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Financial Stability Considerations for Bank Merger Analysis

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Since enactment of the Dodd-Frank Act in 2010, the federal banking agencies have been required by statute to consider risks to financial stability when evaluating proposed bank mergers and acquisitions.[1] The agencies have not issued regulations to define an approach to evaluating financial stability effects but have discussed the financial stability factors in public orders reviewing proposed mergers.[2] This note describes those orders and outlines a more comprehensive approach for conducting a systematic analysis of financial stability effects for future reviews.

I. Statutory requirements to consider financial stability

Historically, federal law has required the federal banking agencies to consider a variety of competitive, managerial, community and other factors in assessing a merger or acquisition.[3] Financial stability became one of these factors in 2010, when the Dodd-Frank Act amended the Bank Holding Company Act to require the Federal Reserve also to consider "the extent to which a proposed acquisition, merger, or consolidation would result in greater or more concentrated risks to the stability of the United States banking or financial system."[4] A similar provision applies to nonbank acquisitions.[5]

Similar to the Bank Holding Company Act, the Bank Merger Act requires the relevant agency to consider "the financial and managerial resources and future prospects of the existing and proposed institutions, the convenience and needs of the community to be served, and *the risk to the stability of the United States banking or financial system*."[6] The Dodd-Frank Act does not define financial stability for purposes of either statute.

II. Past Agency Reviews of the Financial Stability Factor

To date, each banking agency has assessed financial stability in the merger context on a case-by-case basis without promulgating any governing rules.[7] In approving mergers since the financial stability factor was added, the agencies have generally provided a high-level description of how they assessed that factor.

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[1] The Bank Merger Act requires the relevant "responsible" banking agency to give prior written approval for, among other transactions, a merger or consolidation between insured depository institutions or an assumption by an insured depository institution of liability to pay deposits made in an uninsured depository institution. 12 U.S.C. § 1828(c). Section 3 of the Bank Holding Company Act requires the Federal Reserve to approve an acquisition of a bank by any company, and Section 4 requires the Federal Reserve to approve the acquisition of a nonbank company (or a proposal to directly engage in nonbanking activities) by bank holding companies. 12 U.S.C. §§ 1842(a), 1843(j). Section 604(d) of the Dodd-Frank Act amended Section 3(c) of the Bank Holding Company Act to require the Federal Reserve, when evaluating a proposed bank acquisition, merger, or consolidation, to consider "the extent to which [the] proposed acquisition, merger, or consolidation would result in greater or more concentrated risks to the stability of the United States banking or financial system." Section 604(e) of the Dodd-Frank Act similarly amended Section 4(j)(2) of the BHC Act to require the Federal Reserve to consider financial stability concerns when reviewing notices by bank holding companies to engage in nonbanking activities. Section 604(f) of the Dodd-Frank Act amended the Bank Merger Act to require the "responsible" banking agency to consider the risk to the stability of the United States banking or financial system in considering a proposed merger.

[2] For brevity's sake, we will below refer only to mergers and not add "and acquisitions," in part because most acquisitions include a merger of subsidiary banks.

[3] 12 U.S.C. § 1842(c)(2)-(3), (6).

[4] 12 U.S.C. § 1842(c)(7).

[5] 12 U.S.C. § 1843(j)(2) requires the Federal Reserve to consider "whether performance of the activity by a bank holding company or a subsidiary of such company can reasonably be expected to produce benefits to the public, such as greater convenience, increased competition, or gains in efficiency, that outweigh possible adverse effects, such as undue concentration of resources, decreased or unfair competition, conflicts of interests, unsound banking practices, or *risk to the stability of the United States banking or financial system*." (emphasis added).

[6] 12 U.S.C. § 1828(c)(5) (emphasis added).

[7] The Federal Reserve has not adopted a regulation relating to its assessment of the financial stability factor, but its rules relating to capital surcharges for global, systemic bank holding companies (GSIBs) provide guidance as to the Federal Reserve's approach to and analysis of financial stability issues related to large banks.

The Federal Reserve first considered the financial stability factor in 2012 in connection with Capital One's acquisition of ING's U.S. retail banking operations pursuant to Section 4 of the BHC Act.[8] The standard used in that case has generally been followed by the Federal Reserve in all subsequent cases, at least those for which an analysis has been disclosed publicly.[9] The *Capital One* order provides:

> In reviewing applications and notices under sections 3 and 4 of the BHC Act, the Board expects that it will generally find a significant adverse effect if the failure of the resulting firm, or its inability to conduct regular-course-of-business transactions, would likely impair financial intermediation or financial market functioning so as to inflict material damage on the broader economy. This kind of damage could occur in a number of ways, including seriously compromising the ability of other financial institutions to conduct regular-course-of-business transactions or seriously disrupting the provision of credit or other financial services. To assess the likelihood that failure of the resulting firm may inflict material damage on the broader economy, the Board will consider a variety of metrics. These would include measures of the size of the resulting firm; availability of substitute providers for any critical products and services offered by the resulting firm; interconnectedness of the resulting firm with the banking or financial system; extent to which the resulting firm contributes to the complexity of the financial system; and extent of the cross-border activities of the resulting firm. These categories are not exhaustive, and additional categories could inform the Board's decision.[10]

The order also states that the Board "has considered whether the proposed transaction would provide any stability benefits and whether enhanced prudential standards applicable to the combined organization would offset any potential risks,"[11] but contains no analysis of those benefits or offsets – perhaps because such analysis was superfluous in a case where the Board apparently concluded there were no meaningful risks to financial stability to offset.

The Federal Reserve has discussed potential benefits to financial stability in connection with two acquisitions: the acquisition by Goldman Sachs of GE Capital's financial assets pursuant to the Bank Merger Act and the acquisition by Morgan Stanley of E*TRADE under Section 4 of the BHC Act.[12] In the *Goldman* order, the Board found that "the transaction would provide GS Bank with approximately $17 billion in deposits, a deposit customer base, and a platform for increasing its deposit funding in the future. As a result, the proposal would immediately improve the stability of GS Bank's funding profile by diversifying sources of funding and increasing stable funding and would allow the bank to maintain and further improve its funding profile in the future. This should enhance financial stability."[13]

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[8] This application was decided under section 4 of the BHCA Act because ING's retail banking operations were conducted in a thrift rather than a bank.

[9] Indeed, subsequent public orders issued by the Federal Reserve under Sections 3 or 4 of the Bank Holding Company Act or the Bank Merger Act typically provide a footnote stating "For further discussion of the financial stability standard, see Capital One Financial Corporation, FRB Order No. 2012-2 (February 14, 2012)."

[10] FRB Order No. 2012-2, Order Approving the Acquisition of a Savings Association and Nonbanking Subsidiaries, Capital One Financial Corporation McLean, Virginia (February 14, 2012), 28-29; available at: Order Approving the Acquisition of a Savings Association and Nonbanking Subsidiaries -- Capital One Financial Corporation (federalreserve.gov)

[11] *Id.* at 36.

[12] The Board also considered the Morgan Stanley acquisition under Section 163(b) of the Dodd-Frank Act, which requires the Federal Reserve to conduct a financial stability analysis when reviewing notices by bank holding companies with total assets of $50 billion or more, or nonbank financial companies supervised by the Federal Reserve, to acquire voting shares of companies with total assets of $10 billion or more. 12 U.S.C. § 5363(b)(4).

[13] Federal Reserve Board Order No. 2016-03 (March 21, 2016) at 23.

In the *Morgan Stanley* order, the Board stated that "while the acquisition would marginally increase Morgan Stanley's systemic footprint, certain financial-stability-enhancing features of the acquisition would operate as mitigating factors" including "[t]he Board's regulatory and supervisory frameworks [that] are tailored to apply the strictest standards to U.S. GSIBs and to increase in stringency with an individual GSIB's systemic footprint" and that "[f]ollowing the acquisition, all of E*TRADE's activities would be subject to the strictest standards [and] the acquisition of E*TRADE also would provide Morgan Stanley with an additional stream of stable revenues for its wealth- and investment-management business and would diversify its funding structure."[14] Thus, the Board has considered potential financial stability risk mitigants and benefits of a merger, but not in a consistent or formally established manner.

The FDIC's approach has been similar. In approving the merger of SunTrust and BB&T, the FDIC's order stated, "In evaluating the likely impact of the proposed transaction on the stability of the U.S. banking or financial system, the FDIC considered quantitative and qualitative metrics, each of which aims to assess whether Truist Bank's systemic footprint would be such that its failure or financial distress would compromise the overall stability of the U.S. banking or financial system . . . The qualitative metric considered with respect to this Application relates largely to the resolvability of Truist Bank, taking into account the institution's proposed organizational structure and its expected continuity, saleability, and separability in resolution."[15] None of the quantitative metrics was disclosed, however. In terms of mitigation, the FDIC did note that "the resolvability of Truist Bank would not present a risk to the stability of the U.S. banking or financial system that is not otherwise mitigated by regulatory requirements applicable to the institution and its parent holding company, including requirements to regularly submit resolution plans."[16]

For its part, the OCC's approach is set forth in its licensing manual, and focuses exclusively on potential costs of a merger, including any increase in size of the combining institutions; whether there would be a reduction in the availability of substitute providers for the services offered by the combining institutions; whether financial distress at the combined entity would cause significant risks to other institutions; whether the combination would "contribute to the complexity of the financial system" whether the combination "would materially increase the extent of cross-border activities of the combining institutions" and whether the proposed transaction would increase the relative degree of difficulty of resolving or winding up the combined institution's business in the event of failure or insolvency.[17]

Drawing on the agencies' case-by-case precedent and engaging in other analysis, we set out below a framework that the agencies should universally apply when assessing the change in financial stability resulting from a proposed merger and a series of factors that should inform such an analysis. The agencies should issue this framework for notice and comment, after conducting further research to enhance their analysis and identify additional factors that should be considered.

III. Assessing the financial stability consequences of a merger

A comprehensive assessment of the change in financial stability resulting from a proposed merger should consider: (1) any change in the probability of failure of the merged company relative to its predecessors; (2) any change in the systemic cost upon failure of the merged company relative to its predecessor; and (3) any consequences of the merger for other companies. The first two considerations are akin to analyzing the risk of a loan or other asset – probability of default times loss given default – with the additional need to consider that risk *relative* to the risk

[14] Federal Reserve Board Order no. 2020-05 (September 30, 2020) at 23.

[15] Branch Banking and Trust Company Winston-Salem, North Carolina, Application for Consent to Merge with SunTrust Bank, Atlanta, Georgia, and to Establish Associated Branches Order and Basis for Corporation, Approval (Nov. 19, 2019); available at: pr19111a.pdf (fdic.gov).

[16] *Id*.

[17] Comptroller's Licensing Manual, Business Combinations, Version 1.1 (July 2018), at 8; available at: Comptroller's Licensing Manual, Business Combinations (occ.gov)

presented by the existing companies, consistent with the approach in prior orders. We first describe the systemic cost index, a quantitative tool that can be used to measure the systemic risk of a firm, and recommend that, in the merger context in particular, it should incorporate the first two considerations set forth above.

A. THE SYSTEMIC COST INDEX

Federal regulation contains one codified measure of the systemic risk presented by a firm: the Systemic Cost Index used to calculate a GSIB capital surcharge.[18] The Federal Reserve has explicitly adopted this methodology for assessing mergers in certain cases, and, the metrics it has used in assessing financial stability risk in other cases are coincident with the components of the GSIB surcharge, and the GSIB surcharge is the only rule that provides metrics for those risks.[19] In addition, the agencies each state that they consider quantitative and qualitative metrics in reviewing merger proposals, and thus, it seems highly likely that the agencies consider the systemic indicator scores of firms proposing to merge.

The Federal Reserve requires U.S. banks to calculate their systemic indicator scores under two different methods, with the higher of the two resulting surcharges applying. In the Basel methodology, known as Method 1, the systemic indicator score is calculated using an equally weighted average of five measures of systemic importance—complexity, interconnectedness, cross-jurisdictional activity, substitutability, and size. The U.S. score, known as Method 2, replaces the substitutability category with short-term wholesale funding. Consequently, using the systemic scores, the failure of a bigger bank will have more systemic costs than the failure of a smaller bank, if the bigger bank has any systemic costs of failure at all.

The systemic cost index appears to be a reasonable place to start in assessing systemic risk. That said, it significantly overstates systemic risk, and any assessment in the merger context would need to correct for this bias. First, the GSIB methodology, adopted in 2015,[20] has never been adjusted to account for numerous market and regulatory actions that have been adopted subsequently and which, by the Federal Reserve's own account, significantly decrease systemic risk. These include central clearing of derivatives, margin requirements on a wide range of uncleared swaps, and single counterparty credit limits.[21] The systemic cost index takes no account of resolution plans and, for GSIBs, does not consider the existence of a single-point-of-entry resolution strategy designed to keep broker-dealers open and operating during resolution, and which prohibits derivatives counterparties from exercising close-out rights upon resolution. Furthermore, with respect to contagion risk, the

[18] 80 Fed. Reg. 49082 (Aug. 14, 2015), available at: 2015-18702.pdf (govinfo.gov).

[19] For example, the following orders referenced the increase in the GSIB scores that would result from the proposed mergers: BB&T/Suntrust (2019), TD/Schwab (2020), Morgan Stanley/Etrade (2020), PNC/BBVA (2021). *See also* Capital One order at 28 ("the size of the resulting firm; availability of substitute providers for any critical products and services offered by the resulting firm; interconnectedness of the resulting firm with the banking or financial system; extent to which the resulting firm contributes to the complexity of the financial system; and extent of the cross-border activities of the resulting firm").

[20] *See* note 15, *supra*; *see also* Calibrating the GSIB Surcharge, Board of Governors of the Federal Reserve System, (July 20, 2015), available at: https://www.federalreserve.gov/aboutthefed/boardmeetings/gsib-methodology-paper-20150720.pdf.

[21] *See, e.g.,* 20160510_tch_research_note_gsib_surcharge-1.pdf (bpi.com); 07.12.2016_newell_testimony_newell.pdf (house.gov); 07.17.2018_greg_baer_testimony.pdf (house.gov). Section 723 of the Dodd-Frank Act amended the Commodity Exchange Act (CEA) by adding Section 2(h)(1), which provides that "it shall be unlawful for any person to engage in a swap unless that person submits such swap for clearing to a derivatives clearing organization that is registered under [the CEA] or a derivatives clearing organization that is exempt from registration under [the CEA] if the swap is required to be cleared." Sections 731 and 764 of the Dodd-Frank Act add a new section, section 4s, to [the CEA] and a new section, section 15F, to the Securities Exchange Act of 1934, respectively, which require registration with the [CFTC] of swap dealers and major swap participants and the [SEC] of security-based swap dealers and major security-based swap participants (each a ''swap entity'' and, collectively, ''swap entities''). For swap entities that are prudentially regulated by one of the OCC, Board, FDIC, FCA, or FHFA, sections 731 and 764 of the Dodd-Frank Act require those agencies to adopt rules jointly for swap entities under their respective jurisdictions imposing (i) capital requirements, and (ii) initial and variation margin requirements on all swaps not cleared by a registered derivatives clearing organization or a registered clearing agency. *See also* 83 Fed. Reg. 38460 (Aug. 6, 2018), available at: 2018-16133.pdf (govinfo.gov). The Board established single-counterparty credit limits for bank holding companies and foreign banking organizations with $250 billion or more in total consolidated assets, including any U.S. intermediate holding company of such a foreign banking organization with $50 billion or more in total consolidated assets, and any bank holding company identified as a global systemically important bank holding company under the Board's capital rules.

GSIB surcharge does not take account of regulation that requires any advanced approaches bank – so, nine in total, and effectively the six largest U.S. banks – to deduct from its regulatory capital any long-term debt issued by a GSIB. This requirement serves as an effective prohibition on any such holding.

Second, four of the measures under Method 2 – complexity, interconnectedness, cross-jurisdictional activity, and size – are calculated as the sum of balance-sheet and off-balance-sheet items for a GSIB at the end of each year, divided by the average over the 2012 and 2013 levels of the aggregate sum across global GSIBs of those same items. Thus, these four measures have increased over time with both inflation and with economic growth, holding risk constant. While the Federal Reserve noted this problem and stated that it would adjust accordingly, it has failed to do so.[22] Lastly, with the incredible growth in the Federal Reserve's balance sheet, banks have significantly increased the holding of reserve balances – riskless assets that nonetheless have inflated their systemic risk scores. Even if corrections are not made to the GSIB methodology for capital purposes, they are essential for purposes of merger review.

Most significantly, the systemic cost index is a static measure of a given firm's systemic risk. It allows for comparison in the case of a merger to only a very limited extent – that is, one can add up the index for the two merging institutions and see if the sum is higher, lower, or (most likely) the same as the *pro forma* index for the combined organization. But that simple math ignores a host of factors that are relevant for assessing whether a given merger increases or decreases financial stability risk, either by changing the probability of failure, the cost of failure, or both, and thus should be considered in any proposed merger. We describe these factors below.

B. EFFECT ON THE PROBABILITY OF FAILURE

Set forth below are factors that can affect the relative probability of failure of a merged firm as compared to its predecessors.

1. Change in the characteristics of the institution

a. Diversification

Mergers generally bring greater diversification in terms of product offering and geographic footprint, which reduces a firm's exposure to any one industry or region and thus lowers the firm's probability of default. Hughes, Mester, and Moon (2001) find that large banks achieve a better risk-profit trade-off than smaller banks because diversification reduces their risk.[23] Goetz, Laevan, and Levin (2016) find that a one-standard-deviation increase in bank diversification across metropolitan statistical areas reduces bank risk by one fourth.[24] Thus, any financial stability analysis should include an estimate of how much diversification benefits reduce the probability of failure.

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[22] The fifth measure, "short-term wholesale funding" (STWF) is calculated as the ratio of the GSIB's STWF divided by its average risk-weighted assets over the previous four quarters. Because the STWF measure is divided by a number that also will grow over time, it will not trend up with economic growth and inflation.

[23] They also find that banks respond to that better risk-return profile by becoming riskier, a shift that examination and regulation is specifically designed to limit.

[24] Similarly, in a speech in 2018, the President of the ECB Mario Draghi, when describing the benefits of European integration, said:

> In the United States for example, retail banking integration has led to a significant increase in the number of multi-state banks. That was not always the case. For example, following the oil price collapse in the mid-1980s, almost every bank in Texas failed, creating a state-wide credit crunch. One reason was that banks were not allowed to operate across states, so the balance sheets of local banks were completely concentrated on their home state.
>
> In a more integrated US banking sector, banks have geographically more diversified loan-books and deposit bases. By offsetting losses made in crisis-hit states with gains in other states, US banks are more resilient to local shocks and can keep their lending stable.

As noted above, the Federal Reserve has recognized such benefits, noting in its *Morgan Stanley* order how the merger "would provide an additional stream of stable revenues for its wealth- and investment-management business and would diversify its funding structure" and in the *Goldman* order, how financial stability would be enhanced because the merger "would immediately improve the stability of GS Bank's funding profile by diversifying sources of funding and increasing stable funding and would allow the bank to maintain and further improve its funding profile in the future." In other words, even though both cases involved a GSIB acquisition, which would create a larger institution, the Board viewed the diversification and stable funding benefits of the resulting entity to be sufficiently great so as to reduce the merged entity's probability of failure such that financial stability would be enhanced.

Thus, any financial analysis in the context of a merger review should include an assessment of any diversification benefits of the merger.

b. Returns to scale

Banks' first line of defense against losses is profits, and there are considerable returns to scale in the banking industry. In other words, larger banks are more profitable than smaller banks, and this increased profitability reduces the resulting institution's probability of failure. Positive returns to scale have been found by Hughes, Lang, Mester, and Moon (1996), Berger and Mester (1997), Hughes and Mester (1998), Hughes, Mester, and Moon (2001), Bossone and Lee (IMF), Wheelock and Wilson (2009), Feng, Guohua and Serletis (2010). Thus, any financial stability assessment should take into consideration the *pro forma* profitability of the combined organization relative to its predecessors and the resulting change in the probability of failure.

c. Technology and operational efficiency

Scale also allows the merged entity to invest in technology and other resources to reduce risks, most notably operational risks, including threats to cybersecurity. In almost every recent merger, management has cited rising technology costs and cyber risk as a rationale, with the merged firm better able to harness the best technology. Indeed, French central bank governor François Villeroy de Galhau recently admonished his EU counterparts for not enacting policies to strengthen the EU banking market by encouraging more mergers of EU banks:

> More than anything else, our banks need economies of scale to have the means to invest properly – including in their digital transformation. Digital is mainly about IT investment, hence fixed costs, hence size. It is high time to start thinking European, instead of national. Let us not fool ourselves: preventing our banks from growing will only make them less profitable and easier prey. We have to avoid a scenario where European G-SIBs would disappear or remain too few, because then we would have partly surrendered our strategic autonomy.[25]

The Agencies regularly note that a combined organization can benefit from the best of each bank on a number of dimensions, including, for example, with respect to managerial resources. Thus, it is logical to conclude that the same should also be true for operational risk management and resilience and technological sophistication in the context of considering the financial stability impact of the merger. Future analysis should consider whether the merged entity will be able to afford and deploy better technology, improving its operational resilience and reducing its probability of failure.

d. Managerial resources

Frequently, acquisitions occur after regulators have determined that the acquired firm has compliance or other problems. In any case, an acquiror may have greater managerial and financial resources, and thus be more

[25] "Looking up to achieve a Financing Union," a speech by François Villeroy de Galhau, Governor of the Banque de France, Eurofi – Paris, Feb. 23, 2022, *available at* https://www.banque-france.fr/sites/default/files/medias/documents/looking_up_to_achieve_a_financing_union.pdf.

capable of not only resolving existing problems but also in identifying strategic opportunities. Therefore, financial stability analysis should include a finding of whether the acquisition would improve managerial resources and thereby reduce the probability of failure.

2. Regulatory consequences of the merger

In banking, larger size comes with a host of more stringent regulations that have the explicit purpose and actual effect of reducing financial stability risk.[26] Those regulations reduce the probability and systemic cost (direct and indirect) of failure. Indeed, in its semiannual financial stability reports, the Federal Reserve has recognized that examination and regulatory efforts by the Federal Reserve and the other agencies have the effect of mitigating "the risks and consequences of financial instability" and explained that "for the largest, most systemically important BHCs, these actions have included requirements for more and higher quality capital, an innovative stress-testing regime, new liquidity regulation, and improvements in the resolvability of such BHCs."

a. *Liquidity requirements*

Liquidity requirements imposed on larger banks include the liquidity coverage ratio, net stable funding ratio, internal liquidity stress tests, liquidity risk management requirements, liquidity buffers, and resolution liquidity requirements. Those requirements, all adopted since 2010, have dramatically increased the amount of cash and cash equivalents held by large banks and reduced their reliance on short-term and unstable funding. As shown in the Fed's November 2021 Supervision and Regulation Report, liquid assets composed over 27 percent of total assets in the banking sector in the third quarter of 2021.[27]

These large cash holdings come with significant economic costs – namely, reduced loan supply – but substantial financial stability benefits. They reduce the probability of failure, as liquidity is the most frequent cause of failure. They also prevent a bank from having to stop providing liquidity to other financial institutions or liquidate assets at firesale prices if it comes under stress.

The LCR applies to BHCs with at least $250 billion in assets or at least $50 billion in weighted short-term wholesale funding (wSTWF) and becomes more stringent as asset size and wSTWF increase.

Set forth below is a table showing the categories of banks subject to increasingly stringent prudential standards:

Firm Type	Qualifier
Category I	U.S. G-SIBs
Category II	>=$700b total assets or >=$75b in cross-jurisdictional activity
Category III	>=$250b total assets or >=$75b in NBA, wSTWF or off-balance-sheet exposure
Category IV	Other firms with $100b to $250b total assets

[26] In issuing its final rules imposing enhanced prudential standards on a tiered basis according to a bank's risk profile, the Board stated that "By establishing categories of standards that increase in stringency based on risk, the framework would ensure that the Board's prudential standards align with the risk profile of large banking organizations, supporting financial stability and promoting safety and soundness," 84 Fed. Reg 59032, 59037 (Nov. 1, 2019), available at: 2019-23662.pdf (govinfo.gov).

[27] Federal Reserve Supervision and Regulation Report (Nov. 30, 2022), available at: The Fed - Supervision and Regulation Report - November 2021 (federalreserve.gov).

The NSFR's requirements apply to BHCs with at least $250 billion in assets or at least $50 billion in weighted short-term wholesale funding and become more stringent as asset size and such funding increase. A modified version of the NSFR rule applies to companies with assets of at least $100 billion, including certain intermediate holding companies formed by foreign banking organizations under FRB's Regulation YY, as well as consolidated subsidiaries that are depository institutions with $10 billion or more in total consolidated assets.

Liquidity stress testing requirements apply to firms with at least $100 billion in assets and become more frequent as asset size or short-term wholesale funding increase. Though the examination process, the Federal Reserve subjects certain firms to its Comprehensive Liquidity Analysis and Review. That program evaluates the liquidity position and liquidity risk-management practices of firms and includes both qualitative and quantitative requirements. Former Fed Chair Janet Yellen testified that "CLAR is designed to ensure that [institutions supervised as part of the Board's Large Institution Supervision Coordinating Committee] have rigorous, forward-looking liquidity stress testing and risk-management practices that account for unique risks, and that the LISCC firms maintain sufficient liquidity to continue to operate through a period of acute stress."[28]

Furthermore, recovery and resolution plans contain triggers, including triggers relating to liquidity, which, when tripped, require the firm's management and board to take specific actions, including the repositioning of resources to improve the liquidity positions of operating subsidiaries. Recovery and resolution plans explicitly impose Resolution Liquidity Adequacy and Positioning and Resolution Liquidity Execution Need requirements designed to equip a firm to measure, monitor and plan for its liquidity needs in a resolution scenario and which, in some instances, may require a firm to increase its liquidity holdings in BAU.

Given the purpose and effect of the LCR, NSFR, CLAR, and liquidity-related resolution requirements, including reporting on form 2052a, the "Complex Institution Liquidity Monitoring Report," which must be provided daily for GSIBs and firms in Categories III and II, any merger that results in greater stringency under any of these regimes results in a lower probability of default. A financial stability assessment in the merger context should note any such changes and their impact.

b. *Capital requirements*

Capital is specifically designed to limit the probability of a bank's failure. Capital requirements grow in stringency along with asset size.[29] Most notably, the capital requirement of banks with over $100 billion in assets includes an additional requirement determined in part through annual stress tests conducted by the Federal Reserve. Banks subject to the tests must have capital sufficient to pass minimum regulatory requirements after a nine-quarter period of severe economic stress. Smaller banks are only subject to the static minimum requirements. In addition, the largest banks are subject to a GSIB surcharge, as noted above.

Furthermore, firms with total assets equal to or greater than $250 billion are subject to capital stress testing requirements annually, whereas firms with total assets equal to or greater than $100 billion and less than $250 billion are only subject to stress tests biennially.[30] Most large banks are also subject to more stringent stress tests

[28] Statement by Janet L. Yellen, Chair, Board of Governors of the Federal Reserve System, before the Committee on Financial Services, U.S. House of Representatives (November 4, 2015), available at: Statement by Chair Yellen before the Committee on Financial Services, U.S. House of Representatives (federalreserve.gov).

[29] *See* Appendix for a detailed description of the GSIB surcharge.

[30] Other factors, including the amount of a firm's nonbank assets, amount of weighted short-term wholesale funding, and off-balance-sheet exposures, could also influence the frequency of supervisory stress testing.

that may include a severe global financial market shock.[31] The stringency of the stress tests applied to large banks can increase based on other factors as well.[32]

By the Fed's calculation, an increase in capital alone strongly reduces the probability of failure. For example, the formula used to calculate the GSIB surcharge indicates that a 1.5-percentage-point increase in the effective capital requirement cuts the probability of failure in half.[33]

The GSIB surcharge requirement provides a stark illustration of the extent to which tighter capital requirements can offset increased systemic cost of failure. GSIB surcharges are calibrated so that the probability of failure is lower for GSIBs to offset the increase in the systemic cost of failure.[34] The surcharges are designed so that the expected systemic cost of failure (the probability of failure times the systemic costs of failure) of each GSIB is equal to the expected systemic cost of failure to a reference non-GSIB. As a result, the merger of two GSIBs would cut the expected systemic cost of failure in half.

Thus, any financial stability analysis should include an assessment of the capital requirements imposed on the combined organization in comparison to its predecessors.

c. *Recovery plans*

In addition to *resolution* plans, discussed below, GSIBs are required to prepare *recovery* plans. The Federal Reserve has issued guidance regarding such recovery plans, noting that "the primary goal of such recovery planning is to develop a menu of options that would enable a firm to respond to a wide range of internal and external stresses and maintain the confidence of market participants without extraordinary governmental support."[35] In addition, the OCC generally requires federally chartered banks with more than $250 billion in assets to file recovery plans.[36]
Thus, analysis of any merger that results in the new company qualifying for the first time as a GSIB would need to consider the benefits of recovery plans in reducing probability of failure.

[31] In addition, U.S. GSIBs and banks with more than $700 billion in assets must conduct company-run stress tests annually, whereas firms with total assets equal to or greater than $250 billion and less than $700 billion must conduct company-run stress tests only biennially. The amount of a firm's cross-jurisdictional activity could also cause it to be required to conduct annual company-run stress tests.

[32] In addition to the generally applicable stress test scenarios, the supervisory stress tests applicable to firms with assets equal to or greater than $250 billion that engage in a large amount of trading or custodial activity may include a global market shock add-on component, designed to assess a firm's performance under heightened market distress and uncertainty, or a counterparty default endogenous add-on component, designed to assess a firm's performance in the event of the default of its largest counterparty.

[33] See "Calibrating the GSIB Surcharge," p. 9, https://www.federalreserve.gov/aboutthefed/boardmeetings/gsib-methodology-paper-20150720.pdf.

[34] *Id*.

[35] The Federal Reserve has issued guidance regarding such recovery plans, noting that "the primary goal of such recovery planning is to develop a menu of options that would enable a firm to respond to a wide range of internal and external stresses and maintain the confidence of market participants without extraordinary governmental support." Federal Reserve Board, SR 14-8: Consolidated Recovery Planning for Certain Large Domestic Bank Holding Companies, Division of Banking Supervision and Regulation SR 14-8 (September 25, 2014), The Fed - Supervisory Letters SR 14-8 on Consolidated Recovery Planning for Certain Large Domestic Bank Holding Companies -- September 25, 2014 (federalreserve.gov). *See also* Federal Reserve Board, SR 14-1: Heightened Supervisory Expectations for Recovery and Resolution Preparedness for Certain Large Bank Holding Companies - Supplemental Guidance on Consolidated Supervision Framework for Large Financial Institutions (January 24, 2014), The Fed - (federalreserve.gov). The Federal Reserve's guidance provides that "a firm is in recovery when it is experiencing or is likely to encounter considerable financial distress but could reasonably return to a position of financial strength if appropriate actions are taken in a timely manner. A firm in recovery has not yet deteriorated to the point where resolution proceedings or bankruptcy are imminent. During this recovery phase, the firm should be working closely with relevant supervisors." SR 14-8.

[36] 12 CFR Part 30, Appendix E.

C. EFFECT ON SYSTEMIC COST GIVEN FAILURE

Set forth below are factors that influence the systemic cost given failure, which can change in connection with a merger.

1. Recovery and Resolution Requirements

Title I and Title II of the Dodd-Frank Act are core reforms that ensure that any banking organization can be resolved in an orderly manner. Title I requires any company controlling more than $250 billion in assets to submit a credible resolution plan – also known as a living will, or pre-packaged bankruptcy plan – to ensure that it can be resolved under the Bankruptcy Code without taxpayer assistance. Title II provides a backup resolution process administered by the FDIC rather than a bankruptcy court.[37] The relevance is indisputable: as the Federal Reserve has explained, "The goal of the Dodd-Frank Act resolution planning process is to help ensure that a covered company's failure would not have serious adverse effects on financial stability in the United States . . . "[38]

Resolution plans are prepared by bank holding companies and subject to detailed review by the Federal Reserve and the FDIC and include contractual terms and liquidity requirements necessary to conduct an orderly sale of all or part of the company. These resolution plans must include details of the firm's ownership, structure, assets, and obligations; information on how the firm's depository subsidiaries are protected from risks posed by its nonbank subsidiaries; and information on the firm's cross-guarantees, counterparties, and processes for determining to whom collateral has been pledged. Resolution plans generally have liquidity triggers that require the firm's board and management to begin taking actions contemplated by the plan well before the firm reaches capital insolvency. Living will requirements are more stringent for larger bank holding companies than smaller bank holding companies: they are required for bank holding companies with more than $250 billion in total consolidated assets and are to be provided at the discretion of the Federal Reserve for banks with assets between $100 billion and $250 billion.[39]

In addition, banks with over $50 billion in assets are also subject to Dodd-Frank's enhanced early remediation tools, which requires the Federal Reserve to establish early remediation triggers based on liquidity measures and forward-looking indicators, rather than backward-looking indicators.

Recovery and resolution requirements are specifically designed to reduce banks' systemic costs of failure. Thus, any merger that takes the resulting company across one of these thresholds – $50 billion, $100 billion, $250 billion – therefore has a significant benefit for financial stability, as the firm must take considerable, tangible steps to ensure that it can be resolved. A final threshold is for firms that register as GSIBs under the Method 1 systemic indicator score. Given the composition of the GSIB methodology, this effectively means exclusively firms with large broker-dealers.

For GSIBs, resolution would proceed using the single-point-of-entry (SPOE) resolution strategy, whether under Title I or Title II. Under the SPOE strategy, all of the losses across a U.S. GSIB would be absorbed by shareholders and creditors of its parent holding company – which would fail and be put into a Chapter 11 bankruptcy. The principal benefit of the SPOE strategy is that it makes it legally and operationally feasible to impose losses on holding

[37] 12 U.S.C. 5383(b).

[38] 84 Fed. Reg. 59194 (Nov. 1, 2019), *available at*: 2019-23967.pdf (govinfo.gov).

[39] Pursuant to the joint rule adopted by the Federal Reserve and the FDIC in 2019, the agencies adopted tailored standards for living will requirements for firms with more than $100 billion in total assets related to living wills, establishing four categories of firms: Category I: GSIBs would be required to file resolution plans every two years, alternating between full and targeted plans; Categories II and III: Domestic and foreign firms in this category would be required to file resolution plans every three years, alternating between full and targeted plans. And Category IV: Domestic firms in this category, owing to their limited systemic footprint, would not be required to file resolution plans. Foreign firms with $250 billion or more in global assets, including those in this category, that do not fall in any other category would be required to file a reduced resolution plan every three years, reflecting their limited U.S. systemic footprint. *Id.*

company debt holders, allowing material operating subsidiaries to remain open and operating. SPOE was created as a direct response to financial stability concerns that arose from the failure of Lehman and other broker-dealers that relied heavily on short-term funding. This goal is achieved by maintaining, at the holding company level, substantial liabilities that cannot run in stress, which is referred to as TLAC, or total loss absorbing capital (basically, equity and long-term debt).[40]

Operational feasibility is achieved by minimizing the types of other holding company creditors, thereby avoiding disputes among creditor classes in bankruptcy. Furthermore, first by an inter-dealer protocol and subsequently by regulation, derivatives counterparties of the broker-dealer are prohibited from treating a holding company bankruptcy or receivership as an event of default and exercising their close-out rights.[41]

The long-term debt issued by a GSIB is referred to as "gone-concern" capital, as it effectively converts to equity upon bankruptcy or the commencement of a resolution proceeding. As of the 4th quarter of 2021, the eight U.S. GSIBs held $2.1 trillion in long-term debt pursuant to Federal Reserve regulation.[42] Any analysis of the financial stability effects of a merger that resulted in first-time GSIB status would need to include a quantification of the *pro forma* TLAC requirement for the new firm, and an analysis of the extent to which that requirement reduces systemic cost given failure relative to the predecessor firms.

As noted, the SPOE strategy is designed to avoid or mitigate impediments to an orderly resolution that could potentially arise in the specific context of a GSIB resolution, which generally would include broker-dealer operations in the United States and other countries. By contrast, banking organizations that hold the great majority of their assets in domestic banks and are not engaged in significant capital markets activity do not present similar complications for purposes of resolution. As a result, in the unlikely event of failure, a single resolution framework—the receivership provisions of the FDIA—would apply to the vast majority of the businesses, assets and liabilities of one of these organizations. This centralized resolution means that many of the practical difficulties that present financial stability risk and necessitate an SPOE strategy —such as coordination of multiple completing insolvency proceedings—are simply not present in this context.

D. CHANGE IN THE RISK TO FINANCIAL STABILITY FOR OTHER REASONS

A proposed merger can change the risks to financial stability for reasons other than those associated with the potential failure of the new institution. The consequences discussed here would change the expected systemic cost of failure of *other* institutions, which should be considered in evaluating a proposed merger.

1. Change in the consequences of the failure of other institutions

One of the contributors to the systemic cost of failure of an institution is the extent to which it provides critical services that few or no other institutions provide. For example, only a large international bank can provide the banking services needed by a large U.S. company engaged in global trade, and there are only a few banks with the scale and scope to provide those services. Indeed, the substitutability component of Method 1 looks at the firm's market share in three systemically significant lines of business: payment activity; assets under custody; and underwriting of debt and equity.[43] The presumption is that as a firm's market share in one of those businesses

[40] The Federal Reserve established long-term debt requirements for the 8 U.S. GSIBs as the greater of 6% of RWAs, plus GSIB surcharge; or 4.5% of total leverage exposure, and TLAC requirements as the greater of 18% of RWAs, plus a buffer of: 2.5% of RWAs, plus method 1 GSIB surcharge, plus any countercyclical capital buffer; or 7.5% of total leverage exposure, plus a buffer of 2% of total leverage exposure. 82 Fed. Reg. 8266 (Jan. 24, 2017), available at: bcreg20161215a1.pdf (federalreserve.gov)

[41] ISDA 2018 Resolution Stay Protocol (Aug. 22. 2018), available at: ISDA 2018 U.S. Resolution Stay Protocol – International Swaps and Derivatives Association.

[42] Based on the U.S. GSIBs' 4Q2021 10Qs.

[43] https://www.bis.org/bcbs/publ/d296.pdf.

grows, its presence in those markets becomes harder to replace, and thus its systemic risk grows. While that is sufficient for purposes of determining whether a given firm is a GSIB, any complete financial stability analysis for purposes of a merger needs to take account of an additional factor: whether the increased size or other changes to a firm post-merger makes it a better substitute for an existing GSIB – that is, whether its presence in those markets – and there may be other markets – reduces the systemic risk presented by *other* firms. Given that the stated purpose of many regional and mid-size bank mergers is exactly to allow them to better compete with the largest banks, this factor seems significant. If a merger were to create an additional bank capable of providing such services, the systemic consequences of the failure of those other institutions would decline.

Thus, any analysis of financial stability needs to take account not only of the systemic risk of the merged entity relative *to* its legacy firms but also whether the new firm better serves as a substitute for other firms that present systemic risk.[44]

2. Consequences for financial stability of prohibiting the merger

There is an extensive literature showing that because of the significant returns to scale in banking, restricting banks' ability to grow through mergers to efficient size will lead to smaller banks taking on excessive risks to compete with more efficient larger banks. When unprofitable banks are forced to compete with more profitable banks, they may do so by taking on more risk. Marcus (1984) finds that banks with valuable growth opportunities choose lower-risk investment strategies to avoid potential loss of charter. Similarly, Sarin and Summers (2016) argue that banks have gotten riskier because regulations have reduced their franchise value (See also Nelson, Covas, Baer, and Newell (2016)). Conversely, Grossman (1992), Keeley (1990), and Hughes, Lang, Moon, Pagano (1997) find that banks with poorer growth opportunities take on higher-risk investment strategies to exploit safety-net subsidies (gambling on success).

A similar concern arises regarding international competition. In a 2011 speech, then-Governor Daniel Tarullo observed:

> An additional concern would arise if some countries made the trade-off [between systemic risk and efficiency] by limiting the size or configuration of their financial firms for systemic risk reasons at the cost of realizing genuine economies of scope or scale, while other countries did not. In this case, firms from the first group of countries might well be at a competitive disadvantage in the provision of certain cross-border activities.[45]

Further, a policy designed to engender a banking system made up of only smaller or medium-sized banks could increase rather than decrease risks to financial stability. Maudos and de Guevara (2011), in "Bank size, market power and financial stability," looking at cross-country and cross-time evidence including over 30,000 observations, conclude that financial stability increases as banks get larger than about $2½ billion in assets.[46] As noted above, Mario Draghi pointed to the financial stability benefits in the United States from allowing interstate banking (and therefore larger, more diversified banks) as a reason why the European Union would benefit by allowing European institutions from expanding their operations across the Union.

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[44] Acting Comptroller Hsu recognized this benefit of certain mergers in a recent speech: Acting Comptroller of the Currency Michael J. Hsu, Remarks Before the Wharton Financial Regulation Conference 2022, "Financial Stability and Large Bank Resolvability" (April 1, 2022) ("prohibiting . . . [large bank] mergers could shield the GSIBs from competition, potentially helping to solidify their dominance in various markets."); available at: Acting Comptroller of the Currency Michael J. Hsu Remarks before the Wharton Financial Regulation Conference 2022 on Financial Stability and Large Bank Resolvability (occ.gov).

[45] Remarks by Federal Reserve Board Governor Daniel K. Tarullo, "Industrial Organization and Systemic Risk: An Agenda for Further Research," At the Conference on the Regulation of Systemic Risk, Federal Reserve Board, Washington, D.C. (September 15, 2011), available at: Speech by Governor Tarullo on industrial organization and systemic risk: an agenda for further research - Federal Reserve Board.

[46] They find that stability also increases as banks get smaller than $2½ billion in assets, but banks that small are likely not relevant for these considerations.

Thus, the agencies should consider the possible implications of *not* approving a merger.

IV. Conclusion

An accurate analysis of the financial stability effects of a given merger must include both costs and benefits resulting from that merger. The factors driving such an analysis, described above, seem to suggest that in most cases, market and regulatory benefits of the merger – increased diversification, profitability, and regulatory stringency – will offset the systemic costs associated with creating a larger institution and therefore result in no net increase in financial stability risk, and in many cases a decrease.

Such a conclusion would be fully consistent with the approach Congress adopted with respect to financial stability more generally. In the Dodd-Frank Act, Congress did not prohibit the existence of firms that present systemic risk; rather, Section 121 directed the Federal Reserve to "prevent or mitigate risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected financial institutions" by adopting enhanced prudential standards. Similarly, the Basel Committee and the Federal Reserve did not prohibit the existence of GSIBs but rather implemented post-crisis policies and requirements to "reduce the probability of failure of G-SIBs by increasing their going-concern loss absorbency; and reduce the extent or impact of failure of G-SIBs, by improving global recovery and resolution frameworks.[47]

Lastly, it is worth noting that when Congress adopted the financial stability factor in the Dodd-Frank Act in 2010, it did so years before the Basel Committee on Banking Supervision adopted a framework for a GSIB surcharge, and before such a framework was published in the United States.[48] Similarly, the concept of stress testing to calculate a capital buffer, which is now the core component of the Federal Reserve's capital regime applicable to the 34 largest banks, was not a consideration in 2010. While Dodd-Frank did include a general requirement for other enhanced prudential standards, those standards took years to develop. Thus, a finding that current regulation and market developments (central clearing of derivatives) are sufficient to offset any financial stability risk arising from a merger would not be a surprise and would reflect adherence to the goals of the statute, not repudiation.

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The views expressed do not necessarily reflect those of the Bank Policy Institute's member banks, and are not intended to be, and should not be construed as, legal advice of any kind.

[47] Basel Committee on Banking Supervision, "Global systemically important banks: assessment methodology and the additional loss absorbency requirement" (Nov. 2011), available at: Global systemically important banks: assessment methodology and the additional loss absorbency requirement - Rules text (bis.org).

[48] https://www.bis.org/publ/bcbs207.htm; https://www.govinfo.gov/content/pkg/FR-2015-08-14/pdf/2015-18702.pdf.

References

Hughes, Joseph P., William Lang, Loretta J. Mester, and Choon-Geol Moon. "Efficient banking under interstate branching." *Journal of Money, Credit and Banking* 28, no. 4 (1996): 1045-1071.

Berger, Allen N., and Loretta J. Mester. "Inside the black box: What explains differences in the efficiencies of financial institutions?." *Journal of banking & finance* 21, no. 7 (1997): 895-947.

Hughes, Joseph P., and Loretta J. Mester. "Bank capitalization and cost: Evidence of scale economies in risk management and signaling." *Review of economics and statistics* 80, no. 2 (1998): 314-325.

Hughes, Joseph P., Loretta J. Mester, and Choon-Geol Moon. "Are scale economies in banking elusive or illusive?: Evidence obtained by incorporating capital structure and risk-taking into models of bank production." *Journal of Banking & Finance* 25, no. 12 (2001): 2169-2208.

Bossone, Biagio, and Jong-Kun Lee. "In finance, size matters: The "systemic scale economies" hypothesis." *IMF Staff Papers* 51, no. 1 (2004): 19-46.

Wheelock, David C., and Paul W. Wilson. "Robust nonparametric quantile estimation of efficiency and productivity change in US commercial banking, 1985–2004." *Journal of Business & Economic Statistics* 27, no. 3 (2009): 354-368.

Feng, Guohua, and Apostolos Serletis. "Efficiency, technical change, and returns to scale in large US banks: Panel data evidence from an output distance function satisfying theoretical regularity." *Journal of Banking & Finance* 34, no. 1 (2010): 127-138.

Marcus, Alan J. "Deregulation and bank financial policy." *Journal of banking & finance* 8.4 (1984): 557-565.

Sarin, Natasha, and Lawrence H. Summers. "Understanding bank risk through market measures." *Brookings Papers on Economic Activity* 2016.2 (2016): 57-127.

Baer, Greg, Francisco Covas, Bill Nelson, and Jeremy Newell, "What Does a Bank's Franchise Value Tell Us about its Risk to the Taxpayer?" Bank Policy Institute, September 23, 2016. https://bpi.com/what-does-a-banks-franchise-value-tell-us-about-its-risk-to-the-taxpayer/

Grossman, Richard S. "Deposit insurance, regulation, and moral hazard in the thrift industry: evidence from the 1930's." *The American Economic Review* (1992): 800-821.

Keeley, Michael C. "Deposit insurance, risk, and market power in banking." *The American economic review* (1990): 1183-1200.

Goetz, Martin R., Luc Laeven, and Ross Levine. "Does the geographic expansion of banks reduce risk?." *Journal of Financial Economics* 120, no. 2 (2016): 346-362.

Maudos, Joaquín, and Juan Fernández de Guevara. "Bank size, market power and financial stability." In *Bank performance, risk and firm financing*, pp. 7-31. Palgrave Macmillan, London, 2011.

Draghi, Mario. "Risk-reducing and risk-sharing in our Monetary Union." *Speech at the European University Institute, Florence* 11 (2018).

Tarullo, Daniel K. *Industrial organization and systemic risk: an agenda for further research: a speech at the Conference on the Regulation of Systemic Risk, Federal Reserve Board, Washington, DC, Sept. 15, 2011*. No. 582. 2011.