

Quarterly Report on Bank Trading and Derivatives Activities

Third Quarter 2021

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

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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 1,357 insured U.S. national and state commercial banks and savings associations reported trading and derivatives activities at the end of the third quarter of 2021.¹ A small group of large financial institutions continues to dominate trading and derivatives activity in the U.S. commercial banking system. During the third quarter of 2021, four large commercial banks represented 89.3 percent of the total banking industry notional amounts and 78.1 percent of industry net current credit exposure (NCCE).

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.

OCC activities also include assessing London Interbank Offered Rate (LIBOR) exposures in supervised banks and their progress toward an orderly transition away from LIBOR. The OCC and the other federal financial institution regulatory agencies issued a joint statement in October 2021 to emphasize the expectation that supervised institutions with LIBOR exposure continue to progress toward an orderly transition away from LIBOR. Refer to OCC Bulletin 2021-48, "LIBOR Transition: Joint Statement on Managing the LIBOR Transition." Given LIBOR's cessation, the agencies have stated that entering into new contracts, including derivatives, that use LIBOR as a reference rate after December 31, 2021, would create safety and soundness risks, including litigation, operational, and consumer protection risks. In addition, in OCC Bulletin 2021-46, "LIBOR Transition: Updated Self-Assessment Tool for Banks," the OCC provides a tool for banks to evaluate their preparedness for the LIBOR cessation.

This is the 104th 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 QuarterlyDerivatives@occ.treas.gov.

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 25 in the appendix.

Executive Summary

- Insured U.S. commercial banks and savings associations (collectively, banks) reported trading revenue of \$6.8 billion in the third quarter of 2021, \$1.3 billion less (15.5 percent) than in the previous quarter and \$80.0 million less (1.2 percent) than a year earlier (see table 1).
- Credit exposure from derivatives increased in the third quarter of 2021 compared with the second quarter of 2021. NCCE increased \$12.0 billion, or 2.6 percent, to \$453.0 billion (see table 5).
- Derivative notional amounts increased in the third quarter of 2021 by \$978.0 billion, or 0.5 percent, to \$184.5 trillion (see table 10).
- Derivative contracts remained concentrated in interest rate products, which totaled \$131.8 trillion or 71.4 percent of total derivative notional amounts (see table 10).

Revenue

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

Insured U.S. commercial banks and savings associations reported \$6.8 billion in trading revenue in the third quarter of 2021, \$1.3 billion less (15.5 percent) than in the previous quarter and \$80.0 million less (1.2 percent) than a year earlier (see table 1). The quarter-over-quarter decrease in trading revenue was primarily due to a decrease in revenue from interest rate trading instruments. For a historical view of quarterly bank trading revenue by instrument, see figure 15a in the appendix.

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

	3Q 2021	2Q 2021	Q/Q Change	Q/Q % Change	3Q 2020	Y/Y Change	Y/Y % Change
Interest Rate	-\$330	\$3,369	-\$3,698	-109.8%	\$2,821	-\$3,151	-111.7%
Foreign Exchange	\$3,998	\$1,547	\$2,452	158.5%	\$1,942	\$2,056	105.9%
Equity	\$1,729	\$2,384	-\$655	-27.5%	\$750	\$979	130.6%
Commodity & Other	\$531	\$549	-\$19	-3.4%	\$1,226	-\$695	-56.7%
Credit	\$884	\$217	\$667	306.8%	\$154	\$730	473.4%
Total Trading Revenue	\$6,813	\$8,066	-\$1,253	-15.5%	\$6,893	-\$80	-1.2%

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 \$14.2 billion in the third quarter of 2021 was \$9.3 billion (39.7 percent) lower than in the previous quarter. The quarter-over-quarter decrease in trading revenue was primarily due to decreases in revenue from interest rate and equity trading

instruments. Year-over-year holding company trading revenue decreased by \$2.4 billion (14.6 percent). For a historical view of quarterly holding company trading revenue by instrument, see figure 15b in the appendix.

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

	3Q 2021	2Q 2021	Q/Q Change	Q/Q % Change	3Q 2020	Y/Y Change	Y/Y % Change
Interest Rate	-\$1,182	\$4,968	-\$6,150	-123.8%	\$4,582	-\$5,764	-125.8%
Foreign Exchange	\$5,144	\$2,732	\$2,412	88.3%	\$1,037	\$4,107	396.0%
Equity	\$6,835	\$12,409	-\$5,574	-44.9%	\$6,424	\$411	6.4%
Commodity & Other	\$1,978	\$1,802	\$176	9.8%	\$1,912	\$66	3.4%
Credit	\$1,440	\$1,644	-\$204	-12.4%	\$2,681	-\$1,241	-46.3%
Total HC Trading Revenue	\$14,215	\$23,555	-\$9,340	-39.7%	\$16,637	-\$2,422	-14.6%

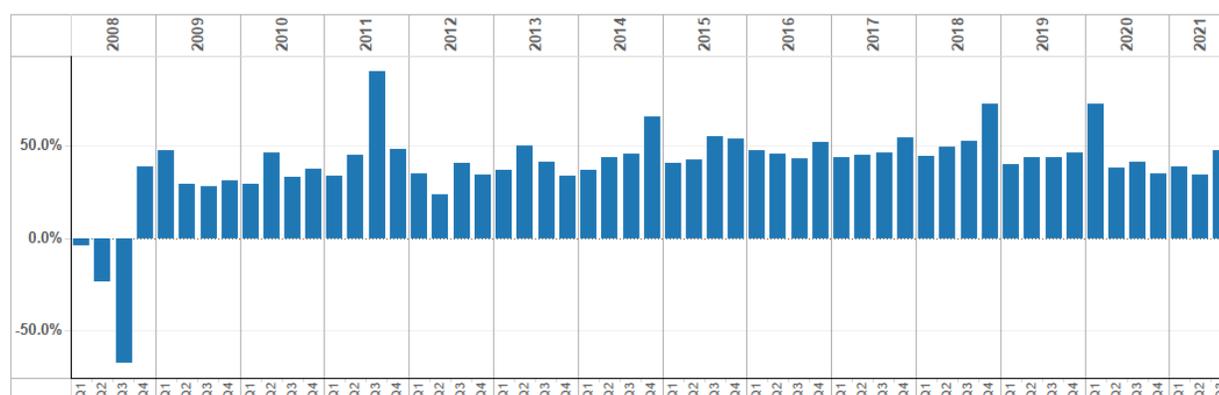
Source: Consolidated Financial Statements for Holding Companies—FR Y-9C, Schedule HI

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

Before the 2008 financial crisis, trading revenue at banks typically ranged from 60 percent to 80 percent of consolidated BHC trading revenue. Since the 2008 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 third quarter of 2021, banks generated 47.9 percent of consolidated holding company trading revenue, an increase from 34.2 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 \$20.0 billion (0.9 percent) in the third quarter of 2021 to \$2.1 trillion, primarily driven by a \$76.0 billion (5.5 percent) decrease in receivables from interest rate contracts (see table 3a). GNFV decreased \$34.0 billion (1.7 percent) to \$2.0 trillion during the quarter, driven by a \$76.0 billion (5.7 percent) decrease in payables on interest rate contracts (see table 3b).

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

	3Q 2021	2Q 2021	Q/Q Change	Q/Q % Change	3Q 2020	Y/Y Change	Y/Y % Change
Interest rate	\$1,313	\$1,390	-\$76	-5.5%	\$1,847	-\$534	-28.9%
FX	\$476	\$454	\$22	4.9%	\$449	\$27	6.1%
Equity	\$173	\$175	-\$1	-0.7%	\$157	\$16	10.1%
Commodities	\$102	\$75	\$27	36.0%	\$48	\$54	113.7%
Credit	\$38	\$30	\$9	28.6%	\$34	\$4	11.6%
GPFV	\$2,103	\$2,123	-\$20	-0.9%	\$2,535	-\$432	-17.1%

Source: Call reports, Schedule RC-L

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

	3Q 2021	2Q 2021	Q/Q Change	Q/Q % Change	3Q 2020	Y/Y Change	Y/Y % Change
Interest rate	\$1,250	\$1,326	-\$76	-5.7%	\$1,774	-\$524	-29.6%
FX	\$465	\$444	\$21	4.8%	\$456	\$9	2.0%
Equity	\$184	\$188	-\$4	-2.2%	\$158	\$26	16.2%
Commodities	\$87	\$69	\$18	26.2%	\$49	\$38	77.9%
Credit	\$41	\$34	\$7	20.2%	\$37	\$3	8.6%
GNFV	\$2,026	\$2,060	-\$34	-1.7%	\$2,474	-\$448	-18.1%

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	GPFV
Contracts with negative value to Bank A	4	-\$350	GNFV
Total contracts	10	\$150	NCCE to Bank A from Counterparty B

Most 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 increased by \$12.0 billion (2.6 percent) to \$453.0 billion in the third quarter of 2021 (see table 5).²

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.

Legally enforceable netting agreements allowed banks to reduce GPFV exposures by 78.5 percent (\$1.7 trillion) in the third quarter of 2021.

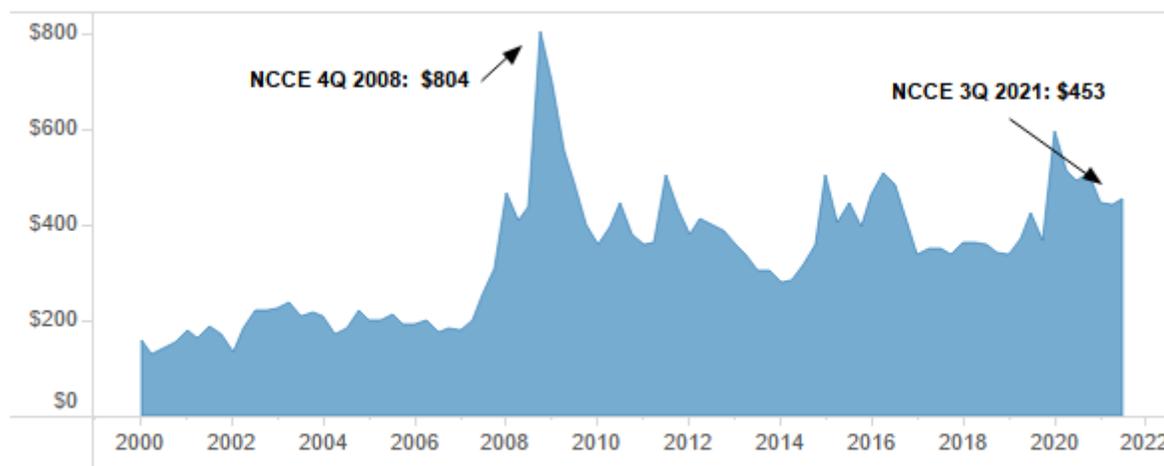
Table 5: Net Current Credit Exposure, in Billions of Dollars

	3Q 2021	2Q 2021	Q/Q Change	Q/Q % Change
GPFV	\$2,103	\$2,123	-\$20	-0.9%
NCCE RC-R	\$453	\$441	\$12	2.6%
Netting benefit RC-R	\$1,650	\$1,682	-\$32	-1.9%
Netting benefit % RC-R	78.5%	79.2%		-0.7%

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

NCCE peaked at \$804.0 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 decline in NCCE since 2008 has largely resulted from declines in the GPFV of interest rate and credit contracts. After a large increase in NCCE during the first quarter of 2020 as markets responded to the financial impact of the COVID-19 global pandemic, NCCE ended the third quarter of 2021 lower at \$453.0 billion as more normal market activity resumed.

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 (34.5 percent) and in corporations and other counterparties (56.2 percent) (see table 6). The combined exposure to hedge funds and sovereign governments was small (9.2 percent in total).

Table 6: Net Current Credit Exposure by Counterparty Type as a Percentage of Total Net Current Credit Exposure

	Banks and securities firms	Hedge funds	Sovereign governments	Corporate and all other counterparties
3Q 2021	34.5%	2.4%	6.8%	56.2%
2Q 2021	34.6%	2.7%	6.7%	56.0%
1Q 2021	37.5%	2.3%	6.7%	53.5%
4Q 2020	39.8%	2.2%	8.2%	49.9%
4Q 2019	44.2%	2.5%	9.2%	44.1%
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%

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 94.0 percent of their total NCCE at the end of the third quarter of 2021, up from 92.7 percent in the second quarter of 2021 (see table 7). Collateral held against hedge fund exposures increased in the third quarter to 551.1 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.

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 %
3Q 2021	122.5%	551.1%	65.3%	60.1%	94.0%
2Q 2021	119.8%	514.0%	59.3%	59.7%	92.7%
1Q 2021	110.9%	490.2%	57.1%	63.8%	91.0%
4Q 2020	107.5%	467.6%	52.1%	59.5%	86.9%
4Q 2019	130.0%	485.9%	48.3%	91.8%	114.5%
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%

Note: FV stands for fair value.

Source: Call reports, Schedule RC-L

The majority of collateral held by banks against NCCE is very liquid with 67.4 percent held in cash (both U.S. dollar and other currencies) and an additional 8.8 percent held in U.S. Treasuries and U.S. 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. government agency	Corp bonds	Equity securities	All other collateral
3Q 2021	41.4%	26.0%	7.5%	1.3%	1.5%	6.1%	16.3%
2Q 2021	42.0%	24.7%	7.3%	1.4%	1.4%	7.6%	15.6%
1Q 2021	41.3%	26.5%	6.6%	1.4%	1.6%	7.8%	14.8%
4Q 2020	39.5%	28.6%	7.8%	1.7%	1.1%	7.2%	14.1%
4Q 2019	34.4%	24.5%	11.6%	1.7%	2.3%	7.6%	17.7%
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

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 FFIEC Form 102. The VaR measurement is calculated daily 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. Figure 22 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
3Q 2021 average 60-Day VaR	\$105	\$169	\$57	\$184
2Q 2021 average 60-Day VaR	\$163	\$167	\$68	\$220
Q/Q change	-\$58	\$2	-\$12	-\$36
3Q 2021 total risk-based capital	\$276,303	\$166,169	\$186,588	\$47,070

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

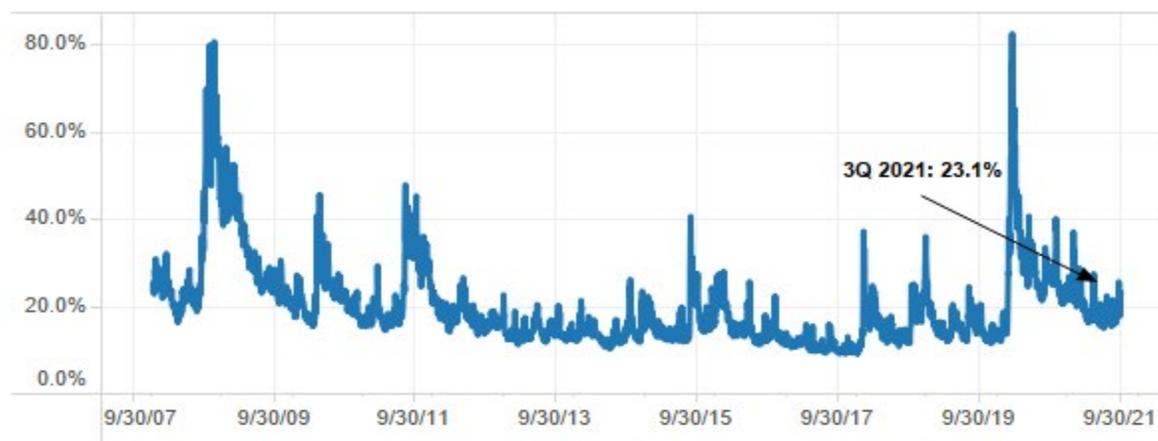
	JPMorgan Chase Bank NA	Citibank NA	Bank of America NA	Goldman Sachs Bank USA
3Q 2021 VaR Capital Requirement	\$315	\$506	\$170	\$552
2Q 2021 VaR Capital Requirement	\$489	\$500	\$204	\$660
Q/Q Change	-\$174	\$6	-\$36	-\$108
3Q 2021 Total Risk-Based Capital	\$276,303	\$166,169	\$186,588	\$47,070

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. Higher volatility as represented by the VIX is associated with increased equity trading volume, which drives increased bank and holding company equity trading revenue. The figure illustrates that there was an extended period of low volatility following the end of the 2008 financial crisis that continued until late in the first quarter of 2020. In mid-March 2020 volatility spiked as financial markets reacted to fears over the potential impact of the COVID-19 global pandemic. The VIX exceeded its previous high from the 2008 financial crisis before settling back to a more normal level of 23.1 percent at the end of the third quarter of 2021.

Figure 3: Volatility Index (VIX)



Source: Bloomberg

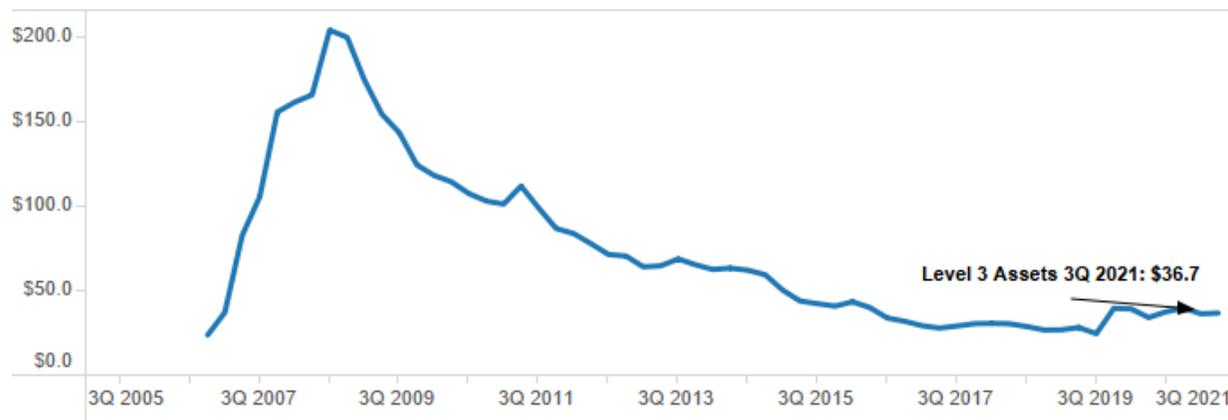
Level 3 Trading Assets

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,

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

major dealers have reduced the volume of level 3 trading assets. Because the model inputs that determine the fair value of these exposures are not derived from observable market transactions, banks use their own model 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 third quarter of 2021, banks held \$36.7 billion of level 3 trading assets, up 1.3 percent from the previous quarter and 7.8 percent higher than a year ago. Level 3 trading assets are \$167.4 billion (82.0 percent) lower than the peak level from 2008.

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 third quarter increased by \$978.0 billion (0.5 percent) to \$184.5 trillion from the previous quarter (see table 10). The increase in the notional amount of derivative contracts by underlying risk exposure was primarily driven by increases across all contracts except interest rate contracts. Interest rate notional amounts continued to represent the majority of banks' derivative holdings at \$131.8 trillion, or 71.4 percent of total derivatives (see table 10).

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

	3Q 2021	2Q 2021	Q/Q Change	Q/Q % Change	3Q 2020	Y/Y Change	Y/Y % Change
Interest rate	\$131,769	\$133,298	-\$1,529	-1.1%	\$129,758	\$2,011	1.5%
FX	\$42,504	\$41,210	\$1,294	3.1%	\$39,682	\$2,822	7.1%
Equity	\$4,649	\$4,255	\$394	9.3%	\$4,023	\$626	15.6%
Commodity	\$1,703	\$1,632	\$72	4.4%	\$1,536	\$167	10.9%
Credit derivatives	\$3,854	\$3,106	\$748	24.1%	\$3,581	\$274	7.6%
Total notional	\$184,480	\$183,501	\$978	0.5%	\$178,579	\$5,900	3.3%

Source: Call reports, Schedule RC-L

The increase in the total notional amount of derivative contracts by contract type was primarily driven by increases in swap contracts (see table 11). Swap contracts remained the leading derivatives contract type at 60.2 percent of all notional amounts.

The four banks with the most derivative activity hold 89.3 percent of all bank derivatives, while the largest 25 banks account for nearly 100 percent of all contracts (see tables 15 and 17 and figure 10 in the appendix for more information).

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

	3Q 2021	2Q 2021	Q/Q Change	Q/Q % Change	3Q 2020	Y/Y Change	Y/Y % Change
Futures and forwards	\$35,311	\$37,584	-\$2,273	-6.0%	\$39,823	-\$4,511	-11.3%
Swaps	\$111,081	\$106,971	\$4,110	3.8%	\$99,580	\$11,501	11.5%
Options	\$34,233	\$35,840	-\$1,607	-4.5%	\$35,596	-\$1,363	-3.8%
Credit derivatives	\$3,854	\$3,106	\$748	24.1%	\$3,581	\$274	7.6%
Total notional	\$184,480	\$183,501	\$978	0.5%	\$178,579	\$5,900	3.3%

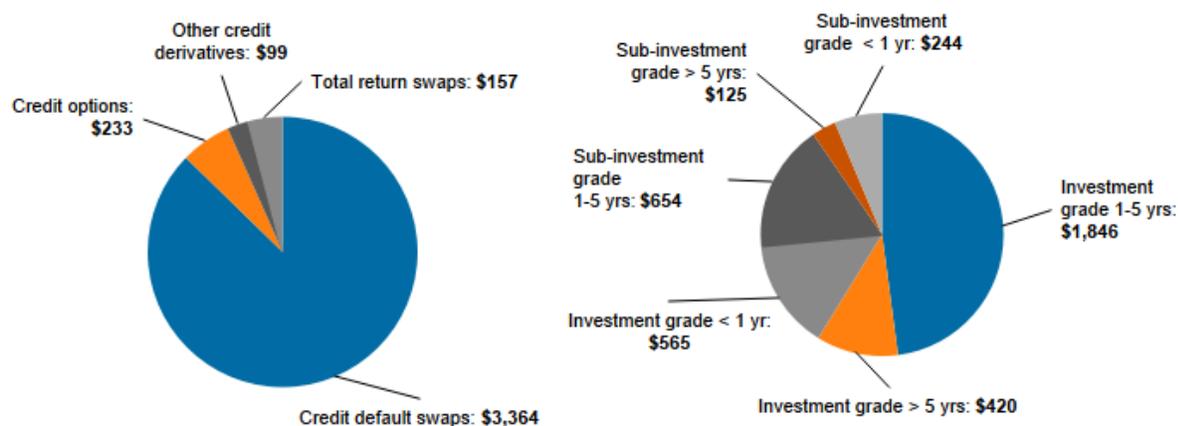
Source: Call reports, Schedule RC-L

Credit Derivatives

The notional amounts of credit derivatives increased \$748.0 billion (24.1 percent), to \$3.9 trillion in the third quarter of 2021 (see table 10). Contracts referencing investment-grade firms increased \$540.0 billion, and contracts referencing sub-investment-grade firms increased \$208.0 billion in the third quarter (see figure 20 in the appendix). Credit derivatives outstanding remained well below the peak of \$16.4 trillion in the first quarter of 2008 (see figure 7 in the appendix). As shown in the chart on the left of figure 5, credit default swaps are the dominant product, at \$3.4 trillion (89.4 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 \$1.8 trillion or 47.9 percent of all credit derivative notional amounts. Contracts of all tenors that reference investment-grade entities are \$2.8 trillion or 73.5 percent of the market (see the chart on the right in figure 5).

Figure 5: 3Q 2021 Credit Derivative Composition, in Billions of Dollars



Source: Call reports, Schedule RC-L

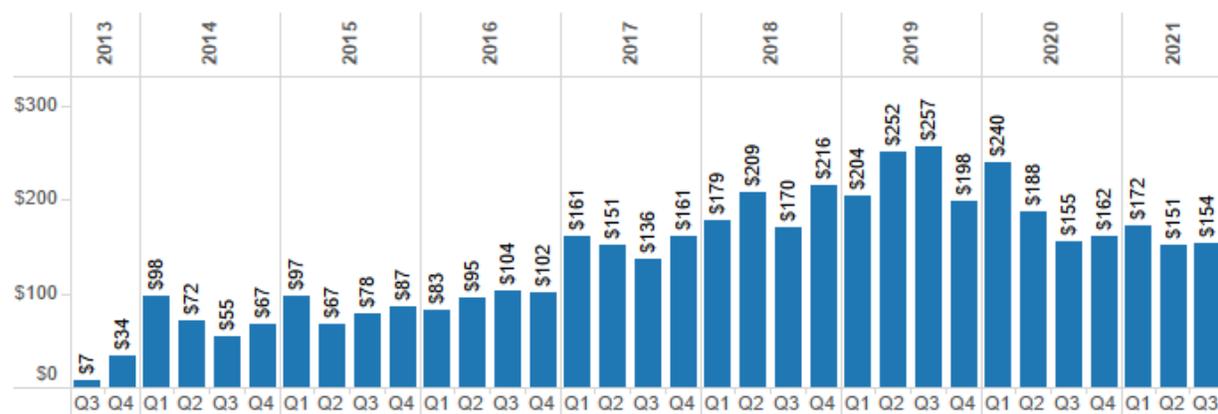
The notional amount for the 99 banks that net sold credit protection (i.e., assumed credit risk) was \$1.8 trillion, up \$371.3 billion (25.4 percent) from the second quarter of 2021 (see table 24 in the appendix). The notional amount for the 78 banks that net purchased credit protection (i.e., hedged credit risk) was \$2.0 trillion, \$376.4 billion higher (22.9 percent) than in the second quarter of 2021 (see table 24 in the appendix).

Compression Activity

Notional amounts of banks' derivative contracts have generally declined since 2013 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 increased in the third quarter of 2021, as shown in figure 6.

Figure 6: Quarterly Compression Activity, in Trillions of Dollars



Source: LCH Group

Centrally Cleared Derivative Contracts

In the first quarter of 2015, banks began reporting their volumes of cleared and uncleared derivative transactions, as well as risk weights for counterparties in each of these categories. In the third quarter of 2021 39.0 percent of banks' derivative holdings were centrally cleared (see table 12). From a market factor perspective, 50.5 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 35.3 percent of credit derivative transactions were centrally cleared during the third quarter of 2021.

Centrally cleared derivative transactions were heavily concentrated at qualifying central counterparties, with 92.8 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	FX	Equity	Precious metals	Credit	Other	Total
3Q 2021	50.5%	2.1%	21.4%	2.6%	35.3%	13.2%	39.0%
2Q 2021	50.7%	2.0%	22.1%	3.3%	35.3%	14.1%	39.5%
1Q 2021	48.6%	2.0%	24.3%	2.9%	39.3%	12.3%	38.2%
4Q 2020	45.3%	1.9%	24.3%	2.1%	36.8%	12.4%	35.0%
3Q 2020	49.2%	1.9%	24.9%	2.8%	39.2%	12.9%	38.9%
2Q 2020	50.7%	1.9%	25.7%	2.0%	36.0%	12.0%	40.3%
1Q 2020	52.9%	2.0%	26.5%	2.1%	34.4%	11.8%	42.3%
4Q 2019	46.7%	1.7%	24.8%	2.8%	26.4%	11.5%	37.1%

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 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 a CCP either 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.

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Table 13. Notional Amounts of Derivative Contracts

TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES												
SEPTEMBER 30, 2021, 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	\$3,290,398	\$52,353,900	\$1,220,806	\$1,511,366	\$9,700,773	\$30,283,648	\$8,311,847	\$1,325,460	\$971,614	
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	1,237,482	1,318,435	5,787,002	27,736,140	11,754,182	499,887	730,183	
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	627,529	425,365	6,203,460	30,423,118	5,307,389	1,389,280	508,781	
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	226,860	247,268	4,304,039	11,472,612	2,913,794	442,860	583,763	
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMUCUFX09	1,786,611	9,765,559	339,657	182,643	1,152,993	6,438,698	1,548,369	103,199	15,723	
6	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	319,439	2,356,925	5,649	0	2,298,502	19,125	33,649	0	79,583	
7	HSBC NA	1IE8VN30JCEQV1H4R804	199,613	1,535,873	53,757	1,644	528,401	845,533	99,068	7,471	62,981	
8	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	385,830	1,052,134	6,703	60	267,442	750,451	27,288	190	141,076	
9	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	556,811	732,315	20,611	1,000	107,949	394,311	198,773	9,671	2,596	
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	462,386	498,334	4,641	3,750	31,995	397,903	47,719	12,325	2,070	
11	WESTERN ALLIANCE BANK		52,854	482,501	456,852	50	20,648	1,376	3,576	0	0	
12	TRUIST BANK	JJKC32MCHWDI71265Z06	516,783	321,212	4,570	19,739	26,120	216,818	43,333	10,632	239	
13	NORTHERN TRUST CO	6PTKHDJ8HDFU78PFWH30	168,651	304,655	0	0	285,093	19,065	497	0	23,326	
14	TD BANK NATIONAL ASSN	03D0JEWFDUS0SEEKG89	413,131	297,003	0	0	2,111	293,318	1,574	0	5	
15	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	187,103	199,697	1,003	0	20,218	159,072	17,035	2,369	234	
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	372,049	175,937	14,436	0	5,913	149,101	605	5,882	83	
17	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,377	156,484	1,952	146	8,195	99,466	41,502	5,222	340	
18	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,260	154,314	2,855	0	30,203	116,236	5,019	1	513	
19	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	46,731	148,746	3,186	1,349	128,980	9,422	5,797	11	0	
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	184,659	131,383	1,996	0	7,561	106,372	15,115	339	490	
21	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	155,343	130,239	1,234	20	3,083	99,663	19,789	6,450	27	
22	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	177,797	112,240	0	0	21,423	73,377	7,756	9,684	766	
23	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	173,438	72,005	218	0	6,778	55,743	5,094	4,172	72	
24	MANUFACTURERS&TRADERS TR CO	WWB2V0FCW3A0EE3ZJN75	151,508	65,660	0	0	3,431	59,191	3,039	0	134	
25	SANTANDER BANK N A	TR24TWEY5RVRQV65HD49	97,095	52,548	0	0	1,866	45,098	5,487	97	88	
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$14,529,992	\$183,416,368	\$4,231,999	\$3,712,835	\$30,954,179	\$110,264,857	\$30,417,295	\$3,835,203	\$3,124,687	
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			6,379,638	1,063,143	3,672	651	121,442	816,394	102,035	18,949	2,843	
TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	4,235,671	3,713,486	31,075,622	111,081,251	30,519,330	3,854,151	3,127,531	

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. Before the first quarter of 1995 total derivatives included spot FX. Beginning in that quarter, spot FX has been reported separately. Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-L

Table 14: Notional Amounts of Derivative Contracts (Holding Companies)

TOP 25 HOLDING COMPANIES IN DERIVATIVES											
SEPTEMBER 30, 2021, 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.	815DZWZKVSZ11NUHU748	\$3,757,576	\$51,884,750	\$1,247,951	\$2,049,334	\$10,234,116	\$29,010,698	\$8,003,106	\$1,339,545	\$949,910
2	CITIGROUP INC.	6SHG14ZSSLCXQSB395	2,361,876	44,280,501	658,865	2,556,330	7,151,744	27,604,396	4,969,079	1,340,087	508,107
3	GOLDMAN SACHS GROUP, INC., THE	784F5XWPLTWKTBV3E584	1,443,237	41,655,463	1,762,732	2,692,969	5,692,214	20,252,772	10,076,973	1,177,803	426,595
4	BANK OF AMERICA CORPORATION	9DJT3UXIJZJ4WXXO774	3,085,446	36,511,852	790,624	1,218,043	7,782,824	21,590,932	4,283,920	845,509	419,851
5	MORGAN STANLEY	IGJSJL3JD5P3016NJZ34	1,190,476	35,084,601	846,930	1,639,848	4,211,646	20,453,366	7,216,088	716,723	101,241
6	WELLS FARGO & COMPANY	PBLD0EJDB5FWOLXP3B76	1,954,901	10,134,007	353,157	214,210	1,684,224	6,254,448	1,545,700	82,268	15,690
7	MIZUHO AMERICAS LLC		48,821	6,288,818	24,079	19,322	347,540	5,704,962	186,141	6,774	1,600
8	SMBC AMERICAS HOLDINGS, INC.		25,278	5,049,346	132,347	1,764,775	370,511	1,830,933	949,036	1,744	2,540
9	HSBC NORTH AMERICA HOLDINGS INC.	213800JCL1FHBQK3M654	253,914	3,560,887	251,112	671,472	528,401	1,996,544	105,887	7,471	62,981
10	STATE STREET CORPORATION	549300ZFEEJ2IP5VME73	323,139	2,352,875	5,649	0	2,298,502	15,075	33,649	0	79,583
11	BANK OF NEW YORK MELLON CORPORATION, THE	WFLLEPCF7ZXENRZV188	470,533	1,042,602	7,541	450	284,119	723,014	27,288	190	141,108
12	U.S. BANCORP	N1GZ7BBF3NP8GI976H15	567,495	734,642	20,611	1,000	107,769	396,819	198,772	9,671	2,596
13	RBC US GROUP HOLDINGS LLC		164,028	604,837	167,701	199,720	14,782	221,715	377	541	308
14	BARCLAYS US LLC	213800H14XVWV0870I72	173,628	561,910	20,886	263,337	230,896	9,314	0	37,477	43
15	PNC FINANCIAL SERVICES GROUP, INC., THE	CFGNEKW0P8842LEUIA51	554,457	520,683	4,671	3,750	37,741	410,246	51,946	12,328	2,086
16	WESTERN ALLIANCE BANCORPORATION	5493003VJXZ5JXT9S762	52,775	482,676	456,852	50	20,648	1,551	3,576	0	0
17	TD GROUP US HOLDINGS LLC	549300ARWZ5E3L64UH29	514,438	348,122	36,395	0	13,343	296,810	1,574	0	5
18	TRUIST FINANCIAL CORPORATION	549300DRQQI75D2JP341	529,884	329,693	4,570	19,739	34,547	216,852	43,333	10,652	239
19	NORTHERN TRUST CORPORATION	549300GLF98S992BC502	169,086	301,905	0	0	285,093	16,315	497	0	23,326
20	CREDIT SUISSE HOLDINGS (USA), INC.	549300YHT5NGRKJD1R94	105,861	276,004	4,578	2,632	146,062	49,573	12,173	60,986	13
21	CAPITAL ONE FINANCIAL CORPORATION	ZUE8T73ROZOF6FLBAR73	425,377	245,324	14,436	0	13,631	210,770	605	5,882	83
22	CITIZENS FINANCIAL GROUP, INC.	2138004JDDA4ZQUPFW65	187,549	199,697	1,003	0	20,218	159,072	17,035	2,369	234
23	MUFG AMERICAS HOLDINGS CORPORATION	5493004K1ECE43Q0BX47	164,593	189,612	4,300	1,516	59,629	116,236	7,831	101	513
24	FIFTH THIRD BANCORP	THRNG6BD57P9QWTQLG42	207,731	157,189	1,952	146	8,195	100,171	41,502	5,222	340
25	BOK FINANCIAL CORPORATION	GRI2NT5QHYW751NMR949	46,983	148,746	3,186	1,349	128,980	9,422	5,797	11	0
TOP 25 HOLDING COMPANIES WITH DERIVATIVES			\$18,779,082	\$242,946,742	\$6,822,128	\$13,319,992	\$41,707,376	\$137,652,007	\$37,781,885	\$5,663,354	\$2,738,992

Note: Currently, the Y-9 report does not differentiate credit derivatives by contract type. Credit derivatives have been included in the sum of total derivatives. Before to the first quarter of 2005, total derivatives included spot FX. Beginning in that quarter, spot FX has been reported separately. 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 15: Distribution of Derivative Contracts

TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES											
SEPTEMBER 30, 2021, 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	\$3,290,398	\$52,353,900	5.2	94.8	66.6	24.9	4.1	1.8	2.5
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	5.3	94.7	85.2	13.4	0.2	0.1	1.0
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	2.4	97.6	64.4	28.8	2.7	0.9	3.1
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	2.4	97.6	68.8	24.8	3.9	0.2	2.3
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMUCUFXT09	1,786,611	9,765,559	5.3	94.7	89.5	5.6	3.0	0.8	1.1
6	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	319,439	2,356,925	0.2	99.8	0.9	97.7	0.0	1.4	0.0
7	HSBC NA	11E8VN30JCEQV1H4R804	199,613	1,535,873	3.6	96.4	24.5	70.4	1.5	3.1	0.5
8	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	385,830	1,052,134	0.6	99.4	23.4	75.8	0.7	0.0	0.0
9	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	556,811	732,315	3.0	97.0	87.5	10.9	0.0	0.2	1.3
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	462,386	498,334	1.7	98.3	89.7	3.9	1.5	2.5	2.5
11	WESTERN ALLIANCE BANK		52,854	482,501	94.7	5.3	100.0	0.0	0.0	0.0	0.0
12	TRUIST BANK	JJKC32MCHWDI71265Z06	516,783	321,212	7.6	92.4	80.8	5.0	9.5	1.4	3.3
13	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	168,651	304,655	0.0	100.0	6.2	93.6	0.2	0.0	0.0
14	TD BANK NATIONAL ASSN	03D0JEWFDUFUS0SEEKG89	413,131	297,003	0.0	100.0	96.5	3.5	0.0	0.0	0.0
15	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	187,103	199,697	0.5	99.5	90.4	8.2	0.0	0.3	1.2
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	372,049	175,937	8.2	91.8	87.3	2.6	0.0	6.8	3.3
17	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,377	156,484	1.3	98.7	73.5	13.2	2.3	7.6	3.3
18	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,260	154,314	1.9	98.1	90.6	9.3	0.1	0.0	0.0
19	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	46,731	148,746	3.0	97.0	91.7	0.4	0.1	7.9	0.0
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	184,659	131,383	1.5	98.5	82.6	5.6	0.0	11.5	0.3
21	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	155,343	130,239	1.0	99.0	92.8	1.2	0.0	1.1	5.0
22	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	177,797	112,240	0.0	100.0	33.8	25.2	32.4	0.0	8.6
23	HUNTINGTON NATIONAL BANK MANUFACTURERS&TRADERS TR CO	2WHM8VNH63UN14OL754	173,438	72,005	0.3	99.7	86.4	5.2	0.9	1.7	5.8
24		WWB2V0FCW3A0EE3ZJN75	151,508	65,660	0.0	100.0	99.2	0.8	0.0	0.0	0.0
25	SANTANDER BANK N A	TR24TWEY5RVRQV65HD49	97,095	52,548	0.0	100.0	92.2	7.5	0.0	0.0	0.2
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$14,529,992	\$183,416,368	\$7,944,834	\$175,471,534	\$130,805,625	\$42,436,813	\$4,646,089	\$1,692,639	\$3,835,203
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			6,379,638	1,063,143	4,323	1,058,820	963,194	67,166	2,992	10,842	18,949
TOTAL FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	7,949,156	176,530,355	131,768,820	42,503,979	4,649,081	1,703,480	3,854,151
				(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
TOP 25 COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES				99.4	4.3	95.1	70.9	23.0	2.5	0.9	2.1
OTHER COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES				0.6	0.0	0.6	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	4.3	95.7	71.4	23.0	2.5	0.9	2.1

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. "FX" does not include spot FX. "Other" is defined as the sum of commodity and equity contracts. Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-L

Table 16: Credit Equivalent Exposures

TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES									
SEPTEMBER 30, 2021, MILLIONS OF DOLLARS									
RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL RISK-BASED CAPITAL	BILATERALLY NETTED CURRENT CREDIT EXPOSURE	POTENTIAL FUTURE EXPOSURE	TOTAL CREDIT EXPOSURE FROM ALL CONTRACTS	(%) TOTAL CREDIT EXPOSURE TO CAPITAL
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,290,398	\$52,353,900	\$276,303	\$179,308	\$256,265	\$435,573	158
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	47,070	62,580	71,944	134,524	286
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	166,169	76,565	205,491	282,056	170
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	186,588	34,964	64,087	99,051	53
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,786,611	9,765,559	173,608	32,217	23,395	55,612	32
6	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	319,439	2,356,925	19,161	8,739	7,738	16,477	86
7	HSBC NA	1IE8VN30JCEQV1H4R804	199,613	1,535,873	23,193	4,077	5,402	9,478	41
8	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	385,830	1,052,134	21,991	5,834	4,080	9,914	45
9	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	556,811	732,315	53,970	3,665	6,014	9,678	18
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	462,386	498,334	42,849	6,814	276	7,090	17
11	WESTERN ALLIANCE BANK		52,854	482,501	4,538	13	23	37	1
12	TRUIST BANK	JJKC32MCHWDI71265Z06	516,783	321,212	47,088	3,166	2,780	5,946	13
13	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	168,651	304,655	11,573	2,228	2,552	4,780	41
14	TD BANK NATIONAL ASSN	03D0JEWDFUS0SEEK889	413,131	297,003	35,893	207	1,320	1,527	4
15	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	187,103	199,697	19,406	1,626	1,232	2,858	15
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	372,049	175,937	30,060	4,754	3,298	8,052	27
17	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,377	156,484	18,850	3,561	2,463	6,024	32
18	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,260	154,314	15,796	1,280	490	1,770	11
19	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	46,731	148,746	4,178	1,916	1,005	2,921	70
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	184,659	131,383	16,851	2,478	2,083	4,561	27
21	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	155,343	130,239	14,791	836	537	1,373	9
22	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	177,797	112,240	19,145	391	4,533	4,924	26
23	HUNTINGTON NATIONAL BANK	2WHM8VNVJH63UN14OL754	173,438	72,005	16,462	1,359	734	2,093	13
24	MANUFACTURERS&TRADERS TR CO	VWB2V0FCW3A0EE3ZJN75	151,508	65,660	13,987	586	145	731	5
25	SANTANDER BANK N A	TR24TWEY5RVRQV65HD49	97,095	52,548	11,403	745	406	1,151	10
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$14,529,992	\$183,416,368	\$1,290,921	\$439,907	\$668,294	\$1,108,201	86
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			6,379,638	1,063,143	615,928	12,751	9,768	22,519	4
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	1,906,849	452,659	678,062	1,130,721	59

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. The total credit exposure to capital ratio is calculated using risk-based capital (tier 1 plus tier 2 capital). Currently, the call report does not differentiate credit derivatives by contract type. Credit derivatives have been included in the sum of total derivatives here. Numbers may not add up to total due to rounding.

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

Table 17: Notional Amounts of Derivative Contracts Held for Trading

TOP FOUR COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES								
SEPTEMBER 30, 2021, 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	\$3,290,398	\$52,353,900	\$50,517,193	99.0	\$511,247	1.0
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	47,798,151	99.9	35,090	0.1
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	42,829,075	99.6	157,786	0.4
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	17,604,436	91.9	1,560,137	8.1
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$7,782,523	\$164,670,602	\$158,748,855	98.6	\$2,264,260	1.4
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			13,127,106	19,808,909	16,946,758	86.4	2,665,487	13.6
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	175,695,613	97.3	4,929,747	2.7

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

Source: Call reports, Schedule RC-L

Table 18: Gross Fair Values of Derivative Contracts

TOP FOUR COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES										
SEPTEMBER 30, 2021, 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	\$3,290,398	\$52,353,900	\$607,297	\$572,373	\$3,551	\$2,572	\$9,611	\$10,969
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	657,599	652,083	254	126	9,025	9,951
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	441,780	430,086	2,323	2,133	13,764	13,764
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	156,741	155,224	27,742	28,815	4,045	4,339
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$7,782,523	\$164,670,602	\$1,863,417	\$1,809,766	\$33,870	\$33,646	\$36,445	\$39,023
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			13,127,106	19,808,909	149,738	128,051	17,454	13,423	1,651	1,680
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	2,013,155	1,937,817	51,324	47,069	38,096	40,703

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 19: Trading Revenues From Cash Instruments and Derivatives

TOP FOUR COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES										
SEPTEMBER 30, 2021, 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	\$3,290,398	\$52,353,900	\$2,583	\$286	\$701	\$920	\$306	\$370
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	688	(1,154)	1,328	215	32	267
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	1,518	367	824	362	94	(129)
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	932	139	474	242	3	74
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$7,782,523	\$164,670,602	\$5,721	(\$362)	\$3,327	\$1,739	\$435	\$582
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			13,127,106	19,808,909	1,092	33	671	(10)	96	302
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	6,813	(329)	3,998	1,729	531	884

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. Trading revenue is defined here as "trading revenue from cash instruments and off-balance-sheet derivative instruments." Numbers may not add up to total due to rounding.

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

Table 20: Notional Amounts of Derivative Contracts by Contract Type and Maturity (Interest Rate, FX, and Gold)

TOP FOUR COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES												
SEPTEMBER 30, 2021, 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	7H6GLXDRUGQFU57RNE97	\$3,290,398	\$52,353,900	\$24,547,156	\$19,171,456	\$5,481,312	\$49,199,924	\$7,703,755	\$2,417,896	\$1,220,287	\$11,341,938
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	18,680,105	8,543,173	7,964,532	35,187,810	4,647,765	841,961	704,008	6,193,734
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	19,933,956	3,969,905	2,984,900	26,888,761	11,154,746	713,527	262,269	12,130,542
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	4,506,798	5,059,900	4,167,892	13,734,590	3,910,936	468,394	307,739	4,687,069
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$7,782,523	\$164,670,602	\$67,668,015	\$36,744,434	\$20,598,636	\$125,011,085	\$27,417,202	\$4,441,778	\$2,494,303	\$34,353,283
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			13,127,106	19,808,909	5,515,678	4,789,144	2,328,196	12,633,019	4,142,811	281,674	81,919	4,506,404
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	73,183,693	41,533,578	22,926,832	137,644,104	31,560,013	4,723,452	2,576,222	38,859,687

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. Numbers may not add up to total due to rounding. 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-L and RC-R

Table 21: Notional Amounts of Derivative Contracts by Contract Type and Maturity (Precious Metals)

TOP FOUR COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES								
SEPTEMBER 30, 2021, 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	\$3,290,398	\$52,353,900	\$25,989	\$1,623	\$0	\$27,612
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	762	170	0	932
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32WEFA76	1,703,923	44,376,141	9,281	427	0	9,708
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	17,753	513	0	18,266
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$7,782,523	\$164,670,602	\$53,785	\$2,733	\$0	\$56,518
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			13,127,106	19,808,909	10,964	957	0	11,921
TOTAL FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	64,749	3,690	0	68,439

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

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

Table 22: Notional Amounts of Derivative Contracts by Contract Type and Maturity (Other Commodity and Equity)

TOP FOUR COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES												
SEPTEMBER 30, 2021, 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	\$3,290,398	\$52,353,900	\$1,018,717	\$125,074	\$7,699	\$1,151,490	\$2,542,366	\$652,704	\$120,854	\$3,315,924
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	43,928	13,330	41	57,299	123,453	35,573	7,317	166,343
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	150,620	59,921	3,258	213,799	583,739	181,733	9,152	774,624
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	15,787	4,506	0	20,293	644,688	156,129	16,718	817,535
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$7,782,523	\$164,670,602	\$1,229,052	\$202,831	\$10,998	\$1,442,881	\$3,894,246	\$1,026,139	\$154,041	\$5,074,426
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			13,127,106	19,808,909	59,682	92,190	457	152,329	185,395	109,701	5,085	300,180
TOTAL FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	1,288,734	295,021	11,455	1,595,210	4,079,641	1,135,840	159,126	5,374,606

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

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

Table 23: Notional Amounts of Credit Derivative Contracts by Contract Type and Maturity (Investment Grade and Sub-investment Grade)

TOP FOUR COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES													
SEPTEMBER 30, 2021, 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	7H6GLXDRUGQFU57RNE97	\$3,290,398	\$52,353,900	\$1,325,460	\$257,421	\$585,405	\$161,534	\$1,004,360	\$79,054	\$196,259	\$45,787	\$321,100
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	499,887	48,157	234,435	52,007	334,599	21,349	119,338	24,601	165,288
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	1,389,280	150,337	762,193	141,886	1,054,416	98,872	209,840	26,152	334,864
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,400,819	19,607,433	442,860	73,979	189,645	45,129	308,753	34,936	86,445	12,726	134,107
TOP 4 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$7,782,523	\$164,670,602	\$3,657,487	\$529,894	\$1,771,678	\$400,556	\$2,702,128	\$234,211	\$611,882	\$109,266	\$955,359
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			13,127,106	19,808,909	196,664	35,131	74,485	19,650	129,266	9,705	42,220	15,473	67,398
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	3,854,151	565,025	1,846,163	420,206	2,831,394	243,916	654,102	124,739	1,022,757

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

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

Table 24: Distribution of Credit Derivative Contracts Held for Trading

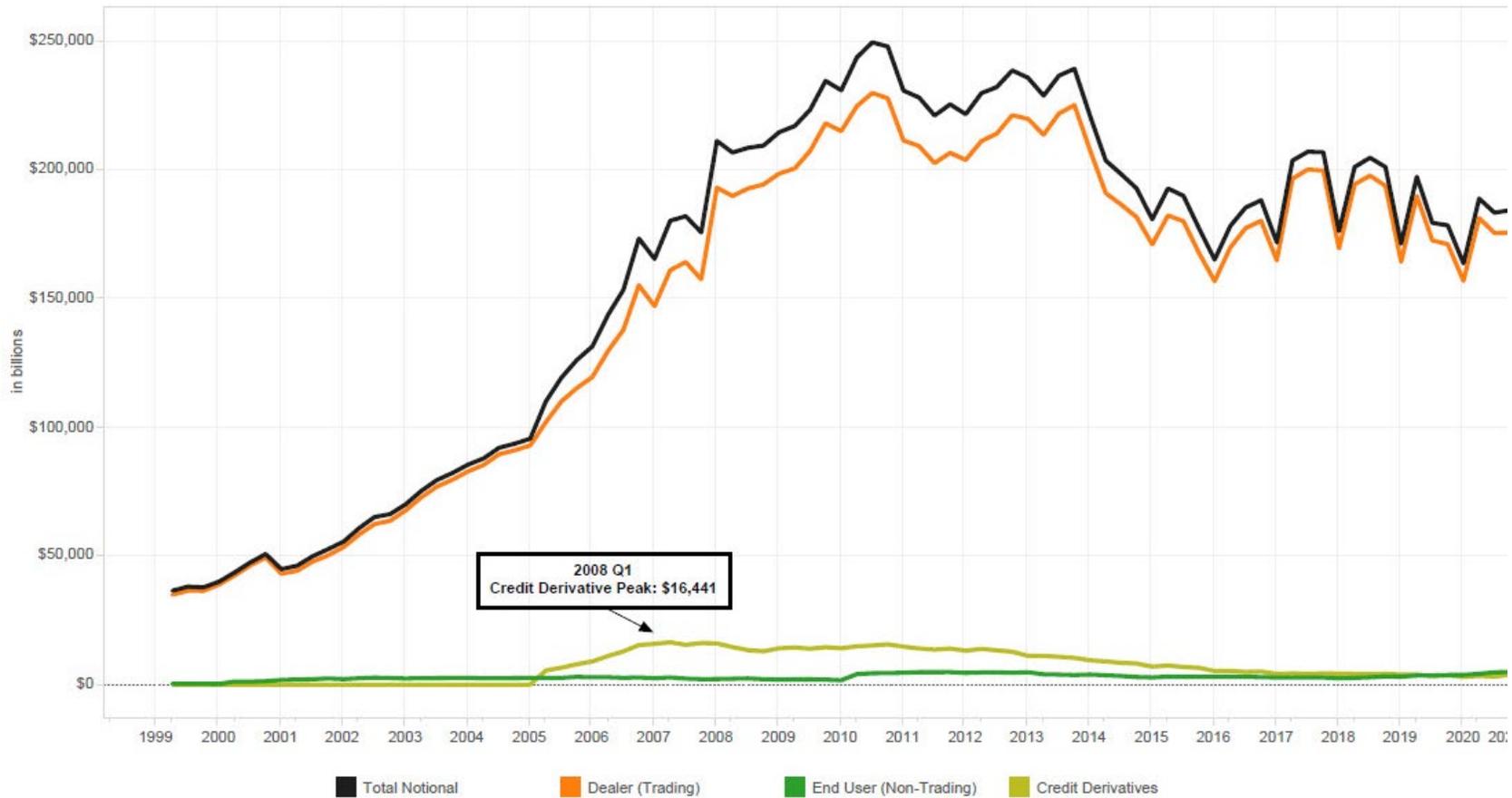
TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES															
SEPTEMBER 30, 2021, MILLIONS OF DOLLARS															
RANK	BANK NAME	LEGAL ENTITY IDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL CREDIT DERIVATIVES	TOTAL CREDIT DERIVATIVES		PURCHASED				SOLD			
						PURCHASED	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	7H6GLXDRUGQU57RNE97	\$3,290,398	\$52,353,900	\$1,325,460	\$690,275	\$635,185	\$592,120	\$26,043	\$67,238	\$4,874	\$568,637	\$10,574	\$55,971	\$3
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	387,383	48,333,128	499,887	276,781	223,106	261,731	3,138	10,319	1,593	216,778	3,134	3,047	147
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,703,923	44,376,141	1,389,280	721,989	667,291	680,677	15,129	26,183	0	631,666	7,581	28,044	0
4	BANK OF AMERICA NA	B4TYDEB6GKMZ0031MB27	2,400,819	19,607,433	442,860	226,873	215,987	192,471	12,772	21,630	0	180,188	16,472	19,327	0
5	WELLS FARGO BANK NA STATE STREET BANK&TRUST CO	KB1H1DSPRFMYMCUFXT09	1,786,611	9,765,559	103,199	61,442	41,757	9,522	35,229	600	16,091	7,494	22,792	0	11,471
6		571474TGEMMWANRLN572	319,439	2,356,925	0	0	0	0	0	0	0	0	0	0	0
7	HSBC NA	1IE8VN30JCEQV1H4R804	199,613	1,535,873	7,471	5,408	2,063	4,619	789	0	0	2,063	0	0	0
8	BANK OF NEW YORK MELLON	HPFHU0OQ28E4NONFVK49	385,830	1,052,134	190	190	0	190	0	0	0	0	0	0	0
9	U S BANK NATIONAL ASSN	6BYL5QZYBDBK8S7L3M02	556,811	732,315	9,671	3,261	6,410	838	0	0	2,423	25	0	0	6,385
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	462,386	498,334	12,325	4,376	7,949	655	0	0	3,721	0	0	0	7,949
11	WESTERN ALLIANCE BANK		52,854	482,501	0	0	0	0	0	0	0	0	0	0	0
12	TRUIST BANK	JJKC32MCHWDI71265Z06	516,783	321,212	10,632	3,598	7,034	795	1,424	0	1,379	0	0	0	7,034
13	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	168,651	304,655	0	0	0	0	0	0	0	0	0	0	0
14	TD BANK NATIONAL ASSN CITIZENS BANK NATIONAL ASSN	03D0JEWFDFUS0SEK89	413,131	297,003	0	0	0	0	0	0	0	0	0	0	0
15		DRMSV1Q0EKMEXLAU1P80	187,103	199,697	2,369	0	2,369	0	0	0	0	0	0	0	2,369
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	372,049	175,937	5,882	2,753	3,129	0	0	0	2,753	0	0	0	3,129
17	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,377	156,484	5,222	1,639	3,584	0	0	0	1,639	0	0	0	3,584
18	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	133,260	154,314	1	1	0	1	0	0	0	0	0	0	0
19	BOKF NATIONAL ASSN	FU7RSW4CQQY98A207J66	46,731	148,746	11	2	9	2	0	0	0	9	0	0	0
20	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	184,659	131,383	339	101	239	101	0	0	0	146	93	0	0
21	REGIONS BANK	EQTWLKG1G7ODGC2MGLV11	155,343	130,239	6,450	2,323	4,127	0	0	0	2,323	0	0	0	4,127
22	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	177,797	112,240	9,684	8,434	1,250	7,316	0	1,118	0	1,250	0	0	0
23	HUNTINGTON NATIONAL BANK MANUFACTURERS&TRADERS TR CO	2WHM8VNJH63UN14OL754	173,438	72,005	4,172	2,909	1,263	0	0	0	2,909	0	0	0	1,263
24		WWB2V0FCW3A0EE3ZJN75	151,508	65,660	0	0	0	0	0	0	0	0	0	0	0
25	SANTANDER BANK N A	TR24TWEY5RVQRV65HD49	97,095	52,548	97	4	94	4	0	0	0	94	0	0	0
TOP 25 COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			\$14,529,992	\$183,416,368	\$3,835,203	\$2,012,357	\$1,822,845	\$1,751,041	\$94,524	\$127,088	\$39,704	\$1,608,350	\$60,646	\$106,389	\$47,460
OTHER COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			6,379,638	1,063,143	18,949	8,396	10,553	1,566	2,250	0	4,581	3,026	2	0	7,525
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES			20,909,629	184,479,511	3,854,151	2,020,754	1,833,398	1,752,607	96,774	127,088	44,285	1,611,376	60,648	106,389	54,985
TOP 25 COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES					(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
OTHER COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES					99.5	52.2	47.3	45.4	2.5	3.3	1.0	41.7	1.6	2.8	1.2
TOTAL AMOUNT FOR COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES					0.5	0.2	0.3	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.2
					100.0	52.4	47.6	45.5	2.5	3.3	1.1	41.8	1.6	2.8	1.4

Note: Credit derivatives have been excluded from the sum of total derivatives here. Numbers may not add up to total due to rounding.

Source: Call reports, Schedule RC-L

Figure 7. Derivative Notional Amounts by Type

Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

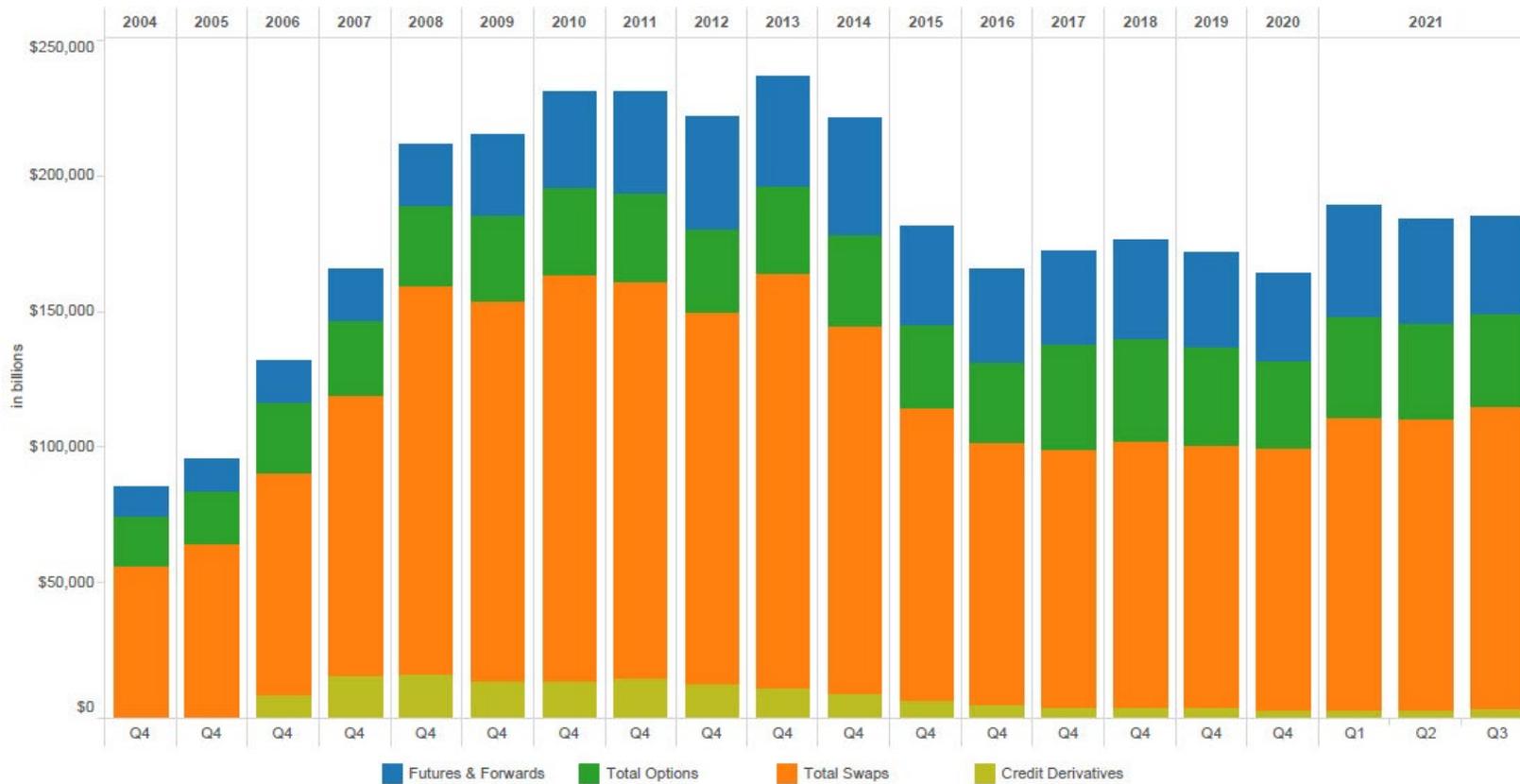
	2018				2019				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Total Notional	\$203,796	\$207,203	\$206,996	\$176,354	\$201,283	\$204,876	\$201,258	\$171,465	\$197,504	\$179,573	\$178,579	\$163,799	\$188,990	\$183,501	\$184,480
Dealer (Trading)	196,712	200,286	199,891	169,636	194,518	197,950	193,912	164,441	189,995	172,723	171,242	156,997	181,421	175,609	175,696
End User (Non-Trading)	2,738	2,738	2,764	2,448	2,620	2,852	3,163	3,079	3,522	3,595	3,757	3,768	4,208	4,786	4,930
Credit Derivatives	4,345	4,179	4,342	4,270	4,145	4,074	4,183	3,945	3,986	3,255	3,581	3,034	3,361	3,106	3,854

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, Schedule RC-L

Figure 8. Derivative Contracts by Product*

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	2020	2021		
	Q4	Q1	Q2	Q3														
Futures & Forwards	\$14,882	\$18,867	\$22,529	\$29,652	\$35,539	\$37,469	\$41,621	\$40,027	\$43,380	\$35,691	\$34,201	\$34,162	\$36,145	\$34,789	\$32,350	\$40,934	\$37,584	\$35,311
Total Options	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	36,117	31,991	36,975	35,840	34,233
Total Swaps	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	96,614	96,423	107,720	106,971	111,081
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	3,945	3,034	3,361	3,106	3,854
Total Notional	131,519	165,559	211,416	214,786	231,099	230,998	221,794	235,992	221,078	180,959	165,252	171,974	176,354	171,465	163,799	188,990	183,501	184,480

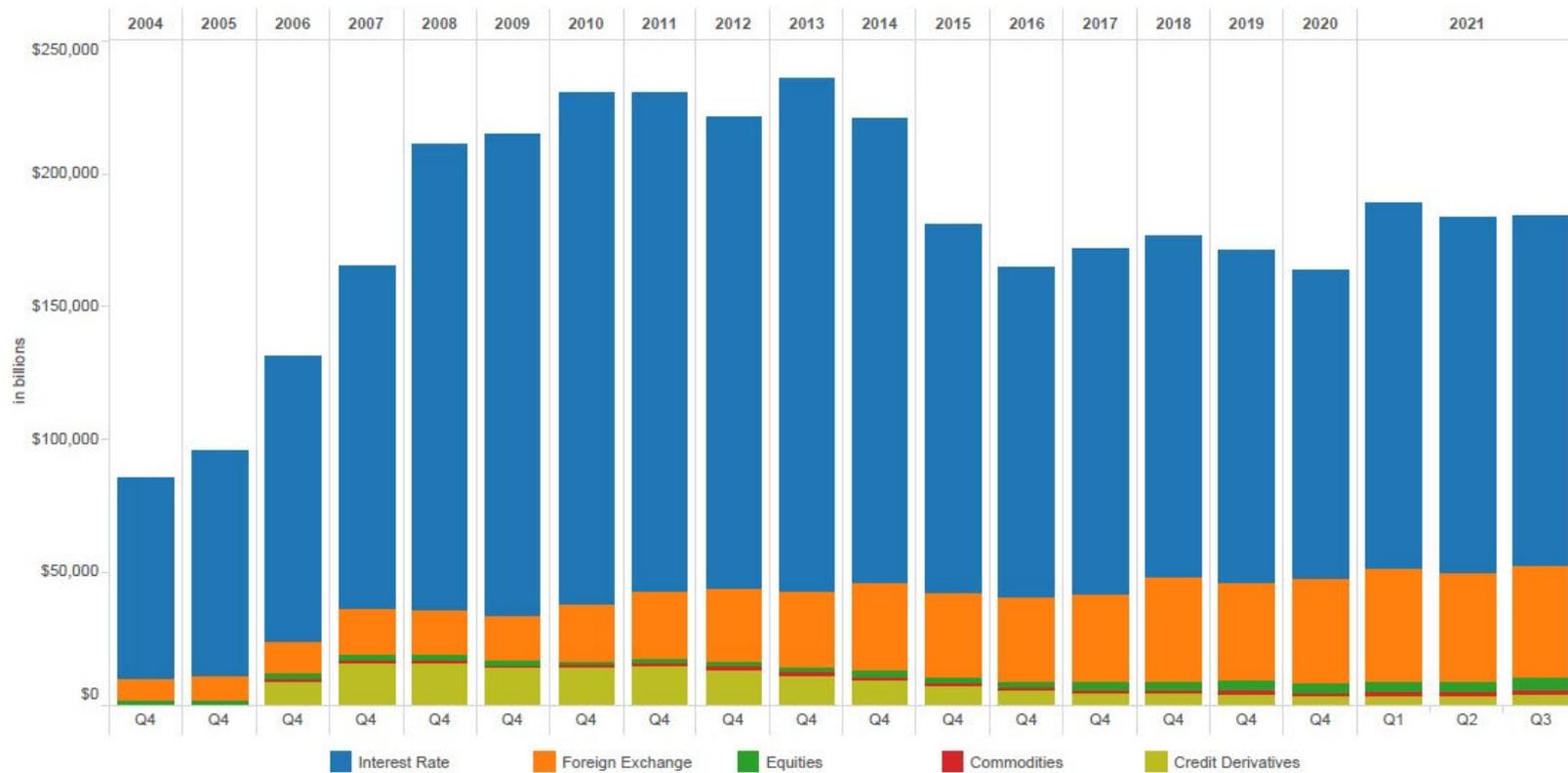
*Notional amount of total: futures, exchange-traded options, over the counter options, forwards and swaps.

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

Source: Call reports, Schedule RC-L

Figure 9. Derivative Contracts by Type*

Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
	Q4	Q1	Q2	Q3													
Interest Rate	\$129,491	\$175,895	\$181,454	\$193,399	\$187,866	\$177,650	\$193,084	\$174,687	\$138,369	\$124,488	\$130,417	\$128,175	\$125,065	\$116,000	\$137,433	\$133,298	\$131,769
Foreign Exchange	16,614	16,224	16,555	20,990	25,436	27,587	28,480	33,183	32,100	31,737	32,903	39,220	37,170	39,596	42,609	41,210	42,504
Equities	2,524	2,207	1,685	1,364	1,606	1,970	2,028	2,537	2,395	2,475	3,080	3,374	3,796	3,775	4,005	4,255	4,649
Commodities	1,067	1,061	979	1,195	1,330	1,397	1,209	1,222	1,108	1,257	1,388	1,315	1,488	1,395	1,582	1,632	1,703
Credit Derivatives	15,863	16,029	14,112	14,151	14,759	13,190	11,191	9,449	6,986	5,293	4,186	4,270	3,945	3,034	3,361	3,106	3,854
Total Notional	165,559	211,416	214,786	231,099	230,998	221,794	235,992	221,078	180,959	165,252	171,974	176,354	171,465	163,799	188,990	183,501	184,480

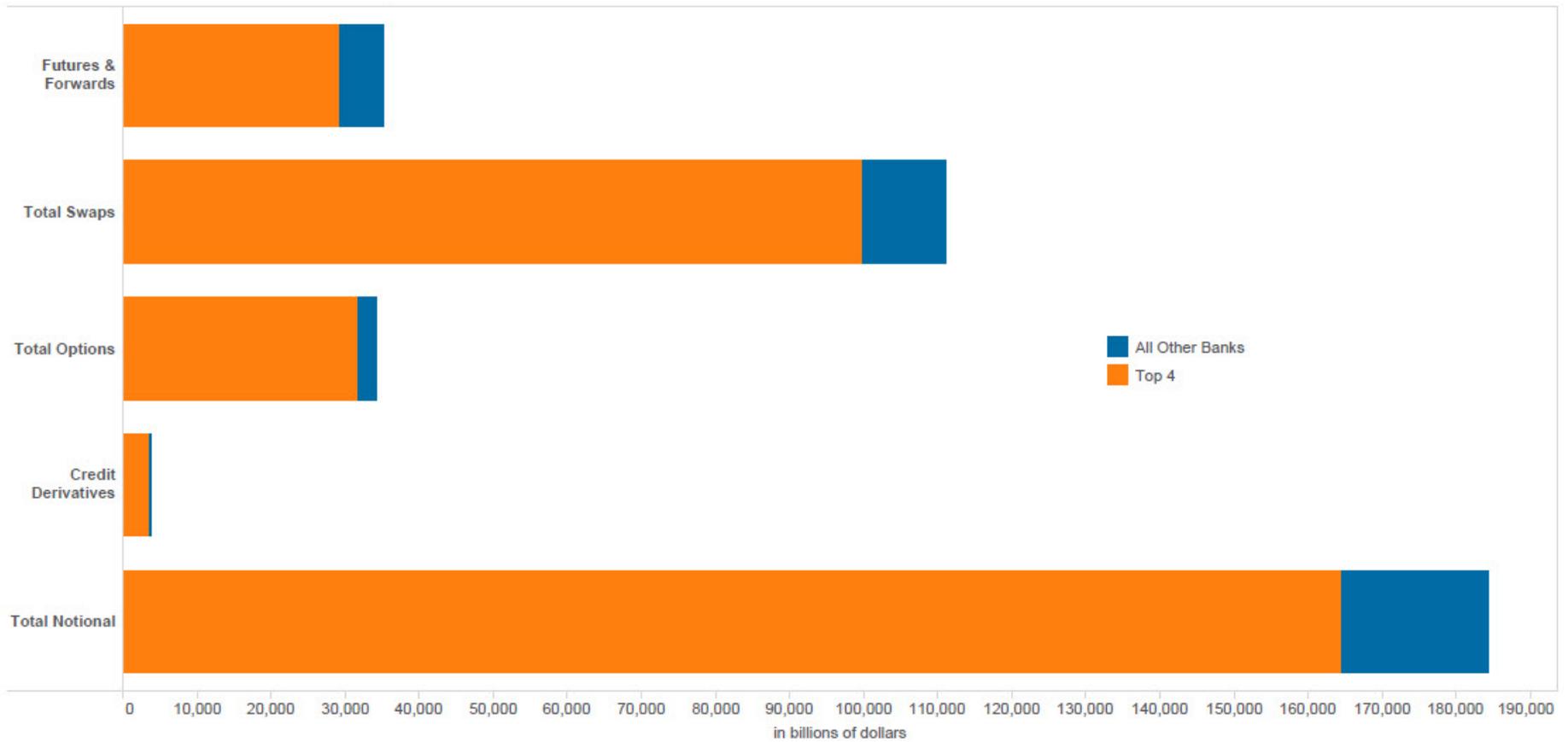
*Notional amount of total: futures, exchange traded options, over the counter options, forwards, and swaps.

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, Schedule RC-L

Figure 10. Four Banks Dominate in Derivatives*

Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

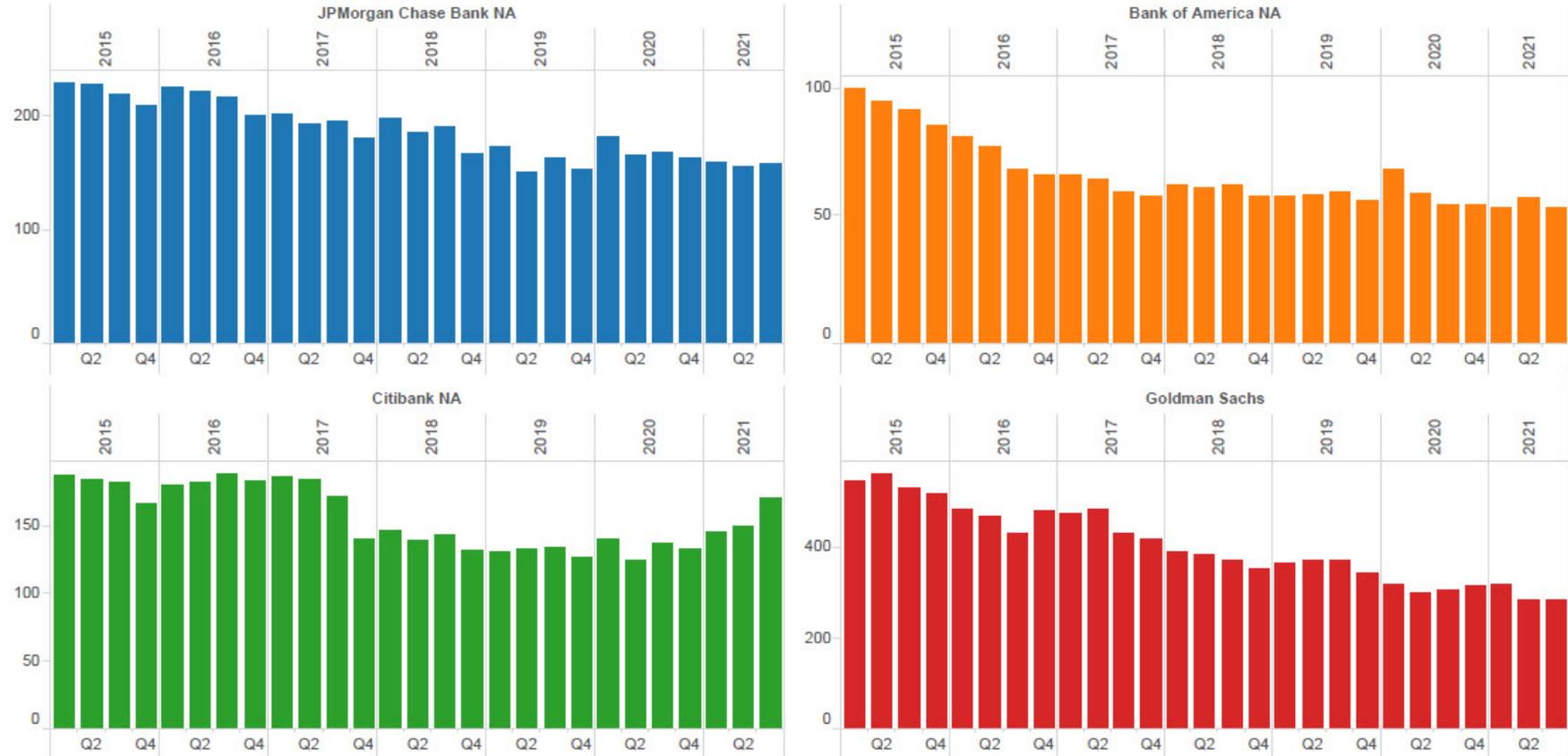
	Top 4	All Other Banks	Grand Total
Futures & Forwards	\$29,308	\$6,003	\$35,311
Total Swaps	99,916	11,166	111,081
Total Options	31,790	2,443	34,233
Credit Derivatives	3,657	197	3,854
Total Notional	164,671	19,809	184,480

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

Source: Call reports, Schedule RC-L

Figure 11. Credit Exposure to Risk-Based Capital (in Percentage)

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



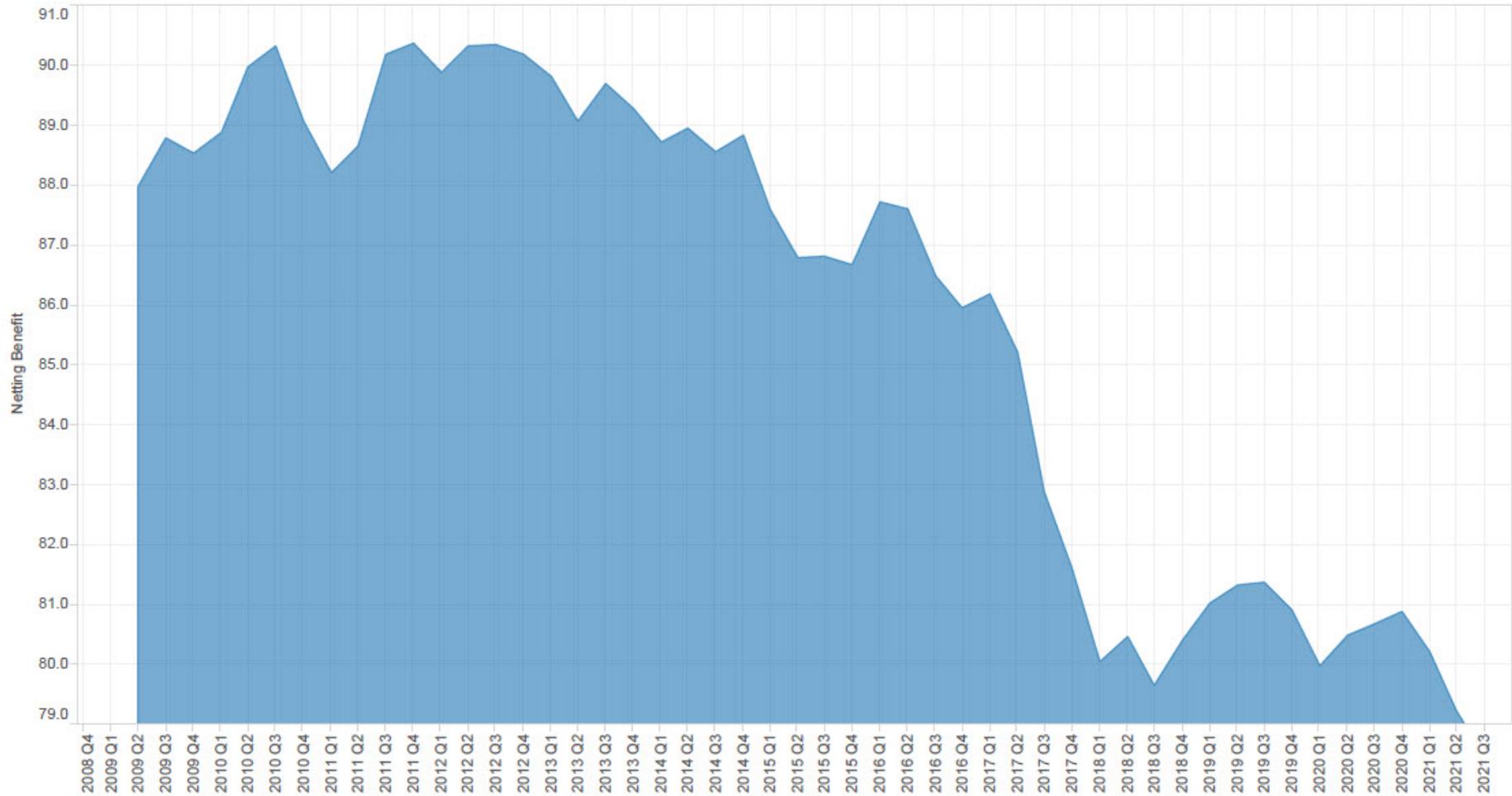
	2014				2015				2016				2017				2018				2019				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3																								
JPMorgan Chase Bank NA	183	189	181	177	229	228	219	209	225	221	216	199	201	193	195	179	197	184	190	167	173	150	163	153	181	165	168	163	159	155	158
Bank of America NA	109	107	107	93	100	95	91	85	81	77	68	66	66	64	59	57	62	61	62	57	58	58	59	56	68	59	54	54	53	57	53
Citibank NA	147	156	190	173	187	184	181	166	180	181	188	183	186	184	171	140	146	139	144	132	130	132	134	126	140	125	137	132	145	150	170
Goldman Sachs	689	620	539	516	547	563	530	516	482	467	433	481	472	484	433	420	389	384	371	354	366	372	372	344	319	299	304	314	316	285	286
TOTAL	Q1	Q2	Q3	Q4	Q1	Q2	Q3																								
	248	240	224	211	238	242	232	223	226	222	217	220	220	218	205	191	195	187	188	173	178	169	176	164	174	160	165	163	165	158	168

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, Schedule RC-R

Figure 12. 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

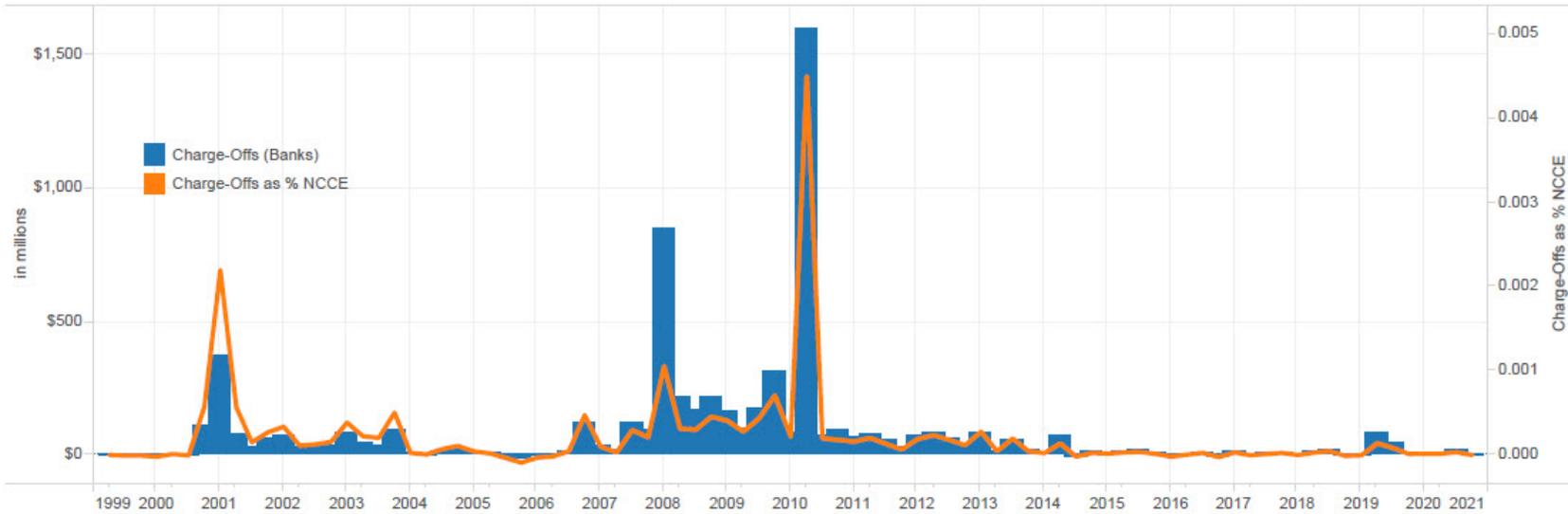
2013				2014				2015				2016				2017				2018				2019				2020				2021		
Q1	Q2	Q3	Q4	Q1	Q2	Q3																												
89.8	89.1	89.7	89.3	88.7	88.9	88.6	88.8	87.6	86.8	86.8	86.7	87.7	87.6	86.5	86.0	86.2	85.2	82.9	81.6	80.0	80.5	79.7	80.4	81.0	81.3	81.4	80.9	80.0	80.5	80.7	80.9	80.2	79.2	78.5

*The netting benefit is defined as: \$ amount of netting benefits/gross positive fair value.

Source: Call reports, beginning the first quarter of 2015 Schedule RC-R; otherwise Schedule RC-L

Figure 13. Quarterly Charge-Offs/(Recoveries) From Derivatives—Bank

Insured U.S. Commercial Banks and Savings Associations With Derivatives



In millions of dollars

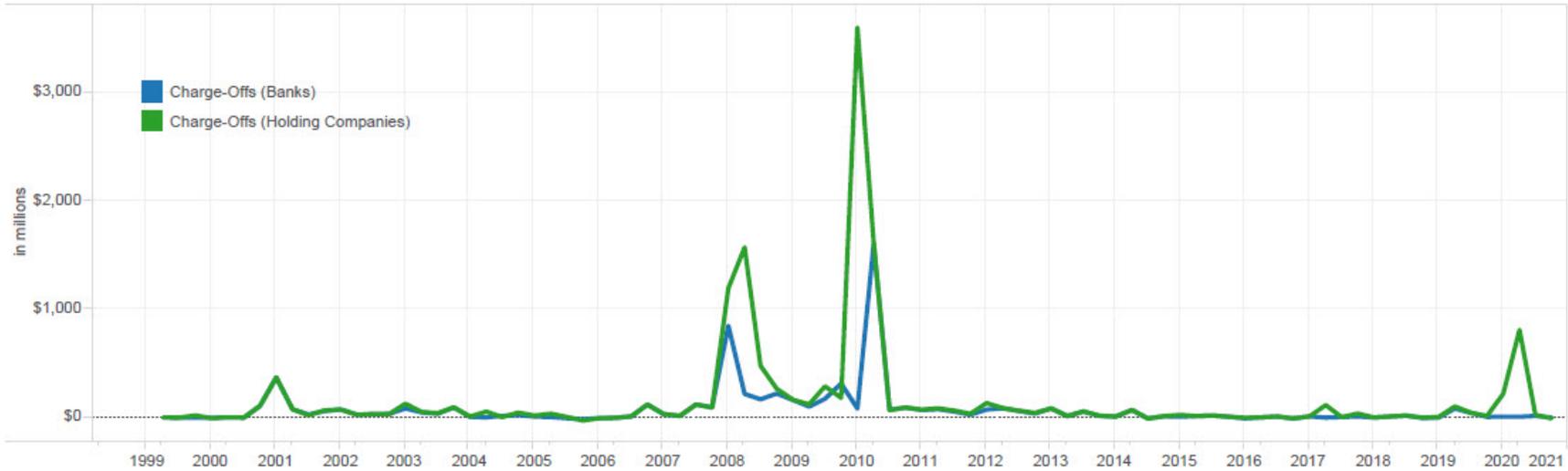
	2000				2001				2002				2003										
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4							
Charge-Offs (Banks)	0.0	-1.0	-1.0	-3.0	2.0	-1.0	107.3	370.0	75.8	28.2	59.0	73.7	25.3	29.9	32.3	83.7							
	2004				2005				2006				2007										
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4							
Charge-Offs (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	314	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				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
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	82.70	42.08	5.98	6.62	6.77	14.70	-0.24

Note: The figures are for each quarter alone, not year-to-date.

Source: Call reports Schedule RI, NCCE: Pre 2009 Q2 (RC-R); 2009 Q2 - 2014 Q4 (RC-L); 2015 Q1 onward (RC-R)

Figure 14. 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

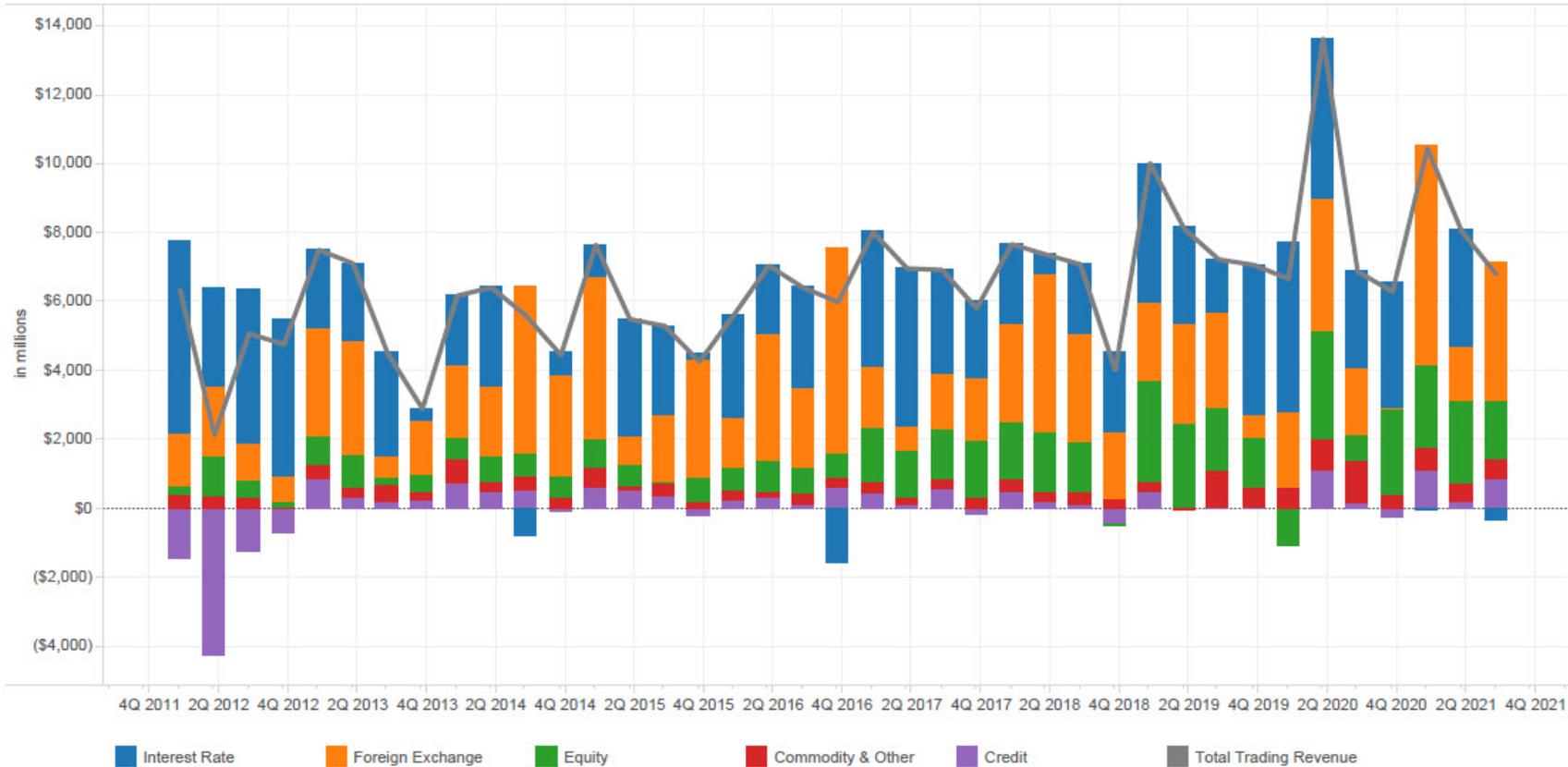
	2000				2001				2002				2003				2004							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Charge-Offs (Banks)	0.0	-1.0	-1.0	-3.0	2.0	-1.0	107.3	370.0	75.8	28.2	59.0	73.7	25.3	29.9	32.3	83.7	46.7	34.9	92.2	5.4				
Charge-Offs (Holding Companies)	0.1	-1.0	19.3	-7.0	2.0	-1.0	107.3	369.6	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				2015			
	Q1	Q2	Q3	Q4	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	314	83	1,601	72	91	69	76	54	26	73	84	61	36	83	13	56	15	8	69	-8	10	6
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	69	-10	13	24
	2016				2017				2018				2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
Charge-Offs (Banks)	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	82.7	42.1	6.0	6.6	6.8	14.7	-0.2	
Charge-Offs (Holding Companies)	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	102.1	44.2	14.6	218.3	807.7	23.7	-8.2	

Note: The figures are for each quarter alone, not year-to-date.

Source: Call reports, Schedule RI and Y-9, Schedule HI

Figure 15a. Quarterly Trading Revenue (Cash and Derivative Positions)*—Bank

Insured U.S. Commercial Banks and Savings Associations



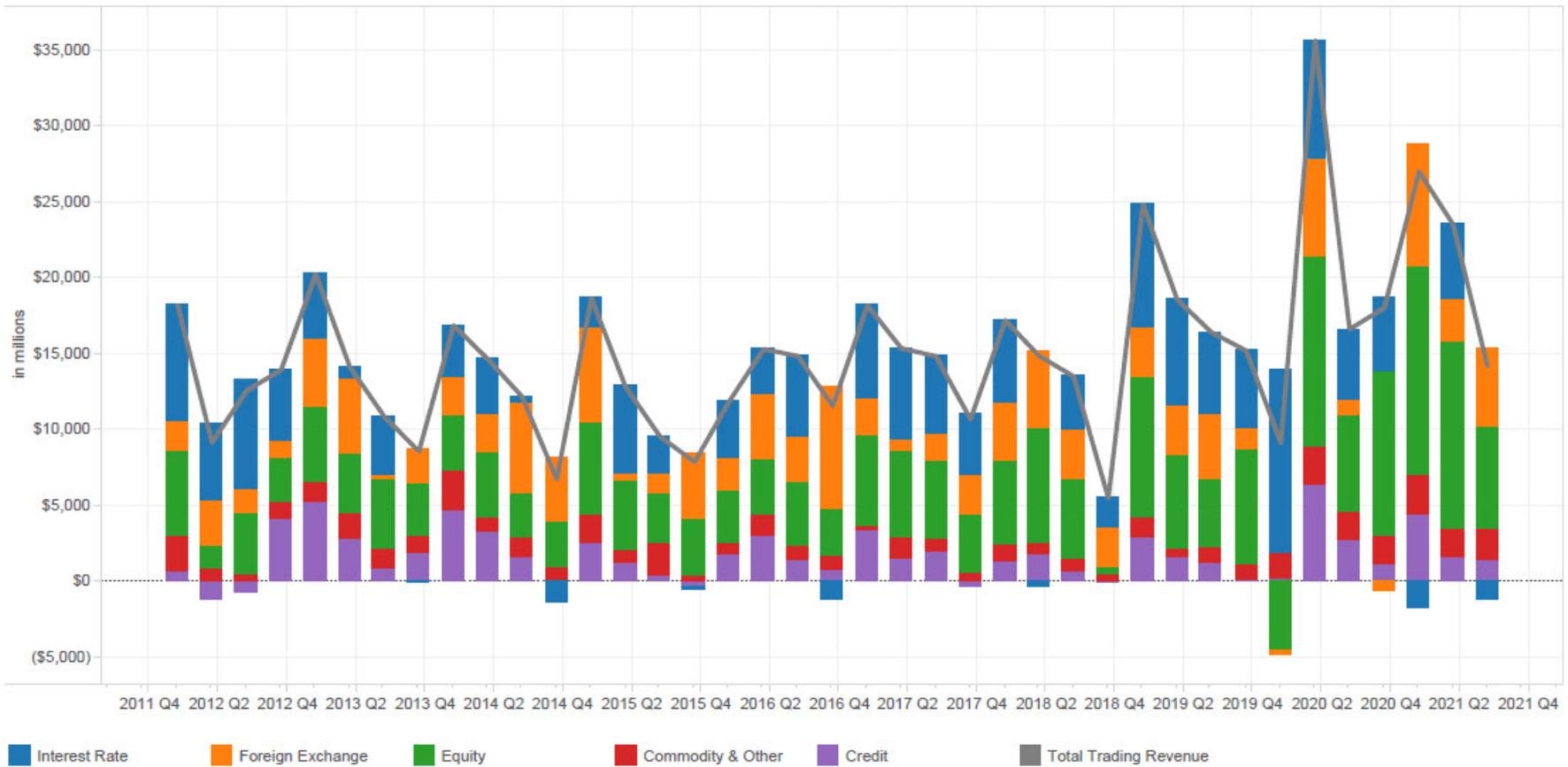
In millions of dollars

	2017				2018				2019				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Interest Rate	\$3,917	\$4,586	\$3,011	\$2,220	\$2,317	\$587	\$2,020	\$2,305	\$4,078	\$2,780	\$1,567	\$4,361	\$4,942	\$4,634	\$2,821	\$3,616	(\$42)	\$3,369	(\$329)
Foreign Exchange	1,743	697	1,608	1,811	2,861	4,569	3,149	1,971	2,254	2,900	2,718	662	2,167	3,841	1,942	18	6,343	1,546	3,998
Equity	1,595	1,359	1,454	1,649	1,624	1,727	1,444	-43	2,895	2,464	1,805	1,427	-1,040	3,139	750	2,480	2,388	2,384	1,729
Commodity & Other	330	211	300	324	395	286	349	274	323	-43	1,109	600	646	905	1,226	434	622	549	531
Credit	447	128	566	-178	487	215	141	-476	485	30	43	34	-34	1,129	154	-243	1,151	217	884
Total Trading Revenue	8,031	6,981	6,940	5,824	7,684	7,384	7,103	4,030	10,035	8,131	7,242	7,083	6,681	13,648	6,893	6,305	10,462	8,066	6,813

*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, Schedule RI

Figure 15b. Quarterly Trading Revenue (Cash and Derivative Positions)*—Holding Company



In millions of dollars

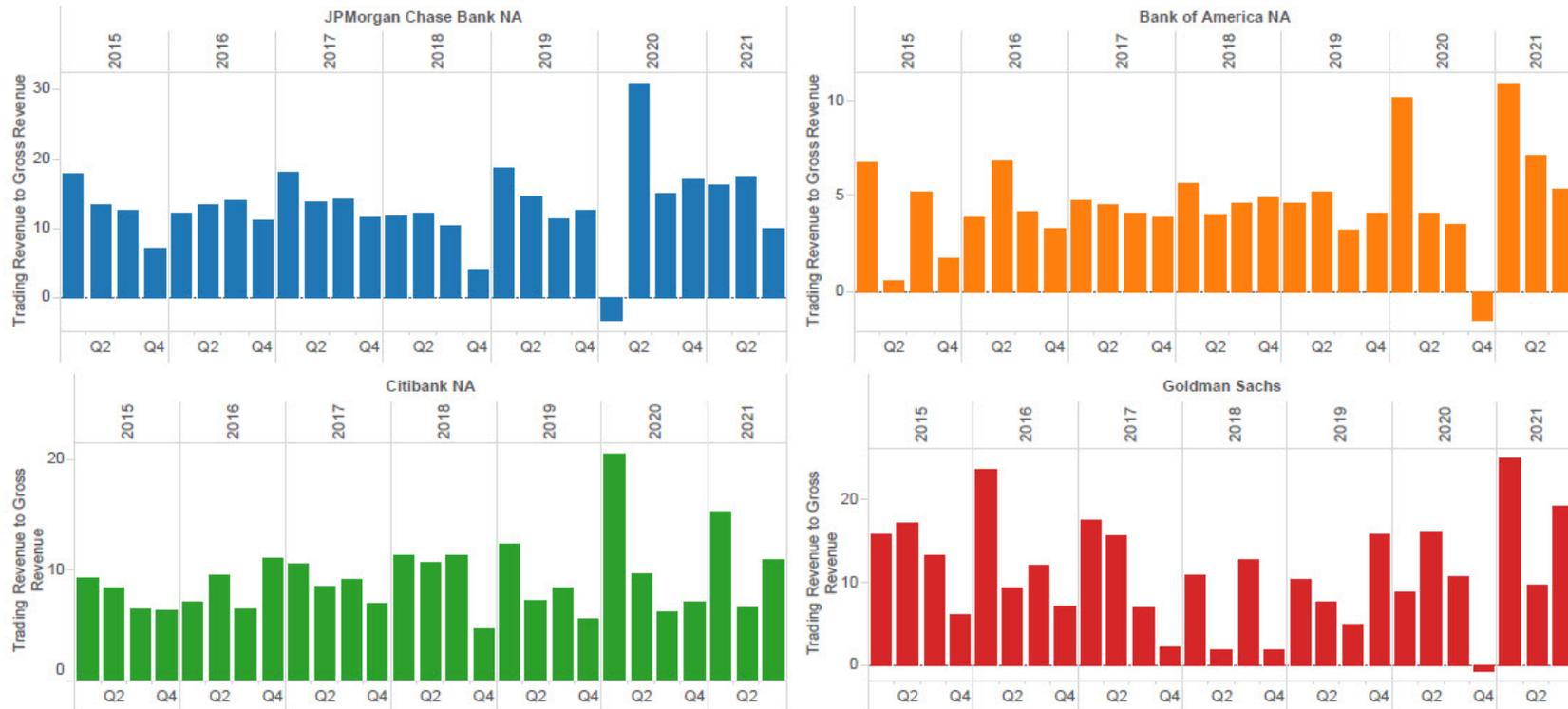
	2017				2018				2019				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Interest Rate	\$6,055	\$6,019	\$5,124	\$4,006	\$5,361	(\$336)	\$3,550	\$1,997	\$8,050	\$6,973	\$5,377	\$5,075	\$12,036	\$7,801	\$4,582	\$4,867	(\$1,792)	\$4,968	(\$1,182)
Foreign Exchange	2,524	733	1,848	2,589	3,900	5,133	3,222	2,530	3,396	3,351	4,241	1,463	-302	6,374	1,037	-628	8,051	2,732	5,144
Equity	5,939	5,783	5,123	3,867	5,431	7,445	5,222	502	9,215	6,083	4,548	7,546	-4,499	12,604	6,424	10,826	13,698	12,409	6,835
Commodity & Other	299	1,317	769	568	1,177	779	874	508	1,298	512	1,045	981	1,664	2,486	1,912	1,804	2,665	1,802	1,978
Credit	3,381	1,523	1,996	-310	1,359	1,848	666	-25	2,903	1,684	1,226	159	257	6,404	2,681	1,181	4,395	1,644	1,440
Total Trading Revenue	18,198	15,376	14,861	10,721	17,229	14,870	13,534	5,513	24,862	18,604	16,437	15,223	9,157	35,669	16,637	18,049	27,016	23,555	14,215

*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, Schedule HI

Figure 16. Quarterly Trading Revenue (Cash and Derivative Positions) as a Percentage of Gross Revenue (in Percentage)*

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



Trading Revenue to Gross Revenue*

	2015				2016				2017				2018				2019				2020				2021		
	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
JPMorgan Chase Bank NA	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	-3.33	30.88	14.83	16.96	16.12	17.50	9.89
Bank of America NA	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	10.13	4.14	3.55	-1.52	10.89	7.10	5.33
Citibank NA	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	20.50	9.63	6.27	7.08	15.35	6.63	10.88
Goldman Sachs	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	7.78	4.98	15.90	8.96	16.21	10.68	-0.56	25.05	9.89	19.13
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
	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	9.60	8.01	8.61	7.44	18.00	9.49	8.91	14.87	11.87	9.36

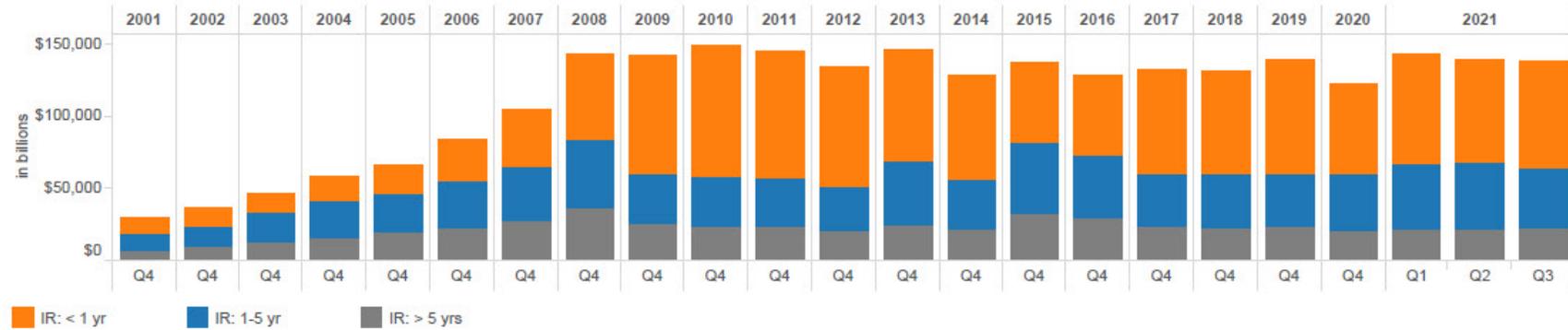
*The trading revenue figures are for cash and derivative activities. Revenue figures are quarterly, not year-to-date numbers. Note: Gross revenue equals interest income plus non-interest income.

Source: Call reports, Schedule RI

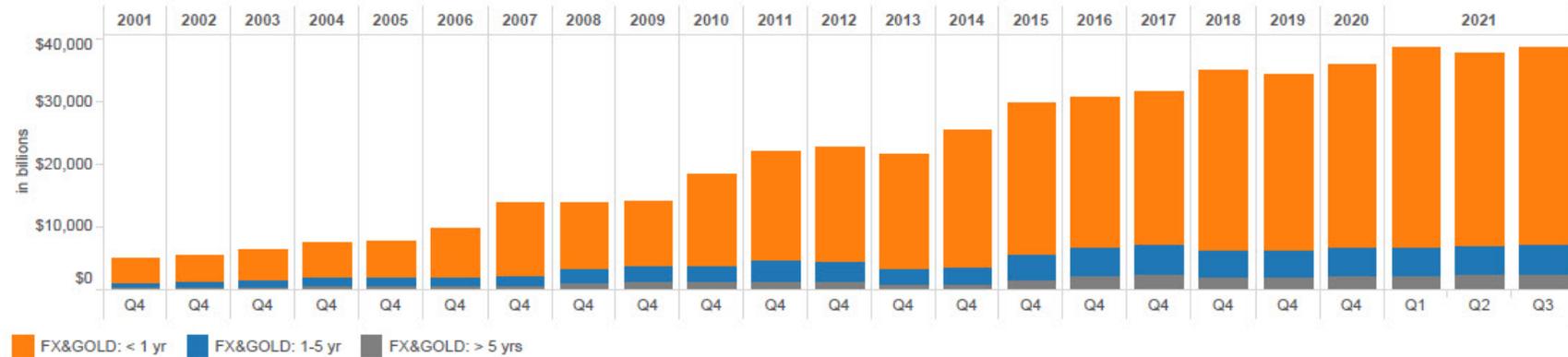
Figure 17. Notional Amounts of Interest Rate and FX + Gold Contracts by Maturity

Insured U.S. Commercial Banks and Savings Associations

Interest Rate



FX & Gold



In billions of dollars

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
	Q4	Q1	Q2	Q3																
IR: < 1 yr	\$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	\$71,492	\$79,132	\$62,444	\$76,502	\$71,252	\$73,184
IR: 1-5 yr	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	35,854	39,198	44,408	45,944	41,534
IR: > 5 yrs	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	24,259	20,838	22,231	22,273	22,927
FX&GOLD: < 1 yr	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	28,241	29,434	32,130	30,840	31,560
FX&GOLD: 1-5 yr	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	4,052	4,404	4,336	4,558	4,723
FX&GOLD: > 5 yrs	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	2,146	2,402	2,405	2,503	2,576

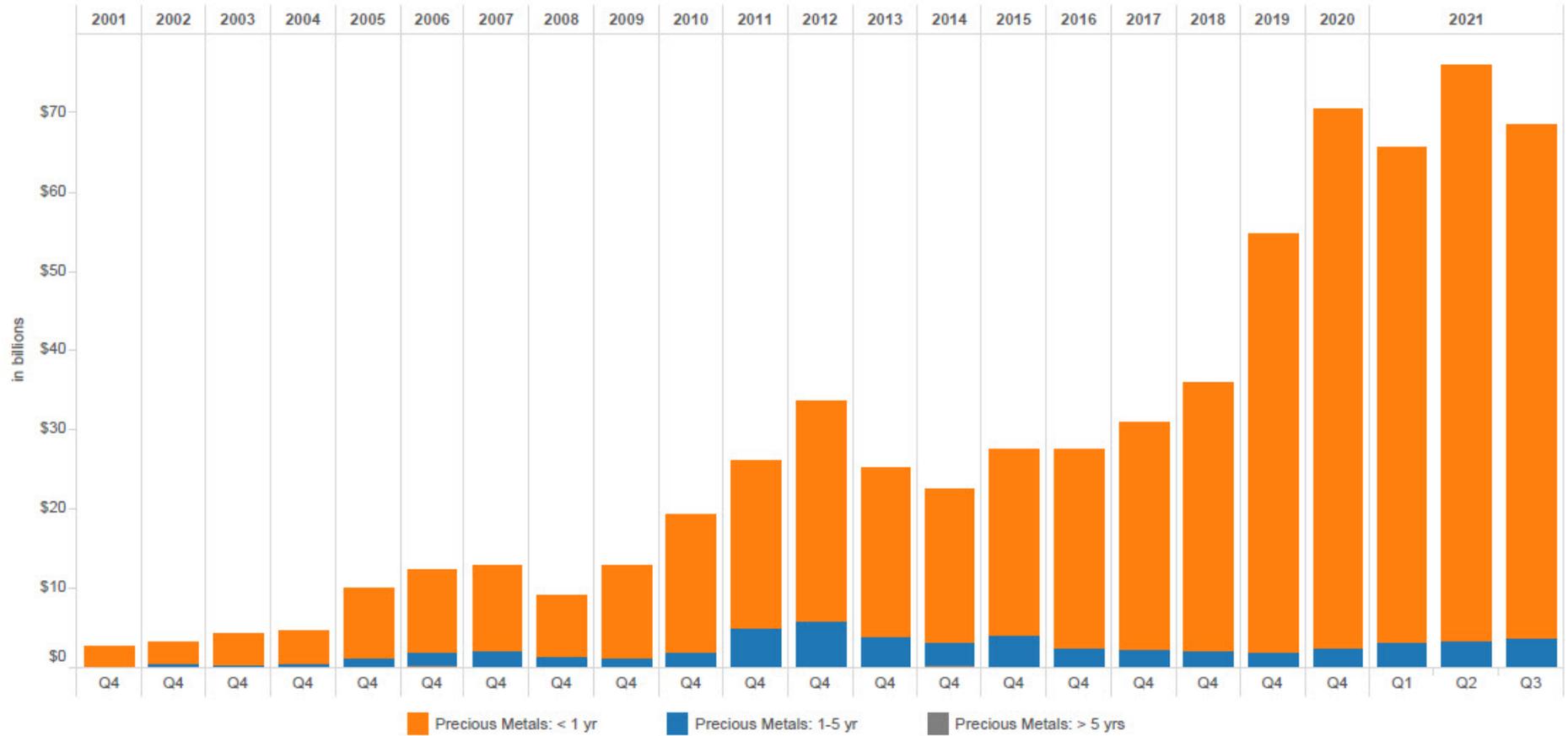
Note: Figures above exclude FX contracts with an original maturity of 14 days or less, written options, basis swaps, and any other contracts not subject to risk-based capital requirements. Effective Q1 2015, the reporting form and call report instructions changed. Schedule RC-R now requires banks to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

Source: Call reports, Schedule RC-R

Figure 18. Notional Amounts of Precious Metal Contracts by Maturity

Insured U.S. Commercial Banks and Savings Associations

Precious Metals



In billions of dollars

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3
Precious Metals: < 1 yr	\$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	\$52.58	\$67.80	\$62.60	\$72.78	\$64.75
Precious Metals: 1-5 yr	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	2.06	2.53	3.03	3.23	3.69
Precious Metals: > 5 yrs	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	0.00

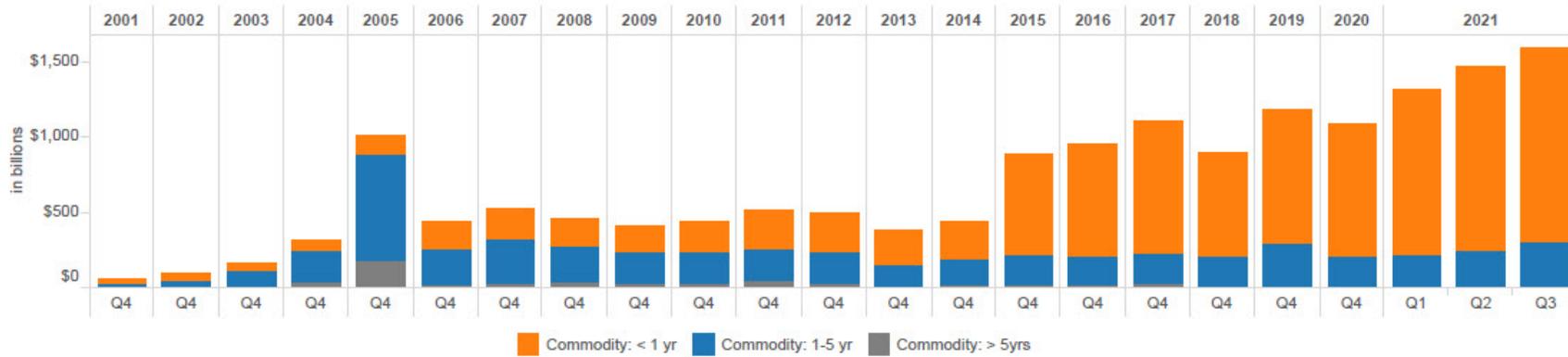
Note: Figures exclude FX contracts with an original maturity of 14 days or less, written options, basis swaps, and any other contracts not subject to risk-based capital requirements.

Source: Call reports, Schedule RC-R

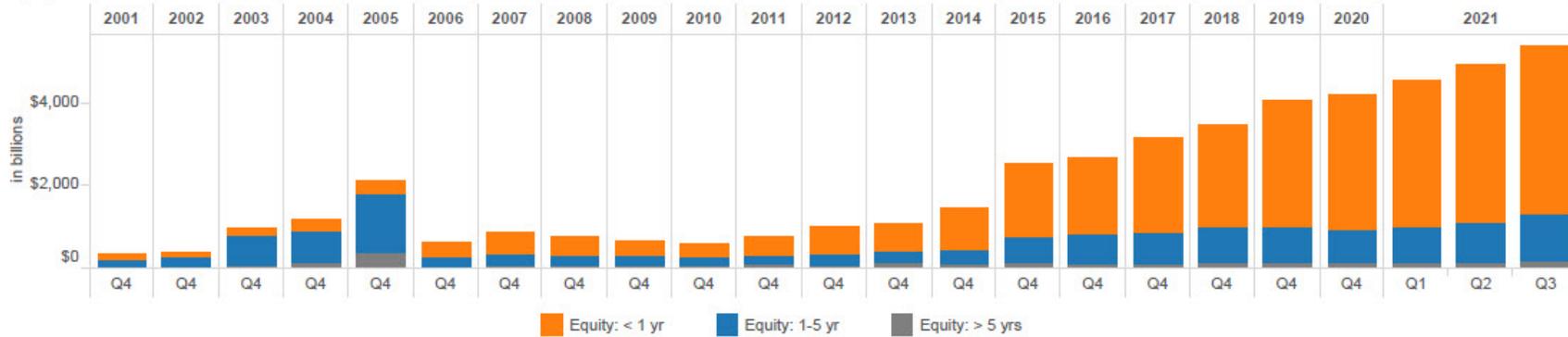
Figure 19. Notional Amounts of Commodity and Equity Contracts by Maturity

Insured U.S. Commercial Banks and Savings Associations

Commodity



Equity



In billions of dollars

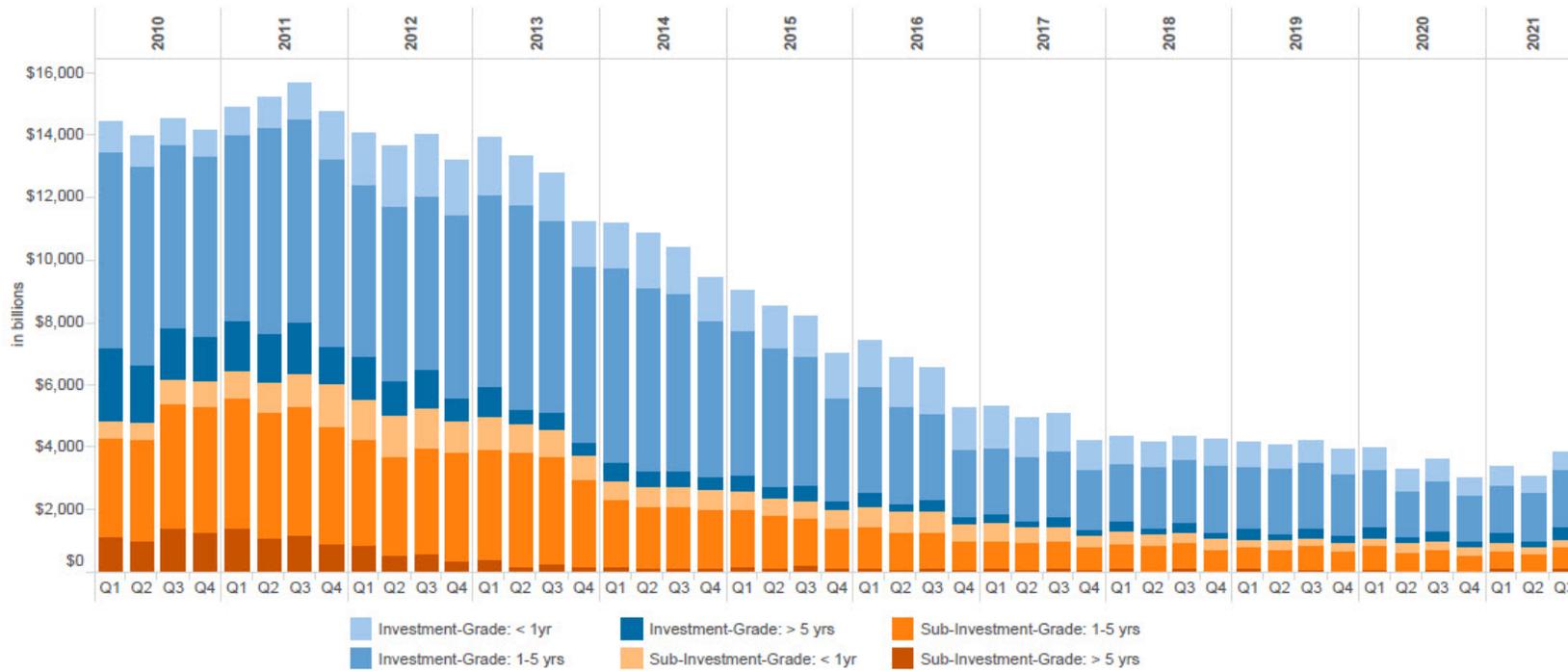
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3
Commodity: < 1 yr	\$55	\$43	\$64	\$133	\$185	\$206	\$179	\$176	\$203	\$261	\$261	\$235	\$257	\$668	\$750	\$883	\$688	\$884	\$879	\$1,098	\$1,225	\$1,289
Commodity: 1-5 yr	35	103	205	707	235	297	233	198	209	209	208	144	164	197	179	202	198	286	198	201	236	295
Commodity: > 5yrs	9	14	40	175	20	25	43	33	25	46	28	6	20	22	23	25	9	10	9	10	10	11
Equity: < 1 yr	127	197	273	321	341	473	409	312	296	427	627	645	996	1,743	1,842	2,296	2,449	3,084	3,287	3,504	3,807	4,080
Equity: 1-5 yr	249	674	736	1,428	221	297	256	228	191	210	262	291	352	628	677	733	864	844	771	871	957	1,136
Equity: > 5 yrs	25	84	140	383	45	70	72	82	85	94	82	136	101	130	123	113	139	136	139	124	153	159

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, Schedule RC-R

Figure 20. Notional Amounts of Credit Derivative Contracts by Credit Quality and Maturity

Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

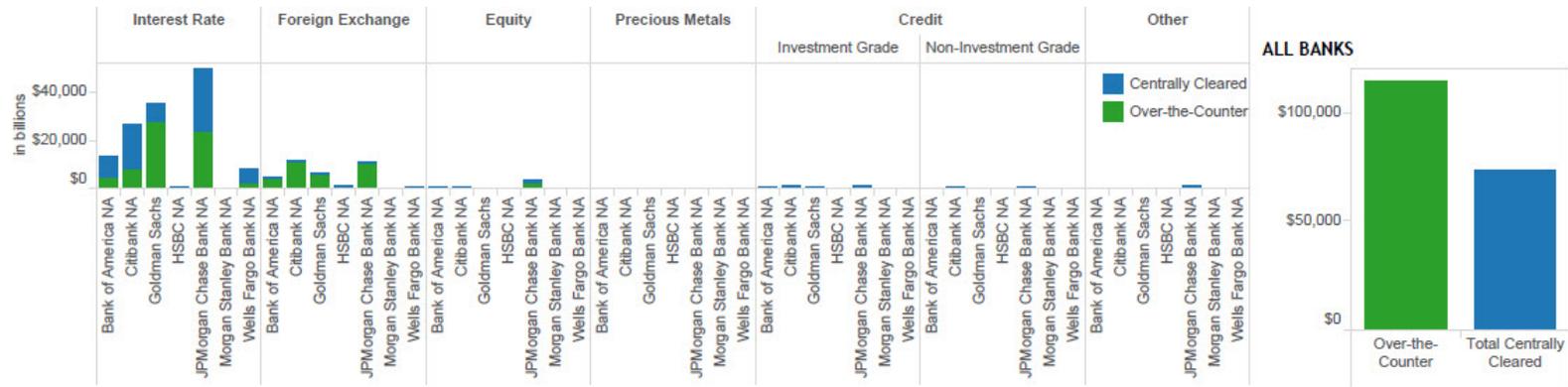
	2017				2018				2019				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3												
Investment-Grade: < 1 yr	\$1,343	\$1,234	\$1,216	\$934	\$880	\$805	\$764	\$837	\$763	\$758	\$675	\$781	\$726	\$619	\$648	\$554	\$547	\$540	\$565
Investment-Grade: 1-5 yrs	2,072	2,073	2,085	1,897	1,839	1,995	1,988	2,173	1,976	2,083	2,084	2,018	1,799	1,523	1,637	1,521	1,545	1,589	1,846
Investment-Grade: > 5 yrs	309	195	345	186	331	184	338	204	367	189	330	198	367	171	336	160	334	162	420
Total Investment Grade	\$3,724	\$3,502	\$3,647	\$3,016	\$3,050	\$2,984	\$3,089	\$3,214	\$3,106	\$3,030	\$3,089	\$2,997	\$2,891	\$2,313	\$2,622	\$2,235	\$2,426	\$2,291	\$2,831
	2017				2018				2019				2020				2021		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3												
Sub-Investment-Grade: < 1 yr	\$582	\$509	\$480	\$375	\$400	\$335	\$318	\$304	\$259	\$283	\$275	\$268	\$247	\$278	\$233	\$218	\$245	\$215	\$244
Sub-Investment-Grade: 1-5 yrs	838	830	814	718	763	791	801	691	661	701	708	624	743	608	618	533	570	551	654
Sub-Investment-Grade: > 5 yrs	159	93	149	77	133	69	133	61	119	60	111	56	105	56	108	48	119	49	125
Total Sub-Investment Grade	\$1,579	\$1,432	\$1,443	\$1,170	\$1,296	\$1,195	\$1,252	\$1,056	\$1,039	\$1,044	\$1,093	\$947	\$1,095	\$942	\$959	\$799	\$935	\$815	\$1,023

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, Schedule RC-L

Figure 21. Notional Amounts of Over-the-Counter and Centrally Cleared Derivative Contracts

Insured U.S. Commercial Banks and Savings Associations



In billions of dollars

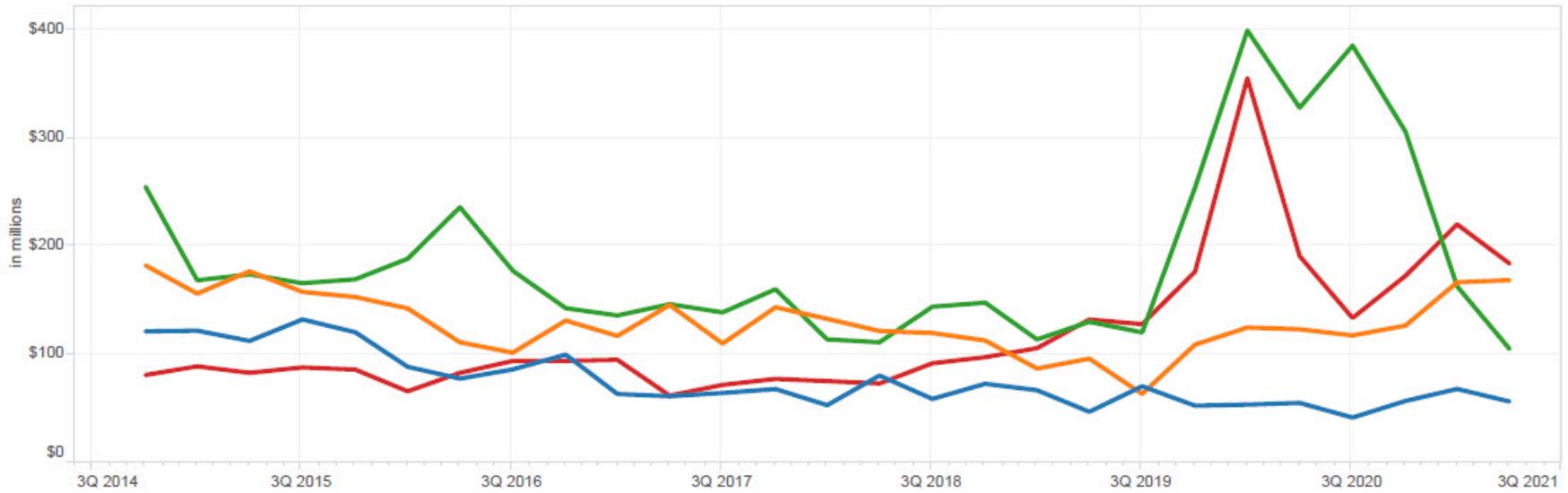
Bank Name	Interest Rate		Foreign Exchange		Equity		Precious Metals		Credit				Other		Total Centrally Cleared	Over-the-Counter	Total Notional
	Centrally Cleared	Over-the-Counter	Investment Grade		Non-Investment Grade		Centrally Cleared	Over-the-Counter									
									Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter					
JPMorgan Chase Bank NA	25,589	23,611	178	11,164	846	2,470	0	28	507	424	208	228	102	1,050	27,429	38,974	66,403
Citibank NA	18,797	8,091	337	11,794	33	741	1	8	302	725	63	268	97	117	19,630	21,744	41,374
Bank of America NA	9,176	4,558	104	4,583	206	612	0	18	157	158	43	88	0	20	9,686	10,038	19,724
Goldman Sachs	7,383	27,805	131	6,063	9	157	0	1	29	283	13	168	0	57	7,565	34,534	42,100
HSBC NA	71	251	42	1,073	0	23	0	10	0	1	0	1	0	0	113	1,359	1,473
Wells Fargo Bank NA	5,872	2,192	0	536	56	153	0	2	0	5	0	20	0	60	5,929	2,969	8,898
Morgan Stanley Bank NA	0	34	0	26	0	35	0	0	0	6	0	4	0	0	0	105	105
Grand Total	66,889	66,542	791	35,239	1,150	4,192	2	67	995	1,602	327	777	199	1,305	70,353	109,723	180,076
ALL OTHER	2,613	1,600	6	2,824	0	33	0	0	1	28	0	22	12	80	2,631	4,587	7,218
TOTAL	69,502	68,142	797	38,063	1,150	4,224	2	67	996	1,630	327	799	210	1,385	72,985	114,310	187,294

% of Total

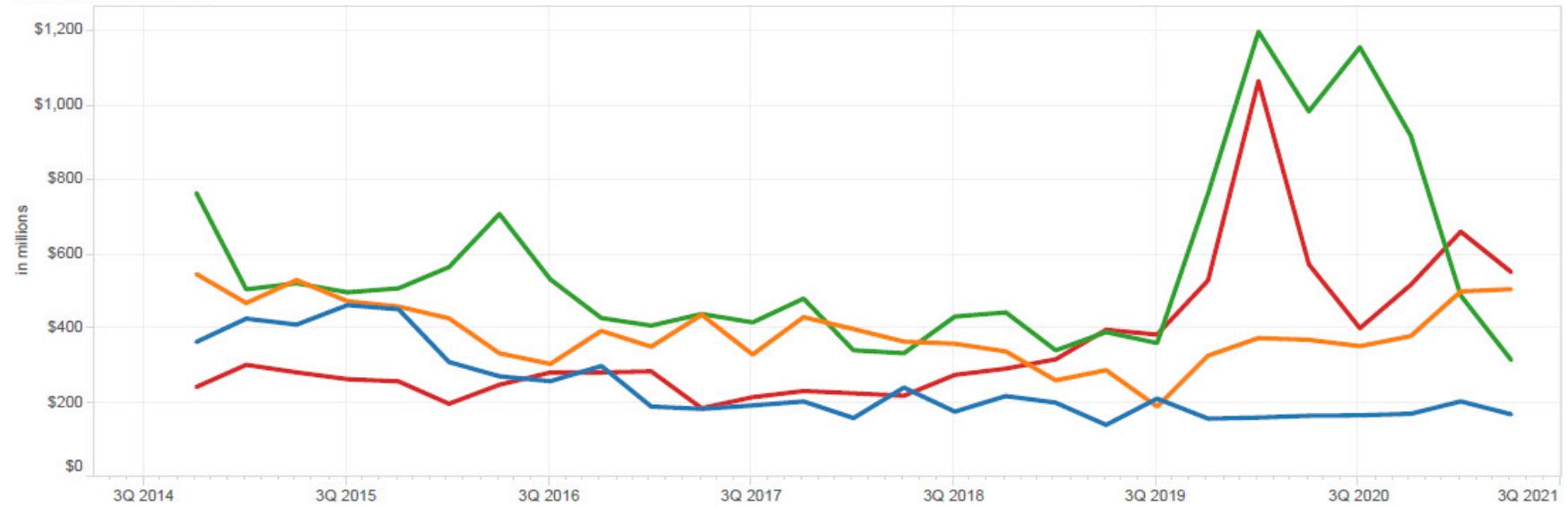
Bank Name	Interest Rate		Foreign Exchange		Equity		Precious Metals		Credit				Other		Total Centrally Cleared as a % of Total Notional	Total Over-the-Counter as a % of Total Notional
	Centrally Cleared	Over-the-Counter	Investment Grade		Non-Investment Grade		Centrally Cleared	Over-the-Counter								
									Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter				
JPMorgan Chase Bank NA	52%	48%	2%	98%	26%	74%	0%	100%	54%	46%	48%	52%	9%	91%	41%	59%
Citibank NA	70%	30%	3%	97%	4%	96%	14%	86%	29%	71%	19%	81%	45%	55%	47%	53%
Bank of America NA	67%	33%	2%	98%	25%	75%	3%	97%	50%	50%	33%	67%	0%	100%	49%	51%
Goldman Sachs	21%	79%	2%	98%	6%	94%	0%	100%	9%	91%	7%	93%	0%	100%	18%	82%
HSBC NA	22%	78%	4%	96%	0%	100%	0%	100%	0%	100%	21%	79%	0%	100%	8%	92%
Wells Fargo Bank NA	73%	27%	0%	100%	27%	73%	0%	100%	7%	93%	2%	98%	1%	99%	67%	33%
Morgan Stanley Bank NA	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%

Source: Call reports, Schedule RC-R

Figure 22. Average 60-Day Value-at-Risk



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