Ten Years After The Financial Crisis, Global Banks' High-Risk Trades Seem To Be In Check

October 5, 2018

*(**Editor's Note:** On Oct. 10, 2018, we republished this report to account for changes in the figures we used for Barclays' capital markets revenue, which affected charts 3, 4, and 5. We have also added data in chart 5 for sales and trading revenue to trading book RWA for the first half of 2018 for Barclays, Credit Suisse, and Deutsche, which has since become available.)*

Key Takeaways

- Capital markets revenue at banks has increased so far this year, but risk taking seems to be in check.
- We are raising our projections for capital markets revenue for 2018. We now expect revenue to be up 3% to 5% year over year. Previously, we had expected it to be flat.
- Trading risks are difficult for investors to determine, but various measures, such as the level of stressed VaR as it relates to VaR, can point to elevated risk taking.
- U.S. banks have the greatest market share of capital markets revenue. While increasing share can be a strength, if a bank's capital markets revenue vastly exceeds other sources of revenue, we could take negative rating actions on the firm.

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Ten years after the failure of Lehman Brothers, trading risks at the large global banks remain--but not close to what they were before the crisis. Revenue from capital markets activity has increased in 2018, albeit modestly. According to Coalition data, capital markets revenue for the industry is up 6% in the first half of 2018. This compares with a decline in capital markets revenue of 4% in 2017. Company statements about this source of revenue for the third quarter were mixed, and results for the third quarter will likely vary from firm to firm.

S&P Global Ratings now projects capital markets revenue for the industry will be up 3% to 5% year over year, versus our previous forecast of flat revenue. Despite this pickup, we don't see banks taking on undue trading risk and don't anticipate changing ratings due to higher trading risk appetites.

That said, we acknowledge that capital market revenue is difficult to forecast and risks are difficult to gauge. In the capital markets business, trading positions, especially derivatives and less-liquid securities, are complex and opaque. Moreover, the value at risk (VaR) metrics and other internal models that aim to measure market risks have limitations and can be inconsistent, particularly when measuring a bank's risk relative to peers. Still, we believe there are metrics that help indicate whether banks are increasing risk appetite in their trading portfolios. These metrics

are:

- The ratio of sales and trading revenues to risk-weighted assets (RWA), as measured in our proprietary risk-adjusted capital (RAC) framework, for trading assets
- The percentage of Level 3 assets to capital
- The value of stressed VaR as it relates to VaR
- The volatility of stressed VaR
- The number of back-testing exceptions

We believe capital market activity is generally a riskier endeavor than mainstream lending and other fee businesses. As a result, our current views for the banks that have sizable capital markets operations (constituting more than 35% of revenues) result in the risk positions being a modest constraint on the ratings. Our analysis of a bank's risk position is generally a refinement of our capital and earnings analysis. This assessment reflects the complexity and opacity of trading operations, as well as the potential for "tail risk," or risks that are otherwise unlikely, to materialize in stressed market conditions.

Bank Capital Markets Revenue Should Be Higher In 2018

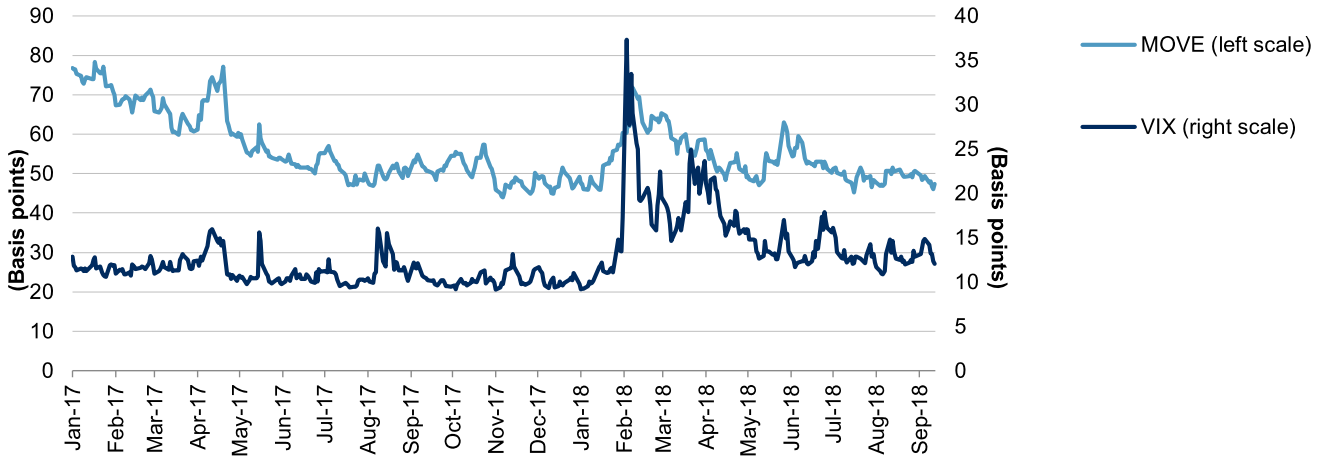
Substantial capital markets activity at a bank is a constraint on its risk position score and, therefore, our rating.

Market volatility, along with higher demand from clients, has given capital markets revenue a boost so far in the first half of 2018. This has been the result of a number of factors. Equity trading revenue, which has been a solid performer, rose because of a pickup in market volatility in the first quarter and continued high market valuations through the second quarter. Meanwhile, fixed income, currencies, and commodities (FICC) trading was weaker but showed some pockets of strength. In particular, more stringent monetary policy in the U.S., which diverged from the policy stance in most other parts of the world, has resulted in the strengthening of the U.S. dollar, along with the weakening of emerging market currencies. This has resulted in the need for clients to reposition and hedge their portfolios. A divergence between investment-grade credit and high-yield spreads has helped boost credit trading. In addition, oil prices are on the rise, helping to boost banks' commodity businesses. These trends have been more muted in the third quarter, and we are uncertain whether the more favorable trading conditions will return in the fourth quarter.

One segment in the capital markets business that may lag in the second half of 2018 for some banks is debt underwriting. This is due to a combination of higher rates and the fact that some companies likely pulled forward some of their borrowing needs to take advantage of lower rates. All in all, we look for capital markets revenues to be up 3% to 5% in 2018, and a similar range for 2019, assuming market valuation remains elevated.

Chart 1

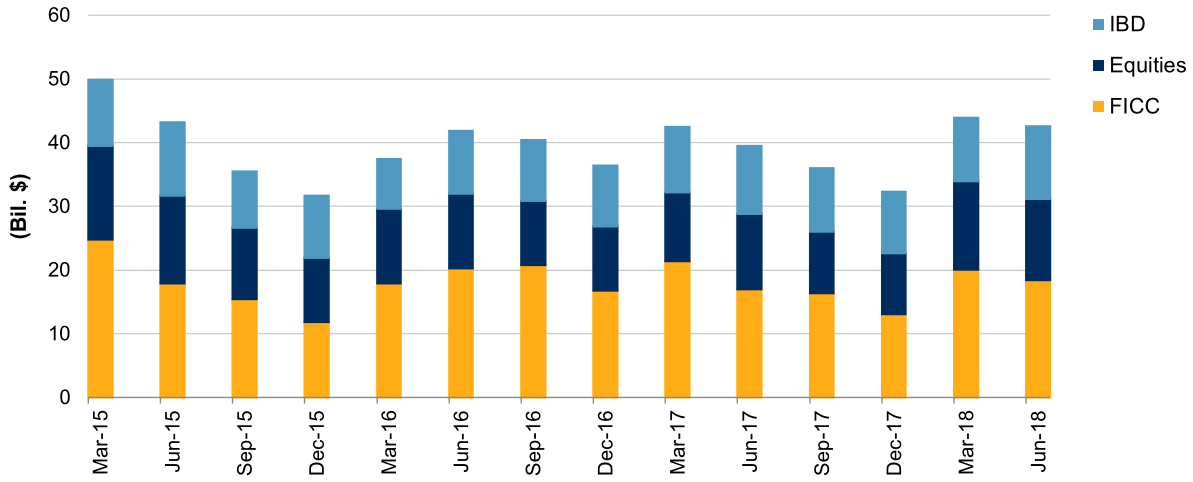
Volatility Trends



MOVE--Merrill Lynch Option Volatility Estimate, a measure of normalized implied volatility on U.S. Treasury options. VIX--CBOE Volatility Index, a measure of expected equity market volatility. Source: Bloomberg.

Chart 2

Sales And Trading Revenue Trends



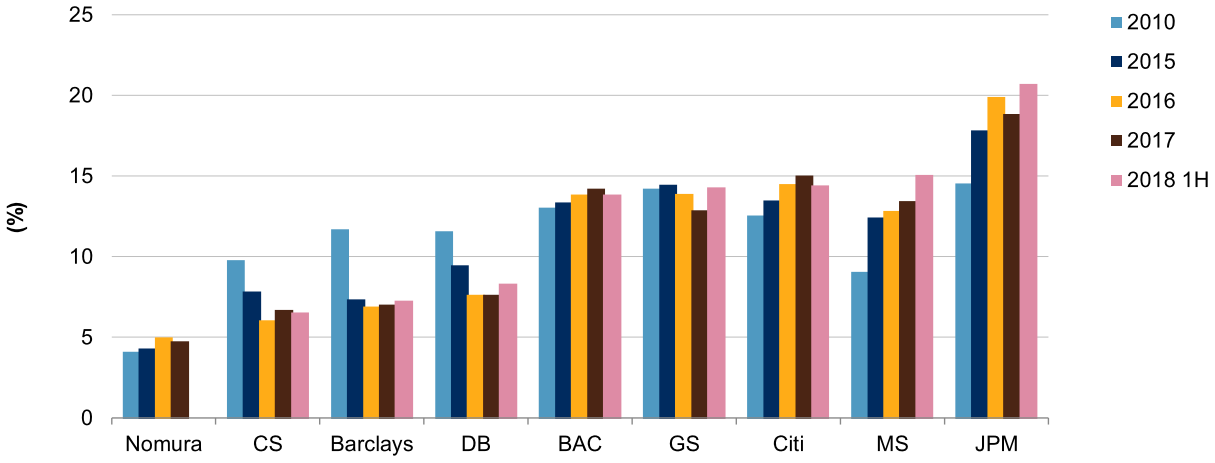
FICC--Fixed income, currencies, and commodities. IBD--Investment banking division. Source: Coalition.

The U.S. Banks Remain Market-Share Leaders In The Capital Markets

The U.S. banks continue to hold the top positions in terms of capital markets revenue. Indeed, U.S. banks comprise the top five in terms of market share (derived by taking each bank's share of the top nine global capital markets banks revenue). Most of the U.S. banks have picked up market share since 2015 or at least held market share constant. Notably, the gap between the U.S. banks and European banks in terms of market share is large. Much of this gap in market share is due to a concerted strategy by European banks to reduce capital and balance-sheet usage within their capital market divisions and shift resources toward more capital efficient and higher-margin businesses, such as wealth management. European banks have made this shift in part because they weren't generating sufficient profitability in their capital markets segments.

Chart 3

Capital Markets Revenue Market Share



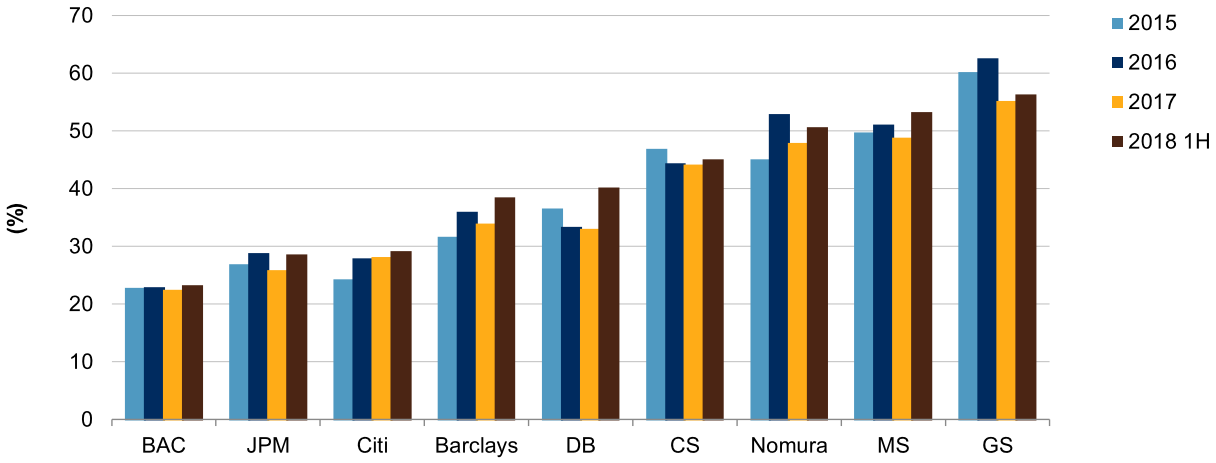
Note: In 2018, DB changed the components of sales and trading revenue. Nomura's fiscal year ends in March.
Sources: Company disclosures and S&P Global Ratings.

Capital Markets As A Percentage Of Overall Revenue Has Largely Remained Constant For Most Banks Since 2015

Despite a concerted effort by some banks to diversify their revenue stream, capital markets as a percentage of overall revenue has largely remained constant over the years. Still, banks that used to participate more fulsomely in the capital markets business are looking for other revenue sources to complement their business. This stems from either their inability to compete effectively in the capital markets business and generate an adequate return, or the recognition that capital markets revenue is fickle and that diversifying into more stable revenue streams is better for overall results.

Chart 4

Capital Markets Revenue To Total Revenue



Note: In 2018, DB changed the components of sales and trading revenue. Source: Company filings.

Overall, we believe that, while new regulations, combined with bank management teams' lower risk appetites, have helped mitigate trading risks since the crisis, significant risks are still embedded in banks' trading operations. All of our risk position scores for banks with large capital markets operations (35% or higher of total revenue) are currently moderate (see table). In addition, we're unlikely to assess the risk position of a bank with a sizeable capital markets operation above adequate. (According to our criteria, if capital markets revenue contributes more than 50% to revenues over the long term, we cap a bank's risk position at moderate.) Although we view a gain in trading market share as a positive for that line of business, if such gains in market share resulted in an excessive amount of sales of trading revenue with respect to other segments, we would have a less favorable view of it.

Global Bank Criteria Scores

Company	Anchor	Business position	Capital and earnings	Risk position	Funding	Liquidity	Unsupported group credit profile	ALAC notches	Sovereign support/group support	Additional factors	Operating company ICR	Outlook
JPMorgan Chase & Co.	bbb+	Very strong	Adequate	Adequate	Average	Adequate	a	1	0	0	A+	Stable
Bank of America Corp.	bbb+	Strong	Adequate	Strong	Average	Adequate	a	1	0	0	A+	Stable
Citigroup Inc.	bbb+	Strong	Adequate	Adequate	Average	Adequate	a-	2	0	0	A+	Stable
Goldman Sachs Group Inc. (The)	bbb+	Strong	Adequate	Moderate	Average	Adequate	bbb+	2	0	1	A+	Stable

Global Bank Criteria Scores (cont.)

Company	Anchor	Business position	Capital and earnings	Risk position	Funding	Liquidity	Unsupported group credit profile	ALAC notches	Sovereign support/group support	Additional factors	Operating company ICR	Outlook
Morgan Stanley	bbb+	Strong	Strong	Moderate	Average	Adequate	a-	2	0	0	A+	Stable
Credit Suisse Group AG	a-	Adequate	Strong	Moderate	Average	Adequate	a-	2	0	-1	A	Positive
Nomura Holdings Inc.	a-	Moderate	Strong	Moderate	Average	Adequate	bbb+	0	2	0	A	Negative
Barclays PLC	bbb+	Adequate	Strong	Moderate	Average	Adequate	bbb+	2	0	0	A	Stable
Deutsche Bank AG	bbb+	Adequate	Adequate	Moderate	Average	Adequate	bbb	2	0	-1	BBB+	Stable

Note: Ratings data as of Oct. 1, 2018. Banks are sorted by issuer credit rating (ICR).

Trading Risks Are Hard To Measure, But There Are Metrics That Help Determine If Risk Taking Is On The Rise

Generally, we believe it's more difficult to determine the risks embedded in a trading portfolio than a loan portfolio. But there are metrics we use to assess trading risk. These are a continuation of analysis we did in 2014 (see "Delving Deeper Into Global Trading Banks' Risks And Rewards: A Study of Public Disclosure," published May 22, 2014). Overall, despite higher trading revenue in 2018, banks don't appear to have taken on undue risk. Comparing many of the trading metrics across banks is not as useful as looking at the trajectory of a ratio within a particular bank. That's because banks have different risk models, which skew the figures. In addition, what banks include in trading revenue differs across institutions. For example, some banks may place lower-risk fee revenue or spread income within trading, which would result in higher trading revenue with lower risk. In addition, VaR models differ across banks in terms of how they are derived. But, within a bank, the metrics should be consistent over time so long as its methodology hasn't changed.

Sales and trading revenues adjusted for risk

This measure reveals whether or not banks are pricing trading revenue correctly on a risk-adjusted basis--the higher the ratio, the better the pricing for the risk taking. We looked at the ratio of sales and trading revenues to trading RWA, as measured in our proprietary risk-adjusted capital (RAC) framework, for trading assets. The RAC framework is a key component of our bank criteria (see "Banks: Rating Methodology And Assumptions," published Nov. 9, 2011, and "Risk-Adjusted Capital Framework Methodology," published July 20, 2017).

Our RWA for trading risks takes into account all trading positions, whether banks include them in their VaR model or not (for example, RAC RWA includes positions accounted for under the standardized approach). This neutralizes, to some extent, inconsistencies in the scope of banks' VaR models, but discrepancies may still exist (see Appendix).

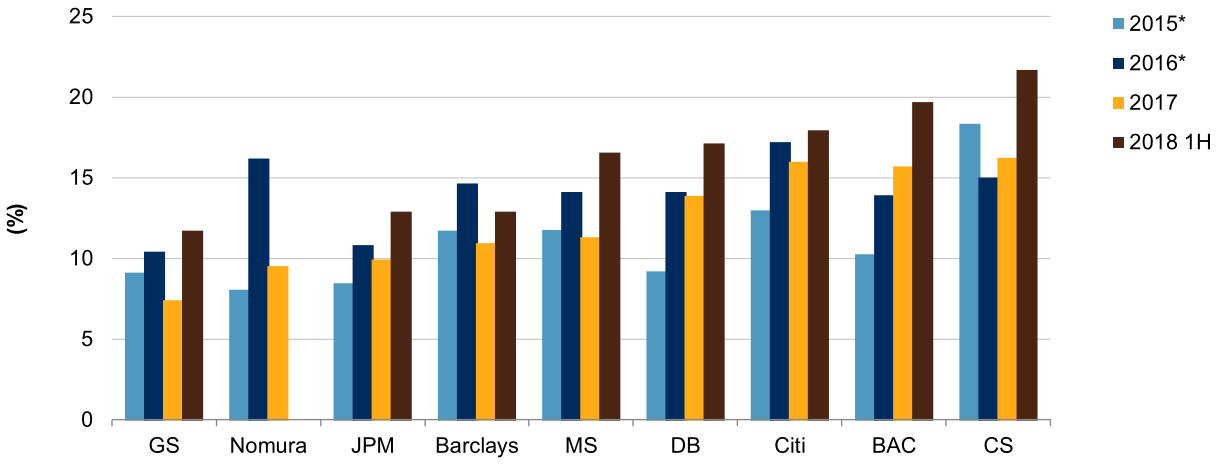
The results show a general pickup in risk-adjusted trading revenue from 2015 to the first half

Viewing a bank's trading metrics over time can be a more useful indicator of its risk appetite than a peer comparison because banks measure trading revenue and construct risk models differently.

2018. This metric for some banks declined in 2017 (meaning less revenue but higher risk). We believe this was more a manifestation of weaker trading revenue results (for example, losses on trading inventory weighing down results) than banks charging lower fees for higher-risk business. Indeed, results picked up again for these banks in the first half of 2018.

Chart 5

Sales And Trading Revenue To Trading Book S&P Global Ratings' RWA



Note: In 2018, DB changed the components of sales and trading revenue. Nomura's fiscal year ends in March. *Trading RWA calculated pro forma following S&P's Global Ratings' risk-adjusted capital criteria published July 20, 2017. S&P Global Ratings' trading RWA for 2018 1H for Barclays, DB, and CS based on estimates.
Source: Regulatory filings.

Level 3 assets / total adjusted capital

The fair values for Level 3 assets are model based, measured by the bank (because the valuation inputs used to derive fair values can't be observed in the market). Therefore, their valuation is sensitive to changes in management assumptions and to the way the models are calibrated. Private equity investments, loans and illiquid debt instruments, and certain types of derivatives often make up Level 3 assets.

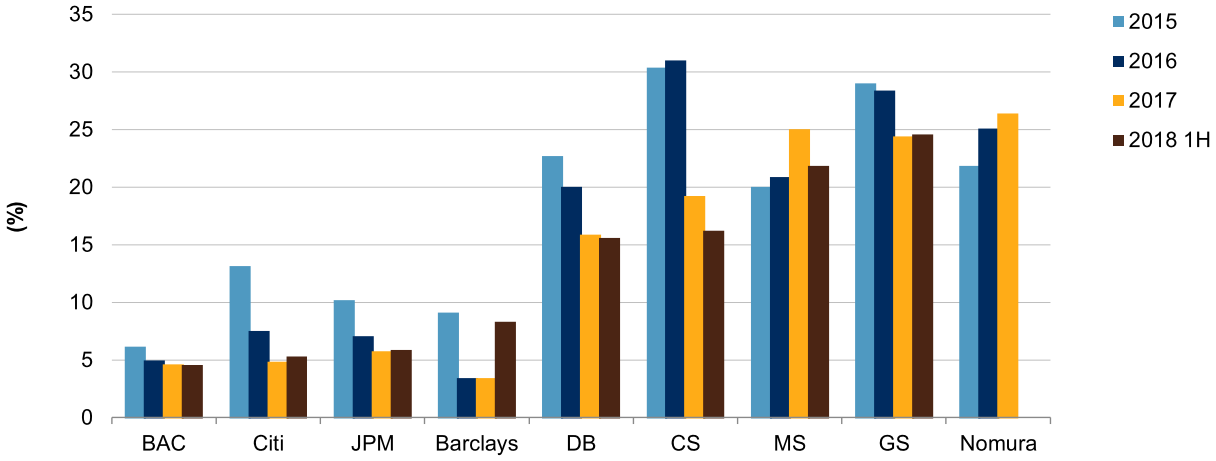
All else being equal, a large proportion of Level 3 trading and derivative assets exposes the bank to mispricing and to a future revision of the assumptions underpinning the valuation of these assets. Level 3 assets are also less liquid than other assets and could be susceptible to significant price declines, should credit issues arise, such as rising default levels. As such, a high ratio of Level 3 assets may suggest potential large tail risks, depending on the degree of conservatism in each bank's valuation model. (Our definition of Level 3 assets, for the purposes of this study, is the sum of Level 3 trading assets and Level 3 derivatives.)

Positively, the amount of Level 3 assets continued to decline from 2015 to the first half 2018 for most of the banks and are well below 2008 levels (when most banks' Level 3 assets to total adjusted capital were greater than 100%). The declines could be the result of more liquid markets and a greater ability to price some of these assets via similar market trades, but we believe they

are largely due to banks reducing legacy illiquid assets. Still, as markets dry up, all else equal, the amount of assets that move to Level 3 could rise, as the fair value becomes more difficult to determine.

Chart 6

Total Level 3 Trading Assets To Total Adjusted Capital



Note: Nomura's fiscal year ends in March. Level 3 assets include level 3 derivative receivables and level 3 trading securities. Source: Company disclosures.

Stressed VaR / VaR

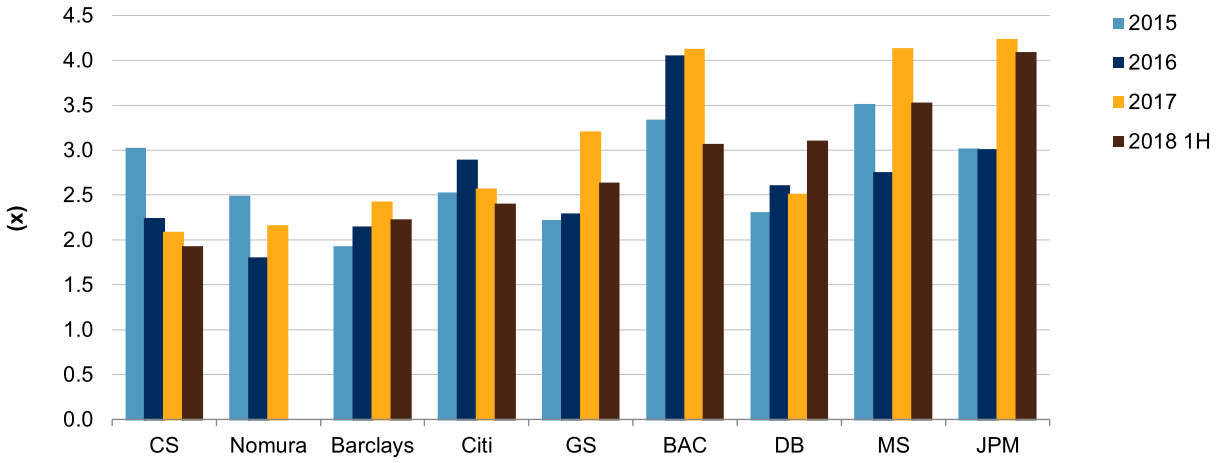
Banks calculate VaR on their trading books to estimate the level of loss they believe could occur in a given time period according to a given confidence interval based on recent market conditions and the current composition of their trading book. They calculate stressed VaR in the same manner but assume market conditions worsen substantially, often to 2008 levels.

Therefore, stressed VaR/VaR shows how significantly a bank's trading losses could rise if market conditions deteriorated sharply. It is an indicator of potential tail risk. A low ratio would indicate that, even if conditions worsened to 2008 levels, the bank's measure of its potential trading losses would not increase materially. The opposite would be true of a high ratio.

Stressed VaR to VaR seems to have increased for a sizeable portion of the banks in 2017 compared with 2015. We believe this largely has to do with a reduction in VaR (the denominator in the metric), reflecting lower volatility, rather than a material change in the composition of banks' trading assets. Indeed, stressed VaR to VaR declined for a majority of the banks in the first half of 2018, probably because volatility increased and not because banks reduced the risk in their trading books.

Chart 7

Stressed VaR/VaR



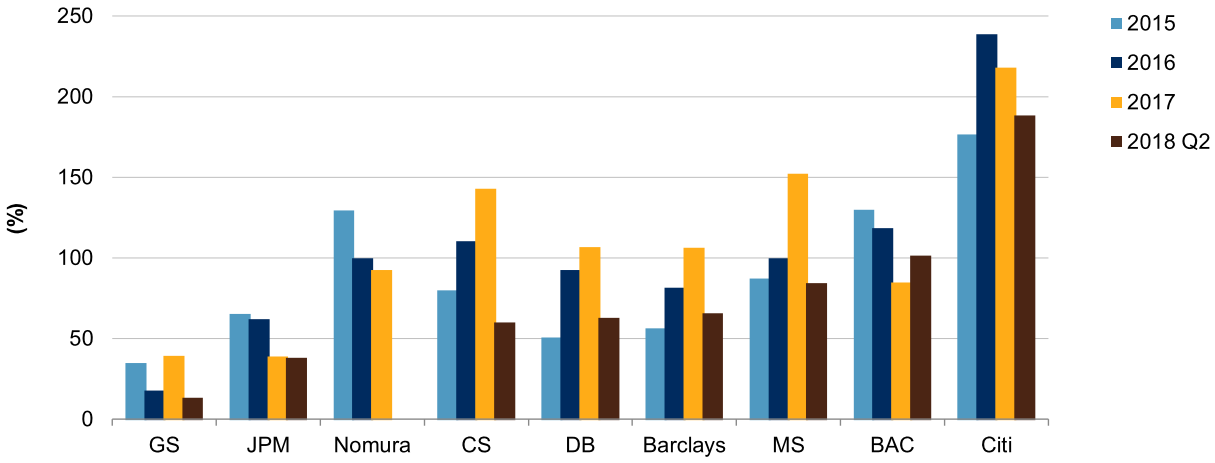
Note: Annual average of regulator VaR and stressed VaR data cited in periodic Pillar 3 reports.

Volatility in stressed VaR

If a bank has greater volatility in its stressed VaR, this could suggest the bank has increased its trading positions aggressively during the period under review, or that the bank has more volatile trading positions. (The ratio is calculated as follows: (maxed stressed VaR – min stressed VaR)/average stressed VaR.) At a minimum, it means the bank has altered the composition of its trading assets and could signal a higher or lower risk appetite. A particularly high ratio can also reflect substantial derisking over a year or movement of items out of the trading book. The volatility of stressed VaR has the advantage over measuring the volatility of VaR in that it neutralizes the impact of changes in market volatility because the market conditions don't change--they remain the same. The volatility of stressed VaR was on the rise for a number of banks from 2015-2017 but, positively, seems to have declined for all banks in the first half of 2018.

Chart 8

Volatility Of Stressed VaR



Note: Volatility is measured by taking the spread between the maximum and minimum stressed VaRs over the year and dividing it by the average stressed VaR.

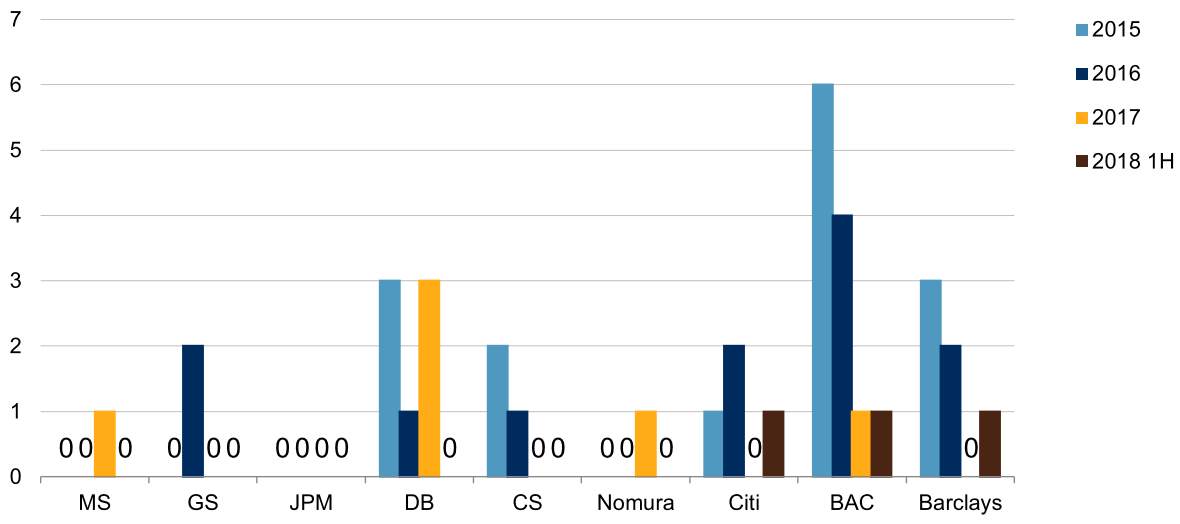
Number of back-testing exceptions

A back-testing exception occurs when the actual trading losses on a given day have exceeded the VaR. In theory, actual trading losses greater than VaR at the 99% confidence level should occur no more than two or three times a year. A high level of back-testing exceptions (relative to peers or in absolute) generally reflects deficiencies in the VaR model. For example, the VaR model may not adequately capture "basis risk" (for example, in a hedging strategy, the risk that offsetting investments don't move in tandem, leaving the bank with some exposure in the positions it holds), because the set of risk factors underpinning the VaR model is not granular enough.

Back-testing exceptions remained minimal from 2015 to the first half of 2018 for most of the banks, with either no or one back testing exception for all of the banks. To put this in context, back in 2008, back-testing exceptions were running about 18 for the group. In this regard, all banks appear to have improved significantly from 2008.

Chart 9

Back-Testing Exceptions



Appendix 1: Sample

Our sample consisted of nine banks with significant investment banking operations:

- Five banks in North America: Citigroup Global Markets Holdings Inc., Bank of America Corp., JPMorgan Chase & Co., Morgan Stanley, and The Goldman Sachs Group Inc.
- Three banks in Europe: Deutsche Bank AG, Barclays PLC, and Credit Suisse AG.
- One bank in Asia: Nomura Holdings Inc. (Nomura's data are based on its fiscal year--April-March).

Appendix 2: Potential Limitations Of The Trading Measures That We Considered As Part Of The Study

General:

- There are likely substantial discrepancies in measuring VaR and regulatory capital requirements for market risk between banks. This is the result of several factors (notably regarding look-back periods or the granularity of risk factors). This could make some of the trading measures we use less comparable (for example, our RAC RWA for trading risk is based on regulatory capital requirements).

Stressed VaR/VaR:

- The measure is likely to produce relatively benign results for sovereign exposures (as 2008 was not, in our view, a period of stress for sovereigns in the eurozone, for example) and, to a lesser

extent, for commodities.

- A particularly high ratio can also reflect substantial derisking over a year or movement of items out of the trading book.

Number of back-testing exceptions:

- Banks do not always report whether they conduct back testing with "hypothetical" daily profit and loss (P&L) or with actual daily P&L. Compared with actual P&L, "hypothetical" P&L is the result on any day "T" of positions that were included in the scope of the VaR model at the end of day T-1. It excludes intraday gains and losses as well as any fees booked upfront at day T and corresponding to new transactions made the same day. It also excludes daily gains/losses on positions that are not included in the scope of the regulatory VaR model. "Hypothetical" P&L is generally lower than actual P&L, so the number of back-testing exceptions measured with hypothetical P&L is generally higher than the number of back-testing exceptions measured by actual P&L.

Related Research

- Unusually Calm Markets Dampen Global Investment Banks' Revenues, Oct 10, 2017
- Delving Deeper Into Global Trading Banks' Risks And Rewards: A Study Of Public Disclosures May 22, 2014

This report does not constitute a rating action.