



**Economic Policy Program**

*Financial Regulatory Reform Initiative*

# The Big Bank Theory:

Breaking Down the Breakup Arguments

October 2014



BIPARTISAN POLICY CENTER



## Economic Policy Program

### *Financial Regulatory Reform Initiative*

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Founded in 2007 by former Senate Majority Leaders Howard Baker, Tom Daschle, Bob Dole, and George Mitchell, the Bipartisan Policy Center (BPC) is a nonprofit organization that drives principled solutions through rigorous analysis, reasoned negotiation, and respectful dialogue. With projects in multiple issue areas, BPC combines politically balanced policymaking with strong, proactive advocacy and outreach.

#### ABOUT THE FINANCIAL REGULATORY REFORM INITIATIVE

The Financial Regulatory Reform Initiative (FRRI) is co-chaired by Martin Baily and Phillip Swagel. Composed of five task forces, FRRI's goal is to conduct an analysis of Dodd-Frank to determine what is and what is not working along with recommendations to improve the system.

#### DISCLAIMER

This report is the product of the BPC Financial Regulatory Reform Initiative with participants of diverse expertise and affiliations, addressing many complex and contentious topics. It is inevitable that arriving at a consensus document in these circumstances entailed compromises. Accordingly, it should not be assumed that every member is entirely satisfied with every formulation in this document, or even that all participants would agree with any given recommendation if it were taken in isolation. Rather, this group reached consensus on these recommendations as a package.

The findings and recommendations expressed herein are solely those of the authors and do not necessarily represent the views or opinions of the Bipartisan Policy Center, its founders, or its Board of Directors.

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# Executive Summary and Introduction

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The 2008 financial crisis threw into sharp relief the issue of “too-big-to-fail” (TBTF)—the challenge posed by financial institutions that were bailed out on concerns that their failure would cause damage to the rest of the financial system and the overall economy. Since then, policymakers and regulators have wrestled with how to address this problem. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank)<sup>1</sup> put in place a series of measures to address the policy challenges of TBTF firms, including rules to enhance prudential supervision of individual institutions and reforms aimed at improving oversight of the overall financial system. Regulators have since agreed at a global level to yet-tougher prudential standards for large financial companies. Dodd-Frank also established a new legal authority to resolve a large and complex financial institution without the need for taxpayer support or further disruption to the financial system.

Have these sweeping reforms gone far enough in addressing the policy challenge of large, complex financial institutions? If they have not, then further measures would be appropriate, including breaking up or shrinking the size of large financial institutions. Such efforts would aim to eliminate perceived government subsidies to large banks that might support their size, and thereby to lessen the purported negative impacts of problems associated with these institutions. But such actions would impose costs, on top of those already associated with the steps taken to date. These costs must be weighed against benefits in order to decide on the appropriate course of action.

This paper, a product of the Bipartisan Policy Center’s Financial Regulatory Reform Initiative, assesses those costs and benefits. What would be the consequences of breaking up the country’s biggest banks? What would dramatically shrinking their size mean for the financial sector, the U.S. economy, and the customers of these institutions? How would such a strategy work? This paper seeks to answer these important questions. We conclude that the reforms undertaken since the financial crisis have gone a long way toward addressing the TBTF issue. Proposals to break up major financial institutions entail greater costs than the benefits they would provide and are potentially outright counterproductive. It would be better to allow Dodd-Frank and other U.S. and global reforms to work as intended, rather than to break up the largest banks. Indeed, if Dodd-Frank works as intended, then there is no need for a break up.

We came to this conclusion for several reasons. First, Dodd-Frank has made considerable progress in addressing the TBTF problem by creating a new legal authority to resolve a large and complex institution, potentially allowing any institution to fail without triggering a

collapse of the financial system. Market expectations of future government rescues have responded to these and other prudential regulatory reforms, including with a reduction in the cost-of-funding advantage for large banks based in part on diminished expectations of future government support. Moreover, if there is any remaining funding advantage, this appears likely to be counterbalanced by enhanced prudential requirements placed on large banks. These include higher capital requirements and annual stress tests, alongside additional capital mandates and new liquidity and asset-liability matching requirements agreed to by regulators through the international Basel III accord.

In addition, Dodd-Frank permits regulators to restrict the activities of financial institutions they deem to pose a “grave threat” to the U.S. financial system or to force such firms to divest assets. Dodd-Frank also caps the size of large banks at 10 percent of total U.S. consolidated financial liabilities, which prevents the largest institutions from growing through mergers and acquisitions.

Taken together, these reforms have transformed the landscape for large financial institutions. As Treasury Secretary Jack Lew put it: “Dodd-Frank ended ‘too big to fail’ as a matter of law; tough rules are now in place to make sure banks have the capital to absorb their own losses; monitoring through stress tests is underway; and resolution authorities and plans are in place. There is a growing recognition of these changes, and market analysts are now factoring them into their assumptions.”<sup>2</sup>

Second, breaking up the country’s largest financial institutions would not be a panacea. While there are potential costs to TBTF firms, a breakup of the largest financial institutions would reduce the value that they provide for the economy, businesses, and consumers. Recent research points to significant economies of scale and scope at large financial institutions, leading to efficiencies for businesses and consumers. Consumers and businesses have responded, with some evidence suggesting they are voting with their feet and choosing to form relationships with large institutions. Large, globally active banks facilitate international trade, spread socially beneficial innovations, and promote economic growth.

This is not to dismiss all concerns regarding large institutions. There are legitimate worries that some large, complex institutions may be “too big to manage,” and a number of large banks were among those that engaged in dangerous activities and practices in the run-up to the crisis. However, Dodd-Frank has alternative solutions to address these problems. It is also important to place the size argument in context. The U.S. banking sector is far less concentrated than banks in other developed countries and even compared with other industries in the United States. In addition to the competitive pressure from small- and medium-sized banks across many business lines, global banks—especially the largest banks—provide further competitive pressure on large U.S. banks, to the benefit of savers and borrowers alike.

Third, the reality is that a breakup would be hard to do. Among the many difficult issues that would need to be addressed for any breakup plan to succeed would be how to divide

the company's assets, debts, and customers among its successor institutions. Policies that would break up large banks must include a plan for how such a transformation would occur and take into account the significant transition costs of a breakup, including disruptions to existing customer relationships.

Finally, there is little reason to believe that breaking up the largest institutions would reduce risks in the financial system over the long-term. Breaking up an institution with \$2 trillion in assets would not result in scores of easy-to-resolve small institutions. Instead, it likely would result in four or five successor entities, engaged in similar activities as their larger predecessor, but still operating at a size of \$400 billion to \$500 billion each. Breaking up the biggest banks, in other words, may not make the financial system any more stable. In fact, it is possible that a financial system with many more banks of a size just below the threshold for a breakup would be riskier, not safer.

This paper is not intended to be the final word on the complicated issue of addressing large, complex financial firms. Instead, it aims to illuminate some of the key policy questions at the heart of this important policy debate.

## Layout of the Paper

The body of this paper focuses on answers to a set of key questions, listed below, which in turn inform our conclusions about the consequences of breaking up the large banks. In each section, we outline our responses.

### *How the Landscape Has Shifted for Large Banks in the Post-Crisis Era*

- What impact has post-crisis regulation had on large banks?
- In the wake of Dodd-Frank, can the largest banks fail without a systemic crisis or a taxpayer rescue?
- Is there an implicit subsidy or cost-of-funding advantage for the largest banks? If so, how big is it?

### *Large Banks: Examining Benefits and Costs*

- What economies of scale and scope exist for the largest banks?
- Do large banks contribute significantly to beneficial financial innovation?
- What value do large banks provide customers?
- Can large banks be effectively managed and supervised?
- Do the largest banks have more incentive than the next tier of banks to take excessive risks?
- Does banking have a competition problem that would be aided by breaking them up?

*Breaking Up Big Banks: Key Considerations*

- Would a breakup increase or decrease financial stability in the long run?
- How easy would it be to break up a large bank?
- What transition costs would be associated with a breakup?
- What are the alternatives to breakup?



# How the Landscape Has Shifted for Large Banks in the Post-Crisis Era

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In Part I, we argue that the reforms put in place in the aftermath of the financial crisis have had important effects on large, complex institutions. First, the new measures force large financial institutions to operate more safely, while the higher regulatory costs they impose serve as a disincentive to increasing in size or even remaining large. Second, Dodd-Frank has established a new mechanism, known as the Orderly Liquidation Authority, to resolve large, complex financial institutions—effectively ending TBTF as a legal concern. Lastly, these reforms have sharply reduced the unfair funding advantage many large banks enjoyed prior to the crisis based in part on the perception they were TBTF. The first section discusses these three main points in greater detail.

## What impact has post-crisis regulation had on large banks?

The architects of the Dodd-Frank Act were aware of the need to address the causes of the global financial crisis and end the perception that any financial institution was TBTF. In 2009, then-Treasury Secretary Timothy Geithner stated that the “crisis has made clear that certain large, interconnected firms and markets need to be under a more consistent, and conservative regulatory regime.”<sup>3</sup> Policymakers in the United States and around the world rejected a strategy to explicitly break up these banks and instead crafted a series of reforms to impose greater regulatory costs related to size. These measures included:

- Higher capital requirements;
- More stringent liquidity requirements;
- Higher deposit insurance premiums, including payments for liabilities that are not covered by FDIC deposit insurance;
- Greater restrictions on credit exposure to counterparties;
- Enhanced supervision and reporting; and
- Restrictions on proprietary trading, known as the Volcker Rule.

Taken together, these reforms address the TBTF problem in two ways. First, they force big financial institutions to operate more safely and make them better able to absorb unexpected losses. Second, in general, they increase regulatory costs on such firms in connection with their size and complexity so there is a disincentive to growing and staying large.

Take higher capital requirements, for example. In the United States, regulators have required a group of large banks with more than \$700 billion in total consolidated assets, commonly referred to as global systemically important banks (G-SIBs), to fund themselves with relatively more capital than their smaller peers. These higher capital levels ensure that such institutions have a greater ability to withstand serious shocks—and prevent a collapse that could threaten the broader economy.

Besides enabling these banks to operate more safely, higher capital levels have also played another important role: forcing large firms to internalize the costs of expanding the size of their balance sheets or scope of activities. After all, while raising additional capital may be costly for these banks, so would be the burden that a failure of a major institution would have on the broader economy and financial system. Imposing higher regulatory costs on bigger and more complex institutions is meant to offset—or more than offset—any cost-of-funding advantage that large banks have when raising money to fund their activities.<sup>i</sup> These new rules would be expected to discourage larger firms from expanding their balance sheets and perhaps even lead large institutions to scale back their operations over time.

It is difficult to quantify the impact of these changes on the largest banks, but an examination suggests that they are significant compared with the size of any cost-of-funding advantage in bond issuances they may enjoy relative to smaller institutions. For example, G-SIBs will be required to fund themselves with an additional 2.5 percentage points of additional Tier 1 common equity relative to risk-weighted assets. For the six largest G-SIBs, these surcharges would result in approximately an additional annual funding cost of a combined \$14 billion per year.<sup>ii</sup>

Additional capital requirements have increased the costs imposed on G-SIBs<sup>iii</sup> since the largest banks have had to increase their overall level of capital to pass annual Federal Reserve Board stress tests, known as the Comprehensive Capital Analysis and Review (CCAR). Indeed, a recent industry-sponsored report written by Federal Financial Analytics suggested that the cost for the six largest institutions of meeting CCAR requirements was \$7.3 billion in 2013, though much of this cost will likely overlap with the new capital

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<sup>i</sup> See discussion of cost-of-funding advantages later in this paper.

<sup>ii</sup> This is based on the following calculation: 2.5 points of risk-weighted assets would translate to 2 points on total assets, assuming an average risk-weighting of 80 percent. If the after-tax cost of debt were about 3 percent and equity about 10 percent, this would raise the total cost of funding the assets by 14 basis points (7 percent multiplied by .02). These are approximations given that the funding costs involved with debt and equity will change with increased capital levels.

<sup>iii</sup> The Federal Reserve Board will soon finalize an enhanced supplementary leverage requirement that is expected to require G-SIBs to fund themselves with 5 percent of capital at the holding-company level against on- and off-balance-sheet assets.

surcharge discussed above.<sup>4</sup> On top of that, an additional capital surcharge on institutions that fund themselves with high levels of short-term liabilities is also expected to be announced by regulators in the future.<sup>5</sup>

However, higher capital standards are not the only measures regulators adopted. New liquidity requirements are being put in place as a result of the Basel III agreement among international regulators. These requirements, known as the Liquidity Coverage Ratio and the Net Stable Funding Ratio, force larger banks to keep more cash and other liquid investments on hand to prevent runs on an individual institution, which could lead in turn to a run on the broader financial system.<sup>iv</sup> The new requirements also influence bank behavior. The new rules favor institutions that rely on more stable deposit funding and engage in more traditional banking activities rather than trading businesses that tend to rely on less stable funding sources such as repurchase agreements. The upshot is that large banks may look to achieve compliance by moving toward lower-yielding short-term securities that comply with the liquidity requirements.<sup>6</sup> They might also choose to lengthen the maturity of their liabilities, thereby incurring higher funding costs.

Other relevant measures include raising the premiums that big banks pay for deposit insurance. Section 331 of the Dodd-Frank Act redefines the assessment base used for calculating deposit insurance assessments. Previously, the assessment base was defined as domestic deposits less certain allowable exclusions, while under the new rule the base is defined as banks' average consolidated total assets minus average tangible equity.<sup>v</sup> As a result, the largest banks are now required to shoulder a greater share of the deposit insurance base and pay higher premiums relative to smaller institutions, such as community banks, which fund themselves more heavily with domestic deposits.<sup>vi</sup> For example, a recent study by Federal Financial Analytics<sup>7</sup> estimated the increased cost for the six largest G-SIBs to be just under \$4 billion.<sup>vii</sup>

Another reform has involved imposing limits on counterparty exposures and creating other qualitative restrictions on behavior—rules designed to curb large bank participation in risky activities. But they also pose potentially significant costs, although the costs are difficult to quantify. For example, a variety of derivatives that are traded over-the-counter (OTC) are subject to new regulations, such as centralized clearing and strict reporting requirements,

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<sup>iv</sup> Further the Federal Reserve Board recently finalized a new minimum liquidity requirement for the largest U.S. bank holding companies with more stringent standards than those set forth in the Basel III framework in regard to what may be considered high-quality liquid assets.

<sup>v</sup> An implication of the change is that banks are assessed insurance premiums on liabilities such as bonds and other types of wholesale funding that are not covered by the FDIC insurance.

<sup>vi</sup> In addition to altering the premium base from domestic deposits to assets, the amendment gave the FDIC the authority to price premiums differently based on its determination of the risks posed by the assets or activities of the insured depository institution or its affiliates. In its rule, the FDIC imposed additional charges for "highly-complex institutions," which includes all of the insured depositories owned by U.S. G-SIBs.

<sup>vii</sup> Standard and Poor's (S&P) estimated the annual cost of the higher fees for the eight largest U.S. banks to be between \$3.5 billion to \$4.0 billion. See Matthew B. Albrecht and Carmen Y. Manoyan, "Two Years On, Reassessing The Cost Of Dodd-Frank For The Largest U.S. Banks," Standard & Poor's, August 9, 2012. Available at: <http://www.standardandpoors.com/ratings/articles/en/us/?assetID=1245338539029>.

under Title VII of the Dodd-Frank Act. Standard & Poor's (S&P) estimated the annual impact on the pretax earnings from complying with the new OTC derivatives regulations to be between \$4 billion and \$4.5 billion for the eight largest banks.<sup>8</sup> Likewise, additional activity restrictions such as the limits on proprietary trading and prohibitions on investments in certain types of funds imposed by Section 619 of Dodd-Frank—more commonly known as the Volcker Rule—also have a disproportionate impact on the largest banks. For instance, the same S&P study found that the Volcker Rule could reduce pretax earnings for the eight largest banks by \$10 billion annually.<sup>9</sup>

Lastly, larger firms face more stringent prudential oversight and additional reporting requirements designed to give regulators a better handle on the safety and soundness concerns facing these banks. The total cost of these regulatory and supervisory changes is difficult to estimate, particularly given that many requirements have yet to be implemented. Estimates of total new regulatory costs include one from S&P,<sup>10</sup> which pegs them between \$22 billion and \$34 billion in 2012,<sup>viii</sup> and another from Federal Financial Analytics, which estimates the total cost of enhanced regulation for the largest six banks (that is, the G-SIBs) was \$70 billion in 2013, double the cost in 2007.

Whether the total increased regulatory cost borne by large banks is \$20 billion, \$30 billion, or \$50 billion annually will be difficult to determine. It appears, however, that these costs are potentially greater than any remaining cost-of-funding advantage that may be enjoyed by large banks.

## In the wake of Dodd-Frank, can the largest banks fail without a systemic crisis or a taxpayer rescue?

The TBTF problem conflates two questions: is a bank “too big” and is it “able to fail”? Indeed, a rationale for breaking up the largest institutions is to assure that taxpayers never have to rescue a large firm, as occurred during the financial crisis. Dodd-Frank tackled this problem by focusing on the “to fail” question, creating a new legal mechanism, known as the Orderly Liquidation Authority, to resolve large, complex financial institutions. If this mechanism works as intended, it will answer the failure question, and this in turn would have a meaningful impact on the “too big” debate. In short, if any bank can fail without larger consequences, then it is not clear that there is still a TBTF problem.

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<sup>viii</sup> This includes additional compliance costs on large banks. S&P estimates these costs to be \$2-2.5 billion annually. Beyond these costs, Section 318 enables the Federal Reserve to charge the largest banks—those with more than \$50 billion in assets—assessment fees equal to the cost of carrying out its supervisory and regulatory responsibilities, which could amount to further supervisory related charges. Taken together with the higher assessment charges levied by the Office of the Comptroller of the Currency, the six largest banks paid just over \$400 million more in such fees in 2013 relative to the total assessments they paid in 2007. However, these compliance and assessment costs, many of which are fixed, largely apply to all banks above the \$50 billion asset threshold. As a result they disadvantage institutions closer to that threshold to a greater degree than the largest institutions.

Title II of the Dodd-Frank Act established the Orderly Liquidation Authority process to allow a major bank to be put through bankruptcy or an alternative insolvency proceeding. Under this mechanism, losses suffered by financial institutions are to be borne by its shareholders and creditors, not taxpayers. Indeed, the Dodd-Frank Act specifically prohibits taxpayer bailouts of financial institutions—if taxpayers cannot be made whole from the resources within the firm itself, then any gap is to be closed through assessments on other financial firms.<sup>11</sup> The Orderly Liquidation Authority can only be invoked under certain conditions,<sup>ix</sup> with the presumption being that most failures will involve resolution by the Federal Deposit Insurance Corporation (FDIC) of the depository institution(s) and use of the Bankruptcy Code to wind down the bank’s holding company. In 2013, the FDIC announced that its preferred approach to resolving financial companies under the Orderly Liquidation Authority was a “single-point-of-entry” strategy.<sup>x</sup>

If the single-point-of-entry approach works as intended, it would eliminate the possibility of a taxpayer-funded bailout of a large financial institution.<sup>12</sup> To the extent that market actors view this strategy as predictable and credible, it would also reduce or eliminate the cost-of-funding advantage often referred to as the “implicit subsidy.” As the Bipartisan Policy Center’s Failure Resolution Task Force outlined in its May 2013 report<sup>13</sup> and subsequent comment letter to the FDIC in 2014,<sup>14</sup> the single-point-of-entry strategy is still a work in progress with important actions remaining. Consequently, it is difficult to know whether it will be effective in resolving a complex global financial institution—we will only find out in a future crisis.

For the single-point-of-entry strategy to work, international coordination is necessary. The absence of such agreements could lead foreign regulators to “ring-fence” the assets of the failed company’s subsidiaries, thereby making resolution under a single-point-of-entry strategy difficult. Some foreign regulators have undertaken actions that could promote ring-fencing, and the Federal Reserve Board has also taken steps that provide for something of a ring-fence around foreign banks operating in the United States.<sup>15</sup> However, the FDIC has undertaken a multinational approach, working with foreign regulators, including those in the United Kingdom and Canada, to attempt to create a resolution strategy that can work for global financial institutions. In general, we support globally coordinated regulatory frameworks and commend the FDIC for taking such an approach.

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<sup>ix</sup> In general, the Orderly Liquidation Authority can only be invoked by a joint determination of the FDIC and the Federal Reserve Board (the Securities and Exchange Commission and the Federal Reserve Board in the case of broker-dealers; the Federal Insurance Office and the Federal Reserve Board in the case of insurance companies). The secretary of the treasury, in consultation with the president, must then approve this determination. The secretary then appoints the FDIC (or the Securities Investor Protection Corporation in the case of broker-dealers) as the receiver for the company.

<sup>x</sup> This approach envisions transferring the holding company’s assets to a bridge financial holding company and imposing its consolidated losses on the equity and long-term unsecured debt-holders of the holding company. The FDIC would also replace management responsible for incurring the losses at the firm. However, the holding company would recapitalize its subsidiaries (both domestic and foreign) with its assets and thus allow the subsidiaries to remain open and operating. The goal is to avoid destabilizing insolvency proceedings at the subsidiary level and ensure overall market stability.

In addition to the Orderly Liquidation Authority, Dodd-Frank requires large financial institutions to submit “living wills,” which are essentially roadmaps for how a firm would be resolved under the Bankruptcy Code in the event of its failure.<sup>16</sup> This is a potentially powerful tool. If the Federal Reserve Board and the FDIC find the plan to be deficient, they can jointly impose enhanced capital, leverage, or liquidity requirements; restrict a company’s growth or operations; and ultimately require it to divest assets.<sup>xi</sup> In other words, Dodd-Frank gives regulators the tools to both wind down and break up large financial institutions should the circumstances warrant it.<sup>17</sup>

In sum, these reforms have the potential to prevent large bank failures and, if that is not possible, ensure an orderly wind-down of a large and complex financial institution without the need for government support. If it ultimately proves effective, then Title II resolution authority will remove the prospect of a taxpayer-funded bailout and, with it, one of the core arguments in favor of breaking up the largest banks.

## Is there an implicit subsidy or funding advantage for the largest banks? If so, how big is it?

A rationale for breaking up big banks is the possibility that they enjoy a funding advantage over smaller peers as a result of an expectation among market participants that the government will step in to support them in a crisis. This is a critical component of the TBTF problem. Normally, market participants would evaluate a bank’s risk level and financial condition on a stand-alone basis. As risk increases, investors should demand higher yields on bank liabilities such as uninsured debt, since counterparties would bear losses if a bank becomes financially insolvent (and investors would evaluate the strength of any insurance or collateral standing behind particular debt securities or other bank liabilities). When investors believe there is an implicit government guarantee, however, they become less sensitive to stand-alone risk levels and will therefore require lower returns on assets they expect to be guaranteed by the government.<sup>xii</sup> The difference between the yield that would be required on a stand-alone basis and the actual yield demanded by the market is often referred to as an “implicit subsidy” to the financial institution.

The term “implicit subsidy” usually evokes the idea of a line-item of funding or direct support from the government to the recipient. In this case, however, we mean the lower rates that large banks pay to fund themselves. This is an indirect “cost-of-funding advantage,” rather than the type of direct government support usually suggested by the term “subsidy.”<sup>18</sup> Thus we use the term “funding advantage” when discussing this issue.

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<sup>xi</sup> Such divestiture requirements would occur after two years and in consultation with the Financial Stability Oversight Council.

<sup>xii</sup> It is important to note that this type of funding advantage can exist even if the market is uncertain about potential government support. If an investor viewed a bailout as a 50 percent probability in a crisis, then required yields would be less sensitive to risk than if there were no perceived chance of a rescue, although there would still be some premium demanded for higher-risk activities.

It is important to note that a cost-of-funding advantage for the largest banks may exist even absent any market expectation of government support. Some studies have found that the largest banks enjoy funding advantages that are similar to those enjoyed by the largest firms in other industries. For example, Lester and Kumar (2014) provide evidence that size effects largely explain funding differentials across both banking and non-banking industries.<sup>19</sup> That is, there may be inherent advantages to size, such as scale and scope effects, and risk diversification. If this is the case, then it is possible that a cost-of-funding advantage could persist for the largest institutions for economic reasons, not related to political or policy decisions.

Funding advantages based on an assumption of government support are harmful for at least two reasons. First, they distort competitive dynamics, encouraging banks to be bigger than they would without the subsidy. Second, they erode market discipline, encouraging excessive risk-taking by the banks. In the absence of a belief that a government backstop exists, risky activities undertaken by banks or poor performance that whittles down a bank's capital level would raise the cost of funding, providing bank management with an incentive for prudence. To the extent market discipline is weakened, bank managers might take on more risk, either out of a conscious desire to "swing for the fences" to maximize profit potential or because over-optimism is not checked by more realistic outside views.

A number of studies have attempted to quantify the size of the funding advantage provided to large banks.<sup>xiii</sup> As both Table 1 below and the literature review in Appendix B indicate, there is considerable disagreement on the question of the cost-of-funding advantage. However, certain points seem clear. First, the largest banks enjoyed a sizeable cost-of-funding advantage before the financial crisis. Second, during the crisis, when credit concerns were paramount, these funding advantages grew dramatically, to the advantage of the largest banks. The market's collective expectation was borne out, as large banks were not allowed to fail, while many smaller institutions went under. Shareholders took losses in many cases, but bondholders were generally made whole, including through guarantees on senior bank debt. These guarantees were vital and effective in containing damage during the crisis, but they constituted government support that made good on the belief that there was implicit backing of large banks.

Since the crisis, however, the cost-of-funding advantage has declined, with some studies finding that large banks are now at a cost-of-funding *disadvantage* relative to smaller banks. These studies include the Government Accountability Office (GAO) report released in July 2014, which evaluated empirical results from 42 different models to try to answer this question. All 42 of those models confirmed that during the financial crisis in 2007-2009,

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<sup>xiii</sup> The major funding sources for large financial institutions include bond investors, repurchase agreement (repo) counterparties, depositors, and equity investors. Of these, bond investors might be seen as most likely to reduce their required returns based on potential government support. While in principle all forms of funding should be assessed in calculating a subsidy, analyses of the funding advantage provided by potential government support for large banks have tended to focus on bond market pricing.

large banks had a cost-of-funding advantage compared with small banks.<sup>xiv</sup> However, GAO found that this effect had been eliminated in a majority of its simulations post-Dodd-Frank. From 2011 to 2013—the most recent period assessed in the report—GAO found that largest banks actually had a *higher* cost of funding than small banks in a plurality of the 42 models. This development reflects a mix of statutory, regulatory, and political changes that are perceived by the market as having reduced the likelihood of a federal rescue. New legislation and regulation have also simultaneously imposed additional changes on large banks' funding (see previous section).

Notably, almost all studies point toward the existence of a cost-of-funding advantage in the past that varied in proximity to bailout events. This suggests that the typical government strategy of “constructive ambiguity,” designed to create uncertainty among investors about the prospects for bailouts,<sup>20</sup> was generally not viewed as credible by market participants. In retrospect, the market was right to assume that there was some significant probability of a government rescue of the banking system, and of important individual banks, in the crisis of 2007-2009. Furthermore, the potential for government support is more valuable during a financial crisis, or at any other time when there is a perceived high level of risk. Thus, it is not surprising that large banks enjoyed large cost-of-funding advantages arising from market perceptions of government support during the last crisis. Equally so, however, changes since the crisis have caused these advantages to decline.

The key question is whether a cost-of-funding advantage will exist in the future. This will depend to a considerable extent on whether markets believe that Title II of Dodd-Frank will be effective or at least have a significant probability of success. There are a number of signs that markets are taking Title II seriously. In June 2013, S&P shifted its outlook to negative for the largest bank holding companies, reflecting their “assessment of political willingness to achieve effective resolution regimes for large systemically important institutions.”<sup>21</sup> In November 2013, Moody's Investors Services announced that they had reviewed their credit-ratings assessments on the eight largest U.S. banks and “removed all uplift from U.S. government support in the ratings for bank holding company debt.” Moody's noted that these actions “reflect strengthened US bank resolution tools, prompted by the Dodd-Frank Act,”<sup>22</sup> which indicates a belief that Title II and its implementation through the FDIC's single-point-of-entry strategy has created a credible path for resolution without government assistance.

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<sup>xiv</sup> The GAO study compared the funding costs of bank holding companies with \$1 trillion in assets and those with \$10 billion in assets.



**Table 1: Recent Studies Examining Bank Cost-of-Funding Differences**

AUTHOR (DATE)	MEASURE OF FUNDING COST	TIME PERIOD REVIEWED	KEY FINDING
Government Accountability Office (July 2014) <sup>23</sup>	Bonds	2006-2013	A plurality of models from 2011-2013 show a higher cost of funding for BHCs with \$1 trillion in assets relative to banks with \$10 billion in assets. All models from 2007-2009 show the cost of funding was lower for such BHCs.
Acharya, Anginer, & Warburton (June 2014) <sup>24</sup>	Bonds	1990-2012	From 1990-2012, the cost-of-funding advantage for SIFIs was 30 bps on average, peaking at 120 bps in 2009.
International Monetary Fund (April 2014) <sup>25</sup>	Credit default swaps on bonds	2003-2013	In 2013, costs were 15 bps on average lower for SIBs relative to non-SIBs. This represented a decline from a peak of 75-90 bps on average in 2009.
International Monetary Fund (April 2014) <sup>26</sup>	Credit ratings	2003-2013	In 2013, costs were 15 bps on average lower for U.S. SIBs (75 bps for distressed SIBs). This represented a decline from a peak of 30-35 bps on average in 2009.
Lester and Kumar (April 2014) <sup>27</sup>	Bonds	2009-2013	In 2013, costs were 18 bps lower on average for U.S. G-SIBs relative to non-G-SIBs. This represented a decline from a peak of 104 bps cost-of-funding advantage for G-SIBs in 2009.
Balasubramanian and Cyree (2014) <sup>28</sup>	Bonds	2009-2011	Following passage of the Dodd-Frank Act, secondary bond costs for the 19 large U.S. banks identified for stress testing by the Federal Reserve increased by 176 bps. This was still 11 bps lower than cost of funding for other banks.
Lester and Kumar (March 2014) <sup>29</sup>	Deposits	2010-2012	From 2010-2012, the cost-of-funding advantage for G-SIBs on uninsured money market deposits was 4 bps on average. This represented a decline from greater than 30 bps prior to 2010.
Santos (2014) <sup>30</sup>	Bonds	1985-2009	The cost of funding for the five largest U.S. banks was 41-45 bps lower on average relative to other banks.
Strongin et al. (2013) <sup>31</sup>	Bonds	1999-2012	In 2011 and 2012, the six largest U.S. banks had a roughly 10 bps higher cost of funding than other banks. From 1999 to 2012, the six largest banks had a 31 bps lower cost of funding on average relative to other banks.

*Note: bps = basis points, which are 1/100<sup>th</sup> of a percentage point; BHC = bank holding company; SIFI = systemically important financial institution; SIB = systemically important bank; G-SIB = global systemically important bank.*

The existence and size of any cost-of-funding advantage will also depend on the underlying creditworthiness of the large banks. If the chances of needing a government rescue are seen to be remote, then there would be little implicit subsidy. There remains some probability of a large bank becoming insolvent absent government support, but the safety of these banks should be substantially higher going forward, as a result of the additional prudential measures contained within Dodd-Frank, Basel III, and other changes driven by the private sector. If that is the case, one would expect the implicit subsidy to be substantially less valuable even without the new failure-resolution authorities created in Dodd-Frank.

# Large Banks: Comparing Benefits and Costs

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In Part 1, we argued that the implementation of reforms contained in the Dodd-Frank Act and Basel III have gone a long way toward ensuring that large financial institutions operate more safely, can be wound down without taxpayer bailouts, and do not retain the funding advantage they enjoyed prior to and during the crisis that reflected market participants' belief of latent government support for these institutions. These reforms address the challenge of TBTF. In Part 2, we go a step further and argue that breaking up the largest banks would be undesirable, given the significant benefits they provide to businesses, individuals, and the economy.

## What economies of scale and scope are available to the largest banks?

Large financial firms benefit from their size in two fundamental ways. First, large banks may obtain "economies of scale," meaning that the cost per unit of output generally decreases with increasing scale as fixed costs are spread out over more units of output. For example, developing a software system to handle the operations and human resources of a large firm is costly but, once it is built, hiring additional employees adds a small marginal cost to the system. Areas with high fixed costs and low marginal costs tend to yield high economies of scale. There are areas in banking that work in this manner, particularly payment processing and clearing systems that require major investments in computer systems and fixed costs but then entail low marginal costs. Economies of scale do not only exist in backroom operations. Large, national ATM and branch networks can create additional value for consumers and businesses, which would incentivize banks to grow their footprint.

Economies of scale can exist beyond platform creation and into human capital. It takes a certain scale of activity before it becomes efficient to hire an expert on a certain market or particular type of loan or investment, and loan officers are more efficient if they have more customers in a specific industry or region. Underwriting a large bond issue requires a global network of clients. Large scale makes it possible for these institutions to make bigger loans or undertake larger transactions than would be possible through syndicated lending. Finally, in the current era, international regulatory compliance requires large teams of legal experts across many countries, as well as a sophisticated information-technology infrastructure.

Early academic work suggested that the benefits of increasing scale in banking leveled off at about \$50 to \$100 billion in assets, much smaller than the current size of the largest U.S. financial institutions.<sup>32</sup> More recent academic work generally finds economies of scale at much higher asset levels, suggesting near-constant returns to scale.<sup>xv</sup> Among these, a Federal Reserve of Philadelphia study conducted by Hughes and Mester (2013)<sup>33</sup> demonstrates that implicit subsidies are not responsible for the significant economies obtained by banks with asset sizes greater than \$100 billion. Instead, they find that economies of scale in the U.S. banking industry have grown significantly, likely as a result of improvements to technology and a reduction in geographic and other legal barriers (earlier studies are mostly a decade or so older and therefore do not account for many of these changes.) Meanwhile, the Clearing House, an organization comprising many of the largest financial institutions, found that the existence of big banks created between \$20 and \$45 billion a year in customer benefits that arose from economies of scale.<sup>34</sup>

Second, large banks benefit from conducting a range of activities, known as “economies of scope.” Banks and their customers can realize added value when banks provide services complementary to their primary offerings. In finance, there are advantages to being able to offer a wide range of services, which are easiest to illustrate with regard to corporate customers. For instance, one reason that banks value mergers-and-acquisitions business is that they produce opportunities to provide customers with a range of related transactions such as financing, foreign exchange, risk management products such as derivatives, and various operational services. It is more economically efficient for banks to provide many of these services in combination.

A 2013 survey commissioned by the U.S. Chamber of Commerce analyzed the choices and preferences of U.S. companies. The survey looked at companies with at least \$75 million in annual revenue, both publicly and privately held. Almost all of these companies (95 percent) use five or more financial services, indicating the demand for a wide variety of services (economies of scope). This desire for a broader number of financial services appears to be growing, particularly as corporations have grown more global in their operations. More than one in five companies responded that they are using more financial services than two to three years ago, while slightly more than one in 20 responded that they are using fewer. While this may be due in part to a natural uptick in demand following the recession, it is notable that when asked what the most important feature of a financial institution was for their firm, a “wide spectrum of services” topped the list.

Finance has been evolving toward greater specialization and customization in services offered to corporations, as evidenced above. In principle, this increased demand for specialized services might create a counterweight to the push for economies of scale, leading instead to a flourishing of smaller, boutique firms. It is interesting that the

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<sup>xv</sup> Four papers find near-constant returns to scale: a 2010 *Journal of Banking* article by Feng and Serletis; a 2012 *Journal of Money, Credit and Banking* article by Wheelock and Wilson; a 2013 Federal Reserve of Philadelphia working paper by Hughes and Mester; and a 2014 Federal Reserve Bank of New York paper by Kovner et al. (see Appendix A for a discussion of the economies of scale literature).

transaction costs of multiple relationships in the corporate sector appear to have instead pushed the consolidation of each of these new specialized services into larger financial services companies. Evidence to quantify the value arising from economies of scope is not plentiful, though one study from the Clearing House did attempt to do so.<sup>35</sup> They concluded that large banks in the United States provide \$15 to \$35 billion a year in economic benefits as a result of economies of scope.<sup>36</sup>

The value of economies of scope has limits, however. Combining banking and insurance was seen as a way to yield substantial scope economies. Yet almost 15 years after the passage of Gramm-Leach-Bliley Act, which among other things allowed these business models to co-exist in a single firm, the benefits of comingling insurance and banking have not been evident and the largest such merger, between Citigroup and Travelers, has since been unwound.<sup>xvi</sup> That the business model of mixing insurance and banking did not enjoy success raises the question of whether consumers and businesses will always benefit from an expanded scope of services. Whatever the theoretical underpinnings of that argument, the practical experience in the United States has indicated that it is not always the case.

Taken together, however, this research suggests that economies of scale account for at least part of the growth in the average size of banks over the past 30 years. If economies of scale and scope are present at large financial firms, then imposing limits on the size of large banks would make banking services more expensive for consumers and businesses. For example, a 2012 study by Wheelock and Wilson found that even capping banks at \$1 trillion in size, a high limit compared with many proposals that have been made, would result in a loss of \$79 billion in scale and scope benefits.<sup>37</sup> If these benefits are so large, then some customers and corporations would likely turn to non-U.S. financial institutions to provide the services that they currently receive from domestic institutions. These larger U.S. corporate firms would then gain an advantage over smaller U.S. businesses that are unable to access these services on a cost-effective basis.

## Do large banks contribute significantly to beneficial financial innovation?

A lesson of the financial crisis is that “innovation” is not always a synonym for “positive.” Innovations that seem beneficial on paper can be used in ways that reduce or reverse those benefits in practice. The complexity of certain financial products, the bulk of which were associated with activities of large banks, obscured the risk present in the underlying assets for even sophisticated investors (and in some cases, complexity made it possible to mask risks).

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<sup>xvi</sup> An exception to this has been USAA, which provides extensive banking and insurance services. See Aaron Klein, “Finding the Right Capital Regulations for Insurers,” Statement to the Subcommittee on Financial Institutions and Consumer Protection and Subcommittee on Securities, Insurance, and Investment, Committee on Banking, Housing, and Urban Affairs, United States Senate, March 11, 2014, p. 3. Available at: [http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore\\_id=b08b03f0-5f62-4faf-820c-be9e9967fd7d](http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=b08b03f0-5f62-4faf-820c-be9e9967fd7d).

At the same time, complex financial products also provide benefits; securitization of debt obligations has, for example, expanded the funding available for consumer and business lending. There are many other clear examples of positive financial innovation. These include the ATM, online banking, and the expansion of simple commodity derivatives that allow corporations, such as airlines, to hedge against risks, such as the possibility that fuel prices will rise. At the same time, innovations such as synthetic credit default securities tied to subprime mortgages were connected to the financial crisis and might be seen as having contributed to it. This paper will not attempt to settle this debate, though we believe that financial innovation has been a net positive overall. Instead we will consider the effect breaking up the large banks would have on the speed of adoption of financial innovations.

While large banks are not necessarily disproportionately initiators of economically useful or consumer-oriented innovations, they do play an important role in *disseminating* such innovations.<sup>38</sup> Large banks have the economies of scale to invest in innovations with high fixed costs, such as online and mobile technology. Specifically, by having a large customer base, major institutions are often better positioned to spread the costs of investment in a technology over more users, allowing them to provide them at lower average costs than their competitors. The geographical reach of large institutions also facilitates the uptake of new innovations, allowing them to reach a wide range of customers across different geographical areas. There is also an argument that large banks may be better positioned to spread innovation as a consequence of reputational effects. That is, consumers are more likely to trust new products and services when they are introduced by an established institution with a major market presence.<sup>39</sup>

Consider the widespread use of ATMs, which began when Citibank installed a fleet of machines at its branches the late 1970s. Subsequently, large banks partnered to form shared ATM networks, which encouraged their spread nationally. By 1995, 63 percent of households held ATM cards.<sup>40</sup> It was only when the dominant national networks permitted fee surcharges on ATMs in 1995 that smaller banks began to install ATMs in large numbers and issue ATM cards to their customers. Large banks were also pioneers of online bill payments, offering such services through third-party providers in the 1990s. Likewise, the largest banks also established the national Automated Clearing House network, which increased the speed of payments and made automatic payments possible. Academic studies have found that large banks were the early and primary adopters of small business credit-scoring in the 1990s,<sup>41</sup> a development that resulted in an increase in the quantity of lending to small businesses.<sup>42</sup>

In sum, large banks have helped to encourage the widespread adoption of new financial innovations, a development that is perhaps unsurprising given their size and geographical scope. Breaking up the largest banks would slow the uptake of these innovations. Whether that is a good or bad thing is up to the reader to judge. Our view is that financial innovation has produced net economic and social benefits, even while we recognize the costs in terms of excessive intermediation, risk-taking, and other harmful impacts.

## What value do large banks provide for customers?

Customers (both business and individual) determine bank size. American consumers are fortunate that they have one of the, if not the, greatest level of consumer choice of financial institutions among developed countries. There are approximately 6,500 banks and a similar number of credit unions in the United States.<sup>43</sup> While geographic and legal restrictions impose some limits on choice, the growth of large national banks, regional banks, and the continued prevalence of a large number of small community institutions provide a wide range of options for consumers

When customers do not like or trust a financial institution they can and do leave. A sudden departure of a significant portion of a bank's customer base can even lead to the institution's failure. Thus, financial institutions have significant incentives to keep customers both through quality service and competitive pricing. There is a major difference between markets for financial services for individuals and businesses. Individuals have more choices, such as credit unions, while businesses typically require a broader array of services. This section examines whether size matters from the customer's point of view.

### **BUSINESSES**

There is some evidence that both business and retail customers choose to bank with large institutions rather than smaller banks. The reasons vary by the type of customer. One set of customers that rely on large U.S. banks are globally active U.S. businesses. These firms face different economic and legal conditions across the variety of locations in which they operate. Large banks with a presence in multiple jurisdictions are often vital for these businesses. In addition to providing valuable cross-border payments and capital markets services, they can help U.S. businesses navigate local laws and business practices and facilitate relationship-building with local business partners.

A 2013 survey commissioned by the U.S. Chamber of Commerce of public and private companies with at least \$75 million in annual revenue found that among companies that issue debt, 84 percent use a financial company with global operations.<sup>44</sup> For comparison, 34 percent use national institutions and 21 percent used regional or local institutions.<sup>xvii</sup> Another 2013 survey of 212 CEOs by the Business Roundtable highlighted the importance of large banks for U.S. multinational businesses.<sup>45</sup> Specifically, majorities of the CEOs surveyed cited large U.S. banks' cash management, foreign exchange, and cross-border payments services as essential to their businesses, as well as the debt and equity offerings provided by large banks. The CEOs also felt that large U.S. banks were either essential or useful in providing mergers and acquisitions advice, large loans, swaps, and derivatives products. The results of the survey are included in Table 2 below.

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<sup>xvii</sup> These numbers exceed 100 percent because most companies that issue debt use multiple financial institutions.

**Table 2: Business Roundtable Member Companies' Use of Large U.S. Bank Products and Services<sup>46</sup>**

FINANCIAL PRODUCT OR SERVICE	ESSENTIAL TO OPERATIONS (%)	USEFUL TO OPERATIONS (%)	ESSENTIAL + USEFUL TO OPERATIONS (%)
Cash Management	65	24	88
Foreign Exchange	56	26	82
Debt and Equity	58	23	81
Cross-Border Payments	56	24	81
Mergers and Acquisitions	34	45	78
Access to Foreign Markets	47	30	77
Large Loans	44	34	77
Swaps and Derivatives	40	30	71
Trade Finance	18	30	48

## INDIVIDUALS

There is no question that big banks suffered substantial reputational damage as a result of the financial crisis. With movements such as Occupy Wall Street and grassroots “change your bank” campaigns targeted against large financial institutions, one might have expected a substantial number of customers to vote with their feet and move their deposit holdings to smaller financial institutions. The empirical evidence does not, however, show this.

The data show instead that the five largest retail banks—Bank of America, J.P. Morgan Chase, Citibank, Wells Fargo, and U.S. Bank—added nearly 25 million new deposit accounts between 2010 and 2014 (see Table 3). This is particularly interesting, because the 2010 to 2014 time period is the only one in recent history in which large financial institutions were not growing by merger and acquisition, as large institutions have been prohibited from doing so after the financial crisis under Section 622 of the Dodd-Frank Act.<sup>47</sup>

It could be argued that customers thought that larger banks were safer as a result of being TBTF. This would represent one avenue of the implicit subsidy of government action flowing through as a benefit to large financial institutions. Accounts with up to \$250,000 in deposits are guaranteed, however, at any FDIC member institution, so concerns over TBTF would not be expected to drive the relationship decision for people with such accounts (which includes most people). The data show that the overwhelming bulk of new accounts were retail and business accounts with less than \$250,000 held in them, implying that individual consumers were using the services of large financial institutions for reasons other than the perceived safety benefits of being TBTF.



There is also little reason to believe that customers are moving to large financial institutions because of a trickle down of benefits from a cost-of-funding advantage. In order for that to be the case, large financial institutions would need to be receiving a funding advantage in excess of regulatory costs and passing some of that advantage on to customers rather than to shareholders or corporate management. In this situation, large institutions would be providing consumers with better interest rates or lower fees than smaller banks. We are not aware of any evidence that shows this to be the case.

**Table 3: Growth in Size and Number of Deposits at Large and Select Regional U.S. Banks, 2010-2014<sup>xviii</sup>**

<b>NET GROWTH FROM MARCH 31, 2010, TO MARCH 31, 2014</b>				
<b>Financial Institution</b>	<b>New Deposit Accounts Under \$250,000</b>	<b>New Deposit Accounts Over \$250,000</b>	<b>Total Number of New Deposit Accounts</b>	<b>Deposit Account Growth (%)</b>
Bank of America, National Association	3,761,000	91,000	3,853,000	6.2%
J.P. Morgan Chase Bank, National Association	1,336,000	119,000	1,455,000	3.2%
Wells Fargo Bank, National Association <sup>xix</sup>	7,283,000	252,000	7,304,000	8.8%
Citibank, National Association	8,588,000	41,000	8,629,000	36.1%
U.S. Bank National Association	4,639,000	24,000	4,663,000	40.4%
PNC Bank, National Association	3,775,000	(97,000)	3,678,000	28.2%

Surveys indicate that customers' satisfaction with their individual financial institution is high among banks of all sizes. The American Customer Satisfaction Index, published in December 2013, showed that customers' satisfaction with their personal bank is high for both large and small banks, with small banks scoring slightly higher (83 vs. 78).<sup>48</sup> J.D.

<sup>xviii</sup> All data other than Wells Fargo obtained from the Federal Deposit Insurance Corporation, "Statistics on Depository Institutions." Available at: [http://www2.fdic.gov/SDI/download\\_large\\_list\\_outside.asp](http://www2.fdic.gov/SDI/download_large_list_outside.asp). Account figures have been rounded to the nearest 1,000.

<sup>xix</sup> For Wells Fargo, the figure for the total number of new deposit accounts was supplied by the institution. The figures for new deposit accounts up to \$250,000 were extrapolated based on an average of the reported percentage of accounts under \$250,000 between 2010 and 2014. The data initially reported by Wells Fargo to the FDIC overstated the total number of deposit accounts because of reporting discrepancies related to its acquisition of Wachovia Corporation.

Power's U.S. Retail Banking Satisfaction Survey found similar results: overall satisfaction among the customers of large banks stood at 782 out of 1,000, putting them at a comparable satisfaction level to midsize (796) and regional (784) banks.<sup>49</sup>

There are several reasons why retail customers may be choosing to bank with larger institutions. Data from FindABetterBank.com, a website that allows consumers to compare institutions and accounts based on both costs and a range of feature requirements, shows that consumers using the website were more likely to select large banks, and somewhat more likely to select regional banks, if they prioritized access to branches and to a widespread ATM network. Customers who stated their selection was based on the fact that they or someone they knew already had a relationship with that institution were also more likely to choose a large bank over a regional or small institution.<sup>50</sup> Both suggest that the national networks offered by the largest institutions are appealing to many customers and that, despite the reputational damage suffered by big banks during the financial crisis, consumers still trust the specific large institutions with which they directly interact.

Another reason why customers choose to stay with larger financial institutions may have to do with the difference between disliking the concept of large financial institutions in the abstract, while liking their specific financial institution in practice. Ernst and Young's 2011 global banking survey, asked more than 20,000 bank customers globally about their views. In the United States, 55 percent of customers responded that their trust in banks had declined in the last year. However, more than three in four (77 percent) rated their particular bank a four or five out of five when asked about their degree of satisfaction. The level of customer satisfaction in the United States was higher than that recorded in any other country.<sup>51</sup>

What the data do indicate is that in a world of extraordinary choice and competition, many consumers choose to do business with the largest, most complex financial institutions. This preference reveals that consumers perceive real value from these banks. This value may be growing as a result of technology, particularly in the Internet, mobile, and ATM network space.

## Can large banks be effectively managed and supervised?

The \$6 billion of losses that arose from J.P. Morgan's "London Whale" episode illustrated that large banks are capable of making large mistakes. Large banking organizations are inherently more complex, with diverse operations spread across many jurisdictions. While there are benefits of scope and scale that arise from having multiple business units operating on a global scale, such institutions are also harder to manage and oversee than smaller ones. This raises the concern that the largest banks are "too-big-to-manage" and supervise effectively. Management complexity is a problem. However, we do not think that

this problem alone necessitates a breakup, because there are alternative ways to address the managerial issues arising from size.

## **MANAGEMENT**

There have been many examples of high-profile management failures in recent years. These include the failure of senior executives at several major U.S. lenders to prevent widespread forgery of mortgage documents associated with “robo-signing,” the failure of senior management at major European banks to stop (or perhaps even notice) Libor manipulation occurring at their trading desks, the payment of dividends by Banco Santander in defiance of the Federal Reserve in September 2014,<sup>52</sup> and the involvement of U.S. subsidiaries of several foreign banks in laundering money for Mexican and Columbian drug cartels. These cases, among others, underscore the difficulties that senior company executives face in managing multiple large and complex subsidiaries.

Despite these examples, there is little empirical evidence about the impact that the quality of management decisions has on performance and risk-taking at financial institutions. The lack of evidence is in part because it is difficult to tease out quantifiable effects of management value and size, controlling for other elements. We review some of the academic evidence and offer suggestions for improving certain problems below.

It is important to remember that we are not talking about the difference in complexity between a big bank and a small one. Instead, we are comparing the management problems that would occur at the five or six successor banks, each of which would still be large. If the five or six successors have the same range of activities—each just at one-fifth or one-sixth of the scale—then it may not be much easier to manage any one of them. The institutions might give up economies of scale in exchange for modest, if any, benefits in terms of safety. Reducing managerial difficulty would logically need to involve a reduction in both the size and number of business lines of the institution.

It is also possible that the successor firms of a broken-up institution would be unable to attract the same quality of CEO and senior managers as its predecessor. Gabaix and Landier (2006),<sup>53</sup> alongside a later study by Gabaix, Landier, and Sauvagnat (2013),<sup>54</sup> found that the marginal impact of a CEO’s talent varied with the value of the firm under his or her control. One would expect this to at least some extent, since career advancement is typically in the direction of moving to larger firms that pay better and allow an individual to make a greater impact as well as garner more prestige. If so, then the average level of management expertise of the CEOs of the five successor firms might be expected to be lower. It is at least theoretically possible that the impact of poorer-performing CEOs would have a significant effect on overall managerial effectiveness.

Nevertheless there does appear to be a prima facie case that large and complex financial organizations are more difficult to manage than smaller organizations involved in fewer business lines. However, it is not obvious that simply breaking these institutions into five or six entities would achieve significant levels of risk reduction, because those entities would not be small. Limits on activities might reduce risk at some institutions, but could

exacerbate risk at others by preventing diversification across business lines and sacrificing significant economies of scope.

## **SUPERVISION OF RISK**

The recognition that large and complex banks are difficult to manage has led to the establishment of new rules that mandate increased risk oversight by the company's board of directors and the creation of risk management centers in the organization. Section 165 of Dodd-Frank required the Federal Reserve Board to establish overall risk management requirements for bank holding companies above \$50 billion and companies designated systemically important financial institutions by the Financial Stability Oversight Council (FSOC).<sup>55</sup>

The Federal Reserve Board finalized the rule-making process in February 2014.<sup>56</sup> Under the final rule, boards are required to establish a risk committee chaired by an independent director and comprising at least one member with significant risk management expertise, which marks a significant shift for boards that often lacked this expertise.<sup>57</sup> The final rule also mandated that the risk committee appoint a chief risk officer responsible for implementing and maintaining risk management procedures throughout the organization. The chief risk officer's compensation structure must also be incentivized to provide an objective assessment of risks undertaken by the company.<sup>58</sup>

The Office of the Comptroller of the Currency has also issued guidelines for heightened risk management standards under part 30 of its regulations.<sup>59</sup> These guidelines add to the Dodd-Frank requirements in important ways. Among other provisions, large U.S. banks are expected to maintain appropriate staffing levels in their risk management units, and provide those staff with compensation packages that will appropriately motivate them and attract the highest quality talent. The board of directors of the bank must also demonstrate a willingness to provide a "credible challenge" to the decision-making of managers to ensure that they are prudently addressing risks.<sup>60</sup>

Large banks are also taking steps to strengthen their corporate governance, including selecting more board directors with financial expertise. Research from the New York Federal Reserve indicates that bank holding companies perform worse when their board members have additional commitments or are filled more interlocking directors.<sup>61</sup> Having stronger boards with greater dedication and focus from its members at the subsidiary level may be one way to address legitimate concerns about firms being "too-big-to-manage."

In short, these changes appear to go a long way in improving the quality of oversight at large firms. While there will undoubtedly still be lapses, it is not obvious that breaking these institutions into five or six smaller entities would achieve significant levels of risk reduction.

## Do the largest banks have more incentive than the next tier of banks to take excessive risks?

Another factor driving proposals to break up the largest banks is the belief that such institutions are more likely to engage in excessively risky activities than their mid-sized or smaller peers. This could be the case, for example, if the cost-of-funding advantage derived from the expectation of government support in a crisis leads to greater risk-taking. Other aspects of large banking organizations might also encourage excessive risk, such as a “bonus culture” or an opacity associated with complexity that allows risk to be hidden and therefore reduces disincentives to take risks. This might apply in particular to tail risks that show up as losses only in unusual times.

We have our doubts about these arguments. At first blush, it is not clear why a funding advantage would lead to higher average risk. There is a long tradition of academic banking studies that concluded that an increase in the franchise value of a banking license would lead to safer behavior in order to reduce the probability of an insolvency that eliminated the license. Demsetz et al. (1996) define franchise value “as the present value of the future profits that a firm is expected to earn as a going concern.”<sup>62</sup> Research has shown that banks will seek to protect franchise value by reducing risk-taking.<sup>63</sup> Therefore, the higher the future profits that a firm expects to earn, the less risk it should take. The highest franchise value banks—that is, the largest institutions—might therefore be expected to operate more safely, even if they have a cost-of-funding advantage relative to smaller institutions. This, of course, is a theoretical argument.

However, recent analyses argue that circumstances have changed. Noting the losses at such high-franchise-value institutions as UBS and Washington Mutual, Martynova and Ranovski (2014) argue that high-franchise-value banks were more likely to take risk in the years preceding the last financial crisis.<sup>64</sup> They argue that as financial markets became more developed and deregulation removed barriers to investment activity, banks were able to both borrow more and invest larger sums in risky market-based instruments. The authors further contend that these risks have been heightened by the fact that banks have increasingly come to rely on short-term funding (such as repos) for their core business.

The recent crisis also made clear that, separate from the quality of management, the incentive structures of senior executives were misaligned. Executive compensation awarded largely in the form of equity might lead managers to focus on short-term earnings rather than the long-term performance of the company, with option compensation—under which executives receive large paydays for meeting near-term profit goals—possibly encouraging executives to take excessive risks.<sup>xx</sup> As the previous section discussed, it may be inherently

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<sup>xx</sup> Although option compensation is widely portrayed as increasing risk-taking incentives, some academic work on this subject has suggested that the effects of option compensation are more mixed (e.g., Jennifer N. Carpenter, “Does Option Compensation Increase Managerial Risk Appetite?,” *The Journal of Finance*, Vol. LV, No. 5, October 2000, 2311-2332. Available at: <http://pages.stern.nyu.edu/~jcarpen0/pdfs/Carpenter2000.pdf>). Others have suggested that, under certain conditions, it could even reduce risk taking incentives (e.g., Stephen A. Ross,

more difficult for managers to uncover or monitor the full range of risks in large organizations.

Would breaking up the institution reduce risk? The answer is “possibly,” though the extent of this reduction in risk would depend on the circumstances of a break up. Unless accompanied by significant restrictions on activities and lines of business, or a realignment of executive incentives, there is little reason to assume that smaller successor banks would operate differently from the original bank, except potentially in regard to a cost-of-funding advantage. Any risk reduction obtained would also have to be weighed against the benefits from large banking organizations.

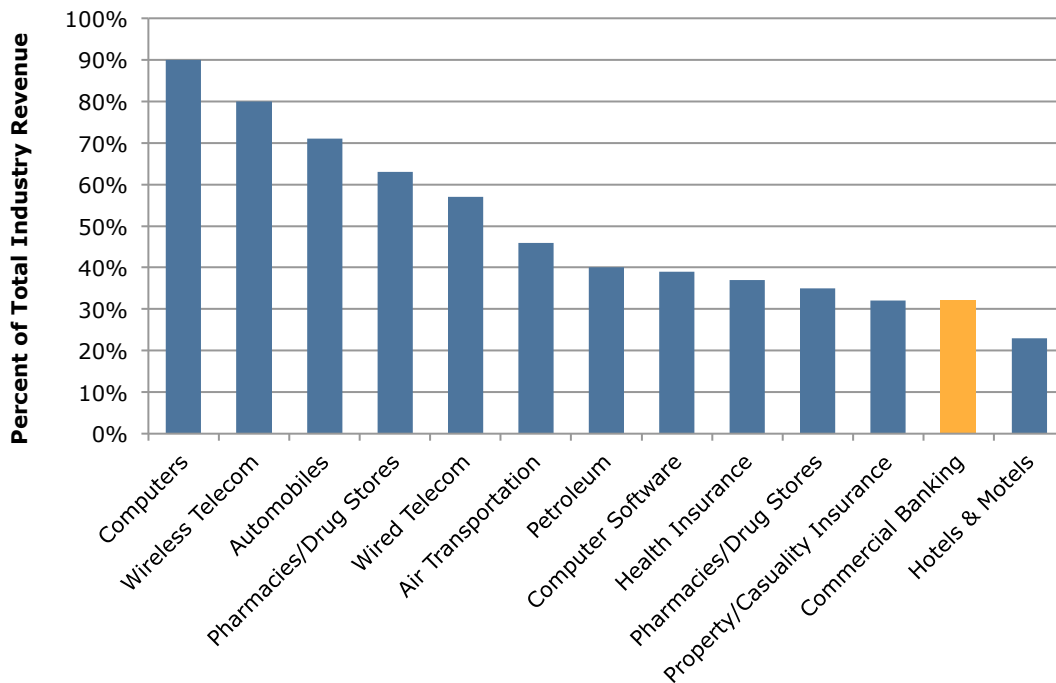
## Does banking have a competition problem that would be aided by breaking them up?

This is a two-part question that first asks whether there is lack of competition in banking and then whether breaking up large financial institutions would increase competition. In looking at the first question, there is little evidence that there is insufficient competition in the U.S. banking industry, outside perhaps of a few specialized areas that would be unlikely to be affected by the breakups. Commercial banking is less concentrated than other industries, such as telecommunications (wireless and wired), transportation (automobiles, airplanes), and pharmaceuticals.

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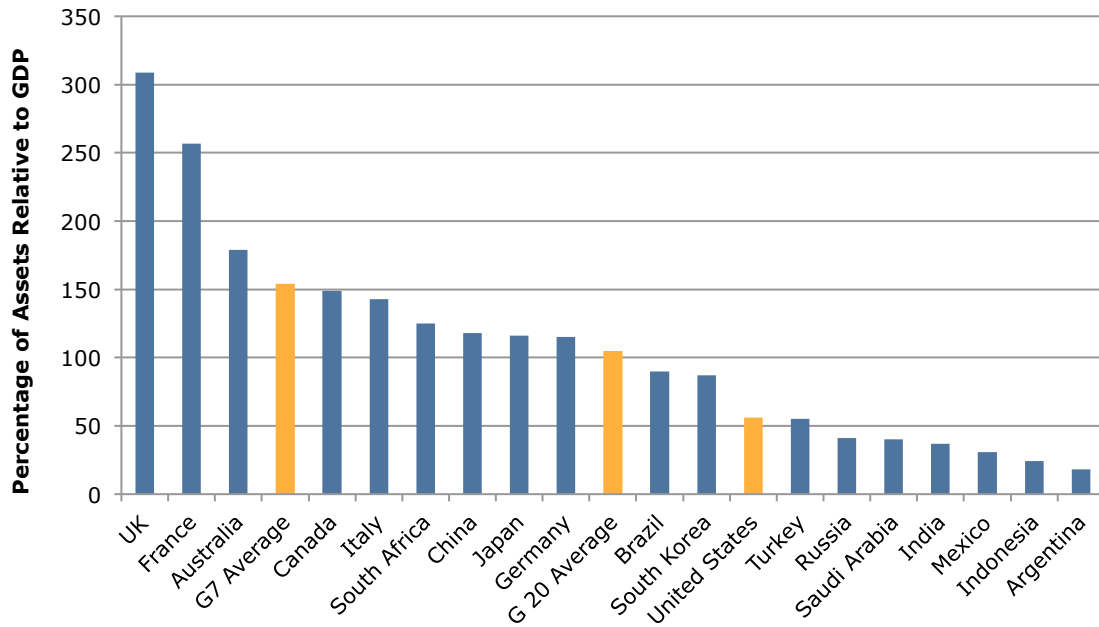
“Compensation, Incentives, and the Duality of Risk Aversion and Riskiness,” *The Journal of Finance*, Vol. LIX, No. 1, February 2004, 207-225. Available at: [http://apps.olin.wustl.edu/faculty/liuh/Research/Brown\\_Bag\\_Ross.pdf](http://apps.olin.wustl.edu/faculty/liuh/Research/Brown_Bag_Ross.pdf).

**Figure 1: Top 4 U.S. Firm Concentration by Revenue by Industry (2007)**<sup>65</sup>



While the U.S. banking industry has consolidated in the past two decades, it is still less concentrated than the banking systems in other leading economies. Taking total assets as a percent of GDP, the five largest U.S. commercial banks comprise a smaller portion of the economy than any of the other G-7 nations. That is, the United States has the least concentrated banking sector of any of its major developed counterparts. In fact, by this measure, the U.S. banking sector is less concentrated than the broader G-20 average.

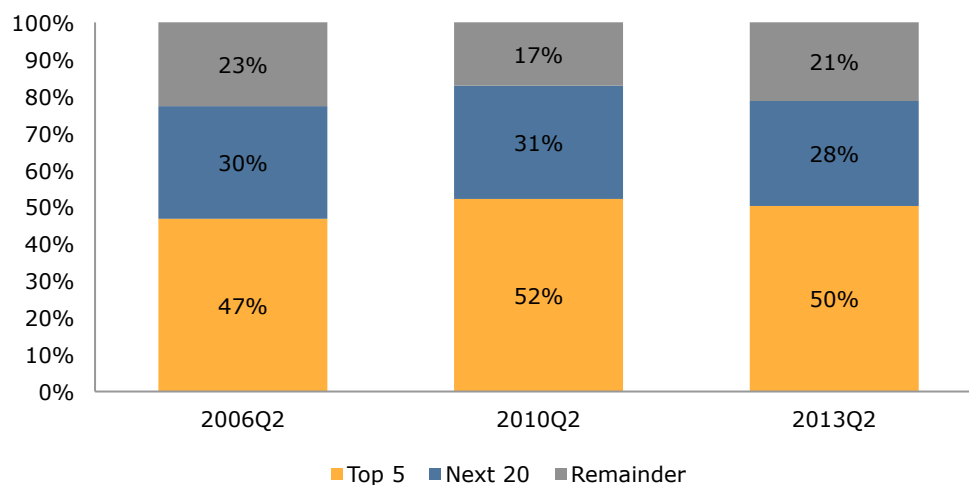
Figure 2: Top 5 Banks by Assets as a Percent of GDP (2011)<sup>66</sup>



While Dodd-Frank explicitly rejected breaking up the largest financial institutions, it did expand legislative and regulatory hurdles to increased growth through mergers and acquisitions. Section 622 of the Dodd-Frank Act generally prohibits financial companies from engaging in mergers or acquisitions that would exceed 10 percent of the aggregate consolidated liabilities of all financial companies in the United States.<sup>67</sup> In May 2014, the Federal Reserve Board issued a proposed rule to implement this provision. Under its terms, no merger or acquisition by a U.S. financial company will be permissible if the combined entity exceeds \$1.8 trillion in consolidated liabilities.<sup>68</sup> As a result, nearly all the U.S. G-SIBs are effectively prohibited from acquiring additional U.S. or foreign corporations, meaning that any future expansion will have to be generated by market growth. This provision, among other factors, may explain why the largest five bank holding companies have seen their market share decline slightly since 2010 (see Figure 3 opposite).



**Figure 3: Bank Holding Company Market Share by Asset Size, 2006 Q2, 2010 Q2, and 2013 Q2<sup>xxi</sup>**



In short, the U.S. banking industry does not have a competition problem by international standards, nor does it appear likely that significant concentration at the level of large institutions will occur in the future. While a breakup would increase competition by creating additional firms, this action might come at the price of financial stability. On the positive side, greater competition motivates banks to differentiate and specialize in unique markets or products, thus creating a stabilizing diversification effect. However, unfettered competition may have played a role in the recent financial crisis by inducing risk-taking behavior, implying a positive relationship between banks' market power and stability. Although not a simple trade-off,<sup>69</sup> breaking up the largest banks in order to increase competition may come at the price of reduced financial stability.

A promising route to provide greater competition in the U.S. banking market would be to ensure that large, global non-U.S. banking institutions who wish to do business in the United States face a level playing field. The U.S. market is already open to significant activity from global banks on both the retail side, as evidenced by the Canadian-headquartered TD Bank and British-based HSBC, as well as on the business and investment side, as shown by a plethora of large globally active banks with U.S. operations. Foreign banks are disadvantaged, however, in the application of some of the new Dodd-Frank regulations. These rules include the Federal Reserve Board's final rule on enhanced prudential standards for foreign banking organizations, which requires such companies to establish ring-fenced U.S. holding companies subject to separate capital and liquidity requirements from their parent company.<sup>70</sup> This rule reduces the economic incentives for such firms to establish large footprints in the U.S. banking market.

<sup>xxi</sup> Data obtained from the FR Y-9C filings of the highest-tier holding company of the institution.

# Breaking Up Big Banks: Key Considerations

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As Part 2 established, large banks provide benefits to the customers and businesses that rely on them. However, the key question for policymakers contemplating whether to break up big banks is whether or not those benefits are offset by the costs these institutions may pose to financial stability. They also must consider several pragmatic issues. The next section lays out many of the questions that need to be addressed before forging ahead with plans to break up a big bank.

## Would a breakup increase or decrease financial stability in the long run?

If each large bank had been broken up a decade ago into ten or 20 pieces, it is hard to be confident that the problems of the crisis would have been avoided. There is, for example, no reason to believe that breaking up large institutions would have prevented the formation of a residential and commercial real estate bubble. Likewise, financial institutions would have had the same incentives to operate with far too little capital and liquidity. It is also important to note that many of the institutions whose failures are most associated with the crisis were not the largest, most integrated, complex financial institutions. This is not to diminish the problems that gripped our financial system in 2008 and 2009 or to minimize the role of large banks in these problems. Rather, it is to point out that most of the firms on the front lines of failure were not the institutions that are primarily thought of as those that need to be broken up. This runs against the possibility that a breakup would have increased financial stability.

Another argument would be that individual troubled banks could have been allowed to fail, given their smaller size. However, this is unconvincing in the context of a crisis this wide. The Savings and Loan (S&L) crisis, for example, demonstrated that costs can add up when many smaller institutions encounter similar problems, even though each firm alone is modest in size. When Continental Illinois National Bank failed in 1984, it was deemed TBTF by regulators despite having assets at the time of only \$40 billion, which is equivalent to just over \$91 billion today.<sup>71</sup> This is far below the level of assets that realistically would approach consideration for a breakup.

The next financial crisis will be different than the last. However, it seems unlikely that breakup would yield greater benefits in the future than it would have in the run-up to the

crisis, given the additional safety margins in the U.S. financial system put in place in the wake of the crisis.

## Is breaking up a bank as simple as it sounds?

Before forging ahead with a plan to break up the banks, it would be worthwhile for policymakers to ask several key questions first:

***What criteria will be used to determine who should be broken up?*** Large banks could be broken up in several different ways. Would this decision be based on assets, activities, or some other measurement of an institution's size? It seems most likely that a mandated breakup would use some form of asset or liability threshold to determine which institutions should be broken up (see the discussion of "hard caps" below). The criteria for breakup could also reference some measure of the systemic risk generated by a bank, but there is no agreed quantification of this. Subjective judgments could be used instead. There would be legal risks unless there are unambiguous guidelines for any decision to break up an institution.

***What asset size is acceptable for a bank before it becomes too big?*** There is no clear analytical guidance as to where to draw the line on when a bank is too big. Ideally one would be able to measure the change in systemic risk and its attendant economic benefits and compare this with the economic costs—or, conceivably, the benefits—of breaking up the banks. However we do not know how to measure either the benefits or costs well and therefore cannot expect theory to provide much help.

***Will banks be allowed to exceed the threshold through organic growth?*** Logically, if size is considered the critical measure of whether a bank must be broken up, then no bank would be allowed to grow above that threshold through mergers or acquisitions. However, if organic growth is also constrained, this would require a bank to turn new customers away, or end relationships with existing, less profitable customers. In practice, it would be difficult for a bank to manage this process. For example, what would happen if existing customers were to grow their accounts? Would the bank have to tell them that they could not make additional deposits?

***Who will decide where customers end up?*** Customers of the bank will need to be divided among its successor institutions. That decision will have to be made by either government officials or by institutions themselves. Either version creates significant disruption to customers and businesses. Breaking up institutions by geography will eliminate benefits of geographical diversity and create artificial boundaries around border geographies (particularly in metropolitan areas). Splitting institutions by business line will eliminate economies of scope and require businesses and consumers to either move their entire account to an institution that is smaller but contains the multi-functionality they are seeking, or to find new services for existing business relationships. In addition, there are

pragmatic concerns, such as determining who will be responsible for telling consumers that they are no longer with Bank X but now with a new Bank Y.

***Will the threshold be adjusted over time?*** Any limit on the size of large banks would be indexed to economic growth and/or growth in the size of the financial sector. However, there are many policies that are not indexed by law, such as the federal gas tax, income brackets for taxes, and the \$50 billion bank SIFI (systemically important financial institution) threshold in Dodd-Frank. Even if policymakers were to index this threshold, the choice of index will be important, as it will determine the degree to which banks can grow in the future. It is not clear which type of index is the most appropriate—it could, for example, be based on growth in GDP, in financial-sector assets, or on some other metric.

***Who will decide how a banking group is broken up?*** Would the government or the firms themselves make the decision of how to break up the firm? One approach would be to allow the banking organization to decide on how to conduct the breakup. Letting banks decide on their own breakup allows economic decisions to be made by those who best know the firms. However, it could produce results that are not intuitively appealing to authorities. For example, a banking group could decide to reorganize in something like a good bank and bad bank structure, by grouping their best businesses and customers into one of the new firms and putting their worst into another. This might increase systemic risk by creating one or more troubled banks that still technically met regulatory requirements. Alternatively, a banking group might break up geographically, in order to maintain strong market shares in each of their regional markets. This system would have a series of regionally concentrated institutions. In addition, customers who desired multi-regional access to services would be hurt and would attempt to move to other institutions operating on a broader geography.

The alternative approach would be to have the government determine how to split institutions. One proposal is to reinstate the division between investment and commercial banking. Alternatively, the government could simply decide which institution would serve which regions, similar to the breakup of AT&T. In this scenario, the government would be moving some customers out of their national bank and into new regional institutions. These decisions would likely be politically controversial.

***Do both domestic and international assets count?*** It may seem natural to include the global assets of banking groups in measuring whether they cross the threshold for breakup. However, this could lead to undesired outcomes. For example, it might push the global banks to spin off, or sell, their foreign operations in order to keep their U.S. operations intact. Yet, there are few policymakers who believe that we should make the U.S. banking system more insular and less able to serve the global needs of U.S. customers. If only U.S. assets are included, then it could push banks in the opposite direction, encouraging international expansion. U.S. regulation promoting U.S. banks expanding operations abroad as opposed to at home, due to regulatory rather than underlying economics, does not appear a reasonable or politically desirable outcome. One could easily imagine unbalanced growth that made the banks more complex and potentially riskier.

**Who will decide where financial commitments, including deposits and debt, belong?** A bondholder, for example, would have to be assigned to one of the successor firms or their bond split in some way between one or more of the firms.

**How long would the transition period last?** Longer periods allow for more thoughtful and potentially less disruptive changes, but would also spread the turmoil and uncertainty over a longer period.

## What transition costs would be associated with a breakup?

Besides the policy questions that must be answered, there are a series of transition costs or issues that need to be addressed. Among the costs imposed on the financial system and broader economy:

**A loss of customer focus.** No matter how hard banks tried, the focus of staff would shift from customers to internal reorganization. Individual careers would be heavily affected by how firms designed their breakup, including: which new firm the employee ended up in, what their new job would be, which customers were assigned to them, who their bosses would be, how much capital would be allocated to their unit, etc. Decisions on lending and undertaking other transactions would become more complicated, slower, and probably more risk-averse, as employees focused on their future career at the expense of the present and did so in an atmosphere of intense uncertainty.

**Disruption of customer relationships when the breakup occurred.** Some customers would be assigned to successor firms where the staff they were used to dealing with no longer worked there or worked in differing capacities. Other customers would be dumped as new guidelines were established by new bosses. There would be significant transactional and transfer costs borne not only by institutions, but also by customers.

**Potential mistakes by successor firms.** Whenever firms make a sharp change in strategy in response to changes in their environment, in this case their legal and regulatory environment, there is a significant possibility of serious error. Putting the major players in our financial system through this simultaneously therefore carries some risk to the financial system.

**Litigation against firms and their regulators.** Both the banks and their supervisors will be required to make a host of decisions with potentially major consequences for the banks' customers, counterparties, funders, and managers. There will almost certainly be a series of large lawsuits stretching on for years, especially if one or more of the broken-up banks runs into problems over time.

**Funding difficulties, and higher cost of debt, until successor firms are clearly established.** Creditors of the banking group will be faced with a great deal of uncertainty about what level of risk they will face going forward, including which firm will be supporting

their repayment and what the financial situation and strategy of that firm will be. The natural tendency will be to withdraw funding or, at a minimum, to charge more.

***Movement of activity to less-regulated firms.*** There is likely to be a significant loss of market share initially, and perhaps permanently, by the banks that are broken up and their successor firms. The transition difficulties listed above virtually guarantee this and, if we are right about the economic advantages of large banks, a permanent loss of advantages should have the same effect. Smaller banks will pick some of the market share up, but it is probable that much of the movement will be to less-regulated financial firms of all kinds that compete with banks. “Shadow banks”—which include money market mutual funds, hedge funds, finance companies, broker-dealers, among others—would become more critical to our financial system and wider economy. As a recent International Monetary Fund study found, a larger shadow banking sector increases systemic risks, in part because of the reliance of such institutions on short-term funding sources.<sup>72</sup> As a result, breaking up large banks could end up increasing systemic risk.

## Alternatives to a breakup: the spectrum of options

For the sake of clarity, this paper has framed the debate as a black-and-white choice between allowing big banks to remain intact or pursuing a breakup strategy that would divide them into multiple pieces and radically reduce their size. In reality, there are a spectrum of options for policymakers to choose between, ranging from a mandatory breakup to some form of return to the pre-crisis status quo. These options include the imposition of a “hard cap” on the asset or liability size of an institution; a more flexible “soft cap” that would increase regulatory costs on the largest banks in order to encourage them to break up; and the reinstating of divisions between commercial and investment banking business lines, such as a return to the anti-affiliation provisions of the Glass-Steagall Act of 1933 that were repealed in 1999.

In general, the closer a plan is on the spectrum to a mandatory breakup, the higher the short- and long-term economic costs. Correspondingly, to the extent that there are benefits from a breakup, those are also likely to be larger the closer on the spectrum the plan is to a mandatory breakup. All three of these proposals would, however, involve many of the transition and long-term costs associated with a breakup, including the loss of economies of scale and/or scope. In our view, Dodd-Frank achieves many of the goals of these plans while also retaining the important benefits that large banking organizations have to offer.

### **RECENT ALTERNATIVE PLANS**

Several recent proposals would move closer on the spectrum to a breakup. Hard-cap proposals, which impose a limit on the amount of assets, liabilities, and/or deposits on an institution’s balance sheet, are the closest to a breakup. The key difference lies in who makes the decision about how the firm is broken up: in contrast to a government-mandated breakup, a cap would leave those decisions to the managers and shareholders of the firm, who would choose how to comply with the limit. The most prominent recent example of a

hard-cap proposal was legislation proposed by Senators Sherrod Brown (D-OH) and Tom Harkin (D-IA) in 2012.<sup>xxii</sup> Their plan, known as the Safe, Accountable, Fair & Efficient (SAFE) Banking Act,<sup>xxiii</sup> would impose a limit on non-deposit liabilities of a bank holding company equivalent to 2 percent of GDP, inflation adjusted, together with a cap on the consolidated liabilities permitted for a firm, which they set at \$1.3 trillion.<sup>73</sup> As a result, at least the four largest U.S. bank holding companies would be forced to break up or divest significant amounts of assets.<sup>74</sup>

Incentive-based, or soft-cap, proposals would not mandate that banks over a certain size threshold break up, but would provide economic incentives—in the form of significantly higher regulatory costs—that would encourage management and shareholders of the largest banks to break up their firms' operations. An example of this approach is a piece of legislation that Senators Brown, David Vitter (R-LA), Mark Kirk (R-IL), and Jeff Sessions (R-AL) proposed in 2013, known as the Terminating Bailouts for Taxpayer Fairness (TBTF) Act.<sup>75</sup> The proposal would require institutions with more than \$500 billion in assets to fund themselves with high-quality, Tier 1 capital equal to at least 15 percent of their assets. One estimate suggests that the TBTF Act would require the largest banks to raise another \$600 billion in Tier 1 capital funding in addition to the \$400 billion they raised in 2013.<sup>76</sup> These costs would provide incentives to the firm's owners and management to divest assets or break up their operations.

The separation of large financial institutions along functional lines is a distinct class of breakup approach. The 21st Century Glass Steagall Act of 2013, introduced by Senators Elizabeth Warren (D-MA), John McCain (R-AZ), Maria Cantwell (D-WA), and Angus King (I-ME), is one such proposal.<sup>77</sup> This legislation would attempt to restore the basic premise behind Glass-Steagall, which contained anti-affiliation provisions that prevented investment and commercial banking activities from occurring in a single firm or group. This class of proposals would lead to a reduction in the complexity of major financial firms, but also the economies of scope that they provide. While it would also likely reduce the size of some major firms, this proposal would not directly address the concerns about institutional size that is at the heart of the TBTF debate, since the successor commercial and investment banks of a broken up institution would still in many cases be very large.

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<sup>xxii</sup> Although this is the most prominent example of a hard-cap plan, others have made similar proposals. For example, Johnson and Kwak (2010, 216-217) propose that the assets of financial companies be limited to 4 percent of nominal GDP.

<sup>xxiii</sup> An accompanying version of this bill was introduced in the House of Representatives by Representatives Brad Miller (D-NC) and Keith Ellison (D-MN). Senator Brown introduced similar legislation in 2010 with Senators Ted Kaufman (D-DE), Robert Casey (D-PA), Sheldon Whitehouse (D-RI), and Tom Harkin (D-IA).

# Conclusion: The Existing Dodd-Frank Framework: A Better Path Forward

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The framework put in place by Dodd-Frank and Basel III in many ways falls in the middle of the spectrum between breakup-like plans and a return to the pre-crisis status quo. These reforms achieve many of the goals of the alternative proposals described above, imposing costs on institutions that are tied to size and providing regulators with tools to restrict the size and activities of large institutions. To the extent that there are externalities to size, these measures ensure that large institutions pay for them. Further research on the extent of such externalities and the regulatory costs faced by large banks would be in order to assess whether the current level of regulation can be improved.

The financial crisis made clear that banks needed to fund themselves with more capital. As a result of the Dodd-Frank and Basel III reforms, the total amount of common equity capital that large U.S. banks use to fund their operations has doubled since the financial crisis.<sup>78</sup> And regulators have indicated that further efforts targeted at those institutions are forthcoming.<sup>79</sup>

The enhanced capital standards put in place by Dodd-Frank and Basel III framework are important steps toward improving safety and soundness of the nation's largest financial institutions. At the same time, enhanced capital levels tied to the size and complexity of an institution play another role: they serve as an additional disincentive to size and growth – a principle at the heart of the soft-cap break up proposals.

Dodd-Frank also moved along the spectrum toward separating institutions by activity through what is commonly known as the Volcker Rule.<sup>80</sup> The rule's ban on proprietary trading by firms that own depository institutions aims to reduce risky trading activity and prevent conflicts of interest between a company's profit maximization goal and the interests of the investors it serves. The Bipartisan Policy Center published an earlier set of recommendations on how the Volcker Rule could be implemented in a manner that may provide greater net benefits.<sup>81</sup> By restricting activities of an institution, the Volcker Rule embraces many of the objectives of the Glass-Steagall Act. Regardless of whether the rule is a good or a bad thing, it allows firms to continue to offer many of the benefits of economies of scope—particularly to their multinational business customers—which would be lost with the reinstatement of the Glass-Steagall Act.



In addition, the Dodd-Frank Act already includes provisions that put caps on the size of large institutions and authorize regulators to wind them down - principles at the heart of many of the mandatory breakup proposals. Dodd-Frank limits financial companies from either merging with or acquiring other companies if doing so would result in the combined company's consolidated liabilities exceeding 10 percent of the aggregate consolidated liabilities of all financial companies in the United States.<sup>82</sup> Likewise, other existing statutory provisions, such as the Riegle-Neal Act, place additional size limitations on financial institutions, restricting mergers and acquisitions that would result in any single institution holding more than 10 percent of U.S. deposits.<sup>83</sup> As a result, existing law provides limits on the size of financial institutions.

Besides a cap on size, Dodd-Frank also provides a new mechanism—the Orderly Liquidation Authority—for regulators to resolve large financial institution while minimizing spillover damage to the rest of the economy or the need for taxpayer-funded bailouts. Furthermore, the Dodd-Frank Act explicitly grants the Federal Reserve Board, with the approval of the FSOC, the authority to break up any financial institution it deems to pose a “grave threat” to financial stability.<sup>xxiv</sup> Section 165 of the Dodd-Frank Act requires the Federal Reserve Board to establish enhanced prudential standards, including requirements for large financial institutions to submit “living wills,” which are essentially roadmaps for how a firm would be resolved through the bankruptcy process in the event of its failure.<sup>84</sup> If the Federal Reserve Board and the FDIC find the plan to be deficient, they can jointly impose enhanced capital, leverage, or liquidity requirements; restrict a company's growth, activities, or operations; and ultimately require it to divest assets.<sup>xxv</sup> In other words, Dodd-Frank already gives regulators the tools to both wind down and break up large financial institutions.<sup>85</sup>

Our analysis suggests that breaking up big banks would not have the intended effect of creating a stronger, safer financial system. A world in which each of the nation's largest banks becomes five or six—still large—financial institutions may be no more resilient. Breaking up large banks would significantly reduce the benefits consumers and businesses that come from the economies of scale and scope that large financial firms provide and impose additional costs on customers.

We believe there is a better path forward. Dodd-Frank, Basel III, and other post-crisis reforms have gone a long way toward addressing the challenge of TBTF without the need to systematically dismantle large, complex firms. Dodd-Frank has improved regulations to reduce the likelihood of a big bank failing, limit moral hazard, and reduce the risk of future taxpayer bailouts. Before policymakers consider further changes, we should allow these existing reforms to work.

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<sup>xxiv</sup> The Federal Reserve Board has not defined what a “grave threat” constitutes, but presumably it could do so broadly. For a more in-depth discussion, see U.S. House of Representatives, Hearing by the Subcommittee on Oversight and Investigations, Committee on Financial Services, entitled “Who is Too Big to Fail: Does Dodd-Frank Authorize the Government to Break Up Financial Institutions?,” April 16, 2013. Available at: <http://financialservices.house.gov/uploadedfiles/113-14.pdf>.

<sup>xxv</sup> Such divestiture requirements would occur after two years and in consultation with the FSOC.

# Appendix A: Current State of the Economies of Scale Literature<sup>xxvi</sup>

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Economies of scale refer to the idea that the cost per unit of output should generally decrease with increasing scale as fixed costs are spread out over more units of output. Among economists, there is little dispute that banks should, *in theory*, enjoy economies of scale as they grow in size. As Hughes and Mester (2013, 560) note,<sup>86</sup> larger banks are more likely to have a lower credit risk on their loan portfolio and reduced liquidity risks from their deposits thanks to greater diversification. This in turn reduces the relative cost of managing these risks, allowing the bank to conserve equity capital, reserves, and liquid assets. Larger banks should also be able to better spread overhead costs, especially the high fixed costs of payments processing equipment and information technology.

Despite these theoretical expectations, empirical studies based on data from the 1980s generally did not find support for scale economies at large banks.<sup>87</sup> These studies found that economies were exhausted when banks grew to \$100 to \$200 million in total assets and that only small banks had the potential for efficiency gains from scale. Even then, these gains generally did not exceed 5 percent of costs.<sup>88</sup> This suggested that few cost savings could be achieved from mergers or internal growth (see McAllister and McManus, 1993,<sup>89</sup> and Mester, 2010,<sup>90</sup> for a discussion of this older literature).

More recent research has found clear evidence of scale economies in banking, however. Berger and Mester (1997),<sup>91</sup> found, for example, that scale economies existed in banks with up to \$25 billion in total assets. Hughes, Mester, and Moon (2001)<sup>92</sup> found constant returns to scale<sup>xxvii</sup> using a large sample of bank holding companies, as did Bossone and Lee (2004),<sup>93</sup> Feng and Serletis (2010),<sup>94</sup> and Kovner, Vickery, and Zhou (2014).<sup>95</sup> Wheelock and Wilson (2012),<sup>96</sup> drawing on more recent data (quarterly observations on all U.S. commercial banks from 1984 to 2006), also find strong evidence of constant returns to scale as banking organizations expand in size. In fact, they found economies at banks with as much as \$1 trillion in assets.

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<sup>xxvi</sup> The authors are indebted to Peter Ryan for writing the first draft of this appendix.

<sup>xxvii</sup> Mester (2010, 11) defines constant returns to scale as occurring when “for a given mix of products, a small proportionate increase in all outputs would increase costs by the same proportion.”

In short, the literature is now quite clear that constant scale economies exist, even at large institutions. This is, at the very least, consistent with the view that consolidation in the banking industry has been driven by scale economies.

## Explaining the Difference between Newer and Older Empirical Studies

As Mester (2010)<sup>97</sup> notes, “[P]art of the difference [between older and newer empirical studies] appears to reflect improvements in methods used for measuring scale economies.” Specifically, more recent studies make use of non-parametric methods, which avoid the problem of specifying an a priori functional cost relationship. Scholars have also developed more realistic models of bank costs that typically include off-balance-sheet output, equity capital, and bank risk preferences (e.g., Berger and Mester, 2003,<sup>98</sup> and Wheelock and Wilson, 2012<sup>99</sup>).

By adding these factors to their models, scholars may have addressed some of the biases in older studies. The failure to include off-balance-sheet activity, for example, led earlier studies to underestimate returns to scale since larger banks tend to generate proportionately more income (and therefore associated costs) from off-balance-sheet activities than smaller banks. Similarly, not controlling for the bank’s level of equity capital also produced lower estimates of returns to scale—larger banks tend to operate with lower equity ratios, meaning they are more leveraged and incur larger interest expenses than smaller institutions. Finally, the studies have increasingly incorporated models of banks’ risk preferences into models of bank production, which has led to more evidence of increasing returns to scale than studies that ignore these effects (e.g., Hughes, Mester, and Moon, 2001<sup>100</sup>).

Mester (2010)<sup>101</sup> suggests that findings of greater economies of scale may also be a function of real changes in information technology in banking, since such systems tend to have high fixed costs. Environmental factors, particularly the relaxation of geographic branching restrictions and removal of other regulatory barriers have also likely played a role (see Berger and Mester, 2003<sup>102</sup>). Finally, the reduced cost of acquiring quantifiable information about potential borrowers has eroded many of the benefits previously enjoyed by small-scale, local institutions, which had previously allowed small banks to out-compete larger banks for certain types of customers, particularly small businesses (see Petersen and Rajan, 2002;<sup>103</sup> Berger, 2003<sup>104</sup>).

# Appendix B: Studies Examining Cost-of- Funding Advantage for Large Banks<sup>xxviii</sup>

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## Bond Yields

Most studies focused on identifying cost-of-funding advantages for large banks have examined the difference between the bond yield that would be required on a stand-alone risk basis and the actual yield demanded by the market.<sup>xxix</sup> Overwhelmingly, these studies have found that large institutions with as risky or higher-risk profiles than smaller institutions have historically enjoyed lower spreads on their bonds, implying that the market factored in an “implicit subsidy” into the price. Moreover, they have typically found that these advantages increase in proximity to bailout events. See Kroszner (2013)<sup>105</sup> for a literature review.

Flannery and Sorescu (1996)<sup>106</sup> examine yield spreads on subordinated debt of U.S. banks from 1983 to 1991. They find that yield spreads for large banks were not risk-sensitive in the early to mid-1980s, a period that was marked by the government bailout of Continental Illinois in 1984, but became significantly more so by the early 1990s, which was marked by debate over and passage of the FDIC Improvement Act (FDICIA) in 1991. Sironi (2003)<sup>107</sup> produced similar findings in his study of yields on subordinated debt of European

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<sup>xxviii</sup>The authors are indebted to Peter Ryan for writing the first draft of this appendix.

<sup>xxix</sup> The major funding sources for large banks are bond investors, repo counterparties, depositors, and equity investors. Of these, bond investors are the most likely to significantly lower their required returns based on potential government support. Repo counterparties primarily rely on the high quality of the collateral and lend for very short periods at a time; they are therefore less interested in a bank’s solvency unless it is clearly on the edge of collapse. Many depositors are insured by the FDIC and are less sensitive to the creditworthiness of the particular bank. Equity investors are rarely directly protected in a government rescue and they can potentially lose high percentages of their investments even if government support helps keep a bank afloat. Therefore, analyses of the funding advantage provided by potential government support for large banks have tended to focus on bond market pricing.

institutions; as monetary and budgetary constraints imposed by the European Union increased in the 1990s, the subordinated debt spreads of large banks became more sensitive to risk.

Baker and MacArthur (2009)<sup>108</sup> find that there was an average cost advantage of 29 basis points for institutions with more than \$100 billion in assets between 2000 and 2007. They found the subsidy increased to 78 basis points from Q4 2008 to Q2 2009 for the 18 banks with assets greater than \$100 billion, equivalent to an annual government subsidy of \$34 billion in the first quarter of 2009. Similarly, Achyara, Anginer, and Warburton (2013)<sup>109</sup> find that there was an annual cost advantage of 20 basis points from 1990 to 2010, equivalent to an annual subsidy of \$20 billion. They find that the subsidy peaked at 120 basis points or \$100 billion in 2009. Finally, Santos (2014)<sup>110</sup> finds that there was a cost-of-funding advantage for the five largest U.S. banks equivalent to 41-45 basis points between 1985 and 2009.

Studies using more recent data suggest a different picture, however. Balasubramanian and Cyree (2014)<sup>111</sup> examined the period from 2009-2011. They found that following the passage of the Dodd-Frank Act, the cost-of-funding advantage for the 19 large U.S. banks identified for stress testing by the Federal Reserve decreased from 187 basis points to 11 basis points. Similarly, Lester and Kumar (2014)<sup>112</sup> found that the cost-of-funding advantage for U.S. G-SIBs on bond issuances declined from 104 basis points to 18 basis points in 2013. Strongin et al. (2013)<sup>113</sup> examined a subset of bond-issuing U.S. banks from January 1999 to March 2013. They found that the largest six banks enjoyed a modest funding advantage of 6 basis points on average between 1999 and 2007. While the funding advantage increased in late 2008 and 2009 (consistent with the other studies), it has since decreased and, was equivalent to a funding *disadvantage* of 10 basis points in 2011 and 2012. Likewise, a plurality of the 42 models the GAO ran in its 2014 study showed a cost-of-funding disadvantage for banks with \$1 trillion in assets relative to banks with \$10 billion in assets.<sup>114</sup> This suggests that the effects of the Dodd-Frank Act and other regulatory changes are having an impact on market perceptions of a government guarantee.

## Equity Prices and Acquisition Premiums

Studies have also looked at equity prices. Since perceptions of implicit government support decrease a bank's cost of funds, it is conjectured that such institutions are likely to be more profitable than their competitors, thus presumably boosting the institution's share price. Ghandi and Lustig (2010)<sup>115</sup> found that equity prices of the largest banking organizations outperformed smaller banks over a 39-year period. Their calculations led them to conclude that the largest commercial banks had received a subsidy equivalent to \$4.7 billion per bank in 2005 dollars.

Other scholars have found that mergers undertaken by the largest banks yield greater relative increases in equity prices than mergers among smaller banks, which also suggests that the market is pricing in a safety-net subsidy (e.g., Kane, 2000).<sup>116</sup> Building on this

literature, studies have found that the difference between the real estimated value and price paid for companies in mergers and acquisitions (referred to as an “acquisition premium”) grows in relative size as the size of the transaction increases, again indicating an implied subsidy benefit. Brewer and Jagtiani (2013)<sup>117</sup> found that acquirers paid at least \$15.3 billion in added premiums in the eight merger deals conducted between 1994 and 2004 that led the combined organization to have an asset size greater than \$100 billion. While these studies reinforce the view that a cost-of-funding advantage exists, they do not take into account the regulatory changes that have occurred since the financial crisis.

## Credit Default Swaps, Credit Ratings, and Deposits

Zan, Qu, and Zhang (2011)<sup>118</sup> take a different approach, examining spreads on credit default swaps (CDS) entered into by the 20 largest U.S. financial institutions compared with the spreads on CDS contracts entered into by 63 other financial institutions. They found that CDS spreads were 23 points lower for the 20 largest institutions prior to the financial crisis and 56 points lower after the crisis. A 2014 International Monetary Fund study examined credit default swaps on bonds, finding that CDS spreads for U.S. systemically important banks were 15 basis points lower than those for other banks in 2013.<sup>119</sup> This, however, represented a decline from a peak cost-of-funding advantage of 70-90 basis points in 2009.

Ueda and Weder di Mauro (2012)<sup>120</sup> examine the credit ratings of banks in major countries. They find that the largest banking organizations enjoyed a cost-of-funding advantage of 60 basis points in 2007 and 80 basis points in 2009. The International Monetary Fund (2014)<sup>121</sup> found a lower cost of funding advantage for U.S. systemically important banks based on credit ratings, peaking at 30-35 basis points in 2009 and declining to 15 basis points in 2013. It is not surprising that funding advantages for large banks would have been found to be greater outside the United States, since many foreign countries have been quick to provide support as necessary in the past. Nor is it surprising that measures of large banks funding advantages during the financial crisis were high, when the potential for government intervention was high, and have since declined.

Jacowitz and Pogach (2013)<sup>122</sup> examine the difference in interest rates banks pay on insured money market deposits as a measure of market perceptions of a government guarantee. They find that TBTF banks paid a lower-risk premium than smaller banks that cannot otherwise be explained by observable risk differentials between those institutions. They conclude that the largest TBTF banks paid 45 basis points less in risk premiums for uninsured deposits between 2005 and 2010. Their conclusion is undermined somewhat by a finding that different levels of insured deposits also varied in their apparent risk premium, suggesting the influence of omitted variables. Adopting a similar analytical approach, Lester and Kumar (2014)<sup>123</sup> find that cost-of-funding advantage for U.S. G-SIBs declined from 30 basis points prior to 2010 to 4 basis points on average between 2010 and 2012. This again suggests funding advantages for large banks have declined since the crisis.

# Appendix C: Authors and the Process for Writing the Report

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## The Authors

The authors of this paper are:

- **Martin N. Baily**, Co-Chair, Financial Regulatory Reform Initiative, Bipartisan Policy Center, and Bernard L. Schwartz Chair in Economic Policy Development and Senior Fellow and Director of the Business and Public Policy Initiative, the Brookings Institution. Former Chairman of the President’s Council of Economic Advisors.
- **Douglas J. Elliott**, Fellow, Economic Studies, Initiative on Business and Public Policy, the Brookings Institution. Former Managing Director, J.P. Morgan.
- **Phillip L. Swagel**, Co-Chair, Financial Regulatory Reform Initiative, Bipartisan Policy Center, and Professor of International Economics, University of Maryland. Former Assistant Secretary for Economic Policy, U.S. Department of the Treasury.

Special thanks to those connected with the Bipartisan Policy Center’s Financial Regulatory Reform Initiative who helped inform and guide us through this process, including: Bipartisan Policy Center staff **Aaron Klein**, **Justin Schardin**, and **Peter Ryan**; and senior advisors **Jim Sivon**, partner with Barnett Sivon & Natter, PC, and **Greg Wilson**, Wilson Consulting.

### **BACKGROUND ON THE PROCESS FOR DEVELOPING THIS REPORT**

The authors developed their conclusions based on their extensive experience in federal regulation and supervision of financial institutions, as well as information-gathering sessions with a wide variety of public- and private-sector experts, agencies, organizations, and individuals. The authors benefited greatly from these meetings and are indebted to all who met with them. However, the authors alone are responsible for the conclusions and recommendations in this report.

### **MEETING QUESTIONNAIRE**

The authors used the following questionnaire to help structure their discussions with current and former regulators, consumer and industry representatives, and academics.

1. Do you believe there an implicit subsidy or funding-cost differential that advantages big banks?
  - a. If so, do you have any indication what size it is?
  - b. Has it increased, remained static, decreased, or been eliminated after the financial crisis and enactment of the Dodd-Frank Act?
2. Do you believe Title II of the Dodd-Frank Act and the FDIC's single-point-of-entry strategy can effectively resolve systemically important financial institutions without requiring a bailout?
  - a. If not, are there changes to this structure that you would make which could make the structure work or do you think it just cannot work?
3. Dodd-Frank attempted to balance any negative externalities of size with additional regulatory requirements. Are the additional regulatory requirements from Dodd-Frank on large financial institutions too high, appropriate, too low, or a mix?
  - a. What is their impact on financial institutions, consumers, the economy, and international markets?
4. At present, are large financial institutions too large to be effectively managed and supervised? What evidence do you have for this? Would the problems be significantly alleviated if the largest banks were broken into multiple pieces?
5. Do you believe significant economies of scope and scale continue to exist as financial institutions grow to be very large?
  - a. Are there specific examples of areas in which economies of scale and scope exist and any where they may not be present or may end at a certain size?
6. Is the U.S. banking sector too concentrated in your opinion?
  - a. If yes, what do you think a better concentration mix would be?
  - b. If no, why do you think so?
7. Do you support breaking up the largest financial institutions?
  - a. If so, why?
  - b. How would it work?
  - c. At what size would you advocate breaking them up?
    - i. Is that size relative to the entire institution or to any specific market.
    - ii. If not, why?
  - d. Is there any point at which you would favor breaking up a financial institution due to its size or concentration?



8. Do you believe that regulators currently have the authority under Dodd-Frank to break up a large financial institution if they believe it poses a systemic threat to the financial system?
  - a. If so, under what, if any, conditions do you think they would use that authority?
9. Are there other restrictions that would achieve similar results short of a breakup that you would favor?
  - a. E.g., restrictions on activities or size?
10. Are large banks important for financial innovation?
  - a. Are there specific examples of innovations that are linked to bank size or scope?
11. Do customers prefer banking with larger or smaller financial institutions (or are they indifferent to size)?
  - a. Has customer preference changed over time with respect to institution size?
    - i. Do you see any difference between costumers (retail depositors, borrowers, corporate accounts, capital market participants)?
12. What, if any, would be the transition costs to the institution and to customers of breaking up a financial institution?
13. What, if any, would be the economic impact on growth of breaking up a financial institution

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**BIPARTISAN POLICY CENTER**

1225 Eye Street NW, Suite 1000  
Washington, DC 20005  
(202) 204-2400

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