

# **Quarterly Report on Bank Trading and Derivatives Activities**

Third Quarter 2017

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

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## **About This Report**

The Office of the Comptroller of the Currency's (OCC) quarterly report on bank trading and derivative activities is based on call report information provided by all insured U.S. commercial banks (including trust companies) and savings associations; reports filed by U.S. financial holding companies; and other published data. A total of 1,391<sup>1</sup> insured U.S. commercial banks and savings associations reported derivative activities at the end of the third quarter of 2017. A small group of large financial institutions continues to dominate derivative activity in the U.S. commercial banking system. During the third quarter of 2017, four large commercial banks represented 90.2 percent of the total banking industry notional amounts and 86.3 percent of industry net current credit exposure (NCCE) (see table 4 in the appendix).

The OCC and other supervisors have dedicated examiners at the largest banks to continuously evaluate the credit, market, operational, reputation, and compliance risks of bank derivative 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 all OTC derivative categories, migration of certain highly liquid products to clearinghouses, and requirements for posting and collecting margin.

This is the 88th edition of the OCC's Quarterly Report on Bank Trading and Derivatives Activities. The first report was published in 1995. In our continuous efforts to improve this report, we now incorporate an entity's Legal Entity Identifier (LEI), if available, in the supplementary tables in the appendix.<sup>2</sup> Please send any comments or feedback on the structure and content of this report to the OCC by email: <u>QuarterlyDerivatives@occ.treas.gov</u>.

## **Executive Summary**

- Insured U.S. commercial banks and savings associations (collectively, banks) reported trading revenue of \$6.4 billion in the third quarter of 2017, \$0.2 billion less (3.6 percent) than in the previous quarter and \$0.02 billion less (0.4 percent) than a year earlier (see page 4).
- Credit exposure from derivatives decreased in the third quarter of 2017 as compared to the second quarter of 2017. NCCE decreased \$21.1 billion, or 5.7 percent, to \$348.4 billion (see page 8).
- Trading risk, as measured by value-at-risk (VaR), decreased in the third quarter of 2017. Total average VaR across the top five dealer banking companies decreased \$17.0 million, or 6.2 percent, to \$256 million (see page 11).
- Derivative notional amounts increased in the third quarter of 2017 by \$2.8 trillion, or 1.5 percent, to \$188.3 trillion (see page 14).
- Derivative contracts remained concentrated in interest rate products, which represented 75.0 percent of total derivative notional amounts (see page 14).

<sup>&</sup>lt;sup>1</sup> Beginning March 31, 2017, institutions with total assets less than \$1 billion have the option to file the FFIEC 051 Call Report. Due to the limited amount of derivatives data provided by FFIEC 051 Call Report filers, this report provides this information in a separate and distinct table in the appendix (see table 13 in the appendix).

<sup>&</sup>lt;sup>2</sup> The Legal Entity Identifier (LEI) is a 20-digit, alphanumeric code that enables clear and unique identification of legal entities. For more information, see the Global Legal Entity Identifier Foundation's website at <u>www.gleif.org</u>.

<sup>3</sup> 

## <u>Revenue</u>

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

Insured U.S. commercial banks and savings associations reported \$6.4 billion in trading revenue in the third quarter of 2017, \$0.2 billion less (3.6 percent) than in the previous quarter and \$0.02 billion less (0.4 percent) than a year earlier (see table 1). The driver of the year-over-year decrease in trading revenue was interest rate and foreign exchange (FX) trading offset by an increase in equity and credit trading revenue.

Combined interest rate and FX revenue led the quarterly decrease, decreasing \$0.7 billion to \$4.5 billion. Since dealers often use interest rate contracts to hedge exposures in FX derivatives, it is useful to view these categories collectively. For a historical view of quarterly bank trading revenue by instrument, see graph 9a in the appendix.

						Y/Y	Y/Y %
	2017 Q3	2017 Q2	Q/Q Change	Q/Q % Change	2016 Q3	Change	Change
Interest Rate & FX	\$4,458	\$5,201	-\$743	-14.3%	\$5,214	-\$756	-14.5%
Equity	\$1,184	\$1,122	\$62	5.5%	\$734	\$449	61.2%
Commodity & Other	\$284	\$206	\$78	38.1%	\$354	-\$69	-19.6%
Credit	\$470	\$108	\$362	333.3%	\$118	\$352	297.2%
Total Trading Revenue	\$6,396	\$6,637	-\$241	-3.6%	\$6,420	-\$24	-0.4%

## Table 1. Quarterly Bank Trading Revenue, in Millions of Dollars

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 \$13.9 billion in the third quarter of 2017 was \$1.2 billion (7.7 percent) lower than in the previous quarter. A \$0.9 billion decrease in equity revenue and a \$0.5 billion decrease in commodity and other revenue drove the decrease in trading revenue from the previous quarter. Year-over-year holding company trading results decreased by \$0.9 billion (6.2 percent). For a historical view of quarterly holding company trading revenue by instrument, see graph 9b in the appendix.

	2017 Q3	2017 Q2	Q/Q Change	Q/Q % Change	2016 Q3	Y/Y Change	Y/Y % Change
Interest Rate & FX	\$6,546	\$6,605	-\$59	-0.9%	\$8,258	-\$1,712	-20.7%
Equity	\$4,705	\$5,682	-\$977	-17.2%	\$4,159	\$546	13.1%
Commodity & Other	\$784	\$1,330	-\$545	-41.0%	\$969	-\$185	-19.1%
Credit	\$1,917	\$1,493	\$424	28.4%	\$1,482	\$435	29.3%
Total HC Trading Revenue	\$13,953	\$15,111	-\$1,158	-7.7%	\$14,868	-\$915	-6.2%

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

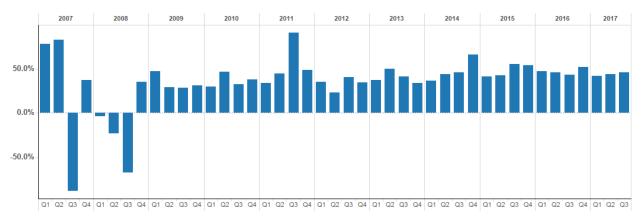
## Bank Trading Revenue as a Percentage of Consolidated Holding Company Trading Revenue

Before the financial crisis, trading revenue at banks typically ranged from 60 percent to 80 percent of consolidated BHC trading revenue. Since the financial crisis and the adoption of bank charters by the former investment banks, the percentage of bank trading revenue to consolidated BHC trading revenue has fallen and is now 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 trading commodity and equity products.

In the third quarter of 2017, banks generated 45.8 percent of consolidated holding company trading revenue, up from 43.9 percent in the previous quarter (see figure 1).





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

## Credit Risk

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

GPFV decreased by \$322.0 billion (13.7 percent) in the third quarter of 2017 to \$2.0 trillion, driven by a \$295 billion (18.1 percent) decrease in receivables from interest rate contracts (see table 3).

Because banks mostly hedge the market risk of their derivative portfolios with other derivatives, a similar decrease in GNFVs generally matched the change in GPFV. Derivative payables, GNFV, decreased \$317.0 billion (13.8 percent) to \$2.0 trillion during the quarter, driven by a decrease in payables on interest rate contracts

GPFV and GNFV interest rate contracts declined 53.1 percent and 53.6 percent respectively year-over-year. Part of the decline is a result of the continued implementation of settled-to-market (STM) treatment for variation margin. STM allows for the characterization of variation margin for over the counter derivatives that are cleared through central clearing parties (CCP), to constitute a settlement of the exposure, as opposed to collateralization.

			Q/Q	Q/Q %		Y/Y	Y/Y %
	2017 Q3	2017 Q2	Change	Change	2016 Q3	Change	Change
Interest Rate	\$1,339	\$1,634	-\$295	-18.1%	\$2,853	-\$1,514	-53.1%
Foreign Exchange	\$476	\$515	-\$39	-7.6%	\$481	-\$5	-1.0%
Equity	\$105	\$97	\$8	8.2%	\$96	\$9	9.0%
Commodities	\$47	\$42	\$5	11.7%	\$42	\$5	11.7%
Credit	\$68	\$69	-\$1	-1.1%	\$91	-\$23	-25.3%
Gross Positive Fair Value	\$2,035	\$2,357	-\$322	-13.7%	\$3,563	-\$1,529	-42.9%

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

				1			
			Q/Q	Q/Q %		Y/Y	Y/Y %
	2017 Q3	2017 Q2	Change	Change	2016 Q3	Change	Change
Interest Rate	\$1,287	\$1,565	-\$279	-17.8%	\$2,776	-\$1,489	-53.6%
Foreign Exchange	\$462	\$515	-\$53	-10.3%	\$467	-\$5	-1.2%
Equity	\$111	\$102	\$9	8.6%	\$95	\$16	17.0%
Commodities	\$48	\$43	\$5	11.6%	\$44	\$4	9.3%
Credit	\$71	\$69	\$1	2.1%	\$91	-\$20	-21.9%
Gross Negative Fair Value	\$1,979	\$2,295	-\$317	-13.8%	\$3,473	-\$1,494	-43.0%

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	Gross Positive Fair Value
Contracts With Negative Value to Bank A	4	\$350	Gross Negative Fair Value
Total Contracts	10	\$150	NCCE to Bank A From Counterparty B

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

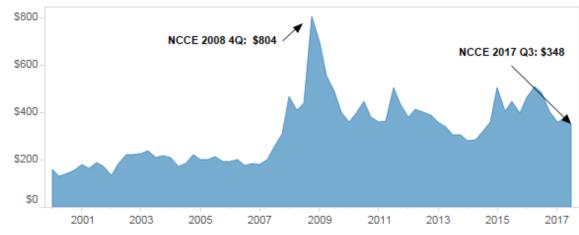
NCCE is the primary metric the OCC uses to evaluate credit risk in bank derivative activities. NCCE for insured U.S. commercial banks and saving associations decreased by \$21.1 billion (5.7 percent) to \$348.4 billion in the third quarter of 2017 (see table 5).<sup>3</sup> Legally enforceable netting agreements allowed banks to reduce GPFV exposures by 82.9 percent (\$1.7 trillion) in the third quarter of 2017 compared with 84.3 percent (\$2.0 trillion) in the previous quarter.

	2017 Q3	2017 Q2	Q/Q Change	Q/Q % Change
Gross Positive Fair Value	\$2,035	\$2,357	-\$322	-13.7%
NCCE RC-R	\$348	\$369	-\$21	-5.7%
Netting Benefit RC-R	\$1,686	\$1,987	-\$301	-15.2%
Netting Benefit % RC-R	82.9%	84.3%		-1.4%

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

NCCE peaked at \$804.1 billion at the end of 2008, during the financial crisis, when interest rates had plunged and credit spreads were very high (see figure 2). The significant decline in NCCE since 2008 has largely resulted from declines in the GPFV of interest rate and credit contracts. GPFV from interest rate contracts has fallen from \$5.1 trillion at the end of 2008 to \$1.3 trillion at the end of the third quarter of 2017. On September 30, 2017, exposure from credit contracts were \$68.1 billion (see table 3), which is \$1.0 trillion lower (93.8 percent) than the \$1.1 trillion on December 31, 2008. New regulations and a decrease in client demand have led to the reduction in credit derivative notional amounts since 2008.





Source: Call reports, Schedule RC-R

The bulk of bank's NCCE in the financial system is concentrated in banks and securities firms (40.1 percent) and corporations and other counterparties (49.0 percent) (see table 6).

The combined exposure to hedge funds, sovereign governments, and monoline financial firms was small (10.9 percent in total). The sheer size of aggregate counterparty exposures, however,

<sup>&</sup>lt;sup>3</sup> Banks report NCCE in 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.

results in the potential for major losses, even in sectors where credit exposure is a small percentage of the total. For example, notwithstanding the minimal share of NCCE to monolines, banks suffered material losses on these exposures during the credit crisis. Sovereign credit exposures were also a small component (7.6 percent) of NCCE during the quarter and, like monoline exposures before the financial crisis, are largely unsecured.

	Banks & Securities Firms	Monoline Financial Firms	Hedge Funds	Sovereign Governments	Corp & All Other Counterparties
2017 Q3	40.1%	0.1%	3.2%	7.6%	49.0%
2017 Q2	47.5%	0.1%	2.5%	7.1%	42.8%
2017 Q1	47.5%	0.1%	2.2%	7.5%	42.7%
2016 Q4	48.5%	0.1%	2.0%	6.5%	43.0%
2015 Q4	53.3%	0.1%	2.1%	6.0%	38.5%
2014 Q4	53.2%	0.1%	1.9%	6.4%	38.4%

## Table 6. Net Current Credit Exposure by Counterparty Type as a Percentage of Total Net CurrentCredit Exposure

Source: Call reports, Schedule RC-L

A more risk-sensitive measure of credit exposure would consider the value of collateral held against counterparty exposures. Commercial banks and savings associations with total assets greater than \$10 billion report the fair value of collateral held against various classifications of counterparty exposure.

Reporting banks held collateral valued at 109.2 percent of their total NCCE at the end of the third quarter of 2017, up from 108.6 percent in the second quarter of 2017 (see table 7). The increase in the ratio of the value of collateral held to the value of counterparty exposure was due primarily to stronger collateral coverage ratio of exposures to banks and securities firms, which increased from 125.7 percent to 133.6 percent. Collateral held against hedge fund exposures decreased in the third quarter, but coverage remains very high at 461.8 percent. Bank exposures to hedge funds have always been secured, because banks take initial margin on transactions with hedge funds, in addition to fully securing any current credit exposure. Collateral coverage of corporate, monoline, and sovereign exposures is much less than coverage of financial institutions and hedge funds, although coverage of corporate exposures has been increasing over the past several years because of increases in the volume of trades cleared at central counterparties.

	FV Banks & Securities Firms	FV Monoline Financial Firms	FV Hedge Funds	FV Sovereign Governments	FV Corp and All Other Counterparties	FV/NCCE%
2017 Q3	133.6%	0.0%	461.8%	34.1%	77.9%	109.2%
2017 Q2	125.7%	0.0%	522.3%	35.0%	77.5%	108.6%
2017 Q1	122.7%	0.0%	579.9%	34.5%	77.4%	106.7%
2016 Q4	119.0%	0.0%	491.5%	34.2%	67.1%	98.5%
2015 Q4	101.6%	5.2%	435.5%	15.6%	66.2%	89.6%
2014 Q4	94.4%	0.0%	361.5%	11.0%	59.5%	80.6%

Source: Call reports, Schedule RC-L

Collateral quality held by banks was very high and liquid during the quarter, with 65.0 percent held in cash (both U.S. dollar and non-dollar) and an additional 12.2 percent held in U.S.

Treasuries and government agency securities (see table 8). Supervisors assess changes in the quality 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.

	Cash U.S. Dollar	Cash Other Currencies	U.S. Treasury Securities	U.S. Gov't Agency	Corp Bonds	Equity Securities	All Other Collateral
2017 Q3	38.2%	26.8%	10.1%	2.1%	2.2%	5.8%	14.8%
2017 Q2	40.9%	27.6%	9.5%	2.1%	2.0%	5.3%	12.5%
2017 Q1	42.0%	27.5%	8.3%	1.9%	2.0%	5.5%	12.8%
2016 Q4	40.1%	31.5%	8.1%	1.7%	1.6%	5.0%	12.0%
2015 Q4	43.7%	31.7%	4.6%	1.6%	1.4%	5.3%	11.7%
2014 Q4	43.8%	31.9%	4.1%	1.7%	1.2%	1.7%	15.7%

## Table 8. Composition of Collateral

Source: Call reports, Schedule RC-L

Credit quality metrics for derivative exposures improved in the third quarter of 2017, as banks reported net recoveries of \$8.8 million, compared to net charge-offs of \$8.7 million in the second quarter of 2017 (see graph 7 in the appendix). The number of banks reporting charge-offs decreased from 14 to seven banks. Net recoveries in the third quarter of 2017 represented 0.003 percent of the NCCE from derivative contracts. For comparison purposes, commercial and industrial (C&I) loan net charge-offs decreased \$296.4 million, or 15.6 percent, to \$1.6 billion during the quarter and were 0.08 percent of total C&I loans. Charge-offs of derivative exposures typically are associated with problem commercial lending exposures, in which the borrower has an associated swap transaction.

## <u>Market Risk</u>

## Value-at-Risk

Banks primarily control market risk in trading operations by establishing limits against potential losses. Banks use VaR to quantify the maximum expected loss over a specified time period and at a certain confidence level under relevant market conditions. Since VaR does not measure the maximum potential loss, banks stress test trading portfolios to assess the potential for loss beyond the VaR measure. Banks and supervisors have been working to expand the use of stress testing to complement the VaR risk measurement process that banks typically use to assess a bank's exposure to market risk.

The large trading banks disclose average VaR data in published financial reports. Comparing the VaR numbers over time to equity capital and net income provides perspective on market risk of trading activities. As shown in table 9, market risk reported by the five largest banking companies, as measured by VaR, is small as a percentage of their equity capital.

			BANK OF		MORGAN	
	<b>JPMORGAN</b>	CITIGROUP	AMERICA	GOLDMAN	STANLEY	TOTAL
Q3 2017	\$30	\$89	\$47	\$47	\$43	\$256
Q2 2017	\$27	\$96	\$48	\$51	\$51	\$273
Q/Q Change	\$3	-\$7	-\$1	-\$4	-\$8	-\$17
Q/Q % Change	11.1%	-7.3%	-2.1%	-7.8%	-15.7%	-6.2%
Equity Capital	\$258,483	\$230,019	\$270,987	\$86,675	\$77,826	\$923,990
2016 Net Income	\$59,979	\$37,251	\$40,708	\$16,541	\$14,142	\$168,621
Avg VaR/Equity	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
Avg VaR/Net Income	0.1%	0.2%	0.1%	0.3%	0.3%	0.2%

### Table 9. Value-at-Risk at Major Bank Holding Companies, in Millions of Dollars

Source: 10K and 10Q U.S. Securities and Exchange Commission reports

VaR measures are not comparable across firms because of methodological differences in calculating VaR, as well as differences in the scope of coverage. These differences can result in materially different VaR estimates across firms, even for the same portfolios. When assessing trading risk in the banking system, it is therefore appropriate to review the trend in VaR at individual firms, not in aggregate across firms.

Because of methodological differences in calculating VaR, readers are cautioned that a higher VaR figure at a particular bank may not necessarily imply that the bank has more trading risk than another bank with a lower VaR. For example, JPMorgan, Goldman Sachs, and Morgan Stanley calculate VaR using a 95 percent confidence interval. If those firms used a 99 percent confidence interval, as Bank of America and Citigroup do, their VaR estimates would be meaningfully higher. The data series used to measure risk also is an important factor in the calculated risk. VaR for a single portfolio of exposures will differ if the historical period used to measure risk differs. The scope of coverage of the VaR measure is also important when reviewing risks across institutions. Some firms disclose VaR based only on their trading and intermediation activity, while others also include risks from hedging mortgage-servicing assets, fair value option portfolios, and asset and liability management activities. Graph 16 in the appendix illustrates the trend over the past seven years in average VaR at each of the top five large banking companies.

Figure 3 shows the VIX, a volatility index,<sup>4</sup> which measures the market's expectation of stock market volatility in the S&P 500 index over the next 30-day period. The chart illustrates that there has been an extended period of low volatility since the end of the financial crisis.

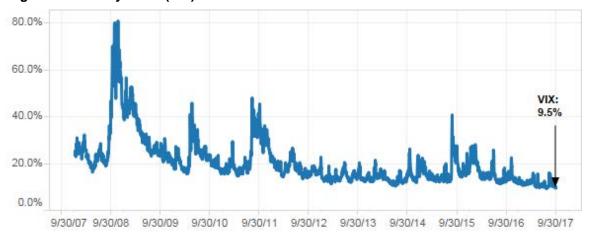


Figure 3. Volatility Index (VIX)

Source: Bloomberg

## Level 3 Trading Assets

Another measure used to assess market risk is the volume of and changes in level 3 trading assets. Level 3 trading assets are assets whose fair value cannot be determined by using observable inputs, such as market prices. Since the peak of the financial crisis at the end of 2008, major dealers have reduced the volume of level 3 trading assets. Because banks cannot observe inputs into the models that determine the fair value of these illiquid exposures, banks use their own assumptions in determining their fair values. Level 3 assets peaked at \$204.1 billion at the end of 2008 (see figure 4). At the end of the third quarter of 2017, banks held \$27.8 billion of level 3 trading assets, down 4.8 percent from the previous quarter, and 30.4 percent lower than a year ago. Level 3 assets are \$176.3 billion (86.4 percent) lower than the peak level from 2008.

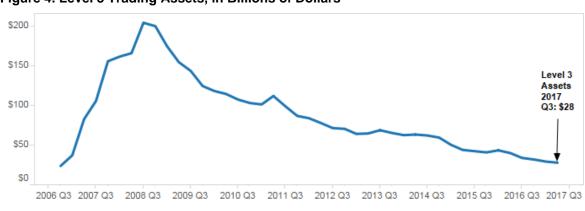


Figure 4. Level 3 Trading Assets, in Billions of Dollars

Source: Call reports, Schedule RC-Q

<sup>&</sup>lt;sup>4</sup> VIX is the trademarked ticker symbol for the Chicago Board Options Exchange SPX Volatility Index.

## Credit Derivatives

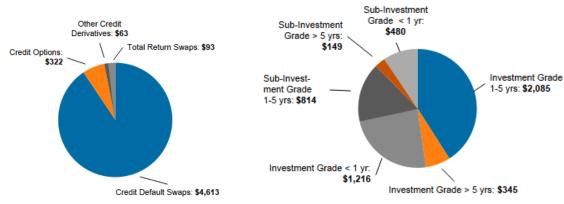
The notional amounts outstanding of credit derivatives increased \$156.0 billion (3.2 percent) in the third quarter of 2017 to \$5.0 trillion. Contracts referencing sub-investment-grade firms increased \$10.9 billion in the third quarter, while contracts referencing investment-grade firms increased \$144.7 billion. Credit derivatives outstanding remained well below the peak of \$16.4 trillion in the first quarter of 2008 (see graphs 1 and 14 in the appendix). As shown in figure 5, credit default swaps are the dominant product, at \$4.6 trillion (90.6 percent) of all credit derivative notional amounts (see also tables 11 and 12 in the appendix).

Contracts referencing investment-grade entities with maturities from one to five years, which increased by \$12.2 billion (0.6 percent) in the quarter, represented the largest segment of the market at 41.0 percent of all credit derivative notional amounts. Contracts of all tenors that reference investment-grade entities are 71.6 percent of the market (see chart on right in figure 5 and graph 14 in the appendix).



By Product Type

By Maturity and Quality of Underlying Reference Entity



Source: Call reports, Schedule RC-L

The notional amount for the 70 banks that net sold credit protection (i.e., assumed credit risk) was \$2.5 trillion, down \$73.2 billion (3.0 percent) from the second quarter of 2017. The notional amount for the 56 banks that net purchased credit protection (i.e., hedged credit risk) was \$2.6 trillion, \$82.4 billion lower (3.3 percent) than in the second quarter of 2017 (see table 12 in the appendix).

## Notional Amounts

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 notional amount of derivative contracts held by banks in the third quarter increased by \$2.8 trillion (1.5 percent) to \$188.3 trillion from the previous quarter (see table 10). The increase in the notional amount of derivative contracts by underlying risk exposure was driven by a \$1.4 trillion increase in interest rate notional amounts as well as a \$0.9 trillion increase in foreign exchange notional amounts. Interest rate notional amounts continued to represent the majority of

banks' derivative holdings at \$141.2 trillion, or 75.0 percent of total derivatives during the third quarter of 2017 (see table 10).

Conversely, the increase in the notional amount of derivative contracts by contract type was driven by a \$3.6 trillion increase in options contracts (9.5 percent) to \$41.3 trillion offset somewhat by a \$1.2 trillion decrease in swap contracts (see table 11). Swap contracts remained the leading derivatives contract type at 54.1 percent of all notional amounts.

The four banks with the most derivative activity hold 90.2 percent of all bank derivatives, while the largest 25 banks account for nearly 100 percent of all contracts (see tables 3 and 5 and graph 4 in the appendix).

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

			Q/Q	Q/Q %		Y/Y	Y/Y %
	2017 Q3	2017 Q2	Change	Change	2016 Q3	Change	Change
Interest Rate	\$141,244	\$139,817	\$1,426	1.0%	\$132,993	\$8,251	6.2%
Foreign Exchange	\$37,457	\$36,521	\$936	2.6%	\$33,858	\$3,599	10.6%
Equity	\$3,056	\$2,908	\$147	5.1%	\$2,735	\$321	11.7%
Commodity	\$1,478	\$1,334	\$143	10.7%	\$1,312	\$165	12.6%
Credit Derivatives	\$5,090	\$4,935	\$156	3.2%	\$6,562	-\$1,472	-22.4%
Total Notional	\$188,324	\$185,516	\$2,808	1.5%	\$177,461	\$10,864	6.1%

Source: Call reports, Schedule RC-L

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

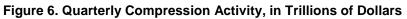
			Q/Q	Q/Q %		Y/Y	Y/Y %
	2017 Q3	2017 Q2	Change	Change	2016 Q3	Change	Change
Futures & Forwards	\$40,119	\$39,841	\$277	0.7%	\$36,957	\$3,162	8.6%
Swaps	\$101,809	\$103,004	-\$1,196	-1.2%	\$103,014	-\$1,205	-1.2%
Options	\$41,307	\$37,736	\$3,571	9.5%	\$30,928	\$10,379	33.6%
Credit Derivatives	\$5,090	\$4,935	\$156	3.2%	\$6,562	-\$1,472	-22.4%
Total Notional	\$188,324	\$185,516	\$2,808	1.5%	\$177,461	\$10,864	6.1%

Source: Call reports, Schedule RC-L

## **Compression Activity**

Notional amounts of banks' derivative contracts have generally declined since 2011 due to trade compression efforts, which has led 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 third quarter of 2017, as shown in figure 6.





In the first quarter of 2015, banks began reporting their volumes of cleared and non-cleared derivative transactions, as well as risk weights for counterparties in each of these categories. In the third quarter of 2017, 39.6 percent of bank's derivative holdings were centrally cleared (see table 12). From a market factor perspective, 50.2 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 27.7 percent of investment grade and 23.4 percent of non-investment-grade transactions were centrally cleared (see graph 15 in the appendix).

Centrally cleared derivative transactions were heavily concentrated at qualified central counterparties, with 91.6 percent of notional amounts reflecting the 2 percent risk weight applicable to such counterparties.

	Interest	Foreign		Precious			
	Rate	Exchange	Equity	Metals	Credit	Other	Total
2017 Q3	50.2%	1.3%	28.6%	4.3%	26.2%	15.5%	39.6%
2017 Q2	50.8%	1.1%	27.3%	4.9%	23.6%	15.5%	40.3%
2017 Q1	49.8%	1.2%	25.1%	5.0%	22.3%	16.0%	39.2%
2016 Q4	49.2%	1.0%	23.4%	5.1%	20.4%	15.0%	38.8%
2016 Q3	49.2%	0.7%	24.3%	6.4%	21.2%	14.9%	39.0%
2016 Q2	49.1%	0.5%	22.1%	5.5%	18.3%	13.7%	39.1%
2016 Q1	45.4%	0.5%	21.4%	4.4%	19.4%	13.6%	36.5%
2015 Q4	46.2%	0.5%	20.0%	3.7%	16.8%	14.0%	36.9%
2015 Q3	44.7%	0.5%	14.5%	5.0%	20.4%	12.5%	36.0%
2015 Q2	43.1%	0.3%	13.6%	2.6%	19.6%	10.7%	35.0%
2015 Q1	44.7%	0.2%	13.6%	1.6%	19.7%	16.0%	36.5%

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

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, 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 into account netting. 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 into account netting. This amount represents the maximum losses a bank would incur if all its counterparties defaulted and there was no netting of contracts, and the bank held no counterparty collateral. GPFVs associated with credit derivatives are included.

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

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

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

**Potential future exposure (PFE):** An estimate of what the CCE could be over time, based on a supervisory formula in the agencies' risk-based capital rules. PFE is generally determined by multiplying the notional amount of the contract by a credit conversion factor that is based on the underlying market factor (e.g., interest rates, commodity prices, or equity prices) and the contract's remaining maturity. The risk-based capital rules, however, permit banks to adjust the

formulaic PFE measure by the net-to-gross ratio, which proxies the risk-reduction benefits attributable to a valid bilateral netting contract. PFE data in this report use the amounts on which banks hold risk-based capital.

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

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

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

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

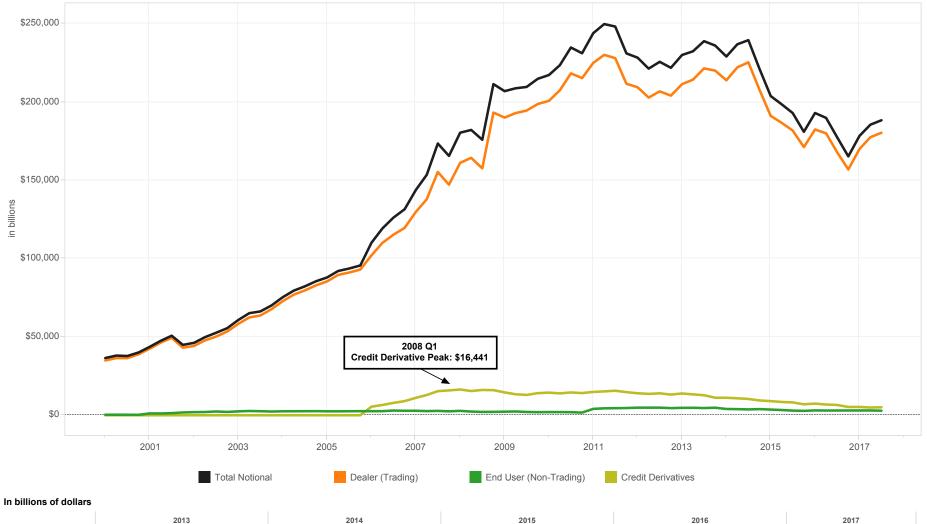
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Derivative Notional Amounts by Type Insured U.S. Commercial Banks and Savings Associations



	2013				2014			2015			2016				2017				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3												
Total Notional	\$229,987	\$232,342	\$238,827	\$235,992	\$229,011	\$236,808	\$239,459	\$221,078	\$203,771	\$198,523	\$192,937	\$180,952	\$192,947	\$189,834	\$177,461	\$165,256	\$178,343	\$185,516	\$188,324
Dealer (Trading)	211,353	214,240	221,425	219,990	213,838	222,078	225,318	207,711	191,123	186,686	181,777	171,172	182,437	179,971	167,873	156,913	169,983	177,519	180,337
End User (Non-Trading)	4,733	4,776	4,610	4,812	4,008	3,903	3,732	3,918	3,632	3,349	2,963	2,794	3,092	3,010	3,025	3,049	3,056	3,063	2,898
Credit Derivatives	13,901	13,327	12,793	11,191	11,165	10,827	10,408	9,449	9,017	8,488	8,198	6,986	7,418	6,853	6,562	5,293	5,304	4,935	5,090

Note: Numbers may not 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

#### Derivative Contracts by Product\*

Insured U.S. Commercial Banks and Savings Associations

	2003	2004	2005	2006	2007	2008	2009	2010	2011	201	2 20	13 2	014	2015	2016		2017	
\$250,000																		
											_							
200,000 -									100									
150,000-																		
100,000 -																		
\$50,000-																		
,																		
\$0																		
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	. C	4 0	Q4	Q4	Q4	Q1	Q2	Q3
				Futures	s & Forward	ls 📃 T	Fotal Option	IS	Total S	Swaps		Credit Der	ivatives					
llions of d	ollars																	
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	
		Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	
ures & Fo		\$11,406	\$11,370	\$12,057	\$14,882	\$18,867	\$22,529	\$29,652	\$35,539	\$37,469	\$41,621	\$40,027	\$43,380			\$39,858	\$39,841	\$40,1
al Options	-	14,616	17,754	18,858	26,277	27,727	29,747	31,884	32,078	32,505	30,375	32,305	33,081	30,889	29,386	33,999	37,736	41,3

**Credit Derivatives** 0 0 0 9,020 15,863 16,029 14,112 14,151 14,759 **Total Notional** 70,112 85,536 95,627 131,519 165,559 211,416 214,786 231,099 230,998

81,340

103,102

143,111

139,138

64,712

\*Notional amount of total: futures, exchange-traded options, over the counter options, forwards and swaps. Note: Numbers may not add due to rounding

56,411

44,090

Source: Call reports

**Total Swaps** 

149,331

146,266

136,608

13,190

221,794

152,469

11,191

235,992

135,169

9,449

221,078

107,392

180,952

6,986

96,384

5,293

165,256

99,183

5,304

178,343

103,004

185,516

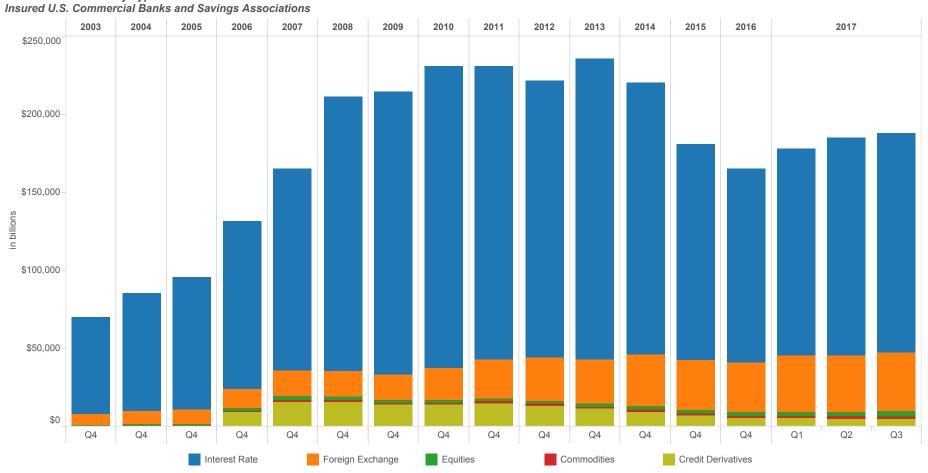
4,935

101,809

188,324

5,090

## Derivative Contracts by Type\*



#### In billions of dollars

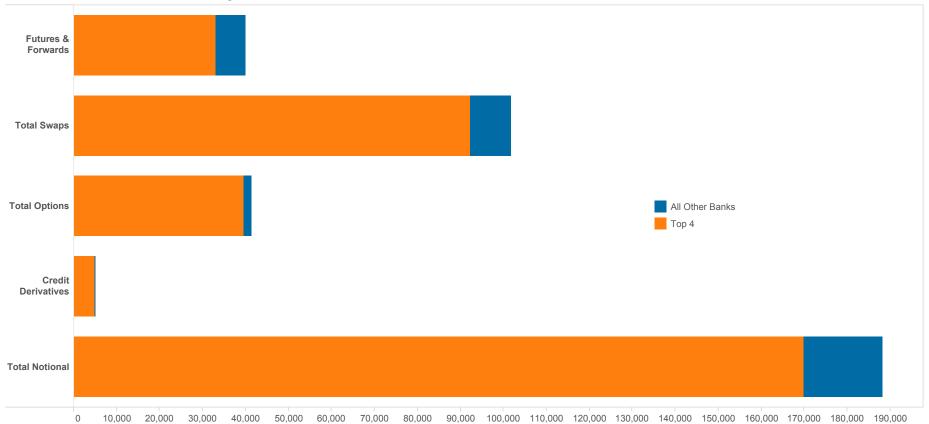
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3
Interest Rate	\$61,876	\$75,533	\$84,530	\$107,435	\$129,491	\$175,895	\$181,454	\$193,399	\$187,866	\$177,650	\$193,084	\$174,687	\$138,363	\$124,480	\$132,690	\$139,817	\$141,244
Foreign Exchange	7,185	8,607	9,289	11,900	16,614	16,224	16,555	20,990	25,436	27,587	28,480	33,183	32,100	31,737	36,161	36,521	37,457
Equities	829	1,112	1,255	2,271	2,524	2,207	1,685	1,364	1,606	1,970	2,028	2,537	2,395	2,488	2,839	2,908	3,056
Commodities	223	284	552	893	1,067	1,061	979	1,195	1,330	1,397	1,209	1,222	1,108	1,257	1,350	1,334	1,478
Credit Derivatives	0	0	0	9,020	15,863	16,029	14,112	14,151	14,759	13,190	11,191	9,449	6,986	5,293	5,304	4,935	5,090
Total Notional	70,112	85,536	95,627	131,519	165,559	211,416	214,786	231,099	230,998	221,794	235,992	221,078	180,952	165,256	178,343	185,516	188,324

Note: As of 2006 Q2 equities and commodities types are shown as separate categories. They were previously shown as "Other Derivs." Numbers may not total due to rounding.

Source: Call Reports

#### Four Banks Dominate in Derivatives\*

Insured U.S. Commercial Banks and Savings Associations



#### in billions of dollars

#### In billions of dollars

	Top 4	All Other Banks	Grand Total
Futures & Forwards	\$33,202	\$6,917	\$40,119
Total Swaps	92,263	9,546	101,809
Total Options	39,534	1,772	41,307
Credit Derivatives	4,913	177	5,090
Total Notional	169,912	18,412	188,324

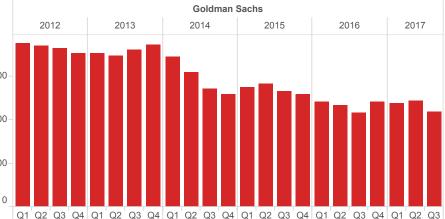
\*Notional amount of total: futures, exchange-traded options, over-the-counter options, forwards, and swaps. Source: Call reports

### Credit Exposure to Risk-Based Capital (in Percentage)

Top 4 Insured U.S. Commercial Banks and Savings Associations by Derivative Holdings



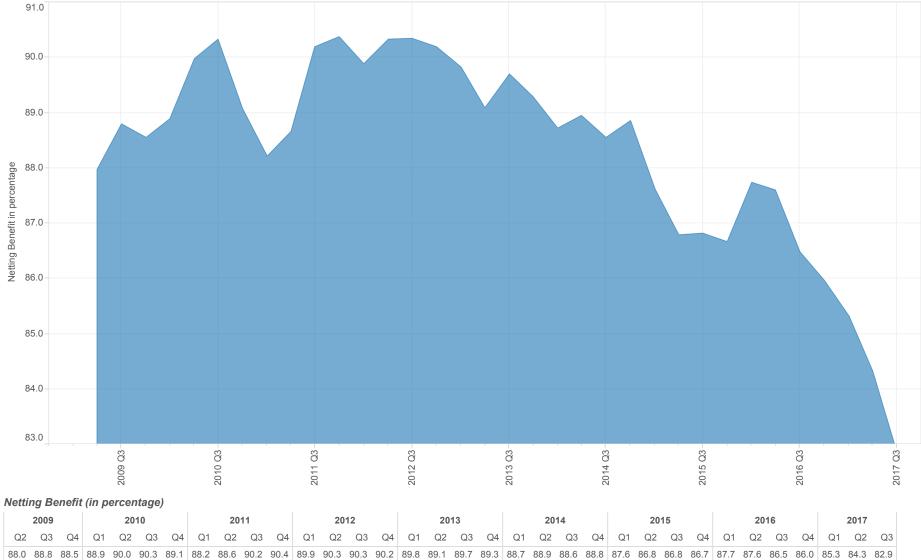




Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q2 Q3 Q1 Q2 Q3 Q4 Q1 Q2 Q3 TOTAL 

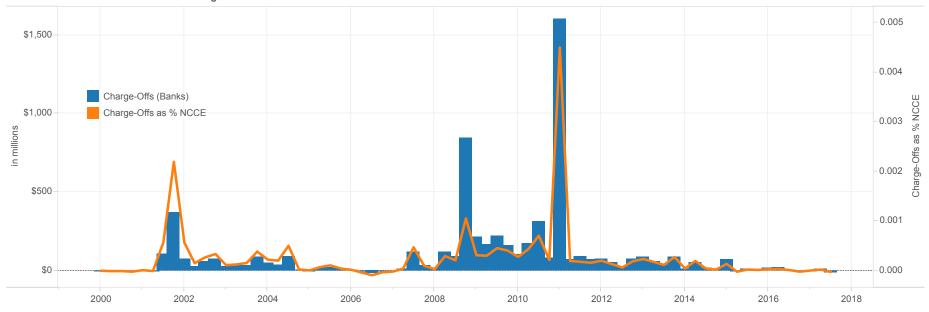
Note: The methodology to calculate the credit risk exposure to capital ratio for the Top 4 category uses a weighted average of total current credit exposure. Source: Call reports





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

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



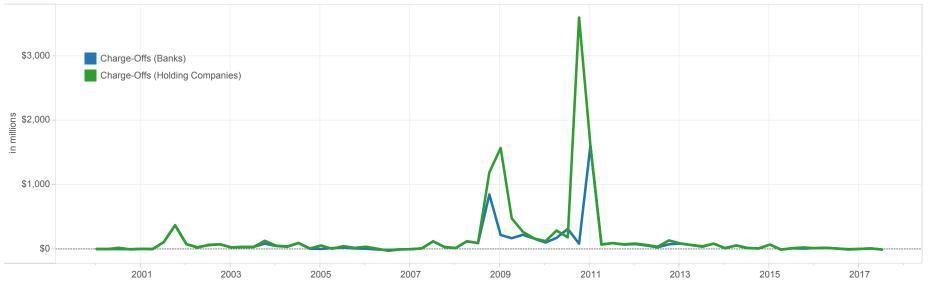
#### In millions of dollars

	2000			2001				2002				2003				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	0.0	-1.0	-1.0	-3.0	2.0	-1.0	107.3	370.0	75.8	28.2	59.0	73.7	25.3	29.9	32.3	83.7
		2004	1			2005	5			2006	;			2007	,	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	46.7	34.9	92.2	5.4	1.3	14.2	23.0	8.3	3.6	-7.0	-16.0	-5.8	-3.1	9.1	119.5	30.7
		2008	3			2009	)			2010	)			2011	l	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Charge-Offs (Banks)	15	120	92	847	217	168	221	162	100	173	313	83	1,601	72	91	69
		2012	2			2013	3			2014	Ļ			2015	5	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	76.35	54.34	26.12	73.44	84.28	60.72	35.77	83.45	12.78	55.90	14.53	7.91	69.31	-7.93	10.44	6.40

		201	16		2017		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Charge-Offs (Banks)	13.30	18.56	6.48	-7.84	1.22	8.71	-8.77

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

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



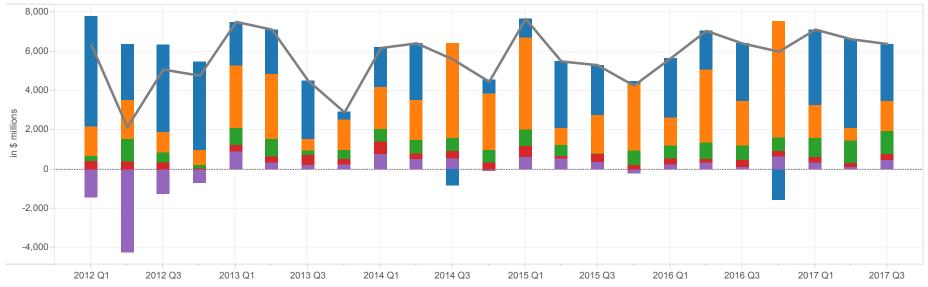
In	mil	lions	of	dol	lars

in millions of dollars																							
			2000	D				2	001					2002					20	03			
	G	21	Q2	Q3	C	Q4	Q1	Q2		Q3	Q4	Q	1	Q2	Q3	Q	4	Q1	Q2	G	23	Q4	
Charge-Offs (Banks)	0.	.0	-1.0	-1.0	-3	8.0	2.0	-1.0	10	7.3	370.0	75.8	3 2	28.2	59.0	73.	7 2	25.3	29.9	32	.3	83.7	
Charge-Offs (Holding Companies)	0.	.1	-1.0	19.3	-7	.0	2.0	-1.0	10	7.3	369.6	75.8	3 2	21.2	66.0	73.	7 2	25.3	32.9	31	.4	127.8	
			2004	4				2	005					2006					20	07			
	G	Q1	Q2	Q3	(	Q4	Q1	Q2		Q3	Q4	Q	1	Q2	Q3	Q	4	Q1	Q2	C	23	Q4	
Charge-Offs (Banks)	46	.7	34.9	92.2	5	5.4	1.3	14.2	2	3.0	8.3	3.6	<u>}</u>	-7.0	-16.0	-5.	8	-3.1	9.1	119	.5	30.7	
Charge-Offs (Holding Companies)	51	.2	40.4	94.2	9	0.0	54.9	3.6	4	5.1	18.1	35.4	1	5.4	-28.1	-7.	2	-3.1	10.4	119	.4	32.2	
			2008	В				2	009					2010					20	11			
	G	21	Q2	Q3	(	24	Q1	Q2		Q3	Q4	Q	1	Q2	Q3	Q	4	Q1	Q2	G	23	Q4	
Charge-Offs (Banks)	1	5	120	92	84	47	217	168	2	21	162	100	) .	173	313	8	31,	601	72	ç	91	69	
Charge-Offs (Holding Companies)	1	5	120	93	1,19	92 1	,570	477	2	66	164	122	2 2	288	181	3,59	8 1,	617	68	ç	92	73	
		20	12			20	13			20	14			20	15			201	16			2017	
	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)	76.3	54.3	26.1	73.4	84.3	60.7	35.8	83.5	12.8	55.9	14.5	7.9	69.3	-7.9	10.4	6.4	13.3	18.6	6.5	-7.8	1.2	8.7	
Charge-Offs (Holding Companies)	84.6	64.0	34.9	133.4	87.2	62.6	42.9	83.4	13.6	55.6	17.2	9.1	69.0	-10.2	12.9	24.5	12.8	18.0	7.5	-2.5	1.4	8.9	

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

#### Graph 9a

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



Interest Rate	In millions of dollars								
Foreign Exchange			Average	Past 8	Past 8	Past 8	Since	Max	Min
Equity		3Q2017	Past 12 Q3's	Quarter Average	Quarter High	Quarter Low	2000 Average	Since 2000	Since 2000
Commodity & Other	Interest Rate	2,918	1,899	2,267	4,520	-5,282	1,711	9,291	-1,547
Credit	Foreign Exchange	1,540	2,649	2,513	5,941	-1,069	1,843	5,941	681
Total Trading Revenue	Equity	1,183	655	774	1,183	-1,059	574	1,830	49
	Commodity & Other	284	362	278	402	-307	227	789	161
	Credit	470	370	267	634	-10,237	-172	2,727	-222
	Total Trading Revenue	6,396	5,936	6,099	7,129	-10,580	4,182	10,217	4,273

#### In millions of dollars

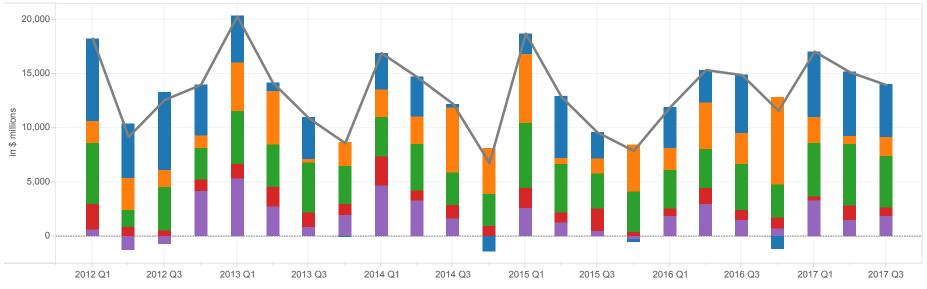
		20	12			201	13			20	14			20	15			20	16			2017	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Interest Rate	5,627	2,870	4,457	4,521	2,243	2,268	3,002	360	2,015	2,883	-819	664	958	3,406	2,578	154	3,023	1,973	2,920	-1,547	3,865	4,520	2,918
Foreign Exchange	1,505	1,990	1,020	753	3,185	3,303	588	1,550	2,137	2,026	4,830	2,902	4,703	855	1,931	3,401	1,424	3,719	2,294	5,941	1,685	681	1,540
Equity	260	1,140	508	187	838	924	233	491	612	726	654	650	797	587	49	742	668	867	734	681	922	1,122	1,183
Commodity & Other	412	390	350	30	364	292	481	265	672	293	411	335	587	129	402	198	271	161	353	296	328	206	284
Credit	-1,444	-4,243	-1,242	-713	890	339	222	245	756	500	535	-79	624	530	357	-222	263	342	118	634	330	108	470
Total Trading Revenue	6,359	2,147	5,093	4,778	7,520	7,125	4,527	2,911	6,192	6,428	5,612	4,471	7,669	5,507	5,316	4,273	5,650	7,062	6,420	6,006	7,129	6,637	6,396

\*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 total due to rounding.

Source: Call reports

#### Graph 9b

Quarterly Trading Revenue (Cash and Derivative Positions)\* Holding Company



Interest Rate
 Foreign Exchange
 Equity
 Commodity & Other
 Credit
 Total Trading Revenue

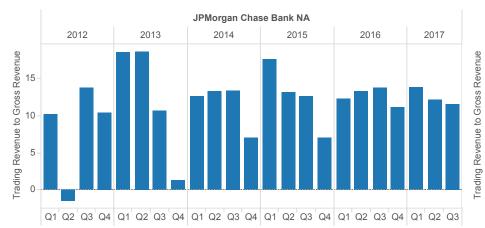
#### In millions of dollars

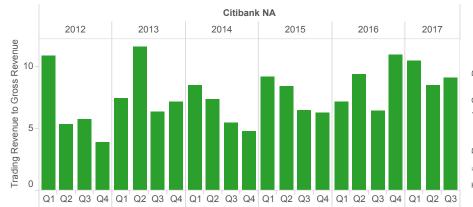
		20	12			20	13			20	14			20	15			20	16			2017	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Interest Rate	7,592	5,032	7,139	4,683	4,272	823	3,811	-94	3,395	3,645	353	-1,396	1,893	5,662	2,403	-243	3,808	2,965	5,359	-1,193	6,013	5,884	4,780
Foreign Exchange	2,005	2,959	1,617	1,185	4,414	4,890	320	2,205	2,472	2,521	5,985	4,243	6,329	552	1,393	4,338	2,025	4,318	2,899	8,007	2,440	721	1,766
Equity	5,684	1,543	3,973	2,849	4,960	3,936	4,561	3,484	3,682	4,296	2,938	2,947	6,022	4,481	3,196	3,696	3,441	3,612	4,159	3,021	4,902	5,682	4,705
Commodity & Other	2,265	880	542	1,107	1,324	1,746	1,347	1,052	2,617	924	1,242	954	1,833	871	2,146	412	738	1,491	969	1,003	399	1,330	784
Credit	673	-1,239	-696	4,143	5,292	2,761	855	1,949	4,718	3,292	1,687	14	2,603	1,294	452	-317	1,880	2,940	1,482	742	3,274	1,493	1,917
Total Trading Revenue	18,220	9,175	12,575	13,968	20,262	14,156	10,893	8,595	16,885	14,679	12,205	6,762	18,680	12,860	9,590	7,887	11,892	15,327	14,868	11,579	17,028	15,111	13,953

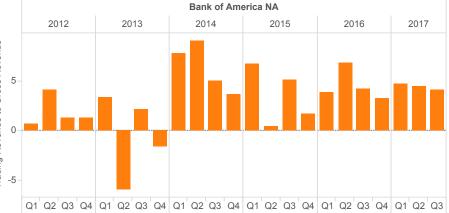
\*The trading revenue figures are for cash and derivative activities. Revenue figures are for each quarter alone, not year-to-date. Note: Numbers may not total due to rounding.

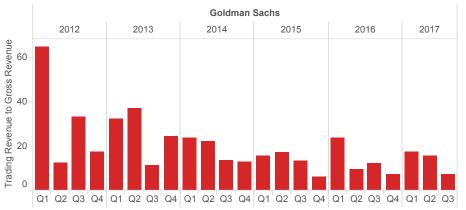
Source: Y9

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









#### Trading Revenue to Gross Revenue (in percentage)\*

		20	12			201	13			20	14			20	15			20	16			2017	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q
JPMorgan Chase Bank NA	10.24	-1.48	13.79	10.50	18.65	18.73	10.67	1.24	12.63	13.31	13.47	6.97	17.73	13.25	12.65	7.03	12.26	13.34	13.83	11.17	13.84	12.16	11.64
Bank of America NA	0.67	4.16	1.28	1.35	3.39	-5.97	2.14	-1.58	7.80	9.11	5.11	3.68	6.78	0.49	5.19	1.72	3.90	6.87	4.18	3.28	4.70	4.49	4.09
Citibank NA	10.95	5.36	5.74	3.94	7.45	11.71	6.39	7.20	8.51	7.43	5.48	4.78	9.17	8.41	6.54	6.30	7.19	9.41	6.47	10.97	10.47	8.50	9.12
Goldman Sachs	65.27	12.48	33.26	17.68	32.65	37.30	11.54	24.45	23.67	22.21	13.74	13.06	15.85	17.32	13.32	6.16	23.78	9.54	12.16	7.22	17.71	15.66	7.10

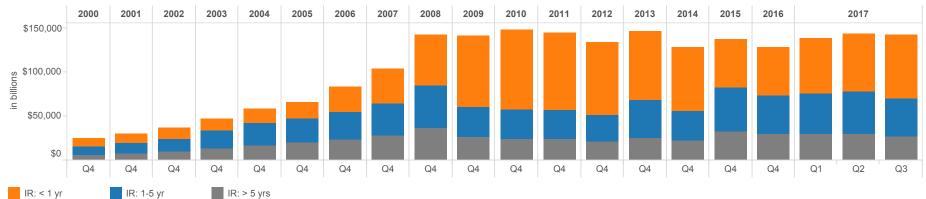
TOTAL	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
	8.70	2.78	7.86	5.72	10.42	9.56	6.72	2.77	10.06	10.45	8.53	5.35	11.68	7.62	8.41	5.03	8.45	10.14	8.51	8.51	10.10	8.74	8.47	

\*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.

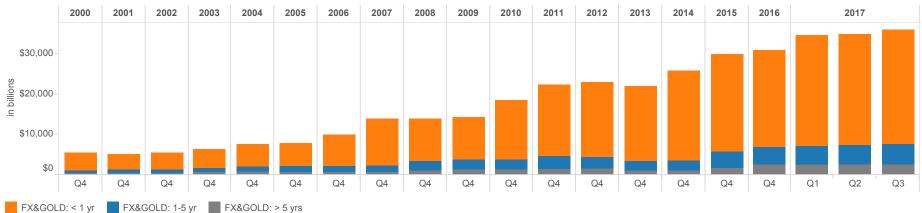
Source: Call reports

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

#### Interest Rate



FX & Gold



In billions of dollars

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3
IR: < 1 yr	\$9,688	\$10,379	\$12,982	\$13,581	\$15,921	\$18,483	\$29,552	\$39,085	\$58,618	\$81,236	\$90,843	\$87,812	\$82,948	\$77,758	\$71,808	\$55,047	\$55,053	\$61,923	\$65,969	\$72,143
IR: 1-5 yr	9,894	11,709	14,328	20,404	25,893	27,683	31,386	37,222	47,456	33,970	33,497	32,750	30,191	44,157	33,727	49,406	43,262	46,450	48,374	43,430
IR: > 5 yrs	5,830	7,451	9,735	13,117	16,492	19,825	23,273	27,724	36,868	26,374	24,307	24,168	21,175	24,630	22,214	32,981	29,762	29,972	29,633	27,040
FX&GOLD: < 1 yr	4,397	3,816	4,078	4,510	5,384	5,728	7,730	11,660	10,640	10,490	14,629	17,632	18,386	18,372	22,145	24,130	23,911	27,320	27,411	28,416
FX&GOLD: 1-5 yr	622	686	857	1,146	1,317	1,381	1,452	1,639	2,195	2,473	2,462	3,117	2,910	2,341	2,587	3,986	4,453	4,772	4,813	4,987
FX&GOLD: > 5 yrs	361	499	439	582	762	689	594	622	1,082	1,347	1,290	1,503	1,480	1,029	969	1,648	2,420	2,429	2,496	2,544

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

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

#### **Precious Metals**

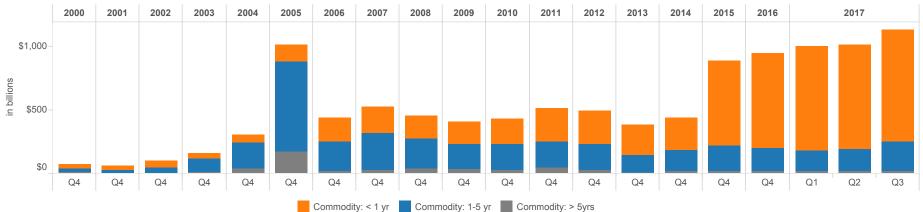
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	
\$45-																				
\$40-																				
\$35-													_							
\$30-																				
suoillid ni																				
.⊑ \$20-																				
\$15-																				
\$10-																				
\$5-																				
\$0	01	04	01	01	01	04	04	04	01	04	04	04	04	04	04	04	04	Q1	Q2	02
	Q4	Q4	Q4	Q4	Q4	Q4 ecious Met	Q4 als: < 1 yr	Q4	Q4 Preciou	Q4 s Metals: 1	Q4 -5 yr	Q4	Q4 ecious Meta	Q4 als: > 5 yrs	Q4	Q4	Q4	QT	QZ	Q3
In billion	s of dollar	s			_		,				2			, .						

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3						
Precious Metals: < 1 yr	2.51	2.44	2.72	3.87	4.04	8.59	10.35	10.72	7.55	11.55	17.47	21.12	27.68	21.41	19.29	23.51	26.87	40.42	40.14	42.21
Precious Metals: 1-5 yr	0.25	0.23	0.46	0.33	0.51	1.29	1.75	2.10	1.51	1.24	1.89	4.74	5.82	3.80	2.84	3.92	3.27	3.13	2.24	2.56
Precious Metals: > 5 yrs	0.16	0.00	0.00	0.00	0.00	0.06	0.33	0.01	0.00	0.00	0.03	0.10	0.03	0.00	0.29	0.07	0.02	0.05	0.04	0.04

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

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



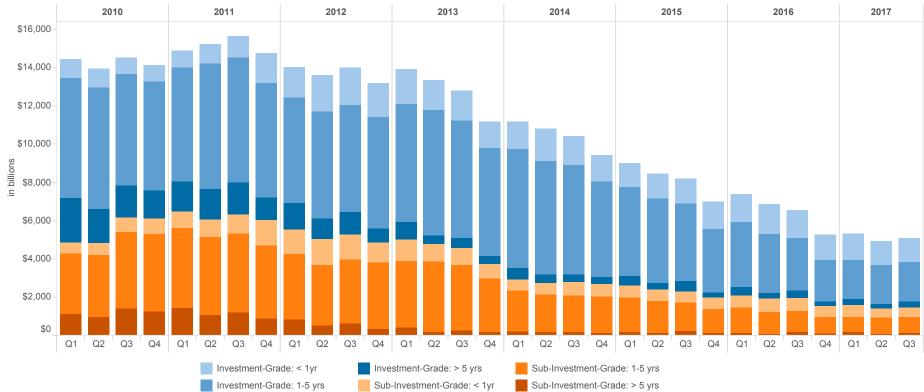




In billions of dollars																				
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	
	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q1	Q2	Q3
Commodity: < 1 yr	\$36	\$31	\$55	\$43	\$64	\$133	\$185	\$206	\$179	\$176	\$203	\$261	\$261	\$235	\$257	\$668	\$750	\$824	\$819	\$883
Commodity: 1-5 yr	27	25	35	103	205	707	235	297	233	198	209	209	208	144	164	197	179	160	175	233
Commodity: > 5yrs	11	2	9	14	40	175	20	25	43	33	25	46	28	6	20	22	23	20	21	23
Equity: < 1 yr	162	121	127	197	273	321	341	473	409	312	296	427	627	645	996	1,743	1,847	2,203	2,236	2,160
Equity: 1-5 yr	180	209	249	674	736	1,428	221	297	256	228	191	210	262	291	352	628	680	763	720	781
Equity: > 5 yrs	38	18	25	84	140	383	45	70	72	82	85	94	82	136	101	130	123	85	127	119

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

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



#### In billions of dollars

		20	13			201	14			201	15			201	16			2017	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3												
Investment-Grade: < 1yr	\$1,790	\$1,550	\$1,548	\$1,384	\$1,414	\$1,707	\$1,478	\$1,375	\$1,256	\$1,292	\$1,270	\$1,380	\$1,471	\$1,549	\$1,451	\$1,348	\$1,343	\$1,234	\$1,216
Investment-Grade: 1-5 yrs	6,168	6,536	6,127	5,661	6,227	5,909	5,722	5,007	4,649	4,450	4,108	3,328	3,400	3,101	2,765	2,170	2,072	2,073	2,085
Investment-Grade: > 5 yrs	948	455	552	409	577	448	433	382	508	359	520	281	457	262	385	214	309	195	345
Total Investment Grade	\$8,906	\$8,541	\$8,228	\$7,455	\$8,218	\$8,064	\$7,633	\$6,764	\$6,413	\$6,101	\$5,898	\$4,990	\$5,328	\$4,911	\$4,601	\$3,732	\$3,724	\$3,502	\$3,647

		20	13		201	14			201	15			20	16					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3												
Sub-Investment-Grade: < 1yr	\$1,090	\$933	\$879	\$765	\$619	\$642	\$671	\$658	\$596	\$562	\$569	\$607	\$622	\$683	\$683	\$581	\$582	\$509	\$480
Sub-Investment-Grade: 1-5 yrs	3,491	3,656	3,424	2,792	2,127	1,960	1,948	1,887	1,813	1,673	1,518	1,271	1,313	1,159	1,122	869	838	830	814
Sub-Investment-Grade: > 5 yrs	414	197	262	179	200	160	157	140	194	152	213	119	155	101	157	111	159	93	149
Total Sub-Investment Grade	\$4,995	\$4,786	\$4,565	\$3,736	\$2,946	\$2,763	\$2,775	\$2,685	\$2,604	\$2,387	\$2,299	\$1,997	\$2,090	\$1,943	\$1,962	\$1,561	\$1,579	\$1,432	\$1,443

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

In billions of dollars

2017 Q3 Notional Amounts of Over-the-Counter and Centrally Cleared Derivative Contracts Insured U.S. Commercial Banks and Savings Associations

	Interest Rate	Foreign Exchange	Equity	Precious Metals	Cr	redit	Other			
					Investment Grade	Non-Investment Grade		ALL BANKS		
\$40,000-								\$100,000-		
알이베g 뜨 \$20,000-						entrally Cleared		\$50,000-		
\$0			$\bigcirc$	$\bigcirc$	ပ ပ ဖ ပ ≥ ဖ ပ	ပ ပ ဖွ ပ ≽ စွ ပ	AC M M C C C F C S C C	\$0	Over-the-	Total Centrally
	BAC GS HSBC MS MS	BAC BAC GS GS HSBC JPM MS MS MS	BAC C GS HSBC JPM MS MS WFC	BAC C GS HSBC JPM MS MS MS WFC	BAC C GS HSBC JPM MS MS	BAC C GS HSBC JPM MS MS MS	BAC C GS HSBC JPM MS MS MS		Counter	Cleared

Bank Name         Centrally         Over-the Cleared         Centrally         Over-the Cleared	Over-	Total		Other			dit	Cre		s Metals	Precious	iity	Equ	Interest Rate Foreign Exchange				
Bank Name         Cleared         Counter	the- N Counter N							nt Grade	Investme									
Cleared       Counter			-the-	Ov	Centrally	Over-the-	Centrally	Over-the-	Centrally	Ponk Nomo								
JPM       21,531       20,431       127       11,635       700       1,350       0       22       352       619       234       643       60       767       21,521         C       20,681       10,481       302       11,962       58       394       2       8       317       1,278       94       381       66       86       21,521       14,249         BAC       13,831       4,346       27       4,901       89       284       0       0       249       373       54       188       0       14       14,249         GS       6,509       25,996       0       2,387       0       25       0       0       0       93       0       61       0       6       6,509         HSBC       2,512       568       17       951       0       38       0       11       1       19       3       24       0       1       2,532         WFC       4,728       2,077       0       431       26       58       0       2       1       1       2       17       29       24       0       0       0       0       0       0       0	44 744	00.405	unter	C	Cleared	Counter	Cleared	Counter	Cleared									
C       20,061       10,461       302       11,962       56       394       2       6       317       1,276       94       381       66       66       14,249         BAC       13,831       4,346       27       4,901       89       284       0       0       249       373       54       188       0       14       6,509         GS       6,509       25,996       0       2,387       0       25       0       0       0       93       0       61       0       6       6,509         HSBC       2,512       568       17       951       0       38       0       11       1       19       3       24       0       1       2,532         WFC       4,728       2,077       0       431       26       58       0       2       1       1       2       17       29       24       4,787         MS       0       0       0       0       0       0       0       0       0	41,711	· · ·	787		80	643	254	619	352	22	0	1,356	700	11,853	127	26,431	21,891	JPM
BAC       13,631       4,346       27       4,301       69       264       0       0       249       373       54       166       0       14         GS       6,509       25,996       0       2,387       0       25       0       0       93       0       61       0       6,509       2,532         HSBC       2,512       568       17       951       0       38       0       11       1       19       3       24       0       1       2,532         WFC       4,728       2,077       0       431       26       58       0       2       1       1       2       17       29       24       4,787         MS       0       0       0       0       0       8       0       2       0       0	24,590	· · · ·	86		66	381	94	1,278	317	8	2	394	58	11,962	302	10,481	20,681	С
GS       0,509       23,996       0       2,387       0       25       0       0       93       0       61       0       6         HSBC       2,512       568       17       951       0       38       0       11       1       19       3       24       0       1       2,532         WFC       4,728       2,077       0       431       26       58       0       2       1       1       2       17       29       24       4,787         MS       0       1       0       0       0       0       8       0       2       0       0	10,106	· · ·	14		0	188	54	373	249	0	0	284	89	4,901	27	4,346	13,831	BAC
HSBC         2,512         506         17         951         0         56         0         11         1         19         5         24         0         1           WFC         4,728         2,077         0         431         26         58         0         2         1         1         2         17         29         24         4,787           MS         0         1         0         0         0         0         8         0         2         0         0         0	28,568	· · · · · · · · · · · · · · · · · · ·	6		0	61	0	93	0	0	0	25	0	2,387	0	25,996	6,509	GS
WFC         4,728         2,077         0         431         26         58         0         2         1         1         2         17         29         24         4,787           MS         0         1         0         343         0         0         0         0         8         0         2         0         0         0	1,611		1		0	24	3	19	1	11	0	38	0	951	17	568	2.512	HSBC
	2,609	4,787	24		29	17	2	1	1	2	0	58	26	431	0	2.077	4,728	
	354	0	0		0	2	0	8	0	0	0	0	0	343	0	1	0	
Grand Total 70,152 69,899 472 32,827 874 2,156 2 43 920 2,391 407 1,318 176 917 73,003	109,550 1	73,003	917		176	1,318	407	2,391	920	43	2	2,156	874	32,827	472	69,899	70,152	

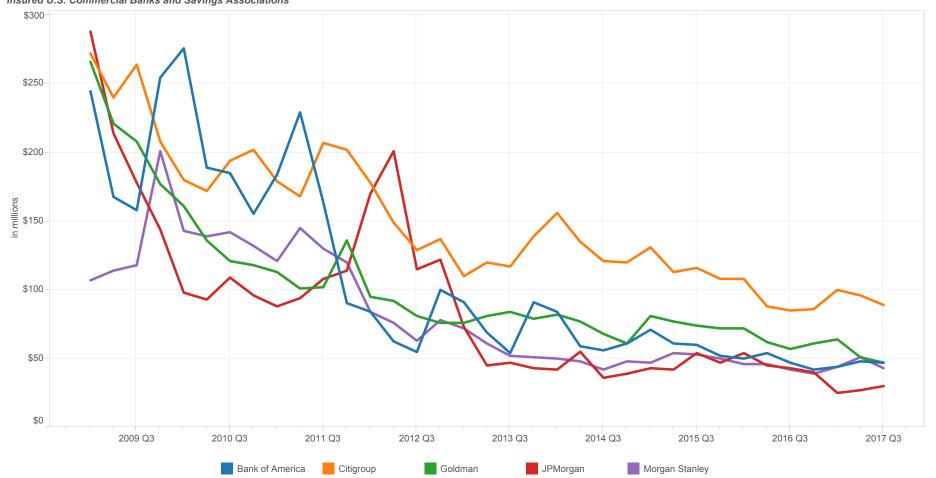
1,446 1,117 0 2,648 0 30 0 0 0 7 0 13 1 45 1,447 3,860 5,307 TOTAL 71,598 71,015 473 35,475 874 2,185 2 43 920 2,398 407 1,331 177 962 74,450 113,410 187,860

% of Total	of Total															I Total
	Interes	st Rate	Foreign Exchange		Equity		Precious Metals			Cre	edit		Otl	ner	Tota Centrally	over-the-
									Investment Grade		Non-Inv Gra	estment ade			Cleared as a % o Tota	fasa%of
Bank Name	Centrally	Over-the-	Centrally	Over-the-	Centrally	Over-the-	Centrally	Over-the-	Centrally	Over-the-	Centrally	Over-the-	Centrally	Over-the-	Notiona	
Dalik Naille	Cleared	Counter	Cleared	Counter	Cleared	Counter	Cleared	Counter	Cleared	Counter	Cleared	Counter	Cleared	Counter	Notiona	Notional
JPM	45%	55%	1%	99%	34%	66%	0%	100%	36%	64%	28%	72%	9%	91%	36%	64%
С	66%	34%	2%	98%	13%	87%	20%	80%	20%	80%	20%	80%	43%	57%	47%	53%
BAC	76%	24%	1%	99%	24%	76%	0%	100%	40%	60%	22%	78%	0%	100%	59%	41%
GS	20%	80%	0%	100%	0%	100%			0%	100%	0%	100%	0%	100%	19%	81%
HSBC	82%	18%	2%	98%	0%	100%	0%	100%	6%	94%	10%	90%	0%	100%	61%	39%
WFC	69%	31%	0%	100%	31%	69%	0%	100%	51%	49%	12%		56%	44%	65%	
MS	0%	100%	0%	100%	0%	100%			0%	100%	0%	100%			0%	

Source: Call reports, Schedule RC-R.

Graph 16

Value-at-Risk (VaR) Insured U.S. Commercial Banks and Savings Associations



In millions of dolla	irs																										
	2011				2012			2013			2014					201	5			201	6		2017				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Bank of America	\$184	\$229	\$164	\$90	\$84	\$63	\$55	\$100	\$91	\$69	\$54	\$91	\$84	\$59	\$56	\$61	\$71	\$61	\$60	\$52	\$50	\$54	\$47	\$42	\$44	\$48	\$47
Citigroup	179	168	207	202	178	149	129	137	110	120	117	139	156	135	121	120	131	113	116	108	108	88	85	86	100	96	89
Goldman	113	101	102	136	95	92	81	76	76	81	84	79	82	77	68	61	81	77	74	72	72	62	57	61	64	51	47
JPMorgan	88	94	108	114	170	201	115	122	73	45	47	43	42	55	36	39	43	42	54	47	54	45	43	40	25	27	30
Morgan Stanley	121	145	130	120	84	76	63	78	72	61	52	51	50	48	42	48	47	54	53	50	46	46	42	39	44	51	43
Total	685	737	711	662	611	581	443	513	422	376	354	403	414	374	323	329	373	347	357	329	330	295	274	268	277	273	256

Data Source: 10Q, 10k U.S.Securities and Exchange Commission Reports

### NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

		LEGAL ENTITY	TOTAL	TOTAL	TOTAL FUTURES	TOTAL OPTIONS	TOTAL FORWARDS	TOTAL SWAPS	TOTAL OPTIONS	TOTAL CREDIT DERIVATIVES	SPOT
RANK	BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	(EXCH TR)	(EXCH TR)	(OTC)	(OTC)	(OTC)	(OTC)	FX
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$1,875,791	\$2,334,113	\$10,148,840	\$27,416,368	\$9,008,870	\$1,826,975	\$619,798
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	2,788,718	1,339,533	6,376,310	30,061,597	8,617,527	2,083,825	931,200
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	2,099,557	6,573,662	2,891,647	21,889,379	9,800,581	161,402	61,424
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	1,303,674	249,053	5,717,522	12,895,179	1,611,060	840,937	430,003
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,737,980	7,988,553	177,060	222,301	2,572,122	4,081,474	903,479	32,117	7,406
6	HSBC NA	1IE8VN30JCEQV1H4R804	195,907	4,493,807	180,238	14,912	1,005,719	2,975,301	221,724	95,914	45,123
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	232,359	1,626,248	14,190	0	1,581,653	4,337	26,068	0	62,955
8	BANK OF NEW YORK MELLON	HPFHU00Q28E4N0NFVK49	281,342	906,817	32,287	90	505,541	342,493	26,226	180	64,170
9	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	363,681	428,204	40,850	22,400	24,735	306,383	26,863	6,974	1,135
10	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	126,898	368,871	0	0	69,512	261,038	27,927	10,394	6,412
11	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	452,252	348,741	4,423	675	56,977	212,171	69,380	5,116	4,610
12	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	130,997	330,552	0	0	313,618	15,808	1,126	0	12,432
13	SUNTRUST BANK	IYDOJBGJWY9T8XKCSX06	203,381	264,535	24,103	20,009	20,647	137,275	56,831	5,671	131
14	TD BANK NATIONAL ASSN	03D0JEWFDFUS0SEEKG89	285,495	180,309	0	0	4,797	174,500	642	371	0
15	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	118,553	155,595	2,979	0	77,045	68,982	6,589	0	580
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	290,965	123,660	244	0	3,119	116,811	455	3,031	28
17	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	134,819	95,042	4,175	0	7,885	76,394	6,095	494	557
18	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	120,725	90,066	0	0	3,967	74,959	8,471	2,670	244
19	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	122,472	89,786	5,258	0	24,297	52,974	4,143	3,115	26
20	FIFTH THIRD BANK	QFROUN1UWUYU0DVIWD51	139,988	76,808	622	407	5,979	51,988	14,489	3,322	268
21	BRANCH BANKING&TRUST CO	JJKC32MCHWDI71265Z06	214,780	59,844	231	0	7,248	43,992	8,373	0	23
22	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	33,102	55,987	551	358	50,109	3,457	1,511	1	19
23	COMPASS BANK	C90VT034M03BN29IRA40	84,701	46,677	795	0	1,403	34,520	9,918	41	44
24	CAPITAL ONE BANK USA NA	LKE37K2B8CFZUR7F9816	116,456	43,413	0	0	8,607	34,806	0	0	27
25	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	102,068	37,789	41	0	2,447	32,661	816	1,824	3
TOP 25	COMMERCIAL BANKS, SAS & TCS WITH DERIVA	ATIVES	\$10,932,413	\$187,723,424	\$8,555,786	\$10,777,512	\$31,481,744	\$101,364,846	\$30,459,164	\$5,084,372	\$2,248,617
	COMMERCIAL BANKS, SAS & TCS WITH DERIVA		4,510,613	600,932	5,352	3,618	75,742	443,849	66,515	5,856	1,619
	COMMERCIAL BANKS, SAS & TCS WITH DERIVA		15,443,026	188,324,356	8,561,138	10,781,130	31,557,486	101,808,695	30,525,679	5,090,228	2,250,236

Note: Credit derivatives have been included in the sum of total derivatives. Credit derivatives have been included as an "over the counter" category, although the call report does not differentiate by market currently. Note: Before the first quarter of 1995 total derivatives included spot FX. Beginning in that quarter, spot FX has been reported separately.

Note: Numbers may not total due to rounding. Source: Call reports, Schedule RC-L

### NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS (HOLDING COMPANIES) TOP 25 HOLDING COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

		LEGAL								CREDIT	
		ENTITY	TOTAL	TOTAL	FUTURES	OPTIONS	FORWARDS	SWAPS	OPTIONS	DERIVATIVES	SPOT
RANK	HOLDING COMPANY	INDENTIFIER	ASSETS	DERIVATIVES	(EXCH TR)	(EXCH TR)	(OTC)	(OTC)	(OTC)	(OTC)	FX
1	CITIGROUP INC.	6SHG14ZSSLCXXQSBB395	\$1,889,133	\$54,751,534	\$2,930,361	\$5,585,973	\$7,668,579	\$28,337,146	\$8,442,833	\$1,786,642	\$927,641
2	GOLDMAN SACHS GROUP, INC., THE	784F5XWPLTWKTBV3E584	930,161	53,054,605	3,285,137	7,590,138	7,242,084	22,013,819	11,525,713	1,397,714	418,958
3	JPMORGAN CHASE & CO.	8I5DZWZKVSZI1NUHU748	2,563,074	51,981,312	1,883,033	2,521,003	10,485,464	26,561,056	8,679,980	1,850,776	610,022
4	BANK OF AMERICA CORPORATION	9DJT3UXIJIZJI4WXO774	2,285,062	36,673,926	1,761,042	1,025,601	8,252,264	20,897,250	3,587,546	1,150,223	400,583
5	MORGAN STANLEY	IGJSJL3JD5P30I6NJZ34	853,693	32,394,340	3,110,607	1,694,441	3,309,448	16,946,318	6,614,119	719,407	57,462
6	WELLS FARGO & COMPANY	PBLD0EJDB5FWOLXP3B76	1,934,939	7,881,903	185,244	242,819	2,614,176	3,909,333	900,191	30,140	7,373
7	HSBC NORTH AMERICA HOLDINGS INC.	213800JCL1FHBQK3M654	286,418	7,098,673	705,494	685,600	1,006,734	4,375,005	229,927	95,914	45,122
8	MIZUHO AMERICAS LLC		42,411	5,243,365	10,375	2,185	435,605	4,755,979	38,356	865	1,044
9	STATE STREET CORPORATION	549300ZFEEJ2IP5VME73	236,000	1,634,104	14,277	0	1,581,929	11,830	26,068	0	62,955
10	RBC USA HOLDCO CORPORATION		138,285	1,247,575	167,047	813,496	198,112	68,088	458	374	97
11	CREDIT SUISSE HOLDINGS (USA), INC.	549300YHT5NGRKJD1R94	219,902	961,090	31,887	22,530	773,657	76,210	4,293	52,514	0
12	BANK OF NEW YORK MELLON CORPORATION, THE	WFLLPEPC7FZXENRZV188	354,397	905,062	33,252	1,815	526,704	316,887	26,224	180	64,125
13	BARCLAYS US LLC	213800H14XVWOV87OI72	175,284	587,569	37,434	200,314	244,935	26,770	0	78,116	104
14	PNC FINANCIAL SERVICES GROUP, INC., THE	CFGNEKW0P8842LEUIA51	375,256	425,389	41,065	22,400	27,315	300,772	26,863	6,974	1,135
15	U.S. BANCORP	N1GZ7BBF3NP8GI976H15	459,227	350,831	4,423	675	56,262	214,976	69,380	5,115	4,610
16	NORTHERN TRUST CORPORATION	549300GLF98S992BC502	131,400	329,802	0	0	313,618	15,058	1,126	0	12,432
17	BNP PARIBAS USA, INC.	549300QVEGJN81E8T563	146,032	285,768	5	2,552	255,522	24,928	2,761	0	34
18	TD GROUP US HOLDINGS LLC	549300ARWZ5E3L64UH29	374,293	277,662	52,403	12,250	27,105	184,795	642	468	0
19	SUNTRUST BANKS, INC.	7E1PDLW1JL6TS0BS1G03	208,366	261,564	24,179	20,009	20,647	135,227	55,831	5,671	131
20	DB USA CORPORATION	529900RO45LRDMWLRI57	164,939	199,777	4,608	132,080	38,600	17,019	5,065	2,405	0
21	CAPITAL ONE FINANCIAL CORPORATION	ZUE8T73ROZOF6FLBAR73	361,402	179,465	244	0	11,875	163,860	455	3,031	54
22	MUFG AMERICAS HOLDINGS CORPORATION		154,852	176,507	8,457	28	92,250	69,182	6,589	0	580
23	CITIZENS FINANCIAL GROUP, INC.	2138004JDDA4ZQUPFW65	151,764	101,334	0	0	3,967	84,777	9,395	3,195	244
24	KEYCORP	RKPI3RZGV1V1FJTH5T61	137,130	100,506	4,175	0	9,607	79,097	7,143	484	557
25	REGIONS FINANCIAL CORPORATION	CW05CS5KW59QTC0DG824	123,518	87,686	5,258	0	24,297	50,874	4,143	3,115	26
TOP 25	HOLDING COMPANIES WITH DERIVATIVES		\$14.696.938	\$257,191,351	\$14.300.006	\$20.575.909	\$45.220.757	\$129.636.257	\$40.265.101	\$7,193,322	\$2.615.290
101 201			ΨIT,070,730	Ψ <b>2</b> 07,171,301	ΨIT,300,000	Ψ20,010,707	Ψτ0,220,101	ψ127,030,237	ψτ0,200,101	ψι, ι το, 322	ψ2,013,2

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. Note: Before to the first quarter of 2005, total derivatives included spot FX. Beginning in that quarter, spot FX has been reported separately. Note: Numbers may not total due to rounding. Source: Consolidated Financial Statements for Bank Holding Companies, FR Y- 9, Schedule HC-L

# DISTRIBUTION OF DERIVATIVE CONTRACTS TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

		LEGAL			PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
		ENTITY	TOTAL	TOTAL	EXCH TRADED	отс	INT RATE	FOREIGN EXCH	OTHER	CREDIT
RANK	BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	CONTRACTS	CONTRACTS	CONTRACTS	CONTRACTS	CONTRACTS	DERIVATIVES
					(%)	(%)	(%)	(%)	(%)	(%)
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	8.0	92.0	68.7	22.8	5.0	3.5
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	8.1	91.9	67.2	26.7	2.1	4.1
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	20.0	80.0	93.9	5.7	0.1	0.4
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	6.9	93.1	72.9	21.8	1.6	3.7
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,737,980	7,988,553	5.0	95.0	91.2	5.6	2.9	0.4
6	HSBC NA	1IE8VN30JCEQV1H4R804	195,907	4,493,807	4.3	95.7	73.9	21.5	2.5	2.1
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	232,359	1,626,248	0.9	99.1	1.1	97.4	1.6	0.0
8	BANK OF NEW YORK MELLON	HPFHU00Q28E4N0NFVK49	281,342	906,817	3.6	96.4	35.5	64.4	0.1	0.0
9	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	363,681	428,204	14.8	85.2	92.7	4.1	1.5	1.6
10	MORGAN STANLEY BANK NA	G1MLHISON32I3QPILB75	126,898	368,871	0.0	100.0	1.1	96.0	0.1	2.8
11	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	452,252	348,741	1.5	98.5	83.4	14.8	0.3	1.5
12	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	130,997	330,552	0.0	100.0	4.2	95.7	0.1	0.0
13	SUNTRUST BANK	IYDOJBGJWY9T8XKCSX06	203,381	264,535	16.7	83.3	77.6	2.7	17.5	2.1
14	TD BANK NATIONAL ASSN	03D0JEWFDFUS0SEEKG89	285,495	180,309	0.0	100.0	95.6	4.2	0.0	0.2
15	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	118,553	155,595	1.9	98.1	94.0	3.9	2.1	0.0
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	290,965	123,660	0.2	99.8	91.0	0.8	5.7	2.5
17	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	134,819	95,042	4.4	95.6	89.4	9.4	0.7	0.5
18	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	120,725	90,066	0.0	100.0	85.8	11.3	0.0	3.0
19	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	122,472	89,786	5.9	94.1	93.8	1.9	0.8	3.5
20	FIFTH THIRD BANK	QFROUN1UWUYU0DVIWD51	139,988	76,808	1.3	98.7	77.0	12.7	5.9	4.3
21	BRANCH BANKING&TRUST CO	JJKC32MCHWDI71265Z06	214,780	59,844	0.4	99.6	99.1	0.9	0.0	0.0
22	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	33,102	55,987	1.6	98.4	95.1	0.9	4.0	0.0
23	COMPASS BANK	C90VT034M03BN29IRA40	84,701	46,677	1.7	98.3	93.5	3.1	3.3	0.1
24	CAPITAL ONE BANK USA NA	LKE37K2B8CFZUR7F9816	116,456	43,413	0.0	100.0	80.2	19.8	0.0	0.0
25	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	102,068	37,789	0.1	99.9	85.9	3.9	5.4	4.8
TOP 25 (	COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES		\$10,932,413	\$187,723,424	\$19,333,299	\$168,390,126	\$140,684,532	\$37,430,372	\$63	\$5,084,372
OTHER (	COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES		4,510,613	600,932	8,970	591,962	559,228	26,759	606	5,856
TOTAL F	OR COMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES		15,443,026	188,324,356	19,342,268	168,982,088	141,243,760	37,457,131	670	5,090,228
				(21)	(0.1)	(24)	(21)	(0.1)	(24)	(21)
				(%)	(%)	(%)	(%)	(%)	(%)	(%)
	COMMERCIAL BANKS, SAS & TCs: % OF TOTAL COMMERC			99.7	10.3	89.4	74.7	19.9	0.0	2.7
	COMMERCIAL BANKS, SAS & TCs: % OF TOTAL COMMERCI			0.3	0.0	0.3	0.3	0.0	0.0	0.0
TOTAL F	OR COMMERCIAL BANKS, SAs & TCs: % OF TOTAL COMM	ERCIAL BANKS, SAs & TCs WITH I	DERIVATIVES	100.0	10.3	89.7	75.0	19.9	0.0	2.7

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. Note: "FX" does not include spot FX.

Note: "Other" is defined as the sum of commodity and equity contracts. Note: Numbers may not total due to rounding. Source: Call reports, Schedule RC-L

### CREDIT EQUIVALENT EXPOSURES TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

						BILATERALLY		TOTAL CREDIT	(%)
		LEGAL			TOTAL	NETTED CURRENT	POTENTIAL	EXPOSURE T	OTAL CREDIT
		ENTITY	TOTAL	TOTAL	RISK-BASED	CREDIT	FUTURE	FROM ALL	EXPOSURE
RANK	BANK NAME	INDENTIFIER	ASSETS I	DERIVATIVES	CAPITAL	EXPOSURE	EXPOSURE	CONTRACTS	TO CAPITAL
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$197,962	\$134,926	\$250,299	\$385,225	195
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	154,424	70,375	194,125	264,500	171
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	27,508	57,156	62,041	119,197	433
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	164,735	38,350	59,277	97,627	59
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,737,980	7,988,553	162,723	13,913	29,249	43,162	27
6	HSBC NA	1IE8VN30JCEQV1H4R804	195,907	4,493,807	26,432	7,581	12,590	20,172	76
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	232,359	1,626,248	17,477	5,303	9,824	15,127	87
8	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	281,342	906,817	21,185	4,922	4,840	9,762	46
9	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	363,681	428,204	35,116	2,906	1,402	4,308	12
10	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	126,898	368,871	15,110	275	3,147	3,422	23
11	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	452,252	348,741	45,012	796	4,609	5,405	12
12	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	130,997	330,552	9,789	1,465	2,506	3,971	41
13	SUNTRUST BANK	IYDOJBGJWY9T8XKCSX06	203,381	264,535	21,806	1,070	2,945	4,015	18
14	TD BANK NATIONAL ASSN	03D0JEWFDFUS0SEEKG89	285,495	180,309	25,996	1,385	1,119	2,503	10
15	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	118,553	155,595	15,517	873	332	1,205	8
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	290,965	123,660	26,724	650	2,003	2,653	10
17	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	134,819	95,042	14,891	469	335	804	5
18	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	120,725	90,066	13,745	598	653	1,251	9
19	REGIONS BANK	EQTWLK1G70DGC2MGLV11	122,472	89,786	14,198	317	643	960	7
20	FIFTH THIRD BANK	QFROUN1UWUYU0DVIWD51	139,988	76,808	16,344	391	976	1,367	8
21	BRANCH BANKING&TRUST CO	JJKC32MCHWDI71265Z06	214,780	59,844	22,707	495	476	971	4
22	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	33,102	55,987	3,116	192	211	403	13
23	COMPASS BANK	C90VT034M03BN29IRA40	84,701	46,677	9,038	242	187	429	5
24	CAPITAL ONE BANK USA NA	LKE37K2B8CFZUR7F9816	116,456	43,413	15,600	100	121	221	1
25	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	102,068	37,789	11,068	320	494	814	7
TOP 25 C	OMMERCIAL BANKS, SAs & TCs WITH DERIV	ΔΤΙΛΕς	\$10,932,413	\$187,723,424	\$1,088,221	\$345,070	\$644,405	\$989,475	91
	OMMERCIAL BANKS, SAS & TCS WITH DERIV		4,510,613	600,932	486,484	3,299	4,492	7,791	71 0
	MOUNT FOR COMMERCIAL BANKS, SAS & TCS WITH DERIV.		15,443,026	188,324,356	1,574,705	348,369	648,897	997,266	63
	NOONT FOR COMMENCIAL DAMAS, SAS & TO		13,775,020	100,524,550	1,574,705	5-10,007	040,077	///,200	03

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

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

Note: Numbers may not total due to rounding.

Source: Call reports, Schedule RC-R.

### NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS HELD FOR TRADING TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

					TOTAL	%	TOTAL	%
		LEGAL			HELD FOR	HELD FOR	NOT FOR	NOT FOR
		ENTITY	TOTAL	TOTAL	TRADING	TRADING	TRADING	TRADING
RANK	BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	& MTM	& MTM	MTM	MTM
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$50,469,659	99.4	\$314,323	0.6
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	49,134,172	99.9	49,513	0.1
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	43,231,861	99.9	22,965	0.1
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	20,909,341	96.0	867,147	4.0
TOP 4 CC	OMMERCIAL BANKS, SAs & TCs WITH DERIVATI	VES	\$5,443,493	\$169,912,120	\$163,745,033	99.2	\$1,253,948	0.8
OTHER C	COMMERCIAL BANKS, SAs & TCs WITH DERIVAT	TVES	9,999,533	18,412,236	16,591,552	91.0	1,643,596	9.0
TOTAL A	MOUNT FOR COMMERCIAL BANKS, SAs & TCs V	VITH DERIVATIVES	15,443,026	188,324,356	180,336,585	98.4	2,897,544	1.6
	rrently, the call report does not differentiate bet mbers may not total due to rounding.	ween traded and not-traded credit derivation	ves. Credit deriva	tives have been exc	cluded from the sum	of total derivativ	ves here.	

Source: Call reports, Schedule RC-L

#### GROSS FAIR VALUES OF DERIVATIVE CONTRACTS TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

					TRAD	DING	NOT FOR	TRADING	CREDIT DE	RIVATIVES
		LEGAL			GROSS	GROSS	GROSS	GROSS	GROSS	GROSS
		ENTITY	TOTAL	TOTAL	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE
RANK	BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	FAIR VALUE*	FAIR VALUE**	FAIR VALUE*	FAIR VALUE**	FAIR VALUE*	FAIR VALUE**
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$739,405	\$707,419	\$3,390	\$2,634	\$24,737	\$25,283
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	395,869	384,312	917	359	27,801	29,236
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	507,856	495,418	48	80	2,849	2,746
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	168,576	162,332	19,127	24,717	10,871	11,624
TOP 4 CO	OMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES		\$5,443,493	\$169,912,120	\$1,811,706	\$1,749,481	\$23,482	\$27,790	\$66,258	\$68,889
OTHER C	OMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES		9,999,533	18,412,236	122,996	120,044	8,444	10,386	1,789	1,984
TOTAL A	MOUNT FOR COMMERCIAL BANKS, SAS & TCs WITH	DERIVATIVES	15,443,026	188,324,356	1,934,702	1,869,525	31,926	38,176	68,047	70,873

Note: Currently, the call report does not differentiate between traded and non-traded credit derivatives. Credit derivatives have been included in the sum of total derivatives here. Numbers may not sum due to rounding. \*Market value of contracts that have a positive fair value as of the end of the quarter. \*\*Market value of contracts that have a negative fair value as of the end of the quarter.

Source: Call reports, Schedule RC-L

### TRADING REVENUES FROM CASH INSTRUMENTS AND DERIVATIVES TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS NOTE: REVENUE FIGURES ARE FOR THE QUARTER (NOT YEAR-TO-DATE)

RANK	BANK NAME	LEGAL ENTITY INDENTIFIER	TOTAL ASSETS	TOTAL DERIVATIVES	TOTAL TRADING REV FROM CASH & OFF BAL SHEET POSITIONS	TRADING REV FROM INT RATE POSITIONS	TRADING REV FROM FOREIGN EXCH POSITIONS	TRADING REV FROM EQUITY POSITIONS	TRADING REV FROM COMMOD & OTH POSITIONS	TRADING REV FROM CREDIT POSITIONS
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$2,677	\$959	\$653	\$725	\$110	\$230
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	1,510	897	383	183	31	16
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	99	466	(604)	3	0	234
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	762	178	309	234	46	(5)
OTHER C	MMERCIAL BANKS, SAS & TCS WITH DERIVATIV OMMERCIAL BANKS, SAS & TCS WITH DERIVATIV MOUNT FOR COMMERCIAL BANKS, SAS & TCS WI	/ES	\$5,443,493 9,999,533 15,443,026	\$169,912,120 18,412,236 188,324,356	\$5,048 1,348 6,396	\$2,500 418 2,918	\$741 799 1,540	\$1,145 38 1,183	\$187 97 284	\$475 (5)

Note: Effective in the first quarter of 2007, trading revenues from credit exposures are reported separately, along with the four other types of exposures. The total derivatives column includes credit exposures. Note: Trading revenue is defined here as "trading revenue from cash instruments and off-balance-sheet derivative instruments."

Note: Numbers may not sum due to rounding. Source: Call reports, Schedule RI

## NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS BY CONTRACT TYPE AND MATURITY (INTEREST RATE, FX AND GOLD) TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

	LEGAL ENTITY	TOTAL	TOTAL	INT RATE MATURITY	INT RATE MATURITY	INT RATE MATURITY	INT RATE ALL	FX and GOLD MATURITY	FX and GOLD MATURITY	FX and GOLD MATURITY	FX and GOLD ALL
RANK BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	< 1 YR	1 - 5 YRS	> 5 YRS	MATURITIES	< 1 YR	1 - 5 YRS	> 5 YRS	MATURITIES
1 JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$22,876,106	\$16,223,206	\$9,222,604	\$48,321,916	\$8,619,725	\$2,229,275	\$1,131,049	\$11,980,049
2 CITIBANK NATIONAL ASSN	E570DZWZ7FF32TWEFA76	1,407,297	51,267,510	14,267,982	10,856,404	6,037,644	31,162,030	10,627,477	1,181,701	454,768	12,263,946
3 GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	20,058,171	6,445,392	6,000,921	32,504,484	1,050,312	720,520	615,754	2,386,586
4 BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	9,462,672	5,725,265	2,989,699	18,177,636	4,122,597	577,146	227,420	4,927,163
TOP 4 COMMERCIAL BANKS, SAS & TCS WITH D OTHER COMMERCIAL BANKS, SAS & TCS WITH I TOTAL AMOUNT FOR COMMERCIAL BANKS, SAS	DERIVATIVES	\$5,443,493 9,999,533 15,443,026	\$169,912,120 18,412,236 188,324,356	\$66,664,931 5,477,685 72,142,616	\$39,250,267 4,180,056 43,430,323	\$24,250,868 2,789,232 27,040,100	\$130,166,066 12,446,973 142,613,039	\$24,420,111 3,996,332 28,416,443	\$4,708,642 278,507 4,987,149	\$2,428,991 114,820 2,543,811	\$31,557,744 4,389,659 35,947,403

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

Note: Numbers may not add due to rounding. Note: Numbers may not add due to rounding. Note: Effective 2015 01, the reporting form and call report instructions changed. Schedule RC-R now requires banks to report FX and gold notional amounts in aggregate, rather than separately. Source: Call reports, Schedule RC-R

#### NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS BY CONTRACT TYPE & MATURITY (PRECIOUS METALS) TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

		LEGAL			PREC METALS	PREC METALS	PREC METALS	PREC METALS
		ENTITY	TOTAL	TOTAL	MATURITY	MATURITY	MATURITY	ALL
RANK	BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	< 1 YR	1 - 5 YRS	> 5 YRS	MATURITIES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$21,427	\$546	\$0	\$21,973
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	8,534	1,148	0	9,682
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	0	0	0	0
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	31	0	0	31
TOP 4	COMMERCIAL BANKS, SAs & TCs WITH	DERIVATIVES	\$5,443,493	\$169,912,120	\$29,992	\$1,694	\$0	\$31,686
OTHER	COMMERCIAL BANKS, SAs & TCs WITH	I DERIVATIVES	9,999,533	18,412,236	12,216	863	39	13,118
TOTAL	FOR COMMERCIAL BANKS, SAs & TCs \	WITH DERIVATIVES	15,443,026	188,324,356	42,208	2,557	39	44,804

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

Note: Numbers may not total due to rounding. Source: Call reports, Schedule RC-R

# NOTIONAL AMOUNTS OF DERIVATIVE CONTRACTS BY CONTRACT TYPE AND MATURITY (OTHER COMMODITY AND EQUITY) TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

		LEGAL			OTHER COMM	OTHER COMM	OTHER COMM	OTHER COMM	EQUITY	EQUITY	EQUITY	EQUITY
		ENTITY	TOTAL	TOTAL	MATURITY	MATURITY	MATURITY	ALL	MATURITY	MATURITY	MATURITY	ALL
RANK	BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	< 1 YR	1 - 5 YRS	> 5 YRS	MATURITIES	< 1 YR	1 - 5 YRS	> 5 YRS	MATURITIES
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$734,969	\$115,090	\$16,954	\$867,013	\$1,445,907	\$516,495	\$93,893	\$2,056,295
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	102,042	46,721	4,009	152,772	312,438	130,443	9,268	452,149
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	2,616	3,135	95	5,846	7,897	13,413	4,127	25,437
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	9,133	4,514	573	14,220	306,309	60,157	6,895	373,361
TOP 4 CO	OMMERCIAL BANKS, SAs & TCs WITH DEF	RIVATIVES	\$5,443,493	\$169,912,120	\$848,760	\$169,460	\$21,631	\$1,039,851	\$2,072,551	\$720,508	\$114,183	\$2,907,242
OTHER C	COMMERCIAL BANKS, SAs & TCs WITH DE	RIVATIVES	9,999,533	18,412,236	34,133	63,672	1,162	98,966	87,082	60,326	5,008	152,417
TOTAL F	OR COMMERCIAL BANKS, SAs & TCs WITH	H DERIVATIVES	15,443,026	188,324,356	882,893	233,132	22,793	1,138,817	2,159,633	780,834	119,191	3,059,659

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

Source: Call reports, Schedule RC-R

# NOTIONAL AMOUNTS OF CREDIT DERIVATIVE CONTRACTS BY CONTRACT TYPE AND MATURITY (INVESTMENT GRADE AND SUB-INVESTMENT GRADE) TOP 4 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

	LEGAL					CREDIT DERI INVESTMENT			CREDIT DERIVATIVES SUB-INVESTMENT GRADE				
	ENTITY	TOTAL	TOTAL	TOTAL CREDIT	MATURITY	MATURITY	MATURITY	ALL	MATURITY	MATURITY	MATURITY	ALL	
RANK BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	DERIVATIVES	< 1 YR	1 - 5 YRS	> 5 YRS	MATURITIES	< 1 YR	1 - 5 YRS	> 5 YRS	MATURITIES	
1 JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$52,610,957	\$1,826,975	\$448,364	\$620,438	\$136,578	\$1,205,380	\$204,027	\$348,274	\$69,294	\$621,595	
2 CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	51,267,510	2,083,825	446,442	1,034,205	123,481	1,604,128	135,148	316,134	28,415	479,697	
3 GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,416,228	161,402	31,059	49,828	17,930	98,817	17,643	32,058	12,884	62,585	
4 BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	22,617,425	840,937	276,740	325,699	57,915	660,354	105,928	49,903	24,752	180,583	
TOP 4 COMMERCIAL BANKS, SAS & TCS WITH DER OTHER COMMERCIAL BANKS, SAS & TCS WITH DEI TOTAL AMOUNT FOR COMMERCIAL BANKS, SAS &	RIVATIVES	\$5,443,493 9,999,533 15,443,026	\$169,912,120 18,412,236 188,324,356	\$4,913,139 177,089 5,090,228	\$1,202,605 13,829 1,216,434	\$2,030,170 55,251 2,085,421	\$335,904 9,216 345,120	\$3,568,679 78,295 3,646,974	\$462,746 17,751 480,497	\$746,369 67,421 813,790	\$135,345 13,621 148,966	98,793	

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

Note: Numbers may not total due to rounding. Source: Call reports, Schedule RC-L and RC-R

#### DISTRIBUTION OF CREDIT DERIVATIVE CONTRACTS HELD FOR TRADING TOP 25 COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

						TOTAL C	REDIT		PUR	CHASED			S	OLD	
		LEGAL			TOTAL	DERIVA	TIVES	CREDIT	TOTAL		OTHER	CREDIT	TOTAL		OTHER
		ENTITY	TOTAL	TOTAL	CREDIT			DEFAULT	RETURN	CREDIT	CREDIT	DEFAULT	RETURN	CREDIT	CREDIT
RANK	BANK NAME	INDENTIFIER	ASSETS	DERIVATIVES	DERVATIVES		SOLD	SWAPS	SWAPS	OPTIONS	DERIVATIVES	SWAPS	SWAPS	OPTIONS	
1	JPMORGAN CHASE BANK NA	7H6GLXDRUGQFU57RNE97	\$2,153,028	\$50,783,982	\$1,826,975		\$899,093	\$849,469	\$16,732	\$56,618	\$5,063	\$835,302	\$6,179	\$57,580	\$32
2	CITIBANK NATIONAL ASSN	E57ODZWZ7FF32TWEFA76	1,407,297	49,183,685	2,083,825	1,056,140	1,027,685	968,524	22,296	65,320	0	956,722	9,739	61,224	0
3	GOLDMAN SACHS BANK USA	KD3XUN7C6T14HNAYLU02	157,953	43,254,826	161,402	88,609	72,793	79,535	2,128	6,895	51	63,865	2,128	6,800	0
4	BANK OF AMERICA NA	B4TYDEB6GKMZO031MB27	1,725,215	21,776,488	840,937	422,501	418,436	377,980	9,990	34,531	0	373,367	12,059	33,010	0
5	WELLS FARGO BANK NA	KB1H1DSPRFMYMCUFXT09	1,737,980	7,956,436	32,117	20,961	11,156	3,226	0	0	17,735	2,480	0	0	8,676
6	HSBC NA	1IE8VN30JCEQV1H4R804	195,907	4,397,893	95,914		45,228	45,895	4,790	0	0	43,644	1,584	0	0
7	STATE STREET BANK&TRUST CO	571474TGEMMWANRLN572	232,359	1,626,248	0	0	0	0	0	0	0	0	0	0	0
8	BANK OF NEW YORK MELLON	HPFHU0OQ28E4N0NFVK49	281,342	906,637	180		0	180	0	0	0	0	0	0	0
9	PNC BANK NATIONAL ASSN	AD6GFRVSDT01YPT1CS68	363,681	421,231	6,974	3,110	3,864	15	0	0	3,095	0	0	0	3,864
10	MORGAN STANLEY BANK NA	G1MLHIS0N32I3QPILB75	126,898	358,477	10,394		100	10,294	0	0	0	100	0	0	0
11	U S BANK NATIONAL ASSN	6BYL5QZYBDK8S7L73M02	452,252	343,625	5,116	1,515	3,600	25	0	0	1,490	0	0	0	3,600
12	NORTHERN TRUST CO	6PTKHDJ8HDUF78PFWH30	130,997	330,552	0	0	0	0	0	0	0	0	0	0	0
13	SUNTRUST BANK	IYDOJBGJWY9T8XKCSX06	203,381	258,864	5,671	3,147	2,524	630	2,512	0	5	0	2,512	0	11
14	TD BANK NATIONAL ASSN	03D0JEWFDFUS0SEEKG89	285,495	179,938	371	366	5	366	0	0	0	5	0	0	0
15	MUFG UNION BANK NA	OX3PU53ZLPQKJ4700D47	118,553	155,595	0	0	0	0	0	0	0	0	0	0	0
16	CAPITAL ONE NATIONAL ASSN	207ALC1P1YM0OVDV0K75	290,965	120,629	3,031	924	2,107	0	0	0	924	0	0	0	2,107
17	KEYBANK NATIONAL ASSN	HUX2X73FUCYHUVH1BK78	134,819	94,548	494	375	119	375	0	0	0	26	93	0	0
18	CITIZENS BANK NATIONAL ASSN	DRMSV1Q0EKMEXLAU1P80	120,725	87,397	2,670	0	2,670	0	0	0	0	0	0	0	2,670
19	REGIONS BANK	EQTWLK1G7ODGC2MGLV11	122,472	86,671	3,115	921	2,194	38	0	0	884	38	0	0	2,157
20	FIFTH THIRD BANK	QFROUN1UWUYU0DVIWD51	139,988	73,486	3,322	503	2,820	0	0	0	503	0	0	0	2,820
21	BRANCH BANKING&TRUST CO	JJKC32MCHWDI71265Z06	214,780	59,844	0	0	0	0	0	0	0	0	0	0	0
22	BOKF NATIONAL ASSN	FU7RSW4CQQY98A2O7J66	33,102	55,986	1	1	0	1	0	0	0	0	0	0	0
23	COMPASS BANK	C90VT034M03BN29IRA40	84,701	46,636	41	0	41	0	0	0	0	41	0	0	0
24	CAPITAL ONE BANK USA NA	LKE37K2B8CFZUR7F9816	116,456	43,413	0	0	0	0	0	0	0	0	0	0	0
25	HUNTINGTON NATIONAL BANK	2WHM8VNJH63UN14OL754	102,068	35,965	1,824	1,186	638	0	0	0	1,186	0	0	0	638
	OMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES		\$10,932,413	\$182,639,053	\$5,084,372		\$2,495,072	\$2,336,552	\$58,449	\$163,364	\$30,935	\$2,275,590	\$34,294	\$158,614	\$26,574
	OMMERCIAL BANKS, SAs & TCs WITH DERIVATIVES		4,510,613	595,076	5,856		3,556	11	79	0	2,210	349	2	0	3,204
TOTAL AN	MOUNT FOR COMMERCIAL BANKS, SAS & TCS WITH DERIVATI	VES	15,443,026	183,234,128	5,090,228	2,591,600	2,498,628	2,336,563	58,528	163,364	33,145	2,275,939	34,296	158,614	29,778
					(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
TOP 25 C	OMMERCIAL BANKS, SAS & TCs: % OF TOTAL COMMERCIAL B	ANKS SAS & TOS WITH DERIVATI	VES		99.9	50.9	49.0	45.9	1.1	3.2	0.6	44.7	0.7	3.1	0.5
	OMMERCIAL BANKS, SAS & TCS: % OF TOTAL COMMERCIAL B				0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	MOUNT FOR COMMERCIAL BANKS, SAS & TOS. % OF TOTAL COMMERCIAL BANKS, SAS & TCS: % OF TOTAL CO			TS .	100.0	50.9	49.1	45.9	11	3.2	0.0	44.7	0.7	3.1	0.1
TOTAL A	NOONT FOR COMMERCIAE DRINKS, SAS & TOS. /0 OF TOTAL CO	DIVINE ROTAL DAMAS, SAS & TOS W		_0	100.0	30.9	47.1	4J.9	1.1	3.2	0.7	44.7	0.7	J. I	0.0
															l
	dit derivatives have been excluded from the sum of total derivatives	atives here.													
	mbers may not total due to rounding.														
Source: C	Call reports, Schedule RC-L														

TABLE 13

#### DERIVATIVES DATA REPORTED BY FFIEC 051 FILERS COMMERCIAL BANKS, SAVINGS ASSOCIATIONS AND TRUST COMPANIES IN DERIVATIVES SEPTEMBER 30, 2017, MILLIONS OF DOLLARS

Total gross notional amount of interest rate derivatives held for trading	\$729
Total gross notional amount of all other derivatives held for trading	\$5
Total gross notional amount of interest rate derivatives not held for trading	\$7,730 \$92
Total gross notional amount of all other derivatives not held for trading	
all Report Schedule RC-R	
A. Notional principal amounts of over-the-counter derivative contracts covered by the regulatory capital rules:	
a. Interest rate	\$4,659
b. Foreign exchange rate and gold	\$0
c. Credit (investment grade reference asset)	\$14
d. Credit (non-investment grade reference asset)	\$11
e. Equity	\$0
g. Other	\$5
f. Precious metals (except gold)	\$0
8. Notional principal amounts of centrally cleared derivative contracts covered by the regulatory capital rules:	
a. Interest rate	\$343
b. Foreign exchange rate and gold	\$0
c. Credit (investment grade reference asset)	\$0
d. Credit (non-investment grade reference asset)	\$0
e. Equity	\$0
f. Precious metals (except gold)	\$0
g. Other	\$0
C. Current credit exposure across all derivative contracts covered by the regulatory capital rules	\$57

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