Belts and Suspenders: Analysis of Large Bank Capital Standards

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SUMMARY

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Belts and Suspenders: Analysis of Large Bank Capital Standards

One way regulators ensure that banks operate in a safe and sound manner is by establishing capital requirements that banks must meet. Bank capital serves as a layer of protection against losses, and in doing so it promotes public confidence in banking institutions. This reduces the likelihood of bank failures, which is important to policymakers, because the federal government provides a financial safety net to protect depositors and the broader economy, which exposes taxpayers to potential losses. Capital rules are set through regulation by the federal bank regulators—the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve, and the Office of the Comptroller of the Currency (OCC)—and are modeled on international agreements made by the members of the Basel Committee on Bank Supervision.

Banks face two sets of capital requirements: (1) risk-based requirements based on the risk of a bank's assets and (2) leverage requirements based on the size of the bank. The reason regulators use risk-weighted assets (RWA) is because some assets are inherently riskier than others. Without risk weighting, banks would have an incentive to hold riskier assets, as the same amount of capital must be held against riskier and safer assets. But risk weights may prove inaccurate. For example, banks held highly rated mortgage-backed securities (MBSs) before the 2008 financial crisis, in part because those assets had a higher expected rate of return than did other assets with the same risk weight. MBSs then suffered unexpectedly large losses during the crisis. Thus, leverage requirements, which are based on size rather than risk, can be thought of as a backstop to ensure that incentives posed by risk-weighted capital ratios do not result in a bank holding insufficient capital. Further, leverage ratios act as a "belt and suspenders" approach to capital regulation that guard against the risk of a particular institution as well as the potential systemic impact a larger asset portfolio may have on the financial system should it succumb. Leverage ratios also proved to be more transparent and therefore instilled more confidence during financial crises.

However, there are policy tradeoffs in using these two types of requirements, particularly for the many banks that face multiple capital requirements. For any particular bank, one of those requirements makes the bank hold the most capital. This is referred to as the *binding requirement*. If this requirement shifts from a risk-based to a leverage requirement, perverse incentives for banks could arise. For example, a binding leverage requirement creates an incentive to hold riskier assets—as all assets require the same amount of capital—at least up to the point where a bank would hold an equal amount of capital under either risk-based or leverage regimes.

The adequacy of bank capital standards is a perennial debate among policymakers. To study this effect, CRS examined the capital requirements facing the 34 large bank holding companies subject to the Fed's 2022 stress test. Specifically, CRS examined the largest Tier 1 capital risk-based and leverage requirements to gauge whether binding requirements align with the goals of prudential regulation. Further, given that the largest banks and their holding companies (bank holding companies, or BHCs) face both risk-based and leverage requirements, CRS analyzed the bank subsidiary requirements as well to determine which requirements are driving capital structure and whether policy options for reforming capital regulation could better meet the goals of prudential regulation. (Statute allows qualifying smaller banks to opt out of risk-weighted requirements.)

Despite bank size growing over time, CRS analysis of 34 BHCs suggests that binding capital requirements are still largely based on risk rather than size. However, one important finding is that bank-subsidiary-level requirements are driving BHC leverage capital structure. To the extent the overall size of a bank continues to grow at a pace that exceeds the growth of its assets, Congress and financial regulators may wish to consider whether the relative levels of capital standards based on risk and size remain properly aligned with risk-based prudential incentives.

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What Is Bank Capital?

Banks serve an important role in the financial system and the broader economy.[1] They aggregate the savings of households and businesses and lend to individuals, businesses, and federal and local governments. Banks also provide other important financial services, such as payment processing.

A core practice of banks is to make loans, which are assets on the banks' balance sheets. Banks also acquire other assets such as securities and property. Banks primarily raise the funds needed to make loans by attracting deposits, a type of liability. Banks can also borrow money from creditors (e.g., by issuing debt), which is another type of liability. However, banks must hold more assets than liabilities in order to remain solvent, so they also raise funds (referred to as capital) from other sources. Conceptually, a bank's *capital* is the stock or equity that represents the owners' stake in the bank. (As discussed below, the regulatory definition of *capital* is more complex and includes various other instruments, but owner equity is the primary type of regulatory capital.) The value of a bank's capital is the difference between the value of its assets and the value of its liabilities.

Capital helps a bank avoid insolvency and failure. Sometimes borrowers do not pay their loans back, and the value of the loan to the bank falls. On the bank's balance sheet, the value of the bank's assets fall to reflect the new value of the loans. The bank can remain solvent because the initial losses are balanced by reducing the value of the bank's capital. For example, if a bank's owners have retained earnings from the prior year, they can use those past earnings to pay off debts when the proceeds from their assets are insufficient. From a cash flow perspective, if a bank becomes unable to both pay all of its creditors and make dividend payments to stockholders, debts are repaid first. (Generally, creditors are legally required to be repaid before stockholders collect dividends.) Dividends are not typically mandatory, which increases the possibility of the bank remaining solvent. In this manner, capital acts as a buffer for losses.

Financial regulators at the state and federal level impose a number of requirements to ensure the financial health of banks, generally through rules and standards that mitigate risks associated with banking activity—commonly referred to as *prudential regulation*. One prudential measure that regulators take is establishing capital requirements that banks must meet in order to operate in a safe and sound manner.[2]

Why Do Regulators Require Capital?

Capital serves as a layer of protection against losses, thereby promoting public confidence in banking institutions. Regulators require banks to hold capital in part because when banks fail, the federal government provides a financial safety net to protect depositors and the broader economy

[1] For a general overview of banking, see CRS In Focus IF10035, *Introduction to Financial Services: Banking*, by Raj Gnanarajah and Andrew P. Scott.

[2] An overview of the U.S. bank capital framework can be found at CRS Report R47447, *Bank Capital Requirements: A Primer and Policy Issues*, by Andrew P. Scott and Marc Labonte.

from losses.[3] The safety net helps banks avoid runs and remain liquid during periods of economic stress, and they reduce the likelihood that a liquidity crisis becomes a solvency issue.[4]

This report analyzes the capital requirements placed on the largest financial institutions, focusing specifically on the impact of these requirements for large bank holding companies (BHCs) subject to the Federal Reserve stress test.[5] There are two kinds of capital requirements considered in this report: risk-based requirements and leverage requirements. Capital requirements are expressed in the form of a ratio. The main types of capital included in the numerator are common equity, Tier 1 capital, and additional Tier 1 capital.[6] The main difference between these requirements is the denominator by which the ratios are calculated: Risk-weighted requirements are based on risk-weighted assets, whereas leverage requirements are based on the size of a bank's balance sheet activity (i.e., total assets are treated equally and not adjusted for risk).

There are several minimum regulatory capital ratios that banks must generally meet, unless they qualify for and elect to be subject to the Community Bank Leverage Ratio, in which case the bank is not subject to risk-weighted capital requirements. The Community Bank Leverage Ratio and smaller banks are not within the scope of this report.[7] This report does not provide a comprehensive overview of the broader U.S. bank capital regulatory framework, which can be found in CRS Report R47447, *Bank Capital Requirements: A Primer and Policy Issues*, by Andrew P. Scott and Marc Labonte.

The capital ratios considered in this paper are summarized in **Table 1**.

Table 1. Select Capital Requirements

Capital Requirement	Calculation
Risk-Based Requirements	
Common Equity Tier 1 (CET1) Capital	CET1/RWA
Tier 1 Capital	Tier 1/RWA
Size-Based Requirements	
Leverage	Tier 1 Capital/Total Consolidated Assets

[3] The government safety net comes in two separate forms: Deposit insurance is provided by the Federal Deposit Insurance Corporation (FDIC) to protect depositors from any loss (up to the insurance limit) in the event of a bank failure; and the Federal Reserve (Fed) acts as a lender of last resort, extending short-term credit to banks that are unable to access funding in private markets.

[4] For more on bank failures, see CRS In Focus IF10055, *Bank Failures and the FDIC*, by Raj Gnanarajah.

[5] A BHC is a company that owns a bank. For the purpose of this report, "BHC" refers to bank holding companies as well as intermediate holding companies and savings and loan holding companies. A savings and loan holding company is a company that owns a savings and loan institution but does not own a bank, as the definition of *savings and loan holding company* "excludes any company that is also a bank holding company." For more, see https://www.ffiec.gov/nicpubweb/Content/HELP/Institution%20Type%20Description.htm. According to the Federal Financial Institution Examination Council, an intermediate holding company is a "company established or designated by a foreign banking organization as its U.S. intermediate holding company under subpart O of the Federal Reserve Board's Regulation YY." For more, see 12 C.F.R. Part 252.

[6] Common equity Tier 1 capital (CET1) includes the sum of common stock issued by the bank, retained earnings, accumulated other comprehensive income, common equity Tier 1 minority interest, and common stock issued and held in trust for the benefit of employees as part of an employee stock ownership. Tier 1 capital includes CET1 plus "additional Tier 1 capital," such as unsecured and paid-in capital instruments issued with no maturity or planned incentives to redeem, which are subordinated to depositors.

[7] For more information on the Community Bank Leverage Ratio, see CRS Report R45989, *Community Bank Leverage Ratio (CBLR): Background and Analysis of Bank Data*, by David W. Perkins.

Capital Requirement	Calculation
Supplementary Leverage	Tier 1 Capital/Total Leverage Exposure

Sources: 12 C.F.R. §3.10-11; 12 C.F.R. §217.10-11; 12 C.F.R. Chapter III, Subchapter B, Part 324.

Notes: The calculation of risk-weighted assets (RWA) varies for the standardized approach and advanced approaches, although the numerical requirement is the same for both types of methods. This report focuses on advanced approaches banks.

There are two types of approaches to calculating capital ratios and setting capital requirements: the standardized approach and advanced approaches. A discussion of the differences between these approaches is outside the scope of this report.[8] All of the BHCs in this report calculate their risk-weighted assets (RWA) using the standardized approach. Some of the larger BHCs are also required to calculate RWA using the advanced approaches (referred to as advanced approaches BHCs). Advanced approaches organizations must thus calculate two different ratios: Tier 1 capital/standardized approach RWA and Tier 1 capital/advanced approaches RWA. To determine whether they meet their minimum requirements, advanced approaches BHCs are supposed to apply the lower of the two ratios to their capital requirements.

Binding Capital Requirements

Potentially lost in the complexity of multiple requirements facing banks is the question of how much capital banks are actually holding and why they are holding it. That information would be illustrative in any debate over whether banks are holding the right amount of capital to balance the benefits and costs of holding it. Further, analyzing what capital requirement requires banks to hold the most capital would be useful in understanding whether the interaction between risk-based and leverage requirements, as currently calibrated, is working as policymakers intended.

Over the past several decades, capital regulations have evolved to account for more complex risks in the marketplace. For example, capital requirements were once based on city population, then deposit volume, then total assets, and now RWA. However, one somewhat recent trend has been the return to simpler leverage measures of capital requirements in addition to risk-weighting schemes. Leverage ratios supplement risk-weighted schemes, and in doing so, they act as a hedge against any particular market risk.

For decades, the guiding principle of capital regulation has been that the riskier a bank is, the more capital it should hold. However, leverage ratios serve as a sort of regulatory hedge against the chance that regulators mis-calibrated risk weight categories or that an unforeseen risk emerged that risk weights did not properly capture, thereby eroding capital adequacy. Therefore, leverage ratios act as a "belt and suspenders" approach to capital regulation, essentially guarding against both the risk of a particular institution and the potential impact a larger asset portfolio may have on the financial system should it succumb. Leverage ratios also proved to be more transparent and therefore instilled more confidence during financial crises.

Issues arise, however, if leverage ratios are the dominant binding requirement. At that point, capital regulation is no longer matching risk with capital, and it has the potential to create perverse incentives for banks.[9] For example, under a purely risk-based regime, if two banks had

[8] The methodologies for calculating standardized approach and advanced approaches risk-weighted assets can be found in 12 C.F.R. Part 217, Subpart D (standardized approach) and 12 C.F.R. Part 217, Subpart E (advanced approaches).

[9] Karen Petrou, *A Holistic Construct for Bank Regulatory Capital*, Federal Financial Analytics, July 6, 2022, https://fedfin.com/wp-content/uploads/2022/07/FedFin-Issue-Brief-A-Holistic-Construct-for-Bank-Regulatory-Capital.pdf. Simply put, the binding constraint a bank faces is the capital requirement that makes it hold the most (continued...)

the same assets but one held much riskier assets than the other did, then the bank with the riskier asset portfolio would have to hold more capital. But if the leverage requirement is binding, all assets require the same amount of capital (at least up to the point where they would hold an equal amount of capital under either risk-based or leverage regimes), so there is less incentive to hold safe assets. In practice, this is more likely to occur for the global systemically important banks (G-SIBs), because they are subject to a higher supplementary leverage ratio (SLR), which has been set at a level that requires many of the largest banks to hold more capital than the generally applicable leverage ratio does. (The G-SIBs include J. P. Morgan, Bank of America, Citigroup, Goldman Sachs, Bank of New York Mellon, Morgan Stanley, State Street, and Wells Fargo.)

For example, J. P. Morgan CEO Jamie Dimon made a noteworthy statement in his testimony before the House Financial Services Committee in September 2022:

> The continued upward trajectory of regulatory capital requirements on America's already fortified largest banks, particularly when not reflective of actual risk, is itself becoming a significant economic risk, because unrepresentative capital requirements erode banks' ability to meet customer needs.[10]

The sentiments conveyed in this statement are the subject of a long history of political and policy debate about prudential regulation, but the part of the statement that is pertinent to the binding requirement issue is "particularly when not reflective of actual risk." Obviously, under the risk-weighted regime, capital levels are inherently tied to risk, at least as defined by regulators. The issue the statement is referencing involves leverage ratios for the largest institutions—in particular, the SLR.[11]

If leverage ratios were guiding capital structure, it could carry significant implications for prudential regulators, as they would have limited influence over the risk profile of large banking asset portfolios.

Analysis of Large BHC Capital Levels

The main finding of this report is that there is evidence that leverage requirements at some of the largest banking organizations are potentially binding, which may mean that prudential regulation is actually incentivizing behavior counter to financial stability. To come to this finding, CRS examines the way different capital requirements influence capital structure at the largest banks in several ways:

- First, this report examines the risk-weighted common equity Tier 1 (CET1) requirements for the 34 large BHCs in the Fed's stress test.[12] For simplicity and

capital. In reality it is the constraint that costs the bank the most to hold—for example, if a bank's RWA required it to hold $8 million in total capital, and its total assets required it to hold $7 million in Tier 1 to meet its leverage ratio requirements. It is possible that the $7 million in Tier 1 cost the bank more to raise than the $6 million in Tier 1 plus $2 million in Tier 2 capital ($8 million in total) cost to raise. In these scenarios, the cost is the determinant factor in identifying the binding constraint, but for the purposes of this analysis, the binding constraint is considered to be the regulation that requires the most capital to be held.

[10] Jamie Dimon, testimony before U.S. House of Representatives, Committee on Financial Services, September 21, 2022, https://democrats-financialservices.house.gov/uploadedfiles/hhrg-117-ba00-wstate-dimonj-20220921.pdf.

[11] Emily Glazer, "Jamie Dimon Pushes for Simpler, More Coordinated Bank Regulations," *Wall Street Journal,* April 4, 2017, https://www.wsj.com/articles/jamie-dimon-pushes-for-simpler-more-coordinated-bank-regulations-1491326079.

[12] The logic for this is that these BHCs are the parent companies for the largest commercial banks in the country, and BHCs subject to stress tests are subject to the most stringent capital standards. These banks also have the largest balance sheets, so comparison of the effects of the two types of requirements should be illustrative.

comparability, this analysis is limited to the standardized approach for RWA calculations.[13]

- Second, this report examines the Tier 1 leverage requirements for each of these organizations.
- Third, this report establishes a proxy to make useful comparisons between risk-based CET1 requirements and Tier 1 leverage requirements, ultimately resulting in an estimation of which requirement is driving capital structure at the BHC level.
- Finally, this report examines the requirements for some of the largest commercial banks that are subsidiaries of these BHCs. Because bank capital requirements vary slightly from BHC capital requirements, it is possible that the bank subsidiary is required to hold more capital than its parent company is, and this could mean bank requirements are actually driving BHC capital structure.

The banks in this study are limited to the 34 large banking organizations that are subject to the Fed's stress tests.[14] Some of these banks report data on a standardized approach basis, and others use the advanced approaches.[15] Differences in reporting are noted throughout the analysis where relevant. All analysis in this section is based on the year-end 2022 Y9-C data, which BHCs file quarterly to report their financial conditions.[16]

Analysis of Risk-Based Capital Ratios

Regulators have suggested that the banking system is well capitalized overall and for large banks specifically.[17] (See **Figure 1Error! Reference source not found.**.) Under the Fed's capital regulatory framework,[18] BHCs have to hold:

- common equity Tier 1 capital ratio of 4.5%;
- Tier 1 capital ratio of 6%;

[13] Given that a number of these BHCs also have to report advanced approaches calculations, CRS estimated the CET1 requirement using both calculations and applied the Fed's implementation of statute to determine which calculation would actually serve as the requirement for each BHC. For example, standardized approach banks are required to hold a minimum of 4.5% CET1/RWA ratio plus a stress capital buffer determined by the stress test (above) and any applicable G-SIB surcharge. The advanced approaches requirement is 7% (4.5% for minimum CET1 and 2.5% for buffer) plus a G-SIB surcharge (if applicable), all as a ratio of advanced approaches RWA. There were nine BHCs in the study that reported advanced approaches data, but only one had an advanced approaches requirement that exceeded its standardized approach requirement. This suggests that the standardized approach capital buffer is likely driving capital structure.

[14] The BHCs in the stress test and stress test results can be found at Federal Reserve, *2022 Federal Reserve Stress Test Results*, June 23, 2022, https://www.federalreserve.gov/publications/files/2022-dfast-results-20220623.pdf.

[15] For more on advanced approaches capital requirements, see CRS Report R47447, *Bank Capital Requirements: A Primer and Policy Issues*, by Andrew P. Scott and Marc Labonte; and Federal Reserve, "Advanced Approaches Capital Framework Implementation," https://www.federalreserve.gov/supervisionreg/basel/advanced-approaches-capital-framework-implementation.htm.

[16] In these quarterly reports, analysts can examine bank balance sheets, capital positions, and RWAs. From this, one can make inferences about how over- or under-capitalized a bank is and whether its capital position is being driven by one particular requirement. Y9-C data can be found at https://www.ffiec.gov/npw/FinancialReport/DataDownload.

[17] See, for example, Martin Gruenberg, testimony Before U.S. Congress, House Committee on Financial Services, *Oversight of Prudential Regulators: Ensuring the Safety, Soundness, Diversity, and Accountability of Depository Institutions*, 117th Cong., 2nd sess., 2022, https://democrats-financialservices.house.gov/uploadedfiles/hhrg-117-ba00-wstate-gruenbergm-20221116.pdf.

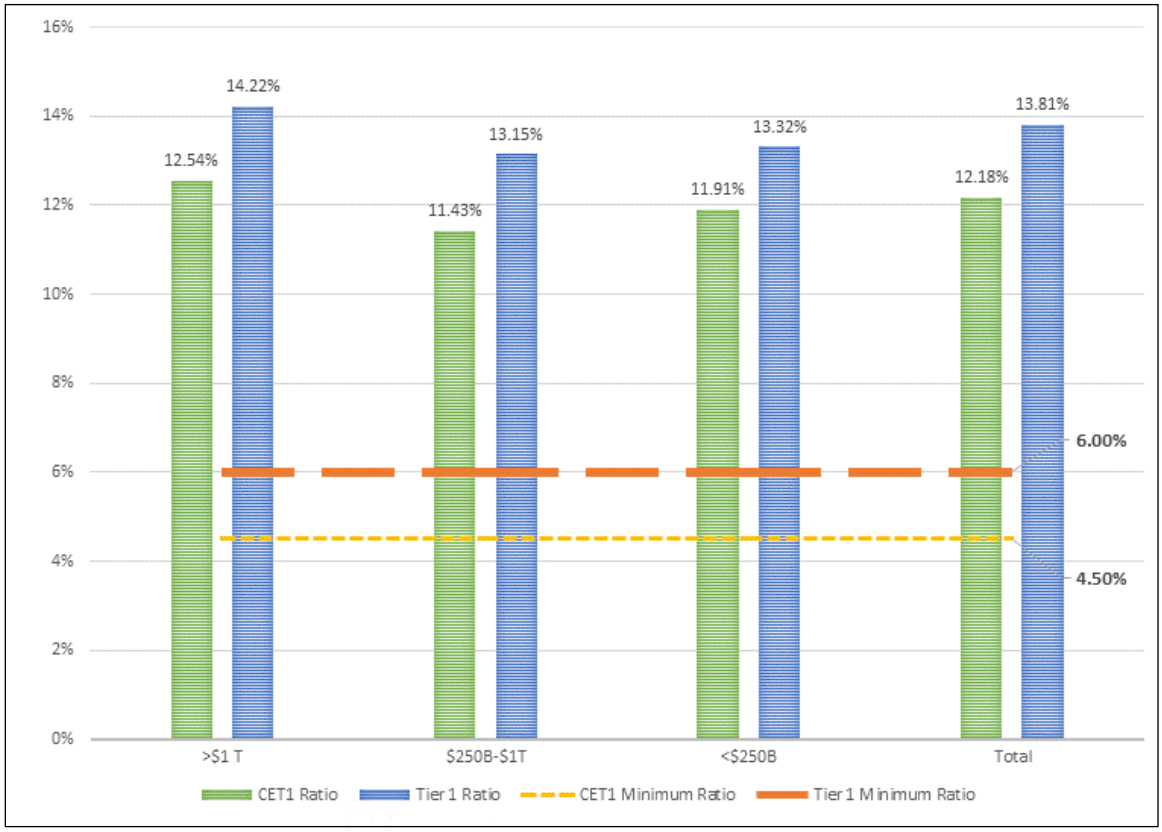
[18] 12 C.F.R. §217.10(a)(1).

- Leverage ratio of 4%; and
- For certain of the largest institutions, an SLR of 3%.

Based on these requirements, it appears the largest BHCs are considerably overcapitalized.

Figure 1. Excess Capital Holdings

% of Standardized Approach RWA, Weighted Average by Asset Class



Source: CRS analysis of Y9-C data.

Notes: This table compares the weighted average standardized approach calculations for CET1 and Tier 1 ratios for each group of BHCs and shows them against the minimum regulatory requirements.

So why are BHCs holding so much capital in excess of their risk-based requirements? Part of this is because the regulation stipulates *minimum* capital ratios. However, under the Fed's capital framework for BHCs with more than $100 billion in consolidated assets, there are additional requirements for CET1 capital, including a stress capital buffer of at least 2.5%, as well as the SLR leverage buffer for G-SIBs and a capital surcharge for G-SIBs of at least 1.0%.[19] Although banks are not required to meet these buffers, they face negative consequences if they do not. This report assumes that the BHCs endeavor to operate without regulatory constraints and treats these as effective requirements.

[19] Federal Reserve, *Large Bank Capital Requirements*, August 2022, https://www.federalreserve.gov/publications/files/large-bank-capital-requirements-20220804.pdf.

Fed Stress Test Capital Requirements

The Fed's large bank capital requirements report shows how the surcharges add up to create a higher effective capital requirement. The Fed's stress test uses the standardized approach.[20] The analysis in this section uses the CET1 requirements from the stress test as a basis for many comparisons.[21] Later on in this report, comparisons will be made to Tier 1 capital requirements using a proxy that CRS created.[22] While this is not a perfect proxy for Tier 1 capital, it will make for a generally useful comparison later on in the report. **Figure 2** shows how much additional CET1 over the minimum requirements (4.5% of RWA)[23] each BHC would need in order to meet its buffer requirements determined by the stress test.[24] For example, Credit Suisse, the first BHC listed, would need additional CETI equal to 200% of the minimum 4.5% requirement (i.e., an additional 9%), for a total CETI requirement of 13.5%. The total stress test buffers resulted in most BHCs having a total CET1 requirement between 7% and 13%, indicating that the minimum requirement plays a small role in determining how much CET1 capital a BHC needs to hold to avoid restrictions on its activities.

[20] Federal Reserve, *2022 Supervisory Stress Test Methodology*, March 2022, https://www.federalreserve.gov/publications/files/2022-march-supervisory-stress-test-methodology.pdf.

[21] Federal Reserve, *2022 Federal Reserve Stress Test Results*, June 23, 2022, https://www.federalreserve.gov/publications/files/2022-dfast-results-20220623.pdf.

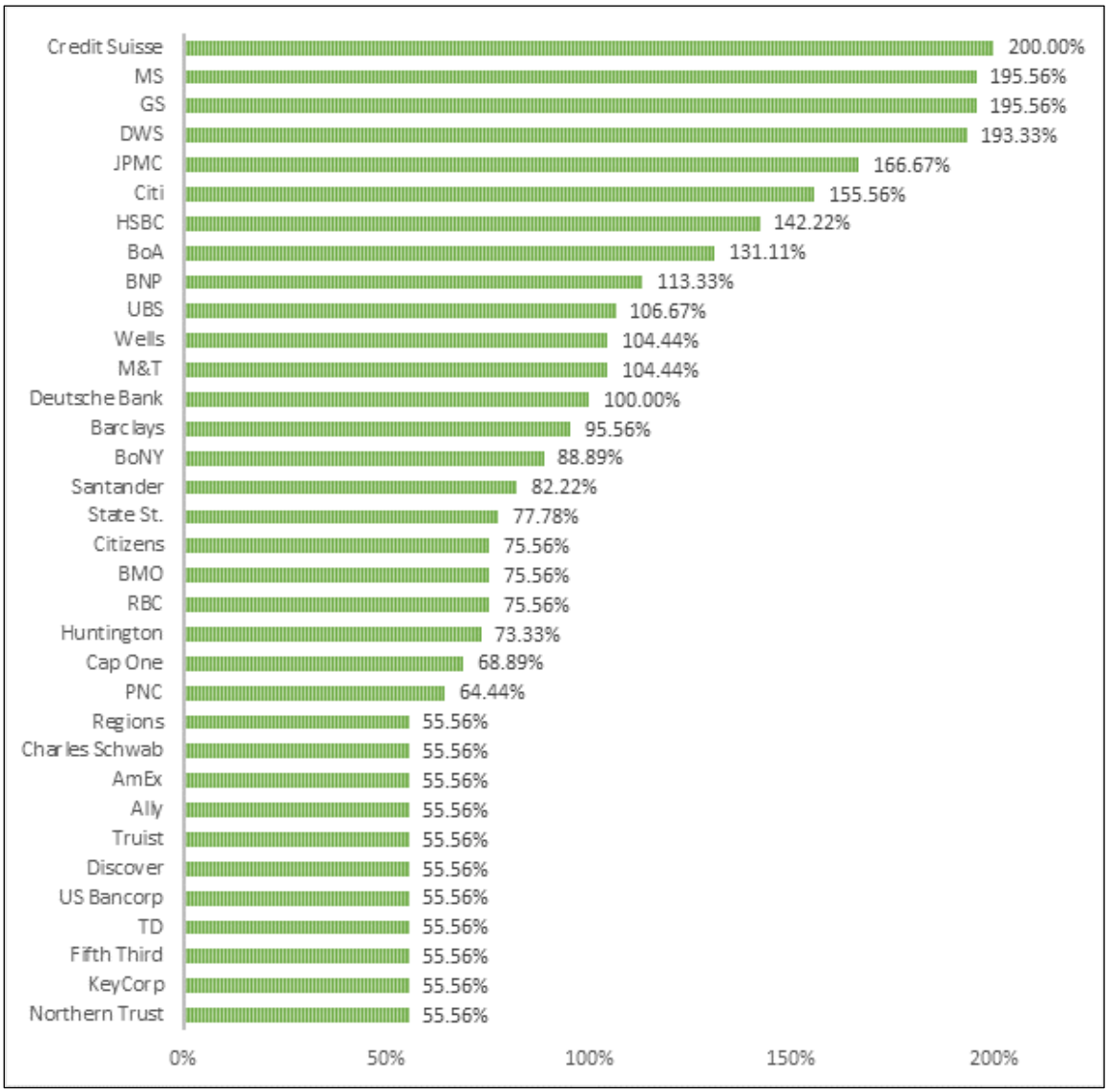
[22] CET1 levels at the BHCs in this report are about 90% of the BHCs' Tier 1 capital, thus making such a proxy useful.

[23] This calculation compares 4.5% of standardized approaches RWA to the stress-test ratio.

[24] Including the G-SIB surcharge where applicable.

Figure 2. Additional CET1 Required to Meet Buffer

% over the 4.5% CET1 Minimum Requirement



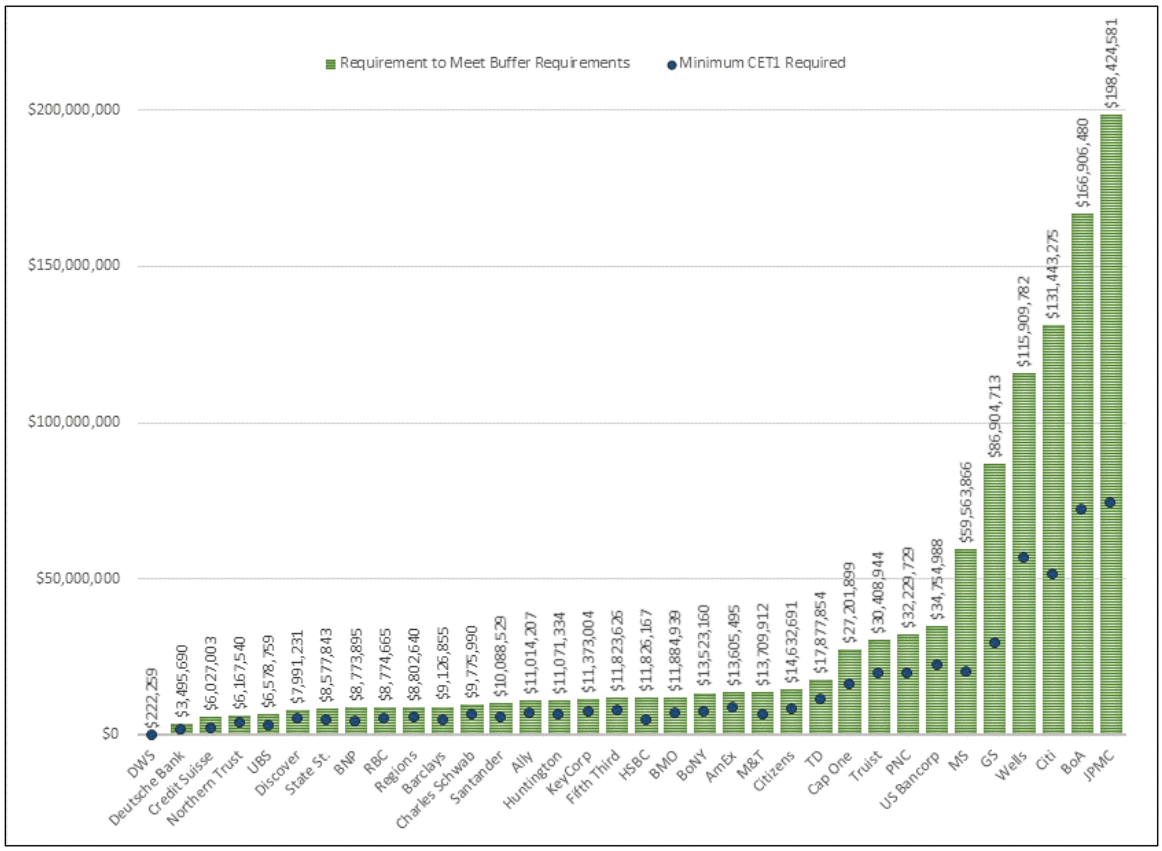
Sources: CRS analysis of Y9-C data and Federal Reserve stress test data.

Notes: Minimum CET1 required is defined as 4.5% of standardized approaches RWA. Requirement to meet buffer requirements is defined as the CET1 required by the stress test by the standardized approaches RWA. Note that the requirement for advanced approaches banks is slightly different. Advanced approaches banks must meet a minimum 4.5% CET1/RWA plus a 2.5% CET1/RWA stress capital buffer and any applicable G-SIB surcharge. In addition to the numerator being different, the denominator is slightly different as well, as advanced approaches banks calculate their RWA with a different model than the standardized approach.

The above analysis shows the risk-weighted CET1 capital requirements for BHCs using the standardized approach to calculating RWA. **Figure 3** shows the requirements based on a standardized approach estimate by CRS using regulatory data and the results of the 2022 stress test. Particularly at the largest banks, buffer requirements are a significant portion of the overall amount of CET1 required.

Figure 3. Estimated CET1 Requirements

CET1 Minimum and Buffer Requirements (Dollars in Thousands)



Source: CRS analysis of Y9-C data.

Notes: CRS used standardized approaches RWA calculations.

However, BHCs are also subject to other capital requirements that are divorced from RWA and instead are based on size. The next section examines leverage requirements.

Leverage Capital Requirements

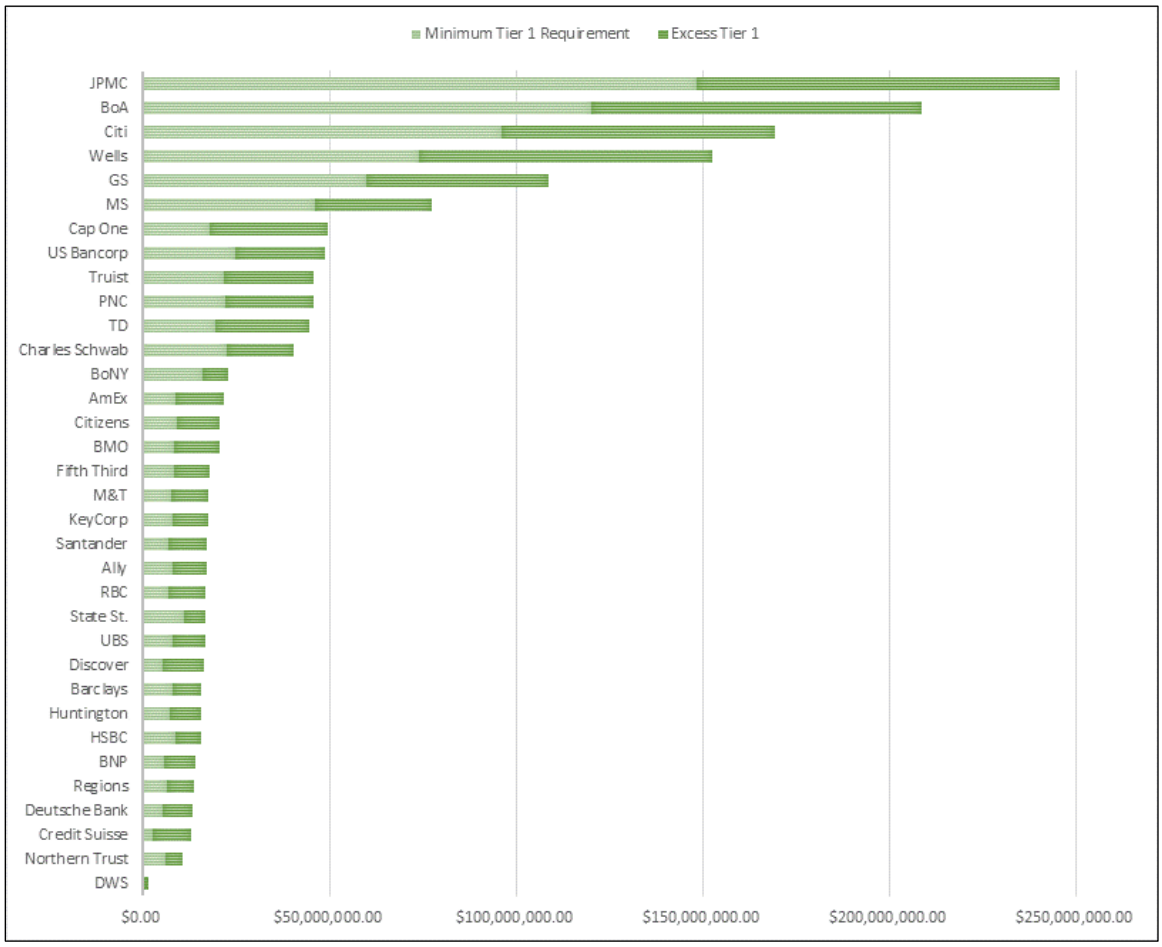
Leverage requirements compel banks and BHCs to hold capital in relation to their size rather than the risk of their asset portfolios. Regulators set a few different leverage requirements that must be met in addition to the risk-based standards they set. For example, BHCs must maintain a minimum leverage ratio of 4%.[25] The leverage ratio is defined as Tier 1 capital[26] as a percentage of average total consolidated assets. To calculate each BHC's leverage requirements, CRS calculated 4% of the BHC's "total assets for leverage ratio" as reported on its Y9-C form. Each BHC's Tier 1 holdings is demonstrated in **Figure 4**.

[25] 12 C.F.R. §217.10 (Part 217, Subpart B).

[26] The Fed's regulation instructs BHCs to use their CET1 plus additional Tier 1 capital. "Additional Tier 1 capital" comprises "additional Tier 1 capital instruments plus related surplus, non-qualifying capital instruments subject to phase out from additional Tier 1 capital, Tier 1 minority interest not included in common equity Tier 1 capital, less deductions from additional Tier 1 capital."

Figure 4. Tier 1 Capital Held vs. Leverage Ratio Requirement

Tier 1 Capital Held (Dollars in Thousands)



Source: CRS analysis of Y9-C data.

Notes: Lighter bar represents Tier 1 needed to meet 4% leverage ratio. Darker bar represents the total amount of Tier 1 capital held by the BHC.

As can be seen above, BHCs typically hold sufficiently high amounts of Tier 1 capital such that they exceed their minimum Tier 1 leverage requirements by a significant margin. Part of the reason for this is that several BHCs are subject to additional Tier 1 leverage requirements, as explained below.

Supplementary Leverage Ratio and Leverage Buffer Requirements

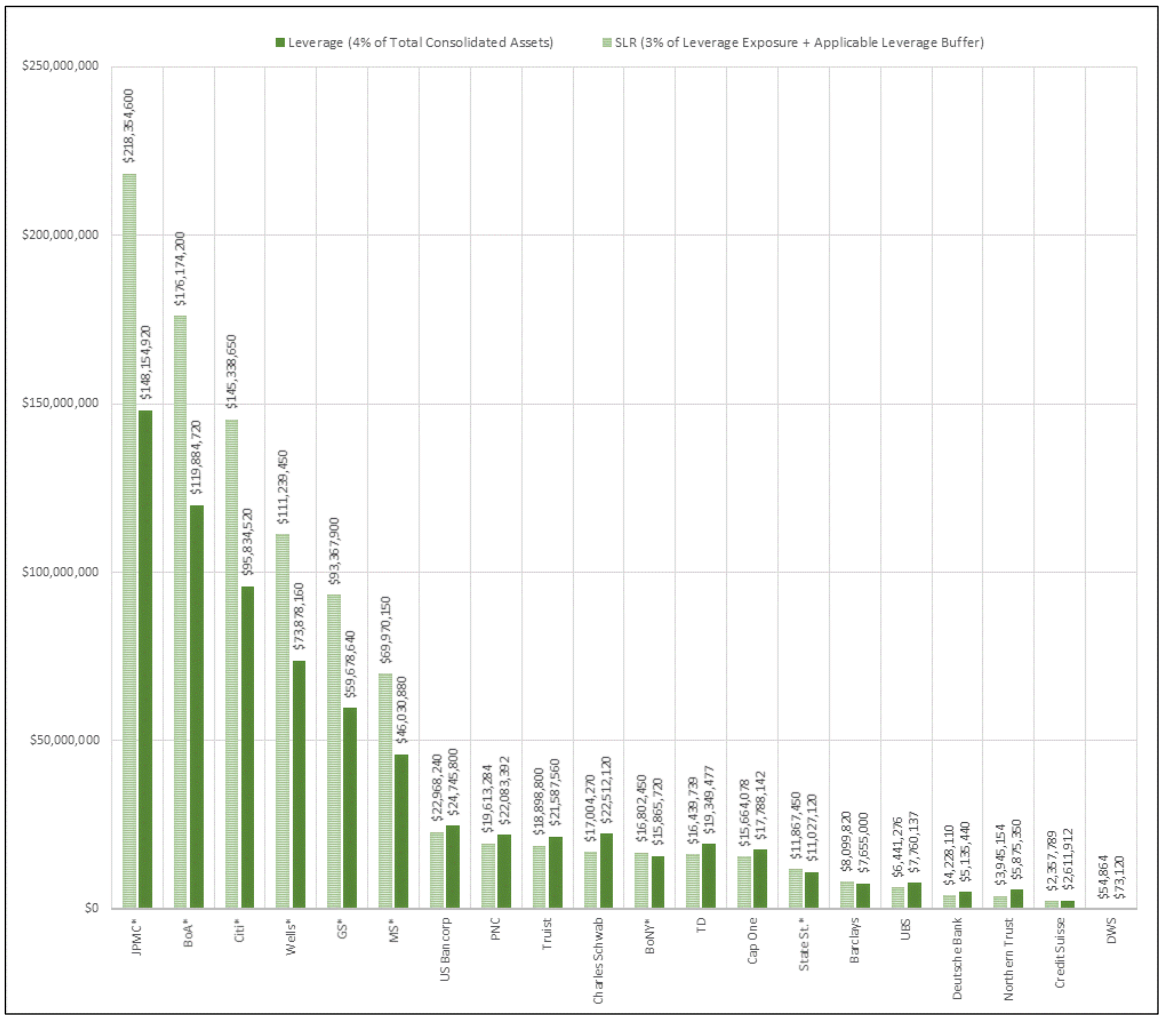
The Fed requires certain BHCs[27] to hold a minimum 3% SLR, and the G-SIBs are required to hold an additional 2% to avoid restrictions on their operations. (This 2% is referred to as the "leverage buffer," though it applies to the SLR, not the 4% leverage requirement.) The SLR is defined as Tier 1 capital as a percentage of "total leverage exposure," defined as the sum of on-

[27] Specifically, advanced approaches BHCs and Category III BHCs are required to meet the SLR. According to the Fed, Category III institutions include those with more than $250 billion in total assets or more than $75 billion in nonbank assets, wholesale funding, or off-balance-sheet exposure. For more information, see Board of Governors of the Federal Reserve System, *Supervision and Regulation Report*, November 2022, p. 40, https://www.federalreserve.gov/publications/files/202211-supervision-and-regulation-report.pdf.

balance-sheet assets and off-balance-sheet exposures. There are 20 BHCs that reported SLR data in Q4 2022. **Figure 5** below shows the amount of Tier 1 capital each of the 20 BHCs that face the SLR must hold to meet both its leverage requirements and its SLR requirements.[28]

Figure 5. Binding Leverage Requirement

Tier 1 Capital Required (Dollars in Thousands)



Source: CRS analysis of Y9-C data.

Notes: Lighter bar represents the SLR. The * indicates a BHC that is bound by the eSLR (5% of leverage exposure), whereas the other BHCs are bound by a 3% SLR. The darker bar represents the standard leverage requirement. The greater of the two bars is the binding leverage requirement.

Among the 20 BHCs that report both leverage and SLR data, nine were required to hold more Tier 1 capital to meet their SLRs than their leverage requirements. Most of these, particularly the BHCs with the largest leverage requirements, are the G-SIBs.

[28] The 4% leverage requirement has a different denominator than the 3% or 5% SLR requirements, so it is possible that the leverage requirement compels the BHC to hold more Tier 1 capital than the SLR does.

Comparing Risk-Based and Size-Based Requirements

This section explores a way to compare risk-based requirements and leverage requirements to see whether BHCs are structuring their capital based on risk or size. Recall from above that the BHC risk-weighted buffers are set in terms of CET1, while the leverage requirements are set in terms of Tier 1 capital.[29]

The analysis in this report compares the highest CET1 requirement (inclusive of buffers and surcharges) to the most stringent leverage or SLR requirement (inclusive of leverage buffers).[30]

Despite this, comparing Tier 1 to CET1 is comparing "apples to oranges" in a sense, as Tier 1 includes CET1 (see footnote 6). There needs to be some adjustment to make a comparison more suitable. To do this, CRS created a proxy[31] so that risk-weighted Tier 1 capital requirements and leverage Tier 1 capital requirements could be compared more directly using the following calculations:

1. Risk-weighted Tier 1 capital proxy: BHC Tier 1 requirement + [CET1 capital buffer + CET1 G-SIB surcharge], where
    a. BHC Tier 1 requirement = 6% of RWA, and
    b. CET1 buffers and surcharges are derived from the Fed's stress test.

To put this in context, **Figure 6** shows the risk-weighted Tier 1 proxy requirement estimated by CRS and the higher Tier 1 leverage/SLR requirement as reported in regulatory filings. With the new risk-weighted Tier 1 proxy requirement, eight BHCs out of the 34 studied still had leverage requirements that exceeded their risk-weighted requirements. What is potentially interesting here is that Bank of America and J. P. Morgan, both of which faced higher Tier 1 leverage requirements when compared to risk-weighted CET1 requirements, are bound by the risk-weighted requirement when the proxy is used.

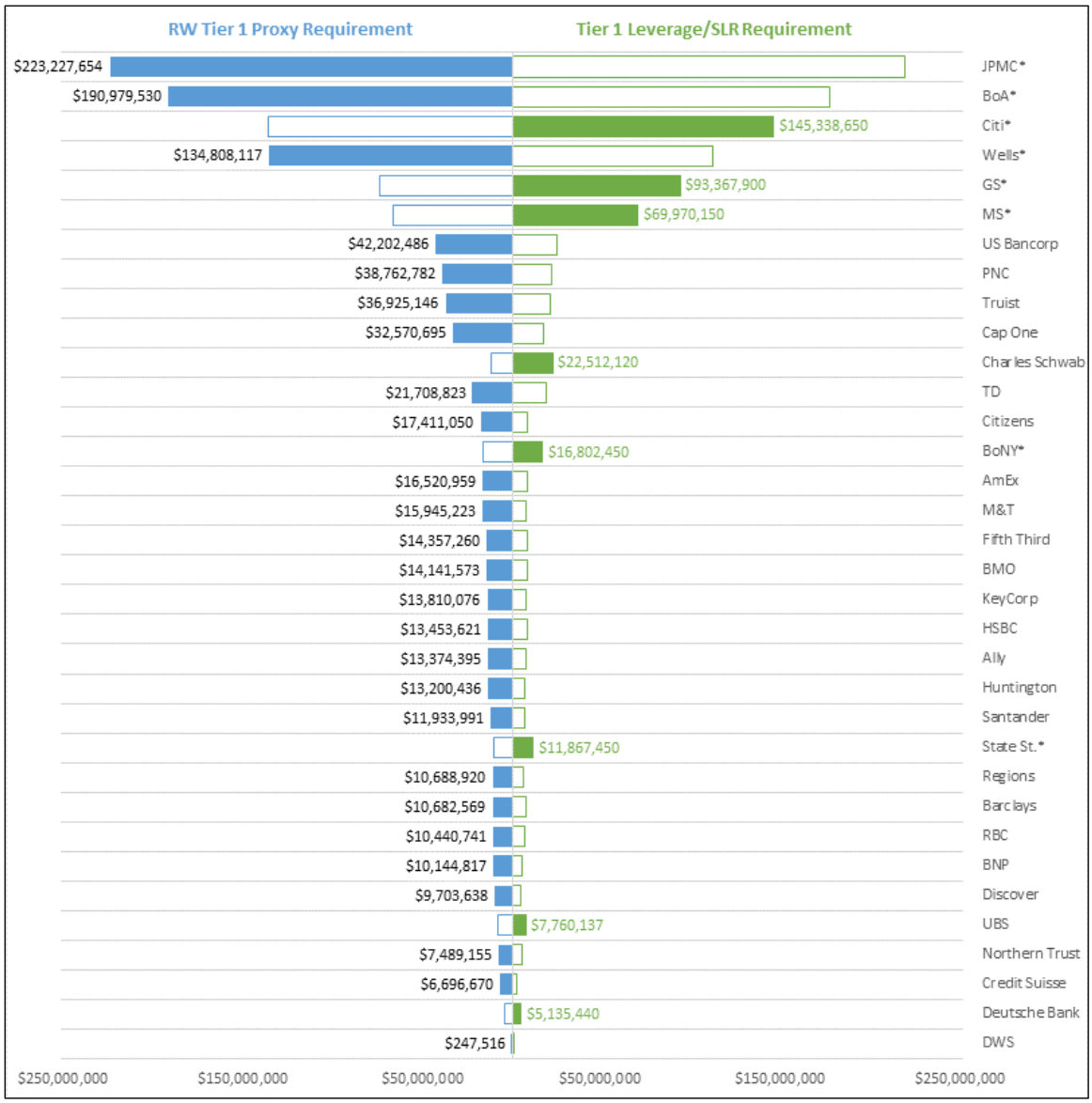
[29] While Tier 1 comprises CET1 and other elements, a bank is allowed to structure 100% of its Tier 1 as CET1.

[30] Risk-weighted CET1 requirements exceeded the Tier 1 leverage or SLR requirements for 23 of the 34 BHCs. Of the 11 BHCs that have higher Tier 1 leverage or SLR requirements, seven are subject to the SLR and leverage buffer requirement. This is perhaps logical given that those banks face a requirement equal to 5% of the generally largest denominator (total leverage exposure).

[31] CRS considers this proxy reasonable as CRS found that the BHCs studied generally held around 90% of their Tier 1 capital as CET1.

Figure 6. Approximated Overall Binding Requirement

Tier 1 Capital, Estimated in Thousands of Dollars



Source: CRS analysis of Y9-C data.

Notes: Solid bar reflects the "binding requirement." Blue represents risk-weighted requirements, and green represents leverage-based requirements.

Yet still, this does not tell the whole story. BHCs and their depository subsidiaries face different requirements for their leverage capital ratios. Because of this disparity, BHCs might actually have to hold additional capital over their statutory requirements in order to account for the subsidiaries' requirements. The following section examines the potential influence that subsidiary-level leverage ratios may have on BHC Tier 1 capital.

Commercial Bank Influence on BHC Tier 1 Capital

Presumably, bank subsidiaries will want to hold enough capital to be considered "well capitalized." This is because increasingly stringent restrictions are placed on banks that are less

than adequately capitalized in order to restore their capital levels. Institutions that are adequately capitalized or better are not subject to supervisory action regarding their capital positions.[32] However, an institution that is undercapitalized, significantly undercapitalized, or critically undercapitalized is subject to the following provisions, according to the FDIC:[33]

- It cannot approve capital distributions.
- It must submit a capital restoration plan to the FDIC.
- Its asset growth is restricted.
- It is restricted from engaging in acquisitions, branching, or new lines of business.

Significantly and critically undercapitalized institutions face additional provisions, which can include recapitalization through sale of voting shares, transaction restrictions, and interest rate restrictions paid on deposits. Critically undercapitalized institutions are further prohibited from engaging in certain transactions, amending their bylaws or charters, and making excessive bonuses or compensation. A critically undercapitalized bank may ultimately be taken into FDIC resolution, where it is likely to be liquidated or sold to a healthier institution.[34]

Assuming a depository subsidiary structures its capital to be "well capitalized," it is theoretically possible that a BHC subsidiary has sufficiently high enough capital requirements that it actually pushes the BHC requirement higher. For example, consider the banking subsidiaries subject to the leverage ratio and SLR.[35] To examine the impact a subsidiary might have on its BHC, CRS looked at a select list of 12 Category I-III BHC's and their largest depository subsidiaries.[36]

To carry out the analysis, CRS first examined the leverage and SLR requirements for each of the 12 commercial bank subsidiaries. For the banks in this study to be considered well capitalized, commercial banks are required to meet a leverage requirement of 5% of total consolidated assets (compared to 4% at the holding company level), and G-SIBs are required to meet a minimum SLR of 6% of leverage exposure (compared to 5% at the holding company level). The amount of capital required under the generally applicable leverage requirement of 5% exceeded the SLR except when the bank was a G-SIB subject to the 6% enhanced SLR (eSLR). (See **Table 2**.)

[32] There are no regulatory penalties for being adequately capitalized. However, to avoid the capital restrictions associated with failing to meet the Capital Conservation Buffer (see main text), banks would need to exceed the well-capitalized risk-weighted standards under the Prompt Corrective Action framework. Regulators also evaluate for capital adequacy as part of their supervisory exams, so banks might seek to maintain well-capitalized status to avoid any negative effect on their CAMELS ratings. For background on bank supervision, see CRS Report R46648, *Bank Supervision by Federal Regulators: Overview and Policy Issues*, by David W. Perkins.

[33] FDIC, *Formal and Informal Enforcement Actions Manual*, "Chapter 5—Prompt Corrective Action," June 2022, p. 5, https://www.fdic.gov/regulations/examinations/enforcement-actions/ch-05.pdf.

[34] FDIC, *Formal and Informal Enforcement Actions Manual*, p. 5.

[35] The SLR applies to subsidiaries of G-SIBs as well as Category II and Category III institutions. For more on the categories, see Federal Reserve, *Supervision and Regulation Report*, p. 40.

[36] CRS limited the analysis to subsidiaries with assets that comprise at least two-thirds of the BHC consolidated assets. This list comprises the following BHCs: Bank of America, Bank of New York Mellon, Capital One, Citigroup, JPMorgan Chase, Northern Trust, PNC, State Street, TD Group, Truist, U.S. Bancorp, and Wells Fargo. The full list of BHCs can be found at https://www.ffiec.gov/npw/Institution/TopHoldings, and their subsidiaries can be found at https://www.federalreserve.gov/releases/lbr/current/.

Table 2. Maximum Subsidiary Estimated Tier 1 Leverage Requirement

Tier 1 Capital Required (Thousands of Dollars)

Commercial Bank	Leverage Requirement (5% of Consolidated Assets)	Supplementary Leverage Requirement (3% or 6% of Leverage Exposure)
Bank of America*	$117,886,850.00	**$167,115,600.00**
Bank of New York Mellon*	**$16,188,450.00**	$15,779,280.00
Capital One	**$22,143,073.60**	$15,599,501.16
Citibank*	$86,937,200.00	**$131,372,460.00**
JPMorgan Chase*	$162,495,600.00	**$235,530,120.00**
Northern Trust	**$7,323,781.75**	$3,931,484.97
PNC	**$27,290,469.40**	$19,445,164.50
State Street*	$13,661,000.00	**$14,208,480.00**
TD Bank	**$18,626,178.80**	$12,697,322.40
Truist	**$26,507,950.00**	$18,567,030.00
US Bank	**$29,261,684.80**	$21,727,635.30
Wells Fargo*	$84,270,050.00	**$123,514,080.00**

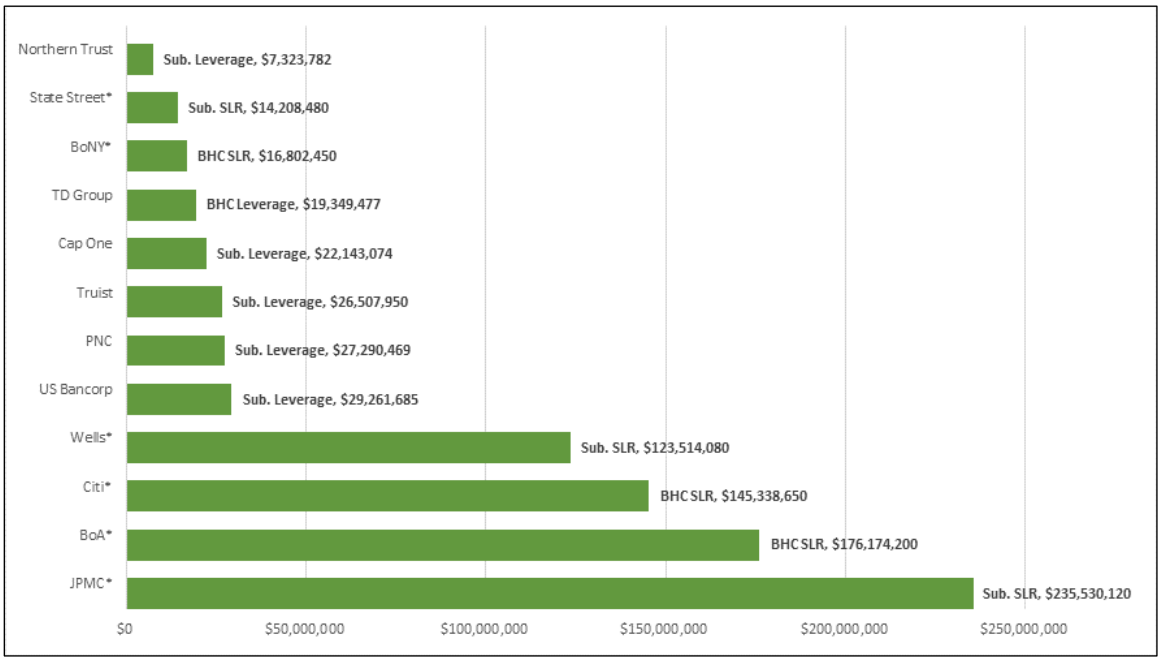
Source: CRS analysis of call report data.

Notes: Supplementary leverage requirement is either the generally applicable leverage ratio of 3% or the eSLR of 6% for G-SIBs (* indicates a G-SIB). Bold indicates the higher requirement.

The final piece of this analysis is determining the extent to which these banks influence the BHC maximum requirements for Tier 1. **Figure 7** below shows that eight of the 12 banks/BHC groups studied faced higher leverage requirements at the subsidiary level than at the BHC level, thus making the effective BHC leverage requirement the same as the subsidiary leverage requirement.

Figure 7. Effective Binding Leverage Requirement at BHC Level

Subsidiary or BHC Requirement (Thousands of Dollars)



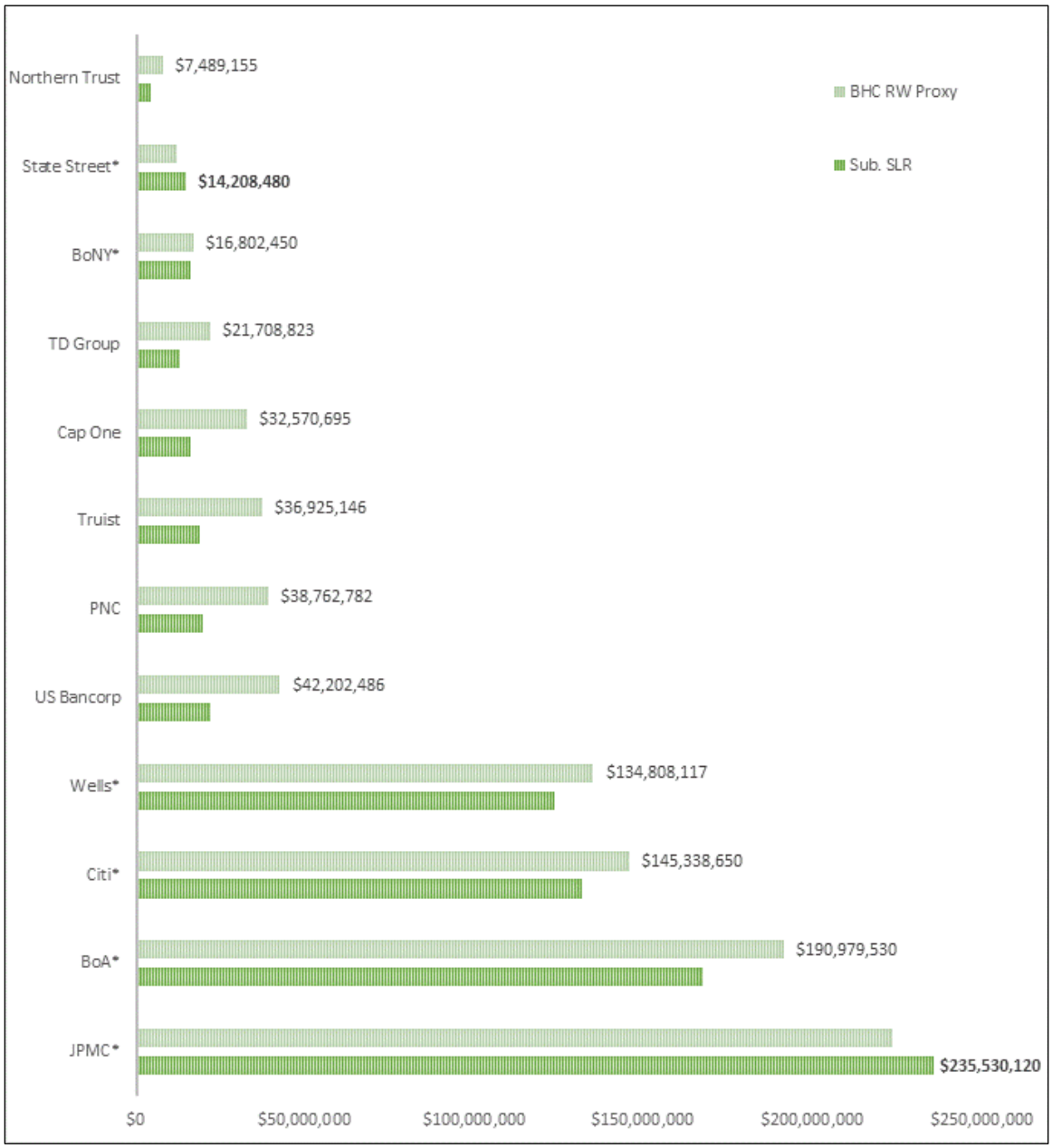
Sources: CRS analysis of call report and Y9-C data.

Notes: * indicates a G-SIB. Green bars represent the binding leverage requirement at the BHC and subsidiary levels.

Figure 8 shows that the risk-based requirements are likely still driving capital formation among the largest institutions at the BHC level. This weakens the claim that leverage requirements are binding and suggests that capital is still generally linked to risk—at least insofar as the regulators assess risk.

Figure 8. Estimated Binding Requirement

Tier 1 Capital Required (Thousands of Dollars)



Sources: CRS analysis of call report and Y9-C data.

Notes: * indicates a G-SIB. Lighter shaded bars represent the proxy risk-weighted calculation at the BHC level. Darker shaded bars represent the estimated leverage requirement, accounting for subsidiary levels. Bold numbers indicate where a leverage binding requirement is present. Note that in 2020, the federal banking agencies implemented a final rule that allowed custody banks to exempt certain assets from the SLR, which may impact the actual binding requirements for banks that hold large amounts of assets-under-custody in relation to their total assets such as BoNY and State Street. The rulemaking can be found in the *Federal Register* at OCC, Fed, and FDIC, "Regulatory Capital Rule: Revisions to the Supplementary Leverage Ratio to Exclude Certain Central Bank Deposits of Banking Organizations Predominantly Engaged in Custody, Safekeeping, and Asset Servicing Activities," 85 *Federal Register* 4569, January 27, 2020.

Policy Implications

While this analysis is limited in scope, looks only at year-end 2022, and relies on estimates and proxies, the following findings of this report have implications for policymakers:

- Large BHCs hold CET1 levels well in excess of their minimum CET1 requirements and are likely to meet buffer requirements in order to avoid restrictions on their activity.
- Large BHCs hold Tier 1 levels well in excess of their minimum leverage requirements. This is likely driven by bank subsidiary leverage or SLR requirements.
- Ultimately, it is likely that binding requirements are still tied to risk rather than size, although large BHC subsidiaries may face sufficiently high leverage requirements to affect overall BHC capital structure.

Given that the amount of capital required under risk-weighted and leverage ratios was very close for a number of other institutions, especially the G-SIBs, there is a possibility that more banking organizations could be bound by leverage requirements in the future. This is potentially a meaningful finding for Congress, particularly in its oversight role with respect to banking regulators, who may wish to keep bank capital structure in line with the tenets of risk-management policies (i.e., more capital for more risk).

If regulators are concerned about the largest institutions making capital structure decisions in a manner that is inconsistent with the purpose of the established risk-based framework, they could seek to calibrate leverage and risk-based requirements. For example, among the largest institutions, regulators could lower the SLR so that the amount they are currently required to hold under risk-weighted requirements becomes the binding one. Alternatively, risk-based requirements could be raised to return them to the binding constraint.

Regulators have debated revising capital rules to address this issue but have not implemented any changes to date.[37] To the extent the size of the institution—rather than the risk of its assets—is driving capital structure, Congress may wish to consider whether additional measures are needed to ensure that the policy goals of prudential regulation remain in line with the outcomes generated by the existing framework.

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[37] See the "Large Bank Issues" section of CRS Report R47447, *Bank Capital Requirements: A Primer and Policy Issues*, by Andrew P. Scott and Marc Labonte.

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