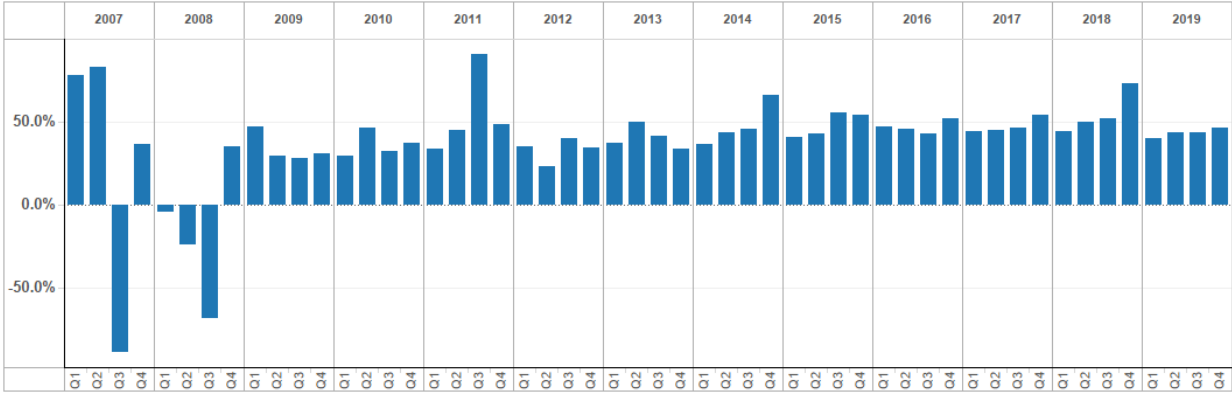
Source: Consolidated Financial Statements for Holding Companies—FR Y-9C, Schedule HI

Bank Trading Revenue as a Percentage of Consolidated Holding Company Trading Revenue

Before the financial crisis, trading revenue at banks typically ranged from 60 percent to 80 percent of consolidated BHC trading revenue. Since the financial crisis and the adoption of bank charters by the former investment banks, the percentage of bank trading revenue to consolidated BHC trading revenue has fallen and is now typically between 30 percent and 50 percent. This decline reflects the significant amount of trading activity by the former investment banks that, while included in BHC results, remains outside insured commercial banks. More generally, insured U.S. commercial banks and savings associations have more limited legal authorities than their holding companies, particularly in the trading of commodity and equity products.

In the fourth quarter of 2019, banks generated 46.7 percent of consolidated holding company trading revenue, an increase from 43.8 percent in the previous quarter (see figure 1).

Figure 1: Bank Trading Revenue as a Percentage of Consolidated Holding Company Trading Revenue



Source: Consolidated Financial Statements for Holding Companies—FR Y-9C (Schedule HI) and call report (Schedule RI)

Counterparty Credit Risk

Counterparty credit risk is a significant risk in bank derivative trading activities. The notional amount of a derivative contract is a reference amount that determines contractual payments, but it is generally not an amount at risk. The credit risk in a derivative contract is a function of a number of variables, such as whether counterparties exchange notional principal, the volatility of the underlying market factors (interest rate, currency, commodity, equity, or corporate reference entity), the maturity and liquidity of the contract, and the creditworthiness of the counterparty.

Credit risk in derivatives differs from credit risk in loans because of the more uncertain nature of the potential credit exposure. Because the credit exposure is a function of movements in market factors, banks do not know, and can only estimate, how much the value of the derivative contract might be at various points in the future.

The credit exposure is bilateral in most derivative transactions, such as swaps (which make up the bulk of bank derivative contracts). Each party to the contract may (and, if the contract has a long enough tenor, probably will) have a credit exposure to the other party at various times during the contract's life. With a funded traditional loan, the amount at risk is the amount advanced to the borrower. The credit risk is unilateral as the bank faces the credit exposure of the borrower.

Measuring credit exposure in derivative contracts involves identifying those contracts on which a bank would lose value if the counterparty to a contract defaulted. The total of all contracts with positive value (i.e., derivative receivables) to the bank is the gross positive fair value (GPFV) and represents an initial measurement of credit exposure. The total of all contracts with negative value (i.e., derivative payables) to the bank is the gross negative fair value (GNFV) and represents a measurement of the exposure the bank poses to its counterparties.

GPFV decreased by \$354 billion (15.5 percent) in the fourth quarter of 2019 to \$1.9 trillion, primarily driven by a \$267 billion (17.1 percent) decrease in receivables from interest rate contracts (see table 3). GNFV decreased \$340 billion (15.3 percent) to \$1.9 trillion during the quarter, primarily driven by a \$262 billion (17.4 percent) decrease in payables on interest rate contracts.

Table 3: Gross Positive Fair Values and Gross Negative Fair Values, in Billions of Dollars

	4Q 2019	3Q 2019	Q/Q Change	Q/Q % Change	4Q 2018	Y/Y Change	Y/Y % Change
Interest rate	\$1,296	\$1,563	-\$267	-17.1%	\$1,007	\$289	28.7%
Foreign exchange	\$423	\$506	-\$83	-16.4%	\$511	-\$88	-17.1%
Equity	\$120	\$115	\$5	4.1%	\$132	-\$12	-9.0%
Commodities	\$38	\$47	-\$9	-19.7%	\$44	-\$6	-13.9%
Credit	\$47	\$47	\$0	0.8%	\$43	\$4	9.5%
Gross positive fair value	\$1,925	\$2,279	-\$354	-15.5%	\$1,738	\$187	10.8%

	4Q 2019	3Q 2019	Q/Q Change	Q/Q % Change	4Q 2018	Y/Y Change	Y/Y % Change
Interest rate	\$1,246	\$1,509	-\$262	-17.4%	\$960	\$286	29.8%
Foreign exchange	\$431	\$503	-\$72	-14.4%	\$500	-\$68	-13.7%
Equity	\$121	\$114	\$8	6.6%	\$126	-\$4	-3.4%
Commodities	\$39	\$52	-\$12	-23.5%	\$46	-\$7	-14.6%
Credit	\$48	\$50	-\$1	-2.2%	\$43	\$5	11.7%
Gross negative fair value	\$1,887	\$2,227	-\$340	-15.3%	\$1,675	\$212	12.7%

Source: Call reports, Schedule RC-L

A legally enforceable netting agreement between a bank and a counterparty creates a single legal obligation for all transactions (called a “netting set”) under the agreement. Therefore, when banks have such agreements with their counterparties, contracts with negative values (an amount a bank would pay to its counterparty) can offset contracts with positive values (an amount owed by the counterparty to the bank), leaving an NCCE as shown in table 4.

Table 4: Netting Contract Examples

Bank A portfolio with Counterparty B	Number of contracts	Value of contracts	Credit measure/metric
Contracts with positive value to Bank A	6	\$500	Gross positive fair value
Contracts with negative value to Bank A	4	-\$350	Gross negative fair value
Total contracts	10	\$150	NCCE to Bank A from Counterparty B

Most, but not necessarily all, derivative transactions that a bank has with an individual counterparty are subject to a legally enforceable netting agreement. Some transactions may be subject to the laws of a jurisdiction that does not provide legal certainty of netting agreements, in which case banks must regard such transactions as separate from the netting set. Other transactions may involve nonstandard contractual documentation. Transactions that are not subject to the same legally enforceable netting agreement have distinct values that cannot be netted and for which the appropriate current credit measure is the gross exposure to the bank, if that amount is positive. While banks can net exposures within a netting set under the same netting agreement, they cannot net exposures across netting sets without a separate legally enforceable netting agreement. As a result, a bank's NCCE to a particular counterparty equals the sum of the GPFV of contracts less the dollar amount of netting benefits with that counterparty. A bank's NCCE across all counterparties equals the sum of its NCCE to each of its counterparties.

NCCE is the primary metric the OCC uses to evaluate credit risk in bank derivative activities. NCCE for insured U.S. commercial banks and savings associations decreased by \$57 billion (13.5 percent) to \$368 billion in the fourth quarter of 2019 (see table 5).² Legally enforceable netting agreements allowed banks to reduce GPFV exposures by 80.9 percent (\$1.6 trillion) in the fourth quarter of 2019.

Table 5: Net Current Credit Exposure, in Billions of Dollars

	4Q 2019	3Q 2019	Q/Q Change	Q/Q % Change
Gross positive fair value	\$1,925	\$2,279	-\$354	-15.5%
NCCE RC-R	\$368	\$425	-\$57.3	-13.5%
Netting benefit RC-R	\$1,558	\$1,854	-\$297	-16.0%
Netting benefit % RC-R	80.9%	81.4%		-0.5%

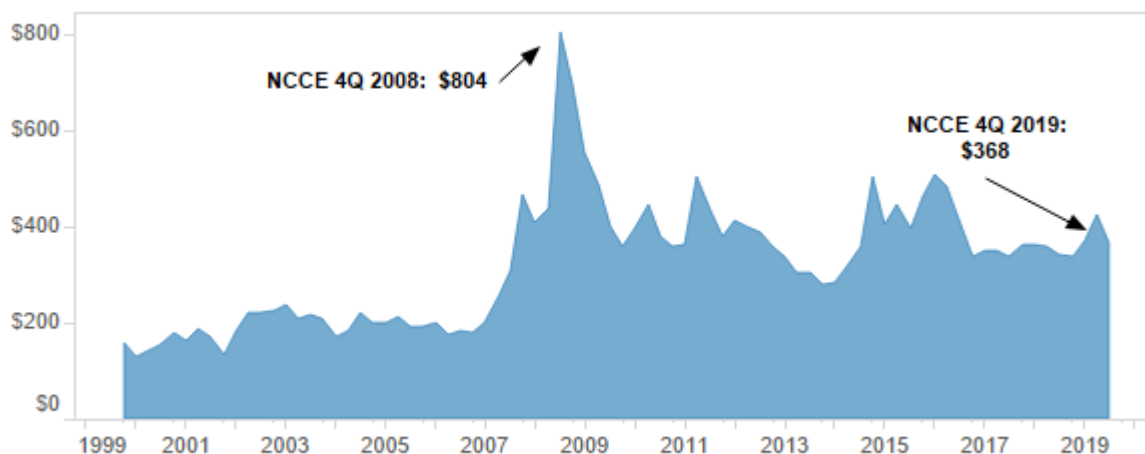
Source: Call reports, Schedules RC-L and RC-R

NCCE peaked at \$804 billion at the end of 2008, during the financial crisis, when interest rates had plunged, and credit spreads were very high (see figure 2). The significant decline in NCCE since 2008 has largely resulted from declines in the GPFV of interest rate and credit contracts. The GPFV from interest rate contracts has fallen from \$5.1 trillion at the end of 2008 to \$1.3 trillion at the end of the fourth quarter of 2019 (see table 3). In addition, on December 31,

² Banks report NCCE on two different schedules (RC-R and RC-L) of the call report, and the amounts reported are not the same because of differences in the scope of coverage. Neither measure comprehensively captures NCCE. RC-L includes exposure only from OTC derivative transactions; it excludes exchange-traded transactions. RC-R excludes transactions not subject to capital requirements. This report uses RC-R to measure NCCE.

2019, exposure from credit contracts was \$47.4 billion, which is \$1.1 trillion lower (95.7 percent) than the \$1.1 trillion on December 31, 2008 (see table 3).

Figure 2: Net Current Credit Exposure, in Billions of Dollars



Source: Call reports, Schedule RC-R

The bulk of NCCE in the financial system is concentrated in banks and securities firms (44.2 percent) and in corporations and other counterparties (44.1 percent) (see table 6). The combined exposure to hedge funds and sovereign governments was small (11.7 percent in total).

Table 6: NCCE by Counterparty Type as a Percentage of Total NCCE

	Banks and securities firms	Hedge funds	Sovereign governments	Corp and all other counterparties
4Q 2019	44.2%	2.5%	9.2%	44.1%
3Q 2019	42.2%	1.9%	9.1%	46.8%
2Q 2019	41.5%	4.3%	9.8%	44.5%
1Q 2019	43.5%	4.6%	9.6%	42.3%
4Q 2018	41.7%	5.0%	10.0%	43.2%
4Q 2017	41.7%	3.1%	7.9%	47.3%
4Q 2016	48.4%	2.0%	6.5%	43.0%
4Q 2015	53.3%	2.1%	6.0%	38.5%

Source: Call reports, Schedule RC-L

A more risk-sensitive measure of credit exposure would consider the value of collateral held against counterparty exposures. Reporting banks held collateral valued at 114.5 percent of their total NCCE at the end of the fourth quarter of 2019, up from 109.2 percent in the third quarter of 2019 (see table 7). Collateral held against hedge fund exposures decreased in the fourth quarter, but coverage remains very high at 485.9 percent. Bank exposures to hedge funds are secured, because banks take initial margin on transactions with hedge funds, in addition to fully securing any current credit exposure. Collateral coverage of corporate and sovereign exposures is much less than coverage of financial institutions and hedge funds, although coverage of corporate

exposures has been increasing over the past several years because of increases in the volume of trades cleared at central counterparties.

Table 7: Ratio of Fair Value Collateral to Net Current Credit Exposure

	FV banks and securities firms	FV hedge funds	FV sovereign governments	FV corporate and all other counterparties	FV/NCCE %
4Q 2019	130.0%	485.9%	48.3%	91.8%	114.5%
3Q 2019	131.8%	543.8%	49.1%	82.8%	109.2%
2Q 2019	130.9%	335.2%	47.2%	83.0%	110.1%
1Q 2019	127.7%	343.8%	48.2%	88.2%	113.4%
4Q 2018	128.9%	308.0%	47.1%	91.8%	113.7%
4Q 2017	124.4%	495.5%	25.1%	89.8%	111.5%
4Q 2016	119.1%	491.5%	34.2%	67.0%	98.5%
4Q 2015	101.6%	435.5%	15.6%	66.2%	89.6%

Source: Call reports, Schedule RC-L

The majority of collateral held by banks against NCCE is very liquid with 58.9 percent held in cash (both U.S. dollar and non-dollar) and an additional 13.3 percent held in U.S. Treasuries and government agency securities (see table 8). Supervisors assess changes in the quality and liquidity of collateral held as a key early indicator of potential easing in credit terms. Examiners review the collateral management practices of derivative dealers as a regular part of their supervision activities.

Table 8: Composition of Collateral

	Cash U.S. \$	Cash other currencies	U.S. Treasury securities	U.S. gov. agency	Corp bonds	Equity securities	All other collateral
4Q 2019	34.4%	24.5%	11.6%	1.7%	2.3%	7.6%	17.7%
3Q 2019	35.8%	27.3%	11.0%	1.5%	1.8%	6.3%	16.2%
2Q 2019	34.9%	26.0%	12.0%	1.5%	1.9%	6.6%	17.1%
1Q 2019	34.0%	26.0%	11.9%	1.6%	2.1%	7.4%	17.2%
4Q 2018	37.2%	23.3%	10.8%	2.2%	2.1%	7.1%	17.2%
4Q 2017	37.6%	25.5%	10.3%	1.9%	2.5%	5.7%	16.5%
4Q 2016	40.1%	31.5%	8.1%	1.7%	1.6%	5.0%	12.0%
4Q 2015	43.7%	31.7%	4.6%	1.6%	1.4%	5.3%	11.7%

Source: Call reports, Schedule RC-L

Credit quality metrics for derivative exposures remained relatively stable in the fourth quarter of 2019, as banks reported net recoveries of \$1.5 million, compared with net recoveries of \$4.8 million in the third quarter of 2019 (see graph 7 in the appendix). The number of banks reporting charge-offs decreased from 11 to 10 banks. Net charge-offs in the fourth quarter of 2019 represented 0.0004 percent of the NCCE from derivative contracts. For comparison purposes, commercial and industrial (C&I) loan net charge-offs decreased \$48.0 million, or 2.2 percent, to \$2.1 billion during the quarter and were 0.1 percent of total C&I loans. Charge-

offs of derivative exposures typically are associated with problem commercial lending exposures, in which the borrower has an associated swap transaction.

Market Risk

Value-at-Risk

Banks primarily control market risk in trading operations by establishing limits against potential losses. Banks use value-at-risk (VaR) to quantify the maximum expected loss over a specified time period and at a certain confidence level under relevant market conditions. Banks subject to the market risk capital rule, 12 CFR 3, subpart F, are required to report their VaR-based measures quarterly on Form FFIEC 102. The VaR measurement is calculated on a daily basis using a one-tail, 99 percent confidence level, and a holding period equivalent to a 10-business-day movement in underlying risk factors, such as rates, spreads and prices. Tables 9a and 9b show the quarter-over-quarter change in VaR, as well as the VaR-based capital charge, for banks most active in trading and derivatives activity. As shown in table 9a, market risk in trading operations, as measured by VaR, is a small proportion of their risk-based capital. Graph 16 in the appendix illustrates the historical trend in VaR measurements for these institutions.

Table 9a: Value-at-Risk, in Millions of Dollars

	JPMorgan Chase Bank, NA	Citibank, NA	Bank of America, NA	Goldman Sachs Bank USA
4Q 2019 Average 60 Day VaR	\$120	\$64	\$71	\$128
3Q 2019 Average 60 Day VaR	\$130	\$96	\$47	\$132
Q/Q Change	-\$10	-\$33	\$24	-\$4
4Q 2019 Total Risk-Based Capital	\$224,390	\$157,324	\$166,567	\$34,469

Source: Market Risk Regulatory Report for Institutions Subject to the Market Risk Capital Rule—FFIEC 102

Table 9b: Value-at-Risk Capital Requirement, in Millions of Dollars

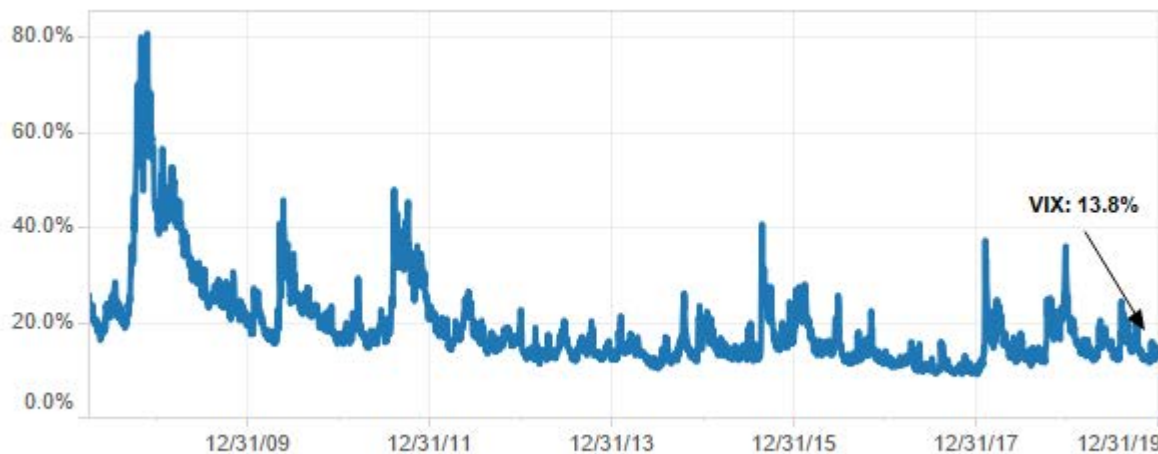
	JPMorgan Chase Bank, NA	Citibank, NA	Bank of America, NA	Goldman Sachs Bank USA
4Q 2019 VaR Capital Requirement	\$361	\$191	\$212	\$384
3Q 2019 VaR Capital Requirement	\$390	\$288	\$141	\$397
Q/Q Change	-\$29	-\$98	\$71	-\$13
4Q 2019 Total Risk-Based Capital	\$224,390	\$157,324	\$166,567	\$34,469

Source: Market Risk Regulatory Report for Institutions Subject to the Market Risk Capital Rule—FFIEC 102

Volatility Index

Figure 3 shows the VIX, a volatility index,³ which measures the market's expectation of stock market volatility in the S&P 500 index over the next 30-day period. The chart illustrates that there has been an extended period of low volatility since the end of the financial crisis.

Figure 3: Volatility Index (VIX)



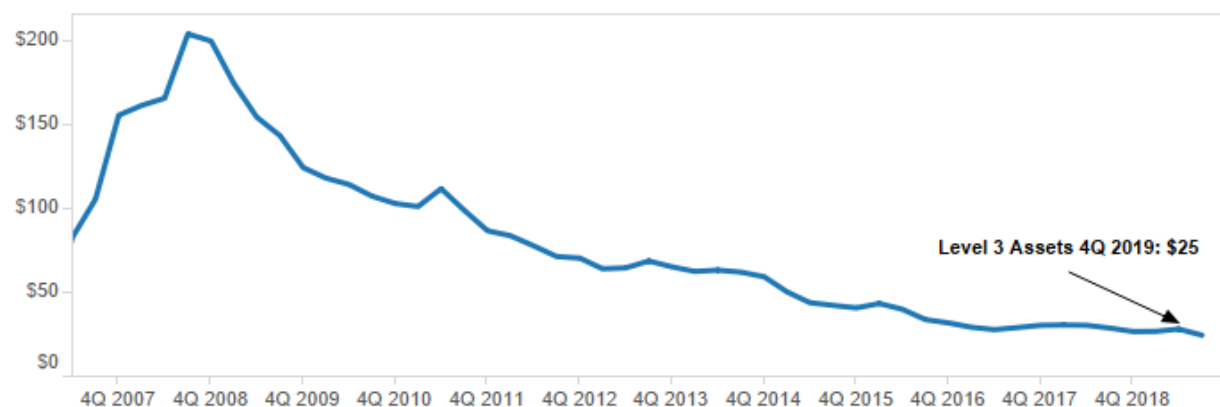
Source: Bloomberg

Level 3 Trading Assets

Another measure used to assess market risk is the volume of and changes in level 3 trading assets. Level 3 trading assets are assets whose fair value cannot be determined by using observable inputs, such as market prices. Since the peak of the financial crisis at the end of 2008, major dealers have reduced the volume of level 3 trading assets. Because banks cannot observe inputs into the models that determine the fair value of these illiquid exposures, banks use their own assumptions in determining their fair values. Level 3 trading assets peaked at \$204.1 billion at the end of 2008 (see figure 4). At the end of the fourth quarter of 2019, banks held \$25 billion of level 3 trading assets, down 3.7 percent from the previous quarter, and 14.7 percent lower than a year ago. Level 3 trading assets are \$179.6 billion (88.0 percent) lower than the peak level from 2008.

³ VIX is the trademarked ticker symbol for the Chicago Board Options Exchange SPX Volatility Index.

Figure 4: Level 3 Trading Assets, in Billions of Dollars



Source: Call reports, Schedule RC-Q

Notional Amounts of All Derivative Contracts

Changes in notional amounts are generally reasonable reflections of business activity and can provide insight into potential revenue and operational issues. The notional amount of derivative contracts, however, does not provide a useful measure of market or credit risk.

The total notional amount of derivative contracts held by banks in the fourth quarter decreased by \$29.8 trillion (14.8 percent) to \$171.5 trillion from the previous quarter (see table 10). The decrease in the notional amount of derivative contracts by underlying risk exposure was driven by decreases across all notional classes. Interest rate notional amounts continued to represent the majority of banks' derivative holdings at \$125.1 trillion, or 72.9 percent of total derivatives (see table 10).

The decrease in the total notional amount of derivative contracts by contract type was driven by decreases across all notional classes (see table 11). Swap contracts remained the leading derivatives contract type at 56.3 percent of all notional amounts.

The four banks with the most derivative activity hold 85.7 percent of all bank derivatives, while the largest 25 banks account for nearly 100 percent of all contracts (see tables 3 and 5 and graph 4 in the appendix for further information).

Table 10: Derivative Notional Amounts by Underlying Risk Exposure Quarter-Over-Quarter, in Billions of Dollars

	4Q 2019	3Q 2019	Q/Q Change	Q/Q % Change	4Q 2018	Y/Y Change	Y/Y % Change
Interest rate	\$125,056	\$147,166	-\$22,109	-15.0%	\$128,174	-\$3,118	-2.4%
Foreign exchange	\$37,170	\$44,410	-\$7,240	-16.3%	\$39,220	-\$2,050	-5.2%
Equity	\$3,796	\$3,835	-\$39	-1.0%	\$3,374	\$422	12.5%
Commodity	\$1,495	\$1,662	-\$167	-10.0%	\$1,315	\$181	13.7%
Credit derivatives	\$3,945	\$4,183	-\$238	-5.7%	\$4,270	-\$325	-7.6%
Total notional	\$171,463	\$201,256	-\$29,794	-14.8%	\$176,353	-\$4,890	-2.8%

Source: Call reports, Schedule RC-L

Table 11: Derivative Notional Amounts by Contract Type Quarter-Over-Quarter, in Billions of Dollars

	4Q 2019	3Q 2019	Q/Q Change	Q/Q % Change	4Q 2018	Y/Y Change	Y/Y % Change
Futures and forwards	\$34,787	\$47,061	-\$12,274	-26.1%	\$36,144	-\$1,357	-3.8%
Swaps	\$96,615	\$108,936	-\$12,321	-11.3%	\$97,930	-\$1,316	-1.3%
Options	\$36,117	\$41,077	-\$4,960	-12.1%	\$38,009	-\$1,892	-5.0%
Credit derivatives	\$3,945	\$4,183	-\$238	-5.7%	\$4,270	-\$325	-7.6%
Total notional	\$171,463	\$201,256	-\$29,794	-14.8%	\$176,353	-\$4,890	-2.8%

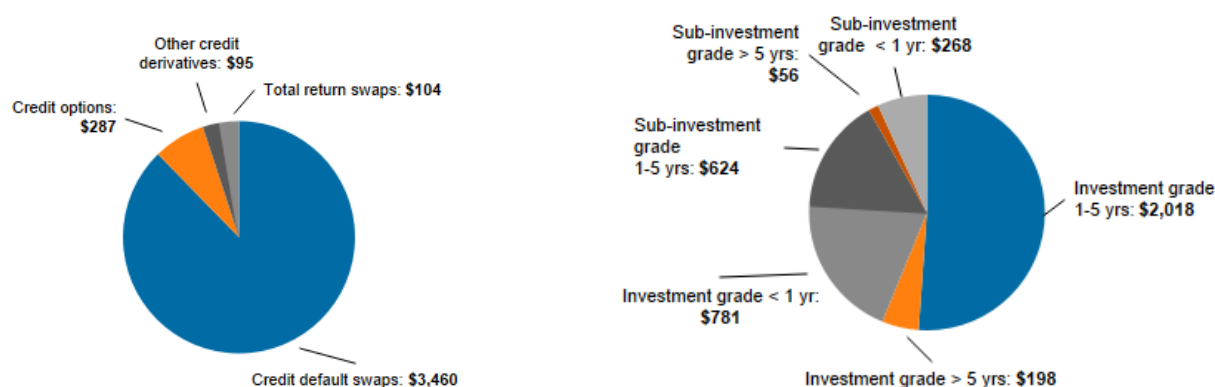
Source: Call reports, Schedule RC-L

Credit Derivatives

The notional amounts of credit derivatives decreased \$238 billion (5.7 percent), to \$3.9 trillion, in the fourth quarter of 2019 (see table 10). Contracts referencing investment-grade firms decreased \$92.0 billion and contracts referencing sub-investment-grade firms decreased \$146.0 billion in the fourth quarter (see graph 14 in the appendix). Credit derivatives outstanding remained well below the peak of \$16.4 trillion in the first quarter of 2008 (see graph 1 in the appendix). As shown in figure 5, credit default swaps are the dominant product, at \$3.5 trillion (87.7 percent) of all credit derivative notional amounts.

Credit derivative contracts referencing investment-grade entities with maturities from one to five years represented the largest segment of the market at \$2.0 trillion or 51.2 percent of all credit derivative notional amounts. Contracts of all tenors that reference investment-grade entities are \$3.0 trillion or 76.0 percent of the market (see chart on right in figure 5).

Figure 5: 4Q 2019 Credit Derivative Composition, in Billions of Dollars



Source: Call reports, Schedule RC-L

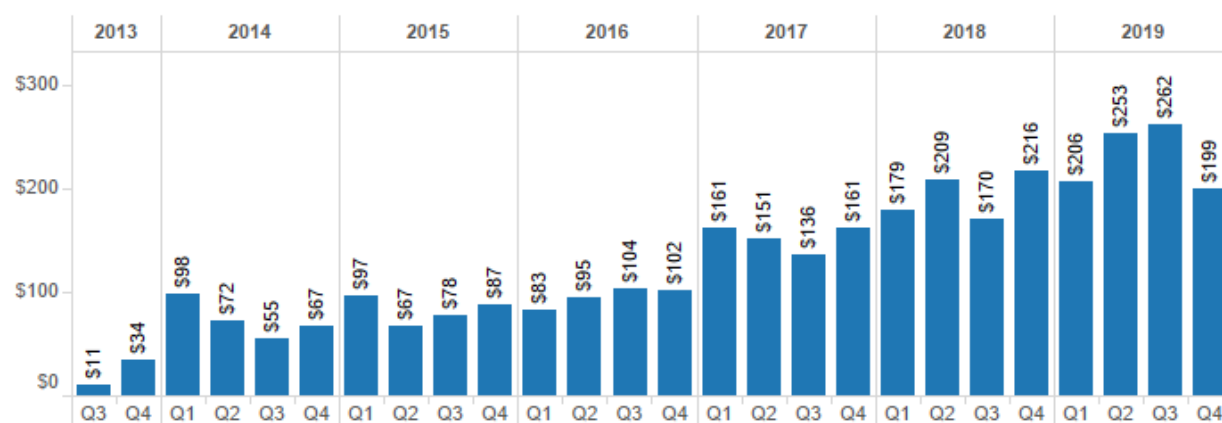
The notional amount for the 87 banks that net sold credit protection (i.e., assumed credit risk) was \$1.9 trillion, down \$115.1 billion (5.7 percent) from the third quarter of 2019 (see table 12 in the appendix). The notional amount for the 68 banks that net purchased credit protection (i.e., hedged credit risk) was \$2.0 trillion, \$123.0 billion lower (5.7 percent) than in the third quarter of 2019 (see table 12 in the appendix).

Compression Activity

Notional amounts of banks' derivative contracts have generally declined since 2011 because of trade compression efforts, leading to less need for risk management products. Trade compression continues to be a significant factor in reducing the amount of notional derivatives outstanding.

Trade compression aggregates a large number of swap contracts with similar factors, such as risk or cash flows, into fewer trades. Compression removes economic redundancy in a derivative book and reduces operational risk and capital costs for large banks. Trade compression activities decreased in the fourth quarter of 2019, as shown in figure 6.

Figure 6: Quarterly Compression Activity, in Trillions of Dollars



Source: LCH Clearenet

Centrally Cleared Derivative Contracts

In the first quarter of 2015, banks began reporting their volumes of cleared and non-cleared derivative transactions, as well as risk weights for counterparties in each of these categories. In the fourth quarter of 2019, 37.1 percent of banks' derivative holdings were centrally cleared (see table 12). From a market factor perspective, 46.7 percent of interest rate derivative contracts' notional amounts outstanding were centrally cleared, while very little of the FX derivative market was centrally cleared. The bank-held credit derivative market remained largely uncleared, as 26.4 percent of credit derivative transactions were centrally cleared during the fourth quarter of 2019.

Centrally cleared derivative transactions were heavily concentrated at qualifying central counterparties, with 87.9 percent of notional amounts reflecting the 2 percent risk weight applicable to such counterparties.

Table 12: Centrally Cleared Derivative Contracts as a Percentage of Total Derivative Contracts

	Interest rate	Foreign exchange	Equity	Precious metals	Credit	Other	Total
4Q 2019	46.7%	1.7%	24.8%	2.8%	26.4%	11.5%	37.1%
3Q 2019	55.1%	1.5%	26.8%	6.5%	28.3%	15.2%	43.0%
2Q 2019	53.9%	1.4%	26.8%	10.2%	25.9%	15.4%	42.5%
1Q 2019	54.0%	1.3%	26.9%	10.0%	27.7%	16.0%	42.4%
4Q 2018	51.0%	1.2%	25.7%	8.0%	29.3%	17.5%	39.8%
4Q 2017	47.8%	1.0%	25.7%	7.8%	25.8%	15.0%	38.0%
4Q 2016	49.1%	1.0%	23.5%	5.6%	20.4%	15.0%	38.8%
4Q 2015	46.2%	0.5%	20.0%	3.7%	16.8%	14.0%	36.9%

Source: Call reports, Schedule RC-R

Glossary of Terms

Bilateral netting: A legally enforceable arrangement between a bank and a counterparty that creates a single legal obligation covering all included individual contracts. This arrangement means that a bank's receivables or payables, in the event of the default or insolvency of one of the parties, would be the net sum of all positive and negative fair values of contracts included in the bilateral netting arrangement.

Centrally cleared derivative contract: A standardized derivative contract that is transacted bilaterally but submitted for clearing to a central counterparty, with the central counterparty becoming the ultimate counterparty to both the buyer and the seller.

Credit derivative: A financial contract that allows a party to take on or reduce credit exposure (generally on a bond, loan, or index). The OCC's derivatives survey includes OTC credit derivatives, such as credit default swaps, total return swaps, and credit spread options.

Derivative: A financial contract in which the value is derived from the performance of underlying market factors, such as interest rates, currency exchange rates, and commodity, credit, and equity prices. Derivative transactions include a wide assortment of financial contracts, such as structured debt obligations and deposits, swaps, futures, options, caps, floors, collars, forwards, and various combinations thereof.

Gross negative fair value (GNFV): The sum total of the fair values of contracts when the bank owes money to its counterparties, without taking netting into account. This amount represents the maximum losses the bank's counterparties would incur if the bank defaulted and there was no netting of contracts, and the counterparties held no bank collateral. GNFVs associated with credit derivatives are included.

Gross positive fair value (GPFV): The sum total of the fair values of contracts when the bank is owed money by its counterparties, without taking netting into account. This amount represents the maximum losses a bank would incur if all its counterparties defaulted and there was no netting of contracts, and the bank held no counterparty collateral. GPFVs associated with credit derivatives are included.

Net current credit exposure (NCCE): For a portfolio of derivative contracts, NCCE is the GPFV of contracts less the dollar amount of netting benefits. On any individual contract, current credit exposure (CCE) is the fair value of the contract if positive, and zero when the fair value is negative or zero. NCCE is also the net amount owed to banks if all contracts were immediately liquidated.

Notional amount: The nominal or face amount that is used to calculate payments made on swaps and other risk management products. This amount generally does not change hands and is thus referred to as notional.

OTC derivative contracts: Privately negotiated derivative contracts that are transacted off of organized exchanges.

Potential future exposure (PFE): An estimate of what the CCE could be over time, based on a supervisory formula in the agencies' risk-based capital rules. PFE is generally determined by multiplying the notional amount of the contract by a credit conversion factor that is based on the underlying market factor (e.g., interest rates, commodity prices, or equity prices) and the contract's remaining maturity. The risk-based capital rules, however, permit banks to adjust the formulaic PFE measure by the net-to-gross ratio, which proxies the risk-reduction benefits attributable to a valid bilateral netting contract. PFE data in this report use the amounts on which banks hold risk-based capital.

Qualifying central counterparties (QCCP): QCCPs are defined in 12 CFR 3.2 as either a CCP that the Financial Stability Oversight Council has designated systemically important under title VIII of the Dodd–Frank Wall Street Reform and Consumer Protection Act or that meets a series of standards. See 12 CFR 3.2 for a full definition.

Total credit exposure (TCE): The sum total of NCCE and PFE.

Total risk-based capital: The sum of tier 1 plus tier 2 capital. Tier 1 capital generally consists of common shareholders' equity, perpetual preferred shareholders' equity with noncumulative dividends, retained earnings, and tier 1 capital of consolidated subsidiaries that is not owned by the bank (minority interest), less regulatory adjustments and deductions. Tier 2 capital generally consists of subordinated debt, intermediate-term preferred stock, cumulative and long-term preferred stock, tier 2 capital of consolidated subsidiaries that is not owned by the bank (minority interest), and a portion of a bank's allowance for loan and lease losses less regulatory adjustments and deductions.

Trade compression: A significant factor in reducing the amount of notional derivatives outstanding. Trade compression aggregates a large number of swap contracts with similar factors, such as risk or cash flows, into fewer trades. Compression removes economic redundancy in a derivative book and reduces operational risks and capital costs for large banks.

Volatility index (VIX): A measure of the market's expectation of stock market volatility of S&P 500 index options over the next 30-day period.

Index of Tables and Figures

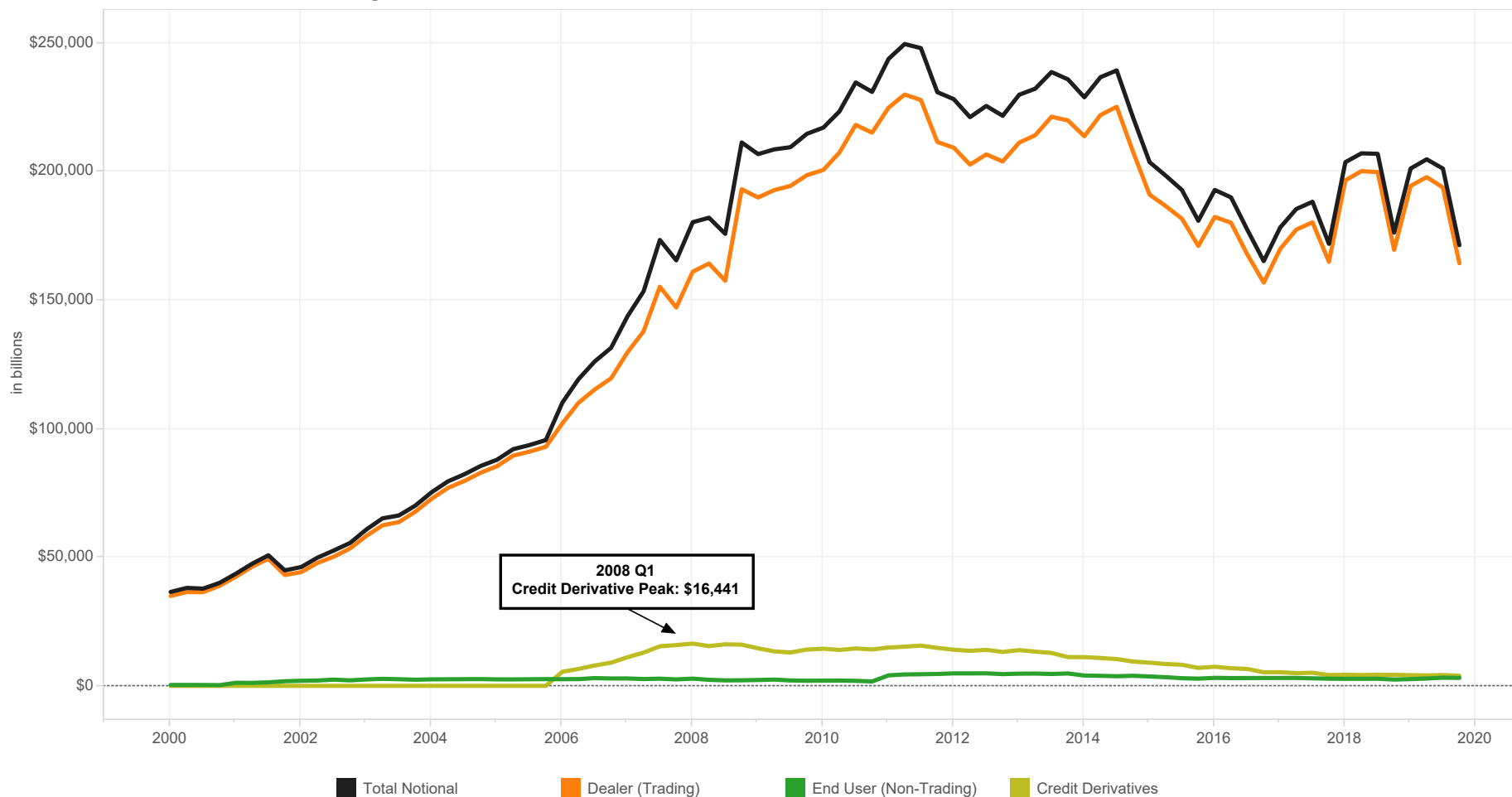
Table 1: Quarterly Bank Trading Revenue, in Millions of Dollars	2
Table 2: Quarterly Holding Company Trading Revenue, in Millions of Dollars.....	2
Figure 1: Bank Trading Revenue as a Percentage of Consolidated Holding Company Trading Revenue.....	3
Table 3: Gross Positive Fair Values and Gross Negative Fair Values, in Billions of Dollars.....	4
Table 4: Netting Contract Examples.....	5
Table 5: Net Current Credit Exposure, in Billions of Dollars	5
Figure 2: Net Current Credit Exposure, in Billions of Dollars.....	6
Table 6: NCCE by Counterparty Type as a Percentage of Total NCCE	6
Table 7: Ratio of Fair Value Collateral to Net Current Credit Exposure	7
Table 8: Composition of Collateral.....	7
Table 9a: Value-at-Risk, in Millions of Dollars	8
Table 9b: Value-at-Risk Capital Requirement, in Millions of Dollars.....	8
Figure 3: Volatility Index (VIX).....	9
Figure 4: Level 3 Trading Assets, in Billions of Dollars.....	10
Table 10: Derivative Notional Amounts by Underlying Risk Exposure Quarter-Over-Quarter, in Billions of Dollars.....	11
Table 11: Derivative Notional Amounts by Contract Type Quarter-Over-Quarter, in Billions of Dollars.....	11
Figure 5: Credit Derivative Composition, in Billions of Dollars.....	12
Figure 6: Quarterly Compression Activity, in Trillions of Dollars	13
Table 12. Centrally Cleared Derivative Contracts as a Percentage of Total Derivative Contracts.....	13

Appendix: Supplementary Graphs and Tables

- Graph 1. Derivative Notional Amounts by Type
- Graph 2. Derivative Contracts by Product
- Graph 3. Derivative Contracts by Type
- Graph 4. Four Banks Dominate in Derivatives
- Graph 5. Credit Exposure to Risk-Based Capital (in Percentage)
- Graph 6. Netting Benefit: Amount of Gross Credit Exposure Eliminated Through Bilateral Netting
- Graph 7. Quarterly Charge-Offs/(Recoveries) From Derivatives—Bank
- Graph 8. Quarterly Charge-Offs/(Recoveries) From Derivatives—Holding Company
- Graph 9a. Quarterly Trading Revenue (Cash and Derivative Positions)—Bank
- Graph 9b. Quarterly Trading Revenue (Cash and Derivative Positions)—Holding Company
- Graph 10. Quarterly Trading Revenue (Cash and Derivative Positions) as a Percentage of Gross Revenue (in Percentage)
- Graph 11. Notional Amounts of Interest Rate and FX + Gold Contracts by Maturity
- Graph 12. Notional Amounts of Precious Metal Contracts by Maturity
- Graph 13. Notional Amounts of Commodity and Equity Contracts by Maturity
- Graph 14. Notional Amounts of Credit Derivative Contracts by Credit Quality and Maturity
- Graph 15. Notional Amounts of Over-the-Counter and Centrally Cleared Derivative Contracts
- Graph 16. Average 60 Day VaR

- Table 1. Notional Amounts of Derivative Contracts
- Table 2. Notional Amounts of Derivative Contracts (Holding Companies)
- Table 3. Distribution of Derivative Contracts
- Table 4. Credit Equivalent Exposures
- Table 5. Notional Amounts of Derivative Contracts Held for Trading
- Table 6. Gross Fair Values of Derivative Contracts
- Table 7. Trading Revenues From Cash Instruments and Derivatives
- Table 8. Notional Amounts of Derivative Contracts by Contract Type and Maturity (Interest Rate, FX, and Gold)
- Table 9. Notional Amounts of Derivative Contracts by Contract Type and Maturity (Precious Metals)
- Table 10. Notional Amounts of Derivative Contracts by Contract Type and Maturity (Other Commodity and Equity)
- Table 11. Notional Amounts of Credit Derivative Contracts by Contract Type and Maturity (Investment Grade and Sub-Investment Grade)
- Table 12. Distribution of Credit Derivative Contracts Held for Trading
- Table 13. Derivatives Data Reported by FFIEC 051 Filers

Graph 1
Derivative Notional Amounts by Type
Insured U.S. Commercial Banks and Savings Associations

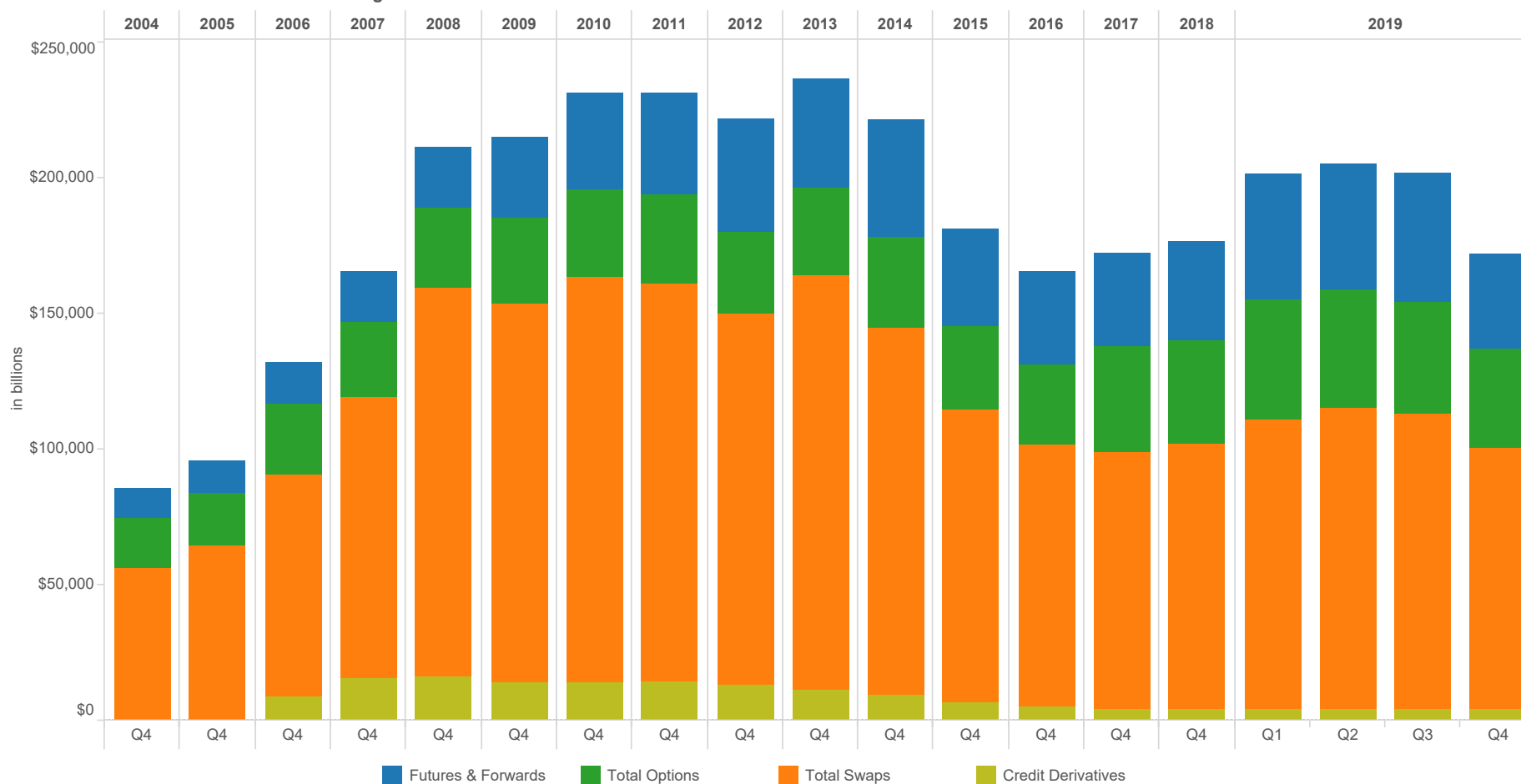


In billions of dollars

	2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Total Notional	\$192,952	\$190,057	\$177,466	\$165,252	\$178,335	\$185,522	\$188,351	\$171,973	\$203,767	\$207,202	\$206,995	\$176,353	\$201,282	\$204,874	\$201,256	\$171,463
Dealer (Trading)	182,437	180,186	167,873	156,901	169,971	177,519	180,344	165,002	196,684	200,286	199,891	169,636	194,518	197,950	193,912	164,441
End User (Non-Trading)	3,097	3,018	3,030	3,057	3,061	3,069	2,917	2,785	2,737	2,737	2,763	2,447	2,619	2,850	3,162	3,077
Credit Derivatives	7,418	6,853	6,562	5,293	5,304	4,935	5,090	4,186	4,345	4,179	4,342	4,270	4,145	4,074	4,183	3,945

Note: Numbers may not add up to total due to rounding. Total derivative notionals are now reported including credit derivatives, for which regulatory reporting does not differentiate between trading and non-trading.
Source: Call reports

Graph 2
Derivative Contracts by Product*
Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

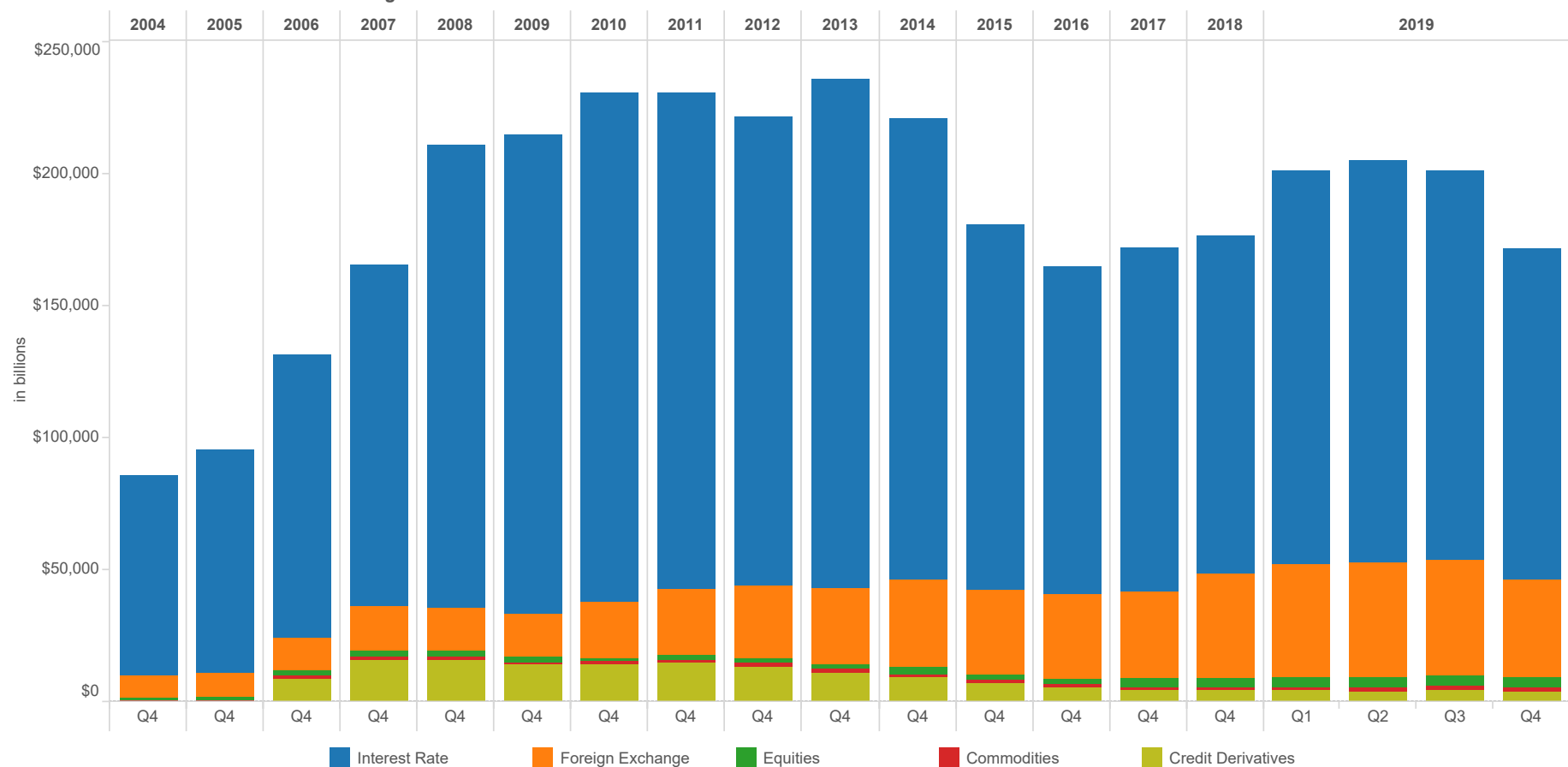
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3	Q4
Futures & Forwards	\$12,057	\$14,882	\$18,867	\$22,529	\$29,652	\$35,539	\$37,469	\$41,621	\$40,027	\$43,380	\$35,691	\$34,201	\$34,162	\$36,144	\$46,165	\$46,209	\$47,061	\$34,787
Total Options	18,858	26,277	27,727	29,747	31,884	32,078	32,505	30,375	32,305	33,081	30,889	29,373	38,841	38,009	44,138	43,686	41,077	36,117
Total Swaps	64,712	81,340	103,102	143,111	139,138	149,331	146,266	136,608	152,469	135,169	107,392	96,384	94,784	97,930	106,833	110,905	108,936	96,615
Credit Derivatives	0	9,020	15,863	16,029	14,112	14,151	14,759	13,190	11,191	9,449	6,986	5,293	4,186	4,270	4,145	4,074	4,183	3,945
Total Notional	95,627	131,519	165,559	211,416	214,786	231,099	230,998	221,794	235,992	221,078	180,959	165,252	171,973	176,353	201,282	204,874	201,256	171,463

*Notional amount of total: futures, exchange-traded options, over the counter options, forwards and swaps.

Note: Numbers may not add up to total due to rounding.

Source: Call reports

Graph 3
Derivative Contracts by Type*
Insured U.S. Commercial Banks and Savings Associations

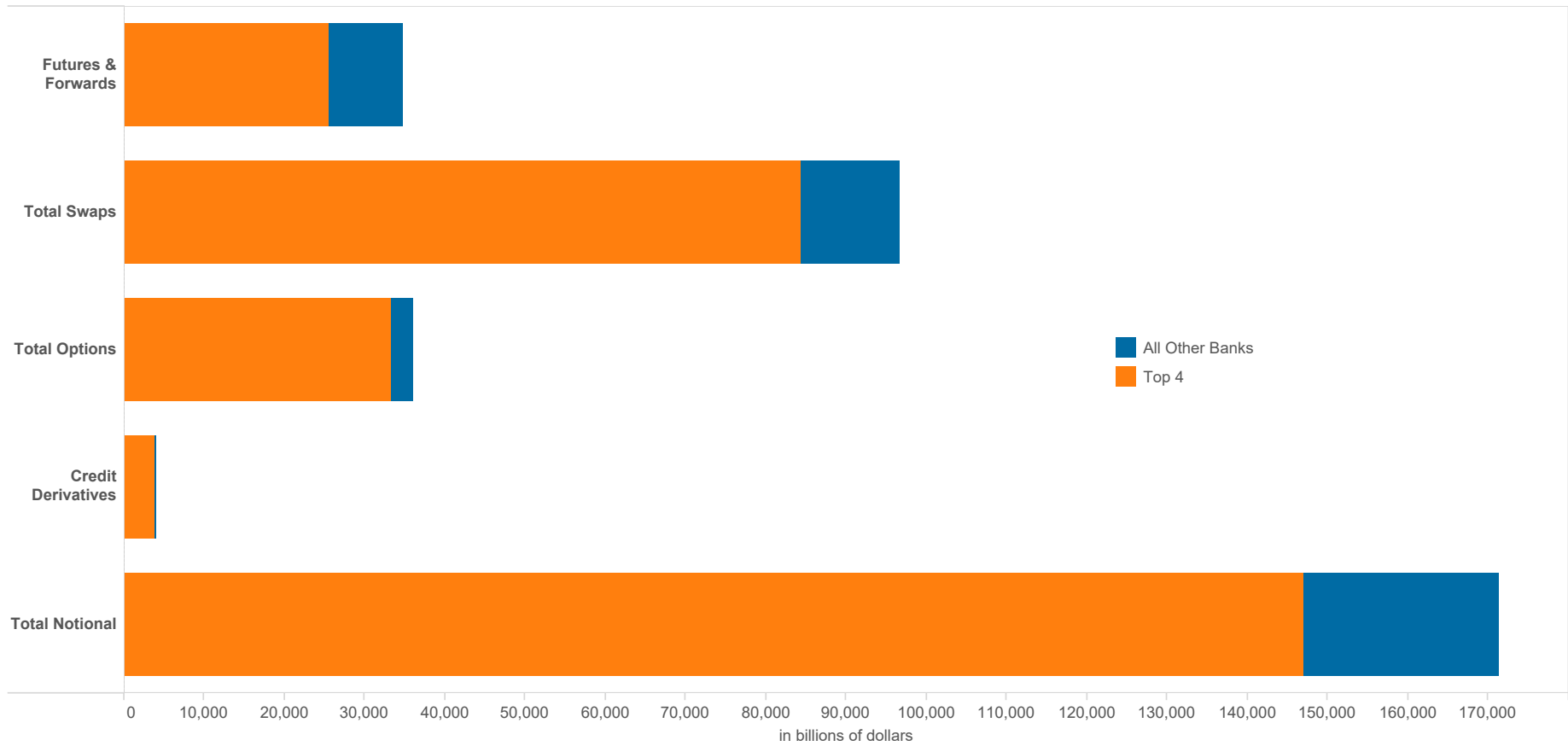


In billions of dollars

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3	Q4
Interest Rate	\$107,435	\$129,491	\$175,895	\$181,454	\$193,399	\$187,866	\$177,650	\$193,084	\$174,687	\$138,369	\$124,488	\$130,417	\$128,174	\$149,185	\$151,852	\$147,166	\$125,056
Foreign Exchange	11,900	16,614	16,224	16,555	20,990	25,436	27,587	28,480	33,183	32,100	31,737	32,903	39,220	42,899	43,744	44,410	37,170
Equities	2,271	2,524	2,207	1,685	1,364	1,606	1,970	2,028	2,537	2,395	2,475	3,080	3,374	3,675	3,723	3,835	3,796
Commodities	893	1,067	1,061	979	1,195	1,330	1,397	1,209	1,222	1,108	1,257	1,388	1,315	1,377	1,482	1,662	1,495
Credit Derivatives	9,020	15,863	16,029	14,112	14,151	14,759	13,190	11,191	9,449	6,986	5,293	4,186	4,270	4,145	4,074	4,183	3,945
Total Notional	131,519	165,559	211,416	214,786	231,099	230,998	221,794	235,992	221,078	180,959	165,252	171,973	176,353	201,282	204,874	201,256	171,463

*Notional amount of total: futures, exchange traded options, over the counter options, forwards, and swaps.
 Note: As of 2006 Q2 equities and commodities types are shown as separate categories. They were previously shown as "Other Derivs."
 Numbers may not add up to total due to rounding.
 Source: Call reports

Graph 4
Four Banks Dominate in Derivatives*
Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

	Top 4	All Other Banks	Grand Total
Futures & Forwards	\$25,625	\$9,162	\$34,787
Total Swaps	84,315	12,299	96,615
Total Options	33,297	2,820	36,117
Credit Derivatives	3,733	212	3,945
Total Notional	146,970	24,493	171,463

*Notional amount of total: futures, exchange-traded options, over-the-counter options, forwards, and swaps.
 Source: Call reports

Graph 5
Credit Exposure to Risk-Based Capital (in Percentage)
Top 4 Insured U.S. Commercial Banks and Savings Associations by Derivative Holdings



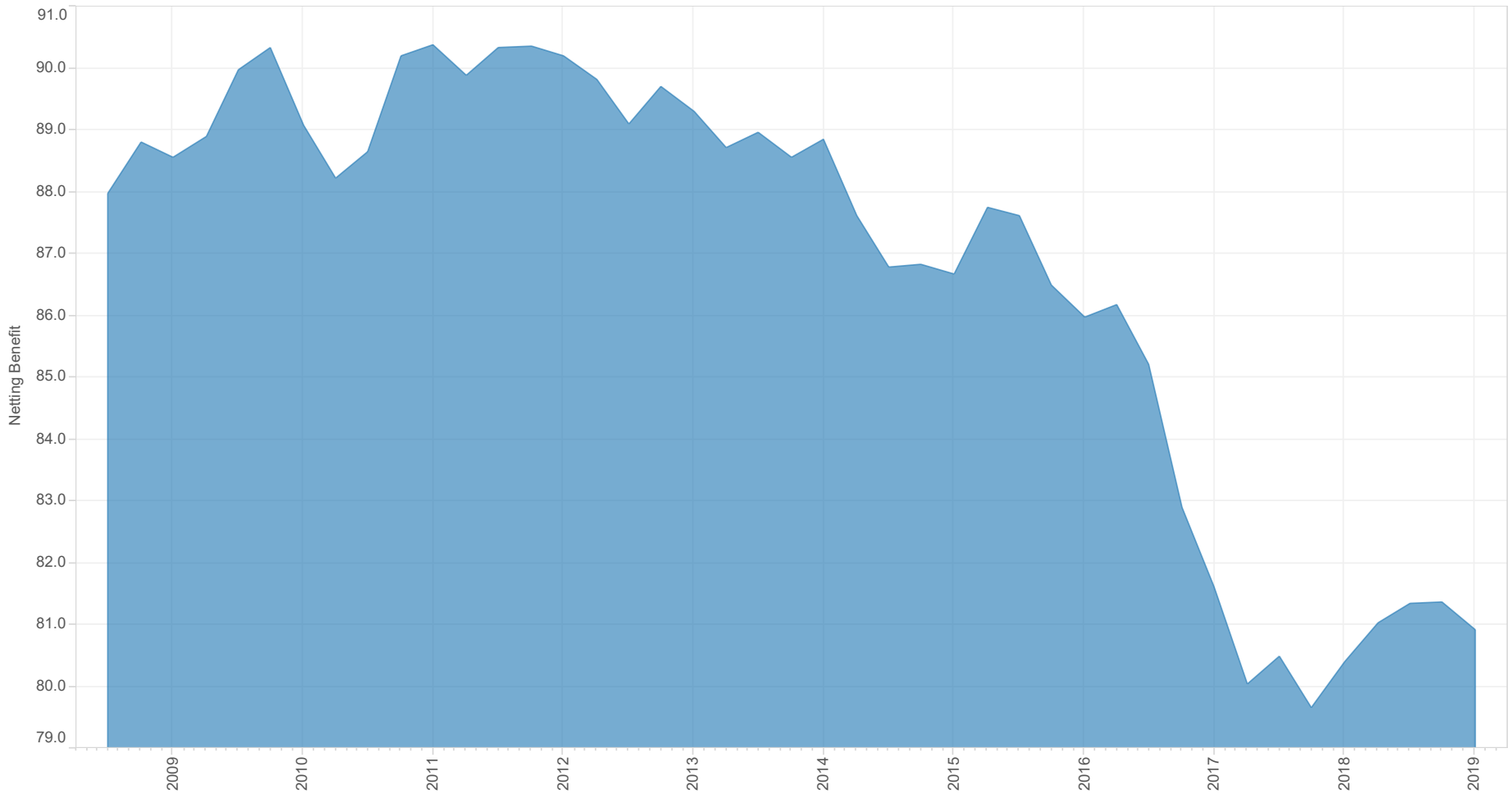
	2012				2013				2014				2015				2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
JPMorgan Chase Bank NA	250	246	247	229	219	216	205	183	183	189	181	177	229	228	219	209	225	221	216	199	201	193	195	179	197	184	190	167	173	150	163	153
Bank of America NA	149	141	139	132	129	125	121	117	109	107	107	93	100	95	91	85	81	77	68	66	66	64	59	57	62	61	62	57	58	58	59	56
Citibank NA	172	171	170	170	165	164	161	148	147	156	190	173	187	184	181	166	180	181	188	183	186	184	171	140	146	139	144	132	130	132	134	124
Goldman Sachs	751	738	727	705	703	693	719	741	689	620	539	516	547	563	530	516	482	467	433	481	472	484	433	420	389	384	371	354	366	372	372	344
TOTAL	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	284	282	281	271	261	258	262	262	248	240	224	211	238	242	232	223	226	222	217	220	220	218	205	191	195	187	188	173	178	169	176	164

Note: The methodology to calculate the credit risk exposure to capital ratio for the Top 4 category uses a weighted average of total current credit exposure.
Source: Call reports

Graph 6

Netting Benefit*: Amount of Gross Credit Exposure Eliminated Through Bilateral Netting (in Percentage)

Insured U.S. Commercial Banks and Savings Associations by Derivative Holdings

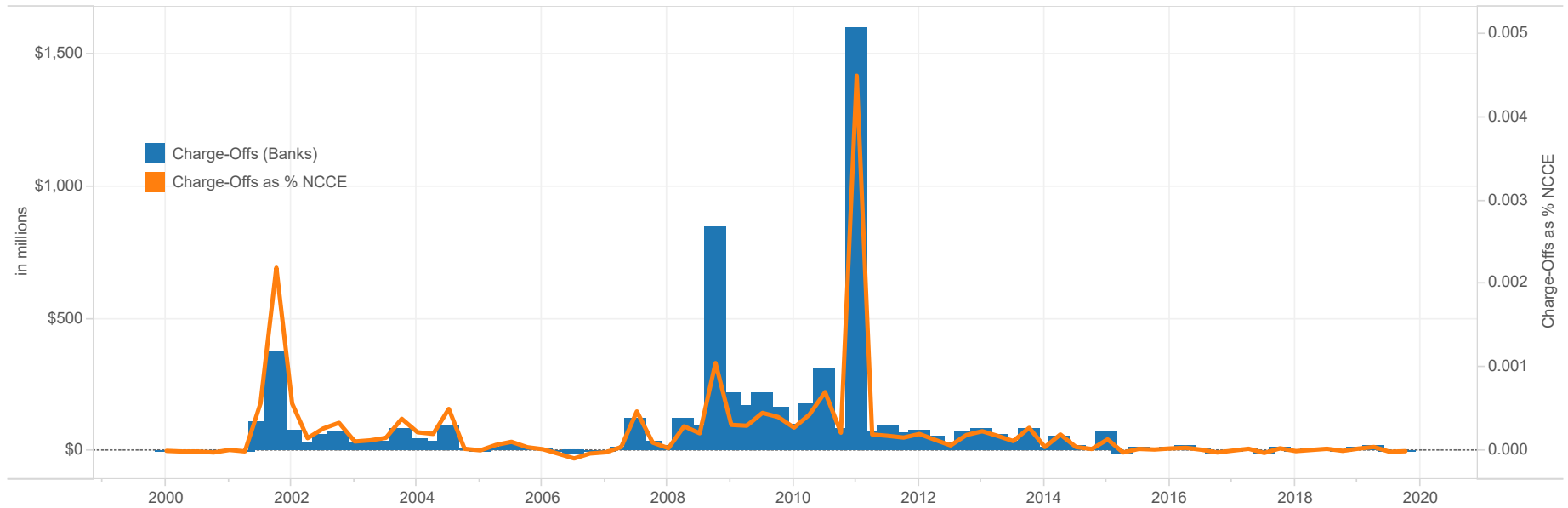


Netting Benefit

2011				2012				2013				2014				2015				2016				2017				2018				2019			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
88.2	88.6	90.2	90.4	89.9	90.3	90.3	90.2	89.8	89.1	89.7	89.3	88.7	88.9	88.6	88.8	87.6	86.8	86.8	86.7	87.7	87.6	86.5	86.0	86.2	85.2	82.9	81.6	80.0	80.5	79.7	80.4	81.0	81.3	81.4	80.9

*The netting benefit is defined as: \$ amount of netting benefits/gross positive fair value.
Source: Call reports, beginning the first quarter of 2015 RC-R; otherwise RC-L

Graph 7
Quarterly Charge-Offs/(Recoveries) From Derivatives - Bank
Insured U.S. Commercial Banks and Savings Associations with Derivatives

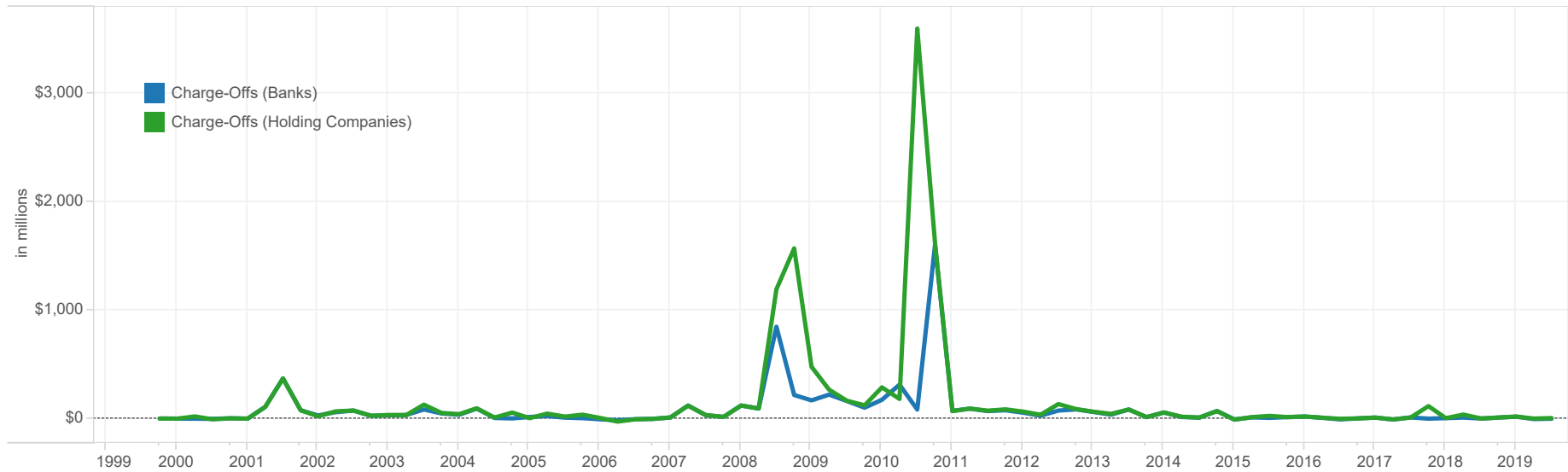


In millions of dollars

	2000				2001				2002				2003			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	0.0	-1.0	-1.0	-3.0	2.0	-1.0	107.3	370.0	75.8	28.2	59.0	73.7	25.3	29.9	32.3	83.7
	2004				2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	46.7	34.9	92.2	5.4	1.3	14.2	23.0	8.3	3.6	-7.0	-16.0	-5.8	-3.1	9.1	119.5	30.7
	2008				2009				2010				2011			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	15	120	92	847	217	168	221	162	100	173	313	83	1,601	72	91	69
	2012				2013				2014				2015			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	76.35	54.34	26.12	73.44	84.28	60.72	35.77	83.45	12.78	55.90	14.53	7.91	69.31	-7.93	10.44	6.40
	2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	13.30	18.56	6.48	-7.84	1.22	8.71	-8.77	10.26	-1.14	3.97	8.80	0.06	9.11	17.23	-4.78	-1.45

Note: The figures are for each quarter alone, not year-to-date.
 NCCE: Pre 2009 Q2 (RC-R); 2009 Q2 - 2014 Q4 (RC-L); 2015 Q1 onward (RC-R)
 Source: Call reports

Graph 8
Quarterly Charge-Offs/(Recoveries) From Derivatives - Holding Company
Insured U.S. Commercial Banks and Savings Associations with Derivatives Compared with Holding Companies

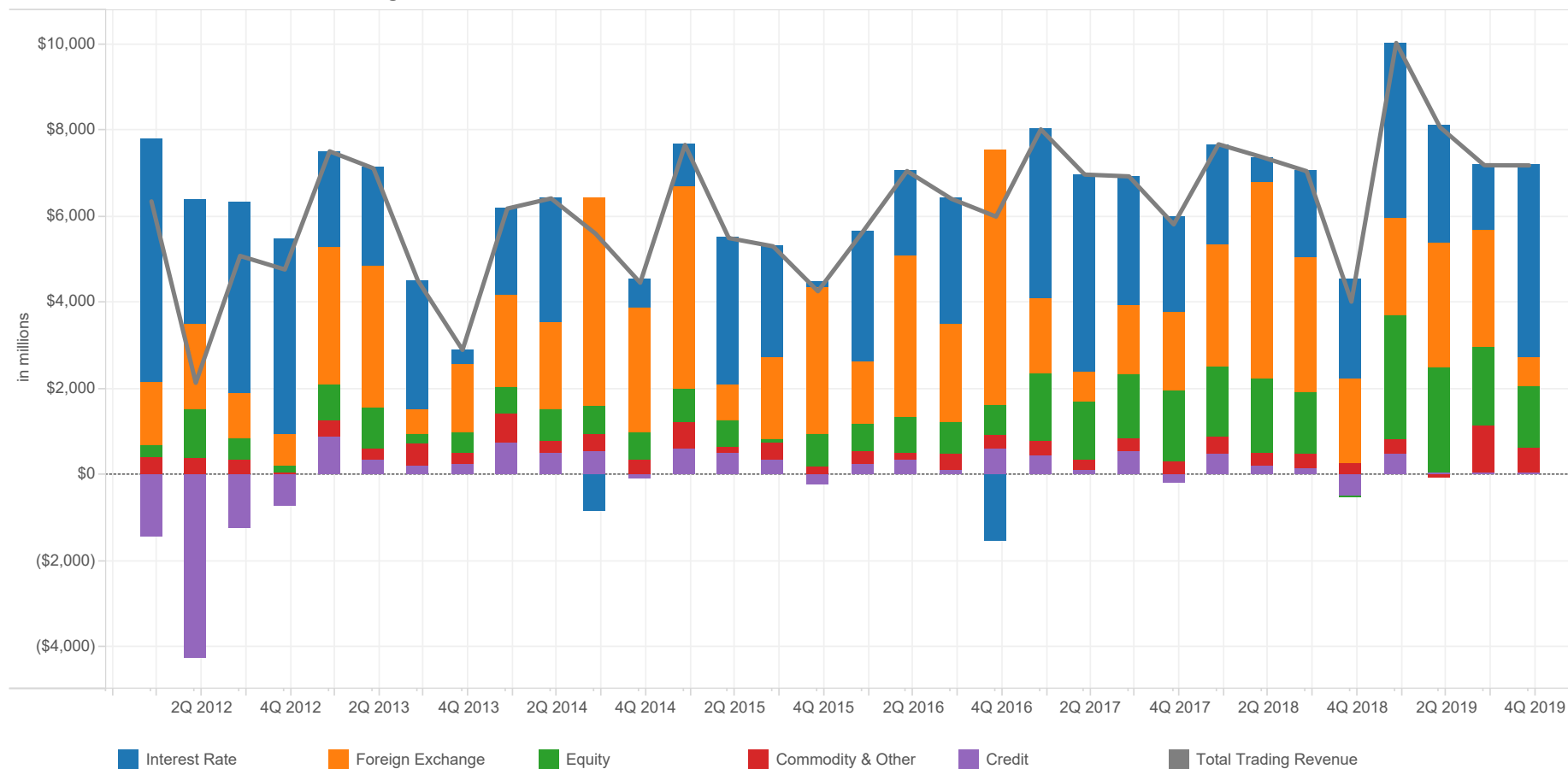


In millions of dollars

	2000				2001				2002				2003				2004			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	0.0	-1.0	-1.0	-3.0	2.0	-1.0	107.3	370.0	75.8	28.2	59.0	73.7	25.3	29.9	32.3	83.7	46.7	34.9	92.2	5.4
Charge-Offs (Holding Companies)	0.1	-1.0	19.3	-7.0	2.0	-1.0	107.3	369.6	75.8	21.2	66.0	73.7	25.3	32.9	31.4	127.8	51.2	40.4	94.2	9.0
	2005				2006				2007				2008				2009			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	1	14	23	8	4	-7	-16	-6	-3	9	119	31	15	120	92	847	217	168	221	162
Charge-Offs (Holding Companies)	55	4	45	18	35	5	-28	-7	-3	10	119	32	15	120	93	1,192	1,570	477	266	164
	2010				2011				2012				2013				2014			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	100	173	313	83	1,601	72	91	69	76	54	26	73	84	61	36	83	13	56	15	8
Charge-Offs (Holding Companies)	122	288	181	3,598	1,617	68	92	73	85	64	35	133	87	63	43	83	14	56	17	9
	2015				2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	69.3	-7.9	10.4	6.4	13.3	18.6	6.5	-7.8	1.2	8.7	-8.8	10.3	-1.1	4.0	8.8	0.1	9.1	17.2	-4.8	-1.5
Charge-Offs (Holding Companies)	69.0	-10.2	12.9	24.5	12.8	18.0	7.5	-2.5	1.4	8.9	-8.3	9.6	114.5	3.5	36.6	0.1	9.5	17.9	-0.3	4.1

Note: The figures are for each quarter alone, not year-to-date.
Source: Call reports and Y-9

Graph 9a
Quarterly Trading Revenue (Cash and Derivative Positions)* - Bank
Insured U.S. Commercial Banks and Savings Associations

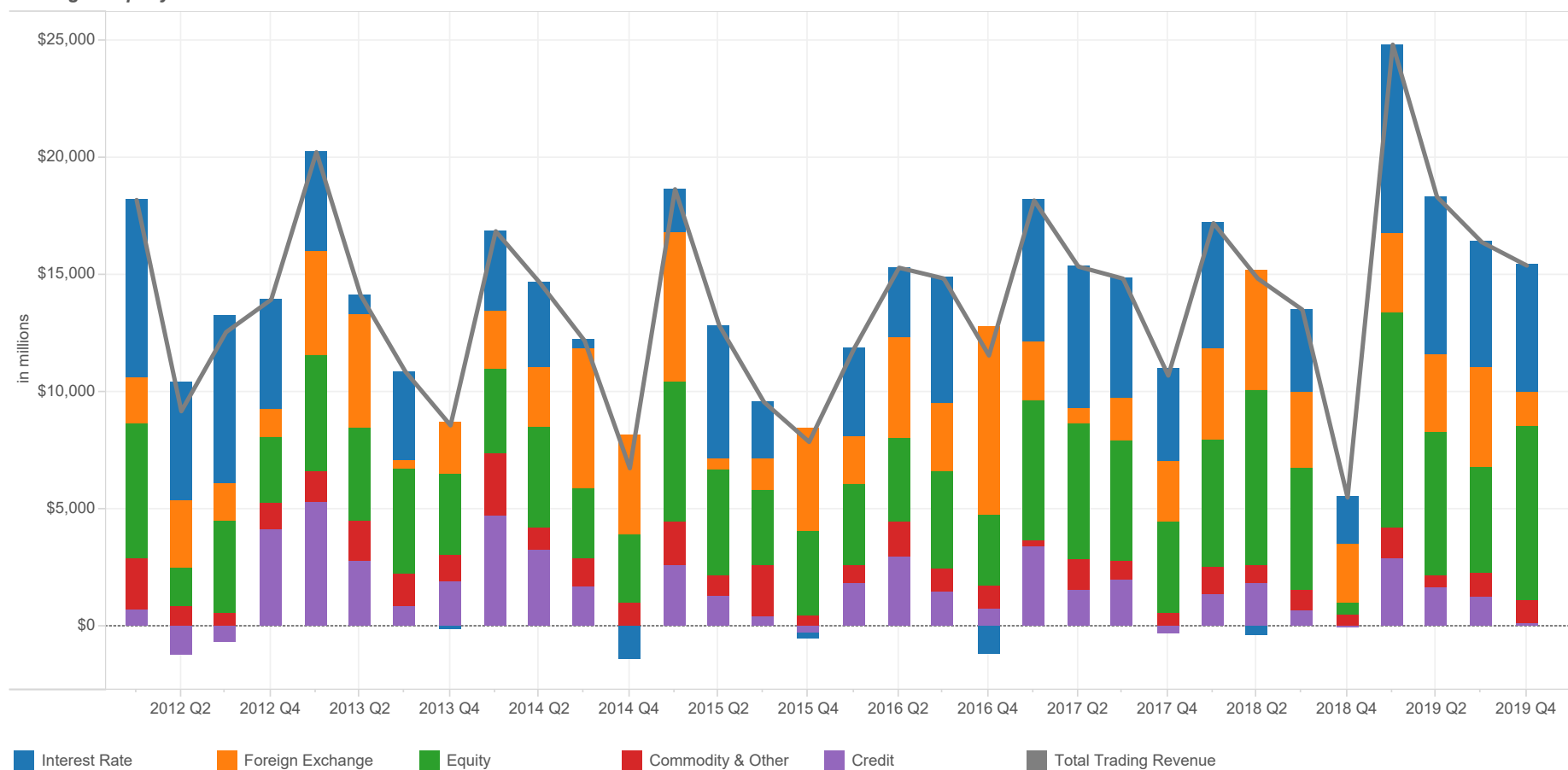


In millions of dollars

	2015				2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Interest Rate	\$958	\$3,406	\$2,578	\$154	\$3,023	\$1,973	\$2,920	#####	\$3,917	\$4,586	\$3,011	\$2,220	\$2,317	\$587	\$1,998	\$2,305	\$4,078	\$2,730	\$1,523	\$4,471
Foreign Exchange	4,703	855	1,931	3,401	1,424	3,719	2,294	5,941	1,743	697	1,608	1,811	2,861	4,569	3,130	1,971	2,254	2,900	2,718	662
Equity	797	587	49	742	668	867	734	681	1,595	1,359	1,454	1,649	1,624	1,727	1,444	-43	2,895	2,464	1,805	1,427
Commodity & Other	587	129	402	198	271	161	353	296	330	211	300	324	395	286	346	274	323	-43	1,109	600
Credit	624	530	357	-222	263	342	118	634	447	128	566	-178	487	215	141	-476	485	30	43	34
Total Trading Revenue	7,669	5,507	5,316	4,273	5,650	7,062	6,420	6,006	8,031	6,981	6,940	5,824	7,684	7,384	7,059	4,030	10,035	8,081	7,198	7,194

*The trading revenue figures are for cash and derivative activities. Revenue figures are for each quarter alone, not year-to-date.
 Note: Numbers may not add up to total due to rounding.
 Source: Call reports

Graph 9b
Quarterly Trading Revenue (Cash and Derivative Positions)*
Holding Company



In millions of dollars

	2015				2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Interest Rate	\$1,893	\$5,662	\$2,403	(\$243)	\$3,808	\$2,965	\$5,359	#####	\$6,055	\$6,019	\$5,124	\$4,006	\$5,361	(\$336)	\$3,550	\$1,997	\$8,044	\$6,728	\$5,363	\$5,431
Foreign Exchange	6,329	552	1,393	4,338	2,025	4,318	2,899	8,007	2,524	733	1,848	2,589	3,900	5,133	3,222	2,530	3,396	3,351	4,241	1,462
Equity	6,022	4,481	3,196	3,696	3,441	3,612	4,159	3,021	5,939	5,783	5,123	3,867	5,431	7,445	5,222	502	9,215	6,083	4,548	7,388
Commodity & Other	1,833	871	2,146	412	738	1,491	969	1,003	299	1,317	769	568	1,177	779	874	508	1,298	512	1,045	981
Credit	2,603	1,294	452	-317	1,880	2,940	1,482	742	3,381	1,523	1,996	-310	1,359	1,848	666	-25	2,903	1,684	1,226	158
Total Trading Revenue	18,680	12,860	9,590	7,887	11,892	15,327	14,868	11,579	18,198	15,376	14,861	10,721	17,229	14,870	13,534	5,513	24,856	18,359	16,423	15,419

*The trading revenue figures are for cash and derivative activities. Revenue figures are for each quarter alone, not year-to-date.
 Note: Numbers may not add up to total due to rounding.
 Source: Y9

Graph 10
Quarterly Trading Revenue (Cash and Derivative Positions) as a Percentage of Gross Revenue (in Percentage)
Top 4 Insured U.S. Commercial Banks and Savings Associations by Derivative Holdings



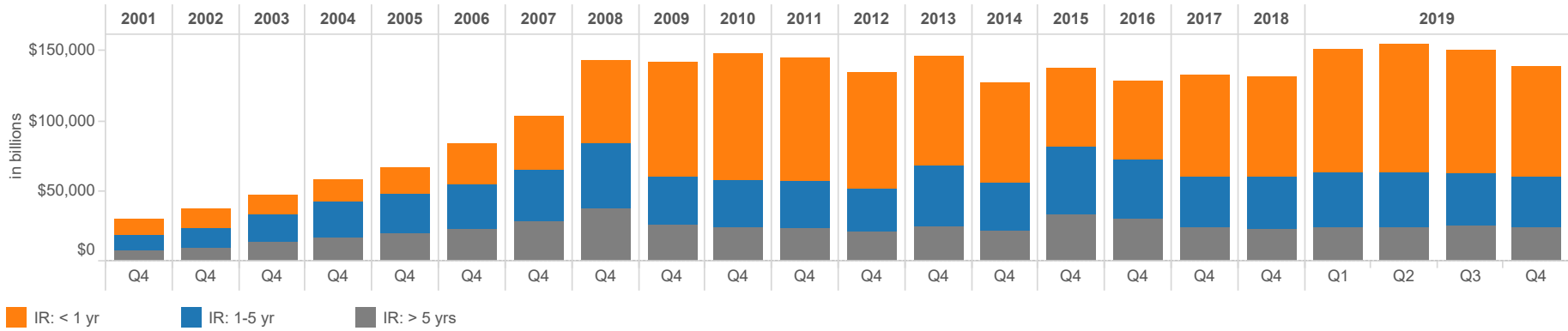
Trading Revenue to Gross Revenue*

	2014				2015				2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
JPMorgan Chase Bank NA	12.63	13.31	13.47	6.97	17.73	13.25	12.65	7.03	12.26	13.34	13.83	11.17	17.98	13.66	14.01	11.52	11.90	12.19	10.26	3.92	18.57	14.57	11.30	12.62
Bank of America NA	7.80	9.11	5.11	3.68	6.78	0.49	5.19	1.72	3.90	6.87	4.18	3.28	4.70	4.49	4.09	3.87	5.62	4.04	4.54	4.90	4.60	5.14	3.20	4.09
Citibank NA	8.51	7.43	5.48	4.78	9.17	8.41	6.54	6.30	7.19	9.41	6.47	10.97	10.47	8.50	9.12	6.94	11.33	10.69	11.26	4.66	12.32	7.23	8.48	5.56
Goldman Sachs	23.67	22.21	13.74	13.06	15.85	17.32	13.32	6.16	23.78	9.54	12.16	7.22	17.71	15.66	7.10	2.15	10.85	1.84	12.77	1.86	10.31	5.65	2.81	20.02
TOTAL	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	10.06	10.45	8.53	5.35	11.68	7.62	8.41	5.03	8.45	10.14	8.51	8.51	11.68	9.32	9.39	7.55	9.77	8.95	8.82	4.36	12.43	9.53	7.93	8.77

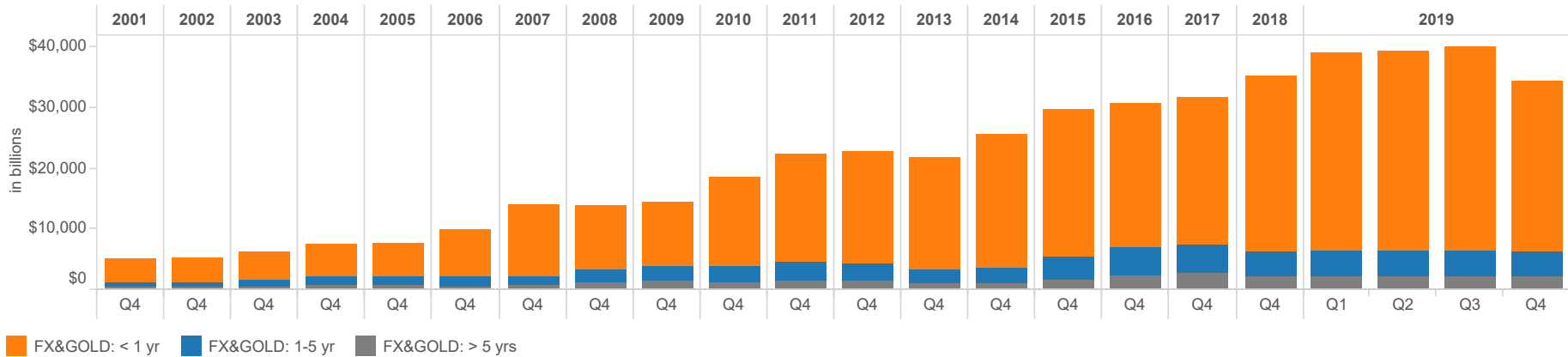
*The trading revenue figures are for cash and derivative activities. Revenue figures are quarterly, not year-to-date numbers.
 Note: Gross revenue equals interest income plus non-interest income.
 Source: Call reports

Graph 11
Notional Amounts of Interest Rate and FX + Gold Contracts by Maturity
Insured U.S. Commercial Banks and Savings Associations

Interest Rate



FX & Gold



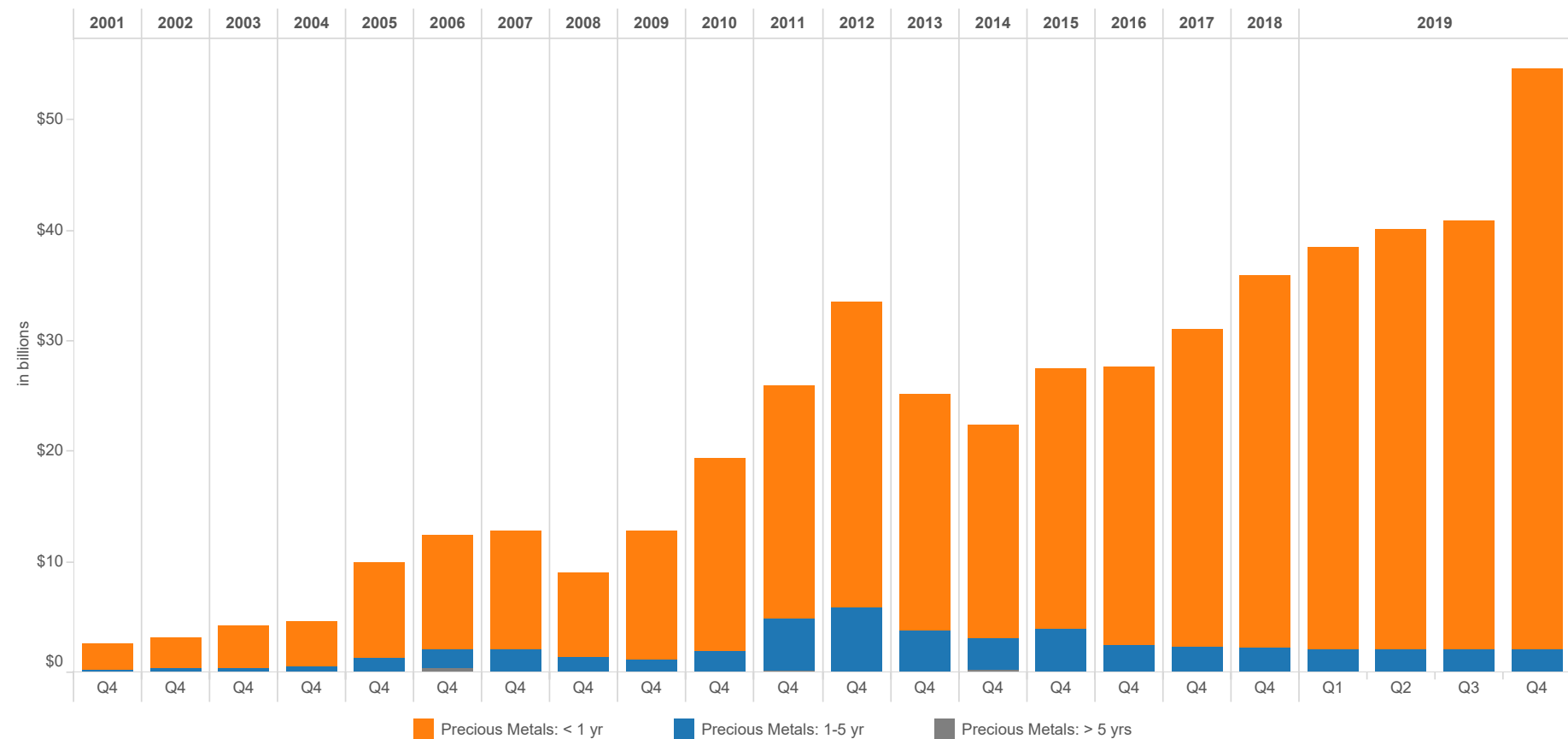
In billions of dollars

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3	Q4
IR: < 1 yr	\$13,581	\$15,921	\$18,483	\$29,552	\$39,085	\$58,618	\$81,236	\$90,843	\$87,812	\$82,948	\$77,758	\$71,808	\$55,054	\$55,061	\$72,589	\$71,491	\$87,926	\$90,566	\$88,724	\$79,162
IR: 1-5 yr	20,404	25,893	27,683	31,386	37,222	47,456	33,970	33,497	32,750	30,191	44,157	33,727	49,406	43,261	36,154	36,681	38,989	39,191	37,507	35,822
IR: > 5 yrs	13,117	16,492	19,825	23,273	27,724	36,868	26,374	24,307	24,168	21,175	24,630	22,214	32,981	29,762	23,565	23,244	24,261	24,213	24,491	24,259
FX&GOLD: < 1 yr	4,510	5,384	5,728	7,730	11,660	10,640	10,490	14,629	17,632	18,386	18,372	22,145	24,130	23,912	24,380	28,891	32,626	32,805	33,602	28,241
FX&GOLD: 1-5 yr	1,146	1,317	1,381	1,452	1,639	2,195	2,473	2,462	3,117	2,910	2,341	2,587	3,986	4,454	4,805	4,219	4,364	4,340	4,280	4,052
FX&GOLD: > 5 yrs	582	762	689	594	622	1,082	1,347	1,290	1,503	1,480	1,029	969	1,648	2,420	2,525	2,096	2,182	2,171	2,149	2,146

Note: Figures above exclude FX contracts with an original maturity of 14 days or less, written options, basis swaps, and any other contracts not subject to risk-based capital requirements. Effective Q1 2015, the reporting form and call report instructions changed. Schedule RC-R now requires banks to report gold and FX notionals in aggregate, rather than separately.
 Source: Call reports

Graph 12
Notional Amounts of Precious Metal Contracts by Maturity
Insured U.S. Commercial Banks and Savings Associations

Precious Metals



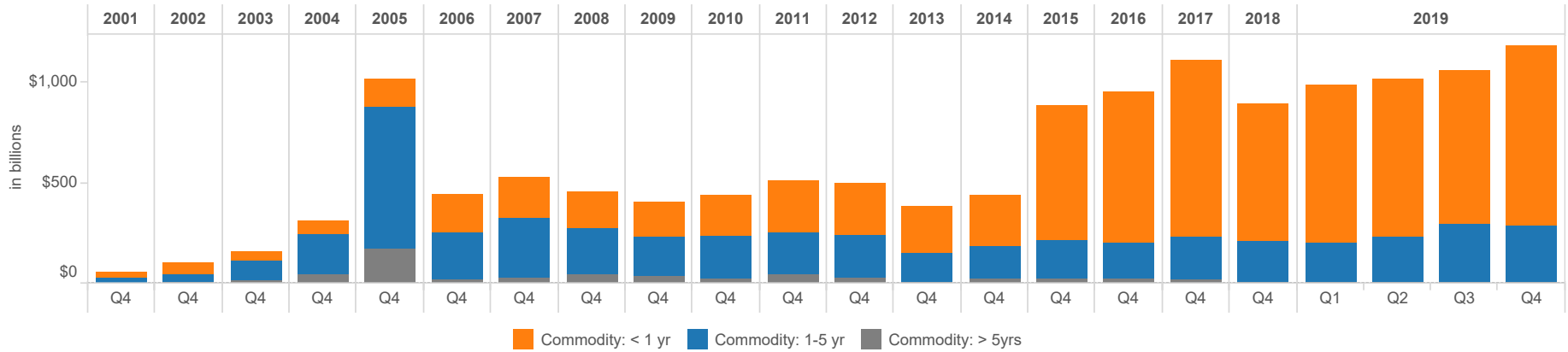
In billions of dollars

	2002 Q4	2003 Q4	2004 Q4	2005 Q4	2006 Q4	2007 Q4	2008 Q4	2009 Q4	2010 Q4	2011 Q4	2012 Q4	2013 Q4	2014 Q4	2015 Q4	2016 Q4	2017 Q4	2018 Q4	2019			
																		Q1	Q2	Q3	Q4
Precious Metals: < 1 yr	\$2.72	\$3.87	\$4.04	\$8.59	\$10.35	\$10.72	\$7.55	\$11.55	\$17.47	\$21.12	\$27.68	\$21.41	\$19.29	\$23.51	\$25.07	\$28.62	\$33.62	\$36.45	\$38.00	\$38.71	\$52.58
Precious Metals: 1-5 yr	0.46	0.33	0.51	1.29	1.75	2.10	1.51	1.24	1.89	4.74	5.82	3.80	2.84	3.92	2.49	2.38	2.25	2.12	2.06	2.14	2.06
Precious Metals: > 5 yrs	0.00	0.00	0.00	0.06	0.33	0.01	0.00	0.00	0.03	0.10	0.03	0.00	0.29	0.07	0.02	0.01	0.01	0.00	0.00	0.00	0.00

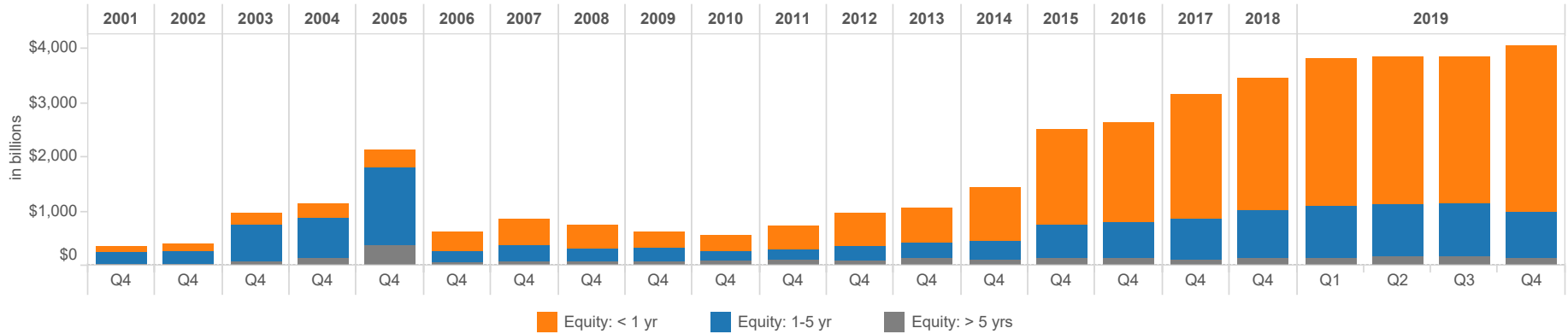
Note: Figures exclude FX contracts with an original maturity of 14 days or less, written options, basis swaps, and any other contracts not subject to risk-based capital requirements.
 Source: Call reports

Graph 13
Notional Amounts of Commodity and Equity Contracts by Maturity
Insured U.S. Commercial Banks and Savings Associations

Commodity



Equity

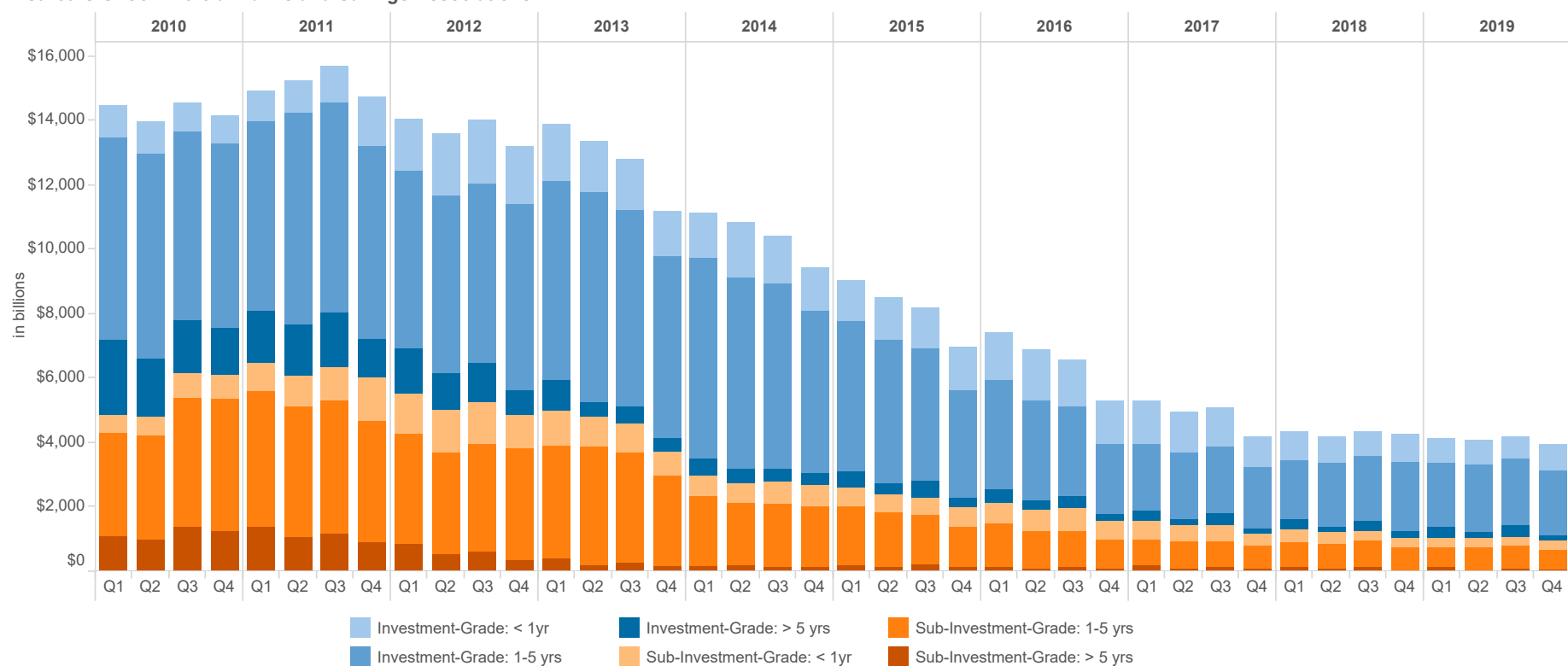


In billions of dollars

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3	Q4
Commodity: < 1 yr	\$55	\$43	\$64	\$133	\$185	\$206	\$179	\$176	\$203	\$261	\$261	\$235	\$257	\$668	\$750	\$883	\$688	\$790	\$790	\$767	\$892
Commodity: 1-5 yr	35	103	205	707	235	297	233	198	209	209	208	144	164	197	179	202	198	191	219	283	278
Commodity: > 5 yrs	9	14	40	175	20	25	43	33	25	46	28	6	20	22	23	25	9	8	10	10	10
Equity: < 1 yr	127	197	273	321	341	473	409	312	296	427	627	645	996	1,743	1,842	2,296	2,449	2,715	2,725	2,687	3,084
Equity: 1-5 yr	249	674	736	1,428	221	297	256	228	191	210	262	291	352	628	677	733	864	958	972	995	844
Equity: > 5 yrs	25	84	140	383	45	70	72	82	85	94	82	136	101	130	123	113	139	143	149	148	136

Note: Figures above exclude foreign exchange contracts with an original maturity of 14 days or less, written options, basis swaps, and any other contracts not subject to risk-based capital requirements.
 Source: Call reports

Graph 14
Notional Amounts of Credit Derivative Contracts by Credit Quality and Maturity
Insured U.S. Commercial Banks and Savings Associations

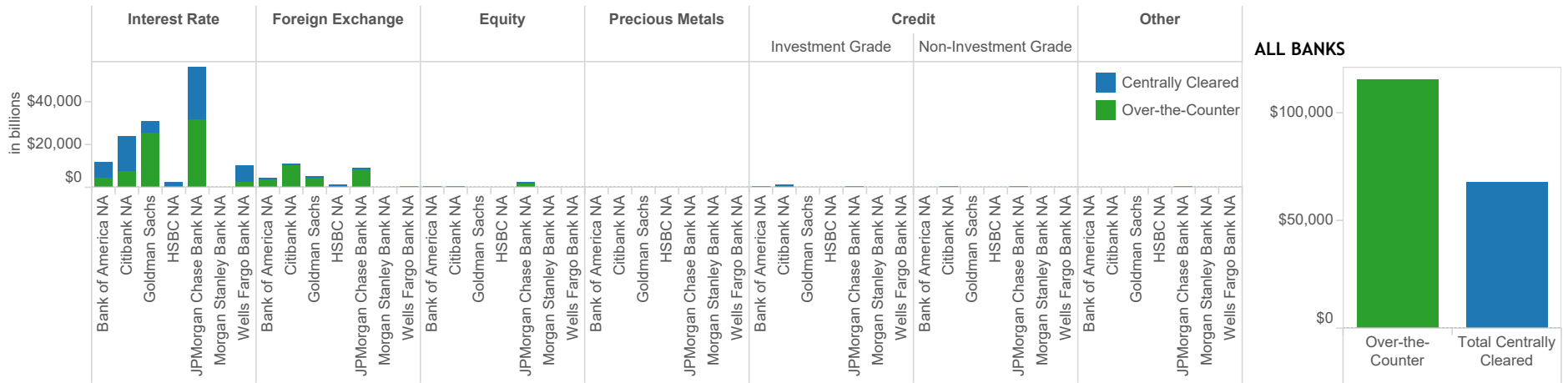


In billions of dollars

	2015				2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Investment-Grade: < 1yr	\$1,256	\$1,292	\$1,270	\$1,380	\$1,471	\$1,549	\$1,451	\$1,348	\$1,343	\$1,234	\$1,216	\$934	\$880	\$805	\$764	\$837	\$763	\$758	\$675	\$781
Investment-Grade: 1-5 yrs	4,649	4,450	4,108	3,328	3,400	3,101	2,765	2,170	2,072	2,073	2,085	1,897	1,839	1,995	1,988	2,173	1,976	2,083	2,084	2,018
Investment-Grade: > 5 yrs	508	359	520	281	457	262	385	214	309	195	345	186	331	184	338	204	367	189	330	198
Total Investment Grade	\$6,413	\$6,101	\$5,898	\$4,990	\$5,328	\$4,911	\$4,601	\$3,732	\$3,724	\$3,502	\$3,647	\$3,016	\$3,050	\$2,984	\$3,089	\$3,214	\$3,106	\$3,030	\$3,089	\$2,997
	2015				2016				2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sub-Investment-Grade: < 1yr	\$596	\$562	\$569	\$607	\$622	\$683	\$683	\$581	\$582	\$509	\$480	\$375	\$400	\$335	\$318	\$304	\$259	\$283	\$275	\$268
Sub-Investment-Grade: 1-5 yrs	1,813	1,673	1,518	1,271	1,313	1,159	1,122	869	838	830	814	718	763	791	801	691	661	701	708	624
Sub-Investment-Grade: > 5 yrs	194	152	213	119	155	101	157	111	159	93	149	77	133	69	133	61	119	60	111	56
Total Sub-Investment Grade	\$2,604	\$2,387	\$2,299	\$1,997	\$2,090	\$1,943	\$1,962	\$1,561	\$1,579	\$1,432	\$1,443	\$1,170	\$1,296	\$1,195	\$1,252	\$1,056	\$1,039	\$1,044	\$1,093	\$947

Note: Figures exclude FX contracts with an original maturity of 14 days or less, written options, basis swaps, and any other contracts not subject to risk-based capital requirements.
Source: Call reports

Graph 15
4Q 2019 Notional Amounts of Over-the-Counter and Centrally Cleared Derivative Contracts
Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

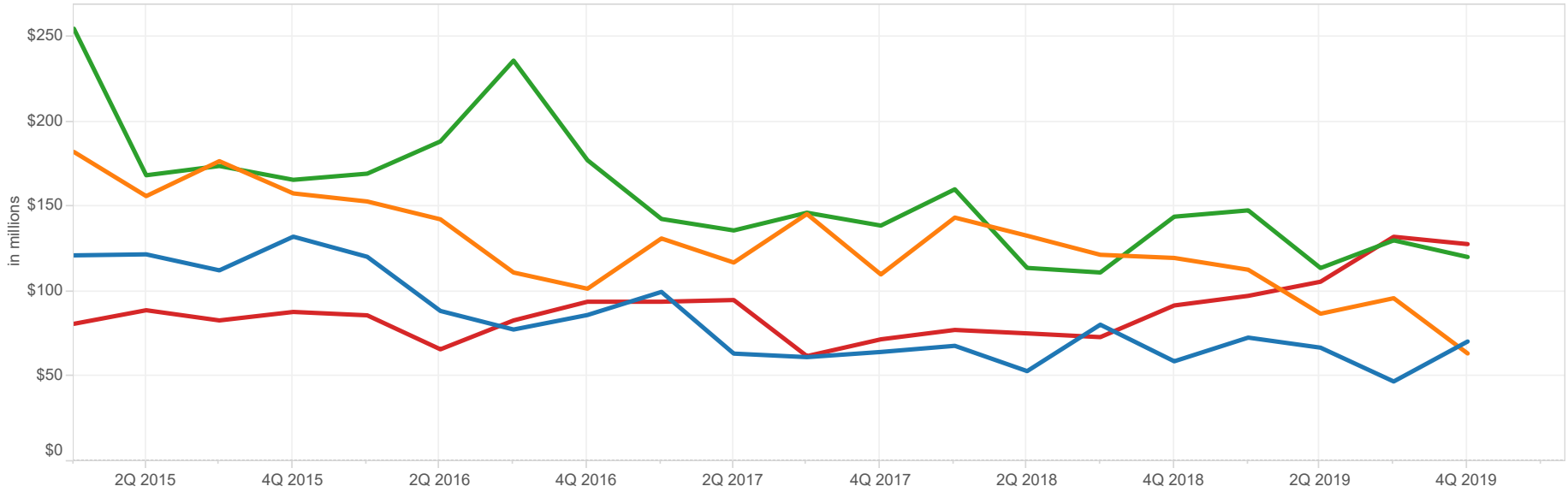
Bank Name	Interest Rate		Foreign Exchange		Equity		Precious Metals		Credit				Other		Total Centrally Cleared	Over-the-Counter	Total Notional
	Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter	Investment Grade		Non-Investment Grade		Centrally Cleared	Over-the-Counter			
									Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter					
JPMorgan Chase Bank NA	24,432	31,498	100	9,074	717	1,900	0	36	421	488	115	218	65	782	25,850	43,997	69,847
Citibank NA	16,002	7,843	275	10,737	61	496	2	7	229	1,250	49	303	67	98	16,686	20,734	37,420
Bank of America NA	6,995	4,660	74	4,264	188	405	0	0	154	202	51	114	0	30	7,462	9,675	17,137
Goldman Sachs	5,228	25,744	78	5,078	0	34	0	0	0	106	0	67	0	5	5,306	31,034	36,339
HSBC NA	2,216	680	43	1,440	0	88	0	8	2	15	6	25	0	2	2,267	2,258	4,525
Wells Fargo Bank NA	8,004	2,495	0	457	42	102	0	2	0	10	0	23	1	64	8,047	3,152	11,199
Morgan Stanley Bank NA	0	11	0	32	0	1	0	0	0	7	0	4	0	0	0	54	54
Grand Total	62,877	72,930	570	31,082	1,007	3,026	2	53	807	2,077	222	755	133	981	65,617	110,904	176,521
ALL OTHER	2,136	1,300	5	2,783	0	31	0	0	1	24	0	21	3	63	2,145	4,222	6,367
TOTAL	65,013	74,230	574	33,865	1,007	3,057	2	53	808	2,102	222	775	136	1,044	67,762	115,126	182,888

% of Total

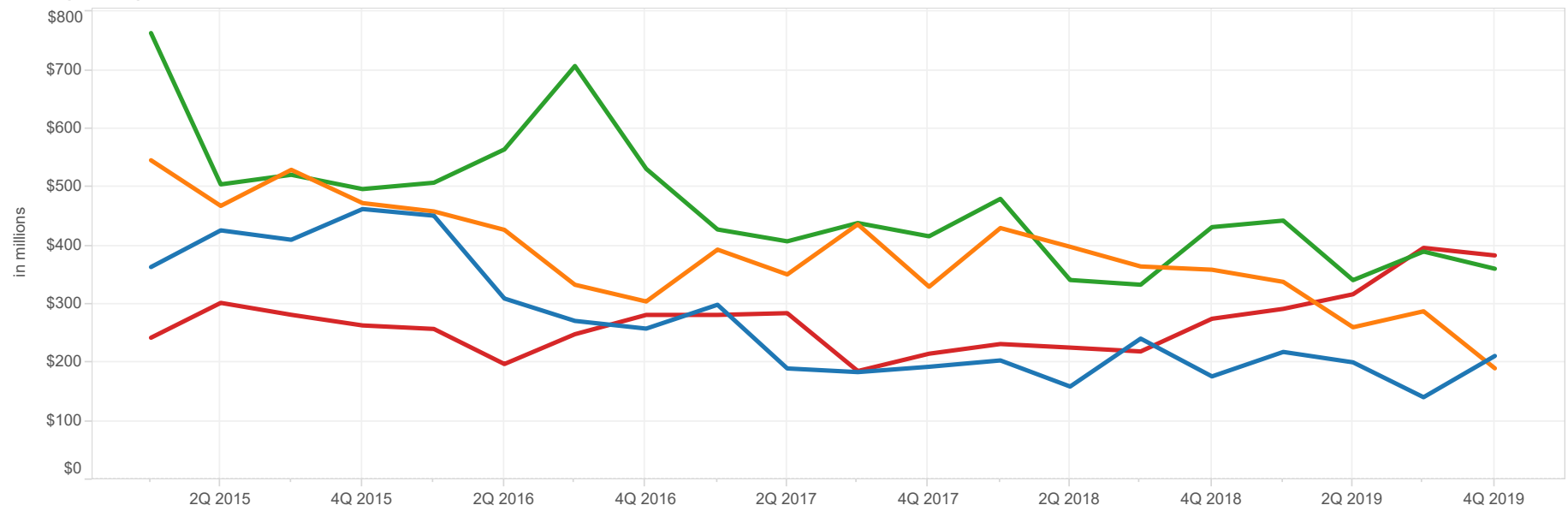
Bank Name	Interest Rate		Foreign Exchange		Equity		Precious Metals		Credit				Other		Total Centrally Cleared as a % of Total Notional	Total Over-the-Counter as a % of Total Notional
	Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter	Investment Grade		Non-Investment Grade		Centrally Cleared	Over-the-Counter		
									Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter				
JPMorgan Chase Bank NA	44%	56%	1%	99%	27%	73%	0%	100%	46%	54%	34%	66%	8%	92%	37%	63%
Citibank NA	67%	33%	2%	98%	11%	89%	18%	82%	16%	84%	14%	86%	41%	59%	45%	55%
Bank of America NA	60%	40%	2%	98%	32%	68%	0%	100%	43%	57%	31%	69%	0%	100%	44%	56%
Goldman Sachs	17%	83%	2%	98%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	15%	85%
HSBC NA	77%	23%	3%	97%	0%	100%	0%	100%	14%	86%	18%	82%	0%	100%	50%	50%
Wells Fargo Bank NA	76%	24%	0%	100%	29%	71%	0%	100%	2%	98%	1%	99%	2%	98%	72%	28%
Morgan Stanley Bank NA	1%	99%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%

Source: Call reports, Schedule RC-R

Graph 16
Average 60 Day VaR



VaR Capital Requirement



■ Bank of America, National Association
 ■ Citibank, N.A.
 ■ JPMorgan Chase Bank, National Association
 ■ Goldman Sachs Bank USA

Source: Market Risk Regulatory Report for Institutions Subject to the Market Risk Capital Rule—FFIEC 102

TABLE 1

**NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS
TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL FUTURES (EXCH TR)	TOTAL OPTIONS (EXCH TR)	TOTAL FORWARDS (OTC)	TOTAL SWAPS (OTC)	TOTAL OPTIONS (OTC)	TOTAL CREDIT DERIVATIVES (OTC)	SPOT FX
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	\$1,227,974	\$2,387,457	\$7,007,962	\$26,316,707	\$8,732,892	\$1,213,919	\$507,259
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	1,271,771	3,043,191	5,650,505	22,925,846	9,164,117	176,519	293,694
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	41,058,473	680,034	784,972	5,684,382	25,865,958	6,183,671	1,859,456	262,464
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	327,556	243,829	3,774,564	9,206,899	2,756,613	482,730	290,904
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,712,919	12,053,810	222,571	170,337	4,184,796	5,821,063	1,615,091	39,952	4,169
6	HSBC NA	1IE8VN30JCEQV1H4R804	172,888	4,729,973	154,307	5,656	1,035,387	2,954,930	489,644	90,049	67,060
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	242,148	2,375,073	5,408	0	2,315,299	24,780	29,586	0	65,326
8	BANK OF NEW YORK MELLON	HPFHU00Q28E4NONFVK49	311,387	1,131,136	23,462	0	288,308	796,225	22,976	165	60,538
9	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	486,004	576,977	19,340	1,250	85,238	327,785	132,998	10,366	620
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	397,703	448,491	4,174	1,005	23,904	377,187	31,375	10,845	541
11	NORTHERN TRUST CO	6PTKHDJ8HDF78PFWH30	135,885	304,357	0	0	288,251	15,546	560	0	7,994
12	TRUIST BANK	JJKC32MCHWDI71265Z06	461,256	294,906	2,600	21,386	28,154	177,761	54,885	10,120	323
13	TD BANK NATIONAL ASSN	03D0JEWDFUS0SEK89	320,472	235,109	0	0	2,346	232,237	526	0	0
14	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,194	224,138	2,979	0	120,141	96,721	4,154	142	371
15	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	165,742	196,659	3,304	0	13,196	162,229	15,472	2,458	97
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM00VDV0K75	328,999	187,452	3,299	0	5,167	172,449	1,107	5,430	263
17	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	42,074	148,002	1,070	307	137,891	6,588	2,139	7	0
18	REGIONS BANK	EQTW1K1G7ODGC2MGLV11	125,641	146,274	1,137	20	27,897	91,623	18,892	6,705	161
19	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	167,845	123,552	1,016	179	7,833	80,919	28,295	5,309	363
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	143,390	120,514	910	0	6,655	96,124	16,397	427	340
21	MANUFACTURERS&TRADERS TR CO	WWB2V0FCW3A0EE3ZJN75	119,432	108,797	0	0	2,457	87,585	18,755	0	147
22	MORGAN STANLEY BANK NA	G1MLHISON3213QPILB75	146,645	69,280	64	0	15,723	26,049	16,973	10,471	2,403
23	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	108,739	66,423	204	0	3,765	46,065	13,364	3,026	21
24	BBVA USA	C90VT034M03BN29IRA40	92,658	53,738	2,110	0	1,684	40,925	8,029	990	0
25	SANTANDER BANK N A	TR24TWEY5RVROQV65HD49	84,671	42,643	0	0	1,300	33,919	7,372	52	9
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$11,773,157	\$170,606,827	\$3,955,291	\$6,659,589	\$30,712,805	\$95,984,119	\$29,365,884	\$3,929,139	\$1,565,067
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			4,929,495	855,732	4,120	802	114,343	630,586	90,338	15,542	1,723
TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	3,959,411	6,660,391	30,827,148	96,614,705	29,456,222	3,944,681	1,566,791

Note: Credit derivatives have been included in the sum of total derivatives. Credit derivatives have been included as an "over the counter" category, although the call report does not differentiate by market currently.

Note: Before the first quarter of 1995 total derivatives included spot FX. Beginning in that quarter, spot FX has been reported separately.

Note: Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-L

TABLE 2

**NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS (HOLDING COMPANIES)
TOP 25 HOLDING COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	HOLDING COMPANY	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	FUTURES (EXCH TR)	OPTIONS (EXCH TR)	FORWARDS (OTC)	SWAPS (OTC)	OPTIONS (OTC)	CREDIT DERIVATIVES (OTC)	SPOT FX
1	JPMORGAN CHASE & CO.	7H6GLXDRUGQFU57RNE97	\$2,687,379	\$46,449,106	\$1,257,949	\$2,807,257	\$7,330,561	\$25,383,903	\$8,426,970	\$1,242,466	\$493,755
2	CITIGROUP INC.	E57ODZWZ7FF32TWEFA76	1,951,158	40,820,866	852,778	2,217,821	6,678,358	23,775,657	5,988,938	1,307,314	262,184
3	GOLDMAN SACHS GROUP, INC., THE	KD3XUN7C6T14HNAYLU02	992,996	39,556,430	1,818,430	4,073,443	4,562,222	18,072,157	9,925,903	1,104,275	204,885
4	MORGAN STANLEY	IGJSJL3JD5P30I6NJZ34	895,429	32,513,056	1,010,269	1,466,036	3,970,703	17,680,732	7,918,922	466,394	44,960
5	BANK OF AMERICA CORPORATION	B4TYDEB6GKMZO031MB27	2,434,079	30,395,057	1,388,730	1,264,145	5,674,619	17,089,164	4,183,820	794,579	195,524
6	WELLS FARGO & COMPANY	KB1H1DSPRFMYMCFXT09	1,927,555	12,364,212	232,356	198,279	4,635,443	5,648,843	1,611,646	37,645	4,169
7	HSBC NORTH AMERICA HOLDINGS INC.	213800JCL1FHBQK3M654	249,096	6,943,568	398,657	505,574	1,035,676	4,416,629	496,983	90,049	67,060
8	MIZUHO AMERICAS LLC		43,947	6,455,222	15,996	7,693	596,707	5,698,040	132,717	4,069	7,047
9	SMBC AMERICAS HOLDINGS, INC.		22,850	4,739,350	123,814	1,392,635	906,970	1,537,306	777,316	1,309	1,517
10	STATE STREET CORPORATION	571474TGEMMWANRLN572	245,610	2,366,848	5,408	0	2,315,299	16,555	29,586	0	65,326
11	BANK OF NEW YORK MELLON CORPORATION, THE	HPFHU00Q28E4NONFVK49	381,508	1,135,286	24,352	140	313,005	774,648	22,976	165	60,574
12	BARCLAYS US LLC	213800H14XVWV870I72	149,420	607,814	9,889	286,733	245,527	17,958	0	47,707	1
13	U.S. BANCORP	6BYL5QZYBDK8S7L73M02	495,426	591,790	19,340	1,250	83,993	343,842	132,998	10,367	620
14	PNC FINANCIAL SERVICES GROUP, INC., THE	AD6GFRVSDT01YPT1CS68	410,373	442,838	4,189	1,005	27,624	367,800	31,375	10,845	541
15	RBC US GROUP HOLDINGS LLC		139,634	434,718	104,432	167,926	2,256	159,127	565	413	164
16	CREDIT SUISSE HOLDINGS (USA), INC.	549300YHT5NGRKJD1R94	114,766	332,667	7,055	2,730	158,177	90,214	6,728	67,763	102
17	TRUIST FINANCIAL CORPORATION	JJKC32MCHWDI71265Z06	473,078	315,548	2,600	21,386	36,061	190,498	54,883	10,120	323
18	NORTHERN TRUST CORPORATION	6PTKHDJ8HDUF78PFWH30	136,828	302,607	0	0	288,251	13,796	560	0	7,994
19	TD GROUP US HOLDINGS LLC	03D0JEWDFDFUS0SEK89	408,605	300,263	49,025	0	11,201	239,511	526	0	0
20	CAPITAL ONE FINANCIAL CORPORATION	ZUE8T73ROZOF6FLBAR73	390,365	255,283	3,299	0	14,153	231,295	1,107	5,430	263
21	MUFG AMERICAS HOLDINGS CORPORATION	OX3PU53ZLPQKJ4700D47	170,810	241,073	5,051	465	134,444	96,817	4,154	142	371
22	CITIZENS FINANCIAL GROUP, INC.	DRMSV1Q0EKMEXLAU1P80	166,090	196,659	3,304	0	13,196	162,229	15,472	2,458	97
23	BOK FINANCIAL CORPORATION	FU7RSW4CQQY98A2O7J66	42,324	148,166	1,234	307	137,891	6,588	2,139	7	0
24	REGIONS FINANCIAL CORPORATION	EQTWLNK1G7ODGC2MGLV11	126,633	143,924	1,137	20	27,897	89,273	18,892	6,705	161
25	KEYCORP	RKPI3RZGV1V1FJTH5T61	145,570	126,077	910	0	8,033	99,347	17,384	402	340
TOP 25 HOLDING COMPANIES WITH DERIVATIVES			\$15,201,528	\$228,178,427	\$7,340,204	\$14,414,844	\$39,208,266	\$122,201,928	\$39,802,561	\$5,210,624	\$1,417,978

Note: Currently, the Y-9 report does not differentiate credit derivati

Note: Before to the first quarter of 2005, total derivatives included spot FX. Beginning in that quarter, spot FX has been reported separately.

Note: Numbers may not add up to total due to rounding.

Source: Consolidated Financial Statements for Bank Holding Companies, FR Y- 9, Schedule HC-L

TABLE 3

DISTRIBUTION OF DERIVATIVE CONTRACTS
TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	PERCENT EXCH TRADED CONTRACTS	PERCENT OTC CONTRACTS	PERCENT INT RATE CONTRACTS	PERCENT FOREIGN EXCH CONTRACTS	PERCENT EQUITY CONTRACTS	PERCENT OTHER CONTRACTS	PERCENT CREDIT DERIVATIVES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	(%)	(%)	(%)	(%)	(%)	(%)	(%)
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	7.7	92.3	70.0	21.7	3.8	1.9	2.6
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	41,058,473	10.2	89.8	87.0	12.5	0.1	0.0	0.4
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	3.6	96.4	63.5	28.8	2.3	0.9	4.5
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,712,919	12,053,810	3.4	96.6	67.7	25.8	3.5	0.2	2.9
6	HSBC NA	11E8VN30JCEQV1H4R804	172,888	4,729,973	3.3	96.7	93.0	3.7	2.3	0.7	0.3
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	242,148	2,375,073	3.4	96.6	64.5	30.7	1.9	1.0	1.9
8	BANK OF NEW YORK MELLON	HPFHU00Q28E4NONFVK49	311,387	1,131,136	0.2	99.8	1.2	97.7	0.0	1.1	0.0
9	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	486,004	576,977	2.1	97.9	28.9	70.8	0.3	0.0	0.0
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	397,703	448,491	3.6	96.4	84.5	13.4	0.0	0.3	1.8
11	NORTHERN TRUST CO	6PTKHDJ8HDFU78PFWH30	135,885	304,357	1.2	98.8	89.5	4.6	1.4	2.1	2.4
12	TRUIST BANK	JJJC32MCHWDI71265Z06	461,256	294,906	0.0	100.0	5.1	94.7	0.2	0.0	0.0
13	TD BANK NATIONAL ASSN	03D0JEWDFUS0SEEKG89	320,472	235,109	8.1	91.9	78.3	4.3	13.0	0.9	3.4
14	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,194	224,138	0.0	100.0	98.2	1.8	0.0	0.0	0.0
15	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	165,742	196,659	1.3	98.7	95.0	4.8	0.1	0.0	0.1
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDVOK75	328,999	187,452	1.7	98.3	91.0	7.7	0.0	0.0	1.2
17	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	42,074	148,002	1.8	98.2	87.4	2.4	0.0	7.3	2.9
18	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	125,641	146,274	0.9	99.1	96.7	0.3	0.1	2.9	0.0
19	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	167,845	123,552	0.8	99.2	93.0	1.4	0.0	1.1	4.6
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	143,390	120,514	1.0	99.0	75.0	11.3	2.5	6.9	4.3
21	MANUFACTURERS&TRADERS TR CO	WWB2V0FCW3A0EE3ZJN75	119,432	108,797	0.8	99.2	89.8	5.5	0.0	4.4	0.4
22	MORGAN STANLEY BANK NA	G1MLHISON32I3QPILB75	146,645	69,280	0.0	100.0	99.2	0.8	0.0	0.0	0.0
23	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	108,739	66,423	0.1	99.9	23.2	60.3	1.4	0.0	15.1
24	BBVA USA	C90VT034M03BN29IRA40	92,658	53,738	0.3	99.7	87.1	3.3	0.6	4.5	4.6
25	SANTANDER BANK N A	TR24TWEY5RVRQV65HD49	84,671	42,643	3.9	96.1	94.7	2.7	0.8	0.0	1.8
					0.0	100.0	93.4	5.9	0.6	0.0	0.1
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$11,773,157	\$170,606,827	\$10,614,879	\$159,991,947	\$124,273,982	\$37,121,899	\$3,793,094	\$1,488,714	\$3,929,139
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			4,929,495	855,732	4,923	850,809	782,482	48,182	3,012	6,514	15,542
TOTAL FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	10,619,802	160,842,756	125,056,464	37,170,080	3,796,106	1,495,227	3,944,681
				(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
TOP 25 COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES				99.5	6.2	93.3	72.5	21.7	2.2	0.9	2.3
OTHER COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES				0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
TOTAL FOR COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES				100.0	6.2	93.8	72.9	21.7	2.2	0.9	2.3
<p>Note: Currently, the call report does not differentiate credit derivatives by over the counter or exchange traded. Credit derivatives have been included in the "over the counter" category as well as in the sum of total derivatives here.</p> <p>Note: "FX" does not include spot FX.</p> <p>Note: "Other" is defined as the sum of commodity and equity contracts.</p> <p>Note: Numbers may not add up to total due to rounding.</p> <p>Source: Call reports, Schedule RC-L</p>											

TABLE 4

CREDIT EQUIVALENT EXPOSURES
TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL RISK-BASED CAPITAL	BILATERALLY NETTED CURRENT CREDIT EXPOSURE		TOTAL CREDIT EXPOSURE FROM ALL CONTRACTS		TOTAL CREDIT EXPOSURE TO CAPITAL (%)
						POTENTIAL FUTURE EXPOSURE	TOTAL CREDIT EXPOSURE			
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	\$224,390	\$142,491	\$201,790	\$344,281	153	
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	34,469	58,903	59,526	118,429	344	
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	41,058,473	157,324	63,318	131,291	194,609	124	
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	166,567	41,234	52,067	93,301	56	
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,712,919	12,053,810	158,615	15,992	24,589	40,581	26	
6	HSBC NA	1IE8VN30JCEQV1H4R804	172,888	4,729,973	22,724	6,071	18,616	24,687	109	
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	242,148	2,375,073	17,947	7,353	8,062	15,415	86	
8	BANK OF NEW YORK MELLON	HPFHU00Q28E4NONFVK49	311,387	1,131,136	19,396	4,528	5,788	10,316	53	
9	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	486,004	576,977	46,994	2,540	7,079	9,619	20	
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	397,703	448,491	39,074	4,075	511	4,586	12	
11	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	135,885	304,357	9,610	2,194	2,522	4,716	49	
12	TRUIST BANK	JJKC32MCHWDI71265Z06	461,256	294,906	43,984	2,235	3,621	5,856	13	
13	TD BANK NATIONAL ASSN	03D0JEWDFUS0SEEK89	320,472	235,109	28,505	157	1,084	1,241	4	
14	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,194	224,138	14,746	1,057	506	1,563	11	
15	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	165,742	196,659	17,938	961	1,420	2,381	13	
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	328,999	187,452	30,852	1,829	3,610	5,439	18	
17	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	42,074	148,002	3,692	8	9	18	0	
18	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	125,641	146,274	13,621	557	635	1,192	9	
19	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	167,845	123,552	18,968	1,285	2,034	3,319	17	
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	143,390	120,514	16,313	962	1,212	2,174	13	
21	MANUFACTURERS&TRADERS TR CO	WWB2V0FCW3A0EE3ZJN75	119,432	108,797	12,343	421	181	602	5	
22	MORGAN STANLEY BANK NA	G1MLHISON32I3QPILB75	146,645	69,280	16,282	141	1,936	2,077	13	
23	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	108,739	66,423	11,864	788	844	1,632	14	
24	BBVA USA	C90VT034M03BN29IRA40	92,658	53,738	9,549	354	167	521	5	
25	SANTANDER BANK N A	TR24TWEY5RVROV65HD49	84,671	42,643	10,844	475	329	804	7	
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$11,773,157	\$170,606,827	\$1,146,613	\$359,929	\$529,429	\$889,358	78	
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			4,929,495	855,732	521,514	7,636	6,795	14,431	3	
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	1,668,126	367,565	536,224	903,789	54	

Note: Total credit exposure is defined as the credit equivalent amount from derivative contracts (RC-R column B lines 20 and 21), which is the sum of netted current credit exposure and PFE.

Note: The total credit exposure to capital ratio is calculated using risk based capital (tier 1 plus tier 2 capital).

Note: Currently, the call report does not differentiate credit derivatives by contract type. Credit derivatives have been included in the sum of total derivatives here.

Note: Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-R.

TABLE 5

**NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS HELD FOR TRADING
TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL HELD FOR TRADING & MTM	% HELD FOR TRADING & MTM	TOTAL NOT FOR TRADING MTM	% NOT FOR TRADING MTM
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	\$45,210,117	99.0	\$462,875	1.0
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	42,028,668	99.9	26,762	0.1
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	41,058,473	39,088,143	99.7	110,874	0.3
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	15,760,452	96.6	549,009	3.4
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$5,873,463	\$146,969,524	\$142,087,380	99.2	\$1,149,520	0.8
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			10,829,189	24,493,035	22,353,483	92.1	1,927,495	7.9
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	164,440,863	98.2	3,077,015	1.8

Note: Currently, the call report does not differentiate between traded and not-traded credit derivatives. Credit derivatives have been excluded from the sum of total derivatives here.

Note: Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-L

TABLE 6

**GROSS FAIR VALUES OF DERIVATIVE CONTRACTS
TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TRADING		NOT FOR TRADING		CREDIT DERIVATIVES	
					GROSS POSITIVE FAIR VALUE*	GROSS NEGATIVE FAIR VALUE**	GROSS POSITIVE FAIR VALUE*	GROSS NEGATIVE FAIR VALUE**	GROSS POSITIVE FAIR VALUE*	GROSS NEGATIVE FAIR VALUE**
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	\$554,260	\$538,029	\$1,807	\$1,680	\$14,545	\$14,751
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	613,275	604,034	309	288	4,210	4,799
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32WEFA76	1,453,998	41,058,473	394,430	391,014	1,385	1,368	21,875	22,109
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	164,091	154,657	13,329	18,086	5,088	5,117
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$5,873,463	\$146,969,524	\$1,726,056	\$1,687,734	\$16,830	\$21,422	\$45,718	\$46,776
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			10,829,189	24,493,035	125,493	119,516	9,594	9,852	1,675	1,662
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	1,851,549	1,807,250	26,424	31,274	47,393	48,438

Note: Currently, the call report does not differentiate between traded and non-traded credit derivatives. Credit derivatives have been included in the sum of total derivatives here. Numbers may not sum due to rounding.

*Market value of contracts that have a positive fair value as of the end of the quarter.

**Market value of contracts that have a negative fair value as of the end of the quarter.

Source: Call reports, Schedule RC-L

TABLE 7

TRADING REVENUES FROM CASH INSTRUMENTS AND DERIVATIVES
TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS
NOTE: REVENUE FIGURES ARE FOR THE QUARTER (NOT YEAR-TO-DATE)

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL TRADING REV FROM CASH & OFF BAL SHEET POSITIONS	TRADING REV FROM INT RATE POSITIONS	TRADING REV FROM FOREIGN EXCH POSITIONS	TRADING REV FROM EQUITY POSITIONS	TRADING REV FROM COMMOD & OTH POSITIONS	TRADING REV FROM CREDIT POSITIONS
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	\$3,752	\$702	\$670	\$1,892	\$211	\$277
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	511	2,021	(1,413)	(270)	0	173
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32WEFA76	1,453,998	41,058,473	1,009	1,270	455	(430)	13	(299)
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	746	45	349	255	122	(25)
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$5,873,463	\$146,969,524	\$6,018	\$4,038	\$61	\$1,447	\$346	\$126
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			10,829,189	24,493,035	1,176	433	601	(20)	254	(92)
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	7,194	4,471	662	1,427	600	34

Note: Effective in the first quarter of 2007, trading revenues from credit exposures are reported separately, along with the four other types of exposures. The total derivatives column includes credit exposures.

Note: Trading revenue is defined here as "trading revenue from cash instruments and off-balance-sheet derivative instruments."

Note: Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RI

TABLE 8

**NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS BY CONTRACT TYPE AND MATURITY (INTEREST RATE, FX AND GOLD)
TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	INT RATE MATURITY < 1 YR	INT RATE MATURITY 1 - 5 YRS	INT RATE MATURITY > 5 YRS	INT RATE ALL MATURITIES	FX and GOLD MATURITY < 1 YR	FX and GOLD MATURITY 1 - 5 YRS	FX and GOLD MATURITY > 5 YRS	FX and GOLD ALL MATURITIES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGOFU57RNE97	\$2,337,646	\$46,886,911	\$30,896,129	\$15,974,515	\$9,059,866	\$55,930,510	\$6,172,516	\$1,989,696	\$1,012,160	\$9,174,372
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	17,676,898	6,908,441	6,386,395	30,971,734	3,871,337	702,466	581,285	5,155,088
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32WEFA76	1,453,998	41,058,473	17,471,334	3,388,639	2,985,578	23,845,551	10,231,599	579,257	201,235	11,012,091
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	4,941,721	4,174,290	2,538,481	11,654,492	3,670,946	455,213	211,755	4,337,914
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$5,873,463	\$146,969,524	\$70,986,082	\$30,445,885	\$20,970,320	\$122,402,287	\$23,946,398	\$3,726,632	\$2,006,435	\$29,679,465
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			10,829,189	24,493,035	8,176,324	5,376,182	3,288,833	16,841,338	4,294,673	325,719	139,807	4,760,199
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	79,162,406	35,822,067	24,259,153	139,243,625	28,241,071	4,052,351	2,146,242	34,439,664

Note: Figures above exclude any contracts not subject to risk-based capital requirements, such as FX contracts with an original maturity of 14 days or less, futures contracts, written options, and basis swaps. Therefore, the total notional amount of derivatives by maturity will not add to the total derivatives figure in this table.

Note: Numbers may not add up to total due to rounding.

Note: Effective 2015 Q1, the reporting form and call report instructions changed. Schedule RC-R now requires banks to report FX and gold notional amounts in aggregate, rather than separately.

Source: Call reports, Schedule RC-R

TABLE 9

**NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS BY CONTRACT TYPE & MATURITY (PRECIOUS METALS)
TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	PREC METALS MATURITY < 1 YR	PREC METALS MATURITY 1 - 5 YRS	PREC METALS MATURITY > 5 YRS	PREC METALS ALL MATURITIES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	\$35,479	\$812	\$0	\$36,291
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	0	0	0	0
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	41,058,473	8,081	390	0	8,471
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	0	148	0	148
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$5,873,463	\$146,969,524	\$43,560	\$1,350	\$0	\$44,910
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			10,829,189	24,493,035	9,023	715	0	9,738
TOTAL FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	52,583	2,065	0	54,648

Note: Figures above exclude any contracts not subject to risk-based capital requirements, such as FX contracts with an original maturity of 14 days or less, futures contracts, written options, and basis swaps. Therefore, the total notional amount of derivatives by maturity will not add to the total derivatives figure in this table.

Note: Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-R

TABLE 10

**NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS BY CONTRACT TYPE AND MATURITY (OTHER COMMODITY AND EQUITY)
TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	OTHER COMM MATURITY < 1 YR	OTHER COMM MATURITY 1 - 5 YRS	OTHER COMM MATURITY > 5 YRS	OTHER COMM ALL MATURITIES	EQUITY MATURITY < 1 YR	EQUITY MATURITY 1 - 5 YRS	EQUITY MATURITY > 5 YRS	EQUITY ALL MATURITIES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,337,646	\$46,886,911	\$708,902	\$132,016	\$5,422	\$846,340	\$1,992,161	\$524,724	\$100,216	\$2,617,101
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	3,206	1,687	0	4,893	19,449	13,054	1,768	34,271
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	41,058,473	113,962	48,029	3,752	165,743	418,965	121,868	15,788	556,621
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	15,863	14,601	35	30,499	495,480	91,211	5,910	592,601
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$5,873,463	\$146,969,524	\$841,933	\$196,333	\$9,209	\$1,047,475	\$2,926,055	\$750,857	\$123,682	\$3,800,594
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			10,829,189	24,493,035	50,252	81,608	536	132,396	157,939	93,195	12,467	263,602
TOTAL FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	892,185	277,941	9,745	1,179,871	3,083,994	844,052	136,149	4,064,196

Note: Figures above exclude any contracts not subject to risk-based capital requirements, such as FX contracts with an original maturity of 14 days or less, futures contracts, written options, and basis swaps.

Therefore, the total notional amount of derivatives by maturity will not add to the total derivatives figure in this table.

Note: Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-R

TABLE 11

**NOTIONAL AMOUNTS OF CREDIT DERIVATIVE CONTRACTS BY CONTRACT TYPE AND MATURITY (INVESTMENT GRADE AND SUB-INVESTMENT GRADE)
TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL CREDIT DERIVATIVES	CREDIT DERIVATIVES INVESTMENT GRADE				CREDIT DERIVATIVES SUB-INVESTMENT GRADE			
						MATURITY < 1 YR	MATURITY 1 - 5 YRS	MATURITY > 5 YRS	ALL MATURITIES	MATURITY < 1 YR	MATURITY 1 - 5 YRS	MATURITY > 5 YRS	ALL MATURITIES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGOFU57RNE97	\$2,337,646	\$46,886,911	\$1,213,919	\$240,017	\$624,208	\$73,856	\$938,081	\$85,906	\$178,093	\$11,839	\$275,838
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,231,949	176,519	18,600	73,512	13,804	105,916	10,363	47,169	13,071	70,603
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	41,058,473	1,859,456	341,663	1,090,623	72,002	1,504,288	99,500	249,135	6,533	355,168
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,852,983	16,792,191	482,730	159,899	166,625	22,842	349,366	56,535	67,845	8,984	133,364
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$5,873,463	\$146,969,524	\$3,732,624	\$760,179	\$1,954,968	\$182,504	\$2,897,651	\$252,304	\$542,242	\$40,427	\$834,973
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			10,829,189	24,493,035	212,057	20,754	63,167	15,642	99,562	15,489	81,471	15,534	112,494
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	171,462,559	3,944,681	780,933	2,018,135	198,146	2,997,213	267,793	623,713	55,961	947,467

Note: Figures above exclude any contracts not subject to risk-based capital requirements, such as FX contracts with an original maturity of 14 days or less, futures contracts, written options, and basis swaps.

Therefore, the total notional amount of derivatives by maturity will not add to the total derivatives figure in this table.

Note: Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-L and RC-R

TABLE 12

**DISTRIBUTION OF CREDIT DERIVATIVE CONTRACTS HELD FOR TRADING
TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS**

RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL CREDIT DERIVATIVES	TOTAL CREDIT DERIVATIVES				SOLD					
						PURCHASED	SOLD	CREDIT DEFAULT SWAPS	TOTAL RETURN SWAPS	CREDIT OPTIONS	OTHER CREDIT DERIVATIVES	CREDIT DEFAULT SWAPS	TOTAL RETURN SWAPS	CREDIT OPTIONS	OTHER CREDIT DERIVATIVES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGOFU57RNE97	\$2,337,646	\$45,672,992	\$1,213,919	\$620,876	\$593,043	\$560,406	\$24,224	\$31,929	\$4,317	\$547,953	\$8,810	\$36,232	\$48
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	228,836	42,055,430	176,519	99,538	76,981	90,812	2,535	6,001	190	71,165	2,535	3,137	144
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,453,998	39,199,017	1,859,456	968,246	891,210	887,103	16,250	64,893	0	840,829	5,635	44,746	0
4	BANK OF AMERICA NA	B4TYDEB6GKMZ0031MB27	1,852,983	16,309,461	482,730	245,504	237,226	187,044	10,776	47,684	0	173,443	14,778	49,005	0
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCFXT09	1,712,919	12,013,858	39,952	26,163	13,789	5,245	0	1,300	19,618	4,156	0	0	9,633
6	HSBC NA	11E8VN30JCEQV1H4R804	172,888	4,639,924	90,049	51,310	38,739	40,749	10,561	0	0	37,475	1,264	0	0
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	242,148	2,375,073	0	0	0	0	0	0	0	0	0	0	0
8	BANK OF NEW YORK MELLON	HPFHU00Q28E4N0NFVK49	311,387	1,130,971	165	165	0	165	0	0	0	0	0	0	0
9	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	486,004	566,611	10,366	3,540	6,827	1,038	0	0	2,502	0	0	0	6,827
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	397,703	437,645	10,845	3,239	7,606	0	0	0	3,239	0	0	0	7,606
11	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFVH30	135,885	304,357	0	0	0	0	0	0	0	0	0	0	0
12	TRUIST BANK	JJKC32MCHWDI71265Z06	461,256	284,786	10,120	4,861	5,259	894	2,531	0	1,436	0	0	0	5,259
13	TD BANK NATIONAL ASSN	03D0JEWDFUS0SEEK89	320,472	235,109	0	0	0	0	0	0	0	0	0	0	0
14	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,194	223,995	142	142	0	142	0	0	0	0	0	0	0
15	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	165,742	194,201	2,458	0	2,458	0	0	0	0	0	0	0	2,458
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM00VDV0K75	328,999	182,022	5,430	1,981	3,449	0	0	0	1,981	0	0	0	3,449
17	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	42,074	147,995	7	1	6	1	0	0	0	6	0	0	0
18	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	125,641	139,569	6,705	2,442	4,263	43	0	0	2,399	43	0	0	4,220
19	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	167,845	118,243	5,309	1,365	3,944	0	0	0	1,365	0	0	0	3,944
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	143,390	120,087	427	175	252	175	0	0	0	159	93	0	0
21	MANUFACTURERS&TRADERS TR CO	WWW2V0FCW3A0EE3ZJN75	119,432	108,797	0	0	0	0	0	0	0	0	0	0	0
22	MORGAN STANLEY BANK NA	G1MLHISON32I3QPILB75	146,645	58,809	10,471	9,808	663	8,159	0	1,649	0	663	0	0	0
23	HUNTINGTON NATIONAL BANK	2WHM8VNH63UN14OL754	108,739	63,397	3,026	2,156	870	0	0	0	2,156	0	0	0	870
24	BBVA USA	C90VT034M03BN29IRA40	92,658	52,748	990	7	982	7	0	0	0	982	0	0	0
25	SANTANDER BANK N A	TR24TWEY5RVQRQV65HD49	84,671	42,590	52	4	48	4	0	0	0	48	0	0	0
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$11,773,157	\$166,677,688	\$3,929,139	\$2,041,524	\$1,887,615	\$1,781,987	\$66,877	\$153,456	\$39,203	\$1,676,923	\$33,115	\$133,120	\$44,457
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			4,929,495	840,190	15,542	7,914	7,628	175	3,603	0	4,136	723	2	0	6,903
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			16,702,652	167,517,878	3,944,681	2,049,437	1,895,243	1,782,163	70,480	153,456	43,338	1,677,647	33,116	133,120	51,360
					(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
TOP 25 COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES					99.6	51.8	47.9	45.2	1.7	3.9	1.0	42.5	0.8	3.4	1.1
OTHER COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES					0.4	0.2	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.2
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES					100.0	52.0	48.0	45.2	1.8	3.9	1.1	42.5	0.8	3.4	1.3

Note: Credit derivatives have been excluded from the sum of total derivatives here.
 Note: Numbers may not add up to total due to rounding.
 Source: Call reports, Schedule RC-L

TABLE 13

DERIVATIVES DATA REPORTED BY FFIEC 051 FILERS*
COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES
DECEMBER 31, 2019, MILLIONS OF DOLLARS

Call Report Schedule SU												
A. Gross Notional Amount of Derivatives	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17
Total gross notional amount of interest rate derivatives held for trading	\$2,293	\$2,526	\$913	\$1,131	\$623	\$751	\$736	\$684	\$542	\$729	\$749	\$655
Total gross notional amount of all other derivatives held for trading	\$33	\$30	\$37	\$24	\$2	\$2	\$5	\$7	\$5	\$5	\$6	\$2
Total gross notional amount of interest rate derivatives not held for trading	\$20,044	\$18,527	\$11,135	\$9,020	\$8,432	\$6,893	\$7,642	\$8,483	\$6,092	\$7,731	\$8,259	\$7,154
Total gross notional amount of all other derivatives not held for trading	\$631	\$546	\$273	\$242	\$160	\$2,754	\$3,133	\$531	\$86	\$89	\$89	\$80

Call Report Schedule RC-R**												
A. Notional principal amounts of over-the-counter derivative contracts covered by the regulatory capital rules:												
a. Interest rate	\$12,435		\$7,177	\$5,858	\$4,147	\$4,459	\$4,584	\$4,471	\$3,847	\$4,657	\$5,024	\$4,758
b. Foreign exchange rate and gold	\$18		\$4	\$5	\$3	\$4	\$5	\$429	\$0	\$0	\$0	\$0
c. Credit (investment grade reference asset)	\$166		\$39	\$41	\$35	\$17	\$14	\$14	\$13	\$14	\$8	\$4
d. Credit (non-investment grade reference asset)	\$61		\$25	\$25	\$12	\$12	\$12	\$11	\$11	\$11	\$11	\$11
e. Equity	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
g. Other	\$9		\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5
f. Precious metals (except gold)	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
B. Notional principal amounts of centrally cleared derivative contracts covered by the regulatory capital rules:												
a. Interest rate	\$161		\$168	\$686	\$1,937	\$2,731	\$3,169	\$129	\$249	\$343	\$178	\$158
b. Foreign exchange rate and gold	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
c. Credit (investment grade reference asset)	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4
d. Credit (non-investment grade reference asset)	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
e. Equity	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
f. Precious metals (except gold)	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
g. Other	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
C. Current credit exposure across all derivative contracts covered by the regulatory capital rules	\$140		\$95	\$59	\$49	\$76	\$119	\$62	\$44	\$57	\$49	\$39

Source: Call reports, Schedule SU and Schedule RC-R

*Beginning September 30, 2019, the eligibility to file the FFIEC 051 Call Report expanded from banks with total assets less than \$1 billion to include banks with less than \$5 billion in total assets.

**Beginning September 30, 2019, banks filing the FFIEC 051 Call Report complete this information from schedule RC-R in the June and December reports only.