

A low-angle, black and white photograph of several tall skyscrapers reaching towards the sky. The perspective is from a low vantage point, looking up at the buildings. The sky is a uniform light gray. A flag is visible on a pole in the distance between the buildings.

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Basel III Endgame Blog Series



Part I: Our Series on US Bank Capital Requirements

Understanding the Current Regulatory Capital Requirements Applicable to US Banks

- In this, the first of a series of blogs on prudential requirements and their impacts, we discuss revisions to bank capital requirements to increase both the quality of capital and the quantum of capital in the system that occurred in the wake of the Great Financial Crisis.
- As we describe in this blog, these reforms have led to U.S. bank capital levels that are now extraordinarily robust relative to their pre-crisis levels.
- While this has undoubtedly made the banking system safer, it also comes with costs to the real economy and capital markets, including on retail investors and end users such as corporates.
- Policymakers must weigh these costs against the benefits of yet further reforms envisioned to the capital framework as part of the so-called “Basel III Endgame” framework. We will discuss the Basel Endgame framework and its impacts in more detail in future blogs.

Background

In response to the 2008-09 Great Financial Crisis, the Basel Committee on Banking Supervision (BCBS), as well as national authorities, instituted a series of wholesale reforms to the pre-crisis prudential regulatory framework. The revisions put in place:

- heightened capital requirements;
- new minimum liquidity requirements;
- new margin requirements;
- stress testing requirements;
- single counterparty credit exposure limits;
- strict limits on proprietary trading;
- mandated greater use of central clearing;
- created new mechanisms to ensure orderly resolution of financial firms, such as Total Loss Absorbing Capacity (TLAC) capital and resolution planning requirements;
- and generally led to enhanced on-going supervision of large banks.

All these measures were designed to work in tandem to dramatically reduce the likelihood of a major bank failing, as well as limit cross-institutional contagion that could result in another banking crisis. As a result of this enhanced prudential framework, all domestic and internationally active banks came out the deep market downturn induced by the COVID-19 pandemic unscathed.

In this, the first of a series of blogs on prudential requirements and their impacts, we discuss what is often seen to be the most important element of these post-crisis reforms: revisions to bank capital requirements to increase both the quality of capital and the quantum of capital in the system. We note that as a result, U.S. bank capital levels are now extraordinarily robust relative to their pre-crisis levels. While this has undoubtedly made the banking system safer, it also comes with costs to the real economy and capital markets. Policymakers must weigh these costs against the benefits of yet further reforms envisioned to the capital framework as a result of the “Basel III Endgame” (hereafter referred to as the “Basel Endgame” framework), which will be the subject of a proposed rulemaking by the U.S. banking agencies this year (and will be the subject of future blogs).

The BCBS began a process to comprehensively revise global bank capital standards in 2010. The objectives of these revisions were first to increase the quantum of capital in the banking system and second to decrease variation between banks in the way risk-based capital charges were calculated (and thereby facilitate better supervisory oversight on banks' risk measurement and management). The first set of revisions, commonly referred to as "Basel III," were finalized by the BCBS in 2011 and were aimed at addressing capital quality and inadequacy resulted from the framework in place pre-crisis.¹ The Basel III framework was implemented in the U.S. in 2013 and is described in greater detail in this blog. The goal of the second set of reforms package, "Basel Endgame", was to reduce the excessive variability across capital requirements and was finalized by the BCBS in 2017.² The European Union and the United Kingdom, among other jurisdictions, have published proposed rules seeking to implement the Basel Endgame framework. The U.S. Notice of Proposed Rulemaking (NPR) implementing the Basel Endgame framework is expected to be released in the coming months.

Current U.S. Capital Requirements: A Brief Primer

Current U.S. regulatory capital rules subject large banks to risk-based capital (RBC) requirements, leverage capital requirements (including U.S. leverage ratio and supplementary leverage ratio or SLR), and additional capital buffers including the Stress Capital Buffer (SCB) for banks subject to the Federal Reserve Board's Comprehensive Capital Analysis and Review (CCAR) requirements, capital conservation buffer (CCB) for banks not subject to CCAR requirements, and the Countercyclical Capital Buffer (CCyB)³. The SCB is a U.S. specific regulatory capital add-on to the minimum capital requirements set out by the Basel standards and is the result of integrating CCAR requirements into the regulatory capital rules. In theory, a bank that does not maintain capital ratios above its minimums plus its buffer requirements faces restrictions on its capital distributions and discretionary bonus payments. But in practice, due to the punitiveness of the restrictions and market perception, the buffers requirements are de facto minimum requirements.

For purpose of risk-based capital requirements, the current capital rules provide two approaches for calculating risk-weighted assets (i.e., the denominator of the RBC ratios) – the "Advanced Approaches" and the "Standardized Approach".

In addition, U.S. global systemically important banks (GSIBs) are also subject to GSIB surcharge which is computed using a U.S.-specific method that generally results in a higher GSIB surcharge than the BCBS internationally agreed method. U.S. GSIBs are also subject an SLR buffer – the enhanced SLR requirements (eSLR), and total loss-absorbing capacity (TLAC) requirements. The current capital rules group banks into five risk-based tiers (or categories) based on a set of risk-based indicators.^{4,5} The eight U.S. GSIBs occupy the first tier (or Category I) and gradually less systemically important banks populating the remaining 4 categories as shown in Table 1. Applicable regulatory capital requirements are tailored to each category with the most stringent requirements applied to Category I banks (see Table 1).

¹ <https://www.bis.org/publ/bcbs189.htm>

² https://www.bis.org/basel_framework/index.htm?m=2697

³ Note that the U.S. has not activated CCyB, but other jurisdictions have (e.g., Sweden).

⁴ The set of risk-based indicators is comprised of size, interconnectedness, cross-jurisdictional activity, substitutability, and complexity.

⁵ <https://www.ecfr.gov/current/title-12/chapter-II/subchapter-A/part-252>

Table 1. Minimum Capital Requirements Under the Current U.S. Regulatory Capital Rules.

Minimum Capital Requirements	Bank Categories ⁶				
	Category I	Category II	Category III	Category IV	Other
Risk-Based Capital					
• Advanced Approaches	✓	✓	X	X	X
• Standardized Approach	✓	✓	✓	✓	✓
• Stress Capital Buffer	✓	✓	✓	✓	X
• Countercyclical Capital Buffer	✓	✓	✓	X	X
• GSIB Surcharge	✓	X	X	X	X
Leverage Capital					
• U.S. Tier 1 Leverage Ratio	✓	✓	✓	✓	✓
• Supplementary Leverage Ratio	✓	✓	✓	X	X
• Enganced Supplementary Leverage Ratio	✓	X	X	X	X
Total Loss Absorbing Capacity					
• TLAC	✓	X	X	X	X

As depicted in Figure 1, under the current capital rules, the largest U.S. banks must calculate and comply with up to 19 capital ratios and buffers requirements altogether:⁷

- 6 risk-based capital ratios (i.e., Common Equity Tier 1 or CET1 ratio, the tier 1 capital ratio, and total capital ratio; each calculated under both Advanced Approaches and Standardized Approach);
- 4 risk-based capital buffers (i.e., SCB, CCB, CCyB, and GSIB surcharge);
- 3 leverage-based ratios and buffers (i.e., U.S. tier 1 leverage ratio, SLR, and eSLR); and
- 6 TLAC ratios and buffers (i.e., the risk-based TLAC ratio, the TLAC buffer, the eligible long-term debt or LTD ratio, the leverage-based TLAC ratio, the leverage-based TLAC buffer, and eligible LTD leverage ratio).

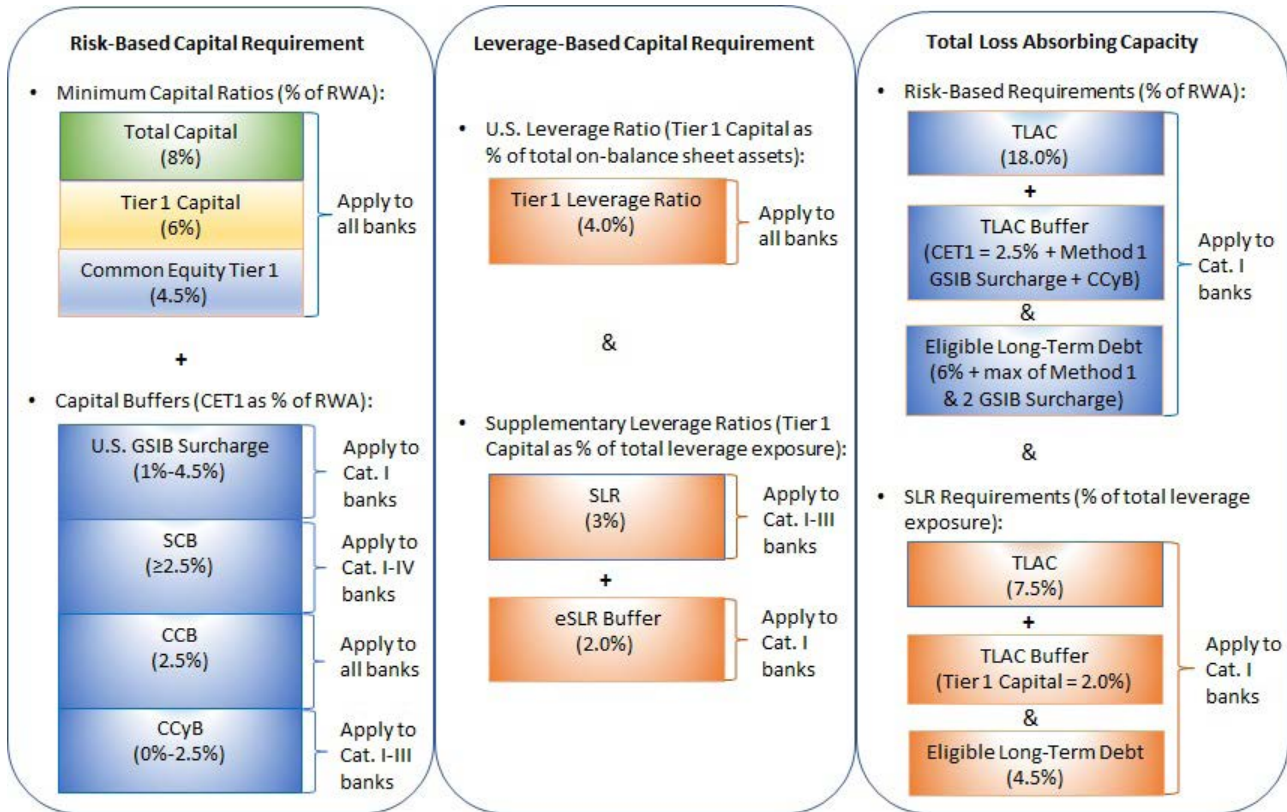
Smaller banks are subject to fewer capital ratios and buffers requirements.

⁶ The criteria for the categories are:

- Category I, U.S. GSIBs;
- Category II, ≥\$700bn total assets or ≥\$75bn in cross-jurisdictional activity;
- Category III, ≥\$250bn total assets or ≥\$75bn in nonbank assets, wSTWF (weighted short-term wholesale funding), or off-balance sheet exposure;
- Category IV, others banks with \$100bn to \$250bn total assets;
- Other, \$50bn to \$100bn total assets

⁷ All Insured Depository Institutions (IDIs) are required to comply with Prompt Correction Action (PCA) which restricts or prohibits certain activities for all IDIs and establishes a framework of supervisory actions for IDIs that are not Adequately Capitalized. Under PCA, capitalization adequacy is assessed based on 4 capital ratios – 3 risk-based capital ratios and 1 U.S. tier 1 leverage ratio. <https://www.federalreserve.gov/publications/2018-11-supervision-and-regulation-report-appendix-a.htm>

Figure 1. Minimum Risk-Based Capital, Liquidity and TLAC Requirements Under the Current U.S. Regulatory Capital Rules⁸



Despite being part of larger global organization, the U.S. intermediate holding company (IHC) of foreign banks operating in the U.S. must also meet U.S. capital standards. Foreign banking organizations (FBOs) U.S. IHCs are subject to U.S. risk-based capital requirements, different leverage capital requirements including the SLR, and additional capital buffers including the SCB and CCyB, depending on their risk-based tier. These capital charges are in addition to the capital standards that foreign banks are subject to within their home jurisdictions.

In addition to this vast array of different capital ratio requirements, there are also differences between banks that are subject to the Advanced Approaches versus those that only use the Standardized Approach to calculating risk-based capital. The Advanced Approaches permit the use of banks' internal models, whereas the Standardized Approach generally disallow internal models. The use of internal models allows for more accurate capture of risks, with capital requirements that more closely correspond to a bank's risk profile. However, they inherently also lead to greater variability in capital requirements between banks. Reducing this variability is the key objective of the Basel Endgame framework, a topic that we will cover in the follow-up blogpost.

Pursuant to the Collins Amendment of the Dodd-Frank Act,⁹ the so-called "Collins Floor", Advanced Approaches banks (Cat. I and Cat. II banks) must calculate each of the different risk-based capital ratios under both the Advanced Approaches and the Standardized Approach and must use the lower of each capital ratio calculated under the two approaches to determine risk-based regulatory capital compliance.

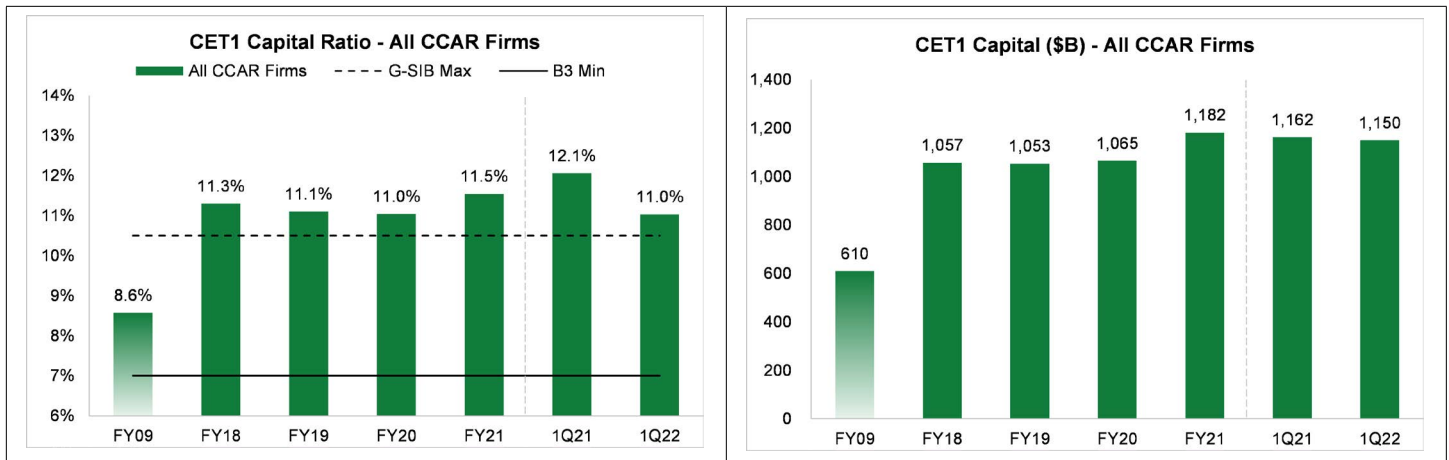
⁸ Note that Internal TLAC and Eligible Long-Term Debt requirements also apply to certain Covered IHCs (that is IHCs controlled by a GSIB). Those requirements include a 16% RWA Internal TLAC + 2.5% TLAC Buffer + 6% Eligible Long-Term Debt minimum for Covered IHCs that operate under a single-point-of-entry (SPOE) resolution strategy. The equivalent numbers for Covered IHCs that operate under a multiple-point-of-entry (MPOE) resolution strategy are 18% Internal TLAC + 2.5% Buffer + 6% Eligible Long-Term Debt. The TLAC SLR requirements applicable to Covered IHCs operating under a SPOE strategy are 6% TLAC + 2.5% Eligible Long-Term Debt. For Covered IHCs operating under a MPOE strategy, the requirements are 6.75% TLAC + 2.5% Eligible Long-Term Debt. Covered IHCs are also subject to TLAC U.S. Tier 1 Leverage Ratio requirements.

⁹ The Collins Amendment requires the appropriate Federal banking agencies to establish minimum leverage and risk-based capital requirements applicable to U.S. insured depository financial institutions will also extend to US bank holding companies, US intermediate holding companies of foreign banking organizations, and systemically important non-bank financial institutions.

U.S. Bank Capital Levels Are Extraordinarily Robust

Since the current capital rules took effect in 2013, U.S. banks have built-up robust capital adequacy (both in terms of overall levels and quality of capital) and have steadfastly increased their CET1 capital levels in particular. As shown in Figure 2, the average of large U.S. banks' CET1 capital ratios and levels grew by 2.4 percentage points and in excess of 88%, respectively, since 2009.

Figure 2. Average CET1 Capital Ratios and Levels of All CCAR Firms Since 2009.



Source: SIFMA Research Quarterly.¹⁰

Policymakers are in broad agreement that both the quantum and the quality of capital in the system have improved dramatically over the past decade. Federal Reserve Board Chairman Jerome Powell observed in a February 2019 statement to U.S. House members noted that capital levels are “just right”.¹¹ Similarly, Acting Comptroller of the Currency Michael Hsu said, in May 2021, that banks’ “capital and liquidity ratios are strong”¹² and he’s generally comfortable with big banks’ capital levels.¹³ As a result of these robust capital levels and along with the certain regulatory reforms from regulators, e.g., temporary exemption of U.S. Treasury securities and central bank reserves from SLR,¹⁴ the U.S. banking system weathered the COVID-19 event and its associated severe market stresses without any bank failures, while also continuing to support the capital market and the real economy.

¹⁰ “B3 Min” indicates the minimum required CET1 ratio applicable to all banks (i.e., 4.5% + 2.5% = 7%). “G-SIB Max” indicates the maximum required CET1 ratio applicable to all banks (i.e., 4.5% + 2.5% + 3.5% = 10.5%). Note that at the time of writing the highest actual G-SIB surcharge is 3.5%. <https://www.sifma.org/wp-content/uploads/2022/03/US-Research-Quarterly-Financial-Institutions-2022-05-11-SIFMA.pdf>

¹¹ <https://www.americanbanker.com/news/capital-levels-are-just-right-powell-tells-house-members>

¹² <https://www.occ.gov/news-issuances/congressional-testimony/2021/ct-occ-2021-56-written.pdf>

¹³ <https://www.bloomberg.com/news/articles/2021-05-25/wall-street-watchdog-sees-little-need-to-ramp-up-bank-capital#xi4y7vzkg>

¹⁴ <https://www.federalregister.gov/documents/2020/04/14/2020-07345/temporary-exclusion-of-us-treasury-securities-and-deposits-at-federal-reserve-banks-from-the>

The Cost of Bank Capital

“[B]ank capital is not costless to society. If capital requirements are increased, some of those costs will be passed on to households and businesses in the real economy”.¹⁵ Many studies have documented evidence of the costs associated with higher bank capital requirements. In the context of SCB, Cortes, et al (2022) show that banks subject to stress test requirements “reduce credit supply and raise interest rates on small business loans”.¹⁶ Higher bank capital requirement has real impacts on the economy and capital markets, including on retail investors and end users as well as in the form of reduced market liquidity and higher costs for both institutional and retail investors. Campbell (2023) provides an excellent literature survey which provides additional studies demonstrating the impact of higher capital.¹⁷ Additionally, there is some evidence suggesting that higher capital requirements (specifically leverage requirements) have constrained the ability of banks to provide liquidity to important funding markets such as the U.S. Treasury market, reducing liquidity and raising costs for investors.¹⁸

Other studies attempt to identify the socially optimal bank capital level. We plan to survey this literature in future blogs. For example, when accounting for the interplay between capital and liquidity Begenau (2020) finds “the optimal capital requirement is 12.4% of risky assets.”¹⁹ Without counting additional capital, current common equity tier 1 capital alone at most banks already is around this optimal level as shown in Figure 2.

Conclusion

Currently, banks in the U.S. are subject to extraordinarily complex and stringent capital requirements, as discussed in this blog. All these measures were designed to work in tandem to dramatically reduce the likelihood of a major bank failing, and limit cross-institutional contagion that could result in another banking crisis. As a result, according to the Federal Reserve Board “the [U.S.] banking system remains strong”, and their capital and liquidity levels are “robust”.²⁰ Unsurprisingly, all domestic and internationally active banks in the U.S. proved resilient throughout deep market downturn induced by the COVID-19 pandemic. But these higher capital requirements inevitably come at some cost to both the real economy and capital markets, including retail investors and end users such as non-financial corporates. Higher capital charges have implications for the for the availability and cost of credit to businesses. Policymakers should weigh these costs against the benefits before implementing the additional reforms envisioned by the Basel Endgame package – a topic we will focus on in a subsequent blog in this series.

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¹⁵ <https://www.parliament.uk/globalassets/documents/commons-committees/treasury/correspondence/mark-carney-governor-bank-of-england-to-rt-hon-andrew-tyrie-mp-5-04-16.pdf>

¹⁶ https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3134262

¹⁷ <https://fsforum.com/news/fixing-what-ain-t-broken-the-real-and-hidden-costs-of-excessive-bank-capital-regulation>

¹⁸ For an overview, see Peter Ryan and Robert Toomey, “Improving Capacity and Resiliency in U.S. Treasury Markets: Part II,” March 30, 2021. Available at: [Improving Capacity and Resiliency in US Treasury Markets: Part II - SIFMA.](https://www.sciencedirect.com/science/article/abs/pii/S0304405X19302508)

¹⁹ <https://www.sciencedirect.com/science/article/abs/pii/S0304405X19302508>

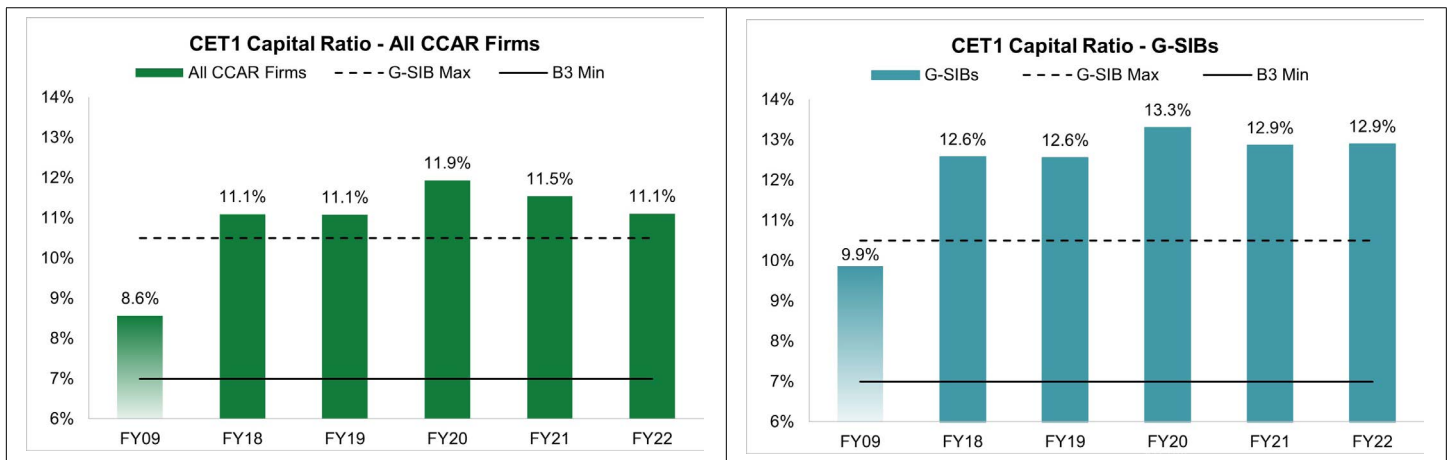
²⁰ [https://www.federalreserve.gov/publications/files/202205-supervision-and-regulation-report.pdf.](https://www.federalreserve.gov/publications/files/202205-supervision-and-regulation-report.pdf)

- In this, the second of a series of blog posts on bank capital requirements and their impacts, we discuss forthcoming changes to U.S. bank capital requirements that are likely to occur as U.S. regulators implement the Basel III “Endgame” package of reforms.
- As we described in [Part I](#) of this series, current capital rules have ensured that U.S. banks’ capital levels are now strong and robust, as evidenced by their resilience during the COVID-19 induced downturn.
- The Basel “Endgame” package will significantly increase banks’ capital requirements over-and-above their already historically high levels in the past several years, resulting in significant additional funding costs for businesses, consumers, and investors.
- Policymakers should be transparent about the costs and benefits of implementing the Basel Endgame package, taking into account the totality of prudential reforms introduced since the Great Financial Crisis (GFC).

Background

In the first part of this series, we examined the post 2008–09 Great Financial Crisis (GFC) reforms to the U.S. prudential framework for banks, with a particular focus on capital requirements. As a result of those reforms, the quality and quantity of capital in the system was dramatically strengthened, particularly in the United States. Today, U.S. banks are subject to a panoply of capital requirements – up to nineteen separate requirements in fact. These include risk-based, leverage, stress testing, and loss-absorbing capital requirements – and as a result are better capitalized than at any point in recent history (see Figure 1). As the current Federal Reserve Vice Chair for Supervision, Michael Barr, stated during his confirmation hearing, “capital and liquidity in the system is **very strong**. The rules that Congress put in place after the financial crisis make it **much less likely that such a financial firm could get itself into trouble** and in a way that would cause problems for the broader economy.”¹

Figure 1. The Average Common Equity Tier 1 (CET1) Capital Ratios and Levels of All CCAR Firms Since 2009



Source: SIFMA Research Quarterly.²

¹ <https://www.congress.gov/117/chrg/CHRG-117shrg48337/CHRG-117shrg48337.pdf>

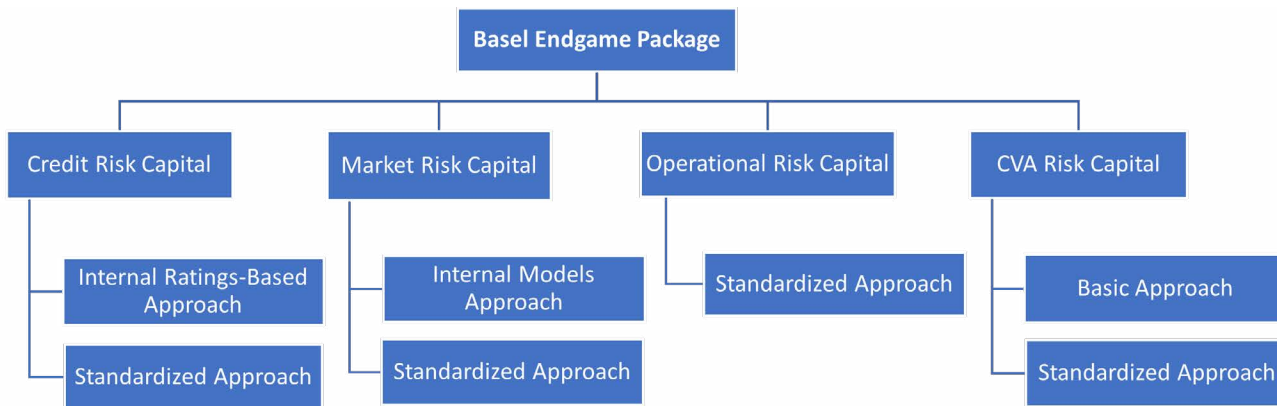
² <https://www.sifma.org/resources/research/research-quarterly-us-financial-institutions/>

While the quality and quantity of bank capital is far stronger today than it was prior to the GFC, regulators have remained concerned that the current capital standards build in too much variability in the way risk-based capital requirements are calculated across banks. To this end, the Basel Committee on Banking Supervision (BCBS) finalized revisions to its risk-based capital standards in 2019, commonly referred to as “Basel III Endgame” (hereafter referred to as the “Basel Endgame package”), which would promote greater standardization across risk-based capital requirements. Since then, national regulators have been working to implement the Basel Endgame package, with proposals issued in both the EU and the UK. The U.S. Notice of Proposed Rulemaking (NPR) implementing the reforms is due to be published by the federal banking agencies (the “Agencies”) in the coming months. Below, we take a closer look at what is in the Basel Endgame package, how it will change the U.S. capital framework and begin to discuss the potential impacts it could have on U.S. capital markets and the broader economy.

What Is In the Basel Endgame Package?

The Basel Committee has said that “[a] key objective of the [Basel Endgame package] revisions ... is to reduce excessive [non-risk-based] variability of risk-weighted assets (RWAs).”³ The source of this variability is two-fold: it arises from the differences between the internal models used by the largest banks to calculate RWAs, as well as various ambiguities embedded in the existing Basel III framework.⁴ Consequently, the Basel Endgame package sets out stricter limits on the use and operation of internal models, and prescribes clear qualitative requirements to reduce ambiguities where possible. Figure 2 depicts the key components of the Basel Endgame package.

Figure 2. Key Components of the Basel Endgame Package.⁵



In terms of the use and operation of internal models, the Basel Endgame package limits the ability of banks to use internal models as widely as they do today and creates stricter and more granular requirements for those internal models that are permitted. For example, the advanced internal ratings-based approaches will no longer be available for corporate and bank exposures. The package will also require or incentivize greater use of regulator-set standardized approaches to set capital requirements, which is achieved through a number of mechanisms, including by adding a minimum “aggregate output floor” for capital requirements calculated using the modeled approaches.

³ <https://www.bis.org/bcbs/publ/d424.pdf>

⁴ https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.trim_project_report-aa49bb624c.en.pdf

⁵ Basic approach for CVA can be viewed as a much-simplified and non-risk sensitive alternative to the Standardized Approach.

Take internal models for market risk capital requirements for example. Historically, the adequacy and robustness of the market risk models are generally validated through back-testing (BT, a process that “involves the comparison of actual outcomes with model forecasts during a sample time period not used in model development at a frequency that matches the model’s forecast horizon or performance window.”⁶). To set stricter criteria for the use of the internal models, the Fundamental Review of the Trading Book (FRTB), which reforms the way the market risk capital requirements are calculated under the Basel Endgame package, introduces an additional test – the Profit and Loss Attribution test (PLAT, which measures the adequacy of a bank’s internal models and prevents the bank from using materially inadequate internal models to calculate their capital requirements)⁷ – to complement the BT. A trading desk may use the internal models to calculate the market risk capital requirements only if it passes *both* the BT and the PLAT tests. Otherwise, the regulator-set standardized approaches must be used.

Constraining the use of internal models, placing greater reliance on the standardized approaches to set capital requirements, and adding more prescriptive qualitative criteria will result in significantly higher total risk-based capital requirements for almost all banks. For example, for large and internationally active banks, the FRTB could lead to over 63% increase in the market risk capital impacts and raise the Credit Valuation Adjustment (CVA) risk capital requirements by 7.7% according to the Basel September 2022 Quantitative Impact Study (QIS) report.⁸ These risk-based requirements capture the potential losses arising from banks’ capital market activities (e.g., trading, market making activities, underwriting, and meeting commercial end-users’ demand for hedging via derivatives).

In terms of reducing ambiguities embedded in the existing Basel III framework, the Basel Endgame package adds new, highly granular requirements designed to ensure consistent policy interpretation and implementation. A good example is the revised trading book and banking book boundary. Historically, for purpose of the market risk capital rule, whether a financial instrument was considered part of the trading book (and hence subject to the market risk capital requirements) or the banking book (and hence subject to the credit risk capital requirements) depended on whether a bank had “trading intent” for this instrument, which could be interpreted differently by different entities.

During the GFC, some banks reclassified certain trading book instruments into their banking book as a result of the severe liquidity shocks and the concomitant reductions in the “fair value” (market value) of these instruments. Such reclassifications were arguably permitted under the vague “trading intent” criteria. But they created non-risk-based variability of market risk RWAs across banks and the resulting capital requirements may not be commensurate with banks’ risks. To reduce the degree of arbitrariness and enhance clarity, reporting, disclosure and the integrity of capital requirements, the FRTB revises the trading book and banking book boundary, setting out a presumptive list detailing the instruments that must be considered as part of the trading book and those as part of the banking book.

In addition, the Basel Endgame package introduces an aggregate output floor to further limit potential capital benefits of using internal models. The output floor sets risk-based capital requirements calculated using modeled approaches at no lower than 72.5% of those required under the standardized approaches.⁹ And this only refers to risk-based capital requirements. There are also leverage ratio and other capital requirements, with the eventual binding capital requirements a bank must comply with determined by the largest of these different requirements.

How Will the Basel Endgame Package Impact the US Capital Markets?

As of end 2022, the U.S. capital markets funded nearly three quarters of all U.S. economic activity. This is a major contrast to other regions in the world, where most debt provided to non-financial corporations comes from bank loans. Figure 3 shows that the U.S. capital markets are the largest in the world, accounting for 41% of the \$118 trillion in global equity market capitalization, or \$48 trillion, and 39% of the \$123 trillion securities outstanding across the globe, or \$48 trillion. The U.S. capital markets continue to be among the deepest, most liquid and most efficient around the globe.

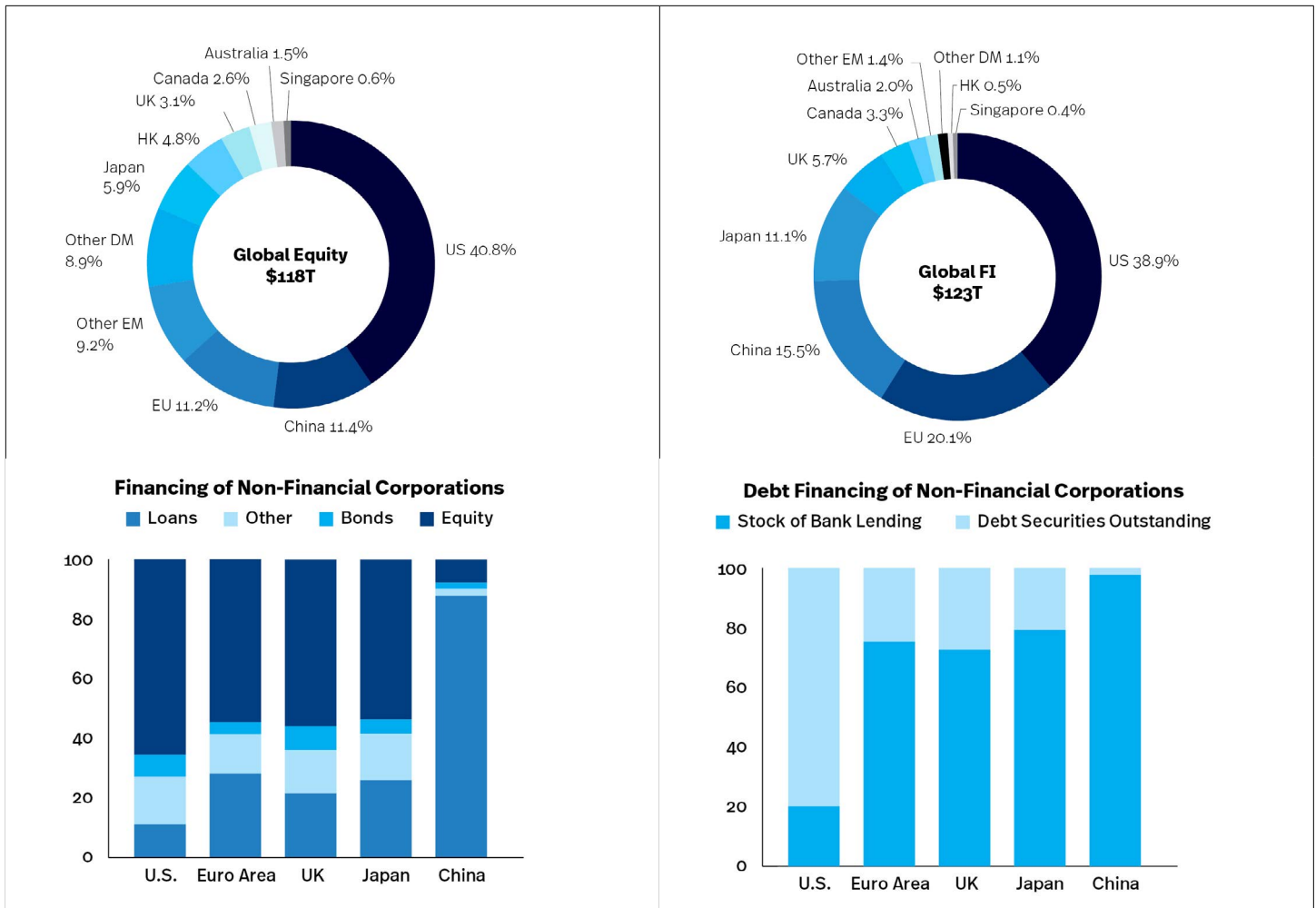
Figure 3. The U.S. Capital Markets Highlights.

6 <https://www.federalreserve.gov/supervisionreg/srletters/sr1107.htm>

7 PLAT compares a trading desk’s daily risk-theoretical P&L with the daily hypothetical P&L. Material discrepancies in the distribution of the two P&Ls indicates the inadequacy of the desk internal models in accurately reflecting the market risk of the desk’s portfolios.

8 <https://www.bis.org/bcbs/publ/d541.pdf>

9 Given the stricter criteria for internal models, introducing the aggregate output floor will add undue complexity to the capital framework and create undue burdens for banks.



Source: SIFMA 2022 Capital Markets Outlook.¹⁰

Even though they may not always be direct lenders, banks nonetheless play a critical role in facilitating capital formation and ensuring liquidity in the capital markets. The Basel Endgame package, and the FRTB in particular, will however significantly increase the capital requirements for banks’ capital markets activities and thus limit their capacity to provide liquidity support to a range of key funding markets and perform important capital markets-related activities (such as market making) on behalf of their clients.

In September 2022, the Agencies confirmed that they intended to implement “enhanced regulatory capital requirements that align with the [Basel Endgame package] issued by the Basel Committee on Banking Supervision ...”¹¹ While the Agencies are expected to implement the core elements of the Basel Endgame package, there is also an expectation, based on past experience, that they will impose super-equivalent requirements (often referred to as “gold-plating”), resulting in higher capital requirements than those contained in the Basel standards.

The expected material increase in capital requirements for U.S. banks’ capital market activities may arise from four potential sources - (1) the standalone impacts of the FRTB implementation; (2) the overlap between the FRTB and the Stress Capital Buffer (SCB) requirement;¹² (3) the interaction between the FRTB and the Collins Floor; and (4) additional constraints on the use of internal models.

The FRTB Standalone Impacts will be Significant

As discussed above, the capital requirement for market risk under the FRTB will be 63% higher than the current market

¹⁰ <https://www.sifma.org/wp-content/uploads/2022/12/2022-Capital-Markets-Outlook-FINAL-FOR-WEB.pdf>

¹¹ <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20220909a.htm>

¹² <https://bpi.com/on-the-overcapitalization-for-market-risk-under-the-u-s-regulatory-framework/>

risk rule.¹³ Additionally, the overlap between the FRTB and the SCB, the interaction between the Collins Floor and the FRTB, and any additional constraints on the use of the internal models will likely increase capital requirements even further.

The FRTB and the SCB Overlap will Lead to Double Counting Losses in a Bank's Trading Operation

The SCB is the consequence of the Federal Reserve Board's effort to simplify its capital rules for large banks by "integrat[ing] the Board's stress test results with its non-stress capital requirements."¹⁴ However, the FRTB is conceptually a stress test framework and "the revised internal models approach replaces VaR and stressed VaR with a single ES metric that is calibrated to a period of significant market stress".¹⁵ The SCB replaced the Capital Conservation Buffer (CCB), which was fixed at 2.5% and remains in place in all other BCBS member jurisdictions. In contrast to the CCB, the SCB *floor* is set at 2.5% – an example of the U.S. gold-plating of the Basel standards. As the result of the 2022 stress test exercise, the SCB requirements for 21 of the 34 banks subject to the SCB rule are greater than 2.5%, and as high as 9.0%.¹⁶ Losses resulting from the stress test Global Market Shock (GMS) component, designed to stress trading positions held by banks with significant trading operations, are a key component of the stress losses and a major driver of excessive year-over-year variability of banks' required SCBs for those banks subject to the GMS.¹⁷ Of the \$612bn in aggregate hypothetical losses recorded in the 2022 stress test exercise, hypothetical GMS losses accounted for \$100bn.¹⁸

Both the FRTB and the GMS are designed to capture extreme potential losses arising from a bank's trading operations. They share key conceptual similarities – both are stress test frameworks, both have risk factor shocks calibrated to equivalent deep market stresses, and both apply overly conservative correlation assumptions. For instance, risk factor shocks in both frameworks are calibrated based on a period of stress. In the 2023 stress test scenario, "shocks to risk factors in more-liquid markets, such as those for government securities, foreign exchange, or public equities, are calibrated to shorter horizons (such as three months), while shocks to risk factors in less-liquid markets, such as those for non-agency securitized products or private equities, have longer calibration horizons (such as 12 months)".¹⁹ Similarly, the FRTB calibrates about 50% of the risk factors to a "liquidity horizon" of three-month or longer.²⁰ Table 1 illustrates the conceptual overlaps between the FRTB and the GMS under the supervisory stress test. As a result, these potential extreme losses in a bank's trading operations will effectively be counted twice (*i.e.*, through both the FRTB and the GMS) for purpose of the risk-based capital requirements. Because of this double count, the SCB will likely exacerbate the capital impacts of the FRTB.

13 The revised CVA framework (*i.e.*, the SA-CVA) is adapted from the FRTB sensitivity-based method and, as a result, it significantly increases CVA risk capital requirement.

14 <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20200304a.htm>

15 https://www.bis.org/bcbs/publ/d457_note.pdf

16 <https://www.federalreserve.gov/publications/files/large-bank-capital-requirements-20220804.pdf>

17 <https://www.sifma.org/resources/news/u-s-stress-test-capital-requirements-are-excessively-volatile-and-over-estimate-losses-identifying-the-problem-and-how-to-solve-it/>

18 <https://www.federalreserve.gov/publications/files/2022-dfast-results-20220623.pdf>

19 <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20230209a1.pdf>

20 Liquidity horizon refers to the time assumed to be required to exit or hedge a risk position without materially affecting market prices in stressed market conditions.

Table 1. Key Overlaps Between the FRTB and the GMS

	The FRTB	The GMS Loss Estimate
Framework Objective	Ensure a bank’s strength and resilience to a severe market distress	Assess a bank’s strength and resilience to a severe market distress
Framework Scope	Instruments arise from trading operations	Instruments arise from trading operations (and certain other fair valued instruments, e.g., private equity)
Framework Calibration	Risk factor shocks are calibrated to specified time periods while limiting the benefits of diversification	Risk factor shocks are calibrated to specified time periods while limiting the benefits of diversification
Loss Estimate	Extreme tail loss	Extreme tail loss

The FRTB and The Collins Floor

As our prior blog discussed, the current capital rules offer two approaches to calculate RWAs – the Advanced Approaches and the Standardized Approach.²¹ The Collins Floor requires the risk-based capital requirements calculated using the Advanced Approaches to be no less than 100% of the Standardized Approach. As a result, any increase in market risk capital requirement due to the FRTB will be fully reflected in increases to the Collins Floor.²² This stands in contrast to the Basel output floor, which provides a 5-year phase-in period with the final floor set at a much lower 72.5%.²³ As of Q4 2022, the risk-based capital requirements for five out of the eight U.S. GSIBs were set by the Collins Floor.²⁴

The Internal Models Versus the Standardized Approaches

To ensure the robustness and adequacy of banks’ internal models, the Agencies issued the *Guidance on Model Risk Management* (SR 11-7) in 2011.²⁵ The European Central Bank (ECB) embarked a *Targeted Review of Internal Models* (TRIM) at the beginning of 2016,²⁶ and issued the *ECB Guide to Internal Models* in 2019.²⁷ The EU’s CRR3 proposal²⁸ and the UK’s Basel 3.1 standards²⁹ continue to allow the use of the internal models to set capital requirements. However, the Agencies have indicated that they are now intent on “replacing the Advanced Approaches with risk-based capital requirements based on the revised Basel standardized approaches for credit risk and operational risk”.^{30, 31} As a result, the Agencies will rely largely on the revised Basel standardized approaches to set the risk-based capital requirements. Such an outcome would disincentivize banks from enhancing and building expertise in the internal models which facilitate more accurate risk measurement and management overall, whereas “the standardized approaches [are] too crude and unrealistic to be useful tools for measuring and managing capital consumption and risk.”³²

21 <https://www.ecfr.gov/current/title-12/chapter-II/subchapter-A/part-252>

22 This capital increase will be compounded should the SCB be applied to the Advanced Approaches because the stress test losses already reflect CVA and operational risk losses (along with market risk losses), creating another instances of potential double-counts.

23 Note that for the purpose of the Basel output floor, the standardized approach covers credit, market, CVA and op risks.

24 <https://www.risk.net/risk-quantum/7955826/bny-mellon-goldman-join-citi-in-escaping-collins-floor>

25 <https://www.federalreserve.gov/supervisionreg/srletters/sr1107.htm>

26 https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.trim_project_report-aa49bb624c.en.pdf

27 https://www.bankingsupervision.europa.eu/banking/tasks/internal_models/html/index.en.html

28 https://eur-lex.europa.eu/resource.html?uri=cellar:14dcf18a-37cd-11ec-8daf-01aa75ed71a1.0001.02/DOC_1&format=PDF

29 <https://www.bankofengland.co.uk/prudential-regulation/publication/2022/november/implementation-of-the-basel-3-1-standards>

30 <https://www.govinfo.gov/content/pkg/FR-2019-11-01/pdf/2019-23800.pdf>

31 <https://www.occ.gov/news-issuances/federal-register/2019/fr8435234.pdf>

32 <https://www.risk.net/risk-management/7956021/us-credit-risk-modellers-prepare-for-life-after-irb>

This move away from internal models will not only lead to capital increases at the firm-wide level, but will affect how capital is allocated internally within firms, placing constraints on certain business lines more than others.³³ The market's experience with the Standardized Approach to Counterparty Credit Risk (SA-CCR) rule,³⁴ which came into effect on January 1, 2022, provides a good real-world example of these sorts of impacts.³⁵

Conclusion

Capital requirements are a cornerstone of the prudential regulatory framework. The Basel Endgame package will bring substantial changes to the U.S. capital those requirements. These changes are expected to significantly increase banks' capital requirements over-and-above their historically high levels. Higher capital levels have benefits (i.e., reduce the likelihood of a bank failure) but also costs (i.e., they limit banks' ability to support capital markets and the broader economy, and make it harder and more expensive for businesses, consumers, and investors to obtain financing). Given policymakers chosen by both Republican and Democratic administrations have stated for some time that the current banks' capital levels are strong and robust, the Agencies should carefully weigh the costs and benefits of implementing the Basel Endgame package and should be transparent about the rationale for further increasing capital levels.

Our next blog will focus on the costs/benefit analysis that should be applied to bank capital requirements and discuss the "optimal" level of bank capital.

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³³ <https://www.oliverwyman.com/our-expertise/insights/2016/aug/post-crisis-basel-reforms.html>

³⁴ <https://www.govinfo.gov/content/pkg/FR-2020-01-24/pdf/2019-27249.pdf>

³⁵ In particular, the Risk Magazine reported that the SA-CCR "had an immediate effect on the status quo for banks and the cost of dealing in foreign exchange forwards and swaps. According to data from transaction cost analysis firm BestX, the difference between US and European bid/offer spreads for G10 forwards jumped by 0.2 basis points between January and March" following the implementation of the rule (<https://www.risk.net/our-take/7955926/living-with-sa-ccr-one-year-on>).



Part III: Our Series on US Bank Capital Requirements

Identifying an Optimal Level of Capital and Evaluating the Impact of Higher Bank Capital Requirements on US Capital Markets

- As we described in [Part I](#) of this series, the largest U.S. banks' capital and liquidity levels have grown dramatically since the original Basel III standards were implemented in 2013 in response to the 2008 Global Financial Crisis ("GFC"). Today, as the Federal Reserve recently observed, the U.S. "banking system is sound and resilient, with strong capital and liquidity."¹
- As we noted in [Part II](#) of this series, the soon-to-be-proposed Basel III Endgame represents a complete overhaul of the risk-based capital framework that was put in place in 2013, and it is expected to significantly increase banks' capital levels, particularly on banks' trading book activities as a result of the Fundamental Review of the Trading Book ("FRTB") reforms.
- In this, the third in a series of blog posts on U.S. bank capital requirements, we discuss what the "optimal" level of bank capital should be – that is a level that provides a substantial margin of safety without impairing economic growth, lending, and capital markets activities.
- We highlight a recent [PWC report](#) that examines the post-GFC reforms to the prudential regulatory framework and surveys the academic literature on the benefits and costs of capital. That report finds that the capital levels for the largest U.S. banks' are close to "optimal," even before fully taking into account the extra financial stability benefits conferred by other non-capital requirements, such as enhanced liquidity and resolution requirements. This suggests that further significant increases in capital requirements will result in material costs for the U.S. capital markets and the broader economy.
- We also provide estimates of the impact of higher capital requirements on large banks' trading book activities. We find that for every one percentage point increase in the effective risk weight of market risk capital, U.S. GSIBs' aggregate trading assets/liabilities fall by \$16.26bn. As a result, the expected FRTB effective RWA add-on risk weight of 8.36% would translate into a potential reduction in U.S. GSIBs' aggregate trading assets/liabilities of roughly \$136bn, had the FRTB been in effect as of December 31, 2022.
- Given that banks play a critical role in intermediating the U.S. capital markets and given that three-quarters of all non-financial corporate funding comes from those markets, the effect of these changes will thus likely be to increase the cost and decrease the availability of funding for businesses and consumers.

Introduction

As we noted in our prior blogs, the capital and liquidity levels for the largest U.S. banking institutions are strong and robust by historical standards and have proved resilient to a range of stresses in recent years. Nonetheless, the U.S. banking agencies are about to embark on a sweeping reform of the risk-based capital framework as part of their expected Basel III Endgame reforms. These changes could increase bank capital requirements "by up to 20%" in the aggregate for the largest U.S. banks, driven in large part by close to a 60% increase¹ in market risk capital requirements for the Global Systemically Important Banks (GSIBs).² These increases will likely have significant impacts on the ability of banks to support capital markets activities and economic activity more generally, leading to reduced liquidity in many key funding markets and increased financing costs for businesses and consumers.

¹ <https://www.federalreserve.gov/publications/files/svb-review-20230428.pdf>

¹ [Add in citations of Barr and Quarles statements and Basel monitoring report].

² As we discussed in Part II of this series, that number may well be an underestimate, given the interaction between the capital changes for banks' trading activities and other elements of the U.S. capital framework.

This raises the important question of what the “optimal” level of capital should be; that is a level that maximizes the financial stability benefits of increased capital without being so high as to impair economic growth, lending, and capital markets activities. A recent [study](#) released by PricewaterhouseCoopers LLP (PwC) entitled “Basel III Endgame: The next generation of capital requirements” examined this issue in-depth in the context of the expected implementation of the Basel III Endgame reforms. The study provides a comprehensive overview of the post-GFC U.S. prudential regulatory framework, noting how the myriad reforms (and their interactions with one another) have reduced risks in the financial system. It then surveys the academic literature on the benefits and costs of bank capital, finding that the average optimal level of capital predicted by those papers is close to the current level of capital at the largest U.S. banks. Moreover, the PwC report notes that many of these studies may not fully account for the risk-reducing impact of other prudential reforms beyond capital requirements and may therefore potentially be overestimating the marginal benefit of higher capital requirements – and by extension the optimal level of capital in the banking system.

Below, we highlight some of the key findings from the PwC report, including an overview of the post-GFC prudential regulatory reforms and their cumulative impact on the safety of the banking system; discuss PwC’s findings with respect to the optimal level of capital; and discuss some of the potential capital markets impacts of the expected increases in capital resulting from the Basel III Endgame.

What Are the Components of the Post-GFC U.S. Prudential Regulatory Reforms?

Since the GFC, banks – particularly the largest U.S. banks – have become subject to a vast and complex array of rules and supervisory standards designed to mitigate a wide range of risks to both individual institutions and the financial system more generally. Table 1 below lists the major components of the different regulatory requirements and supervisory standards applicable to banks in each tiering category (with “Category 1” representing the largest U.S. banks – the eight U.S. GSIBs).³

³ <https://www.federalregister.gov/documents/2019/11/01/2019-23800/changes-to-applicability-thresholds-for-regulatory-capital-and-liquidity-requirements>

Table 1. The Components of the current U.S. prudential regulation standards by tiering categories.

		Category IV \$100B - \$250B	Category III ≥ \$250B - \$700B	Category II > \$700B	Category I U.S. GSIBs
Capital	GSIB Surcharge				✓
	eSLR				✓
	TLAC				✓
	GMS / LCD ⁵		✓	✓	✓
	Advanced Approaches			✓	✓
	No AOCI Opt-out			✓	✓
	Countercyclical Capital Buffer (CCYB)		✓	✓	✓
	SLR		✓	✓	✓
	Company-run Stress Test		✓ (every 2 years)	✓ (annual)	✓ (annual)
	Fed-run Stress Test (CCAR/SCB)	✓ (every 2 years)	✓	✓	✓
	Standardized Approach	✓	✓	✓	✓
Liquidity	Liquidity Coverage Ratio	✓ (+70% for select banks only)	✓ (+85%; +100% for select banks)	✓ (+100%)	✓ (+100%)
	Net Stable Funding Ratio	✓ (+70% for select banks only)	✓ (+85%; +100% for select banks)	✓ (+100%)	✓ (+100%)
	Reporting Requirements	✓ (Monthly)	✓ (Monthly; Daily for select banks)	✓ (Daily)	✓ (Daily)
	Company-run Stress Test	✓ (Quarterly)	✓ (Monthly)	✓ (Monthly)	✓ (Monthly)
	Fed-run Stress Test (CLAR)				✓ (annual)
Resolution Planning			✓ (Every 3 years)	✓ (Every 3 years)	✓ (Every 2 years)
Other Enhanced Prudential Standards	Qualified Financial Contracts (QFCs) Stay Rules				✓
	Single Counterparty Credit Limits (SCCL)		✓	✓	✓
	Swap Margin Rule (SMR)	✓	✓	✓	✓

Source: SIFMA

As Table 1 illustrates, the U.S. GSIBs are required to comply with the most stringent prudential requirements. These requirements are designed to reduce risks in the banking system through the following means:

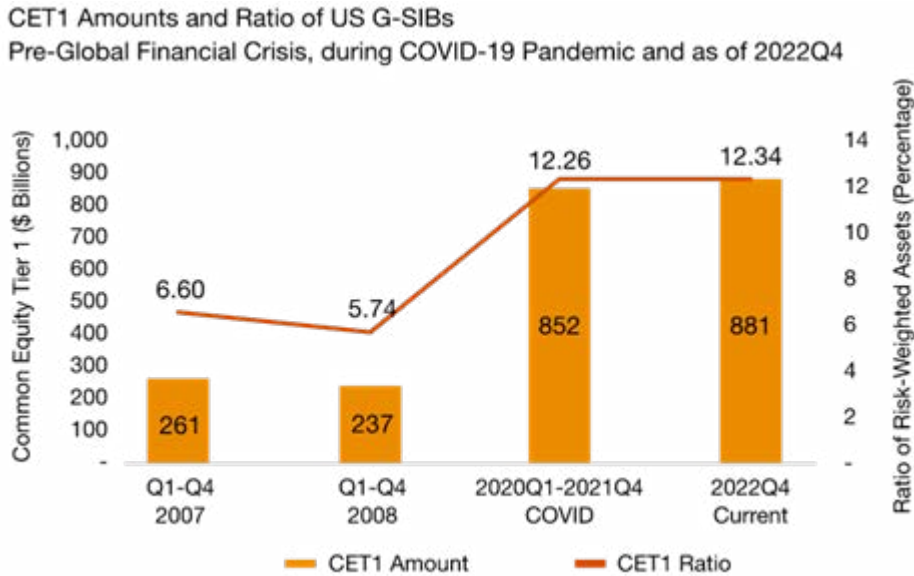
- **Increasing the quantity and quality of banks' capital and liquidity.** The increase in capital was achieved in part, as we previously noted, through the implementation of the original Basel III capital reforms in 2013. Some of the largest impacts, however, occurred through the implementation of capital buffers, including the GSIB Surcharge and the Stress Capital Buffer ("SCB"). Capital increases were also driven by the standard and enhanced Supplementary Leverage Ratio ("SLR") and the statutory Collins' Floor. Moreover, in practice, banks generally maintain capital buffers above and beyond regulatory-mandated minimum levels to prevent breaches of regulatory requirements which in some cases carry mandatory restrictions on capital distributions or other penalties for breaches. In addition, the Total Loss Absorbing Capital ("TLAC") was created to support the orderly resolution of a failing GSIB without the need for taxpayer support. Beyond capital, liquidity resources have been increased through the creation of two standardized requirements: the Liquidity Coverage Ratio ("LCR") and the Net Stable Funding Ratio ("NSFR"), which are designed to ensure banks have sufficient liquid assets to weather liquidity stresses over both a short-term and longer-term horizon.
- **Ensuring banks' resiliency under stress conditions via stress testing.** Stress tests assess banks' capital and liquidity adequacy by evaluating whether they can withstand a pronounced stressed macroeconomic environment that is either prescribed by regulators (supervisory capital stress tests such as the Comprehensive Capital Analysis and Review or "CCAR") or by the banks' internal risk models (company-run capital stress tests). Banks are also required to conduct internal liquidity stress tests ("ILST"), and the largest banks are subject to the horizontal Comprehensive Liquidity Analysis and Review ("CLAR") that the Federal Reserve conducts annually.
- **Reducing counterparty and trading risks.** Regulators have put in place a series of rules designed to limit counterparty and trading risks. These include, among other things, central clearing and margin requirements for non-cleared derivatives, single-counterparty credit limits, and the Volcker Rule which prohibits banks from engaging in proprietary trading or investing in/sponsoring hedge funds or private equity funds.
- **Creating supervisory programs to complement regulatory requirements and enforce compliance with heightened expectations.** In addition to stress testing banks' capital resiliency, the CCAR and Dodd-Frank Act Stress Tests ("DFAST") also evaluate large banks' capabilities in capital planning, while CLAR evaluates the largest banks' liquidity risk management practices and resiliency under normal and stressed conditions. Large banks are required to prepare resolution plans and are subject to regular exams that assess whether they could be unwound in an orderly manner that does not undermine financial stability. Embedded in these supervisory programs are qualitative criteria that complement the minimum quantitative requirements set out in the rules. And they allow the regulators to take firm-specific regulatory actions to ensure any idiosyncratic risks are appropriately addressed.
- **Requiring supplemental enhancements to risk management.** A range of requirements have been put in place to enhance risk management, governance, identification, and measurement. These include, for example, heightened requirements and expectations for boards of directors in overseeing a bank's risk management governance and practices.

Collectively, these requirements and standards have dramatically raised U.S. GSIBs' capital and liquidity resources and have also reduced a range of other risks to banks and the broader financial system. As shown in Figures 1-3 below⁵, U.S. GSIBs' common equity tier 1 ("CET1") capital (the highest-quality form of bank capital) has tripled since the GFC, while TLAC grew by approximately 6 times, and the amount of high-quality liquid assets ("HQLA") held by banks – a key measure of liquidity resilience – increased nearly 11-fold during the same period.

⁴ The GMS component for the severely adverse scenario applies to a firm that is subject to the stress test and that has aggregate trading assets and liabilities of \$50 billion or more, or aggregate trading assets and liabilities equal to 10 percent or more of total consolidated assets, and that is not a Category IV firm under the Board's tailoring framework. For [CCAR 2023](#) the following banks are subject to GMS or LCD: Bank of America Corporation, The Bank of New York Mellon Corporation, Barclays US LLC, Citigroup Inc., DB USA Corporation, The Goldman Sachs Group, Inc., JPMorgan Chase & Co., Morgan Stanley, State Street Corporation, and Wells Fargo & Company.

⁵ Figures 1-3 were taken from the PwC [study](#).

Figure 1. Aggregate Level of Common Equity Tier 1 of U.S. GSIBs.



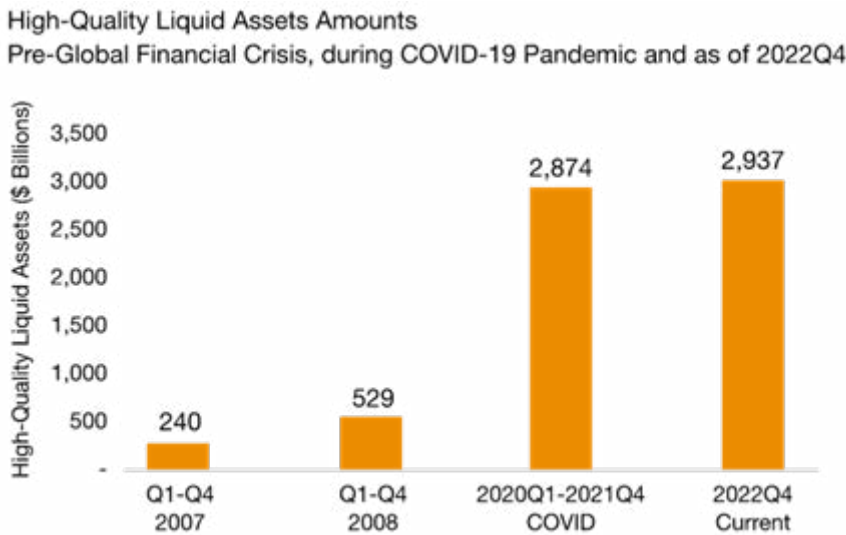
Key insights
Since the Global Financial Crisis, both CET1 levels and ratios have grown significantly;

Across US G-SIBs, the level of CET1 has increased to nearly \$900 billion, while the ratio has roughly doubled since 2008.

Source: S&P Capital IQ

Source: PwC

Figure 2. Aggregate Level of High-Quality Liquid Assets of U.S. GSIBs.

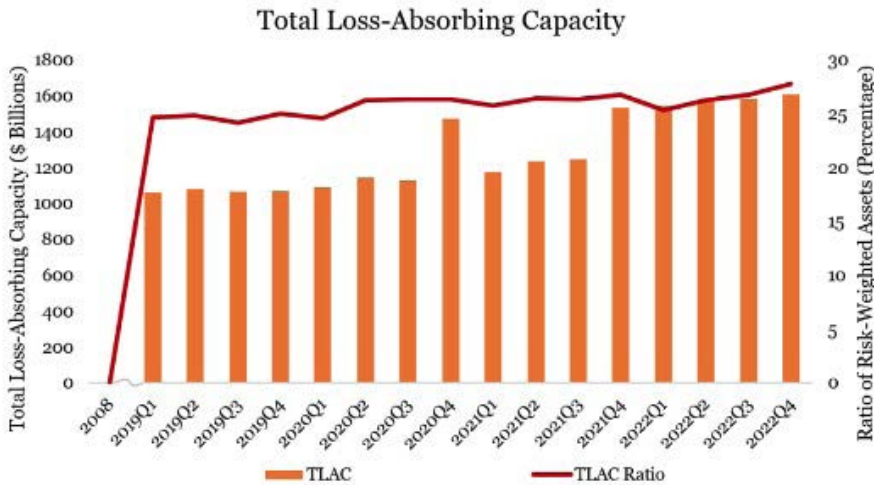


Key insights
The level of HQLA across US G-SIBs has increased by more than 11x since 2007 and 4.5x since 2008, reaching a level of nearly \$3 trillion as of 2022 Q4

Source: FR Y-9C, FR 2900, Federal Reserve accounting system. Board of Governors of the Federal Reserve, "Supervisory Developments," Supervision and Regulation Report, May 14, 2019; S&P Capital IQ

Source: PwC

Figure 3. All Usable Total Loss Absorbing Capacity of U.S. GSIBs.



Key insights
 US G-SIBs now have almost 6x more usable TLAC compared to 2008

Source: S&P Capital IQ

Source: PwC

As a result of all of these changes, the likelihood of a GSIB failure has declined dramatically and the resiliency of the financial system has increased. Capital levels in particular are extraordinarily robust compared to their pre-GFC levels. Yet, the U.S. banking regulators look set to propose a significant increase in capital requirements as part of the Basel III Endgame reforms. This raises the question of whether these additional expected increases would add marginal benefits to financial stability that would outweigh their economic costs, particularly when considered in the context of all of the other post-GFC reforms.

What Is the Optimal Level of Bank Capital?

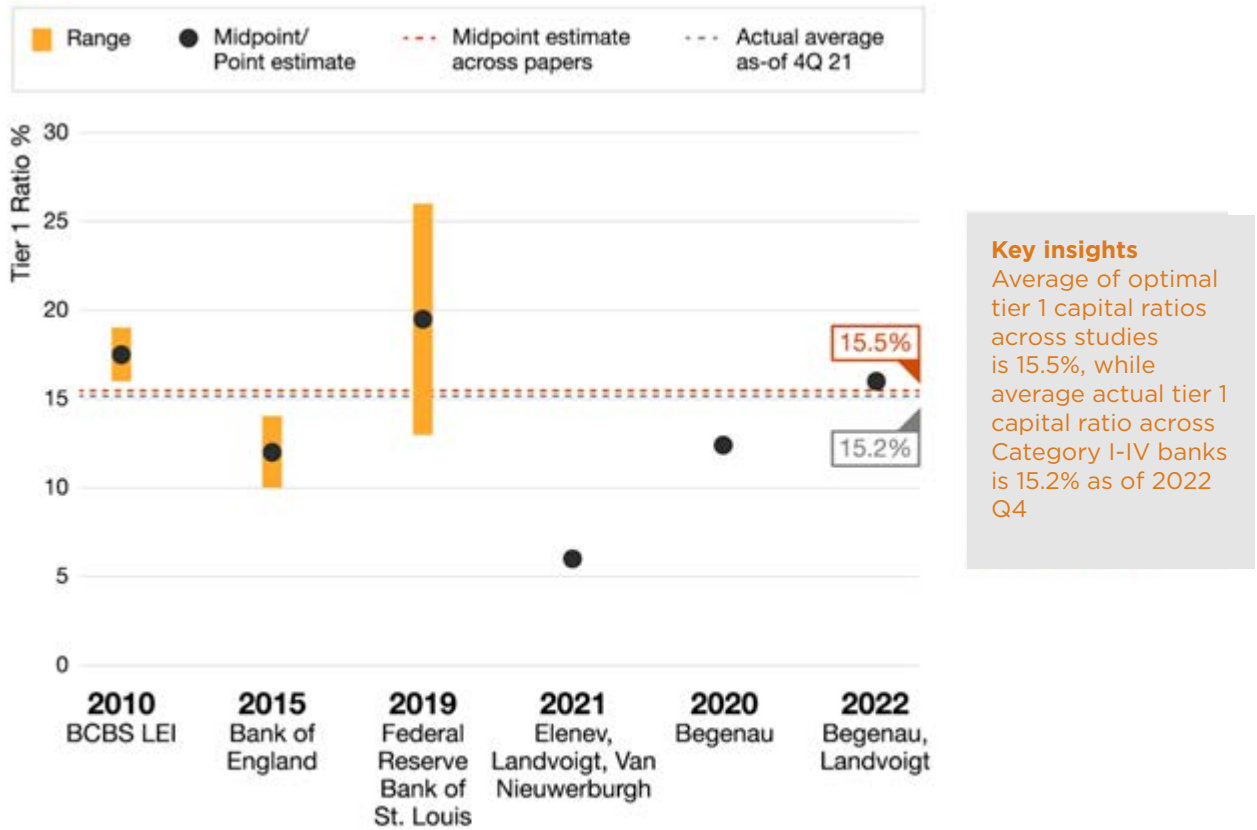
In order to identify the optimal level of capital for the largest U.S. banks, PwC conducted a comprehensive review of the existing literature on optimal bank capital levels. Much of the literature evaluates optimal capital levels by comparing the **trade-off between the marginal benefits** of higher capital in promoting financial stability and **the marginal costs** in terms of its potential impact on economic growth. The studies generally find that higher capital levels promote financial resiliency by increasing banks’ loss-absorbing capacity thereby reducing the likelihood of bank failures and systemic crises. However, they also observe that higher capital levels can impair economic growth by raising the cost of credit and potentially limiting the availability of financing, which may reduce investment and economic expansion.

PwC focuses on six papers out of over twenty they reviewed, the conclusions of which are summarized in Figure 4 below. The papers identify **12-19.5% as the optimal range for Tier 1 capital,⁶ with an average of 15.5%. This figure aligns closely with the actual average U.S. GSIBs Tier 1 capital ratios of 15.5% and 15.2%, as of the fourth quarter of 2021 and 2022, respectively.** The corresponding implied optimal CET1 ratio is estimated to be 13.8%.⁷ This figure is aligned with the average U.S. GSIBs’ CET1 ratio as of year-end 2021 and 2022 of 13.7% and 13.2%, respectively. As noted above, banks generally maintain capital buffers above and beyond regulatory-mandated minimum levels to prevent breaches of regulatory requirements in order to accommodate their specific risk profiles and capital strategies.

6 Tier 1 capital is the sum of Common Equity Tier 1 and Additional Tier 1 capital, net of certain regulatory adjustments. The predominant form of Tier 1 capital consists of common shares and retained earnings.

7 PwC’s estimate for the implied optimal CET1 ratio is derived by multiplying the midpoint Tier 1 optimal capital estimate by the quarterly average historical ratio of CET1 to Tier 1 capital ratios across GSIBs from 1Q2018 to 4Q2022. The relationship between CET1 and Tier 1 capital ratios across GSIBs has been stable since 2018.

Figure 4. Optimal Tier 1 Capital Estimates Across Select Studies.⁸



*Note: The Elenev paper estimates a CET1 Capital Ratio, rather than a Tier 1 Capital Ratio Source for average of Tier 1 Ratio%: Estimates for actual Tier 1 and CET1 capital ratios cover the 33 firms participating in the 2022 CCAR submission. The actual tier 1 ratio is computed as a simple average across the 33 firms. The actuals were sourced from 2022 CCAR submission data: "Stress Test Results, 2013-2021 (CSV)", <https://www.federalreserve.gov/supervisionreg/dfa-stress-tests.htm>

Source: PwC

The PwC report observes that while many of these papers try to account for some of the post-GFC regulatory reforms in determining the optimal level of bank capital, none of them include a holistic evaluation of the costs and benefits of increased capital given all of the post-GFC prudential reforms. In particular, they generally do not account for the risk reduction effects of increases in TLAC and liquidity resources at the largest U.S. banks, or the increased strength in risk management processes that has resulted from the regular stress testing of capital and liquidity at these institutions. Similarly, the reductions in counterparty and trading risks and other reforms are not fully accounted for in these studies. Moreover, none of the studies accounts for possible financial stability risks that may arise from an increase in bank capital requirements, such as risks that might arise from activities migrating to less regulated sectors of the financial system. In sum then, this implies that the marginal benefit of higher capital levels identified by these studies may be overstated, and thus the optimal level of capital for the largest banks may be in fact lower than the figures cited above.

What Will be the Impact of Higher Capital Requirements on Large Banks' Capital Markets Activities?

In its February 2023 *Basel III Monitoring Report*, the Basel Committee on Banking Supervision ("BCBS") estimates the weighted average expected increase in market risk capital – the capital charge for large banks' capital market activities – as the result of the Basel III Endgame will be 56.5% for global GSIBs,⁹ a figure that is likely an underestimate in the U.S. context for reasons we discussed in [Part II](#) of this blog series. These increases, driven by the component of the Basel III Endgame known as the Fundamental Review of the Trading Book ("FRTB"), will affect banks' ability to provide several core capital markets services to their clients, including securities underwriting and market-making, and facilitation of commercial end-users engaging in hedging interest rate and foreign exchange risks.

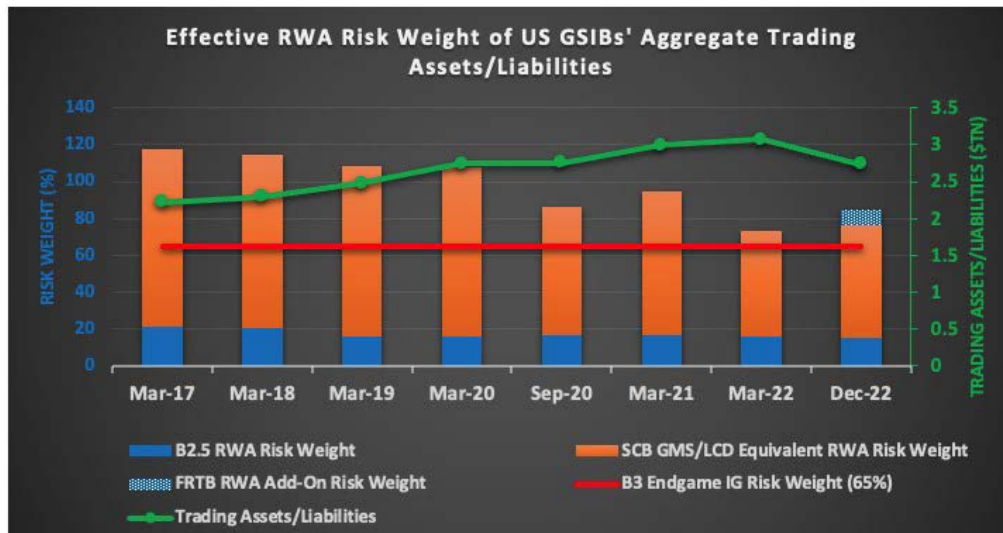
⁸ Figure 4 was taken from <https://explore.pwc.com/baseliiiendgame/basel-iii-end-game-report#page=1> and detailed references can be found therein.

⁹ <https://www.bis.org/bcbs/publ/d546.pdf>

We estimate some of these effects below.¹⁰ Figure 5 below plots the U.S. GSIB's aggregate trading assets/liabilities between 2017-2023 (green line); the effective Risk Weighted Asset ("RWA")¹¹ risk weight (also referred to as RWA density) under the current market risk rule - Basel 2.5 (blue bar); the effective RWA risk weight under the Global Market Shock ("GMS") and Largest Counterparty Default ("LCD") losses that are mandated as part of the SCB requirement (yellow bar)¹²; and the effective RWA risk weight add-on (estimated to be 8.36% as of December 31, 2022)¹³ that we expect as a result of the FRTB relative to the current market risk rule (blue dotted bar). The red line represents the 65% risk weight assigned by regulators to investment grade ("IG") corporates under the Basel III Endgame standardized credit risk framework; a larger effective RWA risk weight corresponds to a higher capital requirement.

The chart demonstrates that: (1) the aggregate trading assets/liabilities of banks fall as capital requirements increase (Table 2 quantifies the impact); (2) the GMS/LCD hypothetical losses are many times the possible stress losses that have occurred since 2007 (banks are required to calibrate market risk based on a historical stress period dating back to 2007); (3) the aggregate trading assets/liabilities are treated in the same way as high-yield debt for capital purposes since the effective RWA risk weight fluctuates around 100% and is consistently above 65% (which is the risk weight for investment grade corporates).

Figure 5. U.S. GSIBs' Aggregate Trading Assets/Liabilities and the Effective RWA Risk Weight Resulting from Market Risk Rule (Basel 2.5 and FRTB) and SCB GMS/LCD Hypothetical Losses.



Source: SIFMA

To quantify the interaction between capital requirements and the U.S. GSIBs' aggregate trading assets/liabilities, Table 2 conducts a linear regression analysis (more details on the quantitative analysis involved are included in an appendix to this blog post). The coefficient for the *effective risk weight* is highly significant statistically and economically. Economically, for every one percentage point increase in the *effective risk weight*, U.S. GSIBs' aggregate trading assets/liabilities falls by \$16.26bn. As a result, the expected FRTB effective RWA add-on risk weight of 8.36% would translate into a potential reduction in U.S. GSIBs' aggregate trading assets/liabilities of roughly \$136bn, had the FRTB been in effect as of December 31, 2022.

¹⁰ See Appendix for more technical details.

¹¹ The effective RWA risk weight is calculated as the ratio of aggregate market risk RWA, reported in FFIEC 102, to aggregate trading assets/liabilities, reported in FR Y9-C. The higher the effective risk weight the higher the capital requirement.

¹² The GMS/LCD losses are multiplied by 1/4.5% to convert to the corresponding RWA. The resulting effective RWA risk weight is calculated the same way as in FN8.

¹³ The BCBS estimates that the FRTB is expected to increase market risk capital requirement by 56.5% for global GSIBs relative to the current market risk capital framework (Basel 2.5). As of December 31, 2022, the effective RWA risk weight under Basel 2.5 is 14.8% and 56.5% of which equals to 8.36%.

Table 2. The Relation between Capital Requirements U.S. GSIBs’ Aggregate Trading Assets/Liabilities.

Regression Analysis	Aggregate Trading Assets/Liabilities
Constant	4.26346***
Effective Risk Weight	-0.01626***
R ²	0.72
*(p<0.05), **(p<0.01), ***(p<0.001)	
Data Source: FR Y9-C, FFIEC 102, and Federal Reserve Board¹⁵	

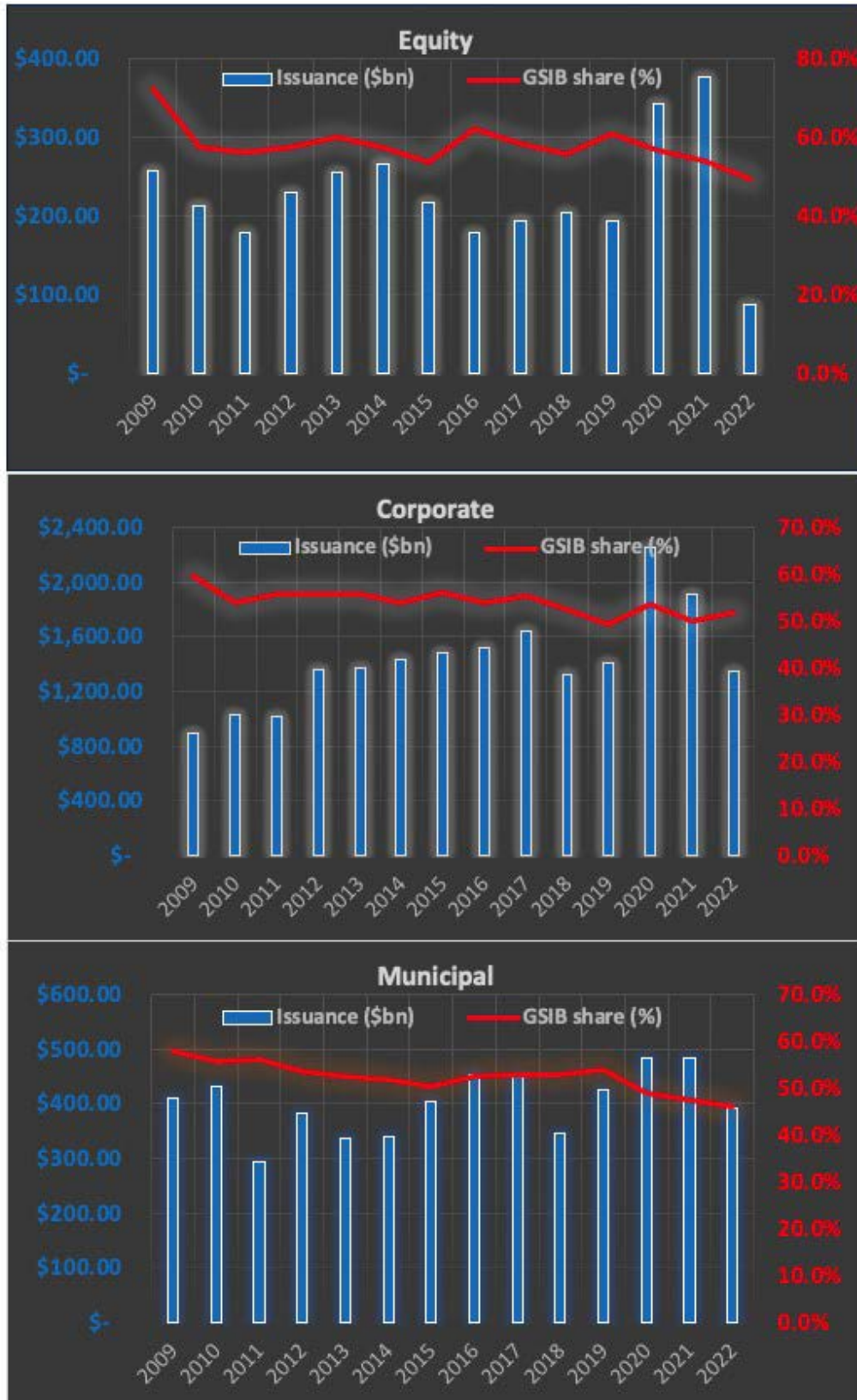
Source: SIFMA

The effect of these increases in market risk capital would thus likely be to further constrain the largest banks’ ability to support capital market activities, including securities underwriting. This would accelerate a trend: U.S. GSIBs’ market shares for equity, corporate, and municipal debt issuances have been declining steadily since 2009¹⁵, as illustrated in Figure 6 below. The continued reduction in banks’ ability to support capital market activities likely will lead to diminished liquidity, more frequent flash crashes, and heightened financial stability risk, especially during market stresses. Given the importance of capital markets funding for non-financial corporations, it will also mean higher funding costs and reduced availability of credit to a wide range of businesses and ultimately consumers.

¹⁴ <https://www.federalreserve.gov/supervisionreg/dfast-archive.htm>

¹⁵ In 2009, the first Supervisory Capital Assessment Program (“SCAP”) was put in place, which set out additional capital requirements for large banks’ capital market activities via the GMS and LCD losses. The SCAP was replaced by CCAR in 2011 which was then incorporated into the risk-based capital requirement through the SCB in 2020.

Figure 6. U.S. GSIBs' Market Shares in Equity, Corporate, and Municipal Underwritings.



Source: Dealogic

Conclusion

Bank capital is not costless. As we have shown in this blog, increases in market risk capital requirements will lead to a decrease in the aggregate trading assets and liabilities for the largest U.S. banks, with knock-on negative effects on the ability of corporations and other end-users to obtain affordable financing. In addition, PwC's survey of the literature on the cost of bank capital suggests that U.S. GSIBs' current capital levels are near their optimal levels, particularly when factoring in the risk-reducing effects of other prudential requirements. This suggests that further significant increases in capital requirements, such as those envisioned under the Basel III Endgame, will result in material costs to the capital markets and the broader economy that will not be outweighed by any marginal financial stability benefits.

Regulators should therefore carefully weigh the costs and benefits of these capital reforms to ensure that they achieve an appropriate balance between financial stability and broader economic growth. In particular, we encourage regulators to consider the interactions between the Basel III Endgame reforms and existing elements of the U.S. capital regime, and holistically evaluate whether other parts of the U.S. capital framework ought to be amended in light of the Endgame reforms.

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APPENDIX: Quantitative Analysis on the Interaction of Market Risk Capital Requirement and Trading Assets/Liabilities

We construct a sample of *effective risk weight* and aggregate trading assets/liabilities covering the period of 1Q 2017 – 4Q 2022 and the eight U.S. GSIBs that are subject to both the market risk rule and the GMS/LCD component of the SCB. The eight U.S. GSIBs are Bank of America Corporation, The Bank of New York Mellon Corporation, Citigroup Inc., Goldman Sachs Group, Inc., JPMorgan Chase & Co., Morgan Stanley, State Street Corporation, and Wells Fargo & Company. Collectively, these eight largest banks account for the majority of all U.S. banks’ capital market activities, and 92% of the \$100bn GMS/LCD losses in the [2022 supervisory stress test](#) exercise.

Market risk RWAs are reported in FFIEC 102, and trading assets and liabilities are reported in FR Y9-C. [FFIEC.GOV](#) posts the most recent 5-year data. Historical GMS/LCD losses can be downloaded [here](#). Generally, to convert capital requirement (or losses) to RWA the capital rules require multiplying the capital requirement by 1/8% (or 12.5). The 8% corresponds to the 8% minimum risk-based capital requirement set out by the Basel standards, which consists of 4.5% of CET1, 1.5% Additional Tier 1, and 2% of Tier 2. A detailed definition of the three categories of regulatory capital can be found [here](#). Because the SCB sets out minimum requirement on CET1, rather than total capital, we calculate GMS/LCD equivalent RWA by multiplying the GMS/LCD losses by 1/4.5% instead of 1/8%.

The BCBS estimates that the FRTB is expected to increase market risk capital requirement by 56.5% for global GSIBs relative to the current market risk capital framework. The market risk RWA under the FRTB is approximated by 1.565x of the RWA reported in FFIEC 102. The RWAs and trading assets/liabilities are aggregate across the eight U.S. GSIBs. And the effective risk weight (also referred to as RWA density) is calculated as the ratio of the aggregate RWA to the aggregate trading assets/liabilities. We estimate a linear regression model with the aggregate trading assets/liabilities as the dependent variable, and the independent variables are the effective risk weight plus a constant. Table A1 below reports the results. We caution that because of the short historical period and resulting small sample size, the results may underestimate or overestimate the actual impact of capital requirements on trading activities over a longer period of time.

Table A1. The Relation between Capital Requirements U.S. GSIBs’ Aggregate Trading Assets/Liabilities

Regression Analysis	Aggregate Trading Assets/Liabilities
Constant	4.26346***
Effective Risk Weight	-0.01626***
R ²	0.72
F-statistic	15.26986
Degree of Freedom	6
*(p<0.05), **(p<0.01), ***(p<0.001)	

Source: SIFMA

The coefficient for *effective risk weight* is highly significant statistically and economically. Economically, for every one percentage point increase in *effective risk weight*, the aggregate trading assets/liabilities falls by \$16.26bn. As of December 31, 2022, had the FRTB been in effect the market risk effective risk weight would have been 8.36% higher, which translates into a potential reduction in the aggregate trading assets/liabilities of roughly \$136bn.



Part IV: Our Series on US Bank Capital Requirements

Explaining the Overlap Between the Fundamental Review of the Trading Book and the Global Market Shock

- In Part II of this blog series, we discussed how the market risk component of the expected Basel III Endgame reforms – known as the Fundamental Review of the Trading Book (“FRTB”) – will effectively duplicate aspects of the Global Market Shock (“GMS”) component of the Federal Reserve’s Stress Capital Buffer (“SCB”) requirement.
- In this blog, we take a deeper dive into the reasons behind this double count. As we discuss below, the duplication arises because the trading and counterparty losses flow through both the SCB’s numerator (via GMS losses) and denominator (via market risk Risk-Weighted Assets or “RWA”). As a result of this double count, market risk capital requirements will be significantly greater than would otherwise be expected given the underlying risks it is seeking to capture.
- We propose simple adjustments that could meaningfully mitigate the impacts of the duplication between the two capital requirements. Those mitigations could include removing the GMS from the SCB, given that the market risk losses it was designed to measure are already captured by the FRTB; redesigning the GMS to be reasonably plausible; and setting capital requirements based on the larger of the FRTB and the GMS rather than the sum of the two components.

1. Identification of the FRTB and the GMS Overlap

Under the current US capital rules, for the purposes of the Standardized Approach, the minimum Common Equity Tier 1 (or “CET1”) capital requirements (in dollar amounts) for a US GSIB is calculated as the sum of 4.5% (the Basel Committee’s minimum CET1 requirements), the SCB, the Countercyclical Buffer (or “CCyB”, 0% currently in the US), and the GSIB surcharge (or “GSIB”), multiplied by the bank’s Standardized Approach RWA (or “ RWA_{SA} ”) which captures only credit risk and market risk losses, i.e.:

$$\text{minCET1} = (4.5\% + \text{SCB} + \text{CCyB} + \text{GSIB}) \times RWA_{SA}$$

The SCB is a ratio of stress losses calculated through the supervisory stress test divided by a bank’s RWA_{SA} . Abstracting from the various adjustments needed to calculate changes in regulatory capital, the stress losses can essentially be calculated as the sum of the provisions for credit losses (including credit losses on available-for-sale “AFS” and held-to-maturity “HTM” securities) under the Current Expected Credit Loss methodology (or “CECL”) and trading and counterparty losses under the GMS,² minus the projected Pre-Provision Net Revenue (or “PPNR”,³ which captures operational risk losses), i.e.:

$$\text{SCB} \approx \frac{\text{CECL} + \text{GMS} - \text{PPNR}}{RWA_{SA}}$$

¹The adjustments include: taxes, income attributable to minority interest, change in valuation allowance, payments on non-common capital, other comprehensive income, change in adjustments and deductions from regulatory capital, other additions to regulatory capital, and planned common stock dividends (see 2022 Supervisory Stress Test Methodology).

²The GMS scenario is a set of hypothetical shocks to a large set of risk factors reflecting general market stress and heightened uncertainty. Since the GMS losses are front loaded to Q1, the calculation assumes the Q1 projected stress losses are the largest amongst all 9 Quarters of the supervisory stress test horizon.

³PPNR is “defined as net interest income (interest income minus interest expense) plus noninterest income minus noninterest expense.” The projected losses due to operational-risk events are included in the projection of PPNR. Additionally, for banks subject to the GMS, PPNR includes projected trading revenues which include both changes in the market value of trading assets and fees from market-making activities. The changes in market value of trading assets also flow through the GMS losses. Though, the Federal Reserve’s “modelling approach for trading revenue limits the influence of severe market events that are separately captured in the global market shock”. (see 2022 Supervisory Stress Test Methodology).

Focusing on credit and market risks, the key components for the SCB calculation are:

- CECL which captures the projected expected credit losses of banking book exposures;
- GMS which captures the projected trading and counterparty losses; and
- RWA_{SA} which captures the unexpected credit losses (RWA_{credit}), and the trading and counterparty losses (RWA_{market}), i.e., $RWA_{SA} = RWA_{credit} + RWA_{market}$.

Therefore, the minimum CET1 capital requirements is approximately equal to:

$$\begin{aligned} \text{minCET1} \approx & \underbrace{(4.5\% + \text{CCyB} + \text{GSIB}) \times RWA_{credit}}_{\text{unexpected credit losses}} + \underbrace{\text{CECL}}_{\text{expected credit losses}} \\ & + \underbrace{\max((4.5\% + \text{CCyB} + \text{GSIB}) \times RWA_{market})}_{\text{trading and counterparty losses}} + \underbrace{\text{GMS}}_{\text{trading and counterparty losses}} \end{aligned}$$

The trading and counterparty losses are capitalized separately by the FRTB (via RWA_{market}) and by the GMS losses (inclusive of Largest Counterparty Default, or “LCD”, and CVA losses). Both the FRTB and the GMS are designed to be stress testing frameworks with largely overlapping objectives, risks capture, and modelling methodologies. Therefore, they essentially double count market risks, leading to capital requirements significantly greater than would be expected given the underlying risk.

Although the double counting between the FRTB and SCB is the most pronounced, it is not the only area where the SCB will overlap with the Basel III Endgame reforms, if the SCB is applied to the Endgame capital requirements. While there is limited overlap between the SCB and the Endgame’s credit risk capital requirements (because the RWA_{credit} captures the unexpected credit losses while the provisions for credit losses captures the expected credit losses), there will be duplication between the Basel Endgame’s operational risk and CVA requirements and the SCB. This is because operational risk losses and CVA risk losses are captured by the PPNR and the GMS respectively (since the SCB denominator, i.e., $RWA_{\text{Basel 3 Endgame}}$, includes capital requirements for the operational risk and CVA risk losses along with the credit risk and market risk losses). This is another example of potential double counting that will need to be addressed by regulators as they implement the Basel III Endgame reforms.

2. Impacts of the FRTB and the GMS Double Count

To illustrate the impacts of the FRTB and the GMS overlap using a simple equity trading portfolio, Table 1 presents the applicable risk-based capital requirements (in terms of CET1) as a percentage of the portfolio’s market value, and the portfolio’s corresponding RWA density. A larger RWA density means higher capital requirements.

⁴The RWA density is defined as the ratio of RWA to the leverage ratio exposure measure. It denotes a bank’s average risk weight per unit of exposure (see <https://www.bis.org/publ/work586.pdf>).

Table 1. CET1 Capital Requirements as Percentage of The Portfolio's Market Value.

CCR	FRTB ⁶	GMS ⁷	Total CET1 Capital	RWA Density
0.69%	31.52%	26.07%	58.28%	758%

Date: May 19, 2023

Portfolio Composition:

1. Bank (the applicable GSIB surcharge is 2.5%) purchases 1 European Put on APPL from Pension Fund. The option is traded at \$10.23, strikes at \$175, and expires on November 17, 2023; and
2. Bank hedges the Put by holding 100 shares of APPL traded at \$175.16.

6-Month Interest Rate: 5%

Credit Rating:

3. Apple, Inc. is rated "AA+" by S&P Global Ratings; and
4. Pension Fund is unrated (the applicable risk weight as prescribed in the Basel 3 Endgame is 100%).

For this stylized trading portfolio consists publicly traded and AA+ rated equity exposures and a vanilla option on the equity, and accounting for all applicable risk-based capital requirements, the resulting minimum required CET1 capital amounts to nearly 60% of the portfolio's market value. The corresponding RWA density equals 758%, which is nearly double the 400% risk weight assigned to "an equity exposure ... that is not publicly traded" under the current US capital rules, and the risk weight assigned to "speculative unlisted equity exposures" under the Basel III Endgame. This is a clear example of how the combination of the two capital requirements results in unnecessarily punitive treatment that is incommensurate with risks of the portfolio.

The fact that FRTB capital requirements and the GMS losses are comparable is not surprising given that both the FRTB and the GMS heavily overlap in terms of design objectives, risks capture, and modelling methodologies, as detailed in Table 2 below.

Table 2. Key Overlaps of the FRTB and the GMS.

	The FRTB	The GMS
• Framework Objective	Ensure a bank's strength and resilience to a severe market distress	Ensure a bank's strength and resilience to a severe market distress
• Risk Captured	Market risk losses arise from trading operations	Market risk losses arise from trading operations, and certain other fair valued instruments, e.g., private equity
• Loss Estimate	Extreme tail loss	Extreme tail loss
• Framework Calibration	Risk factor shocks are calibrated to specified time periods (range from 2-week to 6-month) during which any benefits of risk mitigation actions taken by a bank are ignored while constraining the benefits of diversification	Risk factor shocks are calibrated to specified time periods (range from 3-month to 12-month) during which any benefits of risk mitigation actions taken by a bank are ignored while prohibiting the benefits of diversification

⁵The counterparty credit risk capital requirements are calculated according to 12 CFR Part 217 Subpart E §217.132.

⁶The market risk capital requirements are calculated using the FRTB SBM as prescribed in the Basel 3 Endgame MAR21 (applying the spot shock of 35% and volatility point shock of 77.78%) and FRTB DRC as in the Basel 3 Endgame MAR22 (setting cash equity maturity at 1-year).

⁷The GMS losses are calculated using the spot shock of 26.3% and the volatility point shock of 26.5 as prescribed by the GMS of 2023 DFAST.

⁸Effective October 1, 2022, the GSIB surcharge for the 6 non-custodian GSIBs ranges from 1.5% to 3.5%. The simple average is 2.5%.

⁹<https://www.ecfr.gov/current/title-12/chapter-II/subchapter-A/part-217#217.52>

¹⁰https://www.bis.org/basel_framework/chapter/CRE/20.htm?inforce=20230101&published=20221208

3. Mitigation of the FRTB and the GMS Overlap

To mitigate the impacts of the FRTB and the GMS overlap, the following adjustments could be made to the capital framework:

1. Remove the GMS from the SCB. Because the potential losses on trading activities during market stress are already capitalized adequately by the FRTB (via RWA_{market}), the GMS becomes duplicative and redundant. The most effective way of addressing this problem would be to remove the GMS component from the SCB altogether.
2. Redesign the GMS to be reasonably plausible. In 2019, SIFMA conducted a careful in-depth study of the empirical plausibility of the range of GMS shocks individually and collectively from the inception of the Comprehensive Capital Analysis and Review (or “CCAR”) through the 2019 CCAR cycle. The study finds that the severity of single-factor GMS shocks and the correlation assumptions, which underpin the construct of annual GMS shocks, “cannot be empirically justified as reasonably plausible”. Making the GMS shocks reasonably plausible would help mitigate some of the impacts of the combined GMS and FRTB requirements.
3. Set capital requirements for trading activities based on the maximum of the FRTB and the GMS. Instead of applying the FRTB and the GMS separately and summing up the resulting capital requirements, the capital requirements for trading activities could be determined as the maximum of the FRTB and the GMS. As a result, the minimum CET1 capital requirements would approximately equal:

$$\text{minCET1} \approx \underbrace{(4.5\% + \text{CCyB} + \text{GSIB}) \times RWA_{\text{credit}}}_{\text{unexpected credit losses}} + \underbrace{\text{CECL}}_{\text{expected credit losses}} + \underbrace{\max((4.5\% + \text{CCyB} + \text{GSIB}) \times RWA_{\text{market}}, \text{GMS})}_{\text{trading and counterparty losses}}$$

Table 3 reports the resulting CET1 capital requirements on the stylized trading portfolio following the maximum of the FRTB and the GMS (or “Max Of”) approach. Since the FRTB requires higher capital requirements than the GMS - unsurprising as the FRTB is designed to be a stress testing framework, the final capital requirements are set by the FRTB. Even with the adjustment, the minimum required CET1 capital is nearly 1/3 of the portfolio’s market value. The RWA density of 419% is roughly on par with the 400% risk weight assigned to “speculative unlisted equity exposures” under the Basel III Endgame - an indication that the FRTB may significantly overcapitalize certain risks and market segments.

Table 3. CET1 Capital Requirements as Percentage of The Portfolio’s Market Value.

CCR	FRTB	GMS	Total CET1 Capital		RWA Density	
			No Mitigation	Max Of	No Mitigation	Max Of
0.69%	31.52%	26.07%	58.28%	31.21%	758%	419%

¹¹<https://www.sifma.org/wp-content/uploads/2019/09/SIFMA-GMS-LCD-Study-FINAL.pdf>

4. Conclusion

The FRTB and the GMS are both stress testing frameworks. The designs of the two frameworks largely overlap, and the risk losses estimated by both frameworks are generally comparable (as illustrated in the stylized equity trading portfolio analyzed in this note). The result will be a double counting of risks, and thus significantly higher capital requirements that are incommensurate with risks. This double count should be mitigated prior to the implementation of the Basel III Endgame package. Those mitigations could include removing the GMS from the SCB, given that the market risk losses it was designed to measure are already captured by the FRTB; redesigning the GMS to be reasonably plausible; and setting capital requirements based on the larger of the FRTB and the GMS rather than the sum of the two components.

Additionally, applying the SCB to the Basel 3 Endgame would give rise to overlapping capital requirements for both operational risk losses and CVA risk losses as well, thereby exacerbating the overall impacts of the Basel 3 Endgame. This is another example of potential double counting that will need to be addressed by regulators as they implement the Basel III Endgame reforms.

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Part V: Our Series on US Bank Capital Requirements

The Basel III Endgame's Potential Impacts on Commercial End-Users

- In [Part IV](#) of this blog series, we discussed the potential impacts of the Basel III Endgame on large U.S. banks' capital markets activities.
- To prudently manage and mitigate business risks, commercial end-users (e.g., non-financial corporations, municipalities, and pension funds) often rely directly on the financial products (e.g., derivatives) and services (e.g., securities underwriting) that large banks offer through capital markets activities. The Coalition for Derivatives End-Users recently voiced their concerns about the potential material adverse impacts that could result from the implementation of Basel III Endgame, including higher costs or less availability for certain capital markets products and services.
- In this blog, we take a deeper dive into the potential impacts of the Basel III Endgame on commercial end-users.

1. Background

The Coalition for Derivatives End-Users recently warned that “specific aspects of the trading book components of the Basel III Endgame reforms could lead to reduced bank participation in certain financial markets, leading to increased risks to financial stability and the broader U.S. economy by concentrating these products in less transparent markets and increasing the costs for end-users.” They also stated that the “new rules will have serious consequences to end-users and far-reaching negative implications for the broader U.S. economy, economic growth, competition and financial stability.”¹

Commercial end-users (e.g., non-financial corporations, municipalities, and pension funds) rely directly on the services (e.g., securities underwriting) and products (e.g., financial derivatives) that large banks offer through their capital markets activities. For example, 75 percent of all equity and debt financing of non-financial corporations is derived through the U.S. capital markets, in contrast to most other countries where traditional bank lending is the major source of funding for businesses. The capital markets also serve as a key source of financing/refinancing for US municipalities. Capital markets ensure businesses have easy and consistent access to liquidity and affordable funding to fuel growth and create jobs, and that municipalities have the funds to provide critical civil services respectively.

In addition to securities underwriting, large banks serve as critical counterparties in financial derivatives for commercial end-users, tools they utilize to hedge and mitigate commercial risks associated with their businesses, including interest rate risk, foreign currency risk and commodities risks. The use of financial derivatives to manage commercial risks by commercial end-users benefits the global economy by allowing a range of businesses—including manufacturing, healthcare, agriculture, energy, and technology—to improve their planning and forecasting and offer more stable prices to consumers and more stable contributions to economic growth.

Because of its anticipated significant increase in capital requirements, the Basel III Endgame is expected to materially constrain large banks' ability to support capital markets. This could reduce the depth of their products/services offered to commercial end-users, leading to reduced competition, and increasing the cost of raising capital and hedging risk for a wide variety of commercial end-users.

¹ <https://subscriber.politicopro.com/f/?id=00000189-28e1-d8b7-a9bb-eeefcfde0000>

2. The Basel III Endgame’s Potential Impacts on Commercial End-Users

The Basel III Endgame reforms consist of four components: the credit risk framework, the market risk framework, the CVA risk framework, and the operational risk framework. All four components are expected to have meaningful impacts on banks’ capital markets activities. Given the intended scope, this blog highlights only a few provisions (namely, the treatment of unrated counterparties, the impacts of the revised CVA risk framework, and the treatment of the service component under the revised operational risk framework) of the Basel III Endgame to demonstrate its potential impacts on commercial end-users regarding securities insurance and the use of derivatives to manage business risks.²

1) Securities Issuance

The largest banks play a critical role in underwriting securities including mortgage-backed securities (“MBS”), corporate bonds, equities, ABS, and munis. This is clearly shown in the table below which presents the market shares statistics across three types of firms underwriting various securities, i.e., the Global Systemically Important Banks (or “GSIBs”) – firms expected to bear the lion’s share of the Basel III Endgame capital increases, non-GSIB CCAR firms (or “CCAR ex GSIB”), and other firms (or “Other”, ~200 firms):

Underwriting Market Shares by Product & Firm Group

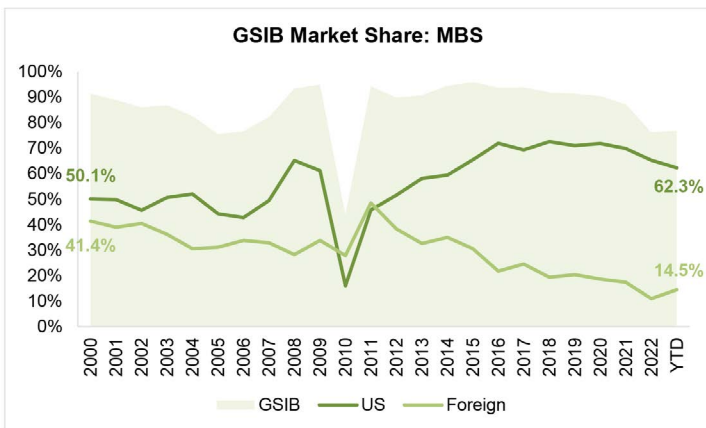
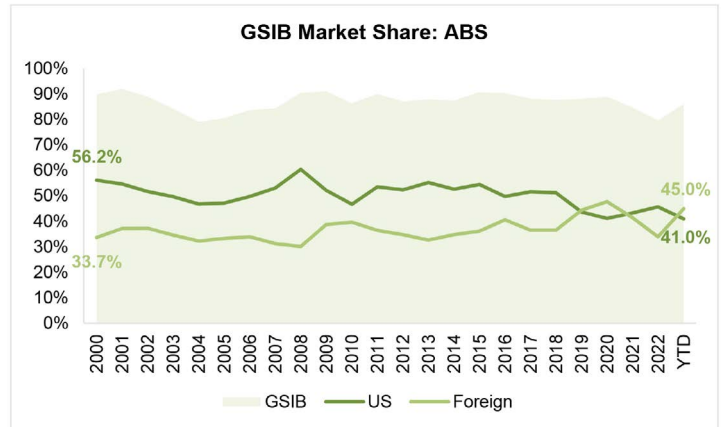
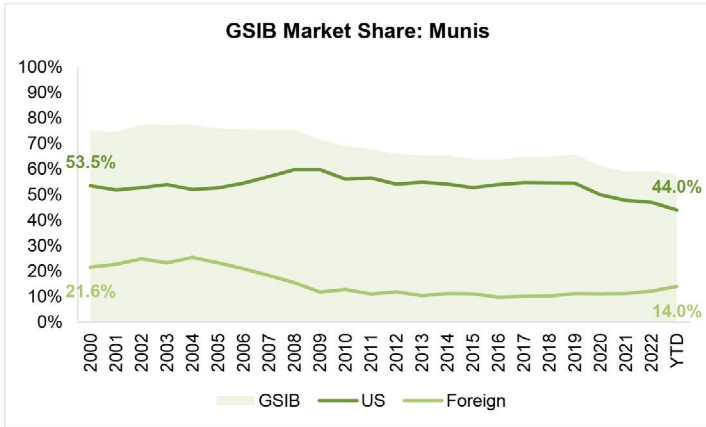
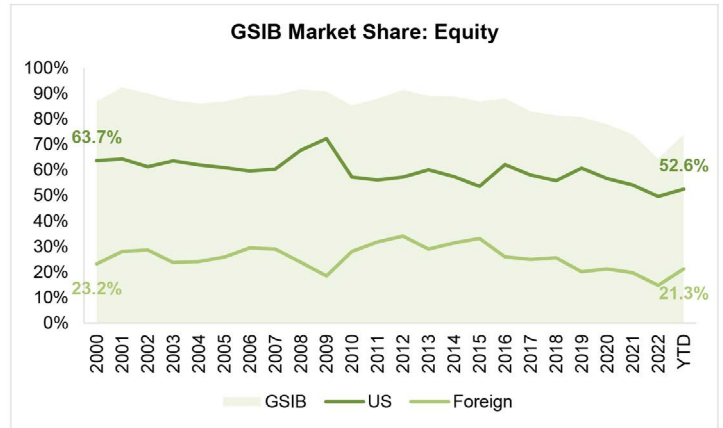
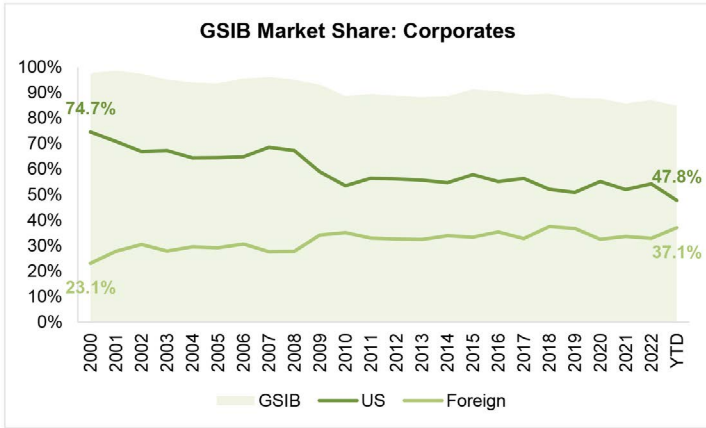
	US	Foreign	GSIB	Super Regional	Regional	CCAR	Top 5	Remainder	Other
MBS	71.0%	21.4%	92.4%	0.6%	0.1%	0.8%	4.6%	2.3%	6.9%
Corporate Bonds - IG	55.0%	35.1%	90.1%	3.0%	0.5%	3.5%	2.4%	3.9%	6.3%
Corporate Bonds - All	53.4%	35.5%	88.9%	3.1%	0.8%	3.9%	2.9%	4.4%	7.2%
ABS	49.1%	38.9%	88.0%	0.4%	0.3%	0.6%	8.7%	2.7%	11.4%
Equities - Secondaries	61.3%	21.8%	83.1%	0.9%	0.6%	1.5%	7.6%	7.8%	15.4%
Corporate Bonds - HY	45.3%	37.5%	82.8%	3.5%	2.0%	5.5%	7.2%	4.5%	11.7%
Equities - All	58.2%	23.6%	81.8%	0.9%	0.6%	1.5%	7.7%	9.0%	16.7%
Equities - IPOs	48.0%	29.5%	77.5%	1.0%	0.6%	1.6%	8.8%	12.1%	20.9%
Munis	54.6%	10.5%	65.2%	2.0%	1.7%	3.7%	16.5%	14.6%	31.1%

Source: Dealogic, Refinitiv, SIFMA estimates

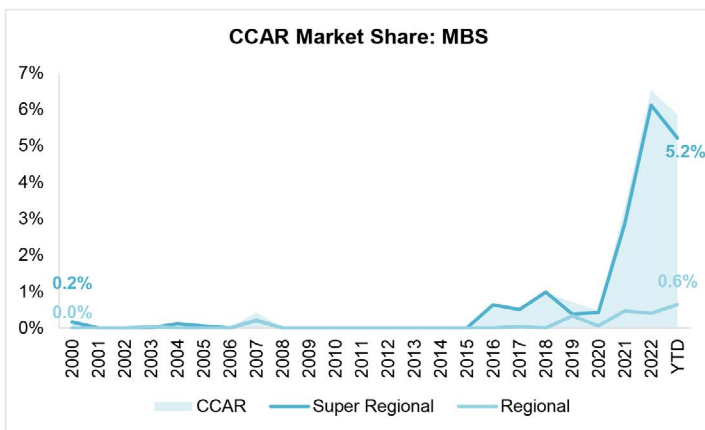
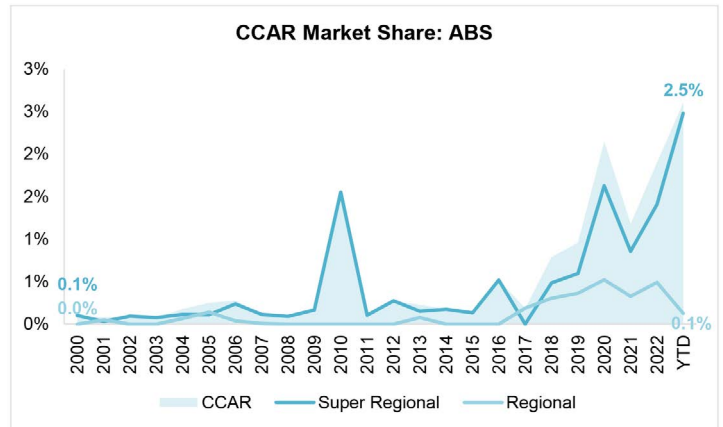
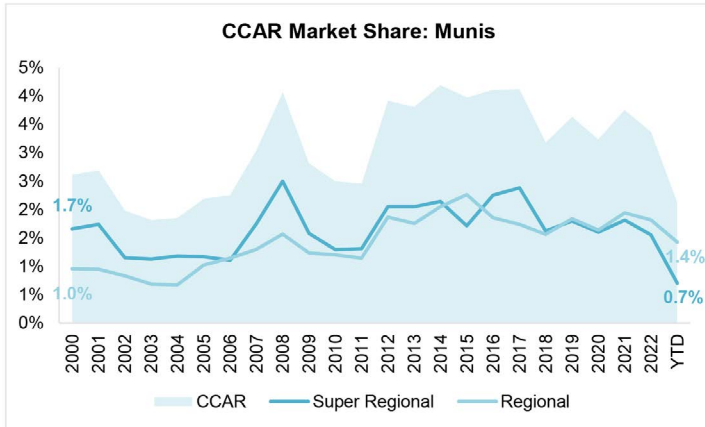
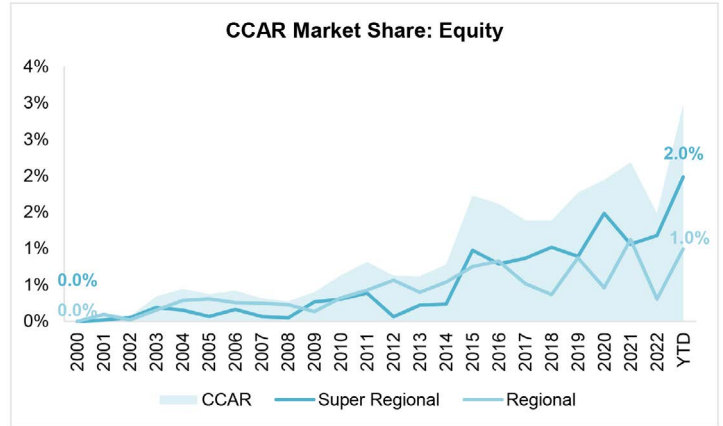
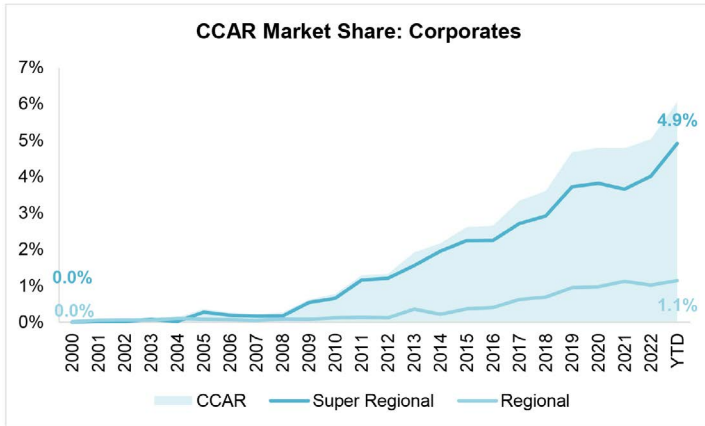
In the last two decades, US GSIBs market share in nearly all types of securities underwriting have steadily and materially decreased. Foreign GSIBs and US regional banks grew their market shares somewhat in certain markets during the same period, while other underwriters have seen their underwriting role expand rapidly. The charts below depict the historical trend of market shares of securities underwriting by the three different types of market players:

² The impacts of the revised market risk framework, or the Fundamental Review of the Trading Book, have been discussed in [Part II](#) and [Part III](#) of this blog series.

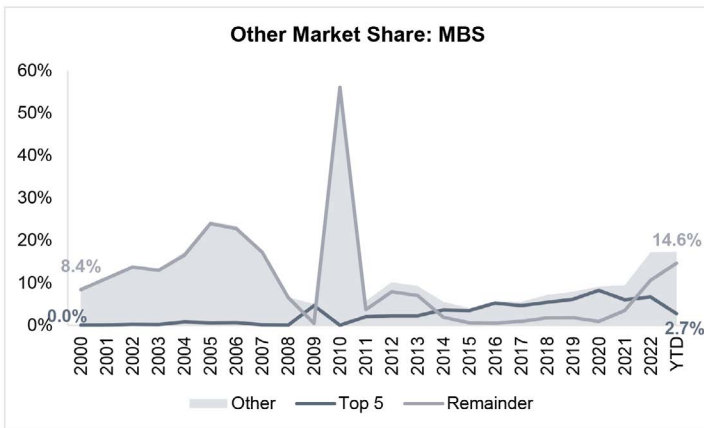
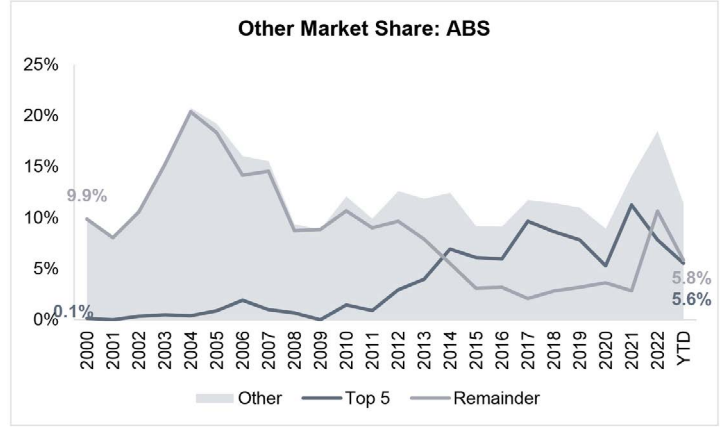
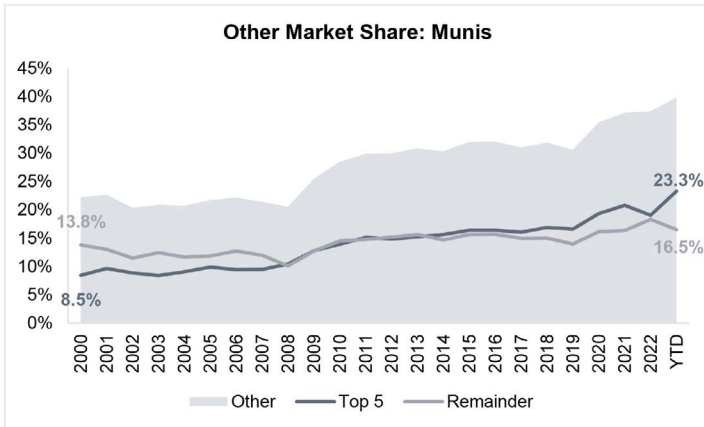
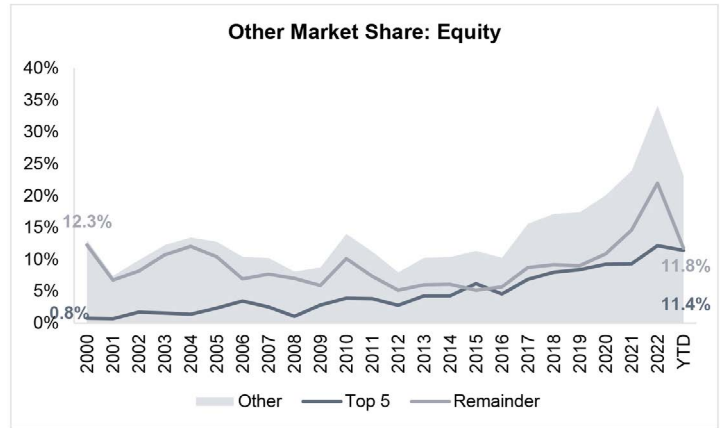
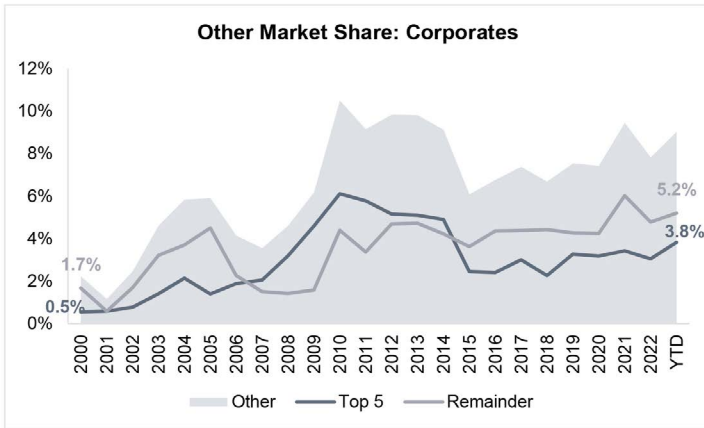
GSIBs



CCAR ex-GSIBs



Other



The Basel III Endgame requires banks to include certain securities arise from underwriting activities in the trading book and subject to the Fundamental Review of the Trading Book (or “FRTB”).³ The Basel Committee *expects* the FRTB to increase market risk capital requirements by 57% for GSIBs globally, a figure that may understate the impacts for the largest U.S. institutions given their greater capital markets focus. Capital requirements increase for banks’ capital market activities of this magnitude alone may be expected to materially compress profitability and, thereby, the viability of certain products and services offered by banks including securities underwriting. In addition, securities underwriting service is a fee-based business (as is the case for custody services and wealth management services). Fee incomes and expenses feed into the “services component” of the revised operational risk framework.⁴

³ See the Basel [RBC 25](#).

⁴ See the Basel [OPE 25](#).

The revised standardized approach for operational risk capital requirements largely relies on a financial-statement-based proxy known as the Business Indicator (or “BI”). The BI is based on certain balance sheet items and is calculated as the sum of three components: an interest, leases, and dividend component; a services component; and a financial component. Each component is calculated based on the income generated by the relevant activities. The BI is then multiplied by corresponding coefficients (i.e., 12%, 15%, and 18%, or “Coefficient”) to generate the Business Indicator Component (or “BIC”, $BIC = BI \times Coefficient$). The BIC is in turn multiplied by an Internal Loss Multiplier (or “ILM”), which depends on each bank’s historical losses over the prior ten years.⁵ A bank’s risk weighted asset (or “RWA”) for operational risk is then calculated as the $BI \times Coefficient \times ILM \times 12.5$. Thus, if assuming ILM equals to 1 and viewing BI as operational risk “exposure”, $Coefficient \times 12.5$ essentially serves the role of the operational risk RWA risk weights.

Focusing on the services component, since the coefficients vary from 12%, 15%, up to 18% depending on size the BI, the corresponding equivalent RWA risk weights are 150%, 187.5%, and 225%. In comparison, the Basel III Endgame assigns RWA risk weight of 150% to corporate exposures rated below BB- (or “high yield”), and risk weight of 250% to public equity holdings.⁶ Thus, the Basel III Endgame capitalizes services component equivalently as high yield debt and even equity exposures. However, the comparison is not a fair one for two reasons. First, the high yield debt and equity exposures are on banks’ balance sheet, and their values are volatile. Therefore, they are expected to attract higher risk weights. Second, service incomes generated from securities underwriting, custody and wealth management services are generally steady and tend not to give rise material losses. Moreover, the operational risk framework and credit risk frameworks are designed to capitalize very different risks.

As a result, the revised operational risk framework may over-conservatively capitalize banks’ capital markets services activities including securities underwriting, custody, and wealth management services. This would disincentivize banks from providing these capital markets services⁷ and disrupt banks’ efforts in “developing sustainable revenue streams beyond net interest income ... [remain] vital in order to buttress [banks’] profitability” which clearly “matters for financial stability.”⁸

2) Derivatives

Commercial end-users employ derivatives primarily to manage and mitigate risks associated with operating their businesses. To help facilitate the efficient access to the derivatives hedging market, Congress exempted end-users that are hedging business risks from having to post margin on uncleared derivatives transactions and from having to clear derivatives transactions.⁹ To be consistent with the Congressional recognition, the Standardized Approach for Counterparty Credit Risk (“SA-CCR”) rule¹⁰ jointly finalized by the three federal banking agencies (i.e., the Board of Governors of the Federal Reserve, the Office of the Comptroller of the Currency, and the Federal Deposit Insurance Corporation) in 2020¹¹ sets out a lower exposure multiplier when a bank’s derivatives counterparty is a commercial end-user (i.e., a multiplier of 1 for commercial end-users as the bank’s counterparties instead of 1.4 for other counterparties) to mitigate the impacts of higher capital requirements resulting from the SA-CCR.

⁵ Note that this has been set at a uniform “1” in the UK and EU proposals (national discretion around the ILM is built into the Basel standards).

⁶ See the Basel [CRE 20](#).

⁷ One way to mitigate the over-conservativeness may be to multiply the services component by a scaler which essentially scales the operational risk RWA risk weight for services component down to an appropriate level. For example, a scaler of 1/1.875 would translate into an average operational risk RWA risk weight of 100% instead of 187.5%. Under the Basel III Endgame (Basel [CRE 20](#)), 100% risk weight for corporate exposure corresponds to an external credit rating of BB+ to BB-.

⁸ See ECB Vice-President Luis de Guindos remark on “[Challenges for bank profitability](#)”, May 1, 2019.

⁹ See the Business Risk Mitigation Price Stabilization Act of 2015. “Forcing businesses to post margin not only ties up capital, but also makes it more expensive for firms to utilize the risk management tools that they need to protect their businesses from uncertainty. Today’s bill clarifies in statute that Congress meant what it said when it exempted end users from margin and clearing requirements. Specifically, it ensures that those businesses which are exempt from clearing their hedges are also exempt from margining those hedges.” 114th Congr. Rec. H-67-68 (Jan. 7, 2015) (state of Rep. Mike Conaway).

¹⁰ See in 12 CFR Part 217 Subpart E [§217.132](#).

¹¹ See <https://www.federalregister.gov/documents/2020/01/24/2019-27249/standardized-approach-for-calculating-the-exposure-amount-of-derivative-contracts>

However, the significant increase in Credit Valuation Adjustment (or “CVA”) capital requirement due to the revised CVA risk framework under the Basel III Endgame would effectively undo the benefits of the lower multiplier under the SA-CCR rule.¹² To illustrate the impacts of the revised CVA risk framework, consider the following stylized example. A pension fund (or “Pension Fund”) hedges its interest rate risk using a 3-year interest rate swap contracted with a bank (or “Bank”). For simplicity, assume the Exposure-at-Default (or “EAD”) of the interest rate swap contract calculated using the SA-CCR equals to \$10mn. The Pension Fund has no listed securities and is unrated. And the 1-year probability of default of the Pension Fund is estimated to be 0.1% – equivalent to a S&P rating between A and BBB, i.e., investment grade rating.¹³ The Bank is subject to CVA risk capital requirement.

In the US, the Dodd-Frank Act prohibits the use of external credit rating in bank capital rules. The US bank capital rules define investment grade as:¹⁴

“Investment grade means that the entity to which the Board-regulated institution is exposed through a loan or security, or the reference entity with respect to a credit derivative, has adequate capacity to meet financial commitments for the projected life of the asset or exposure. Such an entity or reference entity has adequate capacity to meet financial commitments if the risk of its default is low and the full and timely repayment of principal and interest is expected.”

For unrated corporate exposures, the Basel 3 Endgame provides that:¹⁵

“Banks in jurisdictions that do not allow the use of external ratings for regulatory purposes may assign a 65% risk weight to exposures to “investment grade” corporates ... When making this determination ... the corporate entity (or its parent company) must have securities outstanding on a recognised securities exchange.”

The example considers investment grade determination for counterparties with and without the “securities listing” criterium sets out in the Basel III Endgame. The table below presents the resulting CVA capital increase due to the revised CVA risk framework. Implementing the securities listing requirement in investment grade determination the Basel III Endgame raises CVA capital requirement on the interest rate swap transaction 4.13x relative to the current capital rules.¹⁶ Eliminating the listing requirement significantly reduces the resulting CVA capital, though it would still be at 1.73x that of the current capital rules. The results indicate that securities listing should not be required in investment grade determination under the Basel III Endgame implementation:

Current CVA RWA ¹⁷	Revised CVA RWA ¹⁸	Adj. Revised CVA RWA ¹⁹	Increase	
\$0.24mn	\$1.01mn	\$0.42mn	4.13x	1.72x
<p>Date: May 19, 2023</p> <p>Portfolio Composition:</p> <p>1. Pension Fund hedges interest rate risk using 5-year interest rate swap contract with Bank. The interest rate swap contract notional is \$10mm.</p> <p>Credit Rating:</p> <p>1. Pension Fund is unrated (and Bank assigns it an internal PD of 0.1%).</p>				

12 See the [Basel III Monitoring Report Feb. 2023](#).

13 See <https://www.fixedincomenews.com.au/sp-default-rate-study/>

14 See in 12 CFR Part 217 Subpart A [§217.2](#).

15 See the Basel [CRE 20](#).

16 On the same transaction, switching to SA-CCR from the Current Exposure Method (or “CEM”) the CCAR capital requirements increased from \$0.05mm to \$0.21mm – an increase of 4.2x.

17 The current CVA risk capital requirements are calculated according to the simple CVA approach sets out in 12 CFR Part 217 Subpart E [§217.132](#).

18 The revised CVA risk capital requirements are calculated using the BA-CVA approach as prescribed in the Basel 3 Endgame [MAR50](#) (applying the counterparty risk weight of 12% for unrated financials).

19 Apply risk weight for investment grade financials (i.e., 5%) instead of 12% for unrated financials.

3. Conclusion

Commercial end-users rely directly on the capital markets services (e.g., securities underwriting) and products (e.g., financial derivatives) that large banks provide through their capital markets activities. The potential significant increase in capital requirements for large banks' capital market activities due to the Basel III Endgame could materially reduce the depth of banks' products and services offerings to end-users, which in turn leads to reduced competition and increased cost of raising capital and hedging risk for a wide variety of commercial end-users. As a result, some end-users could encounter difficulties in their access to liquidity and affordable funding to fuel growth and create jobs, and provide critical civil services (in the case of municipalities). The treatment of unrated corporate exposures under the revised credit risk framework and the services component under the new operational risk framework are among the factors leading to the significant capital increase. This blog puts forth quick fixes that can mitigate the capital impacts.

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Part VI: Our Series on US Bank Capital Requirements

Understanding the Proposed Changes to the US Capital Framework: Initial Proposals for Reform to Reduce Duplicative Risk Capture and Maintain the Credibility of the Collins Floor Requirement

- The US Basel 3 Endgame [proposal](#) released on July 27, 2023 creates a “three-stack” approach to risk-based capital requirements, replacing the current two-stack approach: the revised US standardized approach, pursuant to the Collins Amendment of the Dodd-Frank Act (“Collins Floor”); a new expanded risk-based approach (“ERBA”); and a separate standardized output floor.
- This blog, part VI in our series on capital requirements for U.S. banks, examines which of the proposal’s three capital stacks are most likely to be binding for the US GSIBs, as well as their interactions with the Federal Reserve’s Stress Capital Buffer (“SCB”). There are two key design flaws that ought to be addressed in the final rule.
- First, the proposal’s design makes the statutorily mandated Collins Floor, as well as the standardized output floor, effectively obsolete (i.e., not binding requirements for banks), reducing them to costly compliance exercises for banks. Second, applying the SCB to the ERBA leads to material duplicative risk capture (i.e., capital requirements in excess of the underlying risks) for market, operational and credit valuation adjustment (“CVA”) risks.
- The over-capitalization resulting from these two design issues will likely constrain the largest banks’ ability to provide key capital markets products and services, translating into higher costs for end-users and the broader US economy. Moreover, it could have negative implications for liquidity in the US Treasury markets, US financial stability, and the broader economy.
- These design issues could be mitigated through two simple adjustments. First, capital buffers should be applied to the Collins Floor and the ERBA in such a way that either could realistically act as the binding constraint for the largest banks. This would involve a) applying the SCB and Method 2 GSIB surcharge (“Method 2”) to the Collins Floor, and b) applying the Capital Conservation Buffer (“CCB”) and the Method 1 GSIB surcharge (“Method 1”) to the ERBA. Second, the standardized output floor should apply only to banks with sufficiently large trading activities.

1. Background on The Existing US Capital Framework

The Collins Amendment of the 2010 Dodd-Frank Act requires large US banks (those subject to “advanced approaches” treatment, generally the US GSIBs) to calculate their capital requirements in two ways: first, using regulator-set standardized approaches and second using internal models approaches, with the higher of the two capital requirements acting as the firm’s binding capital constraint.¹ This creates a “two-stack” approach to calculating capital requirements (Figure 1 provides a high-level schematic depiction of this framework).²

The Federal Reserve then applies the Stress Capital Buffer (“SCB”) to the Collins Floor-mandated standardized approaches and the Capital Conservation Buffer (“CCB”) to the advanced approaches capital calculations. The SCB is no lower and can be significantly higher than the CCB. As a result, the combination of the Collins Floor and SCB often generally acts as the binding capital constraint for the largest banks. As of Q4 2021, the binding risk-based capital constraint for the eight US GSIBs was the Collins Floor,³ though some institutions “escaped” the Floor in Q1 2023.⁴

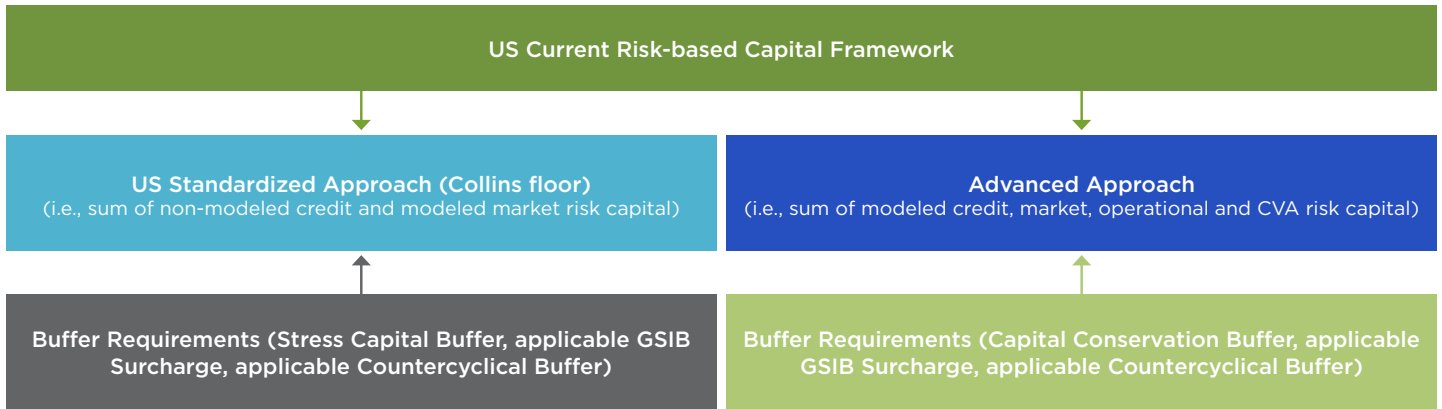
1 The Collins Floor capital requirements equal the sum of non-modeled credit risk capital and modeled market risk capital. The advanced approaches calculate capital requirements equal the sum of modeled credit risk capital, market risk capital, operational risk capital and CVA risk capital.

2 [Part I](#) of our Basel capital blog series provides a more detailed overview of the various components of the current regulatory capital rules.

3 See “All top US banks below Collins floor”, Risk.net, January 27, 2021 (<https://www.risk.net/risk-quantum/7922981/all-top-us-banks-below-collins-floor>).

4 See “Citi, BNY Mellon escape Collins floor”, Risk.net, July 19, 2022 (<https://www.risk.net/risk-quantum/7952111/citi-bny-mellon-escape-collins-floor>).

Figure 1. A high-level schematic overview of the two-stack risk-based capital framework under the current capital rules.⁵



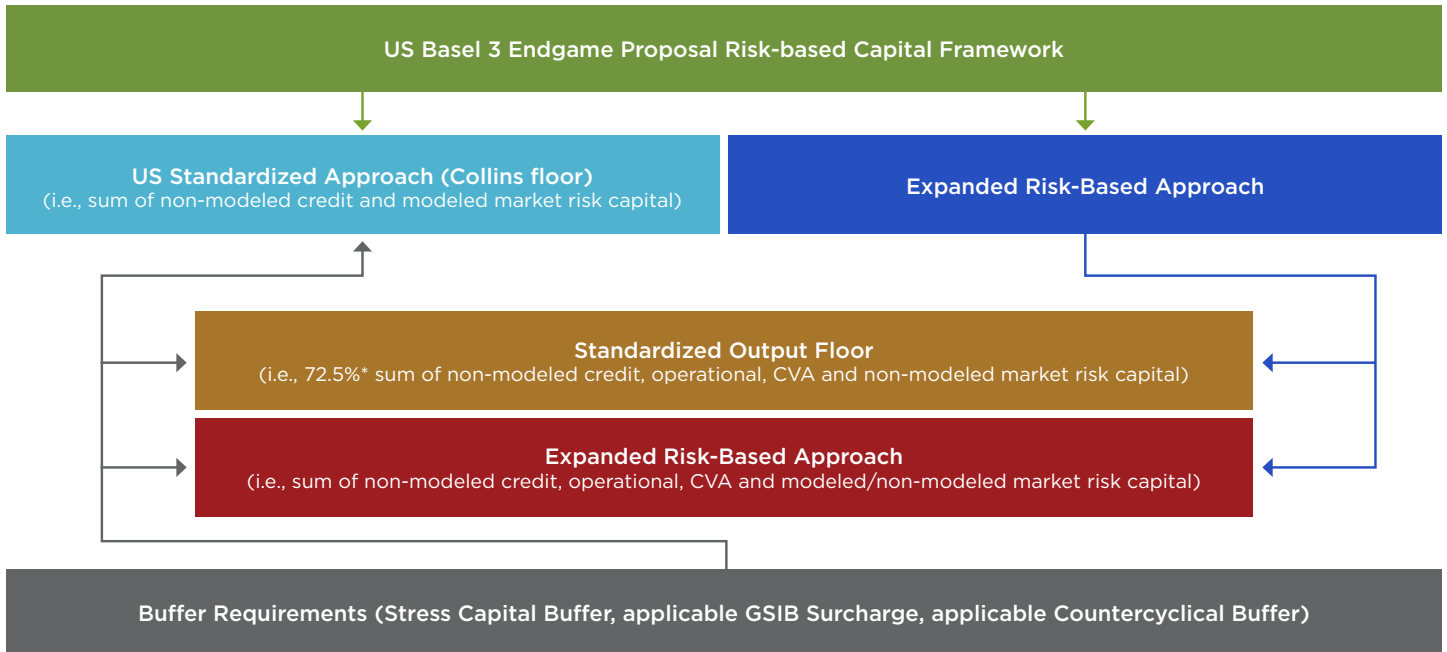
2. How Does the US Proposal Change the Existing Capital Framework

On July 27, 2023, the Federal Reserve Board, the Office of the Comptroller of the Currency, and the Federal Deposit Insurance Corporation (“Agencies”) jointly released a proposal that would implement the internationally agreed Basel III Endgame standards into the US capital rules. The proposal contains several requirements that are super equivalent to the minimum Basel standards – an example of long-standing US “gold plating” of international standards.⁶ Amongst other elements, the proposal contains a “three-stack” design for U.S. risk-based capital requirements: the revised US standardized approach (i.e., the Collins Floor); the expanded risk-based approach (“ERBA”); and the standardized output floor, which is designed to ensure that banks’ modeled capital requirements do not fall below a defined percentage (72.5%) of the capital requirements calculated using the regulator-set standardized approach. The SCB would, in turn, be applied to all three capital stacks. As a result, the CCB will be eliminated – another instance of the US “gold plating”. This new proposed framework is represented in Figure 2 below.

⁵ The risk weighted assets (“RWA”) amount under the US standardized approach equals the sum of US standardized credit risk RWA and the internal models-based market risk RWA, except that the specific risk charge must be calculated using the standardized approach. The RWA amount under the advanced approaches equals the sum of internal models-based credit, market, operational and CVA risks.

⁶ For example, the proposal eliminates internal models for credit risk in its entirety whereas the Basel standards permit it. The proposal also removes the modeled default risk charge in the Basel standards for the FRTB. The proposal floors the Internal Loss Multiplier of the standardized operational risk framework at 1, whereas the Basel standards have no such floor to incentivize banks’ prudent operational risk management practices. Additionally, the proposal adopts the SFT minimum haircut floor which wasn’t implemented in several other major jurisdictions due to the concerns that the framework could have detrimental impacts on SFT markets.

Figure 2. A high-level schematic overview of the two-stack risk-based capital framework under the proposal



For the purpose of the Collins Floor, the proposal retains the current US standardized approach to credit risk and replaces the current internal models approach to calculating market risk with the Fundamental Review of the Trading Book’s internal models approach (“FRTB-IMA”), meaning that the Collins Floor capital requirement is now equal to the sum of the current US non-modeled credit risk capital and FRTB-IMA market risk capital.⁷ The ERBA stack is determined as the sum of non-modeled credit risk, operational risk and CVA risk capital – all calculated using the new standardized approaches, plus FRTB-IMA market risk capital.⁸ The standardized output floor is calculated based on 72.5% of the ERBA capital requirements, though market risk capital must be calculated using the FRTB’s standardized approach (“FRTB-SA”) for these purposes.⁹ In short, the result of these changes is that regulator-set standardized approaches will now be the basis for determining the US risk-based capital requirements rather than internal models approaches.

2.1 Why is the New Standardized Output Floor Unlikely to be a Binding Capital Constraint?

For the standardized output floor to be the binding capital constraint, a bank’s trading activities need to be sufficiently large that at a minimum its non-modelled capital requirements account for more than 40% of total risk-based capital requirements.¹⁰

The eight US GSIBs collectively have the largest trading activities amongst all the Category I-IV banks under the Agencies’ tiering rule and account for 94% of the \$94bn aggregate trading losses under the Federal Reserve’s 2023 supervisory stress test.¹¹ The standardized output floor only has the potential to be a binding constraint for this group of firms. Figure 3 plots the modeled market risk capital calculated as a percentage of the total capital requirements under the ERBA, in term of risk weighted asset (“RWA”) amount, for the eight US GSIBs, assuming the ERBA was effective as of Q1 2019 (recalling that the new standardized output floor equals 72.5% of the EBRA).¹² For all eight US GSIBs, the modeled market risk capital accounts for no more than 20% of the total risk-based capital requirements under the ERBA since Q1 2019 (as of Q1 2023, the highest percentage is 15% across all eight banks).

7 Although the proposal allows modeled market risk for the purpose of the Collins floor, because of its complexity and the stringent model approval process for the FRTB-IMA some banks may choose calculate market risk capital using FRTB-SA instead. In this case, the Collins floor capital requirements equal the sum of the current US non-modeled credit risk capital and FRTB-SA market risk capital.

8 I.e., $ERBA_{RWA} = RWA_{Credit}^{ERBA-SA} + RWA_{Market}^{FRTB-IMA} + RWA_{Op}^{SA} + RWA_{CVA}^{SA}$ where $RWA_{Credit}^{ERBA-SA}$ denotes the risk-weighted asset (“RWA”) for credit risk calculated using the ERBA standardized approach (“ERBA-SA”) credit risk. Similarly, the other terms denote corresponding risk types and calculation approaches. Banks that do not implement the FRTB-IMA or lose the regulatory approval for it must calculate market risk capital using the FRTB-SA.

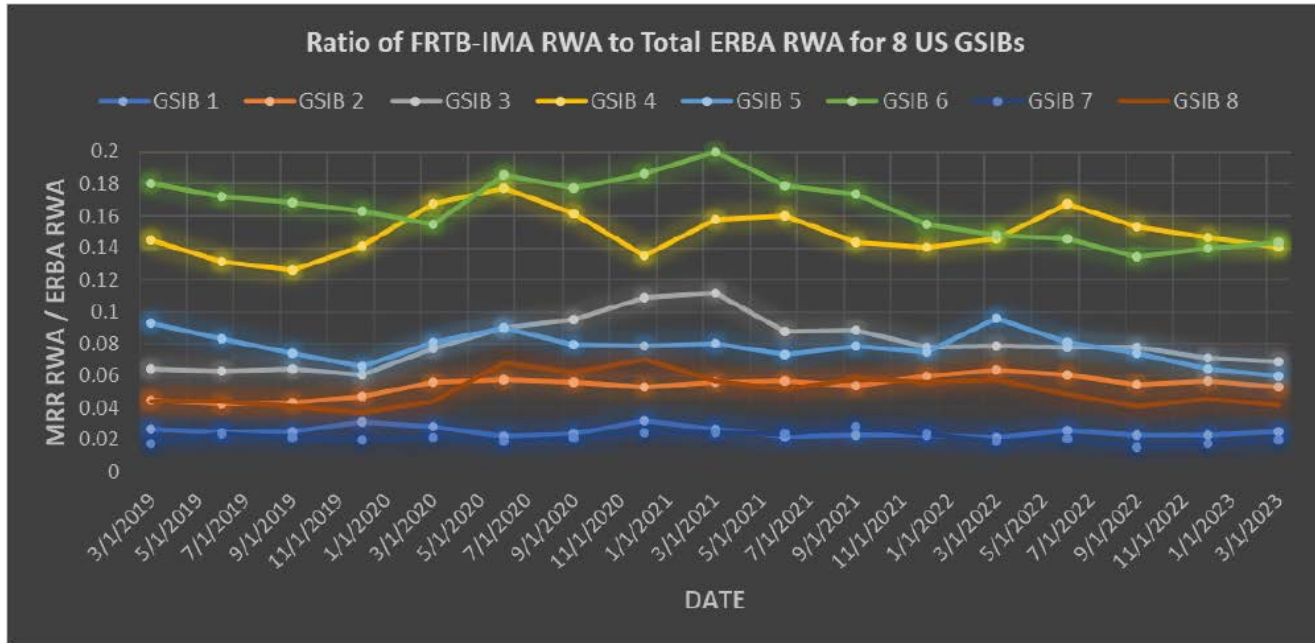
9 I.e., $OutputFloor_{RWA} = 72.5\% * (RWA_{Credit}^{SA} + RWA_{Market}^{FRTB-SA} + RWA_{Op}^{SA} + RWA_{CVA}^{SA})$.

10 The binding condition, i.e., $OutputFloor_{RWA} \geq ERBA_{RWA}$, can be re-written as $(RWA_{Market}^{FRTB-SA} - RWA_{Market}^{FRTB-IMA}) / ERBA_{RWA} \geq 38\%$.

11 See <https://www.federalreserve.gov/supervisionreg/dfa-stress-tests-2023.htm>

12 See Appendix for details on the estimation of the ratios.

Figure 3. The ratio of FRTB-IMA RWA to total ERBA RWA for the eight US GSIBs since Q1 2019



Assuming the modeled market risk capital equals 20% (15%) of total capital, for the standardized output floor to be binding, the corresponding non-modeled market risk capital needs to exceed 2.9x (3.6x) of the modeled market risk capital.¹³ Table 1 presents the ratio of the non-modeled to the modeled market risk capital requirements by risk classes as reported in the Basel Committee’s [2019 explanatory note](#). Given the US GSIBs’ diverse trading activities, it is reasonable to expect their non-modeled to modeled market risk capital ratio be no larger than 2x which is significantly smaller than 2.9x (3.6x). Thus, the new standardized output floor has little chance of being binding for the US GSIBs.¹⁴

Table 1. The estimated capital requirements under FRTB SA relative to FRTB IMA by risk classes

Risk Class Category	FRTB-SA to FRTB-IMA Capital Ratio
General interest rate risk	1.5
Credit spread risk: non-securitizations	1.1
Equity risk	1.8
Commodity risk	1.6
Foreign exchange risk	2.2

Source: The Basel Committee on Banking Supervision

2.2 The Collins Floor Will No Longer Be a Binding Constraint for the Largest Banks Under the Proposal

The Collins floor is binding on firms whenever non-modeled credit risk capital savings (i.e., the difference in the US non-modeled vs the ERBA non-modeled credit risk capital) exceed 100% of the aggregate operational and CVA risk capital under the ERBA.¹⁵ Figure 4 plots the estimated credit risk capital savings as the percentage of the aggregate operational and CVA risk capital, in terms of RWA amount, for the eight US GSIBs.

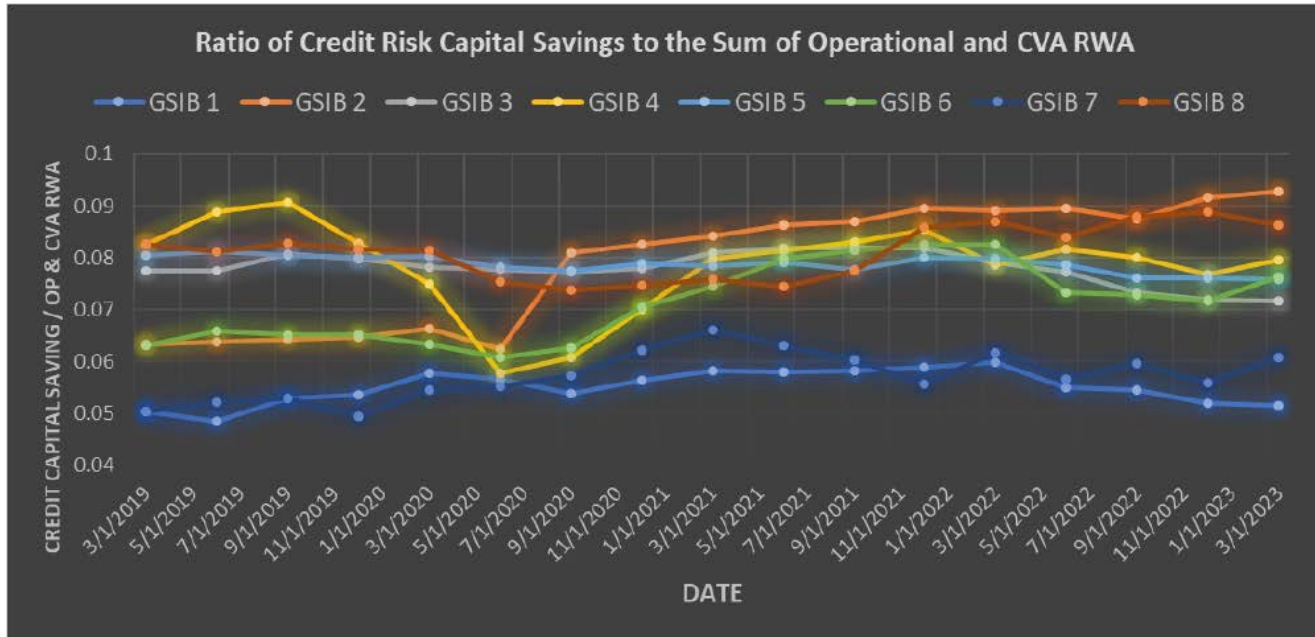
Figure 4. The ratio of non-modeled credit risk capital savings relative to the aggregate operational and CVA risk

¹³ For simplicity, assume the total ERBA capital is \$1. The modeled market risk capital is \$p and the aggregate non-modeled credit risk, operational risk and CVA risk capital is \$(1-p). In addition, assume non-modeled market risk capital equals a times the modeled market risk capital. The standardized output floor is binding if: $0.725 \cdot (a \cdot p + (1-p)) = 1$. When $p=20\%$, $a=2.9$.

¹⁴ For a the FRTB SA to FRTB IMA capital ratio of 1.5x and 1.8x, the corresponding percentage exceeds 76% and 50%.

¹⁵ I.e., $RWA_{Credit}^{US-SA} + RWA_{Market}^{IMA} \geq RWA_{Credit}^{ERBA-SA} + RWA_{Market}^{IMA} + RWA_{Op}^{SA} + RWA_{CVA}^{SA}$.

capital for the eight US GSIBs since Q1 2019



The non-modeled credit risk capital savings are no larger than 10% of the aggregate operational and CVA risk capital under the ERBA for the eight US GSIBs. This means that the Collins Floor will not act as the binding constraint for the US GSIBs, effectively making this statutory requirement redundant.

Therefore, both the Collins Floor and the new standardized output floor effectively become compliance exercises that create unnecessary operational burdens for banks, while the binding capital requirement will almost always be the ERBA.

3. The ERBA and the SCB Effectively Double Count Similar Market and Operational Risks

Under the Federal Reserve’s supervisory stress test, market and CVA risks are captured via the global market shock (“GMS”) losses. In addition, the ERBA capitalizes market and CVA risks under the FRTB and the FRTB-like standardized approach for CVA (“SA-CVA”) respectively. The designs of the FRTB and the GMS share many key similarities – e.g., measure deep tail losses, large risk factor shocks and severely constrain diversification benefits.¹⁶

Additionally, operational-risk losses are captured by the supervisory stress test’s pre-provision net revenue (“PPNR”) component. The Federal Reserve’s PPNR “model projects losses stemming from operational-risk events using information about the size and *historical operational-risk losses* of the firms”.¹⁷ The historical operational-risk losses directly feed into the internal loss multiplier (“ILM”) of the ERBA standardized operational risk framework which the proposal relies on to increase operational risk capital requirements. Consequently, applying the Federal Reserve’s SCB to the ERBA will lead to material duplicative risk capture between the two frameworks (something approximating a “double counting” of risks).

¹⁶ Part IV of our Basel capital blog series provides an in-depth examination of the similarities.

¹⁷ See <https://www.federalreserve.gov/publications/files/2023-june-supervisory-stress-test-methodology.pdf>

4. Two Simple Design Modifications Can Address These Issues

There are two ways in which the proposal could be adjusted to remediate the redundancy built into the three stack-approach and mitigate the duplicative risk capture between the SCB and the ERBA.

a) **Apply Additional Buffers to the Collins Floor and ERBA so that Collins can Act as a Credible Floor:**

We recommend that the Agencies apply *both* the SCB and the Method 2 GSIB surcharge to the Collins Floor – all three are US specific requirements– and *both* the CCB and the Method 1 GSIB surcharge to the ERBA – the three components that are consistent with the Basel standards. As noted above, the risk-based capital ratio for the largest US banks equals the sum of their minimum capital requirements plus buffers such as the SCB, the CCB and, as applicable, the countercyclical capital buffer (CCyB)¹⁸ and the GSIB surcharge. The ERBA as proposed always produces significantly higher minimum capital requirements than the Collins Floor, which appears to run counter to statutory intent. To allow the Collins Floor to have a reasonable chance of acting as the binding capital constraint for the US GSIBs, the buffer requirements added to the Collins Floor should be higher than those added to the ERBA.

The SCB is dependent on the outcome of the Federal Reserve’s supervisory stress test. For some banks, the SCB is significantly higher than the CCB.¹⁹ As a result, adding the SCB to the Collins Floor and the CCB to the ERBA (without applying the SCB) would increase the likelihood of the Collins Floor being binding and would remove the duplicative risk capture for operational and CVA risks (but not for market risk). Additionally, as part of the buffer requirements, the applicable GSIB surcharge can be adjusted. US GSIBs need to calculate GSIB surcharges using two methods: the Basel Method 1 (“Method 1”) and the US-specific Method 2 (“Method 2”).²⁰ The Method 2 almost always produces a higher surcharge than the Method 1 approach. Therefore, adding the Method 2 GSIB surcharge to the Collins Floor and the Method 1 GSIB surcharge to the ERBA would further enhance the credibility of the Collins Floor.

b) **Reduce the Compliance Burden on Banks and Only Apply the Standardized Output Floor to Banks with Large Trading Operations.** With a non-modeled to modeled market risk capital ratio of 1.8x, FRTB-IMA capital effectively needs to exceed 50% of the total ERBA capital for the standardized output floor to bind. Given that no banks’ trading activities are anywhere close to this threshold, the Agencies should reduce the compliance burden associated with calculating the standardized output floor capital requirement and only apply it to banks with sufficiently large trading activities, e.g., where the FRTB-IMA capital exceeds a certain regulators-set percentage of the total ERBA capital.

The above changes would also help to mitigate some of the potential negative effects of the proposal on the US Treasury markets specifically and the US capital markets more generally. A recent report from staff at the New York Federal Reserve finds that dealer banks’ capacity to intermediate in the US Treasury markets is heavily tied to their VaR model estimates.²¹ The proposal will replace this VaR-based market risk measure with a new Expected Shortfall (“ES”)-based market risk measure, a change that contributes heavily to an estimated 75% increase in market capital RWA for the largest US banks. This capital increase will significantly constrain the capacity of the US GSIBs to support the US Treasury markets and other key funding markets. Moreover, its effects would be further compounded by the SCB – due to the duplicative risk capture – and the proposed changes to the GSIB score indicators²² under the Agencies’ GSIB surcharge [proposal](#).²³ The proposed design modifications would mitigate the duplicative risk capture with the SCB and moderate the proposal’s excessive increases in capital requirements for the largest US banks, allowing them to continue to provide support to the US Treasury markets and the capital markets overall. In turn, this would help promote greater US financial stability.

18 The CCyB is 0% under the current US capital rules.

19 See <https://www.federalreserve.gov/publications/files/large-bank-capital-requirements-20220804.pdf>

20 See <https://www.ecfr.gov/current/title-12/chapter-II/subchapter-A/part-217/subpart-H>

21 The paper notes that capacity utilization measures based on estimated VaR ... is an important explanatory factor for the tail behavior of Treasury market liquidity.” See [Dealer Capacity and US Treasury Market Functionality](#).

22 Specifically the proposal’s treatment of derivatives in the interconnectedness and complexity indicators and trading volume in the substitutability indicator.

23 The proposed changes in GSIB surcharge are expected to increase capital requirement for the 8 US GSIBs by \$13bn.

5. Conclusion

The Basel III Endgame completely rewrites the risk-based capital standards for banks. The US proposal adopts the Basel standards but with significant gold plating in many areas, including in the adoption of a three-stack capital framework, with only one stack – the ERBA – likely to be binding for the largest US banks. When the SCB is applied to the ERBA, it leads to material duplicative risk capture (effectively “double counting” of risks) for market, operational and CVA risks, results in excessively higher capital requirements than would otherwise be the case. This could increase funding costs and reduce market liquidity in key capital markets such as the US Treasury markets, with significant negative consequences for US financial stability and the broader economy.

These design issues could be mitigated through two simple adjustments. First, capital buffers should be applied to the Collins Floor and the ERBA in such a way that either could realistically act as the binding constraint for the largest banks. This would involve a) applying the SCB and Method 2 GSIB Surcharge to the Collins Floor, and b) applying the CCB and the Method 1 GSIB surcharge to the ERBA. Second, to minimize the duplicative capture of market-related and operational risks, the standardized output floor should apply only to banks with large trading activities. Moreover, to mitigate the duplicative risk capture for market risk, the SCB’s GMS component needs to be redesigned, as outlined in [Part IV](#) of this blog series.

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Appendix

This Appendix provides details of the data and methodologies used to estimate the US GSIBs' risk-weighted asset ("RWA") amounts under the expanded risk-based approach ("ERBA") sets out in the US proposal.

1. Data Description

The data used in the analysis for the 8 US GSIBs were downloaded from the Federal Financial Institutions Examination Council's [website](#). The data includes:

- quarterly credit and market risk RWAs under the US standardized approach (FR Y9-C); and
- quarterly credit, market, operational and CVA risk RWAs under the advanced approaches (FFIEC 101 and 102).
- The time period coverage is Q1 2019 - Q1 2023.

Additionally, the proposal provides the following impacts estimates:

Table 1. Risk-weighted Assets (RWA) by Risk Category (\$ Billion, year-end 2021)

Risk Category	Aggregate RWA (\$ Billion) for Cat I and II Holding Companies			Aggregate RWA (\$ Billion) for Cat III and IV Holding Companies	
	Current U.S. Standardized	Current U.S. Advanced	Basel III Proposal (Estimated)	Current U.S. Standardized	Basel III Proposal (Estimated)
Credit Risk	6,900	4,300	6,700	4,000	3,800
Market Risk	430	430	760	130	220
Operational Risk	--	1,700	1,400	--	550
CVA Risk	--	240	260	--	28
Total	7,400	6,700	9,200	4,200	4,600

2. Estimation Methodology

We first calculate a set of scaling factors using the impact estimates the regulators provided in the proposal. For example, the FRTB IMA to the current market risk rules capital scaling factor equals $760/430=1.77$ for Cat. I and II bank holding companies, and $220/130=1.69$ for Cat. III and IV bank holding companies.

To estimate each bank's RWA by risk category under the ERBA and the revised US standardized approach from the RWA amounts under the current capital rules, the same scaling factors are applied to all banks in the sample. For example, if a bank's current market risk RWA is \$100, the FRTB IMA RWA is estimated to be $\$100 \times 1.77 = \177 .



Part VII: Our Series on US Bank Capital Requirements

The Federal Reserve Should Revise the US GSIB Surcharge Methodology to Reflect Real Risks and Support the Economy. Part VII in Our Series on US Bank Capital Requirements

In this joint note, we explain how the U.S. methodology for assessing a capital surcharge on global systemically important banks (GSIBs) differs from international norms, overstates the risk presented by those firms, and puts them at a competitive disadvantage. It also provides recommendations for how to rationalize the surcharge and thereby significantly expand the ability of the affected banks to expand credit availability and maintain liquidity in U.S. capital markets.

Our analysis suggests that implementing these adjustments would reduce GSIB surcharges by roughly one percentage point which would expand lending and market making capacity by over \$1 trillion and boost economic growth by roughly \$25 billion per year without sacrificing bank safety and soundness.

Background

The U.S. capital framework requires a GSIB to maintain capital above and beyond generally applicable minimum risk-based capital requirements. The GSIB surcharge requirement reflects the Federal Reserve's unilateral assessment of systemic risk as measured by the weighted sum of a select set of indicators, expressed as a systemic risk score. The higher the score, the higher the applicable GSIB surcharge.

The applicable surcharge is calculated as the higher surcharge of two methods – “Method 1” is the standard adopted by the Basel Committee on Banking Supervision for identifying and setting the surcharge for GSIBs and depends on five sets of systemic indicators – *size*, *interconnectedness*, *complexity*, *cross-jurisdictional activity*, and *substitutability*. “Method 2” is a U.S. only creation that generally employs the Basel methodology but replaces the *substitutability* indicator with a *short-term wholesale funding* (“STWF”) indicator¹. During periods of stress, reliance on short-term wholesale funding might make firms more susceptible to runs that could potentially impact financial stability.

In practice, the Method 2 surcharge always equals or exceeds that of Method 1. It is one of several binding capital constraints for U.S. GSIBs that is calibrated at a higher level.

Method 2 Needs Two Revisions to Appropriately Reflect Changing Realities

In this post, we describe two well-known shortcomings of the Method 2 GSIB score and suggest two adjustments that would improve Method 2's measurement of systemic risk. Two inherent design shortcomings prevent Method 2 from appropriately reflecting changing realities². First, Method 2 assumes the aggregate global systemic indicators are fixed for all time. This assumption erroneously causes an increase in Method 2 scores for reasons unrelated to systemic risk, such as the growth in the global economy over time and the expansion of the Federal Reserve's balance sheet³. The BCBS [published](#) aggregate global size indicator has grown nearly 50% from end-2013 (€66.31 trillion) to end-2021 (€98.48 trillion). The fixed for all time nature of the Method 2 score implies that even if a U.S. GSIB had kept its market share constant during 2013-2021, its size indicator score under Method 2 would have increased by 50% while it would have been unchanged under Method 1. Clearly, Method 2 scores inappropriately penalize a bank for growing along with the rest of the economy. **Growth consistent with the overall level of economic growth bears no relation to systemic risk and should not be counted as such.** Accordingly, Method 2 scores should be re-calibrated to adjust for the overall amount of economic growth that has occurred since the rule was finalized in 2015.

¹ Method 1 calculates each systematic indicator score based on the ratio of that amount of that systemic indicator to the aggregate global indicator amount of that systemic indicator of that year. Whereas for purpose Method 2, the aggregate global indicators amounts are fixed at the average of 2012-2013 amounts.

² Method 2 has a set of other drawbacks that need to be addressed as we highlighted previously. <https://www.sifma.org/resources/submissions/guidance-for-resolution-plan-submissions-of-certain-fbos/>

³ <https://bpi.com/gsib-method-2-fixed-coefficients-must-be-adjusted-for-economic-growth/>

Second, the importance of the U.S. specific STWF factor in Method 2 scores has increased over time, counter to the Federal Reserve’s stated intent that each of the five factors mentioned above account for 20 percent of the Method 2 score⁴. In addition, Method 2 implicitly assumes global banks use STWF to fund illiquid assets which “can leave firms vulnerable to runs that undermine financial stability.”⁵ However, a recent Federal Reserve [study](#) has shown that, over the past decade, “[g]lobal banks mainly use such funding to finance liquid, near risk-free arbitrage positions”. These activities are core to support U.S. capital markets and economic growth which benefits both businesses, government, and consumers. The results suggest that STWF actually poses low risk to financial stability and consequently that the STWF score significantly overstates systemic risk⁶. Accordingly, the STWF factor of the Method 2 score should be recalibrated to ensure that it reflects only 20 percent of the overall score as originally intended by the Federal Reserve.

Recently, the Federal Reserve issued a proposal that would modify the GSIB surcharge in the U.S. However, the Federal Reserve’s GSIB surcharge [proposal](#) does not address either of these two shortcomings. Below, we demonstrate the impact of addressing these two shortcomings.

Adjustments to Method 2

In Table 1, we quantify the projected effects on Method 2 scores and surcharges of (1) accounting for economic growth and (2) reverting the weight of the short-term wholesale funding component to 20 percent. In total, taking into account both the economic growth adjustment and the recalibration of the STWF weight to 20 percent, the average GSIB surcharge would be reduced by 90 basis points.

First, we recalibrate the GSIB scores to account for economic growth. Using 2015—the year when the fixed coefficients for score calculations were published—as our baseline, we measured the nominal GDP growth up to the recent four-quarter average and found a 44.4 percent increase. Consequently, we scaled the coefficients for size, interconnectedness, complexity, and cross-jurisdictional activity by a factor of 1.44. This recalibration led to a decrease in the aggregate GSIB scores by nearly 1000 points. Thus, the average surcharge was reduced by 60 basis points, bringing it down from 2.8 percent to 2.2 percent.

Table 1: Proposed Adjustments to the GSIB Surcharge

Current Data			(1) Economic Growth		(2) Adjusting the STWF Weight to 20%	
Bank Name	2Q23 Score	Surcharge (%)	Score	Surcharge (%)	Score	Surcharge (%)
BAC	631	3.3	472	2.5	411	2.2
C	728	3.7	540	2.8	477	2.5
GS	672	3.5	534	2.8	414	2.2
JPM	947	4.8	696	3.6	625	3.2
MS	600	3.1	498	2.6	354	1.9
WFC	298	1.6	217	1.2	198	1.1
BK	276	1.5	243	1.3	152	1.0
STT	217	1.2	190	1.0	121	1.0
Total/Avg	4369	2.8	3392	2.2	2752	1.9

Note: The surcharge is calculated using narrower score bank ranges as defined in the July 27, 2023 GSIB proposal.

Second, the weight of the short-term wholesale funding component in the overall score would increase to about 35 percent after adjusting the other coefficients for economic growth. As per the preamble of the GSIB final rule, this component is intended to have a 20 percent weight. To return it to that level, the “fixed conversion factor” needs to be recalibrated from 175 to roughly 80. This adjustment would further decrease the average GSIB surcharge by 30 basis points.

4 In the preamble to the final rule, the Federal Reserve explained: “The conversion factor was intended to weight the short-term wholesale funding amount such that the short-term wholesale funding score receives an equal weight as the other systemic indicators within method 2 (i.e., 20 percent)...” 80 Fed. Reg. at 49,100-101.

5 <https://www.govinfo.gov/content/pkg/FR-2015-08-14/pdf/2015-18702.pdf>

6 <https://fsforum.com/news/changing-realities-and-financial-regulation-the-changing-nature-of-short-term-wholesale-funding>

Economic Impact

As shown in the table above, implementing these two adjustments would reduce the average GSIB surcharge by 0.9 percentage points (90 basis points). Because capital is the most expensive form of finance, reducing the amount of required capital lowers the cost of bank borrowing and boosts economic growth. One data-based study conducted by the [Bank of England](#) concluded that a one percentage point decrease in required capital would decrease borrowing costs by 10 basis points and boost GDP by roughly \$50 billion per year. This study, however, considers the entire banking sector. Because the GSIB surcharge only applies to U.S. GSIBs, the impact on economic growth must be adjusted for their share – roughly 50 percent – of the total banking sector. **As a result, this study suggests that reducing GSIB surcharges by 90 basis points would result in additional GDP of roughly \$25 billion per year.**

Another way of assessing the impact of reducing the GSIB surcharge on economic activity is to estimate the additional lending that could be supported by reducing the GSIB surcharge by 0.9 percent. If U.S. GSIBs were held to a lower level of required capital, they would be able to grow their lending until the growth in lending resulted in a new capital ratio that matched the new and lower requirement. Today, U.S. GSIBs maintain a capital ratio of 12.6 percent on average across all U.S. GSIBs. **Reducing their capital ratio by 0.9 percentage points to 11.7 percent would allow U.S. GSIBs to collectively grow their lending and market making activities by roughly an additional \$1.1 trillion.** This additional capacity for banks to intermediate would directly benefit economic growth as businesses, households and communities would put those additional resources to work in the real economy.

Finally, it is important not to lose sight of the broader landscape with respect to large bank capital requirements. Recently, the prudential agencies issued a “Basel III Endgame” proposal that would raise capital requirements for large banks by 19 percent. Against this backdrop of a potential sizeable increase in capital, these adjustments would help to offset the negative economic impacts of other changes to large bank capital requirements.

Conclusion

The Method 2 GSIB surcharge implemented in the U.S. has two well-recognized flaws. First, unlike the Basel GSIB surcharge (Method 1), Method 2 does not adjust for economic growth. Consequently, as the economy grows, the U.S. GSIB surcharge increases, even without a corresponding increase in systemic risk. Second, the importance of the STWF factor exceeds the 20 percent weighting intended by the Federal Reserve Board. We propose two simple and transparent adjustments to the Method 2 GSIB surcharge to address these issues. The adjustments would right-size the GSIB surcharge, leading to about a one percentage point decline in required capital. Such an **adjustment would free up capital, reduce borrowing costs, add over one trillion in additional lending and market making capacity, and increase GDP by approximately \$25 billion annually.** These adjustments to the GSIB surcharge are long overdue and would go a long way toward improving the large bank capital framework while also supporting the U.S. economy.

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Part VIII: Our Series on US Bank Capital Requirements

A Rejoinder on the Need for Trading Book Capital Increases. Federal Reserve Vice Chair Barr's Speech on Capital: Part VIII in Our Series on US Bank Capital Requirements

- In a speech¹ delivered on October 9th, 2023, Federal Reserve Vice Chair for Supervision Barr laid out his rationale for dramatic increases in capital requirements for trading and market making (i.e., capital markets) activities as part of the U.S. Basel Endgame proposal.
- While limiting himself to quantifying the proposal's impact on bank lending (apparently limited to credit risk, without taking into account operational risk), he ignores the fact that three-quarters of debt and equity funding to U.S. businesses and local governments is obtained through the capital markets and not via traditional bank loans. The largest banks form the foundation of these capital markets, providing liquidity and facilitating access to these crucial sources of funding.
- As Vice Chair Barr notes, the largest impacts of the proposal will be on bank trading activities. Indeed, if implemented as written, the proposal will:
 - » Substantially increase the cost of providing capital markets services to end-users such as U.S. businesses and state and local governments;
 - » Reduce the supply of funding through the U.S. capital markets;
 - » Result in less competition and capacity in key U.S. capital markets; and
 - » Result in reduced market depth, particularly during periods of stress, with negative consequences for U.S. financial stability.
- Some U.S. sources of funding, such as securitizations, securities underwriting, equity investments in funds, securities borrowing, and derivatives, will be particularly negatively impacted. This impact would fly in the face of one of the conclusions of a Federal Reserve research paper on the impact of COVID-19 on the U.S. bank regulatory framework, namely, that "trading activity strengthened firms during this period."²
- Vice Chair Barr's argues that these dramatic increases in capital requirements for capital markets activities by large U.S. banks are justified a) because such "activities have generated outsized losses at large banks" and b) because these are "areas where our current rules have shortcomings." Yet Vice Chair Barr does not provide any example of widespread losses from capital markets activities that have occurred since the 2008 Global Financial Crisis ("GFC"). Rather the opposite; he observes that the quality and quantity of capital has vastly improved in the last 15 years because of post-GFC reforms, stating that the common equity capital ratio of the largest U.S. banks has increased from 5.5% in 2009 to 12.4% at the end of 2022.
- Vice Chair Barr also asserts there are shortcomings in the current U.S. capital framework for trading activities by the largest U.S. banks. Yet the shortcomings he refers to are already substantially captured under the Global Market Shock ("GMS") component of stress testing and the resulting Stress Capital Buffer ("SCB") requirement that applies to all large U.S. banks.
- As we note below, the proposed requirements for capital markets activities capture market risk by requiring firms to estimate potential losses to trading positions based on extreme movements in market prices over a regulators-set period of time (i.e., liquidity horizon), calibrated to historic periods. As the existing GMS framework applies to the same positions and applies similar shocks, the proposal effectively captures the same risk twice, first by the proposed amendments to the market risk capital rule and second by the SCB, leading to significantly higher capital requirements than are justified by the underlying risks involved. The Federal Reserve should either eliminate or reform the GMS to eliminate this over calibration of market risk requirements.

¹ <https://www.federalreserve.gov/newsevents/speech/barr20231009a.htm>

² Aboud, Alice, Elizabeth Duncan, Akos Horvath, Diana Iercosan, Bert Loudis, Francis Martinez, Tiomothy Monney, Ben Ranish, Ke Wang, Missaka Warusawitharana, and Carlo Wix, "COVID-19 as a Stress Test: Assessing the Bank Regulatory Framework" (2021), Finance and Economics Discussion Series 2021-024. Washington: Board of Governors of the Federal Reserve System, <https://doi.org/10.17016/FEDS.2021>.

- Finally, Vice Chair Barr argues that higher capital requirements are justified by the immense economic costs of financial crises. Yet he does not cite the extensive body of research on the optimal level of bank capital – i.e., research that has examined both the benefits and costs of higher capital requirements. Indeed, a recent independent study of post-crisis reforms and the academic literature on the optimal level of capital by PwC found U.S. capital levels to be close to optimal.³

Introduction

On October 9th, Federal Reserve Vice Chair for Supervision Michael Barr delivered remarks entitled “Capital Supports Lending” to the American Bankers Association Annual Convention. Vice Chair Barr used the opportunity to discuss why he felt the benefits of the U.S. Basel III Endgame capital proposal outweighed the costs.

In his remarks, Vice Chair Barr admits that the proposal “may result in higher funding costs” but suggests that those costs will be limited because “the effective rise in capital requirements related to lending activities is a small portion of the estimated overall capital increase,” going on to say that “such a rise might be expected to increase the cost to banks for funding the average lending portfolio by up to 3 basis points – 0.03 percentage points.” Leaving aside that this estimate appears to be based on the expected capital increases for credit risk – and does not take into account capital increases for operational risk from lending activities – it ignores the fact that three-quarters of the debt and equity funding for U.S. businesses and state and local governments is obtained through the U.S. capital markets rather than the type of traditional bank lending that predominates in almost every other major country. The largest U.S. banks play a crucial role in facilitating access to debt and equity funding and ensuring liquidity in U.S. capital markets, with the U.S. G-SIBs providing 50% of those trading and market making services to U.S. businesses and state and local governments.

What are the likely impacts of the Basel Endgame proposal on the U.S. capital markets and economy?

This is why the Basel Endgame will have a far greater adverse impact on the U.S. economy than Vice Chair Barr acknowledges. As he notes in his remarks, the capital markets activities of the U.S. banks will be the most heavily penalized by the Basel Endgame proposal, with the Federal Reserve’s own estimates indicating that it will lead to a massive 75% increase in the aggregate risk-weighted assets (“RWA”) attributable to capital markets activities by U.S. banks. That figure may be an underestimate given the over calibration of risks between the market risk portions of the proposal and the existing Global Market Shock (“GMS”) component of stress testing and the resulting Stress Capital Buffer (“SCB”) requirement. This is an issue we have highlighted previously and discuss below. We have also previously described numerous examples of U.S. “gold-plating” of the Basel standards, such as including a far broader range of covered securities, counterparties, and higher collateral requirements than the Basel standards require. This is in addition to the capital increases that will be imposed by the agencies’ separate G-SIB Surcharge proposal.¹

³ <https://www.pwc.com/us/en/industries/financial-services/library/our-take/basel-iii-endgame.html>

⁴ For more on the G-SIB Surcharge reforms, see: <https://www.sifma.org/resources/news/the-federal-reserve-should-revise-the-us-gsib-surcharge-methodology-to-reflect-real-risks-and-support-the-economy/#:-:text=The%20GSIB%20surcharge%20requirement%20reflects.higher%20the%20applicable%20GSIB%20surcharge.>

Those capital increases will lead U.S. banks to significantly scale back their capital markets businesses, leading to higher funding costs and reduced market access for a variety of a wide variety of U.S. businesses and other market participants, including commercial businesses, asset managers, retirement funds, and state and local governments. Competition and capacity in key markets will be reduced, with no guarantee that other market participants will step in to provide services that the U.S. banks can no longer economically provide. Moreover, market liquidity will be reduced, particularly during periods of stress, including in key funding markets such as the U.S. Treasury markets, which will have negative consequences for overall U.S. financial stability.

Such a result would ironically fly in the face of the Federal Reserve's own findings in a working paper that assessed the impact of COVID-19 on the U.S. bank regulatory framework, which stated: "The elevated trading activity in the early stages of the crisis led to an increase in fees, commissions and bid-ask spreads, sustaining the profitability of large banks. In addition, firms also issued corporate bonds and equity at a rapid pace to bolster their balance sheets, leading to increases in underwriting fees. Reflecting in part the limitations on proprietary trading put in place following the financial crisis, no major bank suffered sizeable losses on their portfolios. As such, trading activity strengthened firms during this period."²

Some capital markets activities will be particularly negatively impacted, becoming significantly more expensive or less accessible as a result of these unwise proposed rules. These include:

- **Securitized products trading**, which helps lower borrowing costs for U.S. businesses, diversifies and reduces the concentration of risk in the financial system and strengthens market liquidity (e.g., the mortgage-backed securities markets).
- **Securities underwriting**, a crucial service that enables U.S. businesses and state and local governments to raise debt and equity capital;
- **Equity investments in funds**, which are important sources of funding for U.S. businesses, especially small and medium-size companies including U.S. technology start-ups;
- **Securities borrowing transactions**, which are used to generate income for U.S. pension/retirement funds and helps increase market liquidity; and
- **Derivative transactions**, including those used by U.S. businesses and other end-users to hedge non-financial risks

Are Vice Chair Barr's justifications for these capital increases supported by the facts?

Vice Chair Barr argues that these dramatic increases in the capital requirements for capital markets activities are justified a) because such "activities have generated outsized losses at large banks" and b) because these are "areas where our current rules have shortcomings." But the losses Barr is referring to appear to be those incurred during the 2008 Global Financial Crisis ("GFC") of 2007-2008 rather than anything that occurred in the following 15 years. Since that time, as he admits, "the current capital rule was updated to better reflect [trading and market making activities] risks." Indeed, Vice Chair Barr highlights some of the significant post-crisis reforms that improved the quality and quantity of capital, which he notes has led to an increase in the common equity capital ratio (the most loss-absorbing form of capital) of the largest banking organizations, from 5.5% in 2009 to 12.14% at the end of 2022 (an approximately 120% increase).

⁵ Aboud et al. (2021), p. 4.

Those post-GFC capital reforms include:

- The **first round of global Basel III standards on capital**, which resulted in new bank capital rules for U.S. banks, including for market risk, in 2012 – 2013;
- The minimum capital requirement floors mandated by the Collins Amendment to the **Dodd-Frank Act**;
- The introduction of the **supervisory stress testing requirements**, which are now incorporated into regulatory capital requirements via the SCB;
- The capital surcharge on global systemically important banks (i.e., the “**G-SIB Surcharge**”); and
- The introduction of an extra layer of **Total Loss Absorbing Capital (“TLAC”)** requirements that can be used to recapitalize the operations of a failing G-SIB and allow for its orderly wind-down without any loss to the Deposit Insurance Fund or taxpayers or any adverse impact on U.S. financial stability.

Moreover, these enhanced financial resource requirements have been supplemented by new resolution planning requirements; enhanced supervision and risk management requirements; and measures to reduce counterparty and trading risks, including the introduction of central clearing and margin requirements for non-cleared derivatives, among other changes.

Policymakers have widely acknowledged the success of these capital and related reforms. For example, Federal Reserve Chair Jerome Powell noted in his statement accompanying the release of the Basel Endgame proposal, “the development and implementation of the Dodd-Frank Act and the Basel III accords followed a deliberative and thoughtful process that evolved over a period of several years” and as a result the “U.S. banking system is sound and resilient, with strong levels of capital and liquidity.”³ Commenting on recent stresses in the financial sector, Treasury Secretary Janet Yellen noted that the post-crisis capital and liquidity reforms had helped the banking system weather recent stresses, observing, for example, that “during the March 2020 panic, banks served as an important pillar of strength for the financial system” and that the banking system as a whole had remained strong and relatively stable even as concerns grew about specific regional institutions earlier this year.⁴ It is notable that neither of these recent stress events were connected to trading losses at banks.

In sum then, it is not clear what event triggered U.S. regulators to propose such a significant increase in the capital requirements for capital markets activities over and above the highly successful reforms that were instituted in the wake of the GFC. Indeed, the Basel III Endgame standards were never designed with the intention of increasing capital levels, given that that objective had already been achieved by earlier reforms. For example, the Basel Committee stated in 2017 that the Endgame reforms “will not significantly increase capital requirements overall.”⁵ Instead, the objective of the Basel Endgame standards was to “reduce excessive variability”, “facilitate the comparability of banks’ capital ratios”, and “constrain the use of internally-modelled approaches.”⁶

This leads us to Vice Chair Barr’s second justification for significantly raising the capital requirements for capital markets activities: addressing shortcomings in the current framework for market risk. As Vice Chair Barr correctly notes, the market risk component of the current U.S. capital rules was designed to address two specific issues: first, that “the current framework could result in capital requirements increasing during stress, rather than requiring firms to hold sufficient capital in advance of the stress to be managed through a stress period”, and second that current framework does “not account for the large range of liquidity profiles across trading exposures.”

6 <https://www.federalreserve.gov/newsevents/pressreleases/powell-statement-20230727.htm>

7 <https://home.treasury.gov/news/press-releases/jy1376>

8 <https://www.bis.org/bcbs/publ/d424.pdf>

9 Basel III: Finalising post-crisis reforms Announcement to finalise Basel III reforms https://www.bis.org/bcbs/b3/finalisation_20171207.htm

However, these shortcomings are already substantially addressed in the U.S. capital rules through the GMS component of stress testing and the resulting SCB requirement. The supervisory stress tests have been the binding capital constraints for large U.S. banks since their inception in 2012, and the SCB requirement was finalized in 2020. According to the Federal Reserve, the GMS is calibrated to “[reflect] general market distress and heightened uncertainty”, and “[t]he calibration horizons reflect the variation in the speed at which banks could reasonably close out, or effectively hedge, risk exposures in the event of market stress. The calibration horizons are generally longer than the typical times needed to liquidate exposures under normal conditions because they are designed to capture the unpredictable liquidity conditions that prevail in times of stress.”⁷ The GMS is designed to reflect a market shock that “the [Federal Reserve] Board deems to be plausible, though such movements may not have been observed historically”.⁸ However, a SIFMA 2019 GMS study demonstrates that GMS scenarios since 2012 have been empirically implausible.⁹

The proposed amendments to the market risk capital requirements in the Basel III Endgame proposal are designed to capture the same risks in a similar manner as the GMS. Thus, the trading and market making activities of the U.S. banks would effectively be subject to duplicative capital requirements—first, by the proposed amendments to the market risk capital rule and second by the GMS component of stress testing and the resulting Stress Capital Buffer requirement. This duplication will lead to significantly higher capital requirements for U.S. banks subject to the U.S. stress testing requirements. Thus, should the banking agencies move forward with implementing the proposed amendments to the market risk capital rule, they should make changes to stress testing scenarios to eliminate the over calibration of risks, either by eliminating the GMS altogether; redesigning it to be reasonably plausible; or setting capital requirements as the greater of the new market risk capital rule and the GMS, rather than the sum of the two components (as we discuss in [Part IV](#) of our blog series on the Basel capital requirements).

Finally, in Vice Chair Barr includes a third justification for higher capital requirements in his speech by referring to research on the significant economic costs of financial crises. Notably, Vice Chair Barr does not cite the extensive body of research on the optimal level of bank capital — i.e., research that has examined both the benefits and costs of higher capital requirements. Indeed, a recent independent study by PWC of post-crisis reforms and the academic literature on the optimal level of capital found U.S. capital levels to be close to optimal – that is, at a level that appropriately balances financial stability with the economic costs of higher capital requirements.¹⁰

Conclusion

Vice Chair Barr makes three claims in support of the proposed significant increase in the capital requirements for trading and market making activities in the U.S. Basel Endgame. He argues that trading and market making “activities have generated outsized losses at large banks”; that this is an area where “our current rules have shortcomings”; and that increases are justified by the immense costs of financial crises. However, these claims are contradicted by the facts.

The comprehensive post-GFC capital reforms, as well as other prudential and systemic reforms, have helped to prevent significant trading or market making losses at the largest U.S. banks, even during the market volatility of March 2020 and the more recent stresses witnessed in the U.S. regional banking sector. The shortcomings that the proposal’s market risk capital reforms are designed to address are already captured under the U.S. stress testing framework; indeed, the Federal Reserve should act to eliminate the over calibration of risks that would occur if the proposal is implemented as proposed without reforms to the GMS component of the SCB. Finally, Vice Chair Barr ignores the wide body of research on the optimal level of capital, including a recent independent study by PWC that finds that U.S. capital levels are near optimal levels at present – that is, they balance financial stability with the economic costs of higher capital requirements.

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¹⁰ <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20230209a1.pdf>

¹¹ <https://www.ecfr.gov/current/title-12/chapter-II/subchapter-A/part-252>

¹² <https://www.sifma.org/wp-content/uploads/2019/09/SIFMA-GMS-LCD-Study-FINAL.pdf>.

¹³ Refer to PWC study.



Part IX: Our Series on US Bank Capital Requirements

The Federal Reserve Should Remove “Gold-Plating” in the Basel 3 Endgame. To Ensure International Comparability and Enhanced Financial Stability

- The post-Global Financial Crisis capital rules applicable to the largest U.S. banks are already super-equivalent (i.e., “gold-plated”) to the internationally agreed Basel standards and the proposed (or finalized) rules in most other major jurisdictions.
- The Federal Reserve’s proposal implementing the Basel 3 Endgame in the United States contains a suite of both technical and structural changes to the Basel standards that constitute additional U.S. gold-plating. The continued U.S. gold-plating drives the large, expected increase in capital requirements for large U.S. banks’ capital markets activities.
- As a result, the U.S. proposal undermines the stated objectives of the Basel 3 reforms, which were in large part to promote cross-bank and cross-jurisdictional comparability of risk-based capital requirements.
- Excessive capital requirements would (1) constrain banks’ capacity to provide credit and support the capital markets and the broader economy; (2) accelerate the shift of financing activities outside of the banking system; and (3) further diminish liquidity in key markets and exacerbate financial stability risks. Thus, the Federal Reserve and the other banking agencies should remove the U.S. gold-plating in the U.S. proposal and certain other elements of the U.S. capital framework to ensure cross-jurisdictional comparability and enhance financial stability.

Background

All major jurisdictions including the EU, the UK, and the United States have published their [proposals](#) to implement the Basel 3 Endgame (“B3E”) or have finalized their implementation. In July 2023, the U.S. banking agencies released their proposal implementing the B3E in the U.S. (“U.S. proposal”). The U.S. proposal contains a suite of changes to the Basel standards that constitutes a further U.S. gold-plating of the Basel international standards beyond the existing super-equivalence that is built into the current U.S. capital rules. This decision to gold-plate the international standards in the U.S. proposal contradicts the stated objectives of the Basel 3 reforms, which were designed to promote cross-institutional and cross-jurisdictional comparability of risk-based capital requirements.

This blog identifies areas in which the U.S. proposal gold-plates the international standards and benchmarks the U.S. proposal with the Basel standards, the EU implementation, and the UK proposal to highlight areas of U.S. divergence. As discussed below, the U.S. banking agencies should remove these gold-plated features to ensure international comparability and enhance financial stability.

Where does the US proposal gold-plate the internationally agreed Basel standards?

Table A1 of the Appendix presents a non-exhaustive list of areas in which the U.S. proposal gold-plates the Basel 3 standards. And some policy decisions in the EU and the UK implementation. At a high level, the gold-plating in the U.S. proposal can be classified into two broad groups – technical and structural.

Some of the **technical gold-plating** in the U.S. proposal include:

1. Adopt the SFT haircut floor framework with indications of materially broadening its scope and stringency. The Basel 3 standards include minimum haircuts on non-centrally cleared securities financing transactions (“SFT haircut floor”), which were devised by the Financial Stability Board (“FSB”) to “limit the possible build-up of leverage outside the banking system and reduce the procyclicality of that leverage.”¹ The SFT haircut floor requires banks to receive a minimum amount of over-collateralization on certain SFTs with counterparties that are not subject to prudential regulation.

¹ <https://www.fsb.org/wp-content/uploads/P070920-1.pdf>

The European Banking Authority’s 2019 [Report](#) analyzed carefully the SFT haircut floor framework and recommended against implementing it in the European Union at this time due to the fact that it “could theoretically lead to a more risky situation for institutions than the status quo ... while at the same time it would be unclear whether the application of the framework will have a positive effect in practice on limiting the build-up of leverage outside the banking system.” Many other major jurisdictions, e.g., the UK and Canada, have reached similar conclusions, and thus have decided not to adopt the framework as part of the Basel 3 Endgame implementation. However, the U.S. proposal not only implements the SFT haircut floor but gives clear indications that the agencies are considering broadening the scope of the framework and its stringency. This potentially broadened scope/stringency would include covering more counterparties (e.g., prudentially regulated financial institutions)², more security types (e.g., U.S. Treasury securities)³, and setting higher haircut floors⁴. The proposal offers no evidence, nor justification, to warrant the need for this broader scope and higher stringency.

2. Floor internal loss multiplier (“ILM”) at 1. The ILM of the Basel’s new standardized measurement approach (“SMA”) for operational risk was designed to reflect banks’ operational risk losses history in the resulting capital requirements. For banks that have strong operational risk management practices and thus minimal historical operational risk losses, the ILM can go below 1. Otherwise, the ILM will be greater than 1. The U.S. proposal floors ILM at 1, i.e., regardless of the strength of banks’ operational risk management practices. The proposed floor will result in higher operational risk capital requirements and create perverse incentives contrary to prudent risk management practices. Additionally, as discussed later the Basel SMA (without flooring ILM at 1) produces capital requirements that are well in excess of banks’ historical annual operational risk losses.

3. Raise residential mortgage risk weight by 2000 basis points above the Basel standards. The U.S. proposal assigns to residential mortgage exposures a risk weight that is 2000 basis points above the Basel standards. The Urban Institute examined the historical U.S. residential mortgage loss experiences and concluded that “[t]here is no logical argument for the bank capital requirements proposed in the [U.S. proposal].”⁵ Gold-plating risk weight for residential mortgage exposures and the doubling of “p factor”⁶ (i.e., from p=0.5 in the current U.S. capital rules to p=1 in the U.S. proposal) in the securitization risk weight function directly translate into materially higher costs for large U.S. banks’ holdings, as well as trading, of mortgage-backed securitization exposures, as shown in Figure 1 below. Capital requirements under the U.S. proposal for holdings of mortgage-backed securitization exposures are expected to range between 0.75x-9.80x current U.S. capital levels.⁷

UK Prudential Regulatory Authority’s (“PRA”) Basel 3.1 proposal “set[s] a p-factor of 0.5 for exposures to STS securitisation and a p-factor of 1 for exposures to non-STs securitisations”.⁸ Concerned with the “[risk-weighted amount] resulting from the application of the SEC-SA is not commensurate with the risks posed to the institution or to financial stability”, on October 31, 2023, PRA published a discussion paper offering 3 options for “adjustments to the Pillar 1 framework for determining capital requirements for securitisation exposures”.⁹

Figure 1. Risk Weight of Mortgage-Backed Securitization Exposures under the Current U.S. Capital Rules, the

2 See the U.S. proposal’s Question 54: What entities should be included or excluded from the scope of entities subject to the minimum haircut floors and why? For example, what would be the advantages and disadvantages of expanding the definition of entities that are scoped-in to include all counterparties, or all counterparties other than QCCPs? What impact would expanding the scope of entities subject to the minimum haircut floors have on banking organizations’ business models, competitiveness, or ability to intermediate in funding markets and in U.S. Treasury securities markets?

3 See the U.S. proposal’s Question 55: What alternative definitions of “in-scope transactions” should the agencies consider? For example, what would be the pros and cons of an expanded definition of “in-scope transactions” to include all eligible margin loan or repo-style transactions in which a banking organization lends cash, including those involving sovereign exposures as collateral? How would the inclusion of sovereign exposures affect the market for those securities? What, if any, additional factors should the agencies consider concerning this alternative definition?

4 See the U.S. proposal’s Question 58: What alternative minimum haircut floors should the agencies consider and why? What would be the advantages and disadvantages of setting the minimum haircuts at a higher level, such as at the proposed market price volatility haircuts used for recognition of collateral for eligible margin loans and repo-style transactions, or at levels between the proposed minimum haircut floors and the proposed market price volatility haircuts?

5 <https://www.urban.org/sites/default/files/2023-09/Bank%20Capital%20Notice%20of%20Proposed%20Rulemaking.pdf>

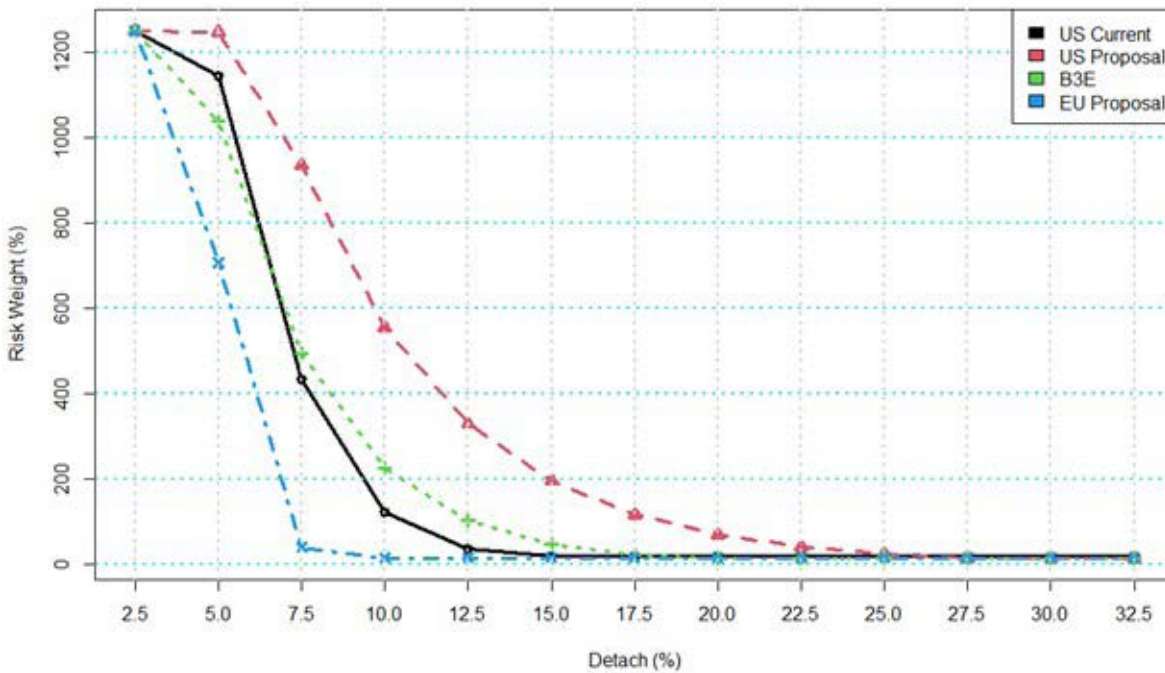
6 p-factor plays 3 roles in the securitization framework: (1) controls the degree of capital surcharge for securitization (i.e., the aggregate capital requirements for holding all tranches of a securitization exceed holding the underlying pool assets), (2) controls the allocation of capital requirements across different tranches of a securitization, and (3) smooths the cliff effects in capital requirements resulted from changes in capital requirements for the underlying pool assets.

7 Risk weight applicable to super senior tranches is floored at 15% under the U.S. proposal vs 20% under the current capital rules, i.e., 0.75x.

8 <https://www.eba.europa.eu/regulation-and-policy/single-rulebook/interactive-single-rulebook/108627>

9 <https://www.bankofengland.co.uk/prudential-regulation/publication/2023/october/securitisation-capital-requirements>

International B3E Standards, the U.S. Proposal, and the EU Proposal.



4. Include centrally cleared derivatives in Credit Valuation Adjustment (“CVA”) capital requirements. Post the Global Financial Crisis, the G20 agreed that “all standardised [derivatives] contracts should be cleared through central counterparties (“CCPs”).”¹⁰ To incentivize central clearing, the Basel standards exempt from CVA capital requirements centrally cleared derivatives.¹¹ The U.S. proposal adopts part of the exemption for minimum CVA capital requirements, i.e., exempting derivatives transacted directly or indirectly through a clearing member with a qualified central counterparty (“QCCP”). However, the client-facing leg of the client-cleared derivatives transactions would be considered OTC transactions for the purpose of the U.S. capital rules and are subject to minimum CVA capital requirements. The U.S. GSIB surcharge proposal includes the client-facing leg of the client-cleared derivatives transactions into the GSIB score calculation leading to a higher surcharge. Additionally, large U.S. banks would be required to calculate CVA losses arising from all derivatives transactions, including centrally cleared derivatives, and reflect it in the Federal Reserve’s Stress Capital Buffer (“SCB”) trading and counterparty loss estimates – effectively reversing the exemption included in the Basel standards.¹²

Some of the **structural U. S. gold-plating** in the U.S. proposal include:

1. Tie supervisory stress tests to capital requirements. The Federal Reserve’s SCB (which is floored at 2.5%) replaced the Capital Conservation Buffer (“CCB”, which is fixed at 2.5%) in the Basel standards. The SCB ties the results of the annual supervisory stress test to large banks’ mandatory capital requirements.¹³ The supervisory stress test captures both trading and counterparty losses (via the Global Market Shock component or “GMS”) and operational risk event losses in a highly conservative manner. In particular, the GMS loss is estimated assuming severe losses within each asset class and no diversification across asset classes. Consequently, the stress losses estimate is more conservative than empirically “plausible”.¹⁴

¹⁰ <https://www.fsb.org/work-of-the-fsb/market-and-institutional-resilience/derivatives-markets-and-central-counterparties-2/>

¹¹ https://www.bis.org/basel_framework/chapter/MAR/50.htm?tldate=20230222&inforce=20230101&published=20200708&export=pdf

¹² https://www.federalreserve.gov/apps/reportingforms/Report/Index/FR_Y-14Q

¹³ Technically the SCB is a buffer. But because banks breaching it are required to limit, if not outright prohibit, capital distribution, banks generally treat the SCB as a minimum capital requirements.

¹⁴ <https://www.sifma.org/wp-content/uploads/2019/09/SIFMA-GMS-LCD-Study-FINAL.pdf>

The U.S. proposal's market risk and CVA risk frameworks capitalize trading and counterparty losses in a manner that largely mirrors the GMS.¹⁵ The proposal's SMA framework capitalizes operational risk more than adequately. In fact, the SMA (without flooring ILM at 1) produces capital requirements that are about 14x banks' historical annual operational risk losses¹⁶, and "about double the maximum amount of loss ever experienced"¹⁷ Consequently, the U.S. proposal plus the SCB would result in capital requirements that are excessive and incommensurate with large banks' trading, counterparty and operational risks.

In contrast, both the European Central Bank ("ECB") and UK PRA avoid "double accounting", and thus over-capitalizing, these risks in setting their capital requirements. In particular, "[a]s a principle, the PRA would not double count capital requirements for the same risks in Pillar 1 and Pillar 2A."¹⁸ The ECB states that "individual add-ons might be adjusted to eliminate any possible double counting where the same risk drivers are addressed simultaneously under different risk categories."¹⁹ This is an approach that the Federal Reserve ought to follow.

To illustrate the conservatism in capital requirements resulting from the combination of the U.S. proposal and the SCB, Table 1 below shows the capital requirements on a simple well-hedged equity portfolio – consisting of a vanilla put option on Apple stock hedged with cash equity. The aggregate capital requirements under the U.S. proposal and the GMS losses would amount to 86% of the market value of this portfolio. And the FRTB plus GMS losses account for 84% of the market value. The effective risk weight, i.e., RWA Density, of 905% suggests that the U.S. proposal capitalizes this portfolio on the basis that it is more than twice as risky as "speculative unlisted equity exposures" to which the proposal assigns a risk weight of 400%.²⁰

This outcome does not even factor in the operational risk capital requirements attributed to trading this portfolio. The SMA is based on the weighted sum of three business indicators ("BI"). One of BI's is the Financial Component – which capitalizes the net Profit/Loss on trading activities.²¹ As a result, banks' trading activities are separately capitalized through the SMA under the U.S. proposal. This leads to further overcapitalization of this simple portfolio.

Table 1. CET1 Capital Requirements as Percentage of The Portfolio's Market Value.

CCR ²²	FRTB ²³	CVA ²⁴	GMS ²⁵	Total CET1 Capital	RWA Density ²⁶
1.04%	47.56%	1.12%	36.63%	86.35%	905%
<p>Date: May 19, 2023</p> <p>Portfolio Composition:</p> <ol style="list-style-type: none"> Bank (a U.S. GSIB with applicable GSIB surcharge is 2.5%²⁷ and SCB is 3.56%²⁸) purchases 1 European Put on <u>APPL</u> from Pension Fund. The option is traded at \$10.23, strikes at \$175, and expires on November 17, 2023; and Bank hedges the Put by holding 100 shares of APPL traded at \$175.16. <p>6-Month Interest Rate: 5%</p> <p>Credit Rating:</p> <ol style="list-style-type: none"> Apple, Inc. is rated "AA+" by S&P Global Ratings; and Pension Fund is unrated (the applicable risk weight as prescribed in the Basel 3 Endgame is 100%). 					

¹⁵ <https://www.sifma.org/resources/news/explaining-the-overlap-between-the-rtb-and-the-global-market-shock/>

¹⁶ <https://orx.org/resource/basel-iii-and-standardised-approaches-to-capital-2023>

¹⁷ <https://explore.pwc.com/baseliiiendgame-operational-risk/our-take-basel-analysis>

¹⁸ <https://www.bankofengland.co.uk/prudential-regulation/publication/2022/november/implementation-of-the-basel-3-1-standards/interactions-with-the-pras-pillar-2-framework>

¹⁹ https://www.bankingsupervision.europa.eu/banking/srep/html/p2r_methodology.en.html

²⁰ https://www.bis.org/basel_framework/chapter/CRE/20.htm?inforce=20230101&published=20221208

²¹ In particular, BI=ILDC+SC+FC. ILDC=min(abs(interest income – interest expense), 2.25%*interest earning assets)+dividend income; SC=max(other operating income, other operating expense)+max(fee income, fee expense); and FC=abs(net P&L trading book)+abs(net P&L banking book).

2. Institute a more punitive GSIB surcharge methodology than the Basel standards.

Along with the U.S. proposal, the Federal Reserve proposed amendments to the GSIB capital surcharge. However, the amendments would not alter the fundamental structure of the U.S. GSIB surcharge calculation. The Federal Reserve uses two methods – Method 1 and Method 2 – to calculate GSIB surcharges with the higher of the two calculations being the binding requirements. Method 1 is the approach in the Basel standards and in other major jurisdictions. Whereas, Method 2 was designed by the Federal Reserve and applies to U.S. GSIBs only. The Method 2 surcharge, in practice, is higher than that of Method 1. And increases automatically as the U.S. economy grows even without changes to a U.S. GSIB’s systemic risk profile.²⁹

3. Eliminate the risk-sensitive modeled approaches. To reduce the excessive variability in risk-weighted assets, the Basel standards set stricter requirements for use of models and sets out an output floor for modeled risk-weighted assets using the regulators-set standardized approaches. The role of models is two-fold: it is used to calculate capital requirements and facilitate prudent internal risk measurement and management practices. Tying capital requirements to internal risk management incentivizes banks to measure and manage risks more accurately and appropriately. It also encourages responsible financial innovation. Standardized approaches, however, can not readily be used, if at all, for internal risk management. Though relatively simple and more conservative, they inevitably penalize certain exposures and reward others.

The U.S. proposal only allows models for general market risk and removes modeled approaches everywhere else including for issuer default risk, i.e., idiosyncratic market risk. The elimination of modeled approaches in the U.S. capital framework and almost exclusive reliance on regulator-set standardized approaches to set capital requirements contribute to the expected excessive increase in capital requirements. This risks homogenizing banks’ business models and exposures, thereby, exacerbating financial stability risk.

4. Require multiple sets of capital calculations even though many calculations are ex-ante largely compliance exercises. The Basel standards set out a two-stack capital framework – standardized approaches and modeled approaches. For the latter, the resulting risk-weighted assets amount cannot be lower than 72.5% of standardized approaches (“Output Floor”). The U.S. proposal, however, essentially sets out a tri-stack capital framework – U.S. standardized approaches (“Collins Floor”), output floor, and the expanded risk-based approach (“ERBA”, whereby modeled approaches for credit risk and idiosyncratic market risk are removed).

Under the U.S. proposal, the output floor becomes fully effective once the final rule comes into force. However, the Basel standards offer a 5-year phase-in period during which the floor starts at 50% and gradually rises to 72.5% at the end of the phase-in period. As demonstrated in a separate blog,³⁰ the ERBA stack would produce higher capital requirements than both the output floor and the Collins floor ex-ante. As a result, these two additional capital stacks would amount to a costly compliance exercise for large U.S. banks.

Why Should the Agencies Eliminate Gold-Plating Associated with the Basel 3 Endgame?

U.S. policymakers have widely acknowledged the success of current capital and related prudential regulations. For example, Federal Reserve Chair Jerome Powell noted in his statement accompanying the release of the U.S. proposal, “the development and implementation of the Dodd-Frank Act and the Basel III accords followed a deliberative and thoughtful process that evolved over a period of several years” and as a result, the “U.S. banking system is sound and resilient, with strong levels of capital and liquidity.”³¹

25 The GMS losses are calculated using the spot shock of 26.3% and the volatility point shock of 26.5 as prescribed by the GMS of [2023 DFAST](#).

26 The Basel 3 Endgame [CRE20](#) assigns a risk weight of 400% to “speculative unlisted equity exposures”.

27 The GSIB surcharge is the simple average of the surcharge applicable to the 8 U.S. GSIBs effective October 1, 2023. The simple average is 2.5%.

28 The SCB is the simple average of the SCBs applicable to the 8 U.S. GSIBs effective October 1, 2023. The simple average is 3.56%.

29 <https://www.sifma.org/resources/news/the-federal-reserve-should-revise-the-us-gsib-surcharge-methodology-to-reflect-real-risks-and-support-the-economy/>

31 <https://www.federalreserve.gov/newsevents/pressreleases/powell-statement-20230727.htm>

30 <https://www.sifma.org/resources/news/understanding-the-proposed-changes-to-the-us-capital-framework/>

The B3E was designed to “reduce excessive variability of risk-weighted assets (RWAs)” and ensure RWAs “comparab[ility]” across banks and jurisdictions.³² The Basel standards achieve these objectives by instituting more stringent criteria for modeled approaches and relying more on risk-sensitive standardized approaches. Materially increasing capital requirements is not one of the objectives. In fact, the Basel Committee’s September 2023 Report suggested that the B3E was expected to increase capital requirements for G-SIBs globally by just 2.9%. However, the U.S. proposal gold-plated requirements drive an expected 20% increase in overall capital requirements for the largest U.S. banks. Moreover, there is well over a 100% increase in capital requirements for capital markets activities – leading to capital requirements that are incommensurate with risks as shown in Table 2.³³

If adopted as proposed, the U.S. proposal’s gold-plating risks exacerbating inconsistencies in global capital requirements and could accelerate the shift of financing activities outside of the U.S. banking system. For example, the 2022 FSO Annual Report notes that nonbank mortgage lenders now manage over 55% of U.S. mortgages compared to just 11% in 2011, and nonbank mortgage originations have increased by 27% since 2017 and now account for 66% of all mortgage originations.³⁴ The FDIC Chairman Gruenberg recently noted that “[t]hese nonbank mortgage companies typically rely on short-term wholesale funding, operating with limited loss-absorbing capacity.”³⁵

The largest banks play a critical intermediary role in U.S. capital markets and the broader economy. These large, proposed increases in capital requirements, especially those related to capital markets activities, would constrain banks’ capacity to intermediate in the capital markets, diminish market liquidity and accelerate the migration of financing activities outside of the banking system. This could negatively affect U.S. and global financial stability, and

Conclusion

The U.S. proposal contains a suite of changes that would gold-plate the internationally agreed Basel standards and drive an expected large increase in the capital requirements for the largest U.S. banks, especially as it relates to their capital markets activities. This also goes against the Basel 3 Endgame’s stated objective of enhancing the comparability of risk-weighted assets across banks and jurisdictions. And the resulting capital requirements are incommensurate with the underlying risks they are designed to capture, creating perverse incentives and severely constraining large banks’ capacity to intermediate the U.S. capital markets and support the broader economy. To avoid these outcomes and reduce financial stability risks, as well as to promote international comparability, the Federal Reserve and the other U.S. banking agencies should remove these gold-plated elements of the U.S. proposal and the existing U.S. capital framework.

25 The GMS losses are calculated using the spot shock of 26.3% and the volatility point shock of 26.5 as prescribed by the GMS of [2023 DFAST](#).

32 <https://www.bis.org/bcbs/publ/d424.pdf>

33 As of year-end 2021, the aggregate market risk RWA for all large banks was \$560 billion under the current U.S. standardized approach. The U.S. proposal estimates that “the increase in RWA associated with trading activity (market risk RWA, CVA risk RWA, and attributable operational risk RWA) would be around \$880 billion for large holding companies”, which amounts to a capital increase of over 150%.

34 <https://www.consumerfinance.gov/data-research/hmda/summary-of-2021-data-on-mortgage-lending/#:~:text=The%20share%20of%20mortgages%20originated,from%2060.7%20percent%20in%202020.>

35 https://www.fdic.gov/news/speeches/2023/spsept2023.html#_ftnref25

Appendix

This Appendix provides details of the data and methodologies used to estimate the US GSIBs' risk-weighted asset ("RWA") amounts under the expanded risk-based approach ("ERBA") sets out in the US proposal.

Table A1. A Non-Exhaustive List of U.S. Gold-Plating and A Cross-Jurisdictional Comparison (area highlighted in yellow indicates U.S. gold-platings, highlighted in blue indicates EU/UK gold-platings).

Component	Basel	U.S.	EU	UK	Comments
Framework	Dual-stack	Tri-stack	Dual-stack	Dual-stack	Number of capital stacks
Temporary Transitional Arrangements	No	No	Yes ³⁶	Yes ³⁷	Allow preferential treatments during transition period
Output Floor	5yrs phase-in, start at 50%	No phase-in, start at 100%	5yrs phase-in, start at 50%	5yrs phase-in, start at 50%	Phase-in arrangement of the output floor
Buffer w/o Risk Double-Count	NA	No	Yes	Yes	With regards to risk double-count in setting capital buffers
GSIB Buffer	Method 1	Max of Method 1 and Method 2	Method 1	Method 1	GSIB surcharge requirements
Other Buffer Requirements DSIB Buffer (or O-SII Buffer)	NA	No	Yes	Yes	Domestic systemic important institutions surcharge
SyRB Buffer	NA	No	Yes	Yes	Other systemic risk surcharge
Capital Conservation Buffer	2.5%	SCB ≥ 2.5%	2.5%	2.5%	Capital conservation buffer requirements
Pillar 2 Requirement	NA	No (reflect via CAMELS)	Yes	Yes	Apply Pillar 2 capital requirements
Leverage Ratio	3% + 50% GSIB Surcharge as applicable	3% + 2%	3% + 50% GSIB Surcharge as applicable	3% + 50% GSIB Surcharge as applicable	Leverage ratio and buffer requirements
Credit Risk	Yes	No	Yes	Yes	Allow banks' internal models for capital requirements
Allow Models					



Part X: Our Series on US Bank Capital Requirements

How the Basel III Endgame Could Impair Securitization Markets and Harm US Businesses and Consumers

- The U.S. Basel III Endgame (“B3E”) proposal related to securitization prescribes the most restrictive approach to set capital requirements for banks’ securitization exposures in the developed world. At the same time, securitization markets are central to the majority of credit being extended in the U.S. economy, including mortgages, credit cards, auto loans, equipment and other small business financing, and other retail consumer assets. Punitive changes in the securitization capital framework will impact the cost of credit for virtually every consumer and business in the U.S.
- As proposed, the U.S. rules will, in many cases, result in significantly more capital for securitized assets than what is required under the current rules. This contradicts the proposed changes to the risk weighting for retail exposures which reduce the amount of capital in most cases, that banks will have to hold against retail loans. Additionally, because the rules are not risk sensitive (i.e., they do not take into consideration the expected performance or riskiness of the underlying loans), in many cases, more capital is required for securitizations of loans that are expected to experience relatively lower losses than for loans expected to experience higher losses.
- Taken together, this will result in more capital (read “higher cost”) for banks to finance securitized assets. Consequently, the U.S. B3E proposal could have severe detrimental impacts on the ability of banks to finance consumer, business, and other credit, and to make markets in securitization bonds, increasing interest rates and reducing the availability of credit, thereby harming main street as well as U.S. financial markets’ global competitiveness.

Background

Put most simply, securitization is a means of providing cost-effective funding to originators of consumer and business credit whereby those originators use their loans as collateral for borrowing or the issuance of securities.

Securitization allows banks and other lenders to provide more credit to consumers and businesses, and at a lower cost, than would be possible if they instead held the loans on their balance sheets. The loans can be placed in a securitization, where investors exchange cash for the bonds that are created. This same structure can be used where a bank provides a loan which, given protections in the form of excess collateral, should require less capital and thus, can be provided at a lower cost than the bank providing the consumer loans directly. In other words, securitization allows for a more efficient cycling of lending capital through the financial system. Securitization products are also used by banks and others to manage or hedge risk. Investors in securitization include mutual funds, pension funds, insurance companies, banks, hedge funds, corporate treasuries, sovereign wealth funds, and other foreign governmental entities.

According to [SIFMA data](#), in 2022 over \$1.5 trillion in mortgage-backed securities were issued, and over \$200 billion in asset-backed securities were issued. Assets that are commonly securitized include residential and commercial mortgages (“mortgage-backed securities”), student loans, auto loans and leases, credit cards receivables, equipment, solar and cell phone tower lease cash flows, and other types of receivables (non-mortgage-backed securities are referred to as “asset-backed securities”). While it varies year to year, recently 70% or more of residential mortgage loans in the US have been funded by securitization, and studies have quantified how securitization has lowered the cost of obtaining a mortgage.¹ This stands in contrast to Europe, where bank lending is a far greater component of consumer and commercial lending than securitization, and hence, the cost of consumer credit is generally higher.

Capital requirements play a key role in the ability of banks to participate in securitizations to fund lending. Higher capital requirements would force banks to hold less inventory leading to lower ABS liquidity and higher spreads which in turn raises costs for consumers and businesses.

¹ See, e.g., “TBA Trading and Liquidity in the MBS Market”, James Vickery and Joshua Wright (2013), available here: <https://www.newyorkfed.org/mediabrary/media/research/epr/2013/1212vick.pdf>

How are capital requirements for securitization exposures calculated?

In 2016, the Basel Committee released the international standards for securitization capital framework,² which constitutes a part of the B3E standards published in 2017. The B3E offers four approaches to calculate capital requirements for securitization exposures – internal ratings-based approach (“SEC-IRBA”), external ratings-based approach (“SEC-ERBA”), internal assessment approach (“IAA”), and standardized approach (“SEC-SA”). The SEC-IRBA is the most risk-sensitive whereas the SEC-SA is the most conservative and least risk-sensitive approach.

In addition, in response to the global financial crisis the Basel Committee and the International Organization of Securities Commissions (“IOSCO”) published “Criteria for identifying simple, transparent and comparable securitisations” in July 2015. The goal of Simplicity, Transparency, and Comparability (“STC”) was to help stakeholders (e.g., originators and investors) evaluate the risks and returns of a particular securitization exposure, thereby “lower the hurdles of assessing securitisations”³ and incentivize healthy growth of securitization markets. Securitization exposures meeting the STC criteria would enjoy preferential treatment (i.e., lower overall capital charges) under the SEC-IRBA, the SEC-ERBA (external ratings-based approach) and the SEC-SA under the Basel standards. The STC framework and the four capital treatment approaches have been adopted by all other major jurisdictions.

In July 2023, the U.S. banking agencies released their [proposal](#) implementing the B3E in the U.S. (“U.S. proposal”). In contrast to other major jurisdictions, the U.S. proposal removes the internal ratings-based approach for credit risk and does not adopt the STC framework.⁴ The Dodd-Frank Act prohibits the use of external credit ratings for bank capital requirements. Consequently, the U.S. proposal does not implement the SEC-ERBA and adopts only the SEC-SA for capital charges on large banks’ securitization exposures. The SEC-SA determines the applicable risk weight based only on standardized parameters reflecting the broad category of underlying pool of assets (e.g., mortgage, corporate etc.), the seniority of the securitization exposure, and an important multiplicative adjustment called the “p-factor.” It completely ignores the expected performance of the underlying pool of loans in assessing capital requirements. As a result, the SEC-SA in the U.S. proposal could double or even triple the capital required on certain securitization exposures relative to the current U.S. capital rules and the securitization framework under the EU and Canada’s B3E implementation, which Federal Reserve Board Governor Michelle Bowman worries could bring “potential harm to U.S. bank competitiveness in the global economy.”⁵

As an illustrative example, banks lend to prime auto loan originators at an advance rate of c. 88% (i.e., the bank lends \$88 collateralized by \$100 of prime auto loans; losses on the loans would therefore need to exceed \$12 for the bank to suffer any impairment on its loan). This lending would generally be rated AAA by the rating agencies which is commensurate with the over-collateralization (i.e., the \$12 in the prior example) being sufficient to cover 4-5x historical losses. The table below compares the risk weight for this lending under the current U.S. capital rules, the U.S. B3E proposal and the approaches available to banks in other jurisdictions for the same lending.

Jurisdiction	Approach	Risk Weight
U.S.	Current Rules	21%
U.S.	B3E NPR	45%
Europe ¹	Internal Ratings Based	15%
Europe	External Ratings Based	18%
Canada	Internal Ratings Based	15%
Canada	External Ratings Based	15%
Canada	STC	10%

¹STS for Europe is not included due to the requirement that securitization parties be EU domiciled which would not be met for a U.S. prime auto loan financing

² See <https://www.bis.org/bcbs/publ/d374.pdf>

³ See <https://www.bis.org/bcbs/publ/d332.pdf>

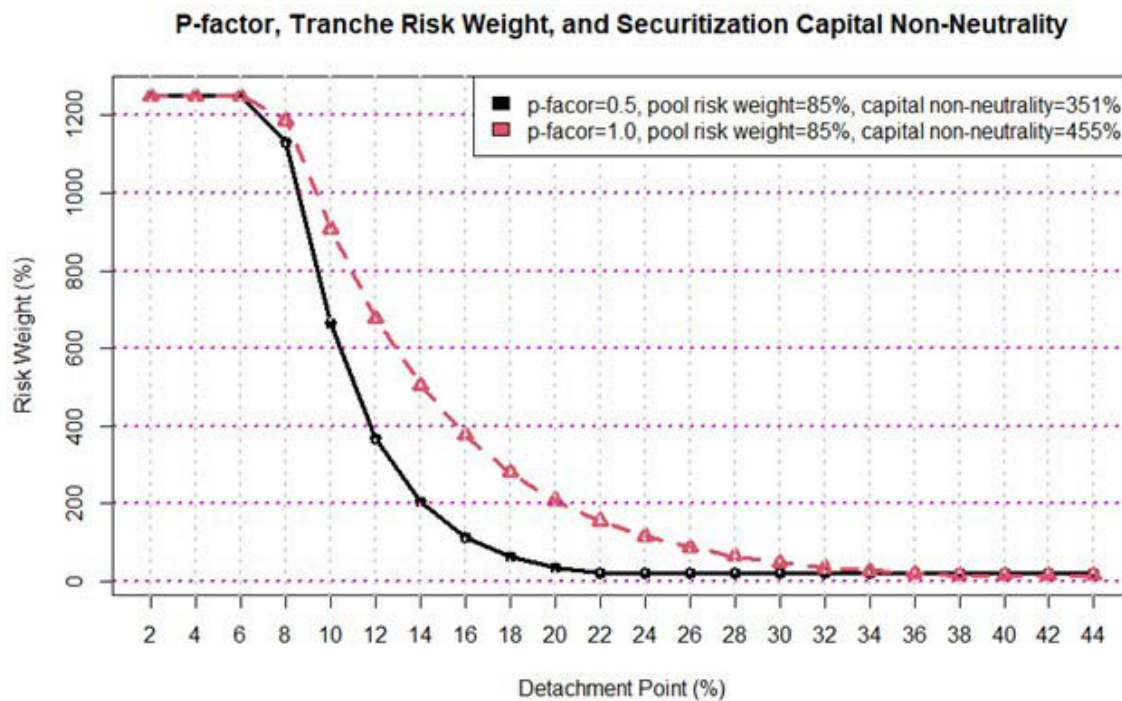
⁴ See <https://www.sifma.org/resources/news/the-federal-reserve-should-remove-gold-plating-in-the-basel-3-endgame/>

⁵ See <https://www.federalreserve.gov/newsevents/speech/bowman20231109a.htm>.

For unsecuritized assets (e.g., loans), under the B3E proposal the broad category of the underlying pool of assets determines the capital requirements for holding them, but for securitized assets, the p-factor is an important additional parameter. The p-factor plays 2 main roles in the SEC-SA framework: (1) it controls the degree of capital penalty for securitization (i.e., it causes the aggregate capital required for holding all tranches of a securitization to exceed that for holding the underlying pool of assets alone, thereby disincentivizing the use of securitization as a credit risk transfer tool by banks) – often referred to as “securitization capital non-neutrality”, and (2) it controls the allocation of capital across different tranches of a securitization.⁶

Figure 1 below illustrates the impacts of raising p-factor to 1 from 0.5 on securitization capital non-neutrality and the re-allocation of capital requirements across securitization tranches. It is clear the securitization is capital non-neutral since the securitization capital non-neutrality far exceeds 100%, a larger p-factor only exaggerates the securitization capital non-neutrality (from 351% to 455%) making it more expensive to securitize assets.

Figure 1. The impacts of p-factor on securitization capital non-neutrality and risk weight across securitization tranches. Assuming tranche thickness equals to 2% with attachment point ranges from 0%-42% and detachment point ranges from 2%-44% respectively,



How does the U.S. proposal create perverse incentives for securitization exposures?

The U.S. proposal could create perverse incentives for securitization exposures due to (1) revisions to the p-factor and the risk weighting of underlying pool of assets, and (2) the lack of appropriate risk-sensitivity of the SEC-SA framework.

The SEC-SA calculates tranche risk weight base on four inputs – attach and detach points, the ratio of delinquent underlying exposures to total underlying exposures in the securitization pool (i.e., W), and the standardized capital requirements for the securitization pool (i.e., Kg), in addition to the p-factor. Kg is adjusted to account for the impacts of W via parameter KA (defined as $KA = \frac{1}{1-W}$). That is, KA effectively ascribes a 625% risk weight to delinquent exposures underlying securitization in contrast to a 150% risk weight held directly on balance sheet. This is further compounded by a higher p-factor.

⁶ In the SEC-SA and the SEC-IRBA, “the p-factor is calculated on a tranche basis with the senior tranche typically having a lower p-factor compared to subordinated tranches. All things being equal, a higher p-factor for the mezzanine tranche relative to the senior tranche would result in higher capital requirements for the mezzanine tranche.” (<https://www.bankofengland.co.uk/prudential-regulation/publication/2023/october/securitisation-capital-requirements#footnote-6>)

The U.S. proposal would double the p-factor to 1 from 0.5 under the current U.S. capital rules leading to higher capital requirements for securitization exposures. The proposal would ascribe a lower risk weight to certain retail loans held on a bank’s balance sheet (e.g., 85% for prime auto loan exposures) than the current U.S. capital rules (e.g., 100% for prime auto loan exposures) which ought to result in lower capital requirements for securitization exposures. The combined impacts of both changes however, tend to raise capital requirements for senior tranches while lowering capital requirements for the junior-most tranches as shown in Table 1 below.

Table 1. The SEC-SA risk weight applicable to prime auto loan (classified as regulatory retail exposures, i.e., assigned 85% risk weight under the U.S. proposal, but 100% risk weight under the current U.S. capital rules) securitization exposures with the p-factor=1 as proposed in the U.S. proposal.

Capital One Prime Auto Receivables Trust 2023-2																
Deal Name	Description	Exposure	SSFA Inputs				Capital & RWA Calculations				Capital & RWA Calculations				Risk Weight Delta (absolute)	Risk Weight Delta (relative)
			Attach	Detach	Seriously Delinquent	Kg	K _A Mod. Adj. K _G	p	Risk Weight	Kg	K _A Mod. Adj. K _G	p	Risk Weight			
COPA2302	A1	199,500,000	84.00	100.00	0.00%	8.00%	8.00%	0.5	20.0%	6.80%	6.80%	1.0	15.0%	-5%	-25%	
COPA2302	A2A	217,880,000	11.20	84.00	0.00%	8.00%	8.00%	0.5	30.9%	6.80%	6.80%	1.0	61.1%	30%	98%	
COPA2302	A2B	217,880,000	11.20	84.00	0.00%	8.00%	8.00%	0.5	30.9%	6.80%	6.80%	1.0	61.1%	30%	98%	
COPA2302	A3	395,760,000	11.20	84.00	0.00%	8.00%	8.00%	0.5	30.9%	6.80%	6.80%	1.0	61.1%	30%	98%	
COPA2302	A4	63,220,000	11.20	84.00	0.00%	8.00%	8.00%	0.5	30.9%	6.80%	6.80%	1.0	61.1%	30%	98%	
COPA2302	B	11,270,000	10.27	11.20	0.00%	8.00%	8.00%	0.5	632.3%	6.80%	6.80%	1.0	701.3%	69%	11%	
COPA2302	C	11,270,000	9.35	10.27	0.00%	8.00%	8.00%	0.5	796.8%	6.80%	6.80%	1.0	803.5%	7%	1%	
COPA2302	D	11,270,000	8.44	9.35	0.00%	8.00%	8.00%	0.5	1001.6%	6.80%	6.80%	1.0	919.2%	-82%	-8%	

Table 1 shows that the risk-weighted asset (“RWA”) and, as a result, the required capital for the retaining Class A, AAA rated notes in the structure essentially doubles.⁸ Take the A2A tranche for example, the risk weight would go up from 30.9% under the current U.S. capital rules to 61.1% under the U.S. proposal – an increase of 98%. However, the capital increase bears no relation to the actual risks inherent in the underlying pool of prime auto loans. In fact, relative to the current capital rules the U.S. proposal would ascribe a lower risk weight to prime auto loans.

The overall securitization capital surcharge (i.e., non-neutrality) for this securitization would rise from 153% under the current capital rules to 172% under the proposal – a 2000 basis points increase, even though the underlying pool of assets are considered less credit risky (i.e., assigned a lower credit risk weight under the proposal). A capital surcharge of 172% indicates that the capital required for holding the securitization would have been over 1.7x of that for holding the underlying pool of prime auto loans. As a result, the U.S. proposal could make it more expensive for banks to transfer credit risk via securitization. In addition, banks could be incentivized to shift out of senior tranches in exchange for more junior and riskier tranches – a perverse incentive that counters the principle and practice of sound risk management.

7 Attachment point for a securitization tranche represents the threshold at which credit losses will first be allocated to the tranche. And detachment point represents the corresponding threshold at which credit losses of principal allocated to the position would result in a total loss of principal.

8 The capital reduction for holding the most senior tranche is because of the lower risk weight floor (i.e., 15%) relative to the current rule (i.e., 20%), but in this case, relates only to a Money Market tranche which is structurally senior in order to qualify under Rule 2a-7 but is a short, relatively small part of the senior capital stack.

Additionally, unlike the SEC-IRBA whereby the p-factor is dependent on the expected performance of the underlying securitization pool (including the probability of default and loss given default), the SEC-SA fixed the p-factor at 1 ignoring the expected performance of the underlying securitization pool. Consequently, the SEC-SA under the U.S. proposal could require lower capital on a senior tranche backed by a subprime pool than a senior tranche backed by a prime pool despite the fact that expected losses on the subprime pool will erode more of the collateral balance than the expected losses on the prime pool. Table 2 shows that capital requirements for retaining most senior tranches backed by a pool of subprime auto loans would decrease under the U.S. proposal. This is in stark contrast to the capital increase for senior tranches backed by prime auto loans reported in Table 1. All else equal, this could result in banks either having to charge substantially more on the securitized loans to the prime auto lender than to the subprime auto lender or to seek to lend more in subprime than prime.

Table 2. The SEC-SA risk weight applicable to subprime auto loan (classified as regulatory retail exposures, i.e., assigned 85% risk weight under the U.S. proposal, but 100% risk weight under the current U.S. capital rules) securitization exposures with the p-factor=1 as proposed in the U.S. proposal.

ACAR 2023-3			Basel 3 Standardized (current)											NPR		
Deal Name	Description	Exposure	SSFA Inputs				Capital & RWA Calculations				Capital & RWA Calculations				Risk Weight Delta (absolute)	Risk Weight Delta (relative)
			Attach	Detach	Seriously Delinquent	Kg	K _A Mo d. Adj. K _G	p	Risk Weight	Kg	K _A Mo d. Adj. K _G	p	Risk Weight			
ACAC2303	A	179,502,732	67.48	100.00	0.00%	8.00%	8.00%	0.5	20.0%	6.80%	6.80%	1.0	15.0%	-5%	-25%	
ACAC2303	B	48,400,000	58.43	67.48	0.00%	8.00%	8.00%	0.5	20.0%	6.80%	6.80%	1.0	15.0%	-5%	-25%	
ACAC2303	C	90,200,000	41.57	58.43	0.00%	8.00%	8.00%	0.5	20.0%	6.80%	6.80%	1.0	15.0%	-5%	-25%	
ACAC2303	D	74,250,000	27.69	41.57	0.00%	8.00%	8.00%	0.5	20.0%	6.80%	6.80%	1.0	24.7%	5%	23%	
ACAC2303	E	41,800,000	19.88	27.69	0.00%	8.00%	8.00%	0.5	28.2%	6.80%	6.80%	1.0	108.6%	80%	285%	

The U.S. proposal would subject a large bank’s trading and market-making activities to the Fundamental Review of the Trading Book framework (“FRTB”). The FRTB consists of two capital components – general market risk capital and issuer default risk capital (“DRC”). For the purpose of the DRC, the risk weight applicable to certain securitization exposures would be calculated using the SEC-SA framework.⁹ Thus, these same perverse incentives would carry over even if the bank holds these tranches for the purpose of trading or market making.

How to mitigate the perverse incentives the U.S. proposal creates for securitization exposures?

The root cause of these perverse incentives is the lack of appropriate risk-sensitivity of the SEC-SA framework which could have detrimental effects on the functioning of the U.S. securitization markets. A few actions could be taken to mitigate such perverse incentives: (1) at the very least, revert the p-factor to 0.5 as in the current U.S. capital rules instead of doubling it as in the U.S. proposal, (2) adopt the SEC-IRBA, and (3) implement the STC framework.

The U.S. proposal should revert the p-factor to 0.5 from 1 to avoid the perverse incentives created by a higher p-factor and reduce the degree of securitization capital surcharge. Our concerns with the excessive securitization capital non-neutrality are shared by several major jurisdictions where mitigation actions are being taken. For example, considering that the “[risk-weighted amount] resulting from the application of the SEC-SA is not commensurate with the risks posed to the institution or to financial stability”, the UK Prudential Regulatory Authority published a discussion paper on “adjustments to the Pillar 1 framework for determining capital requirements for securitisation exposures”.¹⁰

⁹ FRTB classifies securitization exposures into two groups – correlation trading vs non-correlation trading. The prime auto loan securitization transaction presented in Table 1 would be considered non-correlation trading. The risk weight applicable to non-correlation trading securitization exposures for the purpose of DRC is calculated using the SEC-SA.

¹⁰ <https://www.bankofengland.co.uk/prudential-regulation/publication/2023/october/securitisation-capital-requirements>

In addition, the U.S. proposal should adopt the SEC-IRBA. As explained earlier, the SEC-IRBA takes into account the expected performance of the underlying pool of assets in setting capital requirements for securitization exposures. The SEC-SA, however, ignores the expected performance of the underlying pool. As a result, it is the least risk-sensitive and most conservative securitization framework offered by the Basel standards. To ensure capital requirements that are commensurate with risks arising from securitization exposures, the SEC-IRBA should be adopted.

Finally, the U.S. proposal should implement the STC framework. The Basel standards set out the STC criteria to help mitigate the uncertainty related to asset risk, structural risk, governance, and operational risk associated with securitization. Less uncertainty and more confidence in the performance of STC transactions would justify a reduced degree of conservatism being built into the securitization capital frameworks through capital non-neutrality. The Basel Committee states explicitly that “[a]ll other things being equal, a securitization with lower structural risk needs a lower capital surcharge than a securitization with higher structural risk; and a securitization with less risky underlying assets requires a lower capital surcharge than a securitization with riskier underlying assets.”¹¹ The STC framework would help lower the hurdles of assessing securitization exposures and incentivize healthy and responsible growth of the U.S. securitization markets.

Conclusion

The U.S. proposal requires large banks to set capital requirements for securitization exposures using the SEC-SA approach. This framework is the least risk-sensitive and most conservative amongst the four approaches offered in the Basel standards and adopted by other major jurisdictions. Additionally, the proposal does not implement the STC framework which was designed by the Basel Committee to support healthy and responsible growth of securitization markets. As a result, the proposal would result in capital requirements that are not commensurate with risks of the securitization and could create perverse incentives for banks’ involvement in securitization markets. Securitization markets have been a cornerstone of the U.S. capital markets and a key source of funding for the broader U.S. economy. Without appropriate mitigative actions, the U.S. proposal could have detrimental effects on the securitization markets and the broader economy

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¹¹ See <https://www.bis.org/bcbs/publ/d374.pdf>



Part XI: Our Series on US Bank Capital Requirements

The Impact of Rising Debt Levels and Constrained Dealer Capacity on Market Resiliency. Revisiting US Treasury Market Capacity and Resiliency: Part I

- In this two-part blog series, we reexamine long-standing concerns about the capacity and resiliency of the U.S. Treasury market as government bond markets globally contend with rising yields, significant increases in issuance and renewed volatility. We also discuss the wide-ranging impacts that recent regulatory proposals, in particular the Basel III Endgame proposal, could have on these markets.
- In Part I, we examine how the rapid growth in U.S. government debt issuance and constrained dealer balance sheet capacity arising from bank capital requirements have combined to raise questions about the resiliency of the Treasury markets. Serious market disruption events, such as the 2020 “Dash for Cash” episode, as well as the growing risk premia that investors are demanding for holding Treasury securities, appear to support concerns about reduced market capacity and illiquidity during periods of stress.
- Given that Treasury debt issuance seems likely to continue to rise, policymakers have been actively exploring other ways to improve market resiliency. Unfortunately, regulators have not addressed the core problem of constrained dealer balance sheet capacity. In fact, recent regulatory proposals, most notably the Fundamental Review of the Trading Book (“FRTB”) and other trading book capital reforms contained in the Basel III Endgame proposal, would serve to further constrain dealer capacity, raise transaction costs, and potentially disrupt key parts of the market.

Background: Why are the U.S. Treasury markets important and how are they structured?

Treasuries are debt instruments issued by the U.S. government to finance its activities. Owing to the United States’ creditworthiness and status as the world’s leading economy, the U.S. Treasury market (comprised of the cash market as well as the repurchase agreement (“repo”) and futures markets) has been described as the “biggest, deepest and most essential bond market on the planet,”¹ a fact that has allowed the U.S. government to finance its needs at a relatively low cost over time. Investors have historically viewed Treasuries as risk-free or near-cash assets i.e., safe haven assets that retain their value and can be easily sold during both normal and stressed market periods. Owing to their stability, U.S. Treasuries also often serve as benchmarks for other fixed-income securities and hedging positions; as a result, U.S. Treasury yields have an impact on the rates that consumers, businesses, and governments across the globe pay to borrow money. Moreover, the U.S. Treasury repo market is a key transmission mechanism for U.S. monetary policy, and is vital to the liquidity of the cash Treasury market. Put simply, the Treasury markets are the bedrock of the global financial system.

The Treasury markets operate through a dealer-based structure, with “primary dealers” – banks and broker-dealers that have been designated as counterparties of the Federal Reserve Bank of New York (“FRBNY”) –acting as the largest buyers in auctions of new Treasury debt and as market-makers or intermediaries in the secondary markets.² In addition to their obligations to participate in all auctions of U.S. government debt, primary dealers are required to “[d]emonstrate a substantial presence as a market-maker that provides two-way liquidity in [the Treasury market], particularly Treasury cash and repo operations.” The obligation to support market liquidity extends not only to “on-the-run” securities (the most recently issued securities) but also to less liquid “off-the-run” securities that trade in the secondary markets.

In meeting these obligations, and in attempting to satisfy market and client demands, primary dealers are frequently required to commit a significant amount of capital. Principal trading activity in the “when-issued” market (i.e., securities that have been announced but have yet to be issued), during auctions, in the aftermarket of auctions, and in the secondary market requires these dealers to hedge their positions with other Treasury-backed products. By contrast, other market participants are not similarly bound by the market-making obligations that put primary dealers in the position of providing both buy and sell quotes on a more-or-less continuous basis. The ability of primary dealers to engage in this market-making activity supports the liquidity and overall functioning of all segments of the Treasury markets.

¹ “The Joint Staff Report on the U.S. Treasury Market on October 15, 2014,” July 13, 2015. Available at: [Joint_Staff_Report_Treasury_10-15-2014.pdf](#).

² See Federal Reserve Bank of New York, “Primary Dealers.” Available at <https://www.newyorkfed.org/markets/primarydealers.html>.

Why are there growing concerns about the capacity and resiliency of the Treasury markets?

As we discussed in a prior SIFMA [blog](#), the resiliency of the Treasury markets has been called into question by a series of major market disruption events over the past decade, most notably the March-April 2020 “Dash for Cash” episode, in which market price volatility increased dramatically and/or where the depth of the market (i.e., the amount of liquidity available) decreased precipitously. While this type of disruption has not occurred since, the Treasury markets have continued to witness episodes of high volatility and trading volumes. As the Inter-Agency Working Group for Treasury Market Surveillance (“IAWG”) noted, Treasury market “volatility reached levels not seen since the 2008 Global Financial Crisis” in mid-March 2023 as difficulties in the regional bank sector led to a repricing of term risk-free rates, while daily, dealer-to-customer, and interdealer volumes all neared historic highs.³

These market events and trends highlight two structural problems in U.S. Treasury markets: the growth of Treasury issuance as the U.S. government continues to borrow more, and the constrained ability of bank dealers to intermediate these markets. These problems are contributing to growing volatility and episodes of illiquidity, increasing costs for investors, and ultimately potentially contributing to higher borrowing costs for the U.S. government over the longer term. Although policymakers have taken some actions and issued proposals designed to improve market resiliency, these twin dynamics of ever-growing supply and constrained intermediation capacity are only likely to get worse in the coming years, particularly if recent banking agency proposals implementing the Basel III Endgame capital reforms, as well as changes to the way the Global Systemically Important Bank (“GSIB”) Surcharge is calculated, go into effect. These potential impacts will be discussed in Part II of this blog.

Growth of U.S. Government Debt

The dramatic growth in U.S. government debt over the past 15 years has represented a major structural change to the Treasury markets. Outstanding marketable Treasury securities stood at \$25 trillion as of August 2023, which represents a 743% increase since 2000 (see Figure 1 below). Moreover, as federal budget deficits continue to rise, the average rate of Treasury borrowing is accelerating; excluding 2020 (when pandemic-related programs dramatically pushed up borrowing levels), the 2021/2022 average was 56% higher than it had been during the prior decade (\$1.5tn versus \$1tn in the 2010-2019 period). In 2023, borrowing levels are expected to be 200% greater than the 2010-2019 average, with the amount of new marketable Treasury debt likely to be issued exceeding \$3tn.⁴ These trends are likely to continue, with the U.S. Congressional Budget Office (“CBO”) estimating that the total amount of Treasury securities outstanding will rise from 98% of U.S. GDP in 2023 to 107% in 2029.⁵ In sum, the Treasury securities market has grown massively in a relatively short period of time and is likely to continue growing rapidly over the coming years.

Figure 1: Treasury Securities Outstanding (\$TN), 2000-2023



Source: SIFMA Research

³ Inter-Agency Working Group for Treasury Market Surveillance, “Enhancing the Resilience of the U.S. Treasury Market: 2023 Staff Progress Report,” November 6, 2023, p.3. Available at: [20231106_IAWG_report.pdf \(treasury.gov\)](#).

⁴ SIFMA U.S. Treasury Securities Statistics. Available at: [U.S. Treasury Securities Statistics – SIFMA – U.S. Treasury Securities Statistics – SIFMA](#).

⁵ Congressional Budget Office, “The 2023 Long-Term Budget Outlook,” June 2023. Available at: [The 2023 Long-Term Budget Outlook | Congressional Budget Office \(cbo.gov\)](#).

Constraints on Dealer Balance Sheets

This growth in the size of the Treasury markets has coincided with a second structural change: dealer balance sheets have become increasingly constrained since the enactment of capital reforms in the wake of the Great Financial Crisis (“GFC”) of 2007-2008. The constraints on bank dealers’ ability to intermediate in these markets are a function of three post-GFC reforms.

First has been the implementation of the Supplementary Leverage Ratio (“SLR”) and the “enhanced SLR” (“eSLR”) for U.S. GSIBs. The SLR and eSLR create economic disincentives for bank dealers to hold low-returning assets such as U.S. Treasuries by assigning them an equal risk-weighting with far riskier and higher-returning assets (in contrast to risk-based capital requirements, which assign U.S. Treasuries a zero risk-weight).⁶ This difference in treatment can turn these leverage measures into binding constraints for some large dealer banks, placing constraints on bank dealers’ capacity to intermediate in the Treasury markets. Indeed, commentators with diverse perspectives on capital regulation agree that the SLR and eSLR have placed constraints on the ability of bank dealers to perform market-making activity in the Treasury markets, particularly during periods of stress.⁷ Recognizing this, the U.S. banking agencies decided to temporarily exclude Treasuries (and central bank reserves) from the SLR and eSLR calculation as part of their response to the pandemic-induced stresses witnessed in the March-April 2020 Dash-for-Cash episode.

The GSIB Surcharge, specifically the Federal Reserve’s preferred methodology for calculating the Surcharge, known as “Method 2” (as opposed to the “Method 1” approach under the internationally agreed Basel framework), has likely acted as a second constraint. Under this approach, Treasuries and Treasury repos are captured by multiple systemic indicator scores used to calculate the Surcharge⁸, which can lead to double or triple counting of Treasury assets and liabilities – a feature of the Surcharge that former Federal Reserve Governor Daniel Tarullo has acknowledged exists (though he contends that it is an intentional element rather than a “bug” of the metric).⁹ Moreover, the coefficients used to calculate the Method 2 Surcharge are set at a 2012-2013 baseline i.e., they are not adjusted for economic growth.¹⁰ Banks subject to the GSIB Surcharge therefore are likely to have a reduced incentive to grow their balance sheet with low-returning assets such as Treasuries beyond what is required under regulatory requirements such as the Liquidity Coverage Ratio (“LCR”), given that the result will inevitably be a higher capital penalty over time.¹¹ As discussed in Part II of this blog, recently proposed changes to the GSIB Surcharge methodology may only compound this negative impact on Treasury dealer capacity.

6 This issue is discussed in more depth in Peter Ryan and Robert Toomey, “Improving Capacity and Resiliency in U.S. Treasury Markets: Part II – Proposals for Reforming U.S. Treasury Markets, March 30, 2021. Available at: [Improving Capacity and Resiliency in U.S. Treasury Markets: Part II – SIFMA – Improving Capacity and Resiliency in U.S. Treasury Markets: Part II – SIFMA](#).

7 See, for example, Nellie Liang and Pat Parkinson, “Enhancing Liquidity of the U.S. Treasury Market Under Stress,” Hutchins Center Working Paper #72, Brookings Institution, December 16, 2020. Available at: [WP72_Liang-Parkinson.pdf \(brookings.edu\)](#). The need for potential reform (albeit more modest than excluding Treasuries from the SLR altogether) has also been acknowledged by former Federal Reserve Governor Dan Tarullo, who one of the principal architects of the post-GFC prudential reforms. See Daniel Tarullo, “Capital Regulation and the Treasury Market, Hutchins Center on Fiscal and Monetary Policy, Brookings Institution, March 2023. Available at: [Brookings-Tarullo-Capital-Regulation-and-Treasuries_3.17.23.pdf](#).

8 Those components of the systemic indicator scores include the size; complexity; and reliance on weighted short-term wholesale funding; and cross-border transactions.

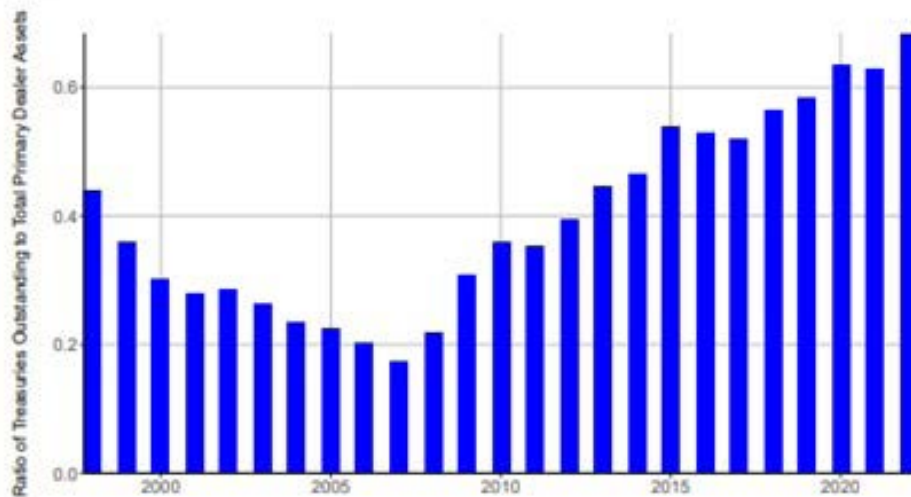
9 Daniel K. Tarullo, “Capital Regulation on the Treasury Market,” Hutchins Center on Fiscal and Monetary Policy at Brookings, March 2023, p. 8. Available at: [Brookings-Tarullo-Capital-Regulation-and-Treasuries_3.17.23.pdf](#). Note

10 For more on this issue, see Francisco Covas and Brett Waxman, “GSIB Method 2 Fixed Coefficients Must be Adjusted for Economic Growth,” December 4, 2020. Available at: [GSIB Method 2 Fixed Coefficients Must Be Adjusted for Economic Growth – Bank Policy Institute \(bpi.com\)](#).

11 This point is at least partially conceded by former Federal Reserve Governor Tarullo in his 2023 article. He notes that while “it is hard to know just how much bank holdings and intermediation of Treasuries would increase were the G-SIB surcharge to be reduced” that “nonetheless, there is surely something to the claim, especially if surcharges were to continue to rise based on balance sheet growth that roughly parallels economic growth (and thus, at least presumptively, does not necessarily increase in the systemic risk posed by that institution).” See Tarullo, p. 9.

Third, higher post-GFC capital requirements (including risk-based requirements) have generally constrained the growth in the size of dealer balance sheets, meaning that bank dealers have relatively less capacity than they once did to intermediate the growing inventories of U.S. Treasuries. Indeed, as Darrell Duffie notes in a recent paper, since 2007, the combined size of primary dealers’ balance has shrunk by a factor of four relative to the growth in U.S. Treasuries outstanding (see Figure 2 below).

Figure 2: Ratio of U.S. Treasuries Outstanding to Primary Dealer Assets, 1998-2022



Source: Duffie (2023)¹²

There is strong evidence that this constrained balance sheet capacity relative to the growing size of the market has exacerbated illiquidity during stress events such as the March-April 2020 Dash for Cash. During that episode, bank dealers purchased large volumes of Treasuries that other market participants, such as funds, proprietary trading firms (“PTFs”), institutional investors, and foreign governments, were looking to sell, but their capacity to do so was nonetheless significantly constrained relative to the demand. Other actors that provided liquidity during normal periods, such as PTFs, withdrew from the market altogether, because they did not have the same incentives to make markets on behalf of clients as the primary dealers. As a Federal Reserve Bank of New York staff report shows, various measures of market liquidity (e.g., the bid-ask spread, depth from the interdealer market and the dealer-to-customer market) declined rapidly¹³, leading to an effective freeze-up of the markets until the U.S. Treasury and Federal Reserve began a series of interventions in the markets to restore stability.¹⁴

Consequences of Reduced Capacity and Resiliency

All of this raises significant financial stability concerns given the central role of the U.S. Treasury markets in the global financial system. It could also have long-term consequences for the cost of financing the U.S. government’s debt. For U.S. Treasuries to maintain their global safe-haven status for investors, it is crucial that the markets have intermediation capacities that are resilient even during periods of crisis-level selling. If investors begin to question their ability to quickly liquidate Treasuries, then the risk premium they charge for holding those instruments is likely to go up.

¹² Chart adapted from Darrell Duffie, “Resilience Redux in the U.S. Treasury Market,” paper presented at the Jackson Hole Symposium, August 25, 2023. Available at: [DuffieJH-2023.pdf \(darrellduffie.com\)](#).

¹³ Darrell Duffie, Michael Fleming, Frank Keane, Claire Nelson, Or Shachar, and Peter Van Tassel, “Dealer Capacity and U.S. Treasury Market Functionality,” Federal Reserve Bank of New York Staff Report, No. 1070, August 14, 2023. Available at: [delivery.php \(ssrn.com\)](#).

¹⁴ For more on this episode, see Peter Ryan and Robert Toomey, “Improving Capacity and Resiliency in U.S. Treasury Markets: Part 1 – Why is Reform Needed? A Brief History of Recent Market Disruptions,” March 24, 2021. Available at: [Improving Capacity and Resiliency in U.S. Treasury Markets: Part I – SIFMA - Improving Capacity and Resiliency in U.S. Treasury Markets: Part I – SIFMA](#).

Indeed, there is some evidence that this is already happening: risk-premium indicators such as credit default swaps (“CDS”), as well as the term premium associated with higher five-year real yields have generally increased beyond what would be expected given the current path of monetary policy.¹⁵ Similarly, the Federal Reserve Bank of New York’s gauge of the 10-year premium became positive in late September 2023, after having stayed negative for most of the past 7 years, reflecting not only an expectation that interest rates will stay higher for a longer duration, but investor concerns about growing U.S. budget deficits – and thus greater supplies of outstanding Treasuries that may be more difficult to sell – in the future.¹⁶ Ultimately if investor confidence about long-term capacity and resiliency of the Treasury markets begins to wane, then the risk premia (yields) they will demand to hold those instruments will increase, resulting in elevated costs of servicing an ever-growing volume of government debt obligations.

Conclusion

The capacity and resiliency of the U.S. Treasury market have been called into question in recent years as market disruption events and heightened volatility become more frequent. These events have highlighted two underlying structural problems: a rapid growth in Treasury issuance and the constrained intermediation capacity of dealers owing to bank capital requirements. While regulators can do little to address the growth in issuance, they can take actions that mitigate the negative consequences for financial stability and long-term debt financing by expanding capacity in the system. One way to do this would be to reduce constraints on the ability of bank dealers to intermediate in these markets through measured reforms to both the SLR and GSIB Surcharge, as well as targeted changes to other risk-based capital rules. However, recent actions by regulators, particularly the banking agencies’ Basel III Endgame proposal, are likely to do the opposite, further constraining dealer capacity, raising transaction costs, and potentially disrupting key parts of the market. We discuss these potential impacts in Part II of this blog.

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¹⁵ Steven Major, Himanshu Malik, and Guy Baverstock, “Bonds Are Not Potatoes 2: Revising the Impact of Supply on Yields,” HSBC Global Research, September 27, 2023.

¹⁶ Michael Mackenzie and Garfield Reynolds, “Treasury ‘Term Premium’ Gauge Positive for the First Time Since 2021,” Bloomberg, September 27, 2023.



Part XII: Our Series on US Bank Capital Requirements

Evaluating the Likely Impact of the Basel III Endgame and Other Recent Regulatory Proposals on the Treasury Markets. Revisiting US Treasury Market Capacity and Resiliency: Part II

- In [Part I](#) of this two-part blog, we examined how growing U.S. government debt issuance and constrained dealer balance sheet capacity arising from bank capital requirements have raised questions about the resiliency of the U.S. Treasury market in recent years. In Part II below, we evaluate the potential impact of recent regulatory proposals and actions on the Treasury markets.
- The banking agencies' Basel III Endgame proposal, particularly the proposed trading book capital increases resulting from the Fundamental Review of the Trading Book ("FRTB"), would likely result in a further contraction of dealer balance sheet capacity. In addition to these additional capacity constraints, the proposed minimum haircut framework for securities financing transactions ("SFTs") could severely disrupt the functioning of the Treasury repo market.
- Other aspects of the Basel III Endgame proposal, together with a separate proposal to amend the Global Systemically Important Bank ("GSIB") Surcharge, could cause bank dealers to pull back their market making activity in the Treasury futures and options markets, creating further significant disruptions, and raising costs for a wide variety of market participants.
- The negative effects of these prudential reforms could be compounded by new market structure rules that may well result in increased costs and impact market liquidity, notably the SEC's recently finalized rule designed to significantly expand central clearing, as well as possible measures designed to increase public transparency in less liquid market segments and require registration for certain classes of market participants.
- Regulators should evaluate the costs and benefits of these measures to ensure that they do not exacerbate existing capacity problems in the Treasury markets. Moreover, the banking agencies should take proactive steps to reform existing rules to reduce balance sheet capacity constraints on bank dealers operating in the Treasury markets.

Overview

U.S. In Part I of this blog, we discussed how the significant increases in Treasury issuance over the past 15 years, combined with constrained dealer balance sheet capacity resulting from bank capital requirements, have contributed to market disruption events and heightened volatility in the U.S. Treasury markets in recent years, calling into question the resiliency of this bedrock component of the global financial system. Over the longer term, these concerns about the Treasury market liquidity and resiliency could increase the cost of financing U.S. government debt, placing burdens on taxpayers and raising costs for borrowers across the economy.

Thought leaders have responded by proposing a variety of measures aimed at reforming the Treasury markets to increase resiliency. As discussed in a prior SIFMA [blog](#), these reform efforts have largely revolved around four main ideas: the creation of a standing repo facility by the Federal Reserve, which would serve as a backstop ensuring market liquidity; the expansion of central clearing and "all-to-all" platforms; improved data collection and disclosure in the secondary markets; and reforms to bank capital requirements to improve dealer capacity. Policymakers have begun to act on a number of these issues, with the Federal Reserve creating a standing repo facility in July 2021.¹

Other recent proposals, however, would further constrain dealer balance sheets, disrupt key parts of the market, and increase costs for a wide range of market participants. Among these, the U.S. banking agencies' Basel III Endgame proposal would have a particularly deleterious impact, in large part owing to the large trading book capital increases envisioned as part of the Fundamental Review of the Trading Book ("FRTB"). Other elements of the proposal, such as the minimum haircut framework for securities financing transactions ("SFTs"), could severely disrupt the functioning of the Treasury repo market. Other Basel reforms, taken together with the Federal Reserve's GSIB Surcharge proposal, would significantly constrain bank dealer capacity in the Treasury futures and options markets. Finally, the negative impacts of these prudential rule changes could be compounded by market structure reforms – such as the SEC's recently finalized proposal on central clearing.

¹ For more details on the facility, see Federal Reserve Bank of New York, "The Fed's Latest Tool: A Standing Repo Facility," Liberty Street Economics, January 13, 2022. Available at: [The Fed's Latest Tool: A Standing Repo Facility - Liberty Street Economics \(newyorkfed.org\)](https://www.newyorkfed.org/outreach/articles/the-fed-s-latest-tool-a-standing-repo-facility).

The FRTB Component of the U.S. Basel III Endgame Proposal Would Further Constrain Dealer Capacity

The Basel III Endgame proposal², which was issued by the Federal Reserve, the Office of the Comptroller of the Currency (“OCC”) and the Federal Deposit Insurance Corporation (“FDIC”) in July 2023, would have far-reaching impacts on the ability of bank dealers to engage in a wide variety of trading activities, including acting as market makers in all parts of the Treasury markets. Initial estimates suggest that the FRTB portion of the proposal will increase the risk-weighted assets (“RWA”) for largest banks’ trading activities by 75%; when all trading book capital increases are factored in (including the Credit Valuation Adjustment or “CVA” as well as trading-related operational risk increases), the RWA increase could be closer to 150% for the largest banks. This is the main driver of the estimated 24% increase in aggregate RWA for the U.S. GSIBs.

These impacts could be even greater owing to structural “gold-plating” resulting from the interaction of the proposal with the existing U.S. capital framework.³ This is primarily because there would be an effective “double counting” of risks between the FRTB reforms and the Global Market Shock (“GMS”) component of the supervisory stress tests. These tests in turn help set a firm’s minimum risk-based capital requirements (as a result of the Stress Capital Buffer or “SCB” requirement), in contrast with other major jurisdictions, where stress test exercises are not used to set minimum regulatory capital requirements.

Taken together, the large, proposed trading book capital increases and the double count between the FRTB component of the Basel III Endgame and the GMS component of the U.S. stress tests would force large banks to rationalize their balance sheet capacity to focus on high-return capital markets activities. Given that market-making in U.S. Treasuries is a low-return business relative to other asset classes, banks would be incentivized to allocate only a very limited portion of their balance sheet to those activities. Since the majority of Treasury market primary dealers are banks covered by the proposal, this would inevitably further constrain dealer capacity – and by extension market resiliency during periods of stress. Constrained capacity and higher capital costs for banks would also likely result in increased transaction costs for Treasury market participants.⁴

The Basel III Endgame’s Proposed SFT Haircut Framework Could Disrupt Treasury Repo Markets if Certain Provisions Were Implemented

While the Basel Endgame – and the FRTB component in particular – will constrain Treasury dealer capacity, another component of the package could have a disruptive impact on the Treasury repo markets. In the U.S. proposal, the banking agencies decided to adopt a portion of the Basel III standards known as the Securities Financing Transactions (“SFT”) minimum haircut floor. In brief, the SFT haircut floor works by eliminating the benefit of collateral taken for securities lending transactions, reverse repos, and eligible margin loans where for transactions that fall below a specified floor, a measure intended to limit the build-up of leverage in the hedge fund sector. The U.S. is moving forward with adoption despite decisions by the EU, UK, Japan, and Canada not to implement this portion of the standards because of its overly broad scope, with pension funds, mutual funds, and insurance company SFTs treated similarly to hedge fund transactions, as well as concerns about the potentially disruptive effects on the SFT markets more generally.⁵

² 88 Fed. Reg. 64029 (September 18, 2023).

³ For more see Guowei Zhang, Peter Ryan, and Carter McDowell, “The Federal Reserve Should Remove “Gold-Plating” in the Basel 3 Endgame, November 8, 2023. Available at: <https://www.sifma.org/resources/news/the-federal-reserve-should-remove-gold-plating-in-the-basel-3-endgame/>.

⁴ A recent study found that market participants were concerned that the U.S. Basel III Endgame proposal would meaningfully impact their derivatives business and would likely increase the capital costs associated with their repo transactions.[4] See SIA Partners, “Central Clearing of U.S. Treasuries & Repo: A Follow Up Review on Market Developments: Challenges and Considerations for the Way Forward,” September 2023. Available at: [s72322-253419-582122.pdf](https://www.sia.com/resources/72322-253419-582122.pdf) (sec.gov).

⁵ European Banking Authority, *Policy Advice on the Basel III Reforms on Securities Financing Transactions (SFTs)*, (Aug. 2, 2019), available at <https://www.eba.europa.eu/sites/default/documents/files/documents/10180/2886865/870bbd5e-ae8f-4933-9f36-784c7183c7f4/Policy%20Advice%20on%20Basel%20III%20reforms%20-%20SFTs.pdf> (EBA SFT Policy Advice). The Prudential Regulation Authority (PRA) in the United Kingdom stated that it “is not consulting in this [Consultation Paper] on the implementation of minimum haircut floors for securities financing transactions (SFTs) in the capital framework – one of two approaches envisaged in the FSB’s report Regulatory framework for haircuts on non-centrally cleared securities financing transactions. The PRA will consider whether implementation in the capital framework is appropriate in due course, taking into account data available under SFT reporting.” Prudential Regulation Authority, *CP16/22 – Implementation of the Basel 3.1 Standards*, (Nov. 30, 2022), available at <https://www.bankofengland.co.uk/prudential-regulation/publication/2022/november/implementation-of-the-basel-3-1-standards>.

Although the U.S. proposal currently excludes non-defaulted sovereigns, the agencies make clear that they are contemplating including those exposures as collateral under the SFT haircut framework.⁶ This would bring U.S. Treasury repo-style transactions would be brought into the scope of the framework. Because of the draconian consequences of breaching the minimum haircut floor (i.e., all the non-exempted SFTs would be treated as unsecured loans), bank dealers would be likely to pull back from engaging in SFTs secured by U.S. Treasury securities with a wide range of non-bank institutions, including pension funds and asset managers. This would create significant disruptions to the functioning of the Treasury repo markets, raising costs for securities lenders and significantly reducing liquidity in those markets and the underlying cash markets. Moreover, it would impede the effective transmission of U.S. monetary policy via the repo markets. In short, this is an outcome that the banking agencies should avoid at all costs.

Extension of the SLR, CVA, and SA-CCR Requirements to All Large Banks Will Further Constrain Capacity and Impact the Treasury Futures and Options Markets

The Basel III Endgame proposal would also extend the SLR to all banking organizations with more than \$100bn in assets; previously Category IV banking organizations were exempt from this provision. This extension of the SLR could act as an additional capacity constraint in the Treasury markets.

The proposal would also make changes to the calculation of derivatives exposures, which will negatively impact costs in the Treasury futures and options markets. First, the new Credit Valuation Adjustment (“CVA”) capital charge, designed to capture credit deterioration of a derivative counterparty, will make a wide range of derivatives transactions more expensive, including client-cleared transactions such as Treasury futures. As in the case of the FRTB, CVA risk is already captured in the U.S. stress tests through its GMS component, leading to an effective double counting of these risks and thus acerbating these negative impacts.

The Basel III Endgame proposal will also require all large banks to calculate the credit risk associated with their derivatives exposures using the Standardized Approach to Counterparty Credit Risk (“SA-CCR”) instead of the Current Exposure Method (“CEM”); previously Category III and IV banking organizations had the option of using either SA-CCR or CEM. The mandatory adoption of the SA-CCR framework will materially increase the counterparty credit risk capital requirements that smaller bank dealers need to maintain against Treasury futures and options transactions, potentially limiting their ability to intermediate in those markets, inhibiting competition, and raising costs for market participants. The fact that there is an overlap in risk capture between the CVA and SA-CCR frameworks will only further compound these effects.

Reforms to the U.S. GSIB Surcharge Would Inhibit Liquidity in the Treasury Futures Markets and Further Constrain Dealer Capacity

As discussed in Part I of this blog, the GSIB Surcharge capital charge, based on the Federal Reserve’s Method 2 approach, may act as an additional constraint on the ability of U.S. GSIB bank dealers to intermediate in the Treasury markets. The Federal Reserve’s recent proposal⁷ to amend the calculation of the GSIB Surcharge would not address concerns that have been raised about the GSIB Surcharge’s impact on these markets i.e., it would not amend the way in which government securities are calculated to reduce their impact on the overall score, nor would it adjust the coefficients to account for economic growth. In fact, the changes could serve to attenuate bank dealers’ ability to clear Treasury futures and options. Given the linkages between prices, trading, and market-making activities that connect the cash, repo, and futures markets, this could have significant effects on overall Treasury market liquidity and raise costs for market participants.⁸

First and most significantly, the proposal would change the treatment of client-facing derivatives transactions – including U.S. Treasury futures and options that are cleared via a central counterparty (“CCP”). Central clearing of over the counter (“OTC”) derivatives is part of internationally agreed post-GFC reforms designed to reduce systemic risk, complexity, and interconnectedness.

⁶ Question 55 of the proposal asks “what alternative definitions of “in-scope transactions” should the agencies consider? For example, what would be the pros and cons of an expanded definition of “in-scope transactions” to include all eligible margin loan or repo-style transactions in which a banking organization lends cash, including those involving sovereign exposures as collateral? How would the inclusion of sovereign exposures affect the market for those securities? What, if any, additional factors should the agencies consider concerning this alternative definition?”

⁷ 88 Fed. Reg. 60385 (Sep. 1, 2023).

⁸ For a fuller discussion of these links, see the Inter-Agency Working Group report entitled “Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report,” November 8, 2021, p.4. Available at: [Microsoft Word – IAWG Treasury Report final.docx](#).

Despite this, the GSIB Surcharge proposal would add client-facing leg of client-cleared derivatives transactions to the Surcharge’s “complexity” and “interconnectedness” systemic risk indicators. As such, it would have significant impacts on U.S. GSIBs that provide client clearing services: when this change was last proposed (but subsequently not adopted) by the Federal Reserve in 2017⁹, there were expectations that it would move all client clearing GSIBs into a higher GSIB Surcharge “bucket” and be equivalent to having to maintain additional capital of 0.5% of risk-weighted assets beyond the surcharges already in place.¹⁰ Indeed a Risk.net article reported that industry executives viewed the proposal as likely to be “very material,” with one head of clearing commenting that they “would be surprised if any U.S. GSIB can continue offering client-clearing services, certainly to any scale” if the rule was adopted as written.[11] In short, if adopted as is, this revised calculation could significantly inhibit liquidity in the Treasury futures market.

Central Clearing and Enhanced Public Disclosure Requirements Could Further Reduce Market Liquidity and Raise Costs

Recent market structure reforms could compound the impacts of the prudential agency proposals and further reduce liquidity and raise costs in the Treasury markets. This week, the Securities and Exchange Commission (“SEC”) finalized a rule that would substantially increase central clearing in the secondary Treasury securities markets (i.e., the “cash” and “repo” markets), as well as impose new margining requirements. As discussed in a prior [blog](#), enhanced central clearing is often seen as at least a partial solution to the problem of constrained dealer balance sheet capacity, since it could reduce capital and leverage requirements for dealers under some circumstances. However, in comments on the SEC’s proposal in December 2022, SIFMA and other industry groups noted that the SEC’s broad-reaching proposal likely would likely reduce rather than enhance liquidity in the Treasury securities market, increasing costs and causing participants to exit the markets—particularly smaller market participants— while doing little to affect overall dealer balance sheet capacity.¹²

These observations were supported by a September 2023 study by SIA Partners.¹³ SIA Partners surveyed market participants as part of that study, finding that there was a widespread expectation that “balance sheet, leverage, and risk appetite for the dealer community [will] be negatively impacted” by both the central clearing rule and the additional margining required under the proposed SEC framework. The study also found that investment and trading activity would likely decline as a result of the higher costs of clearing; the loss of netting/cross margining capabilities across assets; potential increase in capital costs for clearing (similar to OTC derivatives); and the loss of marginal business from smaller market participants.¹⁴ While as a general matter greater central clearing may provide benefits to the Treasury markets, the final rule may negatively impact market resiliency by increasing costs for market participants, compounding the effects of the banking agency proposals.

9 82 Fed. Reg. 40,154 (Aug. 24, 2017).

10 See Futures Industry Association and International Swaps and Derivatives Association, “Comments on Proposed Agency Information Collection Activities (FR Doc. 2017-17939),” October 11, 2017. Available at: [2017-10-11-FIA-ISDA-GSIB.pdf](#).

11 Luke Clancy, “Fed Throws Curveball with Agency Clearing Surcharge Proposal,” Risk.Net, Aug. 21, 2023. Available at: [Fed throws curveball with agency clearing surcharge proposal - Risk.net](#).

12 SIFMA and IIB, comments on proposed “Standards for Covered Clearing Agencies for U.S. Treasury Securities and Application of the Broker-Dealer Customer Protection Rule With Respect to U.S. Treasury Securities,” December 22, 2022. Available at: [Standards for Covered Clearing Agencies for U.S. Treasury Securities and Application of the Broker-Dealer Customer Protection Rule With Respect to U.S. Treasury Securities \(sifma.org\)](#).

13 SIA Partners, “Central Clearing of U.S. Treasuries & Repo: A Follow Up Review on Market Developments: Challenges and Considerations for the Way Forward,” September 2023. Available at: [s72322-253419-582122.pdf \(sec.gov\)](#).

14 Ibid., p. 7

Enhanced public transparency has also been proposed as a potential way to enhance market resiliency. In June 2022, the U.S. Treasury Department issued a request for information (“RFI”) on enhanced public disclosures of U.S. Treasury secondary market transactions.¹⁵ SIFMA and other industry associations commented on that RFI¹⁶, expressing support for additional nonpublic disclosures to the official sector that would support their market monitoring, policymaking, and supervisory functions. At the same time, the industry highlighted how certain public disclosures, particularly in less liquid market segments, could inhibit market liquidity and present risks to the Treasury’s goal of financing the U.S. debt at the lowest cost to taxpayers over time. As SIFMA has noted, any steps “to increase public transparency into this market should therefore be done carefully, incrementally, and with appropriate mitigants to ensure that beneficial activities will not be curtailed.”¹⁷

Thus far, public policy actions to improve public dissemination have been confined to more liquid market segments, such as FINRA’s recent proposal to revise the TRACE reporting rules to include end-of-day reporting of on-the-run nominal coupon security transactions (with caps for large trades).¹⁸ However accelerated or more widespread dissemination of trade data, particularly in the less liquid off-the-run portions of the market, could compound the negative impacts of the other regulatory actions discussed above.

Conclusion

The U.S. Treasury markets are the bedrock of the global financial system, and their ongoing resiliency is critical for the ability of the U.S. government to finance itself at the lowest possible cost, global financial stability, and U.S. economic growth. Given that we expect the volume of Treasury issuance to continue to grow in the coming years, it is crucial that policymakers take steps to improve capacity and strengthen liquidity across all Treasury market segments. Unfortunately, the sweeping Basel III Endgame proposal, as well as the GSIB Surcharge proposal, would likely do the opposite, leading to constrained dealer capacity, increased transaction costs, and significant disruptions across all market segments. These negative effects could be compounded by market structure reforms that could lead to higher costs and impact market liquidity, most notably the SEC’s recently finalized rule expanding central clearing in the Treasury securities markets. It is crucial that U.S. regulators thoroughly evaluate the costs and benefits of these proposals – and make material revisions as needed – to ensure that they promote rather than undermine the future resiliency of the U.S. Treasury markets.

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¹⁵ 87 Fed. Reg. 38259 (June 27, 2022).

¹⁶ SIFMA, SIFMA Asset Management Group, Institute of International Bankers, and American Bankers Association – Securities Association, “Comments on Request for Public Comment on Additional Transparency for Secondary Market Transactions of Treasury Securities: Docket No. TREAS-Do-2022-0012,” August 26, 2022. Available at: [SIFMA, SIFMA AMG, ABASA, IIB submit comments to the Treasury re: Request for Public Comment on Additional Transparency for Secondary Market Transactions of Treasury Securities: Docket No. TREAS-DO-2022-0012](#).

¹⁷ SIFMA and SIFMA Asset Management Group, comment letter on Securities Exchange Act Release No. 34-98859; File No. SR-FINRA-2023-015, November 30, 2023. Available at: [SIFMA and SIFMA AMG submit comments to the SEC on the SEC’s FINRA proposal on public dissemination for Treasury cash transactions](#).

¹⁸ Financial Industry Regulatory Authority, “Notice of Filing of a Proposed Rule Change Relating to Dissemination of Information on Individual Transactions in U.S. Treasury Securities and Related Fees,” Release No. 34-98859; File No. SR-FINRA-2023-015, November 3, 2023. Available at: [Notice of Filing of a Proposed Rule Change Relating to Dissemination of Information on Individual Transactions in U.S. Treasury Securities and Related Fees](#).



Part XIII: Our Series on US Bank Capital Requirements

Why the Federal Reserve Should Pay Particular Attention to Banks' Capital Markets Activities When Deliberating Revisions to the Basel 3 Endgame Proposal

- In the U.S., capital markets serve as a vital source of funding and financial risk management products and services for the economy. U.S. GSIBs (and foreign GSIBs operating in the U.S.) are instrumental intermediaries in the U.S. capital markets. Data suggests that the proposed Basel 3 Endgame would materially raise capital requirements for banks' capital markets activities.
- Banks allocate equity capital to each business segment considering many factors including regulatory capital requirements for the business activities. Materially higher regulatory capital requirements for capital markets activities would result in certain businesses becoming less economically viable. Likely fewer capital markets products and services would be offered – diminishing market liquidity – and at higher costs.
- Therefore, the Federal Reserve should pay particular attention to impacts on banks' capital markets businesses when deliberating revisions to the proposal.

The Basel 3 Endgame proposal is expected to materially raise regulatory capital requirements on banks' capital markets activities.

In the U.S., capital markets serve as a vital source of funding and financial risk management products and services for the economy, e.g., providing 72% of equity and debt financing for non-financial corporations as of 2023.¹ U.S. GSIBs (and foreign GSIBs operating in the U.S.) are instrumental intermediaries in the U.S. capital markets.² This blog dives into the major components of the Basel 3 Endgame proposal that focus on banks' capital markets activities, i.e., the Fundamental Review of the Trading Book ("FRTB"), counterparty credit risk and CVA risk frameworks.

The SIFMA/ISDA's quantitative impacts studies ("SIFMA/ISDA QIS")³ show that the FRTB alone would raise aggregate capital requirements by about 73% under the modeled approach and over 100% under the regulator-set standardized approach for U.S. GSIBs' trading and market-making business. The impacts on individual business segments will vary. For example, the increase in capital requirements for securitized assets is expected to exceed 176%.⁴ Our securitization blog discusses in detail how the proposed changes could have severe detrimental impacts on banks' ability to finance consumer, business, and other credit, and to make markets in securitized assets – results in increasing interest rates and reducing the availability of credit, thereby harming main street as well as U.S. financial markets' global competitiveness – and suggests mitigation actions.⁵

Additionally, the SIFMA/ISDA QIS indicates that the proposed counterparty credit risk and CVA risk frameworks are expected to increase capital requirements by nearly 25% for these banks' derivatives and security financing transactions ("SFTs") businesses. For client clearing businesses, the expected increase in capital requirements is around 80% while for the SFTs businesses, the increase is about 18%. Derivatives (including centrally cleared derivatives) are essential financial risk management tools that are widely used by corporations, pension funds, governments, and other end-users to manage financial risks. Congress exempts end-users from mandatory clearing recognizing the importance of having ready access to derivatives markets by end-users. As a result, the Federal Reserve provides a special provision in the current capital rule to lower the capital requirements for derivatives transactions with end-users.⁶ While the SFTs market is vital for the smooth functioning of our financial system as it facilitates the flow of cash and high-quality securities across the system.⁷

Such material increase in capital requirements would constrain banks' capacity of intermediating capital markets which could destabilize these vital markets and adversely impact financial stability.

1 See <https://www.sifma.org/wp-content/uploads/2022/07/2023-SIFMA-Capital-Markets-Factbook.pdf>

2 For example, GSIBs collectively account for 88% of ABS underwriting in the U.S. as of 2023.

3 See <https://www.sifma.org/resources/news/sifma-responds-to-u-s-basel-iii-and-g-sib-surcharge-consultations/>

4 See <https://fsforum.com/a/media/fsf-b3e-comment-letter.pdf>

5 E.g., keep the p-factor at 0.5 under the SEC-SA framework, instead of raising it to 1 as proposed.

6 I.e., the alpha factor is set to 1 for commercial end-users under the SA-CCR rule. While the proposed capital increase would largely reverse the benefit of the special provision.

7 See https://www.icmagroup.org/assets/documents/Regulatory/Repo/GFMA-and-ICMA-Repo-Market-Study_Post-Crisis-Reforms-and-the-Evolution-of-the-Repo-and-Broader-SFT-Markets_171218.pdf

The regulatory capital requirements drive banks’ allocation of equity capital to each business segment.

In practice, banks generally allocate capital down to each business segment. The amount of capital assigned to each business segment is commonly referred to as equity capital or equity. Each bank has its own internal capital allocation framework. But generally, these frameworks would consider multiple factors, including banks’ internal assessment of risks, the regulatory capital requirements (inclusive of applicable buffer requirements, e.g., Stress Capital Buffer or “SCB”) related to the business activities, and each business segment’s relative contribution to the total required capital.

Return on equity (“ROE”) is measured and internal targets for expected returns are established as key measures of a business segment’s performance.¹ The economic viability of those business segments that fail to meet their ROE targets may be at risk.² A recent Oliver Wyman report projected that the expected increase in capital requirements associated with the Basel 3 Endgame proposal would generate up to a “6pt [i.e., 6%] drag on ROE for these players” and likely that “[b]anks pare back activities as they become increasingly uncompetitive; revenues and RWA shrink”. The report identified derivatives, securitized assets, and SFTs among the business segments that would be severely impacted by the proposal.

The Federal Reserve could take a set of actions to mitigate the Basel 3 Endgame proposal’s impacts on banks’ capital markets activities.

The SIFMA/ISDA QIS and empirical analyses (e.g., SIFMA’s GMS study) suggest that the key drivers of the over-calibrated capital requirements for banks’ capital markets activities include (1) the overlap in risk capture by the SCB and the Basel 3 Endgame (i.e., market risk, CVA risk and operational risk), (2) the lack of recognition of diversification benefits across different asset classes under the FRTB, (3) the lack of incentive for banks to adopt the FRTB modeled approach, and (4) the draconian consequence associated with the proposed SFT minimum haircut floor framework. Additionally, the treatment of fee-based businesses and reimbursement for services that U.S. affiliates receive from their foreign parent under the proposed operational risk framework leads to outsized operational risk capital requirements.

The SCB capitalizes potential losses arising from market risk, CVA risk, and operational risk under stressed market conditions. The current capital rules apply the SCB to the U.S. standardized approach which captures only market risk and credit risk. As a result, there is an overlap in capitalization of market risk between the SCB and the current risk-weighted asset (“RWA”) framework (see our separate blog for detailed discussions). The Basel 3 Endgame proposal, however, would apply the SCB to the expanded risk-based approach (“ERBA”) which captures all four risk types. Consequently, the proposal would broaden the overlap in risk capture between the SCB and the RWA framework to include CVA risk and operational risk as well. The overlaps in risk capture results in excessive capital required in terms of dollar amount. Potential solutions include: (1) applying the SCB only to the U.S. standardized approach (same as the current capital rules, which would avoid overlapping capture of CVA risk and op risk), and (2) applying the FRTB and the SCB’s Global Market Shock (“GMS”) sequentially or using the GMS to address any inadequate risk capture, as seen by the Federal Reserve, by the RWA framework – an approach conceptually consistent with the practice in other major jurisdictions, e.g., European Union.

The complete disallowance of recognition of diversification benefits across asset classes under the FRTB standardized approach and the very limited recognition under the FRTB-modeled approach tend to penalize banks that facilitate trading and market-making in multiple asset classes. And could incentivize monoline business models which would leave the overall banking system more vulnerable. To address such adverse consequences, the Federal Reserve could allow greater recognition of diversification benefits under both the FRTB standardized approach and the modeled approach.³

The SIFMA/ISDA QIS indicates that the FRTB-modeled approach does lead to lower capital increases relative to the standardized approach. However, the system required for operating the modeled approach is far more complex and costly than that of the standardized approach. And, the proposed treatment for risk factors deemed non-modellable

¹ Some banks focus more on the return on tangible common equity (“ROTCE”) measure.

² The ROE targets generally fall within the mid-teen percentage point range.

³ For the FRTB standardized approach, diversification benefits could be achieved by allowing certain correlation while aggregating asset class level capital charges. For the FRTB modelled approach, greater diversification benefits could be achieved by allowing higher IMCC correlation parameter and lower NMRFs correlation parameter.

("NMRFs") is overly conservative resulting in oversized capital requirements. In addition, before a bank can adopt the FRTB-modeled approach for any trading desk, the desk must pass two quantitative tests collectively known as the Profit & Loss Attribution Test ("PLAT"). The PLAT can be overly sensitive under certain circumstances resulting in unwarranted capital swings as some desks come in and out of compliance with the test. Potential solutions to incentivize the adoption of the FRTB-modeled approach could include: (1) broadening the scope of modellable risk factors,¹ and (2) having the PLAT as a monitoring tool instead of a mandatory requirement. Or at least set out a reasonable transition period before the PLAT becomes mandatory so that both the Federal Reserve and the industry could carefully assess the performance of the PLAT.

Additionally, a careful analysis conducted by the European Bank Authority ("EBA") led the EBA to recommend against implementing the SFT minimum haircut floor framework in the European Union due to the fact that it "could theoretically lead to a more risky situation for institutions than the status quo ... while at the same time it would be unclear whether the application of the framework will have a positive effect in practice on limiting the build-up of leverage outside the banking system." To mitigate the potential adverse impacts on the U.S. SFTs market, the Federal Reserve could remove the SFT minimum haircut floor framework from the proposal. And, to mitigate the impacts on derivatives, especially client-cleared derivatives, the Federal Reserve could exempt client-cleared derivatives from CVA capital requirements and from GSIB surcharge requirements.

Conclusion

Large banks are instrumental intermediaries in the U.S. capital markets which serve as the vital source of funding and financial risk management products and services for a wide array of public and private entities. Banks allocate equity capital to each business segment including capital markets businesses considering many factors including regulatory capital requirements for the business activities. And, each business segment is expected to meet the ROE target to be sustainable. The Basel 3 Endgame proposal is expected to materially increase capital requirements for banks' capital markets activities, particularly for trading and market-making, securitized assets, derivatives, and SFTs among others. As a result, it would become more difficult for these business segments to meet their ROE targets which could mean higher costs for their clients/customers and may even endanger their economic viability. Consequently, fewer capital markets products and services may be offered, and at higher costs, leading to diminished market liquidity. Therefore, the Federal Reserve should pay particular attention to impacts on banks' capital markets activities when deliberating the set of revisions to the proposal.

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¹ E.g., allow daily variation margin reconciliations or valuations to be used as price observations for purpose of risk factor eligibility test.



Part XIV: Our Series on US Bank Capital Requirements

How the US GSIB Surcharge and Basel III Endgame Proposals Would Adversely Impact ETF Markets

- More and more institutional investors and retail investors rely on ETFs as investment vehicles. The COVID-19 induced market crisis proved ETFs to be a source of market liquidity and stability as investors turned to ETFs to efficiently rebalance portfolios and hedge risk.
- U.S. GSIBs are key intermediaries in the ETF market, and increasing capital surcharges for ETFs, as proposed, could hurt liquidity in these products and increase costs for investors, including U.S. households.
- To avoid unduly penalizing U.S. GSIBs' participation in ETF markets, leading to material adverse impacts on ETF investors, the Federal Reserve should: (1) exclude ETFs from the definition of "financial institution" under the GSIB surcharge proposal, and (2) revise the treatment of ETFs under the Basel III Endgame proposal to ensure capital requirements commensurate with risks.

A robust ETF market is a key contributor to financial stability.

Exchange-traded funds ("ETFs") are pooled investment vehicles that offer access to a broad range of assets, generally with transparency and low cost. Unlike mutual funds, ETFs operate in two markets – the primary market and secondary market – that involve different types of market participants. ETF investors typically trade existing shares intra-day in the secondary market where market makers regularly provide two-sided quotes for ETFs and are key liquidity providers in the ETF ecosystem.

Separately, authorized participants ("APs") transact with ETF issuers to dynamically manage the creation or redemption of ETF shares in the primary market to keep the price of ETF shares in-line with the value of its underlying securities.¹ Many creations and redemptions happen in-kind and do not require securities purchases or sales by ETF issuers. Instead, APs present a basket of securities to (or receive a basket of securities from) the ETF issuer in exchange for ETF shares. In addition, market makers may engage with APs to create and redeem ETFs shares.² Both APs and market makers – many of them U.S. global systemically important banking organizations ("GSIBs") – are necessary for robust ETF market liquidity and stability.

According to [ETFGI](#), a leading independent research and consultancy firm covering trends in the global ETFs ecosystem, the U.S. ETF market has grown to \$8.12 trillion in total net assets at year-end 2023 (from \$992bn in total net assets in 2010) and accounts for 70% of the \$11.63 trillion in ETFs net assets worldwide. ETF secondary market trading has consistently averaged about 30% of daily U.S. stock trading in the past decade. And over 12% of U.S. households (i.e., 16.1 million) hold ETFs.³ During the COVID-19 pandemic, despite unprecedented market volatility, the ETF market remained resilient and robust. ETF shares traded efficiently, with market makers continuing to provide liquidity and APs facilitating a significantly higher level of creations and redemptions of ETF shares in March 2020 than in March 2019. The ETF market provided price transparency for investors, particularly in the fixed income market, where market participants faced challenges sourcing liquidity and establishing prices for individual bonds. Retail investors use ETFs as investment vehicles as opposed to single stock names to receive exposure to popular indices like the S&P 500 and sector specific industries, i.e., technology. The ETF market didn't add additional pressure to financial markets during the crisis. Instead, it proved to be a source of market liquidity and stability as investors, including U.S. households, turned to ETFs to efficiently rebalance portfolios and hedge risk.⁴

1 APs have no legal obligation to create or redeem ETFs shares. They are compensated through their market making activities in the secondary market, or through service fees they collect from clients who may engage them to facilitate primary trades. Additionally, APs could initiate a creation (or redemption) if the price of an ETF share is greater than (or falls below) the value of the underlying holdings to take advantage of arbitrage opportunities in the market. [X]

2 Some market makers are also APs. [X]

3 See <https://www.ici.org/system/files/2023-05/2023-factbook.pdf> [X]

4 See <https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-lessons-from-covid-19-etfs-as-a-source-of-stability-july-2020.pdf> [X]

Capital requirements for GSIBs' ETF market activities under the current U.S. capital rules.

Under the current capital rules, U.S. GSIBs are subject to a suite of capital requirements including the minimum risk-based capital requirements, leverage capital requirements, and additional capital buffers requirements (e.g., the stress capital buffer (“SCB”) and the GSIB surcharge). Many of these requirements go above and beyond the Basel international standards as explained previously in our blog, [Understanding the Current Regulatory Capital Requirements Applicable to US Banks](#).

For the risk-based capital requirements, U.S. GSIBs are required to calculate capital using two different approaches – the U.S. Standardized Approach and the Advanced Approaches¹ – and use the higher of the two results as the binding risk-based capital requirement. Given the SCB is applied only to the U.S. Standardized Approach, all the 8 U.S. GSIBs are bound by the U.S. Standardized Approach currently. As a result, U.S. GSIBs' ETFs market activities – whether as APs, market makers or both – are capitalized by the U.S. Standardized Approach and the SCB through the global market shock.

For the GSIB surcharge, exposures arising from U.S. GSIBs' ETF market activities are included in the GSIB score's size indicator.² Also relevant is the interconnectedness indicator. The interconnectedness indicator measures a bank's systemic importance as it interconnects with other financial institutions since, also captures ETFs. The higher the interconnectedness the more systemically important a bank is. Currently, the Federal Reserve explicitly excludes only bond ETFs from the definition of “financial institution” and is silent with regards to the treatment of other ETFs, e.g., equity ETFs.³ In contrast, the Basel international GSIB score methodology excludes all ETFs from the definition of “financial institution”.⁴ As we discussed in a separate blog, [The Federal Reserve Should Revise the US GSIB Surcharge Methodology to Reflect Real Risks and Support the Economy](#), relative to the Basel international standards, the U.S. GSIB surcharge methodology generally leads to a more punitive surcharge for U.S. GSIBs even ignoring the divergence in the approach to ETFs.

Capital requirements for GSIBs' ETFs market activities under the proposed U.S. capital rules.

On July 27, 2023 the Federal Reserve released [proposals](#) that would materially revise the risk-based capital framework and the U.S. GSIB surcharge framework. In particular, the Basel III Endgame proposal would apply the SCB to the expanded risk-based approach (“ERBA”). The ERBA would also become the binding risk-based capital requirements for U.S. GSIBs. Under the ERBA, the ETF market activities would be capitalized by the Fundamental Review of the Trading Book (“FRTB”) framework and the operational risk framework (for fee income associated with market making activities) in addition to the SCB. In particular, the proposed FRTB framework provides a suite of approaches for capitalizing ETFs⁵ depending on whether it is feasible to look-through the funds to all individual underlying constituents. Funds that cannot be looked through would need to be capitalized using one of the three approaches with increasingly more conservative outcomes chosen based on the selection criteria set out in the proposal. The SIFMA's quantitative impacts study shows that the FRTB framework alone would more than double the capital requirements for U.S. GSIBs' trading and market making activities.⁶

Separately, contrary to the Basel international standards, the GSIB surcharge proposal would expand the definition of “financial institution” to include all ETFs leading to an even higher surcharge for U.S. GSIBs, potentially discouraging U.S. GSIBs from intermediating the ETF market. Consider, for example, an ETF tracking a broad-based equity index

1 Under the current capital rules, banks may use internal models to calculate capital requirements for credit risk, market risk, CVA risk and operational risk. These internal models collectively referred to as the Advanced Approaches. [«]

2 In the U.S., the applicable surcharge is calculated as the higher surcharge of two methods – “Method 1” is the standard adopted by the Basel Committee on Banking Supervision for identifying and setting the surcharge for GSIBs and depends on five sets of systemic indicators – size, interconnectedness, complexity, cross-jurisdictional activity, and substitutability. “Method 2” is a U.S. only creation that generally employs the Basel methodology but replaces the substitutability indicator with a short-term wholesale funding (“STWF”) indicator. The GSIB score is the weighted sum of all 5 indicators. The higher the score the greater the systemic importance, and thus the higher the GSIB surcharge. [«]

3 See <https://www.federalreserve.gov/apps/reportingforms/Download/DownloadAttachment?guid=ba9b1d68-3a2a-4472-84e6-0130d5c8a601> [«]

4 “For the purpose of the interconnectedness indicators, financial institutions are defined as including banks (and other deposit-taking institutions), bank holding companies, securities dealers (including institutions that are strictly securities brokers), insurance companies, mutual funds, hedge funds, pension funds, investment banks, central counterparties (CCPs), asset management companies and private equity funds.” See https://www.bis.org/bcbcs/gsib/in-str_end23_gsib.pdf [«]

5 And other equity positions in an investment fund. [«] [«]

6 See <https://www.sifma.org/resources/news/sifma-responds-to-u-s-basel-iii-and-g-sib-surcharge-consultations/> [«]

such as the S&P 500. Many of the index constituents are not financial institutions, and thus do not count toward the interconnectedness indicator. Whereas the ETF, as an equity ETF, is included in the interconnectedness indicator. As a result, equity ETFs are scored more punitively than the constituent securities that compose the ETFs' holdings. Similarly, certain equity ETFs are capitalized more punitively under the GSIB surcharge rule than other securities that provide comparable economic exposures, e.g., index futures. It was observed that in some cases the punitive U.S. GSIB surcharge has impacted U.S. GSIBs' capacity to "provide liquidity to ETFs, and ability to recognize the benefits of using ETFs as hedging vehicles to reduce risk".¹¹ This would negatively impact U.S. market liquidity and price discovery while increasing costs for investors, which include pension funds, 529 colleges savings plans, and retirement savings through IRA and 401K accounts.

The Federal Reserve should revise the treatment of ETFs under the GSIB surcharge proposal and the proposed Basel III Endgame.

The two-markets structure of ETFs and the in-kind primary trades help to reduce the interconnectedness concerns expressed by the Agencies and is acknowledged in the GSIB proposal. Therefore, ETFs should be excluded from the definition of "financial institution".

Additionally, the capital treatment for ETFs remains in general excessively conservative under the proposed FRTB framework and the SCB leading to outsized capital requirements. The Federal Reserve should carefully deliberate and revise the treatment of ETFs under the FRTB framework to ensure capital requirements are commensurate with risks. To facilitate the deliberation, SIFMA put forward several recommendations that the Federal Reserve could consider including creating additional buckets for funds (see Table A1 of the Appendix) and an alternative approach that maps a fund's risk sensitivities to relevant buckets for non-funds.²

Conclusion

For the reasons laid out above, ETFs should be excluded from the definition of "financial institution" for purpose of the U.S. GSIB surcharge proposal. Additionally, the treatment of ETFs should be revised under the FRTB framework of the Basel III Endgame proposal to ensure capital requirements for banks' ETF market activities are commensurate with risks. These amendments would help ensure capital requirements for U.S. GSIBs' ETFs market activities are commensurate with the risks that they create, would align with the Basel international standards for GSIB surcharge, and would help ensure the liquidity and efficiency of the ETF market. Additionally, these amendments would ensure investors, including U.S. households, continue having access to the ETF market at reasonable costs and would not see an increase in transaction costs in ETFs.

1 See <https://www.blackrock.com/corporate/literature/publication/blk-comment-basel-iii-endgame-gsib-surcharge-proposal.pdf> [«]

2 See <https://www.sifma.org/resources/submissions/regulatory-capital-rule-amendments-applicable-to-large-banking-organizations-and-to-banking-organizations-with-significant-trading-activity-sifma-and-isda/> [«]

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Appendix

Table A1. SIFMA Proposed investment fund buckets by asset class, fund type, and credit quality.

Asset Class	Fund Type/Credit Quality
Fixed Income (including money market, municipal, and agency funds)	IG sovereign funds (including agency funds)
	Speculative & sub-speculative sovereign funds
	IG non-sovereign funds (including municipal funds)
	Speculative & sub-speculative non-sovereign funds (including municipal funds)
Equity	Large cap and liquid economy funds
	Other equity funds



Part XV: Our Series on US Bank Capital Requirements

Our Take on PwC’s Assessment of the US Basel III Endgame Proposal

- On June 17, 2024, PwC released [Part II](#) of their Basel III Endgame study. The study finds that the U.S. Basel III Endgame proposal (“the Proposal”), if implemented, would cause the U.S. economic growth to decline by up to 56 basis points or half of a percent. This would equate to a reduction in growth of up to 25% based on the U.S. compound annual growth rate over the past 10 years. The negative impacts likely would materialize as reduced returns to bank shareholders (including indirect shareholders through pensions and mutual funds) and through increased costs to consumers and businesses.
- [Part I](#) of the study was published in April 2023. This part evaluated the optimal capital level and found that current capital level of large U.S. banks stands at the average optimal capital level suggested in studies of the topic by regulators, international standard setting bodies and academics.
- The banking agencies need to consider¹ whether the U.S. banking system needs significantly more capital (if so, how much more is required) and² what are associated costs (and benefits) to the broader economy and consumers of the Basel Endgame proposal as they decide the next steps in the rulemaking process.

The Proposal is expected to have material negative impact to GDP and increase costs to consumers.

Since the release of the [Proposal](#) in July 2023¹, various stakeholders have been evaluating its potential impacts and have provided comments to the banking agencies. Latham & Watkins [reported](#) that over 97% of comment letters the agencies received either opposed the Proposal and/or called for a re-proposal, or expressed significant concerns with the Proposal.

Utilizing a framework similar to a 2019 Federal Reserve staff [paper](#) that evaluates the economic costs and benefits of bank capital in the U.S., [Part II](#) of the PwC study finds a negative ongoing GDP impact across three different economic scenarios: -17 bps (positive), -36 bps (neutral) and -56 bps (negative). Put differently, the Proposal would cause the U.S. economic growth to decline by up to 56 basis points – approximately 25% based on the U.S. compound annual growth rate over the past 10 years of 2.1%.

Part II of the study then dives into the impacts on several business segments (including credit cards, residential mortgages, corporate loans and lines of credit, SFTs, derivatives and securitized products) and finds “**[a]n increase in capital requirements will lead to reduced lending and higher borrowing costs.**”

Stakeholder	Impact
Retail customers	<ul style="list-style-type: none"> ▪ Reduced overall credit limits and / or canceled credit lines, with negative associated impact to FICO scores, and higher fees and rates ▪ Fewer options for mortgage lending for low- and moderate-income borrowers and first-time homebuyers
Corporate borrowers	<ul style="list-style-type: none"> ▪ Higher borrowing costs for small and medium businesses ▪ Higher costs for hedging risks
Market participants	<ul style="list-style-type: none"> ▪ Higher transaction costs for financing trades and potentially fewer counterparties for execution ▪ Higher volatility and more challenged price discovery for certain products resulting from diminished liquidity
U.S. banks	<ul style="list-style-type: none"> ▪ Operational complexities in the execution of new requirements, including new definitions, data sourcing and monitoring ▪ Accelerated erosion of market share to nonbanks in product categories such as home lending and mortgage origination ▪ Reduced capacity for supporting financial intermediation in capital markets, translating to higher costs and rates ▪ Higher capital costs across lines of business, impacting product viability and strategic planning ▪ Higher competitive pressure from peer banking organizations headquartered in jurisdictions that have implemented the Basel framework differently

1 Including: (1) increasing the amount and quality of banks’ financial resources; (2) introducing stress testing of financial resources and other forward-looking loss estimation techniques; (3) reducing counterparty exposures and risk in trading activities; (4) creating new supervisory programs to complement new regulatory requirements and enforce compliance with the heightened expectations; and (5) requiring supplemental enhancements to risk management. [[↩](#)]

The Proposal is expected to impact industry stakeholders in different ways:

Part II provides quantitative estimate of the Proposal's impacts by product type:

- **Derivatives:** Additional capital requirements for derivatives could require banks to pass on additional costs of \$10.4 billion per annum to end-users. In particular, the cost to hedge interest rate risks would likely increase by nearly 10 bps, i.e. about \$1 million annually per \$1 billion of swaps notional. Such an increase is an order of magnitude over the bid-offer typically seen on liquid swaps and comes on top of a rate environment that has increased over 500 bps in the last two years.
- **Securitized Products:** Changes to the securitization framework could result in the risk weights for certain tranches of mortgage-backed securities increasing by 250%.
- **Credit Cards/Credit Lines:** The 10% credit conversion factor applied to unused lines of credit and lower risk weight for transactor exposures would incentivize banks to reduce credit lines for all customers and reduce credit exposure to segments with traditionally lower credit scores.
- **Residential Mortgages:** Incremental capital costs from higher loan-to-value bands would affect \$1.46 trillion in outstanding first lien mortgages, possibly reducing credit availability for expanding homeownership.
- **Corporates:** Distinctions in capital treatment between publicly listed and private companies, including regulated entities unable to publicly issue securities (e.g., mutual funds and pension funds), would incentivize banks to treat customers differently despite similar credit risk profiles.
- **SFTs:** The SFT minimum haircut floor framework drives the increase in risk-weighted assets (RWA) requirements for SFTs, totaling approximately 20% of the total RWA attributable to SFTs for U.S. banks.

In addition, Part II highlights that the “[d]ifferences between the U.S. proposal and adoption of the Basel Framework in other jurisdictions could result in different capital treatment for similar risks across global banks.” Such differences would undermine the goal of having globally consistent capital requirements and create a misalignment of risk, whereby capital requirements for the same risks would differ by jurisdiction:

- The effective risk weights in the Proposal are 18-35% higher for investment grade corporates and 27-59% higher for other corporates when compared to the original Basel framework.
- Risk weights for retail exposures are 10% higher in the U.S. than the original Basel framework, which would drive effective RWA requirements for U.S. banks up by approximately 14%.
- Without the adoption of the simple, transparent, and comparable framework, risk weights for securitizations would be 47% higher for auto asset-backed securities, 68% higher for collateralized loan obligations, and 26% higher for residential MBS relative to the Basel framework.
- The SFT minimum haircut floor framework (which was not adopted by all other major jurisdictions) is the largest component driving an increase in RWA requirements for SFTs for U.S. banks. Without it, RWA for SFTs would decrease by approximately 7% from their current levels.

Large US banks' current capital level is at the optimal level.

The primary objective of bank capital requirements is to reduce the likelihood of individual bank failures and subsequent negative effects on the banking system and financial markets, thereby bolstering financial stability. However, such required capital does not come without costs. Excessive capital requirements can negatively impact economic growth by raising the cost of lending and reducing the availability of financing and capital markets products/services for corporations and consumers.

What is the optimal capital level that appropriately balances the benefits and costs of required capital? Where does large U.S. banks' capital levels stand relative to that optimal level? These are the questions that PwC addressed in [Part I](#) of their study.

Part I surveyed published reports and papers by regulators, international standard setting bodies and academics that seek to identify an optimal level of bank capital. It found that “the optimal capital ratios range is 12-19.5%, with an average estimate of 15.5%. This figure aligns closely with the actual average tier 1 bank capital ratios of 15.5% and 15.2%, as of the fourth quarter of 2021 and 2022, respectively, for bank holding companies that are expected to be subject to Basel III Endgame capital requirements.” That is, large U.S. banks' current capital levels are in line with the average

estimated optimal level of capital.

However, the Proposal (together with the GSIB surcharge proposal) is **expected** to increase aggregate capital requirements for largest U.S. banks by 30%. For these banks' trading and market-making business, the SIFMA/ISDA quantitative impact **study** showed that the Proposal's revised market risk framework (i.e., FRTB) would raise aggregate capital requirements by about 73% under the modelled-approach and over 100% under the regulator-set standardized approach. Such further material increases in capital requirements from the current robust levels likely would result in the economic costs outweighing any potential benefits as Part II of the PwC study shows. This is particularly true because approximately 75% of capital formation and lending happens in the capital markets in the U.S., meaning that the trading book capital reforms will have an outsized impact on the U.S. economy.

Conclusion

Post the Global Financial Crisis, global and domestic standard setters have instituted a suite of enhanced capital regulations and supervisory mechanisms.¹ As a result, the overall level of capital in the system has quadrupled and key capital ratios roughly doubled due to significant increases in capital requirements. Beyond capital requirements, many other measures have also been implemented to enhance resiliency of the financial system, e.g., liquidity and total loss absorbing capital requirements, limits on counterparty exposures and restrictions on trading activity. As the banking agencies deliberate the next steps in the Basel Endgame rulemaking process, they should consider: (1) whether the U.S. banking system needs significantly more capital (if so, how much more is required)? and (2) what are the relative costs and benefits to the broader economy, businesses and consumers?

PwC's two-part study on the Basel III Endgame attempts to answer these two questions. Part I evaluated the optimal bank capital level and found that the current capital level of banks expected to be subject to the Proposal is at the average optimal capital level suggested by the literature by regulators, international standard setting bodies and academics that seeks to identify an optimal level of capital. Part II assesses the impacts of the U.S. Basel III Endgame proposal and concludes that the Proposal could cause U.S. economic growth to decline by up to 56 basis points, equivalent to a 25% decline in growth based on the U.S. compound annual growth rate (i.e., 2.1%) over the past 10 years. The negative impacts likely would materialize in the form of higher costs and reduced access for a wide range of capital markets participants, and through increased costs to U.S. businesses and consumers.

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