

Quarterly Report on Bank Trading and Derivatives Activities

Second Quarter 2023

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

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Contents

- About This Report1**
- Executive Summary1**
- Revenue2**
 - Insured U.S. Commercial Banks and Savings Associations’ Trading Revenue.....2
 - Holding Company Trading Revenue2
 - Bank Trading Revenue as a Percentage of
Consolidated Holding Company Trading Revenue3
- Counterparty Credit Risk3**
- Market Risk8**
 - Value-at-Risk8
 - Volatility Index8
 - Level 3 Trading Assets9
 - Notional Amounts of All Derivative Contracts10
 - Credit Derivatives11
 - Compression Activity11
 - Centrally Cleared Derivative Contracts12
- Glossary of Terms13**
- Appendix: Index of Tables and Figures15**

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.¹ A total of 1,186 insured U.S. national and state commercial banks and savings associations reported trading and derivatives activities at the end of the second quarter of 2023.² A small group of large financial institutions continues to dominate trading and derivatives activity in the U.S. commercial banking system. During the second quarter of 2023, four large commercial banks represented 87.0 percent of the total banking industry notional amounts and 64.6 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.

This is the 111th 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.

Executive Summary

- Insured U.S. commercial banks and savings associations (collectively, banks) reported trading revenue of \$13.7 billion in the second quarter of 2023, \$3.9 billion less (22.4 percent) than in the previous quarter and \$3.3 billion more (31.7 percent) than a year earlier (see table 1).
- Credit exposure from derivatives increased in the second quarter of 2023 compared with the first quarter of 2023. NCCE increased \$27.0 billion, or 10.8 percent, to \$273.0 billion (see table 5).
- Derivative notional amounts increased in the second quarter of 2023 by \$4.3 trillion, or 2.0 percent, to \$221.9 trillion (see table 10).
- Derivative contracts remained concentrated in interest rate products, which totaled \$164.1 trillion or 73.9 percent of total derivative notional amounts (see table 10).

¹ Values in the tables and figures in this report may not add up to the totals because of rounding.

² Institutions with total assets of less than \$5 billion have the option to file the Federal Financial Institutions Examination Council (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.

Revenue

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

Insured U.S. commercial banks and savings associations reported \$13.7 billion in trading revenue in the second quarter of 2023, \$3.9 billion less (22.4 percent) than in the previous quarter and \$3.3 billion more (31.7 percent) than a year earlier (see table 1). The quarter-over-quarter decrease in trading revenue was due to decreases in revenue from interest rate, equity, commodity and other, and credit 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

Trading instruments	2Q 2023	1Q 2023	Q/Q change	Q/Q % change	2Q 2022	Y/Y change	Y/Y % change
Interest rate	\$3,461	\$5,735	-\$2,274	-39.7%	\$874	\$2,587	296.0%
Foreign exchange	\$5,174	\$4,439	\$734	16.5%	\$6,363	-\$1,189	-18.7%
Equity	\$3,996	\$5,334	-\$1,338	-25.1%	\$774	\$3,222	416.6%
Commodity and other	\$824	\$1,570	-\$746	-47.5%	\$1,029	-\$205	-20.0%
Credit	\$204	\$516	-\$312	-60.5%	\$1,334	-\$1,130	-84.7%
Total trading revenue	\$13,658	\$17,594	-\$3,936	-22.4%	\$10,373	\$3,285	31.7%

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 \$26.4 billion in the second quarter of 2023 was \$11.3 billion less (29.9 percent) than in the previous quarter. The quarter-over-quarter decrease in trading revenue was due to decreases in revenue from interest rate, equity, commodity and other, and credit instruments. Year-over-year holding company trading revenue increased by \$16.1 billion (156.8 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

Trading instruments	2Q 2023	1Q 2023	Q/Q change	Q/Q % change	2Q 2022	Y/Y change	Y/Y % change
Interest rate	\$4,988	\$11,382	-\$6,394	-56.2%	-\$2,365	\$7,354	310.9%
Foreign exchange	\$7,867	\$5,795	\$2,073	35.8%	\$10,574	-\$2,707	-25.6%
Equity	\$10,797	\$14,264	-\$3,468	-24.3%	-\$1,063	\$11,860	1115.3%
Commodity and other	\$1,611	\$3,471	-\$1,860	-53.6%	\$2,698	-\$1,087	-40.3%
Credit	\$1,141	\$2,771	-\$1,630	-58.8%	\$438	\$704	160.8%
Total BHC trading revenue	\$26,405	\$37,683	-\$11,278	-29.9%	\$10,281	\$16,124	156.8%

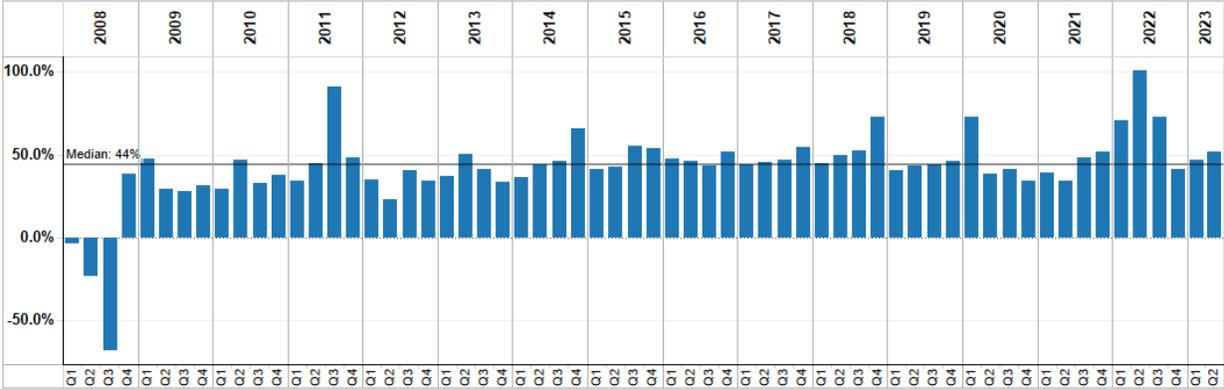
Source: Consolidated Financial Statements for Holding Companies—FR Y-9C, Schedule HI

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 decreased and is 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 second quarter of 2023 banks generated 51.7 percent of consolidated holding company trading revenue, an increase from 46.7 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 increased by \$186.0 billion (8.6 percent) in the second quarter of 2023 to \$2.4 trillion, primarily driven by a \$103.0 billion (19.4 percent) increase in receivables from foreign exchange contracts and a \$77.0 billion (5.5 percent) increase in receivables from interest rate contracts (see table 3a). GNFV increased \$191.0 billion (9.1 percent) to \$2.3 trillion during the quarter, driven by a \$97.0 billion (18.2 percent) increase in payables on foreign exchange contracts and a \$87.0 billion (6.5 percent) increase in payables from interest rate contracts (see table 3b).

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

Trading instruments	2Q 2023	1Q 2023	Q/Q change	Q/Q % change	2Q 2022	Y/Y change	Y/Y % change
Interest rate	\$1,482	\$1,405	\$77	5.5%	\$1,263	\$219	17.3%
FX	\$637	\$534	\$103	19.4%	\$746	-\$109	-14.6%
Equity	\$147	\$132	\$15	11.1%	\$166	-\$19	-11.3%
Commodity & other	\$49	\$57	-\$8	-14.4%	\$138	-\$89	-64.7%
Credit	\$39	\$40	-\$1	-2.7%	\$44	-\$5	-11.1%
GPFV	\$2,353	\$2,168	\$186	8.6%	\$2,357	-\$3	-0.1%

Source: Call reports, Schedule RC-L

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

Trading instruments	2Q 2023	1Q 2023	Q/Q change	Q/Q % change	2Q 2022	Y/Y change	Y/Y % change
Interest rate	\$1,428	\$1,341	\$87	6.5%	\$1,186	\$241	20.4%
FX	\$627	\$531	\$97	18.2%	\$735	-\$108	-14.7%
Equity	\$154	\$138	\$16	11.5%	\$154	\$1	0.4%
Commodity & other	\$47	\$54	-\$7	-13.4%	\$115	-\$68	-59.4%
Credit	\$41	\$41	-\$1	-1.6%	\$40	\$1	3.3%
GNFV	\$2,297	\$2,105	\$191	9.1%	\$2,229	\$67	3.0%

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 \$27.0 billion (10.8 percent) to \$273.0 billion in the second quarter of 2023 (see table 5).³ Legally enforceable netting agreements allowed banks to reduce GPFV exposures by 88.4 percent (\$2.1 trillion) in the second quarter of 2023.

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

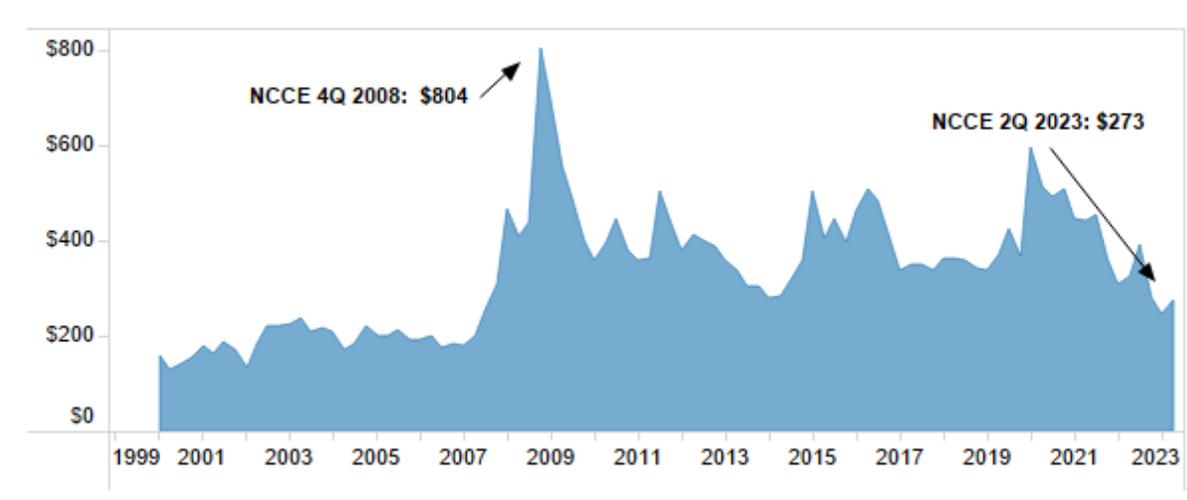
Netting benefit ratio	2Q 2023	1Q 2023	Q/Q change	Q/Q % change
GPFV	\$2,353	\$2,168	\$186	8.6%
NCCE RC-R	\$273	\$246	\$27	10.8%
Netting benefit RC-R	\$2,081	\$1,921	\$159	8.3%
Netting benefit % RC-R	88.4%	88.6%		-0.2%

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

³ 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.

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 second quarter of 2023 at \$273.0 billion as more normal market activity resumed.

Figure 2: Net Current Credit Exposure (NCCE), 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 (36.8 percent) and in corporations and other counterparties (57.4 percent) (see table 6). The combined exposure to hedge funds and sovereign governments was small (5.8 percent in total).

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

Quarter	Banks and securities firms	Hedge funds	Sovereign governments	Corporate and all other counterparties
2Q 2023	36.8%	1.7%	4.1%	57.4%
1Q 2023	36.3%	2.0%	4.1%	57.7%
4Q 2022	34.5%	2.3%	3.9%	59.2%
4Q 2021	37.9%	2.0%	7.4%	52.6%
4Q 2020	39.1%	2.2%	8.3%	50.4%
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%

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 107.4 percent of their total NCCE at the end of the second quarter of 2023, down from 108.9 percent in the first quarter

of 2023 (see table 7). Collateral held against hedge fund exposures increased in the second quarter to 634.2 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 (FV) Collateral to Net Current Credit Exposure

Quarter	FV banks and securities firms	FV hedge funds	FV sovereign governments	FV corporate and all other counterparties	FV/NCCE %
2Q 2023	119.9%	634.2%	71.4%	86.0%	107.4%
1Q 2023	119.4%	609.6%	73.7%	87.9%	108.9%
4Q 2022	111.4%	474.5%	61.5%	75.4%	96.5%
4Q 2021	128.6%	687.6%	69.3%	76.0%	108.0%
4Q 2020	110.6%	467.6%	52.1%	59.5%	87.8%
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%

Source: Call reports, Schedule RC-L

The majority of collateral held by banks against NCCE is very liquid with 65.4 percent held in cash (both U.S. dollar and other currencies) and an additional 8.9 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

Quarter	Cash U.S. \$	Cash other currencies	U.S. Treasury securities	U.S. government agency	Corp bonds	Equity securities	All other collateral
2Q 2023	48.5%	16.9%	8.3%	0.6%	4.1%	6.5%	15.2%
1Q 2023	49.2%	16.1%	8.5%	0.6%	4.2%	6.4%	15.0%
4Q 2022	53.1%	14.9%	8.7%	0.4%	3.8%	5.5%	13.7%
4Q 2021	39.3%	24.5%	8.1%	0.9%	1.6%	8.2%	17.3%
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%

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 Federal Financial Institutions Examination Council (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

Value-at-risk	JPMorgan Chase Bank NA	Citibank NA	Bank of America NA	Goldman Sachs Bank USA
2Q 2023 average 60-day VaR	\$193	\$146	\$113	\$576
1Q 2023 average 60-day VaR	\$238	\$153	\$102	\$446
Q/Q change	-\$45	-\$7	\$11	\$130
2Q 2023 total risk-based capital	\$298,582	\$165,840	\$199,351	\$55,942

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

Value-at-risk capital requirement	JPMorgan Chase Bank NA	Citibank NA	Bank of America NA	Goldman Sachs Bank USA
2Q 2023 VaR capital requirement	\$580	\$439	\$340	\$1,728
1Q 2023 VaR capital requirement	\$714	\$458	\$307	\$1,338
Q/Q change	-\$134	-\$19	\$33	\$390
2Q 2023 total risk-based capital	\$298,582	\$165,840	\$199,351	\$55,942

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

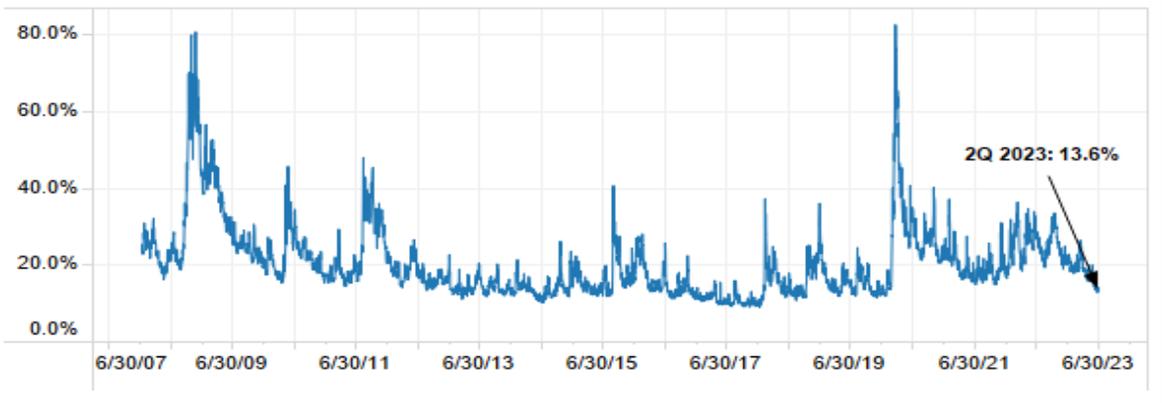
Volatility Index

Figure 3 shows the VIX, a volatility index,⁴ 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

⁴ VIX is the trademarked ticker symbol for the Chicago Board Options Exchange SPX Volatility Index.

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 13.6 percent at the end of the second quarter of 2023.

Figure 3: Volatility Index (VIX)

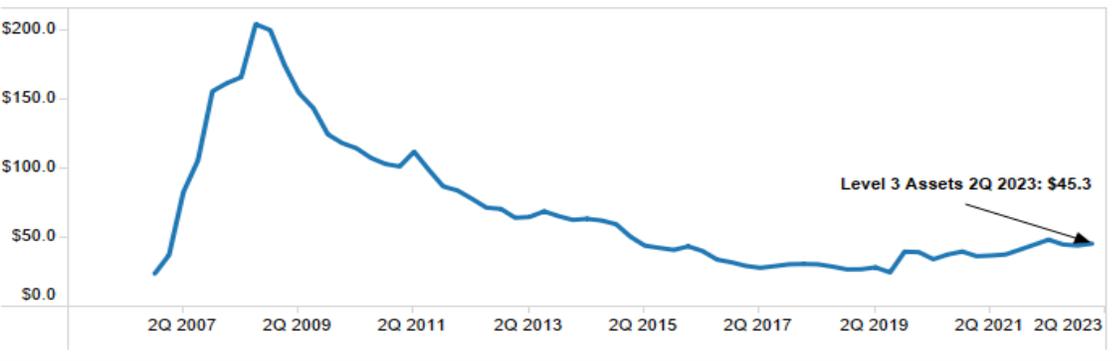


Source: Bloomberg

Level 3 Trading Assets

Another measure used to assess market risk is the volume of and changes in level 3 trading assets. Level 3 trading assets are assets whose fair value cannot be determined by using observable inputs, such as market prices. Since the peak of the financial crisis at the end of 2008, major dealers have reduced the volume of level 3 trading assets. Because 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 second quarter of 2023, banks held \$45.3 billion of level 3 trading assets, up 3.0 percent from the previous quarter and 1.7 percent higher than a year ago. Level 3 trading assets are \$158.8 billion (77.8 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 second quarter increased by \$4.3 trillion (2.0 percent) to \$221.9 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 interest rate, FX, and equity contracts. Interest rate notional amounts continued to represent the majority of banks' derivative holdings at \$164.1 trillion, or 73.9 percent of total derivatives (see table 10).

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

Trading instrument	2Q 2023	1Q 2023	Q/Q change	Q/Q % change	2Q 2022	Y/Y change	Y/Y % change
Interest rate	\$164,071	\$160,260	\$3,811	2.4%	\$142,860	\$21,211	14.8%
FX	\$46,376	\$45,686	\$690	1.5%	\$41,915	\$4,461	10.6%
Equity	\$5,471	\$5,001	\$470	9.4%	\$4,331	\$1,140	26.3%
Commodity and other	\$1,520	\$1,575	-\$55	-3.5%	\$1,779	-\$260	-14.6%
Credit derivatives	\$4,474	\$5,079	-\$605	-11.9%	\$3,966	\$508	12.8%
Total notional	\$221,912	\$217,602	\$4,311	2.0%	\$194,851	\$27,061	13.9%

Source: Call reports, Schedule RC-L

The increase in the total notional amount of derivative contracts by contract type was primarily driven by an increase in swaps derivatives contracts (see table 11). Swaps contracts remained the leading derivatives contract type at 64.5 percent of all notional amounts.

The four banks with the most derivative activity hold 87.0 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

Trading instrument	2Q 2023	1Q 2023	Q/Q change	Q/Q % change	2Q 2022	Y/Y change	Y/Y % change
Futures and forwards	\$33,317	\$34,502	-\$1,185	-3.4%	\$32,045	\$1,272	4.0%
Swaps	\$143,242	\$137,730	\$5,512	4.0%	\$121,285	\$21,956	18.1%
Options	\$40,880	\$40,290	\$589	1.5%	\$37,555	\$3,324	8.9%
Credit derivatives	\$4,474	\$5,079	-\$605	-11.9%	\$3,966	\$508	12.8%
Total notional	\$221,912	\$217,602	\$4,310	2.0%	\$194,851	\$27,061	13.9%

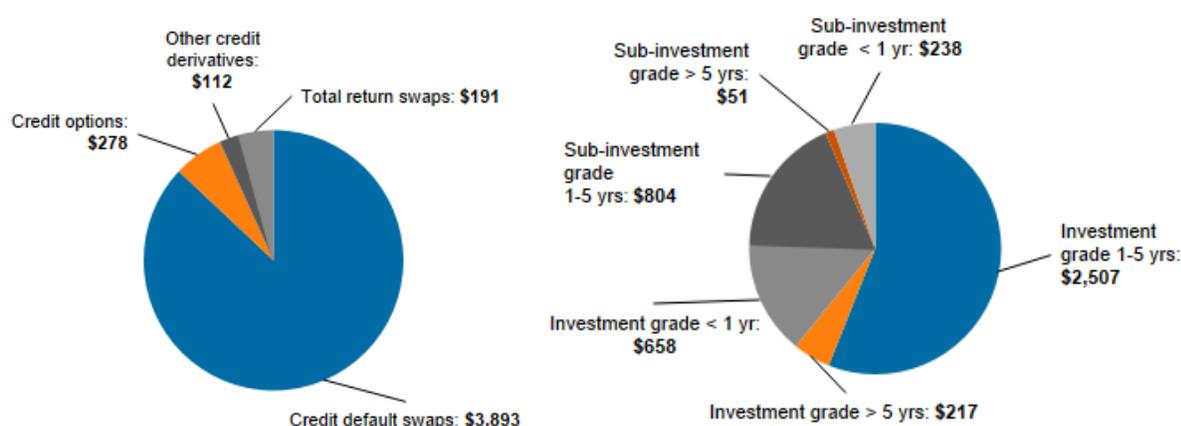
Source: Call reports, Schedule RC-L

Credit Derivatives

The notional amounts of credit derivatives decreased \$605.0 billion (11.9 percent) to \$4.5 trillion in the second quarter of 2023 (see table 11). As shown in the chart on the left of figure 5, credit default swaps are the dominant product, at \$3.9 trillion (87.0 percent) of all credit derivative notional amounts.

Credit derivative contracts referencing investment-grade entities with maturities from one to five years represented the largest segment of the market at \$2.5 trillion or 56.0 percent of all credit derivative notional amounts. Contracts of all tenors that reference investment-grade entities are \$3.4 trillion or 75.6 percent of the market (see the chart on the right in figure 5).

Figure 5: Credit Derivative Composition, in Billions of Dollars



Source: Call reports, Schedule RC-L

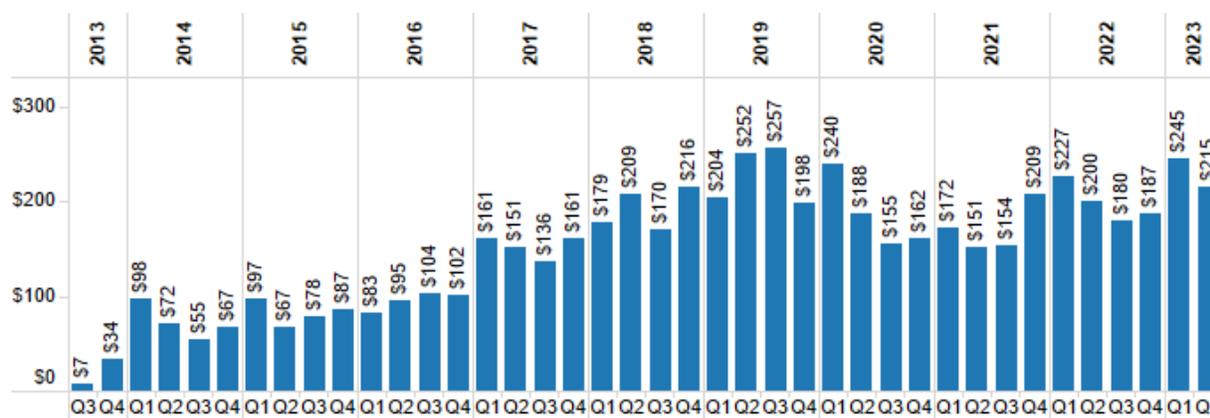
The notional amount for the 101 banks that net sold credit protection (i.e., assumed credit risk) was \$2.1 trillion, down \$310.2 billion (12.7 percent) from the first quarter of 2023 (see table 24 in the appendix). The notional amount for the 82 banks that net purchased credit protection (i.e., hedged credit risk) was \$2.3 trillion, \$294.9 billion lower (11.2 percent) than in the first quarter of 2023 (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 decreased in the second quarter of 2023, 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 second quarter of 2023, 41.3 percent of banks’ derivative holdings were centrally cleared (see table 12). From a market factor perspective, 52.9 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 35.1 percent of credit derivative transactions were centrally cleared during the second quarter of 2023.

Centrally cleared derivative transactions were heavily concentrated at qualifying central counterparties, with 89.0 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

Quarter	Interest rate	FX	Equity	Precious metals	Credit	Other	Total
2Q 2023	52.9%	3.0%	23.5%	7.7%	35.1%	12.5%	41.3%
1Q 2023	52.2%	3.0%	24.7%	7.3%	30.9%	12.6%	40.5%
4Q 2022	49.1%	2.7%	23.8%	8.8%	28.9%	12.2%	37.9%
3Q 2022	54.3%	3.0%	23.9%	6.6%	30.6%	12.9%	41.7%
2Q 2022	55.9%	3.2%	24.8%	5.9%	25.4%	12.3%	43.1%
1Q 2022	56.1%	2.9%	24.3%	6.4%	33.8%	12.4%	43.4%
4Q 2021	51.8%	2.0%	20.6%	3.1%	29.2%	12.3%	39.4%
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%

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.

Appendix: Index of Tables and Figures

Tables

Table 1: Quarterly Bank Trading Revenue, in Millions of Dollars	2
Table 2: Quarterly Holding Company Trading Revenue, in Millions of Dollars	2
Table 3a: Gross Positive Fair Values, in Billions of Dollars	4
Table 3b: Gross Negative Fair Values, in Billions of Dollars	4
Table 4: Netting Contract Examples	5
Table 5: Net Current Credit Exposure, in Billions of Dollars	5
Table 6: Net Current Credit Exposure by Counterparty Type as a Percentage of Total Net Current Credit Exposure	6
Table 7: Ratio of Fair Value Collateral to Net Current Credit Exposure	7
Table 8: Composition of Collateral	7
Table 9a: Value-at-Risk, in Millions of Dollars	8
Table 9b: Value-at-Risk Capital Requirement, in Millions of Dollars	8
Table 10: Derivative Notional Amounts by Underlying Risk Exposure Quarter-Over-Quarter, in Billions of Dollars	10
Table 11: Derivative Notional Amounts by Contract Type Quarter-Over-Quarter, in Billions of Dollars	10
Table 12: Centrally Cleared Derivative Contracts as a Percentage of Total Derivative Contracts	12
Table 13: Notional Amounts of Derivative Contracts	17
Table 14: Notional Amounts of Derivative Contracts (Holding Companies)	18
Table 15: Distribution of Derivative Contracts	19
Table 16: Credit Equivalent Exposures	20
Table 17: Notional Amounts of Derivative Contracts Held for Trading	21
Table 18: Gross Fair Values of Derivative Contracts	22
Table 19: Trading Revenues From Cash Instruments and Derivatives	23
Table 20: Notional Amounts of Derivative Contracts by Contract Type and Maturity (Interest Rate, FX, and Gold)	24
Table 21: Notional Amounts of Derivative Contracts by Contract Type and Maturity (Precious Metals)	25
Table 22: Notional Amounts of Derivative Contracts by Contract Type and Maturity (Other Commodity and Equity)	26
Table 23: Notional Amounts of Credit Derivative Contracts by Contract Type and Maturity (Investment Grade and Sub-investment Grade)	27
Table 24: Distribution of Credit Derivative Contracts Held for Trading	28
Table 25: Derivatives Data Reported by FFIEC 051 Filers	29

Figures

Figure 1: Bank Trading Revenue as a Percentage of Consolidated Holding Company Trading Revenue	3
Figure 2: Net Current Credit Exposure, in Billions of Dollars	6
Figure 3: Volatility Index (VIX)	9

Figure 4: Level 3 Trading Assets, in Billions of Dollars	9
Figure 5: Credit Derivative Composition, in Billions of Dollars	11
Figure 6: Quarterly Compression Activity, in Trillions of Dollars	12
Figure 7: Derivative Notional Amounts by Type	30
Figure 8: Derivative Contracts by Product	31
Figure 9: Derivative Contracts by Type.....	32
Figure 10: Four Banks Dominate in Derivatives	33
Figure 11: Credit Exposure to Risk-Based Capital (in Percentage).....	34
Figure 12: Netting Benefit: Amount of Gross Credit Exposure Eliminated Through Bilateral Netting (in Percentage)	35
Figure 13: Quarterly Charge-Offs/(Recoveries) From Derivatives—Bank.....	36
Figure 14: Quarterly Charge-Offs/(Recoveries) From Derivatives—Holding Company	37
Figure 15a. Quarterly Trading Revenue (Cash and Derivative Positions)—Bank.....	38
Figure 15b. Quarterly Trading Revenue (Cash and Derivative Positions)— Holding Company.....	39
Figure 16. Quarterly Trading Revenue (Cash and Derivative Positions) as a Percentage of Gross Revenue (in Percentage)	40
Figure 17. Notional Amounts of Interest Rate and Foreign Exchange Rate Contracts by Maturity.....	41
Figure 18. Notional Amounts of Precious Metal Contracts by Maturity.....	42
Figure 19. Notional Amounts of Other Commodity and Equity Contracts by Maturity	43
Figure 20. Notional Amounts of Credit Derivative Contracts by Credit Quality and Maturity.....	44
Figure 21. Notional Amounts of Over-the-Counter and Centrally Cleared Derivative Contracts	45
Figure 22. Average 60-Day Value-at-Risk	46

Table 13: Notional Amounts of Derivative Contracts

Top 25 Commercial Banks, Savings Associations and Trust Companies in Derivatives, in Millions of Dollars, June 30, 2023

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	\$3,382,195	\$57,970,009	\$866,867	\$1,104,507	\$10,019,808	\$35,636,676	\$8,862,492	\$1,479,659	\$950,552
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	1,212,979	3,125,638	4,814,380	36,043,639	11,113,728	733,499	620,860
3	CITIBANK NATIONAL ASSN	E57ODZWZ7F32TWEFA76	1,709,727	54,818,226	417,660	504,570	5,590,191	39,013,831	7,809,077	1,482,897	411,494
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	287,646	268,914	4,155,054	14,382,217	3,634,138	537,096	444,118
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCFXT09	1,667,885	15,812,213	609,319	543,359	1,268,202	10,180,726	3,080,093	130,514	24,111
6	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	290,889	2,462,317	14,079	0	2,388,082	28,800	31,356	0	78,249
7	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	669,903	1,783,125	576	1,010	101,386	1,419,879	246,069	14,206	5,588
8	HSBC NA	1IE8VN30JCEQV1H4R804	165,205	1,443,286	94,330	6,163	525,179	731,799	73,625	12,189	40,455
9	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	348,626	1,175,095	30,946	61	309,965	806,144	27,759	220	120,577
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	554,128	1,166,537	8,026	5,875	23,147	1,075,440	40,705	13,345	1,571
11	TD BANK NATIONAL ASSN	03D0JEWDFUS0SEEGK89	374,251	662,989	0	0	1,961	660,972	57	0	0
12	TRUIST BANK	JJKC32MCHWDI71265Z06	546,763	493,801	5,524	31,814	24,612	351,769	70,343	9,739	376
13	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	222,753	470,324	3,860	0	11,797	422,911	29,281	2,475	111
14	NORTHERN TRUST CO	6PTKHDJ8HDF78PFWH30	157,816	326,682	0	0	304,029	22,236	418	0	4,867
15	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	154,556	307,306	112	0	2,810	273,122	25,238	6,024	26
16	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	192,783	285,266	1,183	0	9,251	253,317	21,365	150	1,723
17	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	464,954	248,667	23,077	0	11,880	206,565	658	6,487	434
18	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,426	246,111	1,955	424	6,179	171,138	61,513	4,902	246
19	BMO HARRIS BANK NA		263,344	164,740	0	0	4,006	159,071	1,663	0	212
20	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	202,537	154,478	1,770	0	11,008	117,724	6,592	17,384	404
21	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	188,063	121,666	503	0	5,402	98,114	13,681	3,967	19
22	UBS BANK USA		114,356	99,460	0	0	0	99,460	0	0	0
23	MANUFACTURERS&TRADERS TR CO	VWB2V0FCW3A0EE3ZJN75	207,098	85,828	0	0	3,121	80,044	2,663	0	177
24	COMERICA BANK		90,864	83,240	0	0	3,294	68,393	9,990	1,563	323
25	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	48,942	67,632	2,816	3,257	45,213	8,564	7,782	0	0
	Top 25 commercial banks, SAs & TCs with derivatives		\$15,190,975	\$220,757,926	\$3,583,227	\$5,595,592	\$29,639,956	\$142,312,552	\$35,170,285	\$4,456,315	\$2,706,493
	Other commercial banks, SAs & TCs with derivatives		5,753,754	1,154,390	16,752	981	77,120	928,995	112,714	17,829	700
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	3,599,979	5,596,572	29,717,075	143,241,547	35,282,999	4,474,144	2,707,193

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.

Source: Call reports, Schedule RC-L

Table 14: Notional Amounts of Derivative Contracts (Holding Companies)
Top 25 Holding Companies in Derivatives, in Millions of Dollars, June 30, 2023

Rank	Holding company	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 & CO.	8I5DZWZKVSZ11NUHU748	\$3,868,240	\$57,400,106	\$898,784	\$1,633,223	\$10,444,330	\$34,463,774	\$8,483,205	\$1,476,790	\$929,952
2	CITIGROUP INC.	6SHGI4ZSSLCXXQSBB395	2,423,675	54,023,689	578,175	3,131,771	6,561,606	35,232,738	7,004,208	1,515,191	406,388
3	GOLDMAN SACHS GROUP, INC., THE	784F5XWPLTWKTBV3E584	1,571,386	46,620,013	1,666,620	4,498,919	5,027,542	23,314,714	10,878,991	1,233,227	270,646
4	BANK OF AMERICA CORPORATION	9DJT3UXIJZJ4WXO774	3,123,198	41,863,867	787,645	1,671,518	8,421,707	25,211,461	4,784,100	987,436	327,724
5	MORGAN STANLEY	IGJSJL3JD5P30I6NJZ34	1,164,911	38,546,061	956,227	1,245,762	4,466,388	23,091,833	8,062,895	722,956	122,674
6	WELLS FARGO & COMPANY	PBLD0EJDB5FWOLXP3B76	1,876,322	16,010,324	629,751	587,415	1,659,693	9,944,488	3,077,457	111,520	24,091
7	SMBC AMERICAS HOLDINGS, INC.		36,915	9,938,439	962,561	1,656,632	299,717	5,300,252	1,713,719	5,558	395
8	MIZUHO AMERICAS LLC		82,306	9,699,947	35,839	30,057	446,629	8,830,866	342,052	14,504	4,463
9	HSBC NORTH AMERICA HOLDINGS INC.	213800JCL1FHBQK3M654	223,656	4,912,121	593,166	886,358	525,179	2,814,306	80,924	12,189	40,455
10	STATE STREET CORPORATION	549300ZFEEJ2IP5VME73	294,561	2,453,860	14,222	0	2,388,082	20,200	31,356	0	78,249
11	U.S. BANCORP	N1GZ7BBF3NP8GI976H15	680,825	1,801,941	576	1,010	100,307	1,439,773	246,069	14,206	5,588
12	BANK OF NEW YORK MELLON CORPORATION, THE	WFLLPEPC7FZXENRZV188	430,382	1,155,715	31,289	61	317,617	778,768	27,760	220	120,567
13	PNC FINANCIAL SERVICES GROUP, INC., THE	CFGNEKW0P8842LEUIA51	558,223	1,140,034	8,098	5,875	26,642	1,045,240	40,705	13,475	1,571
14	TD GROUP US HOLDINGS LLC	549300ARWZ5E3L64UH29	516,129	754,869	54,926	1,343	16,244	682,130	225	0	0
15	RBC US GROUP HOLDINGS LLC		165,936	741,533	200,279	205,560	19,908	314,679	461	645	300
16	BARCLAYS US LLC	213800H14XVWV087OI72	190,712	714,947	18,639	299,219	353,224	42,969	96	800	31
17	TRUIST FINANCIAL CORPORATION	549300DRQQI75D2JP341	554,549	509,459	5,524	31,814	24,813	367,105	70,343	9,860	376
18	CITIZENS FINANCIAL GROUP, INC.	2138004JDDA4ZQPFW65	223,468	470,324	3,860	0	11,797	422,911	29,281	2,475	111
19	NORTHERN TRUST CORPORATION	549300GLF98S992BC502	156,753	323,932	0	0	304,029	19,486	418	0	4,867
20	REGIONS FINANCIAL CORPORATION		155,878	303,186	112	0	2,890	268,922	25,238	6,024	26
21	KEYCORP		195,214	294,230	1,183	0	11,109	260,424	21,365	150	1,723
22	CAPITAL ONE FINANCIAL CORPORATION	ZUE8T73ROZOF6FLBAR73	467,800	282,076	23,077	0	11,991	239,863	658	6,487	434
23	FIFTH THIRD BANCORP	THRNG6BD57P9QWTQLG42	207,276	250,316	1,955	424	6,179	175,343	61,513	4,902	246
24	BMO FINANCIAL CORP.		293,090	243,891	20,006	4,953	56,761	159,583	1,724	863	229
25	AMERIPRISE FINANCIAL, INC.		169,790	153,769	14,074	6,566	282	59,960	69,186	3,701	0
	Top 25 holding companies with derivatives		\$19,631,195	\$290,608,648	\$7,506,588	\$15,898,481	\$41,504,665	\$174,501,786	\$45,053,949	\$6,143,180	\$2,341,106

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

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, in Millions of Dollars, June 30, 2023

Rank	Bank Name	Legal entity identifier	Total assets	Total derivatives	Percent exchange traded contracts	Percent OTC contracts	Percent interest rate contracts	Percent foreign exchange contracts	Percent equity contracts	Percent other contracts	Percent credit derivatives
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	3.4	96.6	68.5	24.0	3.7	1.2	2.6
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	7.6	92.4	85.5	12.1	0.9	0.1	1.3
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	1.7	98.3	70.2	23.9	2.6	0.7	2.7
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	2.4	97.6	68.8	24.3	4.1	0.5	2.3
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,667,885	15,812,213	7.3	92.7	85.8	10.8	2.0	0.6	0.8
6	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	290,889	2,462,317	0.6	99.4	1.7	97.1	0.0	1.2	0.0
7	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	669,903	1,783,125	0.1	99.9	91.8	7.2	0.0	0.2	0.8
8	HSBC NA	1E8VN30JCEQV1H4R804	165,205	1,443,286	7.0	93.0	15.3	79.2	1.0	3.7	0.8
9	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	348,626	1,175,095	2.6	97.4	26.8	72.9	0.3	0.0	0.0
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	554,128	1,166,537	1.2	98.8	95.4	2.0	0.7	0.8	1.1
11	TD BANK NATIONAL ASSN	03D0JEWDFUS0SEEKG89	374,251	662,989	0.0	100.0	99.7	0.3	0.0	0.0	0.0
12	TRUIST BANK	JJKC32MCHWDI71265Z06	546,763	493,801	7.6	92.4	84.0	4.8	7.4	1.8	2.0
13	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	222,753	470,324	0.8	99.2	92.0	7.2	0.0	0.2	0.5
14	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	157,816	326,682	0.0	100.0	6.7	93.1	0.2	0.0	0.0
15	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	154,556	307,306	0.0	100.0	96.1	0.6	0.0	1.3	2.0
16	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	192,783	285,266	0.4	99.6	91.4	3.4	0.0	5.1	0.1
17	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	464,954	248,667	9.3	90.7	86.3	5.6	0.0	5.5	2.6
18	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,426	246,111	1.0	99.0	77.5	11.9	1.6	7.1	2.0
19	BMO HARRIS BANK NA		263,344	164,740	0.0	100.0	96.6	2.4	1.0	0.0	0.0
20	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	202,537	154,478	1.1	98.9	43.4	23.3	22.0	0.0	11.3
21	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	188,063	121,666	0.4	99.6	91.8	3.7	0.5	0.7	3.3
22	UBS BANK USA		114,356	99,460	0.0	100.0	100.0	0.0	0.0	0.0	0.0
23	MANUFACTURERS&TRADERS TR CO	WWB2V0FCW3A0EE3ZJN75	207,098	85,828	0.0	100.0	98.2	1.8	0.0	0.0	0.0
24	COMERICA BANK		90,864	83,240	0.0	100.0	76.7	4.0	0.0	17.4	1.9
25	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	48,942	67,632	9.0	91.0	75.3	0.2	0.0	24.4	0.0
	Top 25 commercial banks, SAs & TCs with derivatives		\$15,190,975	\$220,757,926	\$9,178,819	\$211,579,108	\$162,991,484	\$46,325,411	\$5,470,367	\$1,514,350	\$4,456,315
	Other commercial banks, SAs & TCs with derivatives		5,753,754	1,154,390	17,733	1,136,658	1,079,882	50,721	651	5,308	17,829
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	9,196,552	212,715,765	164,071,366	46,376,131	5,471,018	1,519,658	4,474,144
	Top 25 Commercial Banks, SAs & TCs with derivatives: percentage of total			99.5	4.1	95.3	73.4	20.9	2.5	0.7	2.0
	Other commercial banks, SAs & TCs with derivatives: percentage of total			0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
	Total all commercial banks, SAs & TCs with derivatives: percentage of total			100.0	4.1	95.9	73.9	20.9	2.5	0.7	2.0

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.

Source: Call reports, Schedule RC-L

Table 16: Credit Equivalent Exposures

Top 25 Commercial Banks, Savings Associations and Trust Companies in Derivatives, in Millions of Dollars, June 30, 2023

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	Percent of total credit exposure to capital
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	\$298,582	\$81,117	\$246,986	\$328,103	110
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	55,942	13,128	57,198	70,326	126
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	165,840	43,878	147,822	191,700	116
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	199,351	38,076	58,978	97,054	49
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,667,885	15,812,213	166,077	38,049	17,326	55,375	33
6	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	290,889	2,462,317	18,318	6,193	18,171	24,364	133
7	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	669,903	1,783,125	68,502	7,354	5,657	13,011	19
8	HSBC NA	1IE8VN30JCEQV1H4R804	165,205	1,443,286	19,676	4,593	3,496	8,089	41
9	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	348,626	1,175,095	20,762	5,957	9,065	15,022	72
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	554,128	1,166,537	52,859	3,900	-1,200	2,700	5
11	TD BANK NATIONAL ASSN	03D0JEWFDUS0SEEKG89	374,251	662,989	40,797	42	1,891	1,933	5
12	TRUIST BANK	JJKC32MCHWDI71265Z06	546,763	493,801	54,869	410	2,224	2,634	5
13	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	222,753	470,324	22,808	657	1,734	2,390	10
14	NORTHERN TRUST CO	6PTKHDJ8HDFU78PFWH30	157,816	326,682	12,273	2,060	4,300	6,360	52
15	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	154,556	307,306	15,487	503	637	1,140	7
16	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	192,783	285,266	20,441	573	668	1,241	6
17	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	464,954	248,667	51,083	3,330	3,543	6,873	13
18	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,426	246,111	21,367	2,046	3,025	5,071	24
19	BMO HARRIS BANK NA		263,344	164,740	25,927	452	110	562	2
20	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	202,537	154,478	21,338	551	3,636	4,187	20
21	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	188,063	121,666	18,198	2,155	1,032	3,188	18
22	UBS BANK USA		114,356	99,460	10,302	0	257	257	2
23	MANUFACTURERS&TRADERS TR CO	VWB2V0FCW3A0EE3ZJN75	207,098	85,828	19,733	272	259	531	3
24	COMERICA BANK		90,864	83,240	9,641	531	1,327	1,858	19
25	BOKF NATIONAL ASSN	FU7RSW4CQQY98A207J66	48,942	67,632	4,669	1,056	1,320	2,376	51
	Top 25 commercial banks, SAs & TCs with derivatives		\$15,190,975	\$220,757,926	\$1,414,846	\$256,881	\$589,463	\$846,344	60
	Other commercial banks, SAs & TCs with derivatives		5,753,754	1,154,390	587,826	15,853	9,179	25,032	4
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	2,002,672	272,734	598,642	871,376	44

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.

Source: Call reports, Schedules 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, in Millions of Dollars, June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Total held for trading & MTM	Percent held for trading & MTM	Total not held for trading & MTM	Percent not held for trading & MTM
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	\$55,835,760	98.8	\$654,590	1.2
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	56,268,597	99.9	41,767	0.1
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	53,239,800	99.8	95,529	0.2
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	20,225,350	89.0	2,502,619	11.0
	Top four commercial banks, SAs & TCs with derivatives		\$8,058,832	\$193,097,163	\$185,569,507	98.3	\$3,294,505	1.7
	Other commercial banks, SAs & TCs with derivatives		12,885,897	28,815,154	25,072,255	87.7	3,501,906	12.3
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	210,641,762	96.9	6,796,411	3.1

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.

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, in Millions of Dollars, June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Trading gross positive fair value*	Trading gross negative fair value**	Not for trading gross positive fair value*	Not for trading gross negative fair value**	Credit derivatives gross positive fair value	Credit derivatives gross negative fair value**
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	\$654,890	\$637,487	\$3,885	\$1,635	\$12,993	\$13,360
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	772,150	766,540	49	48	8,308	9,367
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	458,438	440,753	2,204	1,737	11,653	11,614
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	159,695	140,562	54,252	57,637	4,021	3,390
	Top four commercial banks, SAs & TCs with derivatives		\$8,058,832	\$193,097,163	\$2,045,173	\$1,985,342	\$60,390	\$61,057	\$36,975	\$37,731
	Other commercial banks, SAs & TCs with derivatives		12,885,897	28,815,154	163,350	168,561	45,704	40,962	1,899	3,079
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	2,208,523	2,153,903	106,094	102,019	38,874	40,810

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.

*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, in Millions of Dollars: Revenue Figures are for the Quarter (Not Year-to-Date), June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Total trading revenues from cash & off-balance sheet positions	Trading revenue from interest rate positions	Trading revenue from foreign exchange positions	Trading revenue from equity positions	Trading revenue from commodity & other positions	Trading revenue from credit positions
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	6,886	1,731	1,433	3,105	365	252
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	924	484	376	256	8	-200
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	1,441	652	1,217	-510	159	-77
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	2,345	667	834	616	179	49
	Top four commercial banks, SAs & TCs with derivatives		\$8,058,832	\$193,097,163	11,596	3,534	3,860	3,467	711	24
	Other commercial banks, SAs & TCs with derivatives		12,885,897	28,815,154	2,062	-73	1,314	529	113	180
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	13,658	3,461	5,174	3,996	824	204

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."

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

Table 20: Notional Amounts of Derivative Contracts by Contract Type and Maturity (Interest Rate and Foreign Exchange Rate)

Top Four Commercial Banks, Savings Associations and Trust Companies in Derivatives, in Millions of Dollars, June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Interest rate maturity < 1 year	Interest rate maturity 1-5 years	Interest rate maturity > 5 years	Interest rate: all maturities	Foreign exchange rate maturity < 1 year	Foreign exchange rate maturity 1-5 years	Foreign exchange rate maturity > 5 years	Foreign exchange rate: all maturities
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	\$35,997,807	\$7,061,698	\$5,564,533	\$48,624,038	\$10,317,354	\$2,511,906	\$1,215,134	\$14,044,394
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	24,969,879	9,221,985	8,265,861	42,457,725	4,940,401	3,177	756,591	5,700,169
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	28,098,172	4,389,438	3,211,548	35,699,158	9,262,508	2,000,832	982,862	12,246,202
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	7,505,198	5,465,580	3,409,993	16,380,771	4,755,687	466,646	291,030	5,513,363
	Top four commercial banks, SAs & TCs with derivatives		\$8,058,832	\$193,097,163	\$96,571,056	\$26,138,701	\$20,451,935	\$143,161,692	\$29,275,950	\$4,982,561	\$3,245,617	\$37,504,128
	Other commercial banks, SAs & TCs with derivatives		12,885,897	28,815,154	16,363,905	3,247,144	1,041,191	20,652,240	6,437,932	282,261	75,078	6,795,271
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	112,934,961	29,385,845	21,493,126	163,813,932	35,713,882	5,264,822	3,320,695	44,299,399

Note: Beginning January 1, 2022, the largest banks are required to calculate their derivative exposure amount for regulatory capital purposes using the Standardized Approach for Counterparty Credit Risk (SA-CCR). Refer to the call report instructions and OCC Bulletin 2020-7, "Standardized Approach for Counterparty Credit Risk: Final Rule," for additional information on the SA-CCR exposure calculation.

Source: Call reports, Schedules 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, in Millions of Dollars, June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Precious metals maturity < 1 year	Precious metals maturity 1-5 years	Precious metals maturity > 5 years	Precious metals: all maturities
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	\$209,452	\$25,691	\$0	\$235,143
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	193	68	0	261
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	112,109	8,368	0	120,477
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	75,501	6,474	0	81,975
	Top four commercial banks, SAs & TCs with derivatives		\$8,058,832	\$193,097,163	\$397,255	\$40,601	\$0	\$437,856
	Other commercial banks, SAs & TCs with derivatives		12,885,897	28,815,154	11,280	969	0	12,250
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	408,535	41,570	0	450,106

Note: Beginning January 1, 2022, the largest banks are required to calculate their derivative exposure amount for regulatory capital purposes using the Standardized Approach for Counterparty Credit Risk (SA-CCR). Under SA-CCR gold derivatives are considered precious metals derivative contracts rather than an exchange rate derivative contract resulting in an increase in reported precious metals derivative contracts compared to prior quarters. Refer to the call report instructions and OCC Bulletin 2020-7, "Standardized Approach for Counterparty Credit Risk: Final Rule," for additional information on the SA-CCR exposure calculation.

Source: Call reports, Schedules 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, in Millions of Dollars, June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Other commodity maturity < 1 year	Other commodity maturity 1-5 years	Other commodity maturity > 5 years	Other commodity: all maturities	Equity maturity < 1 year	Equity maturity 1-5 years	Equity maturity > 5 years	Equity: all maturities
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	\$770,027	\$124,611	\$3,717	\$898,355	\$3,212,920	\$617,599	\$55,749	\$3,886,268
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	40,670	17,675	323	58,668	428,782	62,001	23,767	514,550
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	118,255	47,768	405	166,428	674,662	122,850	6,929	804,441
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	28,141	7,991	381	36,513	687,996	268,568	17,695	974,259
	Top four commercial banks, SAs & TCs with derivatives		\$8,058,832	\$193,097,163	\$957,093	\$198,045	\$4,826	\$1,159,964	\$5,004,360	\$1,071,018	\$104,140	\$6,179,518
	Other commercial banks, SAs & TCs with derivatives		12,885,897	28,815,154	90,531	104,243	186	194,960	327,289	71,280	28,824	427,394
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	1,047,624	302,288	5,012	1,354,924	5,331,649	1,142,298	132,964	6,606,912

Note: Beginning January 1, 2022, the largest banks are required to calculate their derivative exposure amount for regulatory capital purposes using the Standardized Approach for Counterparty Credit Risk (SA-CCR). Refer to the call report instructions and OCC Bulletin 2020-7, "Standardized Approach for Counterparty Credit Risk: Final Rule," for additional information on the SA-CCR exposure calculation.

Source: Call reports, Schedules 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, in Millions of Dollars, June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Total credit derivatives	Investment grade maturity <1 year	Investment grade maturity 1-5 years	Investment grade maturity >5 years	Investment grade all maturities	Sub-investment grade maturity <1 year	Sub-investment grade maturity 1-5 years	Sub-investment grade maturity >5 years	Sub-investment grade all maturities
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$3,382,195	\$57,970,009	\$1,479,659	\$224,331	\$868,171	\$72,482	\$1,164,984	\$78,710	\$226,863	\$9,102	\$314,675
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	733,499	56,150	360,558	53,994	470,702	35,979	206,445	20,373	262,797
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	1,482,897	211,059	911,889	50,891	1,173,839	68,407	234,557	6,094	309,058
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	537,096	112,617	260,492	25,643	398,752	45,678	87,927	4,739	138,344
	Top four commercial banks, SAs & TCs with derivatives		\$8,058,832	\$193,097,163	\$4,233,151	\$604,157	\$2,401,110	\$203,010	\$3,208,277	\$228,774	\$755,792	\$40,308	\$1,024,874
	Other commercial banks, SAs & TCs with derivatives		12,885,897	28,815,154	240,993	53,921	106,081	13,522	173,524	8,822	48,321	10,327	67,469
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	4,474,144	658,078	2,507,191	216,532	3,381,801	237,596	804,113	50,635	1,092,343

Source: Call reports, Schedule RC-L

Table 24: Distribution of Credit Derivative Contracts Held for Trading

Top 25 Commercial Banks, Savings Associations and Trust Companies in Derivatives, in Millions of Dollars, June 30, 2023

Rank	Bank name	Legal entity identifier	Total assets	Total derivatives	Total credit derivatives	Total credit derivatives purchased	Total credit derivatives sold	Purchased credit default swaps	Purchased total return swaps	Purchased credit options	Purchased other credit derivatives	Sold credit default swaps	Sold total return swaps	Sold credit options	Sold other credit derivatives
1	JPMORGAN CHASE BANK NA	7H6GLXDRUQGFU57RNE97	\$3,382,195	\$57,970,009	\$1,479,659	\$768,970	\$710,689	\$679,865	\$35,141	\$47,551	\$6,413	\$646,053	\$12,046	\$52,571	\$19
2	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	517,106	57,043,863	733,499	393,399	340,100	376,297	2,484	14,198	420	323,482	3,281	13,254	83
3	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,709,727	54,818,226	1,482,897	768,783	714,114	712,616	18,696	37,471	0	668,280	6,745	39,089	0
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	2,449,804	23,265,065	537,096	276,367	260,729	225,851	14,149	36,367	0	203,131	20,255	37,343	0
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCFXT09	1,667,885	15,812,213	130,514	75,940	54,574	11,598	41,936	320	22,086	11,596	31,202	0	11,776
6	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	290,889	2,462,317	0	0	0	0	0	0	0	0	0	0	0
7	U S BANK NATIONAL ASSN	6BYL5QZYBBDK8S7L3M02	669,903	1,783,125	14,206	4,298	9,908	907	0	0	3,391	160	0	0	9,748
8	HSBC NA	1IE8VN30JCEQV1H4R804	165,205	1,443,286	12,189	9,406	2,783	6,356	3,050	0	0	2,783	0	0	0
9	BANK OF NEW YORK MELLON	HPFHU0OQZ28E4N0NFVK49	348,626	1,175,095	220	220	0	220	0	0	0	0	0	0	0
10	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	554,128	1,166,537	13,345	5,282	8,063	300	0	0	4,982	0	0	0	8,063
11	TD BANK NATIONAL ASSN	03D0JEWFDUS0SEKGG89	374,251	662,989	0	0	0	0	0	0	0	0	0	0	0
12	TRUIST BANK	JJKC32MCHWDI71265Z06	546,763	493,801	9,739	3,357	6,382	465	1,802	0	1,090	0	0	0	6,382
13	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	222,753	470,324	2,475	0	2,475	0	0	0	0	0	0	0	2,475
14	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	157,816	326,682	0	0	0	0	0	0	0	0	0	0	0
15	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	154,556	307,306	6,024	1,844	4,180	0	0	0	1,844	0	0	0	4,180
16	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	192,783	285,266	150	57	94	57	0	0	0	1	93	0	0
17	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	464,954	248,667	6,487	3,487	3,000	0	0	0	3,487	0	0	0	3,000
18	FIFTH THIRD BANK NA	QFROUN1UWUYU0DVIWD51	206,426	246,111	4,902	1,014	3,888	0	0	0	1,014	0	0	0	3,888
19	BMO HARRIS BANK NA		263,344	164,740	0	0	0	0	0	0	0	0	0	0	0
20	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	202,537	154,478	17,384	16,269	1,115	16,264	5	0	0	1,115	0	0	0
21	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	188,063	121,666	3,967	2,357	1,609	0	0	0	2,357	0	0	0	1,609
22	UBS BANK USA		114,356	99,460	0	0	0	0	0	0	0	0	0	0	0
23	MANUFACTURERS&TRADERS TR CO	VWB2V0FCW3A0EE3ZJN75	207,098	85,828	0	0	0	0	0	0	0	0	0	0	0
24	COMERICA BANK		90,864	83,240	1,563	614	949	614	0	0	0	949	0	0	0
25	BOKF NATIONAL ASSN	FU7RSW4CQQY98A207J66	48,942	67,632	0	0	0	0	0	0	0	0	0	0	0
	Top 25 commercial banks, SAs & TCs with derivatives		\$15,190,975	\$220,757,926	\$4,456,315	\$2,331,664	\$2,124,652	\$2,031,410	\$117,263	\$135,907	\$47,084	\$1,857,550	\$73,622	\$142,257	\$51,223
	Other commercial banks, SAs & TCs with derivatives		5,753,754	1,154,390	17,829	6,181	11,648	1,554	0	0	4,627	2,487	21	0	9,140
	Total all commercial banks, SAs & TCs with derivatives		20,944,729	221,912,317	4,474,144	2,337,844	2,136,300	2,032,964	117,263	135,907	51,710	1,860,037	73,642	142,257	60,364
	Top 25 commercial banks, SAs & TCs with derivatives: percentage of total				99.6	52.1	47.5	45.4	2.6	3.0	1.1	41.5	1.6	3.2	1.1
	Other commercial banks, SAs & TCs with derivatives: percentage of total				0.4	0.1	0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2
	Total all commercial banks, SAs & TCs with derivatives: percentage of total				100.0	52.3	47.7	45.4	2.6	3.0	1.2	41.6	1.6	3.2	1.3

Note: Credit derivatives have been excluded from the sum of total derivatives here.

Source: Call reports, Schedule RC-L

Table 25: Derivatives Data Reported by FFIEC 051 Filers*

Commercial Banks, Savings Associations and Trust Companies in Derivatives, in Millions of Dollars, June 30, 2023

FFIEC 051 Call Report Schedule SU

Gross notional amount of derivatives	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20
Total gross notional amount of interest rate derivatives held for trading	\$5,242	\$5,016	\$4,792	\$4,915	\$4,953	\$4,994	\$5,011	\$5,301	\$5,189	\$5,391	\$5,819	\$6,236
Total gross notional amount of all other derivatives held for trading	\$47	\$51	\$43	\$42	\$35	\$39	\$44	\$14	\$173	\$20	\$19	\$53
Total gross notional amount of interest rate derivatives not held for trading	\$45,979	\$17,739	\$14,395	\$16,786	\$19,499	\$21,308	\$22,545	\$29,991	\$31,949	\$38,839	\$52,867	\$57,459
Total gross notional amount of all other derivatives not held for trading	\$923	\$676	\$1,103	\$1,037	\$1,142	\$1,007	\$1,314	\$1,461	\$1,350	\$1,269	\$1,137	\$1,202

FFIEC 051 Call Report Schedule RC-R**

Notional principal amounts of over-the-counter derivative contracts covered by the regulatory capital rules	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20
Interest rate	\$20,533	Data not reported	\$12,839	Data not reported	\$14,092	Data not reported	\$14,005	Data not reported	\$17,688	Data not reported	\$22,947	Data not reported
Foreign exchange rate	\$5		\$5		\$4		\$4		\$3		\$84	
Credit (investment grade reference asset)	\$80		\$188		\$265		\$230		\$196		\$217	
Credit (non-investment grade reference asset)	\$251		\$212		\$176		\$168		\$154		\$143	
Equity	\$0		\$0		\$0		\$0		\$0		\$0	
Precious metals	\$0		\$0		\$0		\$4		\$1		\$0	
Other	\$0		\$0		\$0		\$0		\$1		\$20	

Notional principal amounts of centrally cleared derivative contracts covered by the regulatory capital rules	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20
Interest rate	\$90	Data not reported	\$79	Data not reported	\$108	Data not reported	\$21	Data not reported	\$193	Data not reported	\$250	Data not reported
Foreign exchange rate	\$0		\$0		\$0		\$0		\$0		\$0	
Credit (investment grade reference asset)	\$0		\$0		\$0		\$0		\$0		\$0	
Credit (non-investment grade reference asset)	\$0		\$0		\$0		\$0		\$0		\$0	
Equity	\$0		\$0		\$0		\$0		\$0		\$0	
Precious metals	\$0		\$0		\$0		\$0		\$0		\$0	
Other	\$0		\$0		\$0		\$0		\$0		\$0	

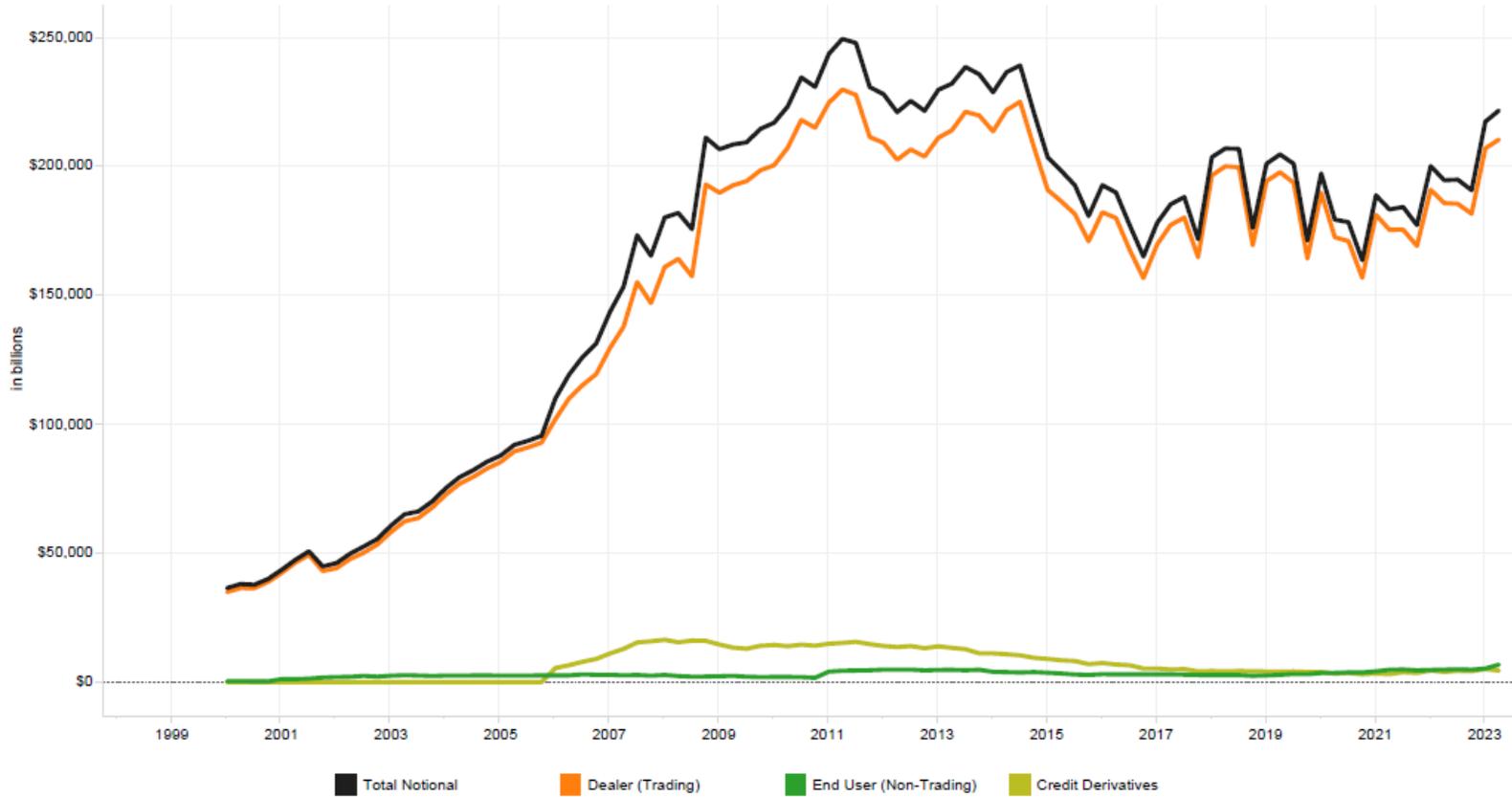
Current Credit Exposure	2Q23	1Q23	4Q22	3Q22	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20
Current credit exposure across all derivative contracts covered by the regulatory capital rules	\$454	Data not reported	\$493	Data not reported	\$363	Data not reported	\$233	Data not reported	\$287	Data not reported	\$449	Data not reported

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

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

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

Figure 7: Derivative Notional Amounts by Type
 Insured U.S. Commercial Banks and Savings Associations



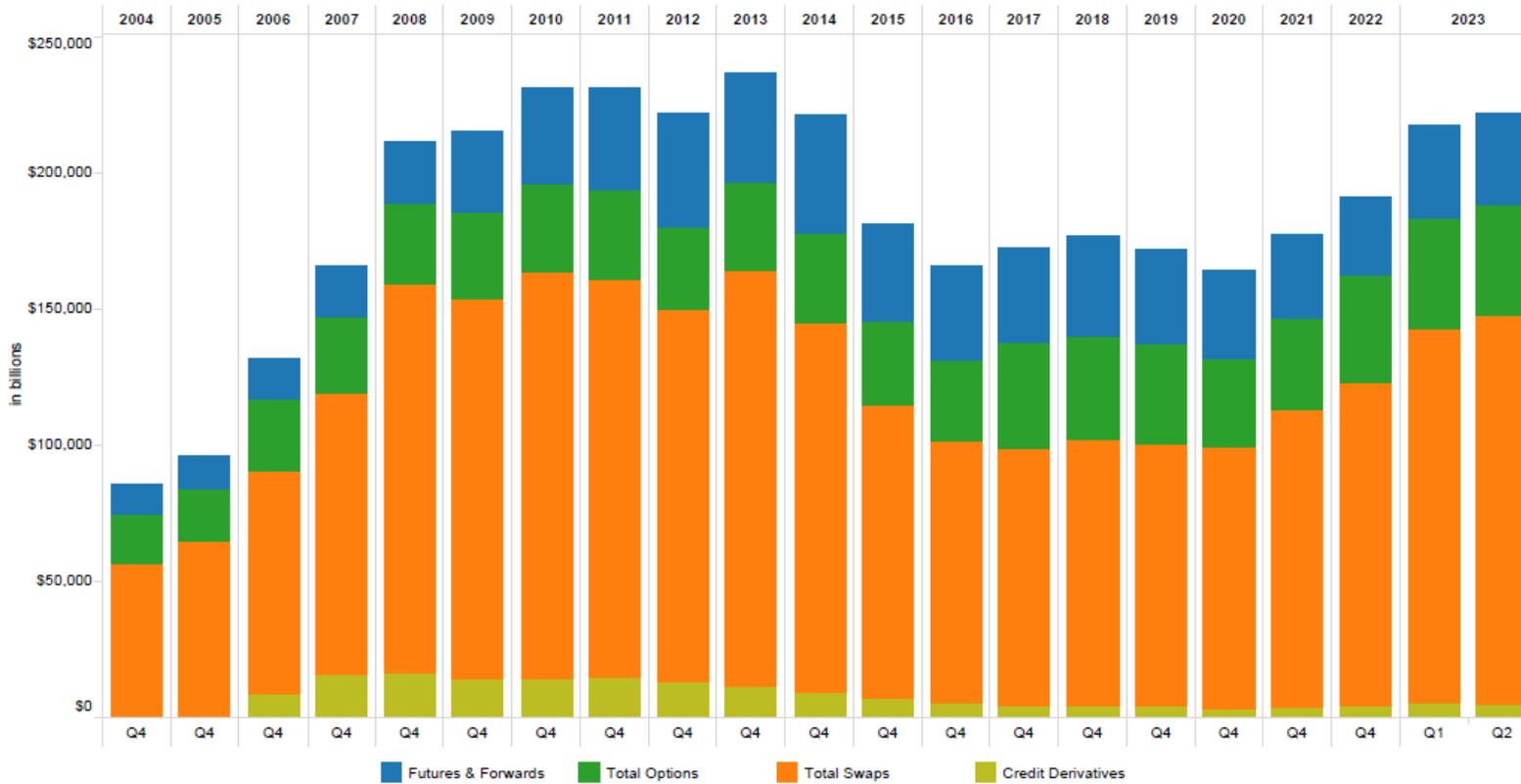
In billions of dollars

	2019				2020				2021				2022				2023	
	Q1	Q2	Q3	Q4	Q1	Q2												
Total Notional	\$201,283	\$204,876	\$201,258	\$171,465	\$197,504	\$179,573	\$178,579	\$183,799	\$188,990	\$183,501	\$184,480	\$177,464	\$200,354	\$194,851	\$195,082	\$190,977	\$217,802	\$221,912
Dealer (Trading)	194,518	197,950	193,912	164,441	189,995	172,723	171,242	156,997	181,421	175,607	175,695	169,361	191,121	186,016	185,701	181,875	207,222	210,642
End User (Non-Trading)	2,620	2,852	3,163	3,079	3,522	3,595	3,757	3,788	4,211	4,791	4,933	4,562	4,729	4,870	4,991	4,861	5,301	6,796
Credit Derivatives	4,145	4,074	4,183	3,945	3,986	3,255	3,581	3,034	3,359	3,104	3,852	3,540	4,504	3,966	4,390	4,241	5,079	4,474

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

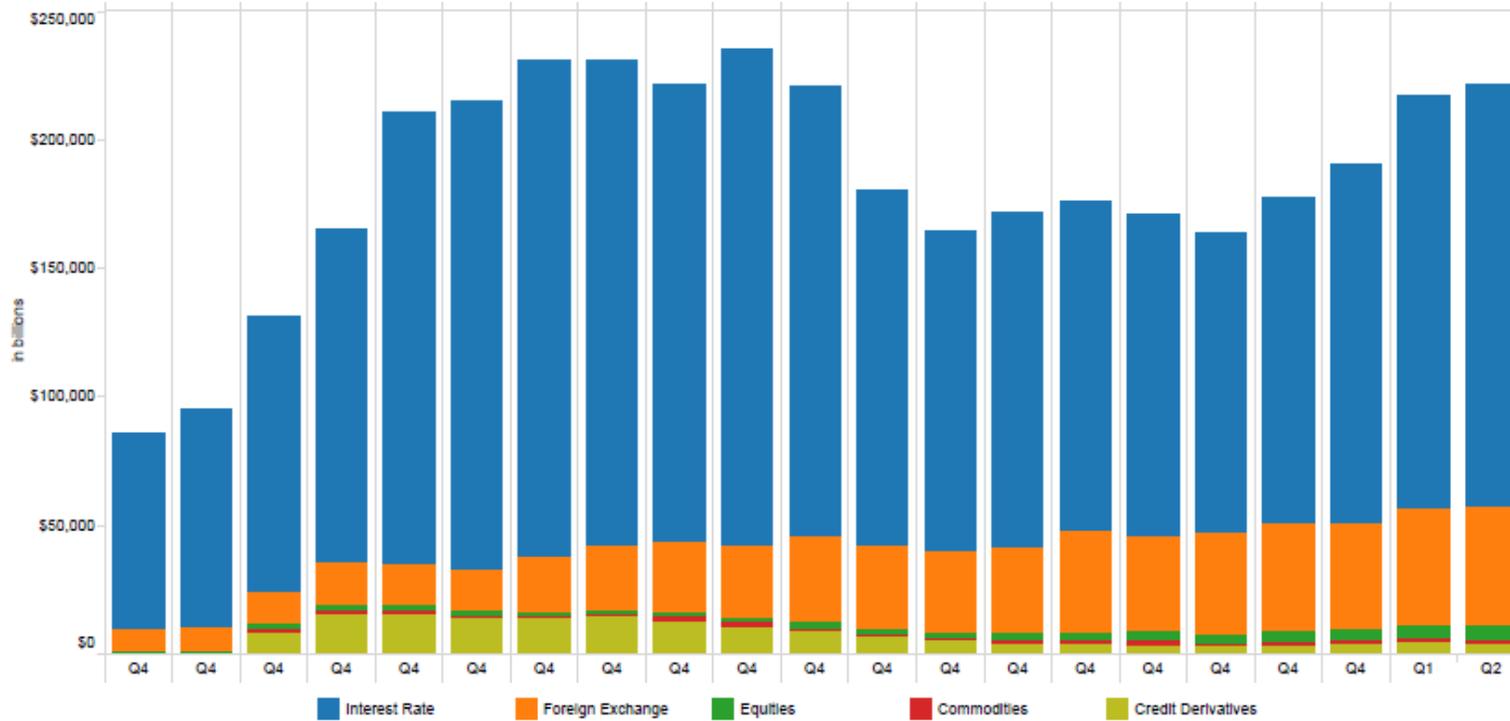
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
	Q4	Q1	Q2															
Futures & Forwards	\$18,867	\$22,529	\$29,652	\$35,539	\$37,469	\$41,621	\$40,027	\$43,380	\$35,691	\$34,201	\$34,162	\$36,145	\$34,789	\$32,350	\$31,180	\$28,749	\$34,502	\$33,317
Total Options	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	33,453	39,389	40,290	40,880
Total Swaps	103,102	143,111	139,138	149,331	146,266	136,808	152,469	135,169	107,392	96,384	94,784	97,930	96,614	96,423	109,290	118,598	137,730	143,242
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	3,540	4,241	5,079	4,474
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	177,464	190,977	217,602	221,912

*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

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
	Q4	Q1	Q2														
Interest Rate	\$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	\$126,236	\$139,755	\$160,260	\$164,071
Foreign Exchange	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	41,847	41,124	45,686	46,376
Equities	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	4,256	4,424	5,001	5,471
Commodities	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	1,584	1,433	1,575	1,520
Credit Derivatives	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	3,540	4,241	5,079	4,474
Total Notional	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	177,464	190,977	217,602	221,912

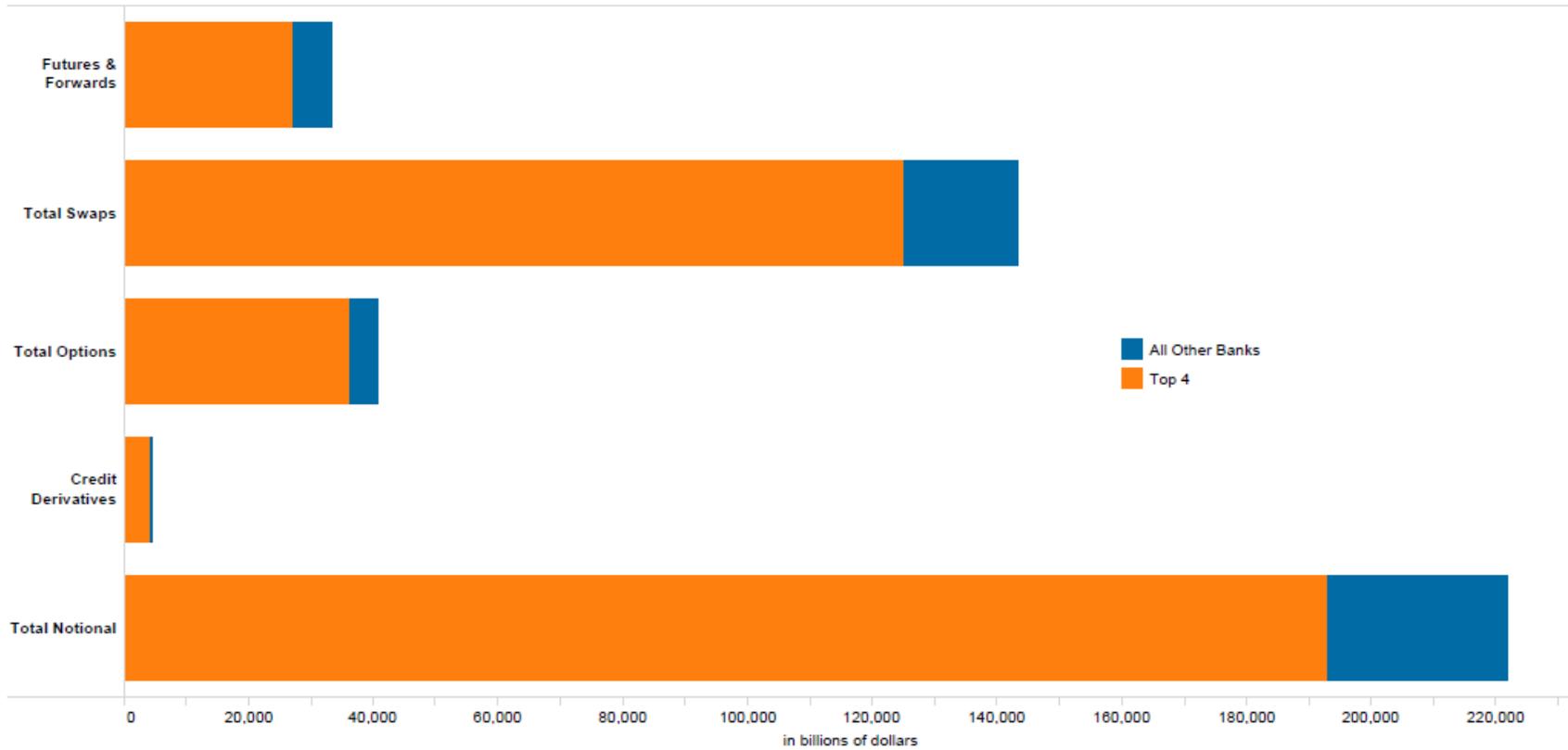
*Notional amount of total: futures, exchange traded options, over the counter options, forwards, and swaps.
 Note: As of 2008 Q2 equities and commodities types are shown as separate categories. They were previously shown as "Other Deriv."
 Numbers may not add up to total due to rounding.
 Source: Call reports, Schedule RC-L

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

Note: As of 2006 Q2 equities and commodities 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



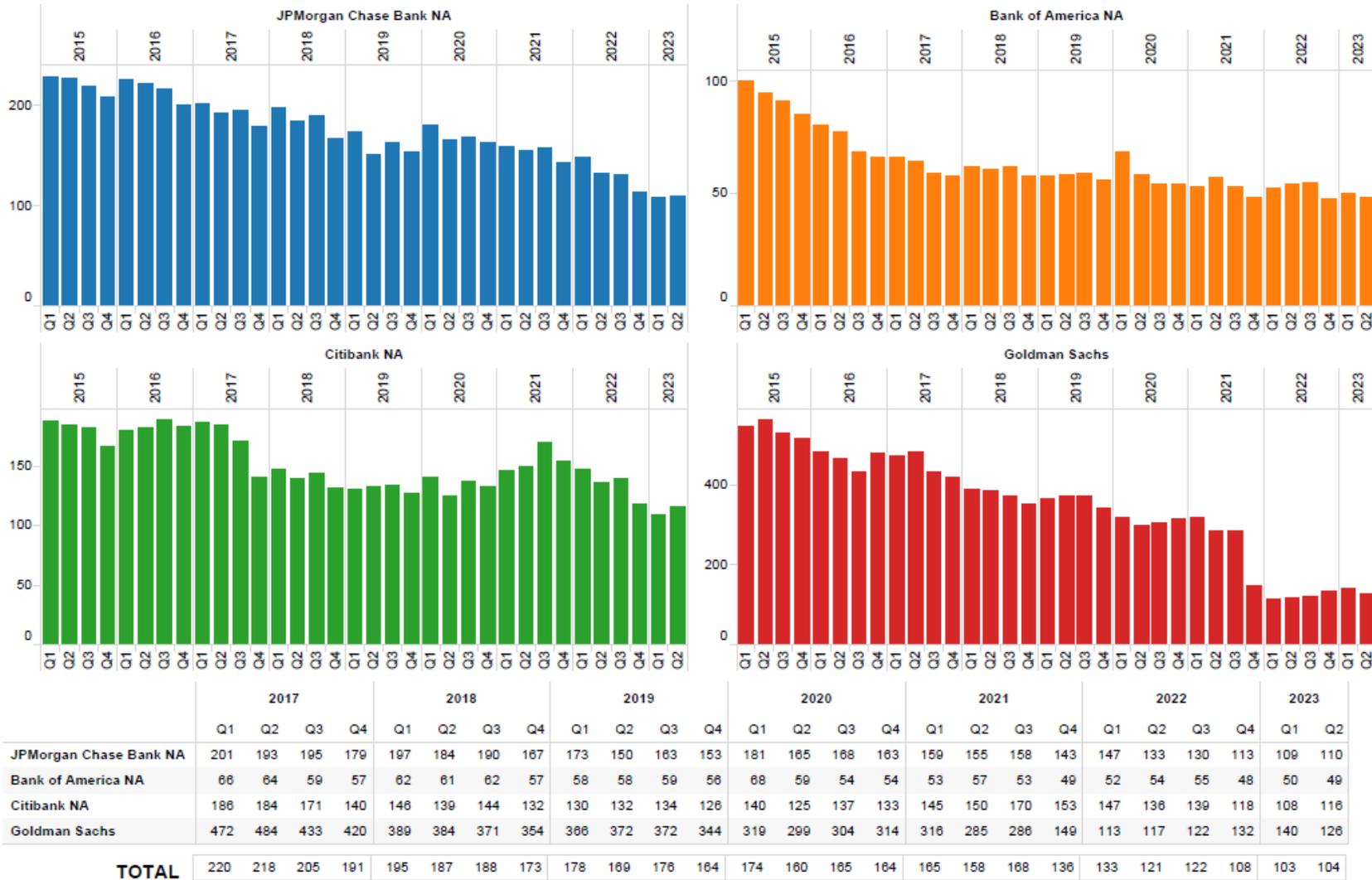
In billions of dollars

	Top 4	All Other Banks	Grand Total
Futures & Forwards	\$27,365	\$5,952	\$33,317
Total Swaps	125,076	18,165	143,242
Total Options	36,423	4,457	40,880
Credit Derivatives	4,233	241	4,474
Total Notional	193,097	28,815	221,912

*Notional amount of total: futures, exchange-traded options, over-the-counter options, forwards, and swaps. See Table 13 for a list of the top four banks.

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

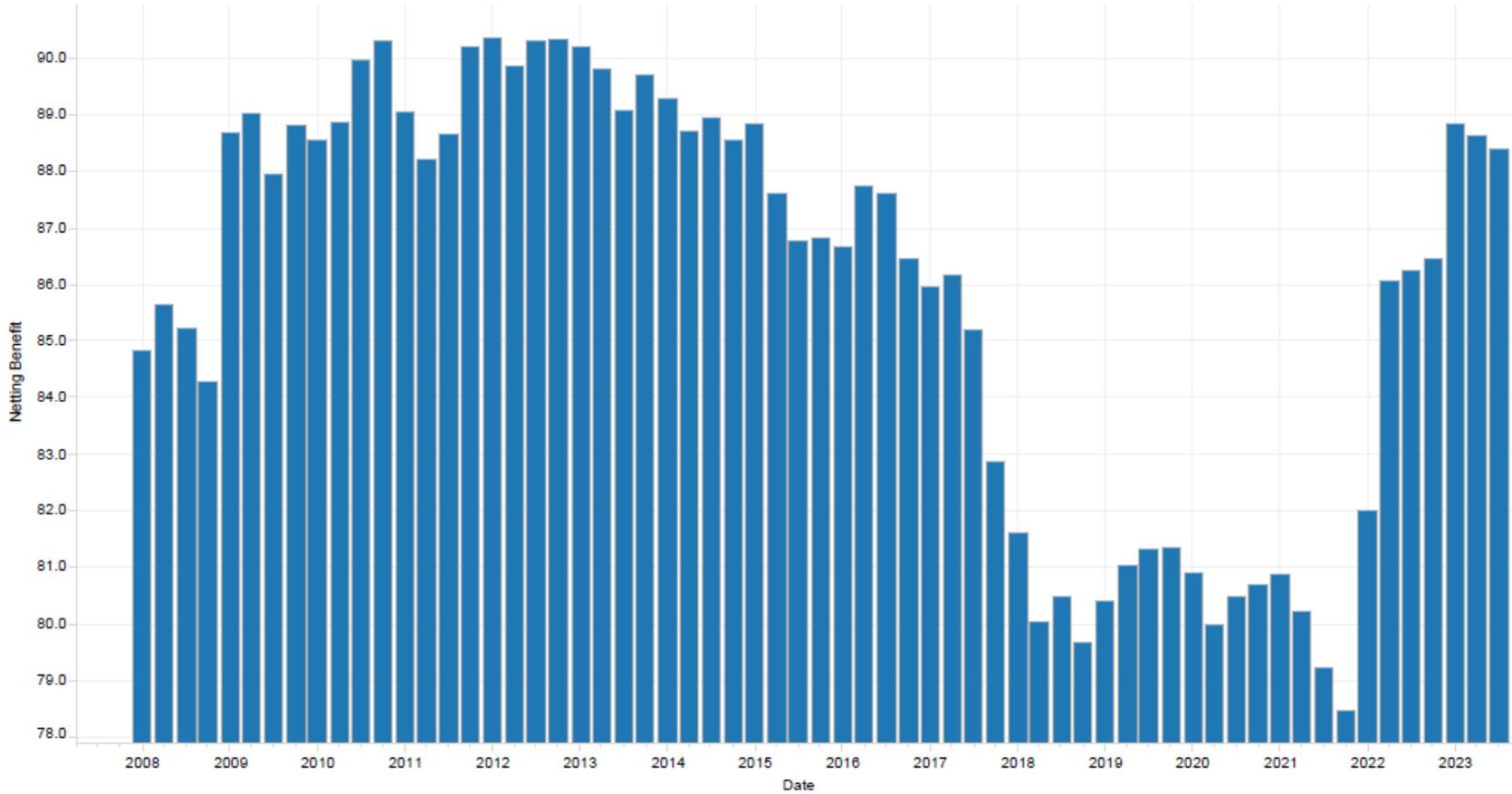


Note: Beginning January 1, 2022, the largest banks are required to calculate their derivative exposure amount for regulatory capital purposes using the Standardized Approach for Counterparty Credit Risk (SA-CCR). Refer to the call report instructions and OCC Bulletin 2020-7, "Standardized Approach for Counterparty Credit Risk: Final Rule," for additional information on the SA-CCR exposure calculation.

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

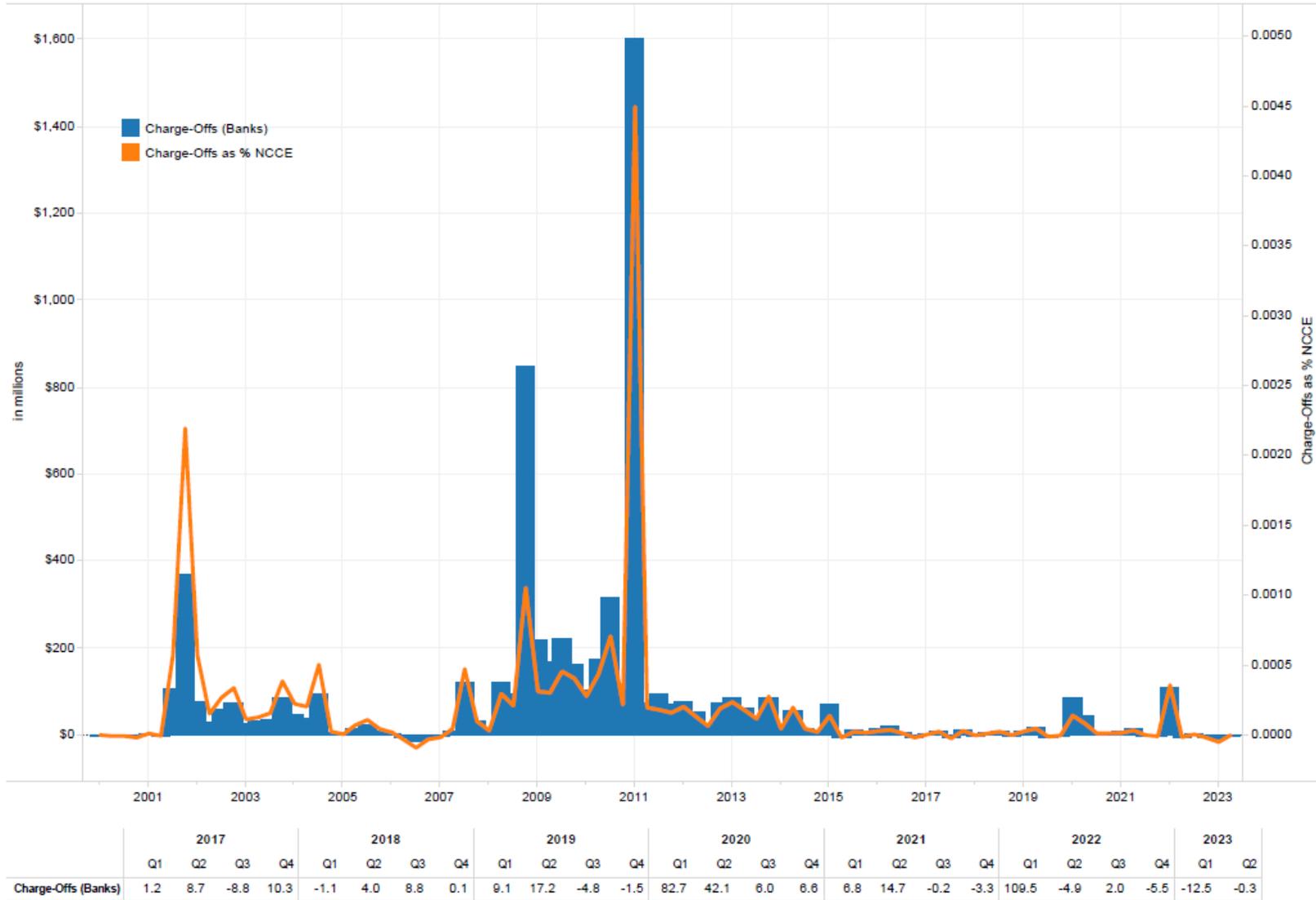
2015				2016				2017				2018				2019				2020				2021				2022				2023	
Q1	Q2	Q3	Q4	Q1	Q2																												
87.6	86.8	86.8	86.7	87.7	87.6	86.5	86.0	86.2	85.2	82.9	81.6	80.0	80.5	79.7	80.4	81.0	81.3	81.4	80.9	80.0	80.5	80.7	80.9	80.2	79.2	78.5	82.0	86.1	86.3	86.5	88.8	88.6	88.4

*The netting benefit is defined as the Gross Positive Fair Value (GPFV) from call report Schedule RC-L minus the Net Current Credit Exposure from call report Schedule RC-R divided by the GPFV.

Note: Beginning January 1, 2022, the largest banks are required to calculate their derivative exposure amount for regulatory capital purposes using the Standardized Approach for Counterparty Credit Risk (SA-CCR). Refer to the call report instructions and OCC Bulletin 2020-7, "Standardized Approach for Counterparty Credit Risk: Final Rule," for additional information on the SA-CCR exposure calculation.

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

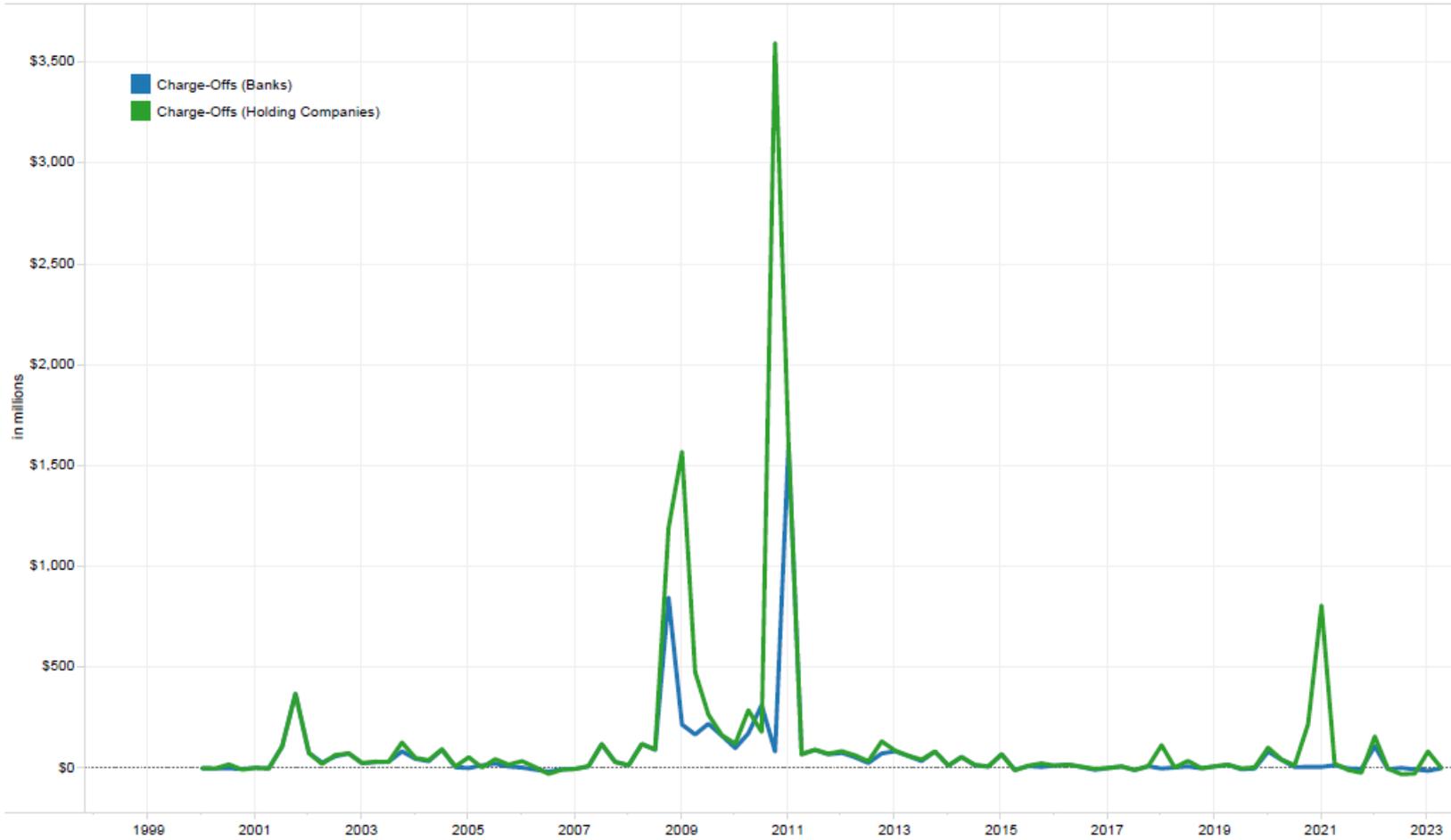
Figure 13: Quarterly Charge-Offs/(Recoveries) From Derivatives—Bank Insured U.S. Commercial Banks and Savings Associations With Derivatives



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

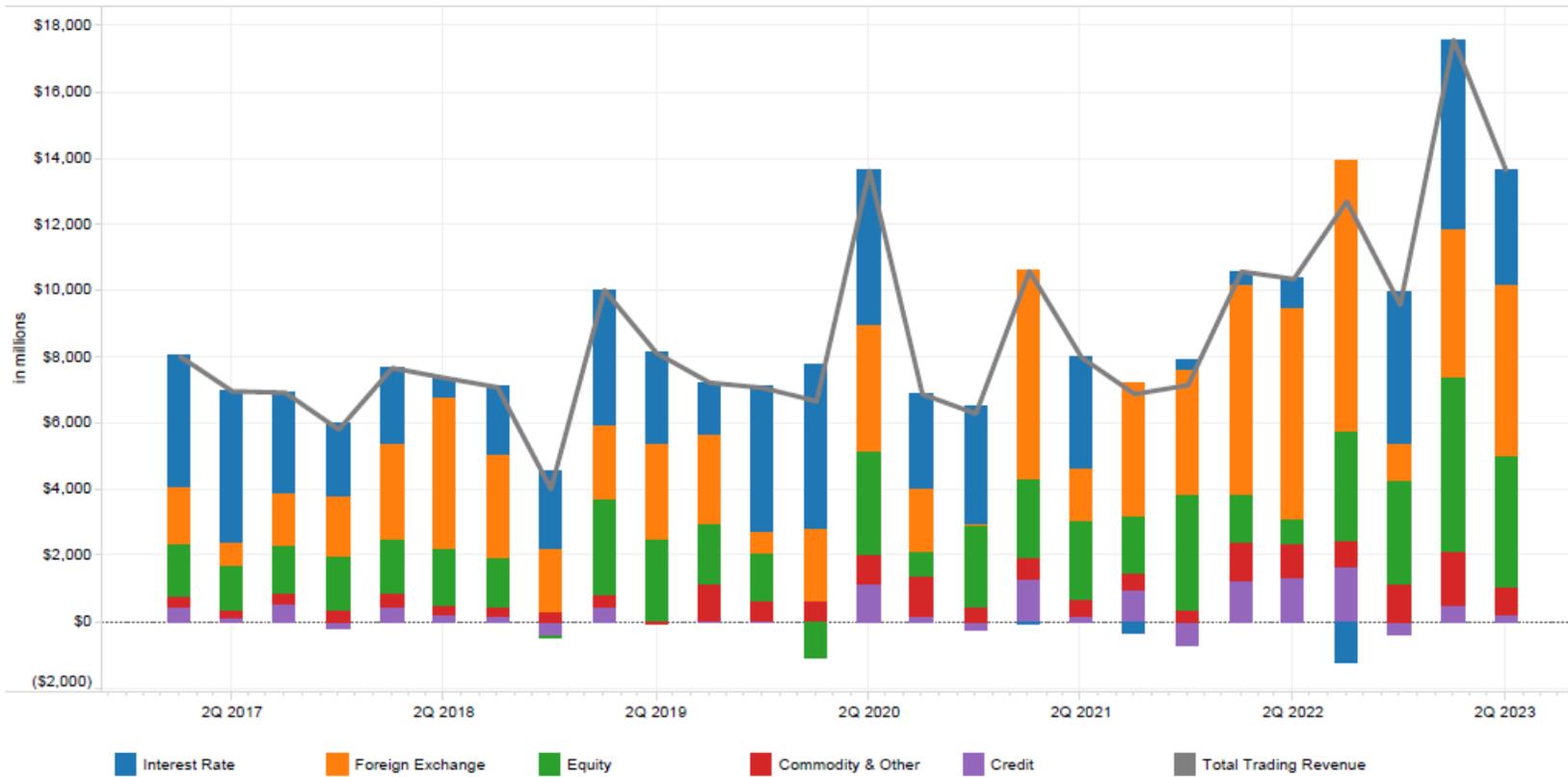


	2018				2019				2020				2021				2022				2023	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Charge-Offs (Banks)	-1.1	4.0	8.8	0.1	9.1	17.2	-4.8	-1.5	82.7	42.1	6.0	6.6	6.8	14.7	-0.2	-3.3	109.5	-4.9	2.0	-5.5	-12.5	-0.3
Charge-Offs (Holding Companies)	114.5	3.5	36.6	0.1	9.5	17.9	-0.3	4.1	102.1	44.2	14.6	218.3	807.7	23.7	-8.2	-22.5	158.0	-1.8	-29.4	-27.1	83.1	2.5

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



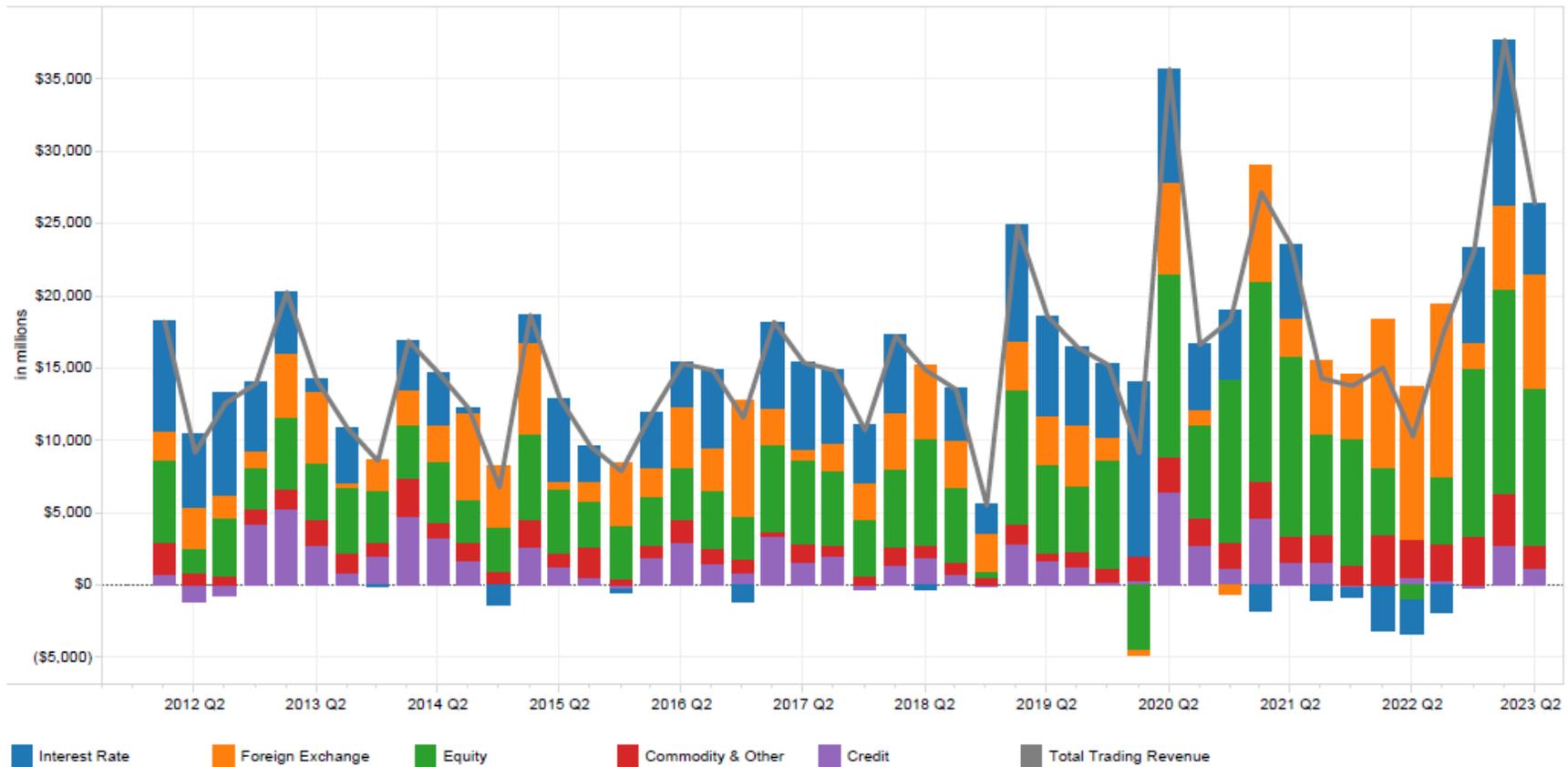
In millions of dollars

	2019				2020				2021				2022				2023	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Interest Rate	\$4,078	\$2,780	\$1,587	\$4,361	\$4,942	\$4,634	\$2,821	\$3,616	(\$42)	\$3,369	(\$329)	\$273	\$403	\$874	(\$1,197)	\$4,576	\$5,735	\$3,461
Foreign Exchange	2,254	2,900	2,718	662	2,167	3,841	1,942	18	6,343	1,546	3,998	3,747	6,341	6,363	8,153	1,134	4,439	5,174
Equity	2,895	2,464	1,805	1,427	-1,040	3,139	750	2,480	2,388	2,384	1,729	3,534	1,458	773	3,306	3,100	5,334	3,996
Commodity & Other	323	-43	1,109	600	646	905	1,226	434	622	549	531	347	1,161	1,029	774	1,153	1,570	824
Credit	485	30	43	34	-34	1,129	154	-243	1,300	150	967	-737	1,235	1,334	1,678	-368	516	204
Total Trading Revenue	10,035	8,131	7,242	7,083	6,681	13,648	6,893	6,305	10,611	7,999	6,896	7,164	10,598	10,373	12,714	9,595	17,594	13,658

*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



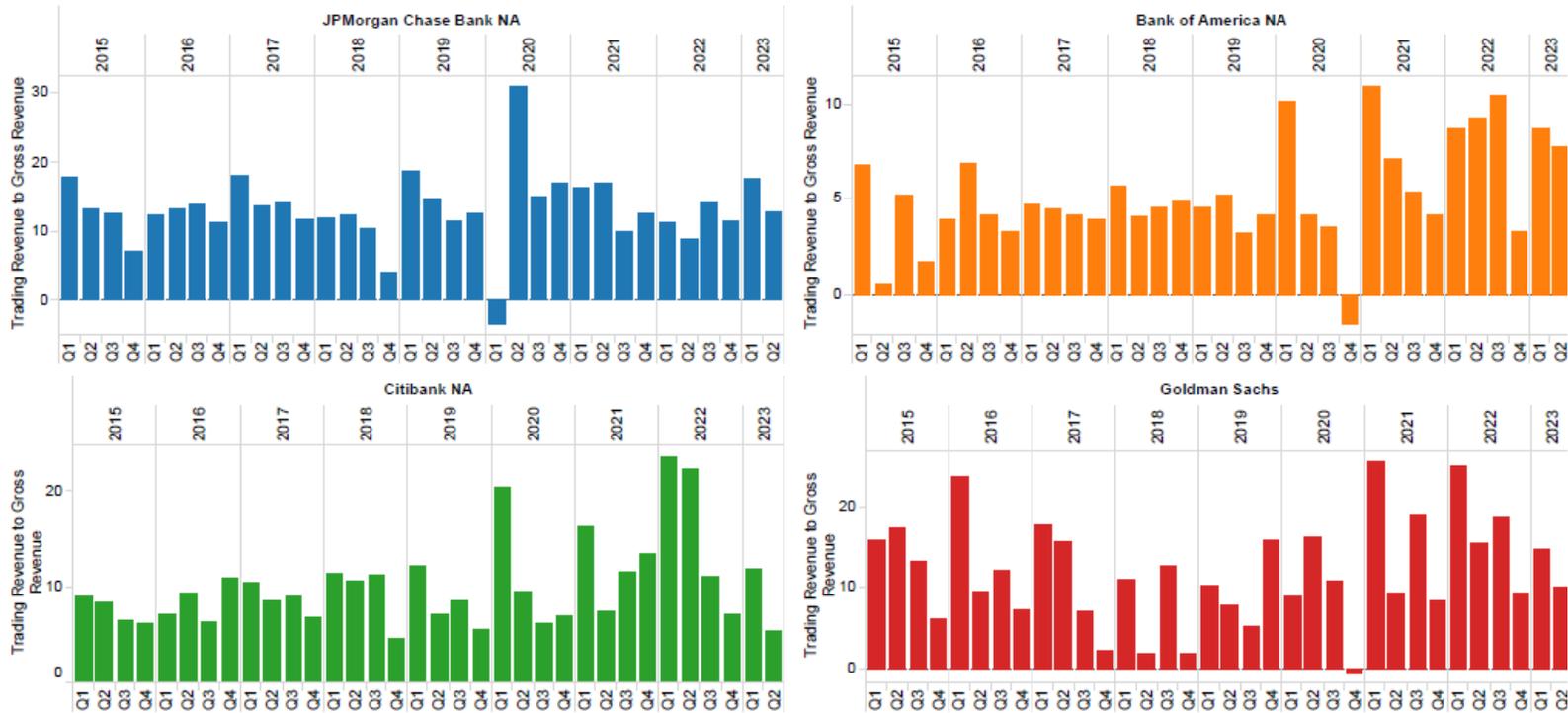
In millions of dollars

	2019				2020				2021				2022				2023	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Interest Rate	\$8,050	\$6,973	\$5,377	\$5,075	\$12,036	\$7,801	\$4,582	\$4,855	(\$1,828)	\$5,001	(\$1,182)	(\$569)	(\$3,137)	(\$2,365)	(\$1,976)	\$6,572	\$11,382	\$4,988
Foreign Exchange	3,396	3,351	4,241	1,463	-302	6,374	1,037	-628	8,051	2,732	5,144	4,496	10,267	10,574	11,900	1,810	5,795	7,867
Equity	9,215	6,083	4,548	7,546	-4,499	12,604	6,424	11,126	13,753	12,353	6,835	8,745	4,546	-1,063	4,672	11,535	14,264	10,797
Commodity & Other	1,298	512	1,045	981	1,664	2,486	1,912	1,804	2,665	1,802	1,978	1,340	3,498	2,698	2,533	3,378	3,471	1,611
Credit	2,903	1,684	1,226	159	257	6,410	2,675	1,181	4,531	1,595	1,530	-225	-129	438	286	-249	2,771	1,141
Total Trading Revenue	24,862	18,604	16,437	15,223	9,157	35,676	16,831	18,337	27,172	23,483	14,305	13,786	15,046	10,281	17,417	23,047	37,683	26,405

*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



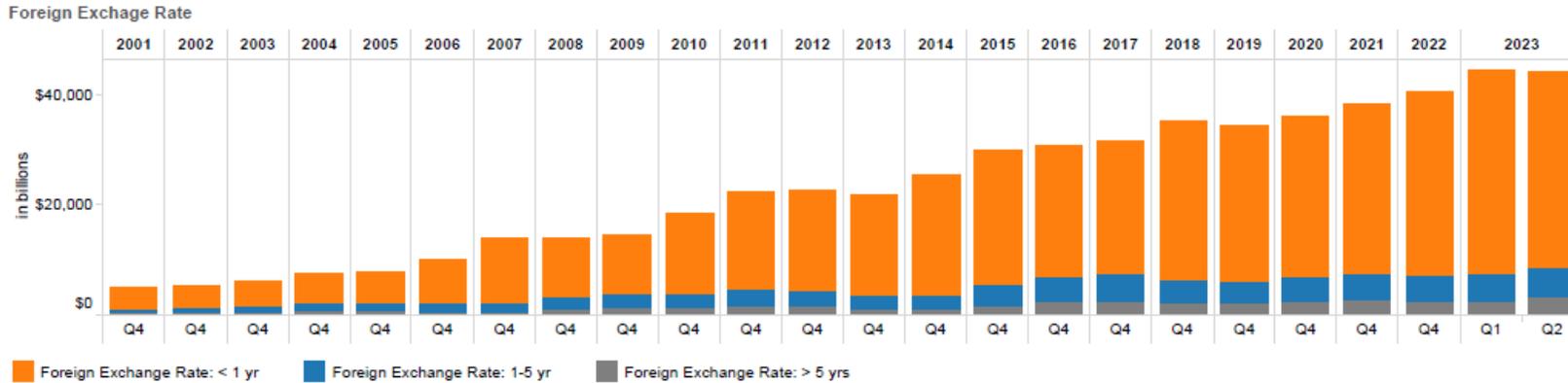
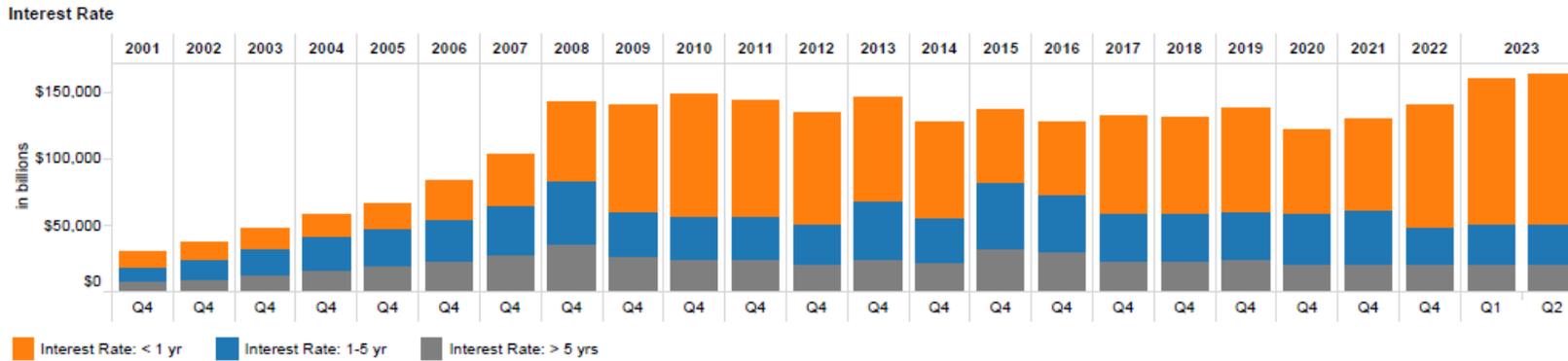
Trading Revenue to Gross Revenue*

	2017				2018				2019				2020				2021				2022				2023	
	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
JPMorgan Chase Bank NA	17.98	13.66	14.01	11.52	11.90	12.19	10.28	3.92	18.57	14.57	11.30	12.82	-3.33	30.88	14.83	16.98	16.12	16.90	9.84	12.70	11.13	8.86	14.06	11.38	17.66	12.79
Bank of America NA	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	4.08	8.74	9.23	10.45	3.30	8.70	7.71
Citibank NA	10.47	8.50	9.12	6.94	11.33	10.69	11.26	4.66	12.32	7.23	8.48	5.58	20.50	9.63	6.27	7.08	16.24	7.42	11.57	13.44	23.64	22.30	11.05	7.15	12.01	5.44
Goldman Sachs	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	25.61	9.27	19.13	8.19	24.97	15.46	18.52	9.30	14.72	10.12
TOTAL	11.88	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	9.40	8.91	15.11	11.75	9.49	10.36	14.32	12.72	12.68	8.11	13.78	9.67

*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 Foreign Exchange Rate Contracts by Maturity
Insured U.S. Commercial Banks and Savings Associations



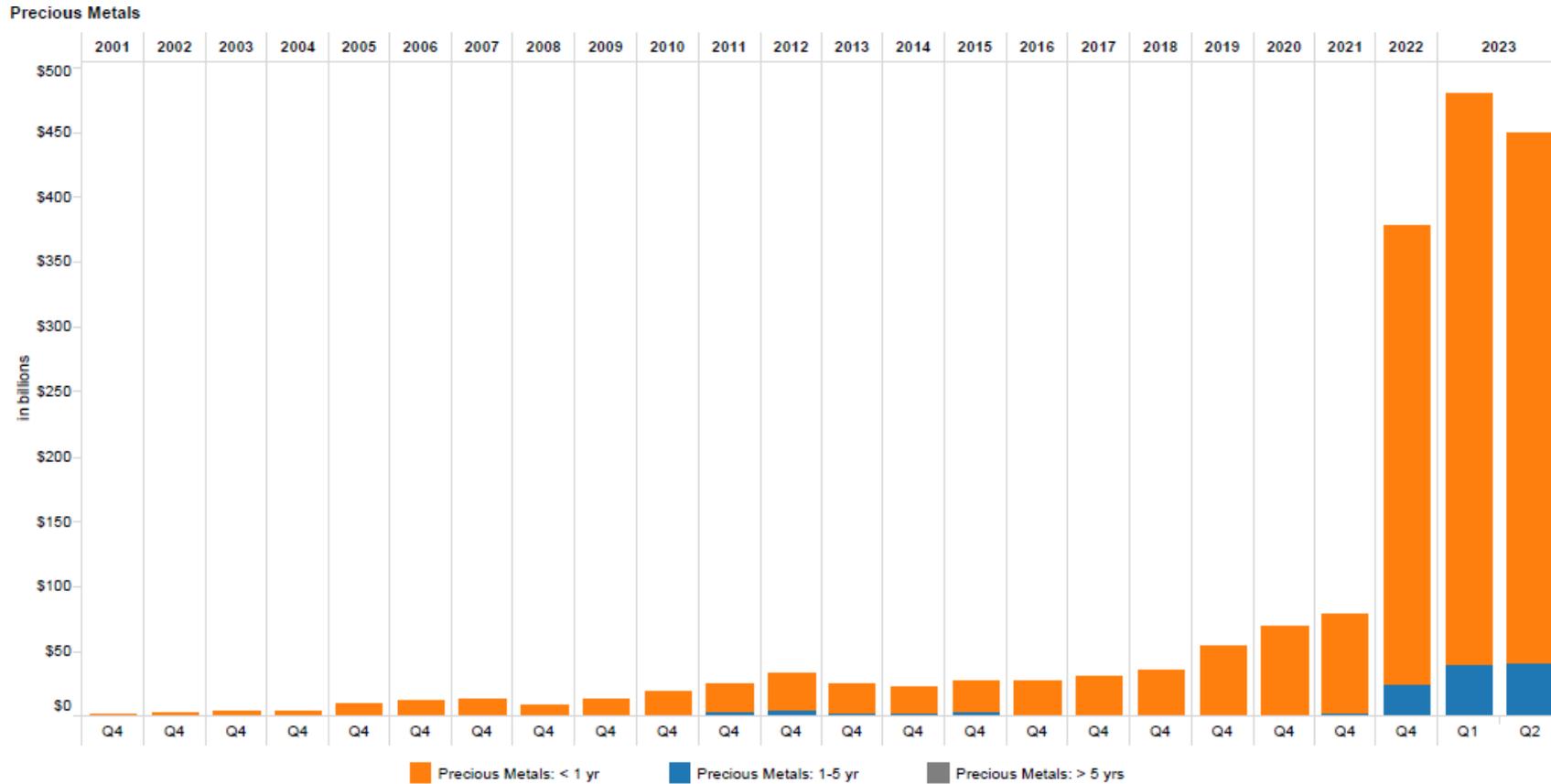
In billions of dollars

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
	Q4	Q1													
Interest Rate: < 1 yr	\$90,843	\$87,812	\$82,948	\$77,758	\$71,808	\$55,054	\$55,061	\$72,589	\$71,492	\$79,132	\$62,444	\$68,044	\$92,693	\$109,261	\$112,935
Interest Rate: 1-5 yr	33,497	32,750	30,191	44,157	33,727	49,408	43,261	36,154	36,681	35,854	39,198	41,244	27,371	30,208	29,386
Interest Rate: > 5 yrs	24,307	24,168	21,175	24,630	22,214	32,981	29,762	23,565	23,244	24,259	20,838	20,464	20,661	21,259	21,493
Foreign Exchange Rate: < 1 yr	14,629	17,632	18,386	18,372	22,145	24,130	23,912	24,380	28,891	28,241	29,434	30,954	33,157	36,897	35,714
Foreign Exchange Rate: 1-5 yr	2,462	3,117	2,910	2,341	2,587	3,986	4,454	4,805	4,219	4,052	4,404	4,864	4,812	4,980	5,265
Foreign Exchange Rate: > 5 yrs	1,290	1,503	1,480	1,029	969	1,648	2,420	2,525	2,096	2,146	2,402	2,552	2,444	2,528	3,321

Note: Beginning January 1, 2022, the largest banks are required to calculate their derivative exposure amount for regulatory capital purposes using the Standardized Approach for Counterparty Credit Risk (SA-CCR). Refer to the call report instructions and OCC Bulletin 2020-7, "Standardized Approach for Counterparty Credit Risk: Final Rule," for additional information on the SA-CCR exposure calculation.

Source: Call reports, Schedule RC-R

Figure 18: Notional Amounts of Precious Metal Contracts by Maturity
Insured U.S. Commercial Banks and Savings Associations



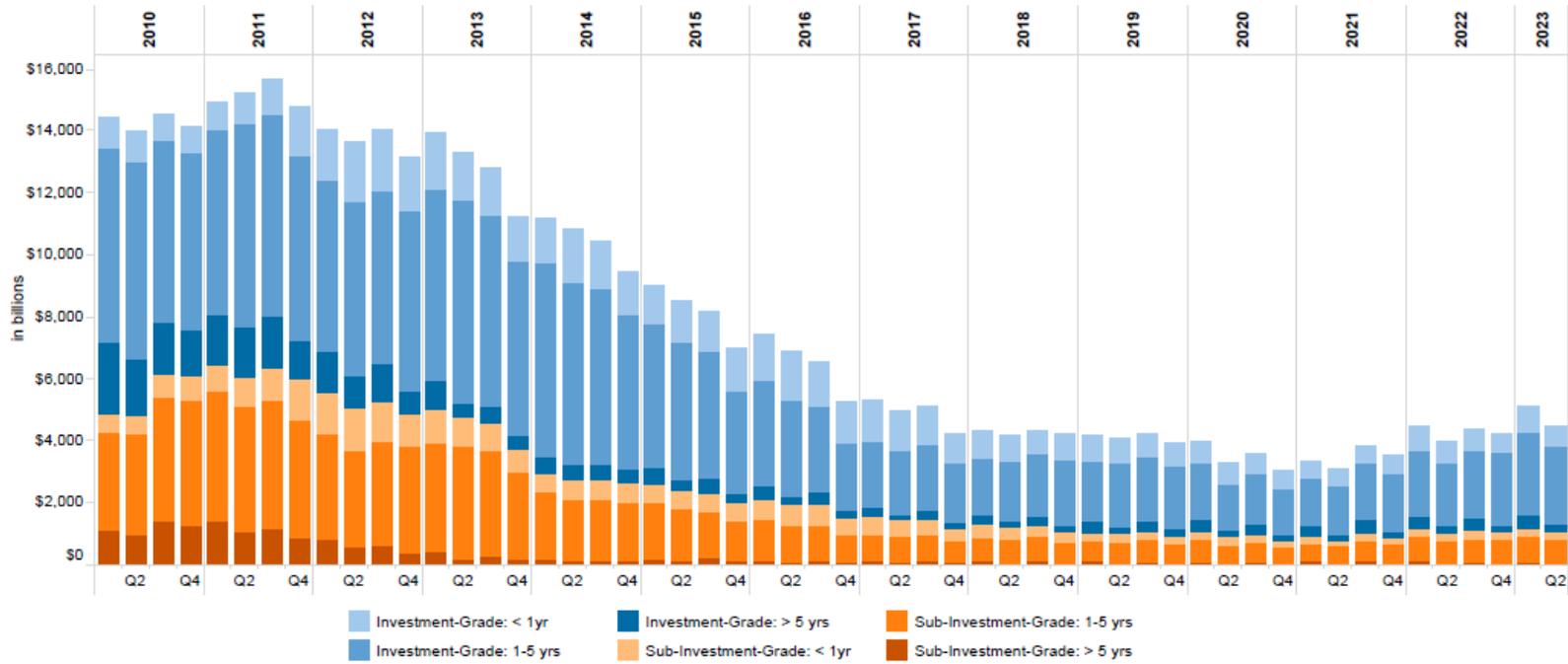
In billions of dollars

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2
Precious Metals: < 1 yr	\$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	\$75.78	\$352.12	\$440.70	\$408.54
Precious Metals: 1-5 yr	1.7	2.1	1.5	1.2	1.9	4.7	5.8	3.8	2.8	3.9	2.5	2.4	2.3	2.1	2.5	3.5	26.0	39.7	41.6
Precious Metals: > 5 yrs	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Beginning January 1, 2022, the largest banks are required to calculate their derivative exposure amount for regulatory capital purposes using the Standardized Approach for Counterparty Credit Risk (SA-CCR). Under SA-CCR gold derivatives are considered precious metals derivative contracts rather than an exchange rate derivative contract resulting in an increase in reported precious metals derivative contracts compared to prior quarters. Refer to the call report instructions and OCC Bulletin 2020-7, "Standardized Approach for Counterparty Credit Risk: Final Rule," for additional information on the SA-CCR exposure calculation.

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

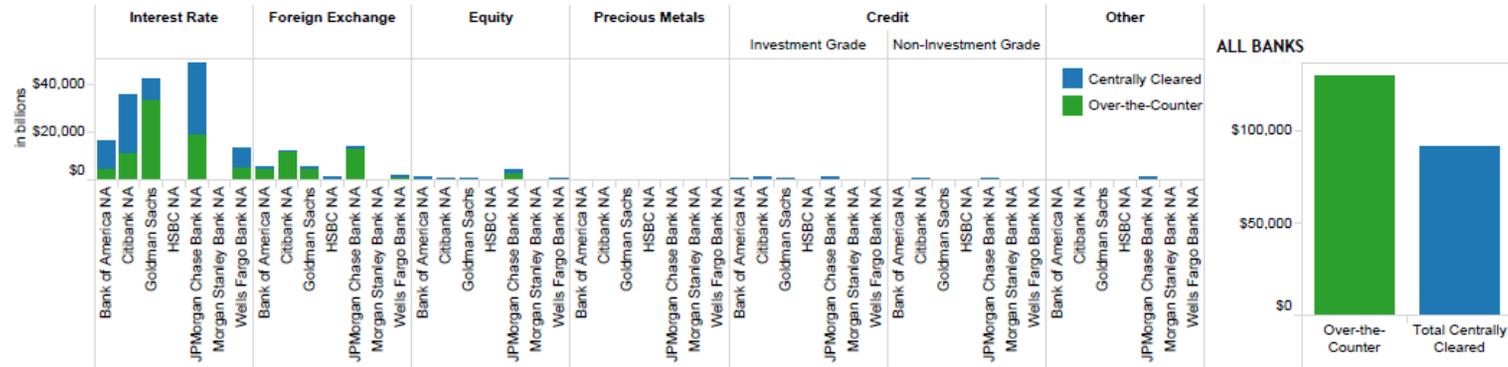


In billions of dollars

	2018				2019				2020				2021				2022				2023	
	Q1	Q2	Q3	Q4	Q1	Q2																
Investment-Grade: < 1yr	\$880	\$805	\$764	\$837	\$763	\$758	\$675	\$781	\$726	\$619	\$648	\$554	\$546	\$539	\$665	\$601	\$795	\$642	\$692	\$617	\$769	\$658
Investment-Grade: 1-5 yrs	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	1,848	1,864	2,109	2,078	2,190	2,362	2,688	2,507
Investment-Grade: > 5 yrs	331	184	338	204	367	189	330	198	367	171	336	160	332	160	418	187	449	198	408	210	440	217
Total Investment Grade	\$3,050	\$2,984	\$3,089	\$3,214	\$3,106	\$3,030	\$3,089	\$2,997	\$2,891	\$2,313	\$2,622	\$2,235	\$2,423	\$2,289	\$2,829	\$2,651	\$3,352	\$2,916	\$3,291	\$3,189	\$3,897	\$3,382
	2018				2019				2020				2021				2022				2023	
	Q1	Q2	Q3	Q4	Q1	Q2																
Sub-Investment-Grade: < 1yr	\$400	\$335	\$318	\$304	\$259	\$283	\$275	\$268	\$247	\$278	\$233	\$218	\$245	\$215	\$244	\$208	\$225	\$248	\$247	\$221	\$252	\$238
Sub-Investment-Grade: 1-5 yrs	763	791	801	691	661	701	708	624	743	608	618	533	570	551	654	632	777	751	747	778	826	804
Sub-Investment-Grade: > 5 yrs	133	69	133	61	119	60	111	56	105	56	108	48	119	49	125	49	150	51	105	53	104	51
Total Sub-Investment Grade	\$1,296	\$1,195	\$1,252	\$1,056	\$1,039	\$1,044	\$1,093	\$947	\$1,065	\$942	\$959	\$799	\$935	\$815	\$1,023	\$889	\$1,152	\$1,049	\$1,099	\$1,052	\$1,182	\$1,092

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

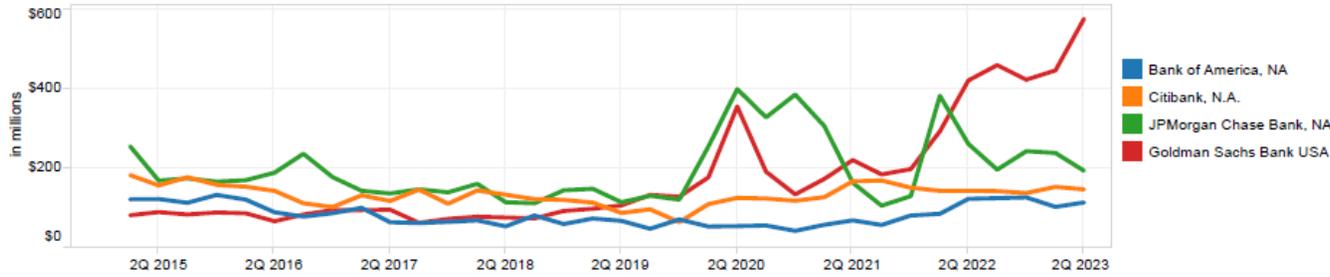
Bank Name	Interest Rate		Foreign Exchange		Equity		Precious Metals		Credit				Other		Total Centrally Cleared	Over-the-Counter	Total Notional
	Centrally Cleared	Over-the-Counter	Investment Grade		Non-Investment Grade		Centrally Cleared	Over-the-Counter									
									Centrally Cleared	Over-the-Counter	Centrally Cleared	Over-the-Counter					
JPMorgan Chase Bank NA	29,282	19,342	578	13,466	1,168	2,718	0	235	708	402	225	212	77	821	32,038	37,196	69,235
Citibank NA	24,508	11,191	399	11,848	26	779	27	94	273	872	79	227	74	92	25,386	25,102	50,488
Bank of America NA	11,102	5,279	135	5,379	184	790	8	74	175	242	39	91	0	36	11,644	11,890	23,534
Goldman Sachs	8,988	33,470	165	5,535	61	454	0	0	33	464	8	214	0	59	9,255	40,196	49,451
HSBC NA	68	54	44	1,138	0	14	0	7	0	5	0	1	0	0	113	1,219	1,332
Wells Fargo Bank NA	7,640	5,883	0	1,717	112	239	0	5	5	28	1	24	0	82	7,757	7,977	15,734
Morgan Stanley Bank NA	2	83	0	34	0	32	0	0	0	14	0	4	0	0	2	147	148
Grand Total	81,590	75,281	1,321	39,116	1,551	5,026	35	415	1,193	2,026	352	772	152	1,090	86,194	123,727	209,921
ALL OTHER	5,010	1,932	25	3,837	0	30	0	0	1	34	0	28	18	95	5,055	5,957	11,011
TOTAL	86,600	77,214	1,346	42,953	1,551	5,056	35	415	1,195	2,060	353	800	170	1,185	91,249	129,684	220,932

% 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	60%	40%	4%	96%	30%	70%	0%	100%	64%	36%	51%	49%	9%	91%	46%	54%
Citibank NA	69%	31%	3%	97%	3%	97%	22%	78%	24%	76%	26%	74%	45%	55%	50%	50%
Bank of America NA	68%	32%	2%	98%	19%	81%	10%	90%	42%	58%	30%	70%	0%	100%	49%	51%
Goldman Sachs	21%	79%	3%	97%	12%	88%	0%	100%	7%	93%	4%	96%	0%	100%	19%	81%
HSBC NA	56%	44%	4%	96%	0%	100%	0%	100%	0%	100%	4%	96%	0%	100%	8%	92%
Wells Fargo Bank NA	56%	44%	0%	100%	32%	68%	0%	100%	15%	85%	4%	96%	0%	100%	49%	51%
Morgan Stanley Bank NA	3%	97%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	1%	99%

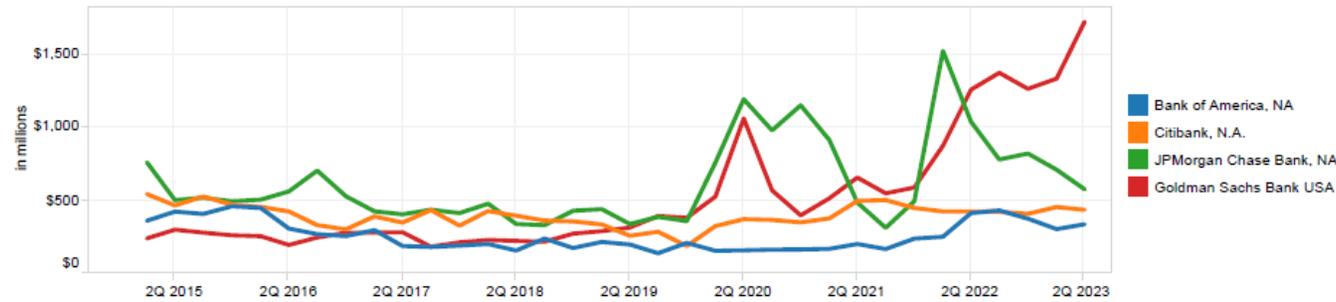
Source: Call reports, Schedule RC-R

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



	2017				2018				2019				2020				2021				2022				2023	
	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
Bank of America, NA	\$100	\$83	\$61	\$64	\$68	\$53	\$81	\$59	\$73	\$67	\$47	\$71	\$53	\$54	\$55	\$42	\$57	\$68	\$57	\$80	\$85	\$122	\$124	\$126	\$102	\$113
Citibank, N.A.	131	117	146	110	144	133	122	120	113	87	96	64	109	125	123	118	127	167	189	151	143	143	142	137	153	146
JPMorgan Chase Bank, NA	143	136	146	139	160	114	111	144	148	114	130	120	254	399	328	385	306	163	105	129	382	261	196	242	238	193
Goldman Sachs Bank USA	94	95	62	72	77	75	73	92	97	106	132	128	176	355	191	134	173	220	184	197	293	421	459	423	446	576

VaR Capital Requirement



	2017				2018				2019				2020				2021				2022				2023	
	Q1	Q2	Q3	Q4	Q1	Q2																				
Bank of America, NA	\$299	\$190	\$184	\$193	\$204	\$160	\$242	\$177	\$219	\$201	\$141	\$212	\$158	\$161	\$166	\$167	\$171	\$204	\$170	\$241	\$254	\$416	\$435	\$378	\$307	\$340
Citibank, N.A.	394	351	437	330	431	399	365	359	338	261	288	191	327	374	370	353	380	500	506	452	428	428	425	411	458	439
JPMorgan Chase Bank, NA	428	408	439	416	480	342	334	432	443	341	390	361	762	1,197	983	1,155	917	489	315	498	1,528	1,043	784	824	714	580
Goldman Sachs Bank USA	282	285	186	216	232	226	220	275	292	317	397	384	529	1,065	572	401	518	660	552	592	878	1,262	1,378	1,268	1,338	1,728

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