Comments on the
Department of Treasury Office of the Comptroller of the Currency, Federal Reserve System, and Federal Deposit Insurance Corporation's Proposal on "Regulatory Capital Rule: Amendments to Large Banking Organizations and to Banking Organizations with Significant Trading Activity"

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I.   Executive Summary

U.S. regulators submitted a proposal that would substantially increase the capital requirements for large banks. According to the regulators, the goal of the Proposal is to enhance the resiliency of large banks and reduce systemic risk. The proposed revisions impact how much capital banks are required to hold against exposures to operational, market, credit, and credit valuation adjustment ("CVA") risk. According to the Proposal, these revisions are expected to increase aggregate risk-weighted assets for Category I to IV banks by 19% and increase the binding common equity tier 1 capital requirement, including minimum and buffers, by approximately 16%, or approximately $180 billion.

In its current form, the Proposal has several fundamental deficiencies that make the assessment of its economic impact inadequate.

First, the Proposal does not adequately discuss the incremental benefits and incremental costs of the proposed revisions. Moreover, even the limited discussion of any benefits and costs is primarily qualitative. I find that the incremental economic benefits of the Proposal may be low to none, which do not justify the very high incremental costs of implementing the Proposal.

Second, some of the proposed revisions are inconsistent with the economic evidence. The large increase in capital requirements expected from implementing the proposed revisions presumes that banks' capital is currently too low, which is inconsistent with U.S. banks' level of capital currently being well-within the range of optimal capital levels found in the academic literature. Moreover, the Proposal does not appear to provide empirical justification for the various inputs it uses for the proposed revisions.

Finally, the Proposal overstates the capital requirements for large banks because it ignores the overlap in the capital requirements for operational, market, credit, and CVA risk.

II.   Introduction

1.   On July 27, 2023, U.S. regulators – i.e., the Office of the Comptroller of the Currency ("OCC"), the Board of Governors of the Federal Reserve System ("Board"), and the Federal Deposit Insurance Corporation ("FDIC") (collectively, the "Agencies") – published a proposal that would substantially increase the capital requirements applicable to large banks and to banks with significant trading activity (the "Proposal").[1, 2] The goal of the Proposal is to enhance large banks' resilience and reduce systemic risk in case of their failure.[3]

2.   On the same day, the Agencies also issued a proposal that would make adjustments to the calculation of the capital surcharge for global systemically important bank holding companies ("G-SIBs").[4]

3.   The proposed revisions will impact how much capital banks are required to hold against exposures to operational, market, credit, and credit value adjustment ("CVA") risk.[5] According to the Proposal, across these four risks, the proposed revisions are expected to increase the total aggregate risk-weighted assets ("RWA")[6] for large (i.e., Category I to IV) banks by 19%.[7] The RWA is used as the denominator in banks' capital-to-risk ratio calculations.[8] Thus, holding a bank's capital-to-risk ratio fixed, a higher RWA would result in the bank increasing its required capital. According to the Proposal, the 19% increase in aggregate RWA translates into approximately 16% increase in the binding common equity tier 1 ("CET1") capital requirements for large banks. Using data as of 3Q 2023, **Table 1** shows that a 16% increase in the required capital for banks with total assets of over $100 billion would result in an approximately $180 billion increase in CET1.[9]

Table 1
Applying a 16% Increase to Total CET1 Capital Of Bank Holding Companies
With More Than $100 Billion in Total Assets As of September 30, 2023[10]
(amounts in $ billions, except percentages)

	Name	Total Assets	Risk-Weighted Assets	CET1 Req. (%)	CET1 Req. ($)
1	JPMorgan Chase & Co.	3,898.3	1,692.2	11.40%	192.9
2	Bank Of America Corporation	3,153.1	1,632.4	9.50%	155.1
3	Citigroup Inc.	2,368.5	1,148.6	12.30%	141.3
4	Wells Fargo & Company	1,909.3	1,237.1	8.90%	110.1
5	Goldman Sachs, Inc.	1,577.2	666.9	13.00%	86.7
6	Morgan Stanley	1,169.0	443.8	12.90%	57.3
7	U.S. Bancorp	668.0	462.2	7.00%	32.4
8	PNC Financial Services Group, Inc.	557.4	425.1	7.00%	29.8
9	Truist Financial Corporation	542.7	428.8	7.40%	31.7
10	TD Group US Holdings LLC	511.8	266.3	7.00%	18.6
11	Charles Schwab Corporation	475.2	129.5	7.00%	9.1
12	Capital One Financial Corporation	471.4	363.0	9.30%	33.8
13	Bank Of New York Mellon Corporation	405.2	153.4	8.50%	13.0
14	BMO Financial Corp.	291.1	217.3	7.80%	16.9
15	State Street Corporation	284.4	118.0	8.00%	9.4
16	American Express Company	250.6	209.4	7.00%	14.7
17	Citizens Financial Group, Inc.	225.6	176.4	8.50%	15.2
18	HSBC North America Holdings Inc.	224.5	106.0	10.90%	11.6
19	First Citizens Bancshares, Inc.	213.8	149.3	7.00%	10.5
20	Fifth Third Bancorp	213.0	168.4	7.00%	11.8
21	M&T Bank Corporation	209.1	151.8	8.50%	12.9
22	UBS Americas Holding LLC	196.5	72.0	13.60%	9.8
23	Ally Financial Inc.	195.7	161.1	7.00%	11.3
24	Keycorp	188.0	152.7	7.00%	10.7
25	Huntington Bancshares Incorporated	186.6	140.7	7.70%	10.8
26	Barclays US LLC	180.9	108.5	9.20%	10.0
27	RBC US Group Holdings LLC	169.0	116.4	8.70%	10.1
28	Santander Holdings USA, Inc.	165.7	123.1	7.00%	8.6
29	Regions Financial Corporation	154.2	126.9	7.00%	8.9
30	Northern Trust Corporation	146.3	88.5	7.00%	6.2
31	Discover Financial Services	143.4	125.5	7.00%	8.8
32	Synchrony Financial	112.9	98.0	6.50%	6.4
33	New York Community Bancorp, Inc	111.2	87.5	6.50%	5.7
34	DB USA Corporation	110.3	37.5	13.80%	5.2

Total CET1 Capital		**1,126.8**
16% Increase in CET1 Capital		**180.3**

4. In its current form, however, the Proposal has several fundamental deficiencies that make the assessment of its economic impact inadequate. In the rest of this paper, I discuss these deficiencies.

5. In **Section III**, I discuss the Proposal's limited discussion of the incremental benefits and incremental costs of the proposed revisions with the discussion primarily being qualitative and inadequate. There are plenty of economic costs associated with implementing the Proposal, such as its adverse effect on economic growth, U.S. homeownership, and market liquidity. Moreover, the proposed revisions would place U.S. banks at a competitive disadvantage relative to international banks. Finally, and counter to the Proposal's goal, the proposed revision may actually result in an increase of systemic risk.

6. I then show in **Section IV** how certain aspects of the Proposal are inconsistent with the findings in the academic literature. The proposed revisions would result in a substantial increase in RWA and capital requirements for large banks, which presumes that current capital for large banks is too low. However, this is belied by the fact that banks' capital is well within the range of optimal capital ratios found in the academic literature. Moreover, various inputs to the proposed revisions are not explained or are inconsistent with the economic evidence the Agencies rely on.

7. In **Section V**, I show that, because of the overlap between capital requirements for operational, market, credit, and CVA risk the proposed revisions can lead to an overstatement of the capital requirements and impose an unnecessary burden on large banks.

III.   Analysis of the Proposal's Economic Impact

8. The Proposal contains hundreds of pages detailing new proposed requirements for covered banks to determine the required level of capital they should hold. With such myriad of proposed changes, one would expect that the Agencies would present a detailed and comprehensive economic cost-benefit analysis to demonstrate that the economic benefits of the Proposal exceed the costs of implementing the proposed revisions. This, however, is not the case, as the current version of the Proposal contains an inadequate discussion of the economic costs and benefits.

9. The current version of the Proposal is limited to the Agencies discussing the economic impact (i.e., the benefits and costs) of the Proposal on lending activity and trading activity. These discussions of benefits and costs in the Proposal, however, are limited, with the discussion primarily being qualitative and inadequate.[11] For example, the Proposal states that "Although a slight reduction in bank lending could result from the increase in capital requirements, the economic cost of this reduction would be more than offset by the expected economic benefits associated with the increased resiliency of the financial system."[12] Yet, the Agencies offer no quantification of either "economic costs" or "the expected economic benefits." This impairs the Agencies' ability to make reliable comparisons of the Proposal's incremental economic benefits and incremental economic costs.

10. As examples, which I discuss in detail in the remainder of this paper, the Proposal:

    a. Does not present an analysis based on a variety of loss measures– e.g., impact on social welfare, gross domestic product ("GDP") (**Section III.A**);

    b. Has not adequately considered the potentially negative impact of increased capital requirements on borrowing rates, which in turn leads to a negative impact on economic growth (**Section III.C.i**);

    c. Does not consider the impact of the proposed revisions on consumer lending and minority and low-to-middle income ("LMI") mortgage borrowers (**Sections III.C.ii** and **III.C.iii**);

    d. Ignores the impact on systemic risk from the adverse impact of the Proposal on market liquidity and the shift of banking activities to nonbank financial institutions, which are not regulated (**Section III.C.iv**);

    e. Lacks transparency surrounding the underlying factors leading to a significant increase in RWA for operational risk and the underlying net benefits of such an increase in banks required minimum capital holdings (**Section IV.B**).[13]

11. The Proposal also does not present a complete picture of its effect as there are open questions that the Proposal does not address. In particular, as the Agencies themselves note, with respect to the economic impact on trading activity, the "overall effect of higher capital requirements on market making activity and market liquidity remains a research question needing further study."[14]

12. Despite the above, the Agencies somehow conclude that they expect that the benefits of increasing risk-based capital requirements for large banking organizations outweigh the

costs.[15] They further conclude with no quantification that the economic impact on lending activity would only result in a "slight reduction in bank lending" and "small changes in loan portfolio allocations," whereas the economic impact on trading activity could "increase banking organizations' costs of engaging in market making activities."[16]

13. At a minimum, the Agencies should construct a cost-benefit model that encompasses relevant inputs that govern the relationships between the benefits of the proposed capital increases with their potential costs. While all economic models are abstractions of the real world, one should consider a complete set of relevant factors that have been established by economic theory. In this case, the model should ensure that it relies on at least the following: a reliable and theoretically-consistent metric to predict financial crises; more granular breakdown of sectors that accounts for the unique risks of each sector; and consideration of the impact on multiple dimensions (e.g., GDP, social welfare, systemic risk, market liquidity, etc.).

14. Consistent with the current version of the Proposal lacking a rigorous cost-benefit analysis, on October 20, 2023, the Agencies announced that they launched data collection from the affected banks that would further clarify the estimated effects of the Proposal.[17]

A. Unlike the Bank of England Proposal, the Proposal Does Not Contain a Comprehensive Quantification of the Economic Impact

15. In contrast to the Proposal, in November 2022, when the Bank of England (the "BoE") issued its consultation paper to implement the reforms referred to as "Basel 3.1," the BoE at least provided an attempt to quantify the economic impact of implementing its proposed reforms.[18]

16. For example, the BoE's consultation paper discussed incremental direct costs to the banks associated with implementation and compliance with Basel 3.1, such as changing the banks' operations. The BoE sampled 32 banks and found that total operational compliance costs were estimated to be £4.9 billion, of which £1.3 billion were one-off costs and £3.6 billion were the present value of ongoing costs. Large banks were expected to incur operational compliance costs of around £4.8 billion (i.e., 97% of total operational compliance costs for all banks). By contrast, small banks were expected to incur operational compliance costs of £161 million (i.e., 3% of total operational compliance costs

for all banks).[19] Interestingly, the major share of the costs for large banks (i.e., those with greater than £100 billion in leverage exposure measure ("LEM"), which is a metric the BoE used to calculate the leverage ratio rather than total assets as LEM takes into account relevant off-balance sheet exposures[20]) was estimated to result from implementing the market risk framework – i.e., £3.818 billion out of £4.949 billion, or 77%.[21] In contrast, the Agencies do not provide an estimate of direct operational costs associated with the Proposal's implementation.

17.   In addition to the operational compliance costs, the BoE analyzed costs associated with banks having to adjust "their balance sheets and/or raising capital to maintain their capital ratios to the extent that lower capital ratios [were] not warranted by lower minima, to comply with the proposed regulations."[22] The BoE analysis estimated that its proposed revisions would increase, on average, banks' CET1 capital by around 3.1%, or £14.2 billion in total across all banks. This is in contrast to the U.S., where the Proposal is expected to increase CET1 capital requirements by approximately 16%.[23] Moreover, the RWA estimates were actually estimated to fall by 1% in the U.K. based on the proposed revisions,[24] while the aggregate RWA estimates are expected to increase in the U.S. by 19%.[25, 26]

18.   As part of the costs, the BoE also included the costs to the regulatory supervisors from implementation, estimated at between £7.5 and £19.3 million.[27] I am not aware that the Agencies have provided such estimates of their own costs of the Proposal's implementation.

19.   The BoE consultation paper's benefits and costs analysis concluded with an overall impact on the U.K. economy. It supported its conclusion with a model that estimates the effects on banks of higher capital levels[28] in which the benefits and costs were estimated in terms of the impact on the value of the U.K.'s domestically produced goods and services (i.e., the gross domestic product or "GDP").[29] Using the above approach, the BoE estimated these costs to be £10.8 billion a year, representing approximately 0.5% of U.K. GDP in 2021.[30] By comparison to the costs, the aggregate benefits, which arose largely from the supposed elimination of risk mis-measurement and costs of financial crises, was estimated to be £21 billion a year.[31] Thus, the BoE estimated a net benefit of £10 billion a year of implementing

its proposed reforms. This model, however, is too simplistic because it only assumes there are two sectors (i.e., household and corporate), so it does not account for the risks of other sectors and the implications of that for the capital requirement of each sector. In any case, despite the flaws in the model, the BoE at least attempted to provide an economic impact analysis; this demonstrates that, properly constructed, such an analysis is possible, yet no such attempt is made in the Proposal.

B. Incremental Economic Benefits Are Not Quantified

20. As mentioned above, while the Agencies discuss the benefits of the Proposal (e.g., being able to better absorb losses and continue serving households and businesses through tough times of stress, as well as enhancing the resilience of the banking sector[32]), the mostly qualitative discussion does not identify the _incremental_ economic benefits of the Proposal, if any. This significantly undermines the Agencies' ability to evaluate the impact of the Proposal beyond the impact of any existing rules banks are already required to follow.

21. Moreover, the Proposal ignores several indicators that would suggest that the U.S. banking system is already able to absorb losses at times of stress and is already currently resilient.

22. _First_, the Proposal ignores the academic literature that demonstrates the banks may be well within the range of optimal capital levels already. I discuss this in detail in **Section IV.A**.

23. _Second_, as the experience during the Covid-19 pandemic and, more recently, as the regional banking crisis have shown, in general, large banks (a) performed well, (b) were viewed as sufficiently capitalized, and (c) were a systemic stabilizing force in 2021 and more recent years. The above can be seen by analyzing the credit default swap ("CDS") spreads for the top U.S. banks. A CDS allows investors to protect themselves against changes to a particular bank's credit risk (also called default risk) by paying a "spread" (which is akin to an insurance premium). Thus, when a bank's risk of default increases (which one would expect would happen during the wild market swings during the Covid-19 pandemic or the regional banking crisis), the CDS spread or the cost of protection against those losses would also increase. As **Exhibit 1** shows, in contrast to the wide or large CDS spreads during the 2007-2009 financial crisis, the CDS spreads of the top six U.S. banks were much narrower and relatively stable over the last several years.

Exhibit 1
5-Year Senior CDS Spreads for Top Six U.S. Banks
January 1, 2006 – December 31, 2023
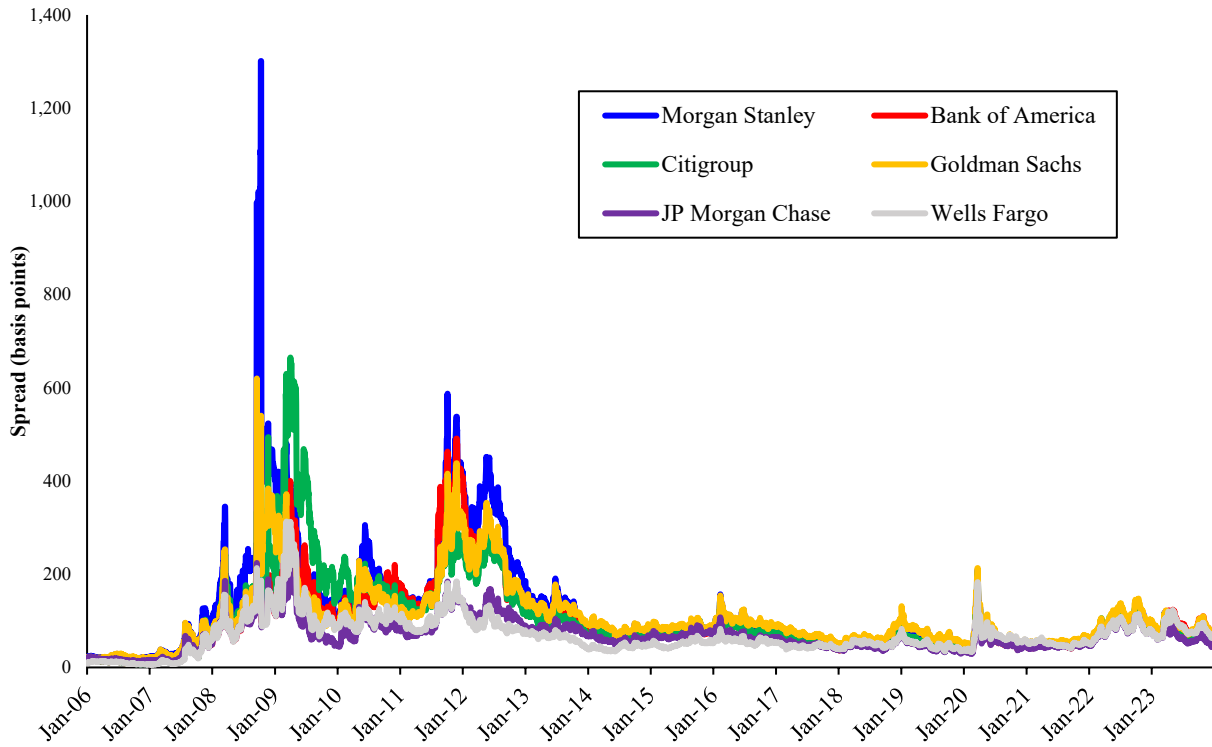
Source: S&P Capital IQ.

24.   *Third*, the potential for the breakdown of the overall U.S. economy due to the failure of a
       large bank (which is often referred to as "systemic risk") has been declining over time. In
       Exhibits 2A and 2B, I use Basel's own model for assessing the systemic importance of
       global systemically important banks (which are referred to as "G-SIBs"). Basel's model
       quantifies systemic importance via a "systemic importance score." The systemic
       importance score is used to determine whether a particular bank would be classified as a
       G-SIB and, as a consequence, subject that bank to a capital surcharge.[33] Thus, a decreasing
       (increasing) average systemic importance score across U.S. banks implies lower (higher)
       systemic risk exposure. As the exhibits show, the systemic importance score has been
       below 2013 levels indicating lower systemic risk exposure:[34]

Exhibit 2A
Average G-SIB Systemic Importance Scores: U.S. Banks
2013-2022
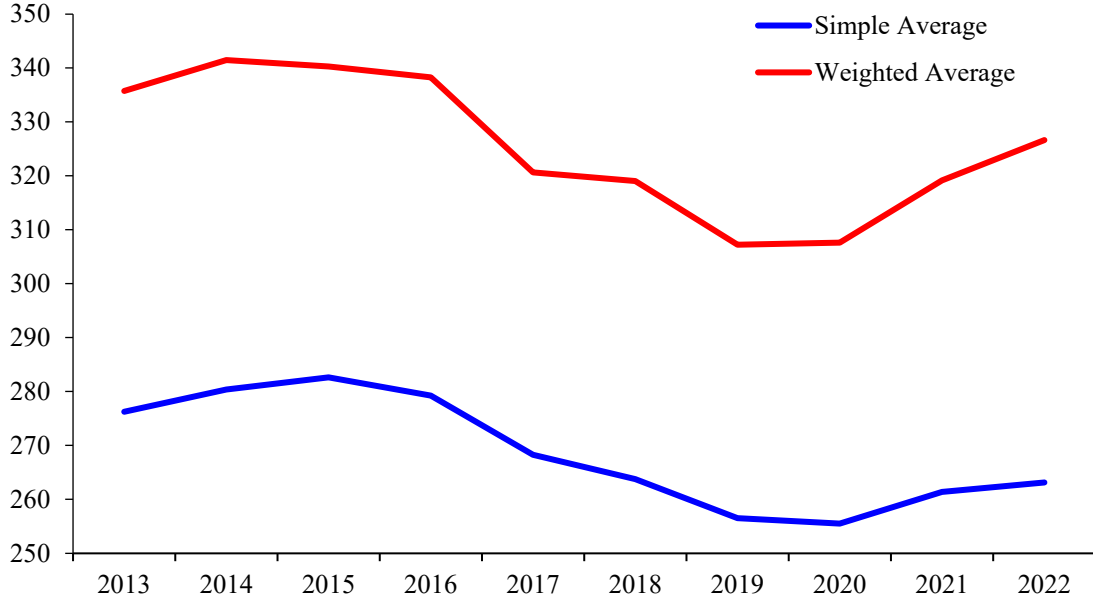
Source: Basel Committee on Banking Supervision ("BCBS").

Exhibit 2B
Average G-SIB Systemic Importance Scores: Top 5 Banks
2013-2022
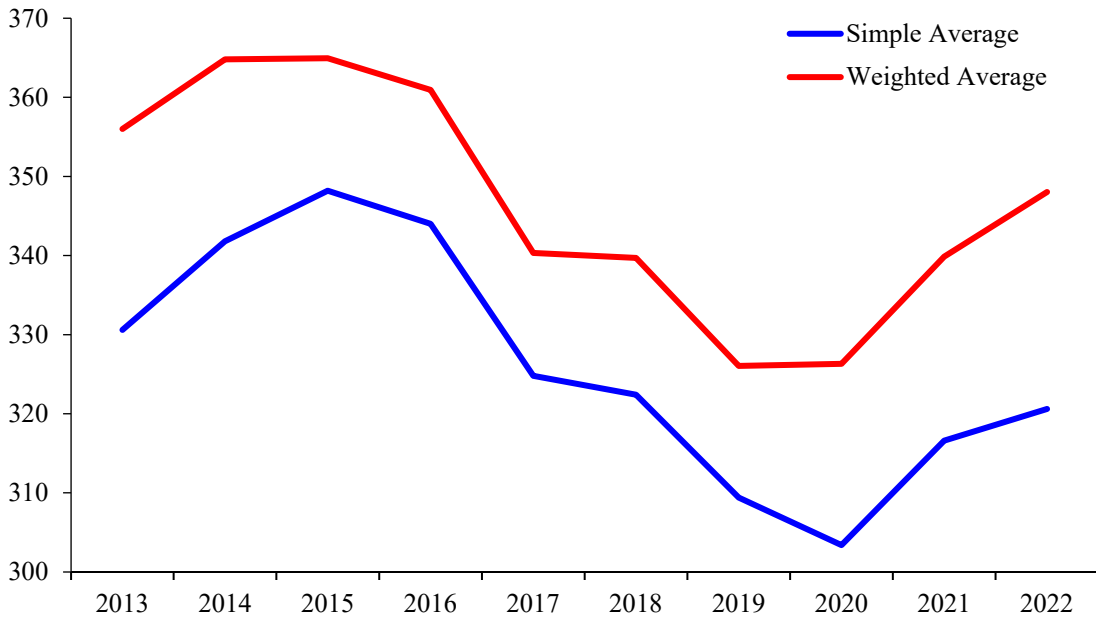
Source: BCBS.
Note: Top 5 Banks include Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, and Wells Fargo.

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25. Moreover, since the 2007-2009 financial crisis the ratio of CET1 capital to risk-weighted assets has more than doubled. *See* **Exhibit 3**. For example, CET1 capital ratio for bank holding companies with total assets above $750 billion increased from 4.37% in Q4 2008 to 13.14% in Q3 2023. During the above period, there has also been a reduction in the number of annual bank failures.[35] *See* **Exhibit 4**. Such a result is consistent with banks already having sufficient capital to absorb losses and avoid failures.

Exhibit 3
CET1 Capital as a Percent of Risk-Weighted Assets
2007-2023
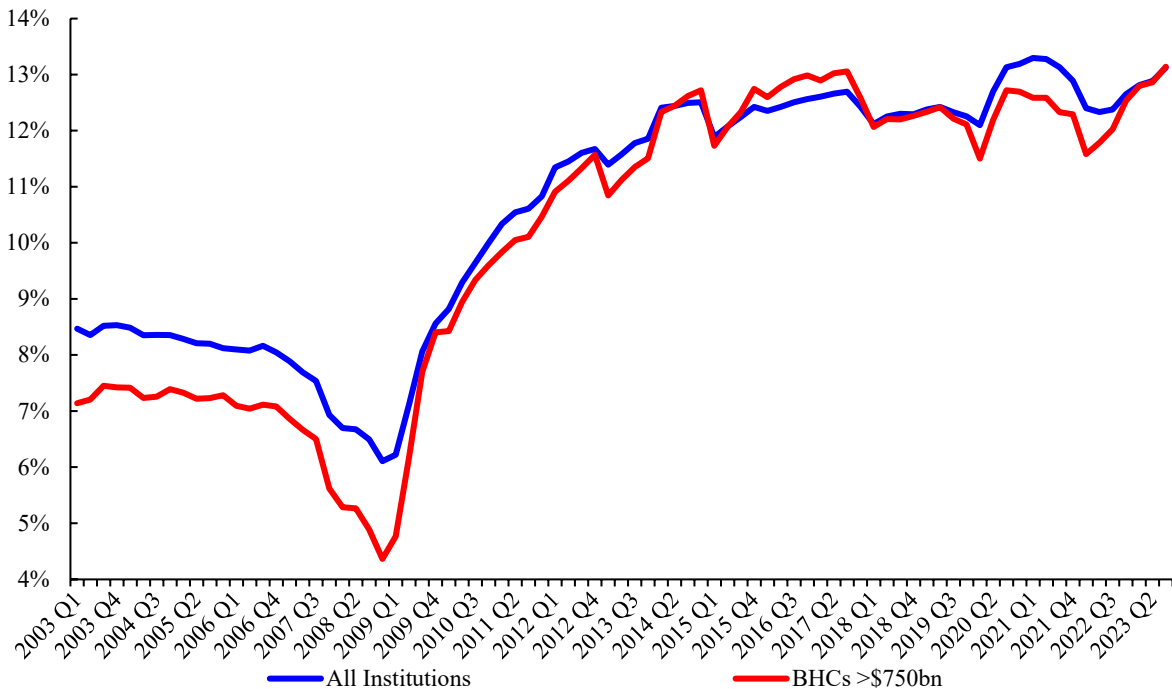
Source: Federal Reserve Bank of New York Banking and Statistics Division.

Exhibit 4
Number of U.S. Bank Failures
2007-2023
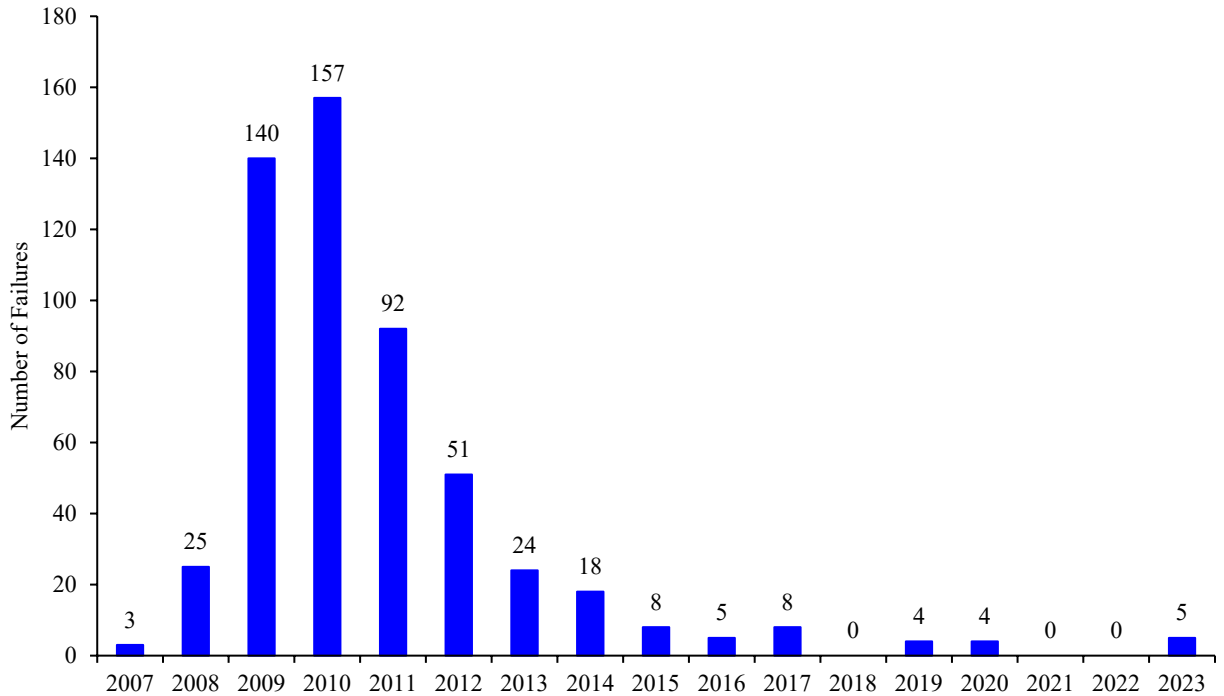
Source: Federal Deposit Insurance Corporation.

26. Given the above, it is not clear what *incremental* economic benefits, if any, the Proposal generates.

C. Incremental Economic Costs Are Not Quantified

27. There are numerous *incremental* costs (direct and indirect) that should be considered and quantified when analyzing the economic impact of the Proposal.

i. *The Proposal Would Have an Adverse Effect on Economic Growth*

28. The proposed revisions in the Proposal increase RWA for large banking organizations, which would adversely affect economic growth by making it more costly for borrowers to borrow money.

29. As mentioned above, The Proposal would increase the aggregate RWA for large bank holding companies by 19%.[36] The RWA is used as the denominator in banks' capital-to-risk ratio. Holding the capital-to-risk ratio fixed and/or to maintain the same profit margin, a higher RWA results in higher capital requirements for banks.[37] The higher capital requirements in the Proposal is a cost that banks will pass on to borrowers through higher

loan spreads.[38] This result is supported by findings in the academic literature. For example, Birn, et al. (2020), who analyzed the benefits and costs of bank capital, noted that the prior studies they reviewed found that a one percentage point increase in capital as a percentage of RWA increased loan spreads by 2.3 basis points to 13 basis points (i.e., 0.023% to 0.130%).[39] Another study by the staff at the International Monetary Fund (Dagher, et al. (2016)) which analyzed the benefits and costs of bank capital, found that a one percentage point increase in Tier 1 capital ratios was associated with loan rates that were 2.5 basis points (i.e., 0.025%) higher.[40] The authors also summarized the results from earlier studies and stated that a one percentage point increase in capital requirements resulted in increasing lending rates by 2 basis points to 20 basis points (i.e., 0.02% to 0.20%).[41]

30. The link between higher loan spreads and slower economic growth is as follows. Higher loan spreads would reduce borrowing. Less borrowing would in turn reduce the amount of overall investments in the economy. Less investments would then lead to a negative impact on economic growth. This conclusion is supported by the academic literature. For example, Martynova (2015) finds that "[b]anks facing higher capital requirements can reduce credit supply as well as decrease credit demand by raising lending rates, which may slow down economic growth."[42] Another study also finds increased loan spreads in the secondary market for syndicated loans have significant negative effects on various measures of economic performance including industrial production and employment.[43]

31. The above indicates that the Agencies have not adequately considered the potentially negative impact of increased capital requirements on borrowing rates, which in turn leads to a negative impact on economic growth.[44]

ii.   *The Proposal Would Have an Adverse Effect on U.S. Home Ownership and Mortgage Supply by U.S. Banks*

32. The Agencies propose that banks assign a risk weight to their exposure to residential real estate ("RRE") based on loan-to-value ("LTV") ratios.[45] They claim that the risk weights are intended to "appropriately reflect differences in the credit risk of these exposures."[46] However, this assignment of a risk weight to RRE has several adverse implications for U.S. home ownership and mortgage supply by U.S. banks, which are not discussed in the Proposal.

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33. *First*, higher RRE risk weights would disincentivize banks from lending. In fact, the proposed risk weights in the Proposal are higher than those proposed by Basel and applied in the E.U. and elsewhere.[47] As **Table 2** below shows, the RRE risk weights under Basel III compared to the Proposal in the U.S. demonstrate a 20-percentage point upward adjustment in risk weights across the board. All else equal, a higher RRE risk weight would require the bank to put up more capital for the same mortgage. Thus, banks may end up approving fewer mortgages, which would then have an adverse effect on U.S. home ownership and mortgage supply by U.S. banks.[48]

Table 2: Residential Real Estate Risk Weights
Basel III vs. The Proposal

LTV Bands (%)	< 50	50 – 60	60 – 70	70 – 80	80 – 90	90 – 100	> 100
General RRE							
Basel III	20%	25%	30%	30%	40%	50%	70%
The Proposal	40%	45%	50%	50%	60%	70%	90%
Difference	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*
Income-producing RRE							
Basel III	30%	35%	45%	45%	60%	75%	105%
The Proposal	50%	55%	65%	65%	80%	95%	125%
Difference	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*

Sources: "High-level summary of Basel III reforms," Basel Committee on Banking Supervision, December 2017, at 4; Proposal, at 64048.

34. *Second*, the changes in the risk weights are particularly onerous for mortgage loans sold to the Government-Sponsored Enterprises ("GSEs"). A paper by Calem & Covas (2023), which studied the effect of the Proposal on mortgage lending, finds that the risk weights for loans sold to GSEs could increase significantly, which would disincentivize banks from originating mortgages for sale to the GSEs and, as a result, harm many LMI households.[49] LMI borrowers are defined broadly as those having income that is less than 120% of their metro or non-metro area median incomes.

35. *Third*, the Proposal also assigns higher risk weights to higher LTV loans. For example, the Proposal assigns a risk weight of 40% for loans with an LTV ratio of 50% or less and a risk weight of 70% for loans with an LTV ratio between 90% and 100%.[50] LMI and minority borrowers rely on high LTV mortgages. Goodman and Zhu (2023), who study the effect of the proposed revisions on mortgage loans in bank portfolios, find that the Proposal would

"disproportionately disadvantage" LMI, Black, and Hispanic borrowers.[51] Similarly, Calem & Covas (2023) find that the Proposal would result in 38% and 52% of the loans to LMI and minority borrowers, respectively, would receive a risk weight of 70% or greater.[52]

36. *Fourth*, the increase in operational risk capital will make the securitization of mortgages more costly; thus, harming the mortgage market and making mortgages more expensive for consumers. The increase in operational risk capital could arise from the impact of mortgages on the calculation of business income ("BI"), which is used in the calculation of operational risk. It also could arise from the impact of mortgages on the stress capital buffer ("SCB"), which is an additional layer of capital large banks are required to hold, that already includes a capital charge for operational risk. Calem & Covas (2023) estimate that "this charge would double the total effective risk weight of loans sold to the GSEs."[53]

37. The Proposal will accelerate the already existing shift of mortgage lending from banks to nonbanks, increasing systemic risk. The most recent Financial Stability Oversight Council ("FSOC") Report reveals that "the share of nonbank originations and servicing [is] at record highs" with nonbanks originating 70% of loans in the first half of 2023 compared with 42% in 2014 and servicing more than half of all mortgages.[54] The FSOC warns that "[g]iven nonbanks' large market share, stress for these nonbanks [such as rise in interest rates that impact their earnings, inflationary pressures that could result in increased borrower delinquencies] could lead to larger systemic issues… [and consumers may be harmed] from ineffective loan servicing if nonbank servicers fail."[55]

38. Moreover, a recent analysis by Bloomberg of 38 million mortgages originated from 2018 through 2022 found that nonbank borrowers paid higher fees on mortgages than bank borrowers.[56] The data shows that nonbank borrowers paid $300 more in total upfront fees, on average, if they borrowed from nonbank lenders instead of traditional banks even if the borrower had comparable income and was borrowing a similar loan size. The authors also found a "racial and ethnic penalty" with Latino homebuyers paying $230 more and Black borrowers paying $150 more than comparable White nonbank borrowers. By contrast, when borrowing through a traditional bank, the authors found the difference was $40 for Latino bank borrowers and "nonexistent" for Black bank borrowers.[57] The higher costs of

higher capital requirements will further increase the shift of minority and LMI borrowers to nonbanks and will increase the number of disadvantaged minority and LMI borrowers.

39. In a recent statement, Michael Barr, the Federal Reserve's vice-chair for supervision, assured that the Agencies "care very much about access to credit for low and moderate income borrowers."[58] Yet, the above changes will have the most effect on the low and moderate income mortgage borrowers and will contribute to the overall systemic risk.

iii.   *The Proposal Would Have an Adverse Effect on Consumer Lending*

40. The Proposal includes risk weights for the credit risk of consumer credit cards and other consumer lending products, i.e., retail exposure. Under the Proposal, a banking organization would assign a risk weight of 55% to a transactor exposure (i.e., regulatory exposure that is a credit facility where the balance has been repaid in full at each scheduled repayment date) and 85% risk weight to a regulatory retail exposure that is not a transactor exposure.[59] These risk weights are 10% higher than those recommended by Basel under the standardized approach for calculating RWA for consumer credit card risk. Under the standardized approach, Basel's risk weights are 45% for transactor exposure and 75% for non-transactor retail exposure.[60]

41. *First*, the Proposal does not provide any justification why the U.S. banks should have higher risk weights than those required by Basel under the standardized approach. All else equal, this means that the U.S. banks will have a higher amount of risk weighted assets, which translates into a higher amount of capital the banks would be required to hold against a number of major consumer credit products.

42. *Second*, as Calem and Covas (2023) find, these requirements are "unduly punitive" for certain less advantaged consumers.[61] They argue that the higher capital requirements for credit card lines would have adverse consequences for young, immigrant households and households with low, no, or impaired credit. This is because higher capital requirements would result in credit cards being more difficult and costly to obtain for these groups of customers.[62]

43. *Third*, imposing an excessive capital charge on other retail exposure categories at a risk weight of 85%, will constrain bank consumer lending. In general, past experience has

shown that capital requirements could impact banks' ability to compete for loans against nonbanks. For example, a report on the state of auto market finance in Q3 2023 published by Experian shows that banks' total auto loan market share continues to decline compared to market share of captive finance companies (these are wholly-owned subsidiaries of automakers or retailers), which do not have capital requirements.[63]

iv.   *The Proposal Is Likely To Adversely Affect Market Liquidity*

44.   The Proposal would lead to a 77% increase in market risk aggregate RWA for Category I and II bank holding companies.[64] The Agencies acknowledge that this higher capital requirement may reduce banks' incentives to engage in certain market making activities and impair market liquidity.[65] This concern is consistent with the findings in the economic literature. For example, Darrell Duffie of Stanford argues that increases in bank capital requirements can severely harm liquidity in the U.S. Treasury markets and result in trading being diverted to less regulated nonbank financial institutions. Duffie (2023) notes that the "trend of declining relative market capacity continues because of large US deficits and regulatory capital constraints that keep banks safe but reduce the flexibility of their balance sheets."[66]

45.   Moreover, the Proposal lacks a discussion of how this Proposal and the G-SIB surcharge proposal interact together. Banks classified as G-SIBs are required to maintain capital above the minimum capital requirement described in the proposal (i.e., the G-SIB surcharge). On the same day the Proposal was released, the Agencies also released the G-SIB surcharge proposal. The G-SIB surcharge proposal uses a similar methodology as the Basel model, but replaces the substitutability indicator in the Basel model with a short-term wholesale funding ("STWF") indicator. In times of stress, however, the STWF might make firms more susceptible to runs that could potentially impact market liquidity and financial stability.[67]

v.   *The Proposal Would Place U.S. Banks at a Competitive Disadvantage Relative to International Banks*

46.   The Proposal states that the capital requirements under the Proposal would generally be consistent with international capital standards issued by the Basel Committee, commonly known as the Basel III reforms.[68] One of the original intentions of the Basel capital

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proposals introduced in 1988 was to create a level playing field in the international banking market.[69] At the time, Japanese banks had captured a large share of the market due to their lower capital ratios.[70] The belief at the time was that the introduction of the 8% risk-based capital ratio across the major countries that are members of the Basel committee would incentivize fairer competition.[71] In this context, the Proposal as set forth by the U.S. regulators deviates from the original equalization objective in many areas and actually puts large U.S. banks at a competitive disadvantage internationally. Below, I provide multiple examples.

47. *First*, under the Proposal, the credit risk weight for corporates is only lowered from 100% to 65% if these firms are both investment grade *and* listed on a securities exchange. While the listing on a securities exchange is consistent with the requirements proposed in Basel III, other countries, such as the U.K. and E.U., did not adopt the securities listing requirement.[72] In Canada, a bank can still apply a 65% credit risk weight to an investment grade counterparty even if it is *not* listed on a securities exchange as long as the counterparty has annual sales of at least CAD 75 million.[73] If the U.S. implements the Proposal's credit risk weight as is, it will discriminate against high credit quality (i.e., "investment grade") private firms as they are not listed on a securities exchange and would put the U.S. at a competitive disadvantage against competitor countries.

48. The potential disadvantage to the U.S. private firms of the Proposal is consistent with findings in Covas and Stepankova (2022).[74] The authors use data from 12 banks on individual probabilities of default ("PD") for both public and private firms. They fit the PDs to a common 21-grade internal rating system developed by Credit Benchmark. Their key findings are as follows: (a) a firm borrowing from a number of banks is similarly rated on the homogenous internal rating scale, suggesting that banks are very consistent in their internal ratings and (b) that there is no systematic statistical difference between the internal ratings of publicly traded exposures and those of private firms and that any differences in internal ratings are largely idiosyncratic and thus tend to cancel out in a portfolio context. These findings suggest that the publicly traded requirement biases against investment quality private firms and may harm their access to credit.

49. *Second*, the U.S. Proposal fails to account for the so-called Basel stress capital buffer, previously called the "capital conservation buffer" that was originally set by Basel III at a fixed 2.5% of RWA to the outcome of annual stress tests large banks are subject to. The CET1 capital requirement for large banks is comprised of four components: the minimum capital requirement, *the stress capital buffer requirement*, countercyclical capital buffer and, if applicable, a capital surcharge for G-SIBs. Thus, the higher the stress capital buffer, the higher the CET1 capital requirement. In recent years, some banks have found their stress capital buffers in the 3% to 5% range – i.e., significantly higher than the original proposed 2.5% benchmark. By comparison, other countries, such as the U.K., also conduct stress tests on their banks, but they require the bank to adjust their internal risk controls and management to the outcome.[75] Thus, the stress test outcomes do not directly affect the conservation capital buffer, which for the U.K. remains at a fixed 2.5% of RWA.[76] Thus, all else equal, the higher stress capital buffer in the U.S. would put U.S. banks at a competitive disadvantage.

50. *Third*, while all banks will be subject to the new operational risk capital requirements, the implementation is likely to be more onerous for the U.S. banks. Under the Proposal, the operational risk capital requirement is equal to the product of the business income component ("BIC") and the internal loss multiplier ("ILM").[77] The higher the ILM for any BIC level, the higher the operational risk capital requirement. The ILM has been set at a *maximum* value of 1 in the U.K. and E.U.[78] In contrast, the ILM has been set to a *minimum* value of 1 in the U.S. Indeed, in extreme cases, the ILM in the U.S. could rise close to 2. Therefore, all else equal, the higher ILM in the U.S. would put U.S. banks at a competitive disadvantage. I discuss this in detail in **Section IV.B.**

51. *Fourth*, as discussed above in **Section III.C.ii**, the RRE risk weights in the U.S. are 20 percentage points higher than Basel III across all loan-to-value ratios, placing the U.S. banks at a disadvantage.

52. *Fifth,* the dramatic increase in market risk capital and operating risk capital through the BI service component will increase the cost of trading and reduce market liquidity. This affects the U.S. the most because the U.S. is a market-based finance system,[79] whose efficiency in allocating financial capital relies more on trading securities in the open

market. By comparison, most other Basel member countries are more bank-based finance systems, which rely on banks acting as intermediaries (e.g., customers depositing money in banks and the banks lending the money to companies). This means that severe increases in costs of market trading via significantly increased market and operational capital risk requirements would result in trading and contracting costs being passed on to customers, which would in turn harm investment financing and growth of U.S. banks and would also potentially make it more costly for firms to undertake new issues of equity and debt.

53. *Sixth*, Basel III introduced rules to reduce the variability of RWAs between banks via an "output floor," where a bank's aggregate RWA calculated with the benefit of internal models cannot be lower than 72.5% of the RWA as calculated under the standardized framework. These final Basel III reforms are now being implemented in member jurisdictions.[80] Unlike the Basel III Framework, the Proposal would only allow internal models in the area of market risk; thus, it is only with respect to market risk that large U.S. banks would be able to benefit from lower RWAs generated using internal models.[81] The output floor would be calculated as 72.5% of the sum of the five RWA components (i.e., credit RWA, equity RWA, operational RWA, CVA RWA, and market RWA under the standardized measure) minus adjusted allowance for credit losses not included in tier 2 capital and allocated transfer risk reserves.[82] The only difference between the pre-output floor and output floor calculations is that the RWAs for the market risk in the output floor is based on the standardized approach for market risk. Under the Proposal, the internal models based measure for market risk is the only component that relies on internal models. Thus, in effect, the calculation of expanded total RWAs would only apply to banks that use internal models for market risk. This is different from the Basel III framework, where the current regulation allows E.U banks to use internal models for credit risk with permission from the European Central Bank, placing large U.S. banks at a competitive disadvantage.

54. *Seventh*, the Proposal includes rules for the application of minimum haircut floors for securities financing transactions ("SFTs"), such as margin loans and repo-style transactions, with unregulated financial institutions.[83] This rule would require a bank to receive a minimum amount of collateral when undertaking certain repo-style transactions and eligible margin loans with unregulated financial institutions.[84] While the intent of the minimum haircut floor was to "limit the build-up of excessive leverage outside the banking

system and reduce the procyclicality of leverage,"[85] the European Banking Authority ("EBA") found that "[m]ore fundamentally … from a prudential perspective the minimum haircut floors framework if implemented in the capital framework as envisaged in the Basel standards could theoretically lead to a more risky situation for institutions than the status quo (since banks could have the incentive to go unsecured on their SFTs that do not satisfy the haircut floors), 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," accordingly, the EBA recommended "to withhold the implementation in the EU of the minimum haircut floors framework for SFTs."[86] Other countries, such as the U.K. and Canada, have also decided not to adopt the minimum haircut floors framework.[87]

vi.   The Proposal Will Increase Systemic Risk

55.   The Proposal recognizes that the changes in the capital requirements could also increase banking organizations' costs of engaging in market making and lending activities.[88] With these higher costs, banks will be incentivized to stop providing capital-intensive services and tighten their credit approval process. This would lead customers to seek loans from nonbank lenders, such as fin-tech lenders, asset-based lenders, mutual funds, and venture capital debt lenders. These nonbank lenders are able to be more flexible with their credit approval process because they are less regulated than banks. For example, nonbank lenders are not regulated by the Federal Deposit Insurance Corporation, whereas banks are. Moreover, these nonbank lenders are more volatile than banks over the business cycle[89] and their performance is more sensitive to the business cycle (i.e., they tend to collapse more in recessions and grow faster in expansions). Thus, the higher costs imposed by the Proposal that result in this shift would lead to increased systemic risk.

56.   Importantly, banks generate revenues and profits through market trading and lending activities. Market and credit risk capital requirements that are too onerous would make it too costly for banks to engage in market trading and lending activities. This would lead to banks generating lower profits, which would in turn negatively impact banks' capital; making banks weaker. Therefore, increasing capital requirements will actually adversely affect bank safety and soundness and weaken the banking system overall.

57. The Basel requirements and the Dodd-Frank Act designed multiple new measures aimed to reduce bank failures, which are not limited to capital increases. For example, Section 165 of the Dodd-Frank Act requires certain safety measures, including stress testing and maintaining a minimum amount of total loss absorbing capacity ("TLAC") buffer for G-SIBs.[90] Thus, the Proposal ignores existing rules that already require banks to maintain higher levels of capital and those rules have been shown to be effective at reducing systemic risk. For example, large banks operating in the U.S. are already required to maintain a minimum amount of TLAC, which requires banks to maintain a minimum amount of long-term debt and equity capital.[91] The TLAC buffer requirements were established "to enhance the resilience of the banking system during stress periods."[92] The TLAC buffer requirements were also intended to limit the ability of banks to distribute capital to its shareholders and make discretionary bonus payments to strengthen banks' ability to continue lending and other business activities during stress periods.[93] In fact, numerous studies have found that the TLAC buffer requirements have been effective at reducing the risk of systematic bank failures.[94] For example, one study finds that the TLAC buffer reduces the probability of financial crises by 30%.[95] Interestingly, the Proposal hardly factors in the additional buffer offered by the debt component of TLAC.

D. Conclusion

58. Given the above, the incremental economic benefits of the Proposal may be low to none, which does not justify the very high incremental costs of implementing the Proposal.

IV. Certain Conclusions in the Proposal Are Inconsistent with Findings in the Academic Literature and/or Evidence That the Agencies Rely On in the Proposal

A. The Academic Literature Indicates That Banks' Capital Is Already at or Around Optimal Capital Levels

59. The Proposal claims that current capital requirements in the United States are toward the low end of the range of optimal capital levels described in the existing literature.[96] The Proposal cites seven papers in a footnote to support its statement. Five of these papers, as the Proposal indicates, state that capital should be higher than the current level of U.S. capital requirements, while two papers suggest that capital should be lower than the current level of U.S. capital requirements.[97] The Agencies conclude that "[o]n balance, this

literature concludes that there is room to increase capital requirements from their current levels while still yielding positive net benefits."[98]

60. As an initial matter, the Proposal's claim of banks being "toward the low end" of the optimal capital ratio range means that the current capital levels of banks are still within the range of optimal capital ratios. In addition, the reason for the claim in the Proposal of an "on balance" view of the academic literature appears to be because the Agencies did not perform a systematic analysis of the seven papers they selected. As a starting point, two of the papers – Basel Committee on Banking Supervision (2010) and Van den Heuvel (2022) – do not even provide estimates of optimal capital levels.[99] Without a benchmark for optimal capital levels, these papers cannot be used to compare the level of banks' capital to what is supposed to be optimal capital levels.

61. Moreover, the studies cited in the Proposal also calculate optimal capital based on two different definitions of capital: CET1 and Tier 1. Thus, one has to make sure that optimal capital ratios are compared to a definition of capital that is on an apples-to-apples basis. Two of the remaining five studies estimate optimal capital based on CET1 capital, which consists of retained earnings and common equity. Specifically, Miles, et al. (2013) and Elenev, et al. (2021) find optimal CET1 capital ratios of 20% and 6%, respectively.[100] As **Exhibit 5** shows, U.S. banks' CET1 capital ratios from 2021 Q1 to 2023 Q3 range from 12.3% to 13.1%, which is well-within the range of optimal CET1 capital ratios of the papers cited in the Proposal.

Exhibit 5
U.S. Banks CET1 Ratios vs. Optimal CET1 Ratios from Studies Cited in the Proposal
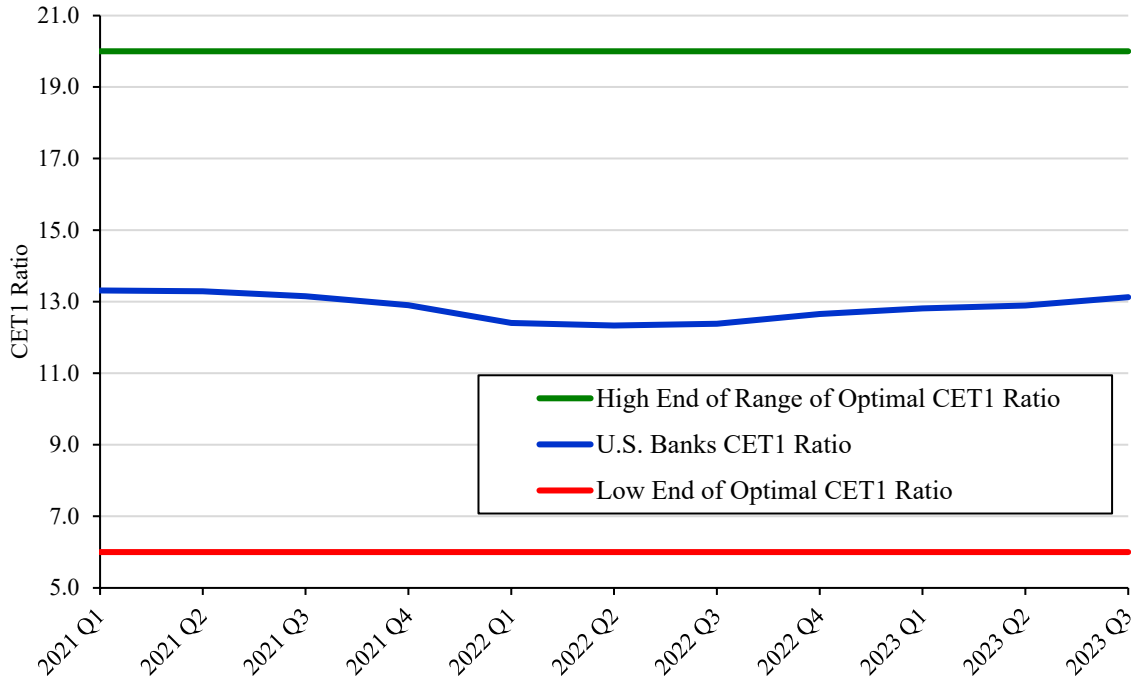
Source: Federal Reserve Bank of New York, Quarterly Trends Report Data, https://www.newyorkfed.org/research/banking_research/quarterly_trends (last accessed January 7, 2024).

62. The remaining three studies estimate optimal capital based on Tier 1 capital ratios, which includes common equity, qualifying perpetual preferred equity, and retained earnings. *First*, Dagher, et al. (2016) find a range of optimal capital ratios of 15% to 23%, where a 15% capital ratio would have avoided almost 55% of cases in the U.S. that needed capital injections during the 2007-2009 financial crisis and the 23% capital ratio would have eliminated virtually all cases.[101] However, the high-end of this range is misleading because this figure is driven by outliers. In fact, the authors' analysis shows that approximately 80% of the U.S. banks in their sample would not have needed capital injections if the capital ratio was approximately 17%.[102] *Second*, Firestone, et al. (2019) find the level of capital that maximizes the difference between total benefits and total costs ranges from 13% to 26%, but the authors state that estimated benefits remain positive until Tier 1 capital ratios reach 13% and the benefits may be positive or negative at higher capital ratios.[103] Thus, given this uncertainty at higher levels of capital ratios, the more appropriate optimal capital level from this study is 13%. Third, Begenau and Landvoigt (2016) find the optimal capital ratio is around 16%.[104] The above three studies indicate that the optimal Tier 1 capital

ratios is a narrow range of 13% to 17%. As **Exhibit 6** shows, U.S. Banks' Tier 1 capital ratios from 2021 Q1 to 2023 Q3 ranged from 13.7% to 14.4%, which is well within the range of optimal Tier 1 capital ratios of the papers cited in the Proposal.

Exhibit 6
U.S. Banks Tier 1 Ratios vs. Optimal Tier 1 Ratios from Studies Cited in the Proposal
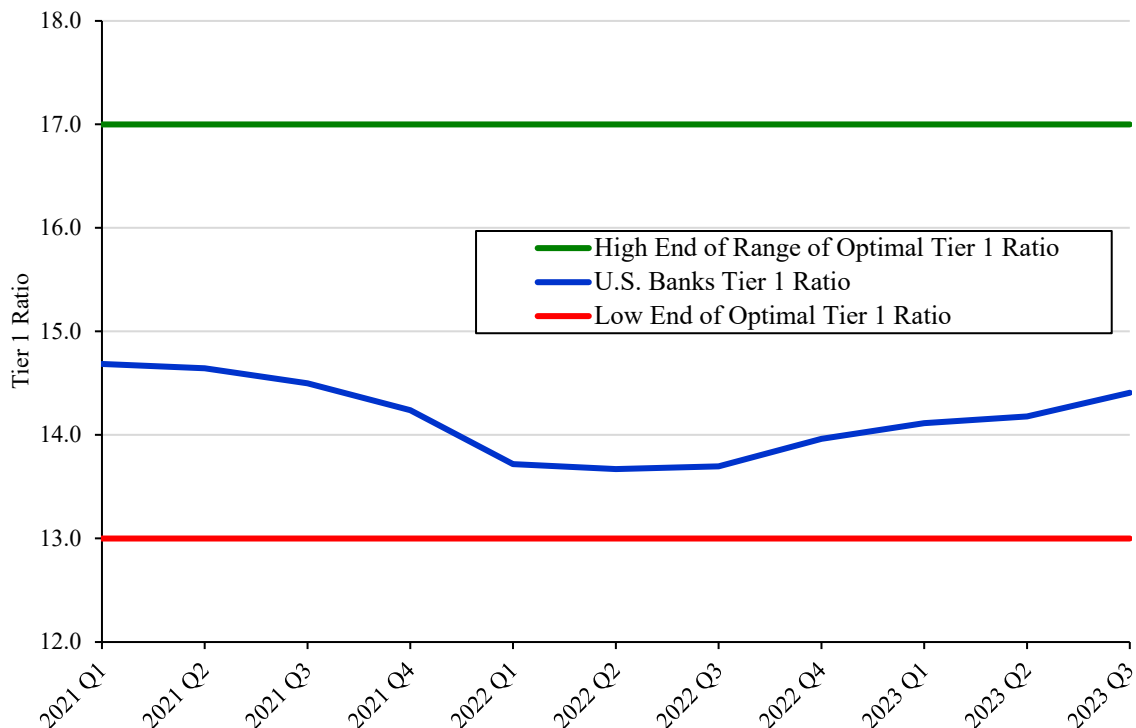

Source: Federal Reserve Bank of New York, Quarterly Trends Report Data, https://www.newyorkfed.org/research/banking_research/quarterly_trends (last accessed January 7, 2024).

63.   Separately, a study conducted by PwC and published in 2023 concludes that the optimal capital level is "near current levels at firms expected to be subject to Basel III Endgame capital requirements."[105] PwC summarized the results of six research papers that estimated optimal capital levels.[106] These papers were authored by key regulators, standard-setting bodies or academics; and consider a broad range of post global financial crisis regulatory regimes or the impact of the nonbank financial sector. They find an implied optimal CET1 ratio of 13.8%, which "aligns" with the actual average bank CET1 ratio as of year-end 2021 and 2022 of 13.7% and 13.2%, respectively.[107] They also find that Tier 1 ratio of 15.5% estimated in the studies "aligns closely" with the actual average Tier 1 capital ratio as of year-end 2021 and 2022 of 15.5% and 15.2%, respectively.[108]

B. **Various Inputs into Operational Risk Requirements Models Lack Explanation or Are Inconsistent with Economic Evidence the Agencies Rely On**

64. Operational risk is the risk of loss resulting from inadequate or failed internal processes, people, systems, or from external events and includes legal risk but excludes strategic and reputational risk.[109] The Proposal introduces a capital requirement for operational risk based on a standardized approach.[110] Under the current rule, banking organizations subject to Category III and IV standards do not calculate a standalone operational risk charge. This is in contrast to the current capital rule, where banking organizations that are subject to Category I or II capital standards calculate RWA for operational risk using the so-called advanced measurement approaches, which are based on banks' internal models.[111] The Proposal argues the current approach for operational risk that relies on internal models presents substantial uncertainty and volatility and the standardized approach would address these concerns.[112]

65. As an initial matter, the Proposal does not analyze operational losses historically to provide any justification for introducing the standardized approach. The Proposal only mentions that internal models are uncertain and volatile but does not explain why the new standardized models are needed. More importantly, the Proposal fails to consider that operational losses are at historically low levels. For example, a study by ORX, an operational risk management association with over 100 member financial institutions,[113] finds that, based on 21 years of data, the ratio of total operational loss to capital rarely exceeds 15% (a threshold established by Basel II under the business indicator approach)[114] and, in 2022, this ratio was approximately 5%.[115]

66. Moreover, various inputs into the standardized approach proposed by the Agencies also lack explanation and are inconsistent with the economic evidence. Under the proposed approach, the operational risk capital requirement is equal to a banks' business indicator component ("BIC")[116] multiplied by its internal loss multiplier ("ILM").[117] As I explain below, there are issues with each of these inputs.

     i.   *Business Indicator Component*

67. The BIC is based on the sum of the following three components, each of which would serve as a measure of broad category of activities in which the banks typically engage: (a)

an interest, lease, and dividend component (to capture lending and investment activities); (b) a services component (to capture fee-based and commission-based activities, as well as other financial activities not captured by the other components of the BIC);[118] and (c) a financial component (to capture trading activity).[119] All inputs to the BIC would be based on three-year rolling averages to help reduce the effect of temporary fluctuations.[120]

68. There are several flaws with the way the Proposal is calibrating the services component of the BIC. *First*, the proposed treatment of the services component does not appear to be favorable to certain banks, such as those that are primarily engaged in fee-based activities. For example, State Street Bank is heavily reliant on fees from clearance and settlement and Bank of New York ("BONY") from custodian services. The Basel 2014 Consultative Document recognized this issue: "A small number of banks that are highly specialised in fee businesses have been identified as facing a disproportionately high capital impact under the BI. The problem stems from the structure of the BI, which was designed to capture the operational risk profile of a universal bank and does not lend itself to accurate application in the case of banks engaged predominantly in fee-based activities."[121]

69. *Second*, the Proposal also appears to be unfavorable to fee-dependent banks since service expenses in this area are not netted against fee income, so, for example, the salaries banks pay their employees in their securities and M&A (i.e., mergers & acquisitions) fee-generating subsidiaries would not be netted against revenue. By comparison, costs are netted out from the two other activities of the BIC (i.e., the interest, lease and dividend component, and the financing component). This bias could be remedied by allowing netting from revenue earned in the services component or setting an upward limit on the size of the services component revenues.

70. *Third*, the Proposal is also unfavorable to profitable banks, as profitable banks would get penalized and be required to put up more capital. For example, an October 13, 2023 *Reuters* article reported that in the third quarter of 2023, J.P. Morgan, Citi, and Wells Fargo experienced more than $50 billion in net interest income,[122] up 29% from the year-earlier period.[123] Such banks with high net interest margin would end up with high BIC values, which may lead to too high of a regulatory capital requirement relative to the bank's average actual external and internal operational risks over the prior 10 years.

71. *Fourth*, the Proposal is unfavorable to banks that focus on originating mortgages for sale to the GSEs. Fee income from the sale of such mortgages will likely have a large impact on the BIC because of the high turnover and sale of mortgages within a business year.[124] This will disincentivize some banks from originating loans for sale, leaving less regulated nonbanks to take their place. As discussed ***supra ¶¶ 37 and 43***, shifting lending activities from banks to nonbanks would lead to an increased systemic risk.

72. *Finally*, when Basel II recommended a standardized approach for operational risk, it assigned different risk weights to each of the eight business lines it identified: corporate finance, trading sales, retail banking, commercial banking, payment and settlement, agency services, asset management, and retail broking.[125] In particular, the capital requirement for each business line is calculated by multiplying each line's gross income by the risk weight for the business line.[126] This more granular approach allows banks to capture the capital requirement for each business line more precisely assuming there is empirical justification for the assigned risk weights to each business line. One study found that, using 21 years of data across 15 U.S. banks, there was a wide variation in median (ranging from 0.26% to 1.21%) and 90th percentile (ranging from 1.57% to 8.77%) loss ratios (annual loss as a percentage of annual income) across the nine business lines the study analyzed. This supports the use of more granular business line data in the new standardized approach to refine loss exposure differences across banks specialized in very different activities (e.g., universals versus specialized).[127] By comparison, the Proposal would require a broader approach, in which the business indicator is focused only on three more general components.

ii. Internal Loss Multiplier

73. The ILM is a factor that *increases* operational risk capital requirements based on a bank's historical operational loss experience.[128] Once calculated, this is multiplied by the bank's BIC to get the operational risk capital requirement. The Proposal requires the ILM to be no less than one,[129] so the ILM cannot decrease the operational risk capital requirement. I explain below that (a) the ILM of a minimum of one is inconsistent with the Basel specification for the calculation of the ILM and (b) the input of 10-year average of annual

total net operational losses is inconsistent with the Proposal's cited academic paper supporting a 10-year calculation period.

74. The ILM is calculated as follows:

$$\max\{1, \ln(\exp(1) - 1 + (15 \times \text{Average Annual Total Net Operational Losses} / \text{Business Indicator Component})^{0.8})\},$$

where Average Annual Total Net Operational Losses equal the average of annual total net operational losses over the previous 10 years (on a rolling quarter basis) and the multiplier of "15" extrapolates from average annual total net operational losses the potential for unusually large losses.[130]

75. Specifically, under the Proposal, an ILM of one is obtained when the "15 x Average Annual Total Net Operational Losses" is equal to or _less than_ the "Business Indicator Component." Not allowing the ILM to fall below one has its drawbacks as it may disincentivize or not fully reward banks that are well-run because, all else equal, well-run banks would have smaller operational losses. To illustrate, consider two banks with the same BIC of $50 billion. Bank A has 15x average annual total operational loss of $50 billion, so its ILM is equal to 1 based on the above equation. Suppose Bank B has better risk management and its 15x average annual total operational loss is only $30 billion, so its ILM _without the floor of one_ would be 0.87. However, because of the floor of one, Bank B will also be subject to the same ILM of 1 as Bank A despite having better risk management practices. In other words, the better risk management practices of Bank B are not recognized under this ILM calculation. Thus, setting a floor of one may disincentivize banks to reduce operational risk under the current Proposal, as they are not fully rewarded for such efforts.

76. Specifically, **Exhibit 7** graphs the relationship between the ILM and the Loss Component/Business Indicator Component ratio ("LC/BIC"). The exhibit shows that, as the LC/BIC ratio approaches zero, say due to very low losses due to operational risk, the ILM falls well below 1 and approaches 0.5. As mentioned above, most banking competitor countries, while not allowing the ILM to fall below one, set one as the standard multiplier rather than potentially allowing it to increase above one, effectively removing the ILM from the calculation. However, as **Exhibit 7** also shows, this is not the case under the formula in the Proposal. For example, a bank with an LC/BIC ratio of 250% would have an

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ILM of 1.3, which would be 30% higher than if the ILM were fixed at 1.0 like in most banking competitor countries. Allowing the ILM to exceed 1 has a direct effect on the amount of operational capital the bank holds, as the amount of a bank's operational risk capital is equal to the BIC *multiplied by the ILM*. Thus, holding the BIC fixed, a 30% higher ILM would result in a significantly higher operational risk capital. As one study estimates, the ILM of U.S. banks has been typically greater than one since 2008, which would, on average, put U.S. banks at a competitive disadvantage over U.K. and E.U. banks.[131]

Exhibit 7
Relationship Between the Internal Loss Multiplier and
The Ratio of Loss Component to Business Indicator Component

Ratio of Loss Component to Business Indicator Component
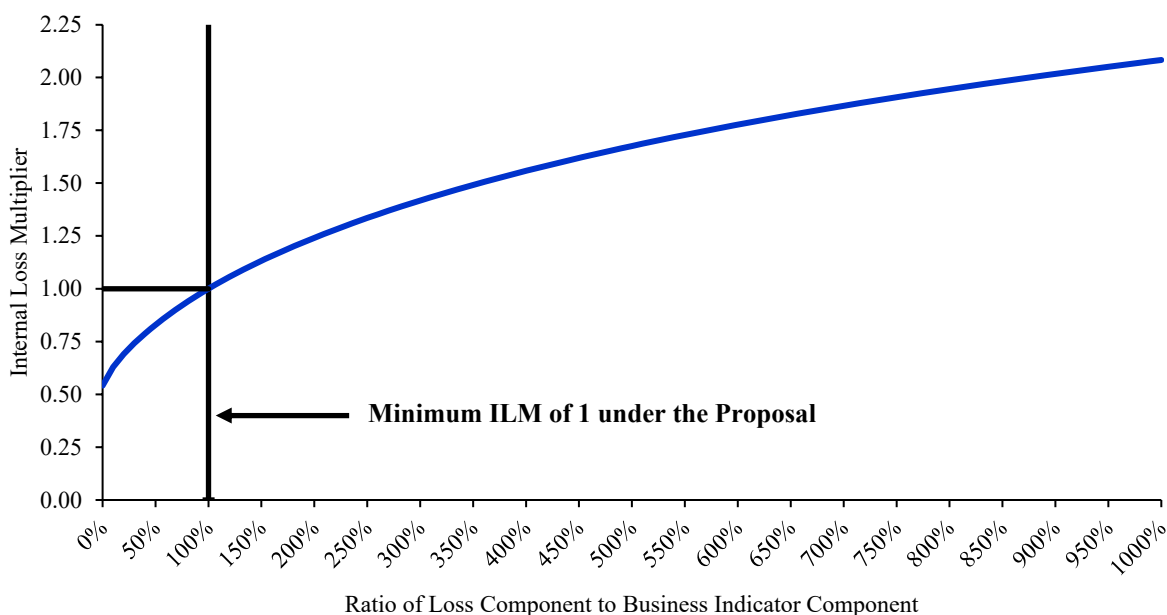
77. The ILM calculation above is based on the average of 10 years of data for operational losses.[132] The Proposal states that the higher historical operational losses are associated with higher operational risk exposure.[133] The Agencies support that statement by citing to a working paper by Curti and Migueis (2023).[134] Inconsistent with the Proposal's use of a 10-year average in the ILM calculation above, the authors find that past operational losses are predictive only up to *three* years prior; not 10 years.[135] Moreover, the Curti and Migueis (2023) results regarding the predictive power of past operational losses significantly weaken when the authors add appropriate control variables to their model.[136] This implies

that the result that past operational losses predict future operational losses is far from robust. In addition, the results of the Curti and Migueis (2023) paper rely on making inferences from the distribution of operational losses, which is highly skewed and heavily influenced by extreme outcomes.[137] As such, operational risk predictions are highly sensitive to the data that is used and the time period covered.[138] In short, operational losses are hard to predict, especially those due to external events.

C.   The Proposal Lacks Empirical Justification of the Parametrization of the Proposed Approach to Market Risk and CVA Risk, Which Are Highly Opaque

78.   Market risk is defined as the risk from exposure to price movements caused by changes in market conditions, market events, and issuer events that affect asset pricing.[139] Unlike for operational risk and credit risk, for market risk, banks with model-eligible trading desks may use internal models after obtaining approval from its primary Federal supervisor rather than the standardized approach for calculating market risk capital requirements.[140] However, as I explain below, there are several issues related to this.

i.   Traffic Light Test

79.   The traffic light test (i.e., a bank can fall in the "green zone", "amber zone," or "red zone") is based on two proposed profit and loss attribution ("PLA") test metrics:[141] (a) the Spearman metric to assess the correlation and (b) the Kolmogorov-Smirnov ("K-S") metric to assess the similarity of distributions.[142] The PLA back tests over the most recent 250 business days and compares the accuracy of <u>modeled</u> potential future profits and losses compared to <u>actual</u> profits and losses for financial reporting purposes.[143] To be approved for internal model calculation instead of the standardized approach, the trading desk has to fall in the "green zone" based on the PLA metrics. If it falls in the "amber zone," then a PLA add-on is required.[144] The problem with the traffic light system is that it seems to create a bias against banks that have good hedging or risk management practices.

80.   To illustrate the above problem, note that the "red zone" cutoff under the Spearman metric is a correlation of less than *positive* 0.70,[145] so a bank with a correlation of less than *positive* 0.70 will fall into the "red zone" and will be required to use the standardized approach. Now, consider a bank that exercises good risk management and has a well-hedged portfolio. If the bank has a perfectly hedged portfolio, its daily predicted modeled

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trading profits and losses would likely be highly correlated with its actual trading profits over time and it would fall in the green zone. However, if the bank has a well-hedged portfolio, its profits and losses will still be exposed to basis risk but because of the often random nature and small impact of basis risk, the daily predicted trading profits and losses will likely have low (i.e., close to zero) correlations with actual profits over time and the bank could fall in the "red zone."[146]

81. Given the above, the traffic light system would have the effect of penalizing banks that exercise good risk management because the bank could more easily fail the PLA tests if it is able to hedge away most of but not all of its risks.[147] As a consequence of failing the PLA tests, the bank would end up using the standardized approach which could expose banks to higher capital requirements. This result contradicts the purpose of the Proposal to increase safety and soundness in the banking system.

82. In addition, while the Proposal reports the breakpoints of the "green zone," "amber zone," and "red zone" for both metrics,[148] there is no discussion in the Proposal of how the breakpoints were determined and the empirical support for such breakpoints.[149] I am not aware of how one can use the two proposed PLA test metrics – i.e., Spearman correlation and K-S test – to identify these breakpoints. There are other issues in using these statistics in the context of the comparisons required under the zoning metrics.[150]

ii.   Sensitivities-Based Method

83. One of the of the components of the standardized approach is a sensitivities-based capital requirement that is intended to capture non-default market risk.[151] For the sensitivities-based method, the market risk capital requirement would equal the sum of the capital requirements for (a) delta, (b) vega, and (c) curvature risks.[152] Delta is a measure of the impact on a market risk covered position's value from small changes in underlying risk factors. Vega is a measure of the impact on a market risk covered position's value from small changes in volatility. Curvature is a measure of the additional change in the positions' value not captured by delta arising from changes in the value of an option or an embedded option. There is an add-on for any default risk and residual risk. Then, each week, these factors are subjected to a stress shock, which is a standardized weight given by the regulators (e.g., 2.5% for all investment grade bonds).[153] As explained below, there are

several issues with the market risk capital requirements for the sensitivities-based method suggested by the Proposal.

84. The Proposal discusses three correlation scenarios (i.e., high, medium, low) to calculate the overall delta, vega, and curvature capital requirements across all risk classes.[154] The base is the medium correlation scenario, and the high and low correlation scenarios are calculated by increasing or decreasing the medium correlation scenario parameters by 25%, respectively.[155] The Agencies claim that this 25% adjustment "appropriately reflect[s] the potential changes in the historical correlations during a crisis,"[156] but does not provide any support for such a claim.

85. Moreover, the Proposal requires summing up the calculated delta, vega, and curvature capital requirements for all asset risk classes,[157] which presumes that the risk class charges are not related to one another and ignores any diversification benefits across these risk charges. By ignoring any diversification benefits, the standardized market capital risk requirements may overstate the banks' market risk exposure.

86. Additionally, the capital charge based on the "standardized method" is supposed to result in banks using the same method, but that is not the case in practice. For example, using the scenario approach makes the correlation assumptions dependent on each bank's market portfolio and, therefore, the approach would not be the same across all banks. The Agencies also do not provide any justification for the scenario shock weights, such as 2.5% for investment grade bonds.[158] [159]

iii.   Internal Models Approach for Market Risk

87. There are also several issues with the market risk capital requirements for the alternative internal models approach suggested by the Proposal.

88. The internal models approach capital requirements for those trading desks that are eligible consist of four components: (a) internally modeled capital calculation ("IMCC") for modellable risk factors; (b) the stressed expected shortfall ("SES") for non-modellable risk factors; (c) the standardized default risk capital requirement; and (d) the aggregate trading portfolio backtesting multiplier.[160] The IMCC "would begin with the calculation each business day of the expected shortfall ("ES")-based measure for an entity-wide level for

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each risk class and across risk classes for all-model eligible trading desks, and also for a trading desk level throughout a twelve-month period of stress, which then would be adjusted using risk-factor specific liquidity horizons."[161]

89.   The Proposal also suggests additional upward liquidity horizons ("LH") adjustments to the internal market risk estimated depending on the risk factor category.[162] *First*, these LHs appear to be arbitrary, varying from 10 days to 120 days, as the Agencies do not provide any basis for selecting these ranges. *Second*, as described in **Section V**, the Global Market Shock ("GMS"), which factors into the stress test conservation buffer of 2.5% or higher (see ***infra ¶¶ 106-108***) implicitly repeats the LH effect by assuming a very long liquidation horizon in the GMS shock. As such, there is some degree of overlap in the stress test buffer and market risk LH factor to GMS shocks.

90.   The Proposal also does not provide justifications for several other factors in the IMCC. For example, in the overall market risk capital requirement under the internal models approach, the Proposal requires the sum of a default risk component from the standardized model ("DRC$_{SA}$") *plus* the maximum of (a) the sum of the modellable and non-modellable risk factors or (b) 60-day average non-modellable risk factors *plus* 1.5x the 60-day average of the modellable risk factors.[163] The Agencies state that due to the 1.5x capital multiplier, they expect the 60-day average would dominate.[164] However, there is no explanation for the basis of the 1.5x capital multiplier.[165] As another example, in calculating the IMCC, the Proposal requires (a) 50% multiplied by the entity-wide LH-adjusted ES measure across all risk classes *plus* (b) 50% multiplied by the sum of the LH-adjusted ES measure for each risk class.[166] Aside from "to constrain the empirical correlations and provide an appropriate balance between perfect diversification and no diversification between risk factor classes,"[167] the Proposal does not provide any discussion or empirical evidence on the selection of the 50% weighting factor for each of the above components.

91.   One article noted that banks that started reducing their reliance on internal models saw increases in the volatility of capital requirements for desks that still use the internal models approach ("IMA").[168] This increase in volatility is due to the use of a risk measure that is based on a historic reference window covering the worst losses for the portfolio. This

reference window is more sensitive the fewer risk factors there are in the portfolio, which is the case when fewer desks are on the IMA.

92.   The Proposal excludes internal models for credit risk capital requirements and instead chooses to rely on a simplistic standardized model approach. The Proposal claims that internal models for credit risk rely on subjective inputs by banks that may be difficult to empirically verify, so their use can result in varying risk-based capital requirements even for similar exposures in effect excluding internal risk based models as introduced under Basel II from the Basel III finalization proposal.[169] As such, the Proposal would remove the use of internal models to set credit risk for banking organizations subject to Category I or II capital standards.[170] However, there are a couple of issues with this proposed revision.

93.   *First*, as support for its "unwarranted variability" claim, the Agencies cite to the 2013 and 2016 BCBS reports.[171] However, while these BCBS reports find variation in banks' estimates of credit risk inputs under the internal models approach, the studies do not identify what constitutes an "unwarranted" level of variation. In addition, these studies are not focused on U.S. banks. By comparison, there are two studies that focus on U.S. banks that find, based on assessments of PDs, that there is not much variability of outcomes across banks. *First*, Firestone and Rezende (2016) study nine large U.S. banks and find that, while the PDs differ, only a few banks systematically set PDs higher or lower than other banks in a statistically significant manner.[172] *Second*, using PD data from 12 large banks with headquarters in the U.S. or with significant exposure to U.S. firms, Covas and Stepankova (2022) find that banks' investment-grade rating assignments to the same entity are generally consistent.[173]

94.   *Second*, abandoning the existing internal ratings-based "foundation" and "advanced" approaches for credit risk exposure as a whole disregards banks' informational advantage regarding borrower credit quality. In particular, banks have more accurate and timely information on firm credit conditions than outsiders, such as ratings agencies. Specifically, the SEC under the fair disclosure regulation allows the banks to legally obtain timely inside or private information regarding firms' credit-worthiness and, in addition through banks' monitoring and developing relationships with borrowing firms, the precision and accuracy

of the information they gain, on average, is superior to those analysts and other agents who just have access to public information, e.g., 10-K reports. Given this, banks should be allowed to continue to use an internal models approach and input their internally determined PDs and LGDs into the foundations or advanced internal models available to banks under Basel II. Instead, the Proposal is to rely solely on a new standardized approach that gives a risk weight of 100% to all firms except those of investment grade and trading on a securities exchange given a risk weight of 65%.

95. Instead of abandoning the internal models approach for credit risk capital outright due to data variability, the Agencies could consider other solutions that would address this issue. *First*, the Agencies could implement a more stringent carrot and stick approach. In the U.S., there is already guidance from regulators that indicates that it may be prudent for banks to make adjustments to their models to account for more extreme outcomes.[174] Accordingly, the Agencies could impose larger penalties for underreporting or overreporting risk measures, which would incentivize the banks to be more compliant and compatible on the accuracy of their data reporting when using the internal models approach. *Second*, even if banks occasionally under- and over-estimate the probabilities of default, as long as there is no systematic downward bias (i.e., gaming), the under and overestimates will tend to cancel out in a portfolio framework. Such an approach is better than a "one size fits all" risk weight of 100% under the standardized model proposal, where bank internal information and credit risk ratings on individual borrowers are viewed as being redundant for capital requirement purposes. *Finally*, it is also interesting that at the time of writing the European regulators continue to allow banks to use internal models along with standardized models for credit capital estimation.

v.   CVA Risk Parameters

96. The Proposal also introduces a number of changes to the CVA risk, where most parameters lack any empirical justification. The Proposal includes two approaches for calculating CVA capital requirements: the basic approach or BA-CVA and the standardized approach or SA-CVA.[175] For the BA-CVA calculation, the Agencies do not provide any explanation why the basic risk-based capital requirement (or K_{basic}) is multiplied by a factor of 0.65[176] or why it would "not be prudent" to allow the banking organization to set the BA-CVA to

zero for perfectly hedged counterparty credit spread and this should be equal to 0.16 (i.e., 0.65 multiplied by 0.25) times the unhedged capital.[177]

97. The Proposal also lacks explanation of how it arrived at the supervisory risk weights, which drive the standalone CVA capital requirement for each counterparty (or SCVA$_C$). The supervisory risk weights differ significantly for investment grade and speculative grade counterparties. For example, for financial institutions (including government-backed financials), which would include entities like pension funds and mutual funds, the risk weight for investment grade counterparty is 5%, whereas the risk weight for non-investment grade counterparty is more than double, or 12%.[178] This is especially problematic considering that under the Proposal the credit risk weight for corporates is only lowered from 100% to 65% if these firms are both investment grade *and* listed on a securities exchange. The higher risk weights applicable to counterparties such as pension funds, for example, could potentially result in higher fees and lower returns for U.S. retirees, affecting thousands of households and social welfare. Commercial-end users, which use derivatives to hedge and mitigate commercial risks associated with their business, such as commodities risk, interest rate risk, and FX risk, for which large banks serve as counterparties, will also be affected, which in turn will affect their planning and forecasting, and will ultimately affect prices and economic growth.

V. The Proposal Ignores the Overlap Between the Basel Framework and the Stress Tests

98. Operational, market, and credit risk have separate capital requirements under the Proposal. However, some capital requirements are already embedded in other risk measures, such as stress tests.

A. Capital Requirements for Operational Risk Are Already Embedded in Other Risk Measures

99. Operational risk is embedded in every activity and product of a banking organization.[179] Thus, if additional capital is already required based on other tests (e.g., credit and market losses), then one risks overstating capital requirements by requiring additional layers of capital from the operational risk requirements. For example, the Federal Reserve states that Pre-provision Net Revenue ("PPNR") "includes projected losses due to operational-risk

events"[180] and its PPNR model "projects losses stemming from operational-risk events using information about the size and historical operational-risk losses of the firms and economic conditions defined in the Federal Reserve's supervisory stress test scenarios."[181]

100. The above is consistent with the findings in the academic literature that finds that, the greater the degree of operational risk in the business risk mix, the greater the overestimate of simply adding the risks from credit risk and ignoring correlations between operational risk and market and credit risk.[182] This effect is due mainly to the distribution of operational risk and its significant skew due to extreme events.

101. Moreover, according to estimates by BPI, banks already hold $138 billion in CET1 capital for operational risk under the current stress tests.[183] The new proposed expanded risk-based approach will require banks to hold an additional $172 billion in CET1 capital for operational risk, more than doubling the capital that banks already hold.[184] The additional capital for operational risk is also not commensurate with the loss ratios for operational risk. A comparison by PwC of the total loss ratios for credit risk versus operational risk shows that the maximum two-year average loss rates for credit risk are 69% versus 48% for operational risk, indicating that operational risk is capitalized substantially more relative to historic credit losses.[185] In other words, "banks would be required to hold operational risk capital for about double the maximum amount of loss ever experienced, whereas for credit risk it would be about 50% more than the maximum historical level of losses."[186]

102. Furthermore, operational risk losses do not always occur contemporaneously with credit and market losses. This is because the operational risk losses associated with an event (e.g., fraud, business disruptions, etc.[187]) could still occur years after the credit and market loss events.[188] For example, credit and market losses occurred during the 2007-2009 financial crisis on mortgage-backed securities, but fines and lawsuits associated with operational losses related to these securities did not occur until years after the financial crisis. There are also external events that cause operational losses that have no overlap with credit or market risks. For example, JPMorgan paid $75 million to settle a lawsuit alleging that the bank aided Jeffrey Epstein's sex trafficking and $290 million to Mr. Epstein's accusers.[189] Deutsche Bank also paid a $75 million settlement to Mr. Epstein's accusers.[190]

i.   Market Risk

103.   The Proposal increases the market risk aggregate RWA for Category I and II bank holding companies from $430 billion under the current U.S. advanced approach to $760 billion – i.e., a <u>*77% increase*</u>.[191] However, in part capital requirements for market risk are already embedded in other risk measures.

104.   In a talk on October 19, 2023, Federal Reserve Vice Chair for Supervision Michael S. Barr discussed that, in his view, conceptually that there is no "double-counting" because Basel sets a minimum ratio and then a buffer based on stress-testing is added on top of that.[192] Mr. Barr, however, agrees that there could be issues in calibrations in the two calculations. Below, I discuss some of the potential overlaps, as they relate to market risk, caused by the calibrations.

105.   In August 2012, the Agencies issued a final rule to address certain deficiencies of the 1996 market risk framework.[193] The 2012 rule (so called Basel II.5) added a stressed value-at-risk ("SVaR") measure to VaR, which was further enhanced during the Basel's Committee's FRTB in February 2015.[194] In January 2019, the Basel Committee published the amended framework for market risk requirements and the Proposal intends to modify the capital rule in a manner consistent with the Basel's FRTB.[195] The main issue with the stressed VaR (SVaR) was that it failed to pick up extreme tail events in the global crisis. However, the current Basel III Endgame Proposal in part overlaps with the already existing GMS component of the stress capital conservation buffer requirement through the new LH component.

106.   A Securities Industry and Financial Markets Association ("SIFMA") (2023) analysis[196] explains that the duplication arises because the trading and counterparty losses flow through both the stress capital buffer's numerator (via global market shock losses) and denominator (via market risk RWA), which would result in an overstatement of the market risk capital requirements given the underlying risk it is attempting to capture.[197] In addition, SIFMA also finds that the FRTB and the GMS stress testing frameworks and the design of these two frameworks "largely overlap" and the risk losses estimated by both frameworks

are generally comparable. It finds that this would result in the repetition of risks and a significant increase in capital requirements. SIFMA suggests that this overlap should be mitigated prior to the implementation of the Basel III Endgame package and those mitigations could include (a) removing the global market shock from the stress capital buffer because the market risk losses it was designed to measure are already captured by the FRTB; (b) redesigning the GMS to be reasonably plausible; and (c) setting capital requirements based on the larger of the FRTB and the GMS rather than the sum of the two components.[198]

107. The above is also consistent with arguments made by other market participants. For example, Hopper (2023) argues that the GMS should be redesigned to cover different risks than liquidity adjusted ES to avoid the overlap, especially the accentuated liquidity effects on capital requirements resulting from their inclusion in the stress test capital buffer.[199] He suggests that the GMS shock could be replaced by global event shocks like global supply chain disruptions or even the Ukraine-Russia conflict.

108. In another article, Hopper (2023) finds that the equity shock on the GMS is merely repeating the FRTB illiquidity assumptions and, by reducing the equity shock by a factor or 2 and credit default swap shocks by a factor of 10, would substantially reduce but not eliminate the overlap between the GMS and FRTB.[200, 201]

109. The Proposal also ignores that the banks are currently retrenching on market risk exposure. For example, Bank of America recently reported that its one-day VaR (an estimate of the most it could lose on any given day on its trading and other fair-value positions) "average[s] $77 million during the period, down 5% from second quarter and the lowest since Q1 2020."[202] Similarly, Goldman Sachs' average VaR was down 33% and JP Morgan's fell 24%.[203] Given the above, it is unclear why market risk capital requirements need to increase so drastically, further reducing liquidity, market making activity, and depth of the U.S. securities markets.

ii.   CVA Risk

110. Similar to market risk, the CVA risk is also already incorporated in other stress testing measures. Specifically, Comprehensive Capital Analysis and Review ("CCAR") adopted in November 2011, which includes the GMS includes losses due to changes in CVA.[204] Each

Federal Reserve Stress Test Results report publishes "Trading and Counterparty Losses", which include "mark-to-market and credit valuation adjustment (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities."[205] Thus, there is an overlap between the Proposal and the already existing risk mitigation measures for CVA risk.

C. Conclusion

111. One major conclusion that can be drawn from the Proposal is the continued reluctance of regulators to recognize offsets through imperfect correlations among the three major components of the aggregate capital requirement – i.e., credit risk, market risk, and operational risk. While it is often argued that, in a crisis, (a) all correlations converge to positive one and (b) market and credit risk are highly correlated, this extreme or risk-additive view may be challenged in at least one area: operational risk events that are to be covered by capital requirements can be due to either internal or external events. Many if not most external operational events are often one-off type events that happened many years ago and/or are very idiosyncratic. For example, related to issues stemming from the 2007-2009 Global Financial Crisis ("GFC"), banks have paid over $300 billion in fines through 2016 – i.e., fines were being paid over seven years following the end of the GFC.[206] Indeed, the distribution of many external operational loss events are distinctly skewed and largely unpredictable. In light of this, it would be appropriate for any final rule to acknowledge that the three major risks are not simply additive risk "silos" and make some attempt to recognize this in calculating the overall capital requirements of individual banks.

Endnotes

[1] "[Regulatory Capital Rule: Large Banking Organizations and Banking Organizations With Significant Trading Activity](#)," Federal Register / Vol. 88, No. 179/Monday, September 18, 2023 / Proposed Rules (the "Proposal"), at 64028, available [https://www.govinfo.gov/content/pkg/FR-2023-09-18/pdf/2023-19200.pdf](#) (last accessed January 2, 2024).

[2] *See* Proposal, at Note 11 ("In 2019, the agencies adopted rules establishing four categories of capital standards for U.S. banking organizations with $100 billion or more in total assets and foreign banking organizations with $100 billion or more in combined U.S. assets. Under this framework, **Category I** capital standards apply to U.S. global systemically important bank holding companies and their depository institution subsidiaries. **Category II** capital standards apply to banking organizations with at least $700 billion in total consolidated assets or at least $75 billion in cross-jurisdictional activity and their depository institution subsidiaries. **Category III** capital standards apply to banking organizations with total consolidated assets of at least $250 billion or at least $75 billion in weighted short-term wholesale funding, nonbank assets, or off-balance sheet exposure and their depository institution subsidiaries. **Category IV** capital standards apply to banking organizations with total consolidated assets of at least $100 billion that do not meet the thresholds for a higher category and their depository institution subsidiaries."). (emphasis added)

[3] Proposal, at 64032.

[4] "[Regulatory Capital Rule: Risk-Based Capital Surcharges for Global Systemically Important Bank Holding Companies; Systemic Risk Report (FR Y–15](#))," Federal Register / Vol. 88, No. 169 / Friday, September 1, 2023 / Proposed Rules ("G-SIB Surcharge Proposal"), available at [https://www.govinfo.gov/content/pkg/FR-2023-09-01/pdf/2023-16896.pdf](#) (last accessed January 2, 2024).

[5] Proposal, at 64031-32.

[6] For purposes of determining the bank's capital-to-risk ratio, assets are weighted by each asset's level of risk. Without risk weighting, the same amount of capital must be held regardless of whether the asset is safe (e.g., Treasuries) or risky (e.g., mortgage-backed securities). With risk weighting, safer assets have a lower risk weight and riskier assets have a higher risk weight.

[7] Proposal, at 64168. The Proposal also states that "In general, the expanded risk-based framework would produce *greater overall risk-weighted assets* than either of the current approaches. The overall increase would lead to the expanded risk-based framework becoming the binding risk-based approach for most large banking organizations." *See* Proposal, at 64168. (emphasis added)

[8] In the above, capital is measured as common equity tier one ("CET1") capital. CET1 is the highest quality of regulatory capital as this is the capital that absorbs losses immediately when they occur. CET1 consists of common shares and stock surpluses from the issuance of common shares and retained earnings. Bank for International Settlements, "Definition of Capital in Basel III – Executive Summary," at 1, available at [https://www.bis.org/fsi/fsisummaries/defcap_b3.pdf](#) (last accessed January 2, 2024).

[9] *See, e.g.,* Joint Press Release of the Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency, "Agencies Request Comment on Proposed Rules to Strengthen Capital Requirements for Large Banks," July 27, 2023 ("The proposed improvements to strengthen the banking system are estimated to result in an aggregate 16 percent increase in common equity tier 1 capital requirements for affected bank holding companies, with the increase principally affecting the largest and most complex banks.").

[10] Sources: Federal Financial Institutions Examination Council, Large Holding Companies, *see* https://www.ffiec.gov/npw/Institution/TopHoldings; Federal Reserve, Large Bank Capital Requirements, *see* https://www.federalreserve.gov/publications/files/large-bank-capital-requirements-20230727.pdf; First Citizens, *see* https://s201.q4cdn.com/792406973/files/doc_downloads/Pillar-3-Form/2023/11/3q23-pillar-3-disclosure-final.pdf for minimum CET1 requirement; New York Community Bancorp Inc. Form 10-Q, September 30, 2023, *see* https://s22.q4cdn.com/437978920/files/doc_financials/2023/q3/NYCB-3Q-2023-10-Q.pdf for minimum CET1 requirement; Synchrony Financial, Form 10-Q, September 30, 2023, *see* https://investors.synchrony.com/filings-regulatory/sec-filings/all-sec-filings/content/0001601712-23-000274/0001601712-23-000274.pdf for minimum CET1 capital requirement.

[11] The Proposal mentions several quantifications of the increase in risk-weighted assets overall and as it relates to the economic impact on lending and trading activity. *See* Proposal, at 64168 ("In aggregate *across holding companies subject to Category I, II, III or IV standards*, the agencies estimate that the proposal would *increase total risk-weighted assets by 20 percent* relative to the currently binding measure of risk-weighted assets. Across depository institutions subject to Category I, II, III or IV standards, the agencies estimate that the proposal would increase risk-weighted assets by 9 percent."); Proposal, at 64169 ("While the proposal would not generally change the minimum required capital ratios, the amount of required capital would change due to changes to the calculation of risk-weighted assets. As a result of the increases in risk-weighted assets, the agencies estimate that the proposal would increase the binding common equity tier 1 capital requirement, including minimums and buffers, of large holding companies by around 16 percent."); Proposal*,* at 64169 ("The agencies estimate that *risk-weighted assets (RWA) associated with banking organizations' lending activities would increase by $380 billion for holding companies subject to Category I, II, III, or IV capital standards due to the proposal*."); and Proposal, at 64170 ("Based on the year-end of 2021 data and QIS reports of large banking organizations, the agencies estimate 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*. Consequently, the increase in RWA associated with trading activity would raise required capital ratios by as much as roughly 67 basis points across large holding companies subject to Category I, II, III, or IV capital standards.") (emphases added).

[12] Proposal, at 64167.

[13] For example, according to Covas (October 2023), the Proposal does not describe the components of the new charge of $1.95 trillion in RWA for operational risk. *See* Covas, F., "The Trillion Dollar Omission in Vice Chair Barr's Cost Analysis," *Bank Policy Institute*, October 12, 2023 and Proposal, at 64168 (Current U.S. Standardized Operational Risk is $0. Proposed estimate is $1,400 billion for Category I and II plus $550 billion for Category III and IV or a total of $1,950 billion). The revisions in the operational risk charge for Category I to IV banks affects lending activities and trading activities. *First,* the Proposal estimates an increase in RWA associated with lending activities of $380 billion. *See* Proposal, at 64169. Given that the credit risk RWA *decreases* by $400 million, s*ee* Proposal, at 64168 (Current U.S. Standardized Credit Risk equals $6,900 billion for Category I and II plus $4,000 billion for Category III and IV or a total of $10,900 billion. Proposed estimate equals $6,700 billion for Category I and II plus $3,800 billion for Category III and IV or a total of $10,500. The difference is -$400 = $10,500 – $10,900), this implies that the operational risk charge associated with lending activities of $780 million. *Second*, the Proposal estimates an increase in RWA associated with trading activities, which is comprised of market risk RWA, CVA risk RWA, and operational risk RWA, of $880 million. *See* Proposal, at 64170. To estimate the operational risk component associated with trading activities from this $880 million increase in RWA related to trading activities one has to subtract (a) the Proposal's estimated increase in the market risk component of $420 billion, s*ee* Proposal, at 64168 (Current U.S. Standardized

Market Risk equals $430 billion for Category I and II plus $130 billion for Category III and IV or a total of $560 billion. Proposed estimate equals $760 billion for Category I and II plus $220 billion for Category III and IV or a total of $980 billion. The difference is $420=$980-$560), and (b) the Proposal's new charge for CVA risk of $288 billion. *See* Proposal, at 64168 (Current U.S. Standardized CVA Risk is $0. Proposed estimate is $260 billion for Category I and II plus $28 billion for Category III and IV or a total of $288 billion.). This results in an implied operational risk charge associated with trading activities of $172 billion. Combining the operational risk charge for lending activities of $780 billion and trading activities of $172 billion would only result in total operational risk charges of $952 billion. This figure is approximately $1.0 trillion less than the new charge of $1.950 trillion in RWA for operational risk reported in the Proposal. *See* Proposal, at 64168 (Current U.S. Standardized Operational Risk is $0. Proposed estimate is $1,400 billion for Category I and II plus $550 billion for Category III and IV or a total of $1,950 billion.). As a result, the Proposal's economic impact analysis appears to exclude approximately $1 trillion in RWA for operational risk that has not been allocated to either lending or trading activities.

[14] Proposal, at 64170-71.

[15] Proposal, at 64167.

[16] Proposal, at 64167.

[17] Board of Governors of the Federal Reserve System "Federal Reserve Board launches data collection to gather more information from the banks affected by the large bank capital proposal it announced earlier this year," October 20, 2023, available at https://www.federalreserve.gov/newsevents/pressreleases/bcreg20231020b.htm (last accessed January 2, 2024.)

[18] Bank of England, "CP16/22 – Implementation of the Basel 3.1 standards," November 30, 2022.

[19] Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), at 15.

[20] Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), at Note 25.

[21] Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), Table 4, at 17.

[22] Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), at 18.

[23] Proposal, at 64169 ("While the proposal would not generally change the minimum required capital ratios, the amount of required capital would change due to changes to the calculation of risk-weighted assets. As a result of the increases in risk-weighted assets, the agencies estimate that the proposal would increase the binding common equity tier 1 capital requirement, including minimums and buffers, of large holding companies by around 16 percent.").

[24] Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), Table 5, at 20.

[25] Proposal, at 64168 (Current U.S. Standardized is $11,600 billion (= $7,400 billion for Category I and II + $4,200 billion for Category III and IV) increasing to $13,800 billion (= $9,200 billion for Category I and II + $4,600 billion for Category III and IV) under the Proposal. An increase of $2,200 billion in aggregate RWA (= $13,800 billion – $11,600 billion) results in a 19% ($2,200 billion / $11,600 billion) increase. *See also*, Proposal, at 64168 ("In aggregate across holding companies subject to Category I, II, III or IV standards, the agencies estimate that the proposal would increase total risk-weighted assets by 20 percent relative to the currently binding measure of risk-weighted assets. Across depository institutions subject to Category I, II, III or IV standards, the agencies estimate that the proposal would increase risk-weighted assets by 9 percent.").

[26] A major reason for this is that, unlike the U.S. stress test, outcomes are not directly reflected in increases in the 2.5% conservation buffer but are viewed as having to be reflected in revisions to banks internal risk controls and management (i.e., so called pillar 2 adjustments).

[27] Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), Table 6, at 22.

[28] The BoE used the National Institute Global Econometric Model ("NIGEM"). Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), Table 7, at 26.

[29] In other words, the BoE's approached focused on gains and losses to the gross domestic product ("GDP") rather than social welfare. *See* Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), at 24.

[30] Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), at 24.

[31] The model used to measure costs was also the NIGEM. Bank of England CP16/22, Appendix 7: Aggregated cost benefit analysis (CBA), Table 7, at 26.

[32] Proposal, at 64169-70.

[33] Basel Committee on Banking Supervision, "Global systemically important banks: assessment methodology and the additional loss absorbency requirement," November 2022, available at https://www.bis.org/bcbs/gsib/index.htm (last accessed January 2, 2024).

[34] Top 5 U.S. Banks include Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, and Wells Fargo. *See* data from https://www.bis.org/bcbs/gsib/ (last accessed January 2, 2024).

[35] *See* FDIC, Bank Failures in Brief – Summary 2001 through 2023, available at https://www.fdic.gov/bank/historical/bank/ (last accessed January 2, 2024) showing the peak of 157 bank failures in 2010 compared to only 5 in 2023 (0 in 2021, 2022). A number of recent failed banks, such as SVB, Regions, and Signature are different from other U.S. Banks, as they were unusually dependent on uninsured deposits, which are sensitive to bank runs. In particular, the problem with these banks was insufficient liquidity to meet uninsured depositor runs rather than insufficient capital to meet credit losses.

[36] Proposal, at 64168.

[37] The proposed revisions also increase banks' costs in other ways. For example, some of a bank's long-term debt may not qualify for income standards on U.S. regional banks' bail-in capacity. *See, e.g.,* "Ally Says Only a Third of Long-Term Debt Qualifies for Fed Bail-In Rule," *Risk.net*, October 27, 2023.

[38] The current high interest rate environment also increases the costs of issuing long-term debt to cover capital requirements. In addition, the Proposal also underestimates the long-term debt issuance needs of banks because the target amounts have to be held at both the bank holding company and bank level, as the liquidity coverage ratio inhibits downstreaming from the bank holding company level to the bank level. *See e.g.,* Anderson, H., Covas, F., and Rosa, F., "The Long-Term Debt Shortfall and the Liquidity Coverage Ratio," *Bank Policy Institute*, October 23, 2023.

[39] Birn, M., de Bandt, O., Firestone, S., Girault, M., Hancock, D., Krogh, T., Mio, H., Morgan, D., Palvia, A., Scalone, V., Straughan, M., Uluc, A., von Hafften, A., and Warusawitharana, M., 2020, "The Costs and Benefits of Bank Capital – A Review of the Literature," *Journal of Risk and Financial Management,* Vol. 13, 1-26, at 4-5 (Table 1 and Note 4 ("Measured as the marginal effect per unit of additional capital as a percentage of RWAs.").

[40] Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovski, L., and Tong, H., 2016, "Benefits and Costs of Bank Capital," IMF Staff Discussion Note SDN/16/04, at 22.

[41] Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovski, L., and Tong, H., 2016, "Benefits and Costs of Bank Capital," IMF Staff Discussion Note SDN/16/04, at 23.

[42] Martynova, N., 2015, "Effect of Bank Capital Requirements on Economic Growth: A Survey," DeNederlandscheBank Working Paper No. 467, at 1.

[43] Saunders, A., Spina, A., Steffen, S., and Streitz, D., "Corporate Loan Spreads and Economic Activity," SSRN Working Paper, August 15, 2022.

[44] The Proposal cites irrelevant studies to support their statement that "[w]hile this increase in requirements could lead to a modest reduction in bank lending, with possible implications for economic growth, the benefits of making the financial system more resilient to stresses that could otherwise impair growth are greater." *See* Proposal, at 64169. The Agencies cite: (a) Macroeconomic Assessment Group, 2010, "Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements," Final Report; (b) Brooke, M., Bush, O., Edwards, R., Ellis, J., Francis, B., Harimohan, R., Neiss, K., and Siegert, C., 2015, "Measuring the macroeconomic costs and benefits of higher U.K. bank capital requirements," *Bank of England Financial Stability Paper 35*; (c) Slovik, P. and Boris C., 2011, "Macroeconomic Impact of Basel III", *OECD Economics Department Working Papers 844*; (d) Firestone, S., Lorenc, A., and Ranish B., 2019, "An Empirical Economic Assessment of the Costs and Benefits of Bank Capital In the United States," *Research Gate*. *See* Proposal, at Note 470. The first paper has minimal relevance to the US as it is based on a median across 97 models provided by each Basel country of which only 4 were provided by the US and 7 on the US by the IMF. Most models were Euro area models, but also included Brazil, India, China, Mexico, and Japan. The vast array of countries on the list applies different approaches and few conclusions about the median effect on the U.S. GDP can be drawn one way or another. The second paper focuses on the U.K. bank system, which is much more concentrated than the one in the U.S. and cannot be comparable. The third paper finds that the effect of Basel III implementation on GDP growth is *negative* 0.05-0.15 percent per year, the opposite of what the Proposal tried to claim. Finally, the fourth paper states that the results have a "high degree of uncertainty and latitude in specifying important study parameters that have a significant influence on the resulting optimal capital level."

[45] Proposal, at 64048.

[46] Proposal, at 64048.

[47] Basel Committee on Banking Supervision, "High-level summary of Basel III reforms," December 2017, at 4.

[48] *See, e.g.,* Goodman, L., and Zhu, J., "Bank Capital Notice of Proposed Rulemaking," *Urban Institute*, September 2023, available at https://www.urban.org/sites/default/files/2023-09/Bank%20Capital%20Notice%20of%20Proposed%20Rulemaking.pdf (last accessed January 2, 2024).

[49] Calem, P., and Covas, F., "The Basel Proposal: What it Means for Mortgage Lending," September 30, 2023.

[50] Proposal, at 64048, Table 5.

[51] Goodman, L. and Zhu, J., "Bank Capital notice of Proposed Rulemaking: A Look at the Provisions Affecting Mortgage Loans in Bank Portfolios," September 2023 ("Among other provisions, this proposal would make significant changes in the capital requirements for single-family residential mortgages held in bank portfolios. In particular, the capital charges rise significantly for loans with high loan-to-value (LTV) ratios. Our analysis suggests the proposed capital levels exceed what would be needed even to protect banks from a repeat of the Great Recession. Moreover, the changes—contrary to the intentions of

the Community Reinvestment Act (CRA)—would disproportionately disadvantage low- and moderate-income (LMI) borrowers and communities, as well as Black and Hispanic borrowers.").

[52] Calem, P., and Covas, F., "The Basel Proposal: What it Means for Mortgage Lending," *Bank Policy Institute,* September 30, 2023, at 4.

[53] Calem, P., and Covas, F., "The Basel Proposal: What it Means for Mortgage Lending," *Bank Policy Institute,* September 30, 2023, at 7.

[54] Financial Stability Oversight Council, "Annual Report 2023," December 14, 2023, at 24-25.

[55] Financial Stability Oversight Council, "Annual Report 2023," December 14, 2023, at 26.

[56] "Borrowers Turned to Nonbank Lenders for Mortgages – And It's Costing Them," *Bloomberg News*, December 18, 2023.

[57] "Borrowers Turned to Nonbank Lenders for Mortgages – And It's Costing Them," *Bloomberg News*, December 18, 2023.

[58] "Bank chiefs attack US plan for tougher capital rules," *Financial Times*, December 1, 2023.

[59] Proposal, at 64052.

[60] Basel Committee on Banking Supervision, "CRE: Calculation of RWA for credit risk CRE 20 Standardised approach: individual exposures," Version effective as of 01 Jan 2023, available at https://www.bis.org/basel_framework/chapter/CRE/20.htm (last accessed January 2, 2024).

[61] Calem, P. and Covas, 2023, "The Basel Proposal: What It Means for Retail Lending," *Bank Policy Institute*, November 8, 2023 available at https://bpi.com/the-basel-proposal-what-it-means-for-retail-lending/ (last accessed January 2, 2024).

[62] Calem, P. and Covas, 2023, "The Basel Proposal: What It Means for Retail Lending," *Bank Policy Institute*, November 8, 2023 available at https://bpi.com/the-basel-proposal-what-it-means-for-retail-lending/ (last accessed January 2, 2024).

[63] Experian, "State of the Automotive Finance Market, Q2 2023," August 31, 2023, available at https://www.experian.com/content/dam/noindex/na/us/automotive/finance-trends/2023/2023-q2-state-auto-finance-market.pdf (last accessed January 2, 2024).

[64] Proposal, at 64168, Table 11.

[65] Proposal, at 64170.

[66] Duffie, D., "Resilience Redux in the US Treasury Market," Working Paper, August 13, 2023, at 4, available at https://www.kansascityfed.org/Jackson%20Hole/documents/9726/JH_Paper_Duffie.pdf (last accessed January 2, 2024).

[67] "The Federal Reserve Should Revise the US GSIB Surcharge Methodology to Reflect Real Risks and Support the Economy," *SIFMA*, October 11, 2023.

[68] Proposal, at 64030.

[69] *See*, *e.g.,* European Parliament Briefing, "Upgrading the Basel standards: from Basel III to Basel IV?", October 2017, available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/587361/IPOL_BRI(2016)587361_EN.pdf (last accessed January 2, 2024).

[70] *See*, *e.g.*, Wagster, J., "Impact of the 1988 Basle Accord on International Banks," *The Journal of Finance*, Vol. LI, No, 4, September 1996.

[71] History of the Basel Committee, available at https://www.bis.org/bcbs/history.htm (last accessed January 2, 2024).

[72] Basel Committee on Banking Supervision, "CRE: Calculation of RWA for credit risk," 2023, at 20.45; Bank of England, "CP16/22 – Implementation of the Basel 3.1 standards: Credit risk – standardised approach, available at https://www.bankofengland.co.uk/prudential-regulation/publication/2022/november/implementation-of-the-basel-3-1-standards/credit-risk-standardised-approach (stating "A corporate entity would not need to have securities outstanding on a recognised exchange to be assessed as IG.) (last accessed January 2, 2024); In E.U., for unrated corporates with a probability of default (PD) of less than 0.5%, the standardized risk weight is set at 65% rather than 100% for a transition period. *See* "How the EU's Banking Package 2021 has started the Basel 4 endgame," *EY*, November 15, 2021, available at https://www.ey.com/en_us/banking-capital-markets-risk-regulatory-transformation/how-the-eu-s-banking-package-2021-has-started-the-basel-4-endgame (last accessed January 2, 2024).

[73] Office of the Superintendent of Financial Institutions, "Capital Adequacy Requirements (CAR) – Chapter 4 – Credit Risk – Standardized Approach," February 2023/April 2023, available at https://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/CAR22_chpt4.aspx#4.1.7 (last accessed January 2, 2024).

[74] *See* Covas, F. and Stepankova, B., "Consistency in Risk Weights for Corporate Exposures Under the Standardized Approach," *Bank Policy Institute Staff Working Paper* 2022-1, January 2022.

[75] Bank of England, "Stress testing the UK banking system: Guidance on the 2022 stress test for participants," available at https://www.bankofengland.co.uk/stress-testing/2022/stress-testing-guidance-2022-for-participants (last accessed January 2, 2024) *See also* Bank of England, "Stress Testing," available at https://www.bankofengland.co.uk/stress-testing (last accessed January 2, 2024).

[76] Bank of England, "The Financial Policy Committee's Approach to Setting the Countercyclical Capital Buffer," July 12, 2023, available at https://www.bankofengland.co.uk/paper/2023/ps/the-financial-policy-committees-approach-to-setting-the-countercyclical-capital-buffer (last accessed January 2, 2024).

[77] Proposal, at 64082-83.

[78] Bank of England, "CP16/22 – Implementation of the Basel 3.1 standards: Operational risk," November 30, 2022, available at https://www.bankofengland.co.uk/prudential-regulation/publication/2022/november/implementation-of-the-basel-3-1-standards/operational-risk (last accessed January 2, 2024); E&Y, "Implementation of the Basel 3 Reforms: The EU is adjusting the Basel Proposals to reflect specific local needs," November 15, 2021, available at https://www.ey.com/en_us/banking-capital-markets-risk-regulatory-transformation/how-the-eu-s-banking-package-2021-has-started-the-basel-4-endgame (last accessed January 2, 2024).

[79] *See, e.g.*, Chakraborty, S. and Ray, T., 2006, "Bank-Based Versus Market-Based Financial Systems: A Growth-Theoretic Analysis," *Journal of Monetary Economics,* Vol. 53, 329-350.

[80] *See e.g.*, ISLA, "Prudential Banking Rules: Basel III Endgame & the Buy Side," October 30, 2023, at 5, available at https://www.islaemea.org/thought-leadership/prudential-banking-rules-basel-iii-endgame-the-buyside/ (last accessed January 2, 2024).

[81] Proposal, at 64034.

[82] Proposal, at 64034.

[83] Proposal, at 64059 & 64063.

[84] Proposal, at 64063.

[85] Financial Stability Board, "Transforming Shadow Banking into Resilient Market-based Finance," November 12, 2015, at 9-10.

[86] European Banking Authority, "Policy Advice on the Basel III Reforms on Securities Financing Transactions (SFTs)," August 2, 2019.

[87] "The Federal Reserve Should Remove 'Gold Plating' in the Basel 3 Endgame," *SIFMA*, November 8, 2023.

[88] Proposal, at 64167.

[89] *See, e.g.,* charts in Fleckenstein, et al. (2021) that show extreme cyclicality of nonbank lending versus bank lending. *See* Fleckenstein, Q., Gopal, M., Gutierrez, G., and Hillenbrand, S., 2021, "Nonbank Lending and Credit Cyclicality," available at https://ssrn.com/abstract=3629232, (last accessed January 2, 2024).

[90] FDIC, "Selected Sections of the Dodd-Frank Wall Street Reform and Consumer Protection Act," available at https://www.fdic.gov/regulations/reform/dfa_selections.html#1 (last accessed January 2, 2024).

[91] Federal Register, "Total Loss-Absorbing Capacity, Long-Term Debt, and Clean Holding Company Requirements for Systemically Important U.S. Bank Holding Companies and Intermediate Holding Companies of Systemically Important Foreign Banking Organizations: Eligible Retained Income," a rule by the Federal Reserve System on March 26, 2020.

[92] Federal Register, "Total Loss-Absorbing Capacity, Long-Term Debt, and Clean Holding Company Requirements for Systemically Important U.S. Bank Holding Companies and Intermediate Holding Companies of Systemically Important Foreign Banking Organizations: Eligible Retained Income," a rule by the Federal Reserve System on March 26, 2020.

[93] Federal Register, "Total Loss-Absorbing Capacity, Long-Term Debt, and Clean Holding Company Requirements for Systemically Important U.S. Bank Holding Companies and Intermediate Holding Companies of Systemically Important Foreign Banking Organizations: Eligible Retained Income," a rule by the Federal Reserve System on March 26, 2020.

[94] *See, e.g.*, Bank for International Settlements, 2015, "Assessing the Economic Costs and Benefits of TLAC Implementation;" Afonso, G., Santos, J., and Traina, J., 2014, "Do 'Too-Big-to-Fail' Banks Taken On More Risk?" Federal Reserve Bank of New York Economic Policy Review; Marques, L., Correa, R., and Sapriza, H., 2013, "International Evidence on Government Support and Risk Taking in the Banking Sector," International Monetary Fund Working Paper No. 13/94.

[95] Marques, L., Correa, R., and Sapriza, H., 2013, "International Evidence on Government Support and Risk Taking in the Banking Sector," International Monetary Fund Working Paper No. 13/94, at 11.

[96] Proposal, at 64169.

[97] Proposal, at Note 469.

[98] Proposal, at 64169.

[99] Basel Committee on Banking Supervision, "An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements," August 2010, at 7 ("Importantly, the aim of the report is *not* to provide a specific calibration of the capital and liquidity requirements. Rather than gauging the optimal level of capital and liquidity requirements, the analysis aims at collecting and synthesizing quantitative evidence regarding the relative magnitude of the macroeconomic benefits and costs" (emphasis in original)); and Van den Huevel, S., 2022, "The Welfare Effects of Bank Liquidity and Capital Requirements," Finance and Economics Discussion Series 2022-072, Board of Governors of the Federal Reserve System (This paper does not provide an estimate of optimal capital).

[100] Miles, D., Yang, J., and Marcheggiano, G., 2013, "Optimal Bank Capital," *The Economic Journal,* Vol. 123-1-37, at 26 ("In calibrating the model we need to be clear about what we mean by capital and RWAs. We have consistently said that capital needs to be pure, loss-absorbing capital. We think of this as common equity. So the regulatory concept nearest to it would seem to be the Basel III concept of CET1."); and Elenev, V., Landvoigt, T., and Van Nieuwerburgh, S., 2021, "A Macroeconomic Model with Financially Constrained Producers and Intermediaries," *Econometrica,* Vol. 89, 1361-1418 (The definition of capital in this paper appears to be closest to CET1 capital. This is also consistent with the conclusion reached by PwC. *See* PwC, "Basel III Endgame: The next generation of capital requirements, Executive Summary – Part 1: Evaluating Optimal Capital Levels," April 2023, at Note 212 ("… excluding Elenev (2021), due to it appearing as an outlier and presenting an optimal estimate for a CET1 ratio rather than a tier 1 ratio.")).

[101] Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovski, L., and Tong, H., 2016, "Benefits and Costs of Bank Capital," IMGF Staff Discussion Note SDN/16/04, at 20 ("The figure suggests that a capital ratio of 15 percent in 2007 would have avoided the need for capital injection in almost 55 percent of cases in the United States and 75 percent of cases in Europe (based on sample of available data) while a capital ratio of 23 percent would have eliminated the need for injection in virtually all cases.").

[102] Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovski, L., and Tong, H., 2016, "Benefits and Costs of Bank Capital," IMGF Staff Discussion Note SDN/16/04, at 21 (Figure 8) (showing a total of 118 U.S. banks).

[103] Firestone, S., Lorenc, A., and Ranish, B., 2019, "An Empirical Economic Assessment of the Costs and Benefits of Bank Capital in the United States," Federal Reserve Bank of St. Louis REVIEW, 203-223, at 203-204 ("We find that the level of capital that maximizes the difference between total benefits and total costs ranges from just over 13 percent to 26 percent. … This implies that our estimated range for the benefits of additional capital remains positive until Tier 1 capital ratios reach 13 percent. For levels of capital between 13 percent and 26 percent, the shaded region overlaps the horizontal axis. This overlap implies that our estimated benefits of additional capital for this range may be positive or negative, depending on the modeling assumptions used.").

[104] Begenau, J. and Landvoigt, T., 2022, "Financial Regulation in a Quantitative Model of the Modern Banking System," *Review of Economic Studies,* Vol. 89, 1748-1784, at 1748 ("Calibrating the model to data on financial institutions in the US, the optimal capital requirement is around 16%.").

[105] PwC, April 2023, "Basel III Endgame: The next generation of capital requirements - Part 1: Evaluating Optimal Capital Levels," April 2023, at 4.

[106] The six papers are as follows: Basel Committee on Banking Supervision, "An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements," August 2010 (referred to by PwC as "BCBS (2010)"); Brooke, M., Bush, O., Edwards, R., Ellis, J., Francis, B., Harimohan, R., Neiss, K., and Siegert, C., 2015, "Measuring the Macroeconomic Costs and Benefits of Higher U.K. Bank Capital Requirements," Bank of England Financial Stability Paper No. 35 (referred to by PwC as "Bank

of England (2015)"); Firestone, S., Lorenc, A., and Ranish, B., 2019, "An Empirical Economic Assessment of the Costs and Benefits of Bank Capital in the United States," Federal Reserve Bank of St. Louis Review, 203-230 (referred to by PwC as "Federal Reserve Bank of St. Louis (2019)"); Elenev, V., Landvoigt, T., and Van Nieuwerburgh, S., 2021, "A Macroeconomic Model with Financially Constrained Producers and Intermediaries," *Econometrica,* Vol. 89, 1361-1418; Begenau, J., 2020, "Capital Requirements, Risk Choice, and Liquidity Provision in a Business-Cycle Model," *Journal of Financial Economics,* Vol. 136, 355-378; and Begenau, J. and Landvoigt, T., 2022, "Financial Regulation in a Quantitative Model of the Modern Banking System," *Review of Economic Studies,* Vol. 89, 1748-1784.

[107] PwC, 2023, "Basel III Endgame: The next generation of capital requirements, Executive Summary – Part 1: Evaluating Optimal Capital Levels," at 75-76 and Table 19.

[108] PwC, 2023, "Basel III Endgame: The next generation of capital requirements, Executive Summary – Part 1: Evaluating Optimal Capital Levels," at 75 and Table 19.

[109] *See* Proposal, at 64082. The Proposal also identifies seven event types: Internal fraud; External fraud; Employment practices and workplace safety; Clients, products, and business practices (including fiduciary and suitability requirements); Damage to physical assets; Business disruption and system failures; and Execution, delivery and process management. *See* Proposal, at 64087.

[110] Proposal, at 64083.

[111] Proposal, at 64083.

[112] Proposal, at 64083.

[113] "O.R.X. Membership," https://orx.org/membership (last accessed January 2, 2024).

[114] "Basel III and standardised approaches to capital: Analysis of ORX global banking data in response to regulatory reforms," O.R.X., at 9.

[115] "Basel III and standardised approaches to capital: Analysis of ORX global banking data in response to regulatory reforms," O.R.X., at 9.

[116] Technically the Business Indicator Component would be a function of the Business Indicator multiplied by a rate ranging from 12% to 18% depending on the business component. *See* Proposal, at 64085-86.

[117] Proposal, at 64083.

[118] Proposal, at 64084.

[119] Proposal, at 64083.

[120] Proposal, at 64083.

[121] Basel Committee on Banking Supervision, "Operational risk – Revisions to the simpler approaches," October 2014, at 16. It is my understanding that BCBS proposed a solution, which it never adopted.

[122] Interest, leases, and dividend component is capped and cannot exceed 2.25% of interest earning assets. The services component that is not capped.

[123] "US Banks: Bigger is Still Better for Now," *Reuters*, October 13, 2023.

[124] Calem, P., and Covas, F., "The Basel Proposal: What it Means for Mortgage Lending," *Bank Policy Institute*, September 30, 2023, at 4.

[125] Basel Committee on Banking Supervision, "OPE Calculation of RWA for operational risk OPE25 Standardised approach," December 15, 2019, at 4.

[126] Basel Committee on Banking Supervision, "OPE Calculation of RWA for operational risk OPE25 Standardised approach," December 15, 2019, at 1.

[127] "Basel III and standardised approaches to capital: Analysis of ORX global banking data in response to regulatory reforms," O.R.X., at 6-8.

[128] Proposal, at 64086.

[129] Proposal, at 64086.

[130] Proposal, at 64086-87. The Proposal also notes that the "15" multiplier is consistent with the Basel III reforms.

[131] "Basel III and standardised approaches to capital: Analysis of ORX global banking data in response to regulatory reforms," O.R.X., at 11.

[132] Proposal, at 64087.

[133] Proposal, at 64086.

[134] Proposal, at 64086 and Note 193.

[135] Curti, F. and Migueis, M., 2023, "The Information Value of Past Losses in Operational Risk," Finance and Economic Discussion Series 2023-003, Washington: Board of Governors of the Federal Reserve System, at 2.

[136] Curti, F. and Migueis, M., 2023, "The Information Value of Past Losses in Operational Risk," Finance and Economic Discussion Series 2023-003, Washington: Board of Governors of the Federal Reserve System, at 3.7 (p. 32). *See also* Table 8 Panel B ("[i]n addition to quarter fixed effects, regressions in Table 8 Panel B include firm fixed effects as control variables. The inclusion of firm fixed effects reduces the explanatory power of historical loss metrics. Lagged average loss severity is no longer statistically significant and the coefficient of lagged average total losses decreases in magnitude meaningfully."). Firm fixed effects would be appropriate in a panel regression of this sort. Separately, the paper is still a working paper, which means it has not passed the publication/peer review test, which might likely bring up the absence of controlling for fixed effects in the Base case scenario.

[137] *See, e.g.,* Rosenberg, J. and Schuermann, T., "A General Approach to Integrated Risk Management with Skewed, Fat-Tailed Risks," Federal Reserve Bank of New York Staff Report no. 185, May 2004, at 26 (finding that the operational risk distribution is different from the credit and market risks distribution and that operational risk exposure is exposed to extreme events).

[138] Sands, P., Liao, G. and Ma, Y., 2016, "Rethinking Operational Risk Capital Requirements," M-RCGB Associate Working Paper Series No. 68, at 16 ("Some (eg Curti and Migueis, 2016) have claimed to demonstrate that 'past losses are predictive of future exposure.' However, we think this analysis is flawed, at least when applied to determining operational RWA. While past losses are predictive for the more frequently recurring operational risk types, this does not appear to hold for the more extreme events that dominate overall losses and thus drive the determination of operational RWA.").

[139] Proposal, at 64091.

[140] Proposal, at 64092-93.

[141] Proposal, at 64142.

[142] Proposal, at Note 405.

[143] Proposal, at 64142 & 64144.

[144] Proposal, at 64144.

[145] Proposal, at 64269-70.

[146] The problem arises even if the bank has good risk management practices, like having a perfectly hedged portfolio. The test compares, for example, the P&L generated by the Risk Engine software, a software system used by banks to measure market risk, to the trading desk P&L. These P&Ls should be the same if Risk Engine uses the same pricing models and data as the trading desk. However, Risk Engine does not always use the same pricing models or data as the trading desk. This mismatch in pricing models or data would result in differences between the two P&Ls. These differences would still be present even if the bank has a perfectly hedged portfolio. The result of these differences is that the P&Ls could look like they have low correlation. Since the traffic light test is designed to measure the correlation between the two P&Ls, a low correlation would indicate that the risk models are inaccurate predictors of the desk models, which would result in the bank failing the PLA test even though its risk management is very good.

[147] *See also*, the discussion of these tests in "The New Profit and Loss Attribution Tests: Not Ready for Prime Time," *Bank Policy Institute*, December 14, 2023, available at https://bpi.com/the-new-profit-and-loss-attribution-tests-not-ready-for-prime-time/ (last accessed January 2, 2024).

[148] Proposal, at 64269-70.

[149] The PLA test is also highly sensitive to data errors, which can result in banks moving from the internal models approach to the standardized approach. These errors may show up in the operational risk capital measure as well, since any operating costs relating to such data errors will be reflected in the internal loss multiplier of the bank.

[150] There are also issues with the K-S test for use as a PLA test metric. The K-S test assumes a comparison of continuous distributions. However, in practice, the distribution based on empirical data is far from continuous and the shape of that empirical distribution is sensitive to data errors. *See* Feigelson, E, and Babu, G.J., "Beware the Kolmogorov-Smirnov test!" Center for Astrostatistics, Penn State University, available at https://asaip.psu.edu/articles/beware-the-kolmogorov-smirnov-test/ (last accessed January 2, 2024).

[151] Proposal, at 64092.

[152] Proposal, at Note 229 and Figure 2.

[153] Proposal, at 64120.

[154] Proposal, at 64113.

[155] Proposal, at 64113.

[156] Proposal, at 64113.

[157] Proposal, at 64113.

[158] It appears that this represents the product of (a) a daily stressed volatility, (b) sqrt(T), and (c) 2.338, where stressed volatility is estimated daily, T is the assumed liquidity horizon in days, and 2.338 is the multiplier for expected shortfall ("ES") at the 97.5% confidence level. *See* Proposal, at Note 335.

[159] In another example, the Agencies' calibrations for securitization requirements lacks justification. *See* Proposal, at 64076. A risk weight of 1,250% translates into a capital ratio of 100% (i.e., 8% x 12.5), or effectively a bank having to hold capital for a 100% loss rate. A 100% capital ratio means that for every $1 of the asset bank has to fund with $1 of capital. If one adds a shock related to securitizations in the global market shock equivalent to 80%, this would translate into a total loss rate of 180% (i.e., 8% x 12.5 + 80%).

[160] Proposal, at 64131.

[161] Proposal, at 64135.

[162] Proposal, at 64137-38.

[163] Proposal, at 64131 (*see* equation for $IMA_{G,A}$).

[164] Proposal, at 64131.

[165] In practice, the multiplier of 1.5 in the Proposal is likely less conservative than the multiplier of 3 in Basel II.5. In Basel II.5, the capital is 3x 99% VaR + 3x Stressed 99% VaR, while in the Proposal it is 1.5x ES at the 97.5% confidence level. If the assets are plain vanilla, then 97.5% ES is approximately the same as 99% Stressed VaR.

Basel II.5 uses a 10-day horizon and, depending on the number of daily errors, the multiplier can go as high as 4.

By comparison, in the Proposal, ES uses a base 10-day horizon but that horizon can be 20, 40, 60 days, or longer depending on the asset class. Moreover, this 10-day base horizon is scaled by the square root of the ratio of the asset's horizon to 10 days. For example, if the horizon is 20 days (e.g., small cap stocks), the 1.5x multiplier will be scaled $\sqrt{(20/10)}$ or 1.4. This results in a multiplier of 2.1 (= 1.4 x 1.5x). If the horizon is 40 days (e.g., investment grade credit), the 1.5x multiplier will be scaled by $\sqrt{(40/10)}$ or 2.0. This results in a multiplier of 3.0 (= 2.0 x 1.5x).

Assets that pass the test to get into the advanced approach are generally liquid and plain vanilla. Thus, those assets will get the shortest liquidity horizon. This means that the 1.5x multiplier may not be scaled at all or, if it does, it will likely be scaled between 2x and 3x.

[166] Proposal, at 64140.

[167] Proposal, at 64140.

[168] Wilkes, S., "As Banks Limit FRTB Model Use, Outputs Get More Volatile," *Risk.net*, October 26, 2023.

[169] Proposal, at 64031.

[170] Proposal, at 64031.

[171] Proposal, at 64031 ("… unwarranted variability across banking organizations in requirements for exposures with similar risks."). There are some academic articles that similarly find that banks tend to underreport self-reported risk measures. *See, e.g.,* Behn, et al, "The Limits of Model-Based Regulation," *The Journal of the American Finance Association*, *The Journal of Finance*, Vol. 77, No. 3, June 2022. It is worth noting that Behn, et al (2022) claims that banks underestimate probabilities of default ("PD"). However, the paper compares Basel PD estimates, which are supposed to measure average default risk over several business cycles to realized defaults between 2008 to 2012, a time of substantial economic stress; thus, missing the average behavior. The data is also analyzed for German banks rather than U.S. banks. The Proposal also cites Begley, et al, "The Strategic Underreporting of Bank Risk," *Oxford*

University Press on behalf of The Society for Financial Studies, May 17, 2017. Begley, et al. (2017) analyze market risk rather than credit risk – i.e., it is not relevant to the credit risk issue being discussed.

[172] Firestone, S. and Rezende, M., 2016, "Are Banks' Internal Risk Parameters Consistent? Evidence from Syndicated Loans," *Journal of Financial Research,* Vol. 50, 211-242, at 211 ("Banks' PDs differ substantially, but only a few systematically set PDs higher or lower than others in a statistically significant manner. However, many banks' estimates of LGD differ from others in a systematic manner that is statistically and economically significant, causing large differences in minimum regulatory capital.") & 214 ("Our dataset combines information from Thomson Reuters LPC's DealScan database with internal corporate credit risk data from banks. These internal data were collected by the FRB from nine large U.S. bank holding companies in May 2011.").

[173] Covas, F. and Stepankova, B., 2022, "Consistency in Risk Weights for Corporate Exposures Under the Standardized Approach," Bank Policy Institute Staff Working Paper 2022-1.

[174] Board of Governors of the Federal Reserve System, Office of the Comptroller of Currency. "Supervisory Guidance on Model Risk Management," SR Letter 11-7, April 4, 2011.

[175] Proposal, at 64151.

[176] Proposal, at 64155.

[177] Proposal, at 64155.

[178] Proposal, at 64156, Table 1 to §_.222.

[179] "Remarks by Thomas J. Curry, Comptroller of the Currency Before the Exchequer Club," May 16, 2012, available at https://www.occ.gov/news-issuances/speeches/2012/pub-speech-2012-77.pdf, at 2 ("The risk of operational failure is embedded in every activity and product of an institution – from its processing, accounting, and information systems to the implementation of its credit risk management procedures.").

[180] Board of Governors of the Federal Reserve System, "2023 Stress Test Methodology," June 2023, available at https://www.federalreserve.gov/publications/files/2023-june-supervisory-stress-test-methodology.pdf (last accessed January 6, 2024), at 10.

[181] Board of Governors of the Federal Reserve System, "2023 Stress Test Methodology," June 2023, available at https://www.federalreserve.gov/publications/files/2023-june-supervisory-stress-test-methodology.pdf (last accessed January 6, 2024).

[182] *See, e.g.,* Rosenberg, J. and Schuermann, T., "A General Approach to Integrated Risk Management with Skewed, Fat-Tailed Risks," Federal Reserve Bank of New York Staff Report no. 185, May 2004, at 30-33 (discussing the impact of business mix and inter-risk correlation).

[183] Covas, F., "About Excessive Calibration of Capital Requirements for Operational Risk," *Bank Policy Institute*, October 30, 2023, available at https://bpi.com/about-excessive-calibration-of-capital-requirements-for-operational-risk/ (last accessed January 2, 2024).

[184] Covas, F., "About Excessive Calibration of Capital Requirements for Operational Risk," *Bank Policy Institute*, October 30, 2023, available at https://bpi.com/about-excessive-calibration-of-capital-requirements-for-operational-risk/ (last accessed January 2, 2024).

[185] PwC, "Our Take: PwC's Financial Services Update, Basel III endgame: Outsized operational risk impact," October 2023, at 5, available at https://explore.pwc.com/baseliiiendgame-operational-risk (last accessed January 2, 2024).

[186] PwC, "Our Take: PwC's Financial Services Update, Basel III endgame: Outsized operational risk impact," October 2023, at 5, available at https://explore.pwc.com/baseliiiendgame-operational-risk (last accessed January 2, 2024).

[187] Proposal, at 64087.

[188] Proposal, at 64180.

[189] "JPMorgan Paying $75 Million to Settle Suit Over Jeffrey Epstein Ties," *The Wall Street Journal*, September 26, 2023.

[190] "JPMorgan Paying $75 Million to Settle Suit Over Jeffrey Epstein Ties," *The Wall Street Journal*, September 26, 2023.

[191] Proposal, at 64168, Table 11.

[192] *See* 2023 Federal Reserve Stress Testing Research Conference Keynote by Michael S. Barr, at 32:12, available at https://www.bostonfed.org/news-and-events/events/federal-reserve-stress-testing-research-conference/2023.aspx (last accessed January 2, 2024).

[193] Proposal, at 64091.

[194] Basel Committee on Banking Supervision, "Fundamental Review of trading book: outstanding issues," February 20, 2015.

[195] Proposal, at 64092 and Basel Committee on Banking Supervision, "Explanatory note on the minimum capital requirements for market risk," January 2019, available at www.bis.org/bcbs/publ/d457.pdf (last accessed January 2, 2024).

[196] "Explaining the Overlap Between the FRTB and the Global Market Shock," *SIFMA*, May 30, 2023, available at https://www.sifma.org/resources/news/explaining-the-overlap-between-the-frtb-and-the-global-market-shock/ (last accessed January 2, 2024.)

[197] "Explaining the Overlap Between the FRTB and the Global Market Shock," *SIFMA*, May 30, 2023, available at https://www.sifma.org/resources/news/explaining-the-overlap-between-the-frtb-and-the-global-market-shock/ (last accessed January 2, 2024.)

[198] "Explaining the Overlap Between the FRTB and the Global Market Shock," *SIFMA*, May 30, 2023, available at https://www.sifma.org/resources/news/explaining-the-overlap-between-the-frtb-and-the-global-market-shock/ (last accessed January 2, 2024.)

[199] Hopper, G., "How Can the Global Market Shock More Effectively Complement the Fundamental Review of the Trading Book?" *Bank Policy Institute*, May 30, 2023.

[200] Hopper, G., "Rationalizing the Global Market Shock," *Bank Policy Institute*, October 17, 2023.

[201] *See* 2023 Federal Reserve Stress Testing Research Conference Keynote by Michael S. Barr, at 32:12, available at https://www.bostonfed.org/news-and-events/events/federal-reserve-stress-testing-research-conference/2023.aspx (last accessed January 2, 2024).

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[203] "BofA's VAR reels back to pre-pandemic level," *Risk.net*, November 8, 2023.

[204] *See e.g.,* Board of Governors of the Federal Reserve System, "Stress Test Methodology," June 2023, at 14 and 58.

[205] *See e.g.,* Board of Governors of the Federal Reserve System, "2023 Federal Reserve Stress Test Results," June 2023, Table 6.

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