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A Comparison of U.S. and International Global Systemically Important Banks

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The authors find that the largest U.S. banks rank relatively high on systemic importance based on measures of size, interconnectedness, complexity, cross-jurisdictional activity, and the provision of services with limited substitutes. These systemic importance indicators are intended to measure the threat to global financial stability that a large bank would pose if it were to fail. U.S. banks particularly dominate the complexity and substitutability categories. Banks with higher systemic importance scores do not consistently have higher risk-based capital ratios, despite the importance of capital as a buffer against the failure of systemically important institutions. Fluctuations in exchange rates can have a significant impact on these scores, which is a potential weakness of the methodology.

This brief examines a set of systemic importance indicators established by the Basel Committee on Banking Supervision (Basel Committee) and compares the largest U.S. banks with the largest foreign banks. Overall, these indicators show the largest U.S. banks rank quite high in systemic importance and dominate certain indicators of systemic importance. The banks we consider are those identified by the Basel Committee as global systemically important banks (G-SIBs). These are large, complex, internationally active banks whose failure could create cross-border spillover risks. The G-SIB identification is made by national banking supervision authorities, primarily based on a scorecard of systemic importance indicators established through the Basel Committee in 2011 and implemented in each jurisdiction.[2] An earlier OFR brief examined the systemic importance scoring method and analyzed the scores of all U.S. banks required to report their indicators.[3] The earlier brief found that among U.S. banks with more than $50 billion in assets, the systemic importance indicators are heavily dominated by the very largest banks. This companion brief focuses on the G-SIBs with an international analysis. There are currently 8 U.S. banks identified as G-SIBs and 22 G-SIBs in other countries.[4]

Overall, we find that the U.S. banks rank high on measures of systemic importance. The three largest U.S. banks rank high across multiple measures of systemic importance. Two categories of systemic importance — substitutability and complexity — are dominated by U.S. banks. We find that banks with higher systemic importance scores do not consistently have higher levels of risk-based capital. We also highlight the effect of exchange rates in making international comparisons and their potential impact on the Basel Committee's recommended capital surcharges for G-SIBs.

The analysis described here is consistent with the Basel Committee's methodology. The Basel Committee's scoring methodology is intended to measure the threat to global financial stability that a G-SIB would pose if it were to fail. Once adopted in a national jurisdiction, the result is a capital add-on intended to reflect these global

Figure 1. Systemic Importance Indicators Reported by All 30 G-SIBs (basis points)

Systemic importance scores calculated by the OFR, based on the Basel Committee's weighting methodology

Bank Holding Company	Size	Interconnectedness			Substitutability			Complexity			Cross-Jurisdictional Activity		2013 SCORE (percent)
	Total exposures	Intrafinancial system assets	Intrafinancial system liabilities	Securities outstanding	Payments activity	Assets under custody	Underwriting activity	Amount of over the counter derivatives	Adjusted trading and available for sale securities	Level 3 assets	Foreign claims	Total cross-jurisdictional liabilities	
Weight (percent)	20	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	10	10	
JPMorgan Chase	390.3	396.4	504.0	400.8	1259.4	1545.8	820.4	770.5	977.6	844.1	317.8	346.6	**5.0**
HSBC	364.1	513.3	448.7	289.1	305.7	449.0	570.2	371.7	561.9	179.9	702.1	878.9	**4.8**
Citigroup	316.5	395.4	474.6	398.5	1178.4	804.5	534.9	673.8	285.0	556.4	384.9	382.0	**4.3**
Deutsche Bank	263.6	392.7	318.8	183.2	890.9	311.4	712.0	774.7	393.1	459.9	482.6	478.4	**4.2**
BNP Paribas	306.4	266.0	555.5	289.6	267.8	418.1	421.7	611.0	559.4	345.8	554.8	414.5	**4.1**
Barclays	296.0	336.5	207.2	225.0	211.3	23.6	696.6	753.8	474.3	663.1	443.9	414.3	**3.8**
Bank of America	294.8	276.2	203.6	327.1	327.9	9.9	630.6	621.9	444.9	387.0	177.8	126.4	**3.0**
Credit Suisse	155.4	188.3	162.9	159.8	142.7	13.1	418.1	640.2	290.3	480.0	325.5	337.6	**2.6**
Morgan Stanley	140.3	502.7	169.0	154.8	38.4	99.3	423.0	494.1	693.0	283.5	162.2	241.8	**2.6**
Goldman Sachs	165.9	316.3	99.0	207.5	37.6	62.8	599.5	570.5	302.9	523.7	159.1	164.3	**2.5**
Mitsubishi	367.1	179.7	219.7	205.4	283.2	110.7	125.2	121.0	244.5	152.3	335.6	251.7	**2.4**
Royal Bank of Scotland	210.2	269.5	254.2	129.9	256.4	6.2	257.3	715.6	115.0	136.2	291.7	246.0	**2.4**
Société Générale	195.5	142.2	254.5	203.1	127.1	354.5	172.2	285.5	370.7	97.1	277.3	247.3	**2.3**
Crédit Agricole	263.4	211.6	365.8	230.8	109.0	225.4	145.6	215.9	187.6	125.3	225.0	216.5	**2.2**
UBS	139.9	156.8	145.4	143.6	113.4	237.8	186.5	384.4	215.7	205.7	272.8	263.1	**2.1**
Banco Santander	208.0	132.4	164.6	254.6	62.3	87.4	61.1	59.6	80.7	24.0	463.6	462.4	**2.0**
Bank of China	298.0	236.6	285.6	133.8	237.4	60.1	17.0	7.0	142.9	64.2	132.7	292.1	**1.8**
Industrial and Commercial Bank of China	387.9	328.0	201.0	172.2	142.7	55.3	88.0	4.1	33.5	291.3	63.8	88.9	**1.8**
Wells Fargo	214.5	103.6	119.4	339.7	112.7	174.0	138.9	55.3	279.8	452.7	32.2	67.0	**1.7**
Mizuho	200.7	77.4	111.1	154.4	225.1	100.0	109.8	114.3	199.9	172.0	153.8	112.2	**1.5**
Bank of NY Mellon	44.8	74.5	212.8	40.9	651.5	1710.4	9.4	13.1	85.3	1.7	39.8	84.4	**1.5**
State Street	37.8	28.6	193.8	28.7	231.6	1479.9	0.0	12.9	117.8	92.1	21.8	64.3	**1.5**
UniCredit	151.5	185.9	135.8	180.0	37.7	50.5	139.4	42.3	15.9	124.5	274.3	290.9	**1.5**
ING Group	141.0	155.7	144.0	125.8	103.1	17.2	59.7	53.8	104.1	43.7	297.3	323.8	**1.4**
Sumitomo Mitsui	185.8	235.9	153.6	182.1	90.1	7.2	88.9	65.1	276.8	116.6	152.7	87.5	**1.4**
Groupe BPCE	186.2	137.4	206.0	241.7	131.8	8.1	108.1	164.4	19.1	251.2	149.9	41.1	**1.4**
Standard Chartered	88.0	179.8	111.5	83.5	76.8	58.8	196.9	62.0	146.7	54.4	251.0	256.3	**1.3**
Agricultural Bank Of China	290.8	106.9	124.3	118.5	135.3	42.9	65.4	1.5	36.3	425.7	11.4	24.3	**1.3**
Nordea Bank	100.0	118.7	85.3	216.0	73.1	62.8	83.0	94.3	25.8	49.8	244.2	222.0	**1.2**
BBVA	102.7	47.4	60.2	135.3	32.7	57.4	58.4	28.3	98.6	14.9	164.7	195.3	**0.9**

Note: Gray rows indicate U.S. banks.
Sources: Company G-SIB disclosures, OFR analysis

threats. The Federal Reserve Board recently adopted this methodology to determine which U.S. banks are G-SIBs. The final U.S. rule uses both the Basel Committee methodology (referred to as Method 1) and an alternative formula (referred to as Method 2), then uses the higher of the two surcharges as the add-on requirement. Method 2 replaces some indicators with new metrics, not yet publicly reported by banks.[5]

Systemic Importance Indicators and Scores

The Basel Committee methodology for G-SIB designation uses 12 indicators of systemic importance, grouped into five categories:

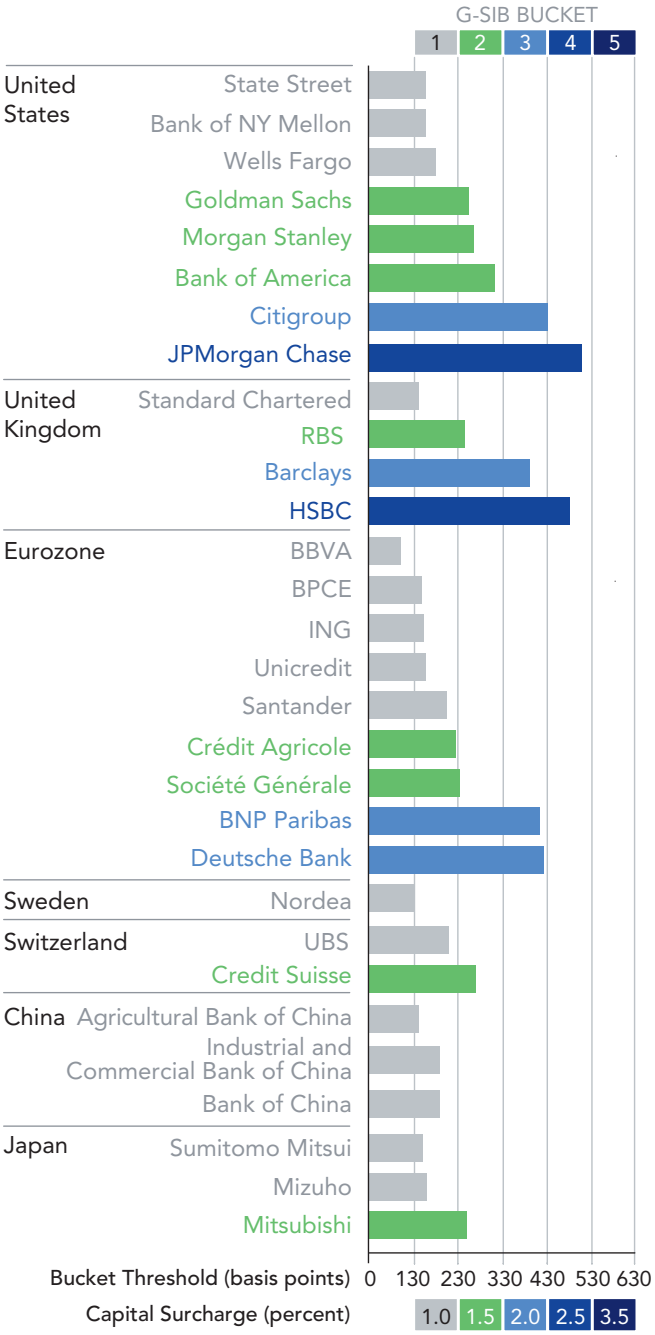
1. **Size,** measured through total exposures. This is a more comprehensive measure than total assets, and it is measured consistently across jurisdictions, whereas the measurement of assets varies with national accounting standards.
2. **Interconnectedness,** measured through a bank's intrafinancial system assets, intrafinancial system liabilities, and total securities outstanding.
3. **Substitutability,** or the extent to which a bank provides important financial infrastructure that would be difficult to replace if the bank were to fail. It is measured through payments activity, assets under custody, and underwriting activity.
4. **Complexity,** measured through a bank's over-the-counter derivatives activity, trading and available-for-sale assets, and holdings of less liquid assets.
5. **Cross-jurisdictional activity,** measured through a bank's foreign claims and total cross-jurisdictional liabilities.

Each of the 12 indicators is scored on a scale from zero to 100 percent by taking a bank's reported value and dividing it by the total value across a panel of 75 banks.[6] The 12 indicator scores are then combined into an overall score. For details of this procedure, see the recent OFR brief[7] or the Basel Committee's G-SIB methodology.[8] Our analysis is based on year-end 2013 values, the most recent date for which all data necessary for the calculations are available.

The systemic importance scores for the 30 G-SIBs are calculated by applying the Basel Committee methodology to indicator values publicly disclosed by the banks on their websites (see **Figure 1**).[9] The overall scores can be grouped by region with cutoffs for the "bucket" to which each bank would be assigned under the methodology,

Figure 2. G-SIB Scores by Region and by Systemic Importance Bucket (basis points)

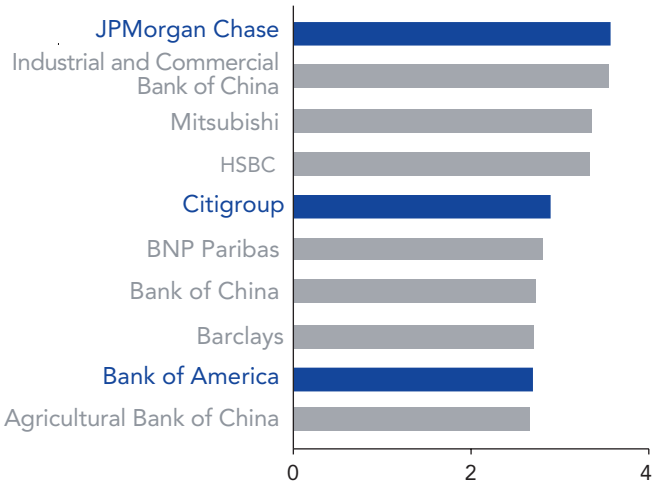
U.S. banks have some of the highest systemic importance scores, using the Basel methodology



Sources: Company G-SIB disclosures, Bank for International Settlements, OFR analysis

Figure 3. Top 10 G-SIBs by Total Exposures ($ trillion)

Three U.S. banks rank in the top 10 based on the Basel Committee's size measurement

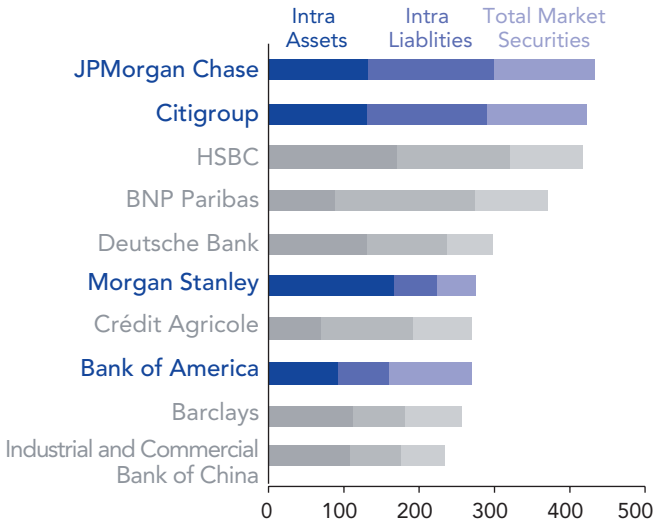


Note: U.S. banks are in blue and non-U.S. banks are in gray.

Sources: Company G-SIB disclosures, Bank for International Settlements, OFR analysis

Figure 4. Top 10 G-SIBs by Interconnectedness (basis points)

U.S. banks rank relatively high on interconnectedness scores



Note: U.S. banks are in blue and non-U.S. banks are in gray.

Sources: Company G-SIB disclosures, Bank for International Settlements, OFR analysis

based on the bank's overall score (see **Figure 2**). The figure also shows the score bands that define the buckets. Two banks in Figure 1 have overall scores that fall below the minimum for the lowest bucket — Nordea Bank AB (Sweden) and Banco Bilbao Vizcaya Argentaria S.A. (Spain). These banks were identified as G-SIBs based on additional factors introduced by their national supervisors.

The Basel Committee has proposed that G-SIBs be required to hold additional Tier 1 risk-based capital based on the bucket in which they fall, ranging from 1 percent for the first and lowest bucket, to 3.5 percent for the fifth and highest bucket. In the United States, the capital surcharge is the larger of the surcharges under the Basel Committee's formula (referred to as Method 1 in the Federal Reserve's final rule) and an alternative formula (Method 2) that also takes into account a bank's reliance on wholesale funding.[10]

International Comparison

Of the G-SIBs with the top 10 scores, half are U.S. institutions, including the highest-scoring bank. This section compares the individual indicator scores that contribute to these overall scores. JPMorgan Chase & Co. tops the list of the 10 largest G-SIBs as measured by total exposures, which also includes Citigroup Inc. and Bank of America Corp (see **Figure 3**). In contrast, when bank size is measured by reported total assets, JPMorgan Chase ranks sixth, and no other U.S. bank makes the top 10.[11] However, a comparison based on total assets could be misleading because of differences in U.S. and international accounting standards.[12] The total exposures measure provides a consistent standard for comparison of banks, as do all of the systemic importance indicators. It is also a more comprehensive measure that includes derivatives exposures and securities financing transactions not included in total assets under U.S. accounting rules.

The 10 G-SIBs that score highest on interconnectedness reflect the weighted sum of the banks' scores for intrafinancial system assets, intrafinancial system liabilities, and securities outstanding (see **Figure 4**). Each bar is divided in three segments, showing the relative contributions of these three indicators to the bank's combined score. Four of the 10 highest scoring G-SIBs are U.S. banks, including the top two.

The substitutability category is largely dominated by U.S. banks (see **Figure 5**). Six of the top 10 scores in this category are U.S. banks, including the top three. The score for each bank reflects the contributions of three indicators

— payments activity, assets under custody, and value of underwritten securities. The relative contributions of these indicators vary substantially across the banks.

Assets under custody are particularly dominated by the U.S. G-SIBs. JPMorgan Chase, Citigroup, Bank of New York Mellon Corp., and State Street Corp. are the world's four largest custodian banks, accounting for more than half of the total assets under custody among the 75 banks used in the G-SIB calculations.

The vertical line in Figure 5 at 500 basis points shows a cap introduced to the G-SIB scoring methodology in 2013 reflecting the Basel Committee's view that the substitutability category has a greater impact on the assessment of systemic importance than intended.[13] In calculating a bank's overall systemic importance score, the substitutability score is capped at 500 basis points, regardless of how high a bank scores on the three substitutability indicators. Four of the five banks that benefit from the cap are U.S. banks.

The removal of the cap would have a material impact on the scores of the banks that significantly surpass the threshold, most notably JPMorgan Chase, Citigroup, and Bank of New York Mellon. Without the cap, JPMorgan Chase's combined score (as shown in **Figure 1**) would rise from 504 to 646, moving it beyond the upper limit of bucket 5.[14] As it stands, no banks are in the bucket 5 classification. The Basel Committee intended bucket 5 to be empty, to deter banks from letting their scores rise. In the U.S. final rule, Method 2 eliminates the substitutability category and replaces it with a wholesale funding category.

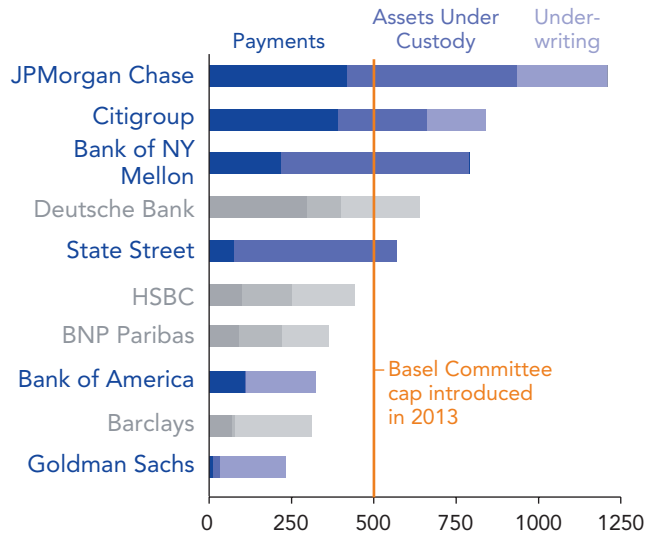
The complexity scores of the highest-scoring G-SIBs show five of the top 10 are U.S. banks, including the highest-scoring bank. Three indicators make up the complexity category — over the counter (OTC) derivatives, trading assets, and certain less liquid assets known as Level 3 assets. The U.S. banks rank somewhat higher in their holding of Level 3 assets and a bit lower in their OTC derivatives exposures.

The cross-jurisdictional activity category of systemic importance is dominated by European and United Kingdom banks (see **Figure 7**). Only two U.S. banks are in the top 10 list in this category, and both are in the lower half of the list. As shown in the figure, the two indicators in this category — foreign claims and cross-jurisdictional liabilities — are roughly equal for each bank.

The overall picture that emerges from this comparison is that the largest U.S. banks score higher on these systemic

Figure 5. Top 10 G-SIBs by Substitutability (basis points)

Six U.S. banks are in the top 10 based on substitutability scores

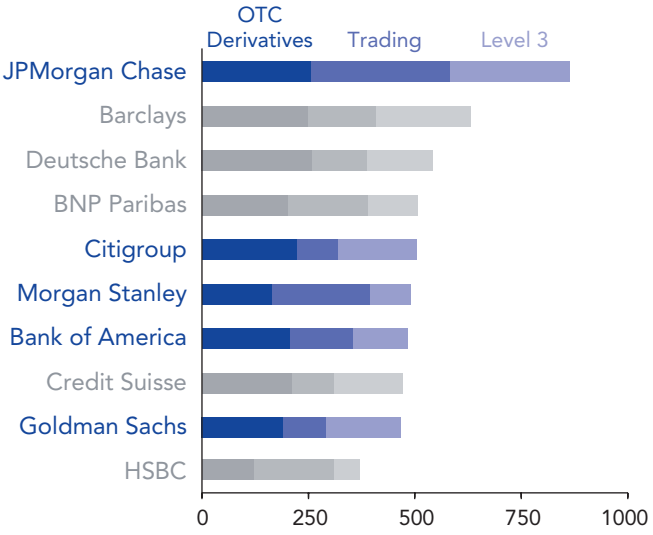


Note: U.S. banks are in blue and non-U.S. banks are in gray.

Sources: Company G-SIB disclosures, Bank for International Settlements, OFR analysis

Figure 6. Top 10 G-SIBs by Complexity (basis points)

U.S. banks rank relatively high on complexity scores

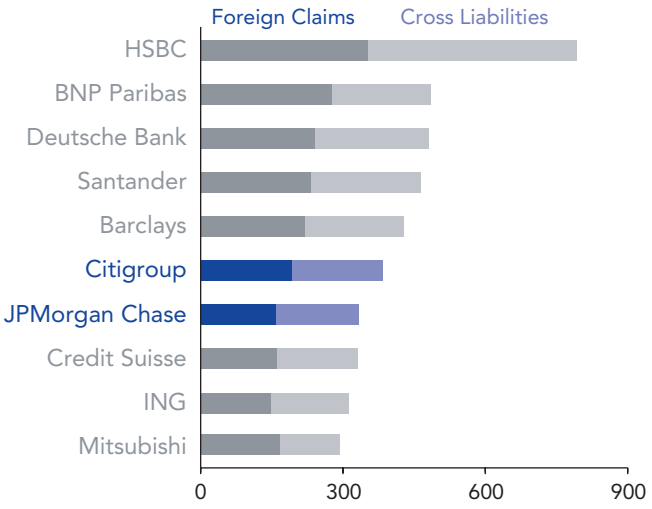


Note: U.S. banks are in blue and non-U.S. banks are in gray.

Sources: Company G-SIB disclosures, Bank for International Settlements, OFR analysis

Figure 7. Top 10 G-SIBs by Cross-Jurisdictional Activity (basis points)

U.S. banks rank relatively low on cross-border activity scores

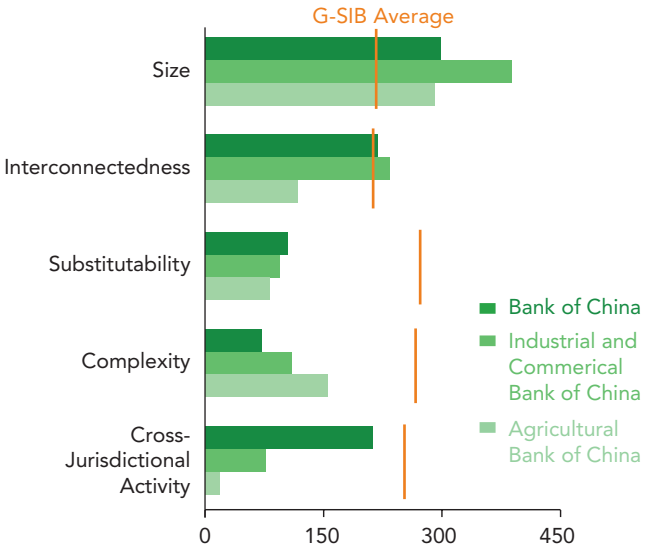


Note: U.S. banks are in blue and non-U.S. banks are in gray.

Sources: Company G-SIB disclosures, Bank for International Settlements, OFR analysis

Figure 8. China's Three G-SIBs (basis points)

Chinese G-SIBs generally rank lower than the overall G-SIB average for Basel Committee criteria



Sources: Company G-SIB disclosures, Bank for International Settlements, OFR analysis

importance indicators than their total assets (as reported under U.S. accounting standards) would suggest. In particular,

- JPMorgan Chase ranks first among the 30 G-SIBs when all systemic importance indicators are combined and scored. The bank scores highest in four of the Basel Committee's five categories of measurements.
- Both Citigroup and JPMorgan Chase score in the top 10 in all five categories.
- Bank of America ranks in the top 10 in four categories.
- U.S. banks dominate two categories of measurements for substitutability and complexity.

China's G-SIBs

China's largest banks present a very different profile because they score high on total exposures but score much lower in the other categories of systemic importance. The Industrial and Commercial Bank of China Ltd., the Bank of China Ltd., and the Agricultural Bank of China Ltd. each rank among the top 10 banks as measured by total exposures (see **Figure 3**). But with one exception, China's G-SIBs do not score among the top 10 in any of the other categories (see **Figure 4** through **Figure 7**). Indeed, the Agricultural Bank of China's overall score puts it just above the threshold for the lowest G-SIB bucket (see **Figure 2**).

When comparing China's largest banks to other large banks, the Chinese banks appear to be significantly larger based on asset size than they are based on total exposures using the Basel Committee methodology. By assets, four of the world's largest 10 banks are Chinese: Industrial and Commercial Bank of China, the Bank of China, the Agricultural Bank of China, and China Construction Bank Corp. However, China Construction Bank — the third-largest Chinese bank by assets and a Chinese domestic systemically important bank — did not meet the threshold qualifications to be deemed a G-SIB. This analysis shows an additional shortcoming of comparing bank asset sizes internationally given differences in global accounting practices. The G-SIB size measure combined with the other indicators of systemic importance provide a more consistent basis for comparison.

The scores of the three Chinese G-SIBs across all five categories of systemic importance are compared with the G-SIB averages in each category (see **Figure 8**). The average for substitutability is computed without the

500-basis point cap. The scores of the Chinese banks are above average for size, about average for interconnectedness, and below average in the other categories. This pattern may change in the coming years as China's banking system becomes more integrated with the rest of the international financial system.

Capital and Systemic Importance Scores

As previously stated, the primary purpose of the systemic importance scores and the buckets they fall into is to determine how much extra capital a G-SIB must hold as a percent of its risk-weighted assets. In the Basel Committee's methodology, G-SIBs with higher scores would be expected to pose greater threats to global financial stability if they were to fail. One might therefore expect to see higher Tier 1 risk-based capital ratios among banks with higher scores. However, this is not the case (see **Figure 9**).[15] The G-SIBs in the highest systemic importance bucket using 2013 data have lower Tier 1 risk-based capital ratios as of end-2014 than other G-SIBs. A similar picture emerges when comparing these banks' regulatory leverage ratios, which are not risk-weighted.

It should be noted that nearly all G-SIBs are well above their current minimum Basel III Tier 1 capital requirement, as depicted in the red line in Figure 9 (with the exception of the Agricultural Bank of China).[16] However, higher Tier 1 and other new capital requirements under Basel III are still being phased in. This may partly explain the apparent lack of a positive relationship between G-SIB buckets and Tier 1 risk-based capital ratios. Nevertheless, the lack of alignment suggests that the intent of the G-SIB process to graduate the loss-absorbing capacity of banks to their systemic footprint has yet to be realized.

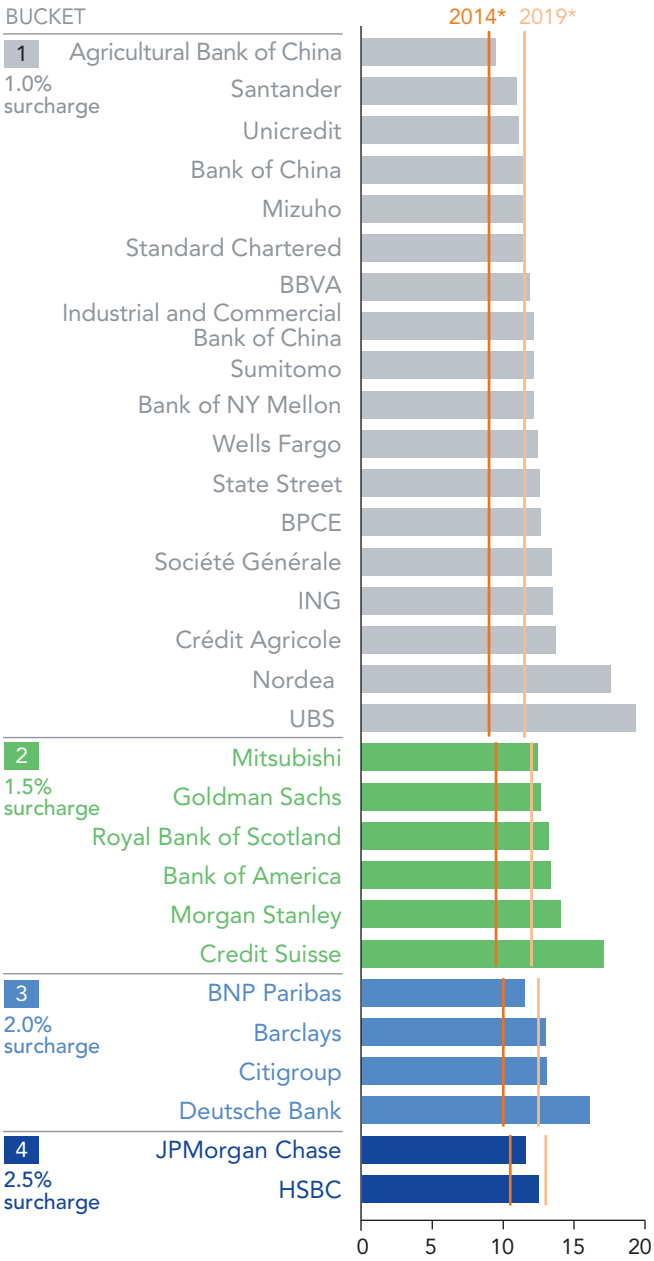
In its final rule for G-SIB capital surcharges, the Federal Reserve anticipates that capital surcharges under its Method 2,[17] which takes into account reliance on short-term funding, will be higher than surcharges calculated according to the Basel Committee's formula. This alternative formula could help better align the capital requirements of large banks with their systemic importance scores, but data are not yet publicly available to assess the impact of the alternative formula.

The Effect of Currency Fluctuations

Under the Basel Committee's methodology, a bank's score for each systemic importance indicator is computed by taking the bank's reported value for the indicator and

Figure 9. Tier 1 Risk-Based Capital Ratio by G-SIB Bucket (percent)

Most banks in higher G-SIB buckets are not holding higher Tier 1 capital, relative to lower-bucket G-SIBs



* Tier 1 capital as a percent of risk-weighted assets.

Note: Vertical lines show Basel III total capital requirements, including capital conservation buffer and G-SIB add-on, as of 2014 and as fully phased-in by 2019.

Sources: Company G-SIB disclosures, SNL Financial LC, Bank for International Settlements, OFR analysis

dividing it by the sum of reported values for that indicator across a panel of 75 international banks.

Because different banks report values in different currencies, their reported values must be converted to a common currency before they can be compared. This conversion creates the possibility that a bank's score may change simply as a consequence of fluctuations in exchange rates. U.S. banks report their indicator values in U.S. dollars. If the dollar appreciated in value compared to other major currencies, the relative systemic importance score of U.S. banks would rise, even if all banks' reported values remained unchanged.

The following analysis investigated the potential impact of this effect, using historical exchange rates. Our conclusion is that currency fluctuations alone are sufficient to move banks from one G-SIB bucket to another. This movement in turn could have a significant impact on their capital requirements.

The simplest way to carry out this analysis was to hold fixed all the indicator values reported by the G-SIBs and recompute the G-SIB scores at different exchange rates. We used monthly exchange rates from January 1993 through February 2015.[18] To recompute the scores, we needed to know how the denominator for each indicator changed as exchange rates changed. We could not recompute the denominator value exactly, because the list of 75 banks from which the denominator was calculated was not made public as part of the Basel Committee's disclosure regime. Instead, we made the simplifying assumption that, as exchange rates fluctuated, the denominator would change by the same proportion as the total for the 30 G-SIBs. For example, if the sum of G-SIB values for an indicator (in dollars) went up by 10 percent, we assumed that the denominator value for that indicator (in dollars) would also go up by 10 percent.

We found that the impact of exchange rate fluctuations can be significant. We held fixed all indicator values as reported by the G-SIBs in their preferred currencies for the end of 2013, and recomputed scores using 266 months of exchange rate changes between January 1993 and February 2015. We found that the overall score for JPMorgan Chase, for example, would put that bank in the fifth and highest bucket more than half the time, even though the bank's score at the end of 2013 put it in the fourth bucket (the second highest). The same calculation showed Citigroup moving up one bucket 78 percent of the time and Bank of America moving up 40 percent of the time. The other U.S. G-SIBs would not change buckets under these exchange rate moves because their scores put them further from the bucket cutoffs.

This analysis may have overstated the effect of exchange rates because it implicitly assumed that all of a bank's assets, liabilities, and payments were denominated in its home currency. In fact, most of the G-SIBs have extensive international operations and transactions. To check the robustness of our conclusion, we repeated the calculation assuming that only a fraction of a bank's indicator values fluctuated with exchange rates. We assumed that the fraction that did not fluctuate was equal to the ratio of the bank's foreign claims (one of the indicators in the cross-jurisdictional activity category) to its total exposures (the size indicator). We used this ratio as a rough measure of the relative size of a bank's international activities to its total activities. We found similar results under this alternative approach. The fraction of time the three largest U.S. G-SIBs moved up a bucket decreased only slightly compared to the previous calculation.

These calculations involved several simplifying assumptions and did not account for ways in which banks may shift their business activities in response to changes in exchange rates. Nevertheless, they suggest that exchange rate fluctuations could be sufficient to move a bank from one bucket to another. Because higher G-SIB buckets are expected to lead to higher capital requirements, these shifts from one bucket to another may have significant — and perhaps unintended — consequences for banks.

Additionally, the current Basel Committee methodology uses end-of-year exchange rates in the calculation of G-SIB scores, creating a potential incentive for a bank to alter its activities near the end of the year in response to exchange rate movements to avoid moving up a bucket. A simple alternative method that reduces this incentive would be to use the average exchange rate over the year or during the fourth quarter. Using average exchange rates could make the assignment of banks to G-SIB buckets more predictable and less vulnerable to shifts in currency values that have little significance for systemic importance. Another possible way to eliminate the cliff effects would be to make the capital add-ons continuous but proportional to the scores without introducing buckets.

In the U.S. final rule for G-SIB capital surcharges, the Federal Reserve removed the effect of exchange rate fluctuations from its Method 2 calculation by moving to a fixed approach employing constants for each systemic risk indicator derived from global 2012-13 data for each indicator and the average exchange rate from 2011-13.

Although the final rule's Method 1 continues to follow the Basel Committee's approach, the Federal Reserve anticipates that Method 2 will determine the capital surcharge for most U.S. G-SIBs, so the new approach may indeed mitigate the effects of exchange rate fluctuations. That said, the fixed method under Method 2 will require periodic review to determine that the resulting scores and surcharges continue to appropriately address banks' systemic importance.

Conclusions

A comparison of several of the largest U.S. banks with other global systemically important banks around the world shows that the U.S. banks rank high on measures of systemic importance. The three largest U.S. banks rank high across multiple measures of systemic importance. U.S. banks dominate two categories of systemic importance — substitutability and complexity. However, the impact of substitutability on U.S. banks' scores is muted under both the Basel methodology and final U.S. rule despite the fact that some U.S. banks play key roles in payment and settlement activities for which there are few or no substitutes.

The Basel Committee's scoring methodology is intended to measure the threat to global financial stability that a G-SIB would pose if it were to fail. But the trade-offs between the potential benefits of scale and scope, and the potential costs from the failure of systemically important institutions, are not well understood and merit further study. The G-SIB methodology seeks to mitigate these potential costs with higher risk-based capital, yet the banks with the highest systemic importance scores do not have the highest capital ratios.

This brief has also highlighted a potential weakness in the Basel Committee's scoring methodology. The methodology makes a bank's bucket assignment — intended to determine the additional G-SIB capital requirement — sensitive to currency fluctuations. Changes in exchange rates can move a bank from one bucket to another, potentially leading to a change in a bank's capital requirements. This potential weakness may encourage banks to adjust their business near the end of the year solely to offset currency effects. This brief discusses alternatives that could reduce the incentives for banks to alter their activities because of the effects of exchange rate movements on the Basel Committee's methodology. Although the final U.S. rule may mitigate the effects of exchange-rate fluctuations, the fixed methodology under Method 2 will require periodic review to determine that the resulting scores and surcharges continue to appropriately address banks' systemic importance.

A bank's systemic importance score is also sensitive to the activities of other large banks. The Basel Committee's G-SIB scoring methodology compares each bank's indicators to those of a panel of 75 large banks around the world. A bank's score may rise if the indicators for other banks decline. This effect is magnified by the use of buckets to set additional capital requirements: a bank near the upper limit of one bucket could find itself bumped up to the next bucket — and subject to a higher capital requirement — through the actions of other banks. This sensitivity could be reduced through surcharges that increase continuously in proportion to overall scores, without the use of buckets.

Endnotes

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[2] See Financial Stability Board, "Update of Group of Global Systemically Important Banks (G-SIBs)," November 1, 2012 (available at www.financialstabilityboard.org/wp-content/uploads/r_121031ac.pdf?page_moved=1, accessed July 2, 2015) and Board of Governors of the Federal Reserve System, "Calibrating the G-SIB Surcharge,"July 20, 2015 (available at www.federalreserve.gov/aboutthefed/boardmeetings/gsib-methodology-paper-20150720.pdf, accessed July 23, 2015).

[3] See Meraj Allahrakha, Paul Glasserman, and H. Peyton Young, "Systemic Importance Indicators for 33 U.S. Bank Holding Companies: An Overview of Recent Data," OFR Brief no. 15-01, February 12, 2015.

[4] The current list of G-SIB banks: Agricultural Bank of China Ltd.; Banco Santander S.A.; Banco Bilbao Vizcaya Argentaria S.A.; Bank of New York Mellon Corp.; Bank of China Ltd.; Barclays Plc; BNP Paribas S.A.; Crédit Agricole S.A.; Credit Suisse Group AG; Deutsche Bank AG; Goldman Sachs Group, Inc.; Groupe BPCE S.A.; HSBC Holdings Plc; Industrial and Commercial Bank of China Ltd.; ING Group; JPMorgan Chase & Co.; Mitsubishi UFJ Financial Group; Mizuho Financial Group, Inc.; Morgan Stanley; Nordea Bank AB; Royal Bank of Scotland Group Plc; Société Générale S.A.; Standard Chartered Plc; State Street Corp.; Sumitomo Mitsui Banking Corp.; UBS AG; UniCredit SpA; Wells Fargo & Co. See Financial Stability Board, "2014 Update of List of Global Systemically Important Banks," November 6, 2014, (available at www.financialstabilityboard.org/wp-content/uploads/r_141106b.pdf, accessed July 31, 2015).

[5] The Basel Committee's approach is Method 1 in the Federal Reserve's rule. The Federal Reserve's rule also includes a Method 2 in calculating capital surcharges for G-SIBs. Method 2 uses data on short-term funding that is not publicly available and is therefore not part of our analysis. See Board of Governors of the Federal Reserve System, "Regulatory Capital Rules: Implementation of Risk-based Capital Surcharges for Global Systemically Important Bank Holding Companies," Final Rule, July 20, 2015 (available at www.federalreserve.gov/newsevents/press/bcreg/bcreg20150720a1.pdf, accessed July 20, 2015).The rule also expands the range of buckets and surcharges under Method 1 beyond the five buckets in the Basel Committee's methodology.

[6] See Basel Committee on Banking Supervision, "Global Systemically Important Banks: Updated Assessment Methodology and the Higher Loss Absorbency Requirement," Bank for International Settlements, Basel, July 2013 (available at www.bis.org/publ/bcbs255.htm, accessed July 2, 2015).

[7] See Allahrakha, Glasserman, and Young (2015).

[8] See Basel Committee on Banking Supervision (2013).

[9] Links to the company disclosures are provided at Bank for International Settlements, "G-SIBs as of November 2014 Allocated to Buckets Corresponding to Required Level of Additional Loss Absorbency," (available at www.bis.org/bcbs/gsib/gsibs_as_of_2014.htm, accessed July 17, 2015). These data are used to calculate banks' scores as of November 2014 under the Basel Committee's methodology, which is also used under the U.S. final rule for calculating banks' capital add-ons. These same data were used for the calculations in this brief. Individual banks' subsequent revisions to their systemic importance data are not reflected in the data relied on by the Basel Committee or in this brief.

[10] See Federal Reserve (2015).

[11] Based on company reports of total assets, using data from SNL Financial LC.

[12] For example, U.S. generally accepted accounting principles (GAAP) and international financial reporting standards (IFRS) differ with respect to the treatment of derivatives, securitized assets, and secured funding transactions such as repo transactions. U.S. GAAP tends to permit more netting and off-balance-sheet items.

[13] See Basel Committee on Banking Supervision, "Global Systemically Important Banks: Updated Assessment Methodology and the Higher Loss Absorbency Requirement," Basel, July 2013 (available at www.bis.org/publ/bcbs255.htm, accessed on January 14, 2015).

[14] These are OFR calculations based on Figure 1.

[15] The figure shows Tier 1 capital ratios as a percent of total risk-weighted assets as of the end of 2014. The values are as reported by SNL Financial or in the banks' financial statements. We use capital ratios from the end of 2014 because different banks followed different reporting conventions at the end of 2013 as new rules were phased in.

[16] See Basel Committee on Banking Supervision, "Basel III Phase-in Arrangements," Bank for International Settlements, Basel, January 2013 (available at www.bis.org/bcbs/basel3/basel3_phase_in_arrangements.pdf, accessed July 14, 2015).

[17] See Federal Reserve (2015) and the explanation in endnote 5.

[18] These are not necessarily indicative of future changes in exchange rates, but they anchor the analysis in historical experience.