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Systemically Important or "Too Big to Fail" Financial Institutions

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Summary

Although "too big to fail" (TBTF) has been a long-standing policy issue, it was highlighted by the financial crisis, when the government intervened to prevent the near-collapse of several large financial firms in 2008. Financial firms are said to be TBTF when policymakers judge that their failure would cause unacceptable disruptions to the overall financial system. They can be TBTF because of their size or interconnectedness. In addition to fairness issues, economic theory suggests that expectations that a firm will not be allowed to fail create moral hazard—if the creditors and counterparties of a TBTF firm believe that the government will protect them from losses, they have less incentive to monitor the firm's riskiness because they are shielded from the negative consequences of those risks. If so, TBTF firms could have a funding advantage compared with other banks, which some call an implicit subsidy.

There are a number of policy approaches—some complementary, some conflicting—to coping with the TBTF problem, including providing government assistance to prevent TBTF firms from failing or systemic risk from spreading; enforcing "market discipline" to ensure that investors, creditors, and counterparties curb excessive risk-taking at TBTF firms; enhancing regulation to hold TBTF firms to stricter prudential standards than other financial firms; curbing firms' size and scope, by preventing mergers or compelling firms to divest assets, for example; minimizing spillover effects by limiting counterparty exposure; and instituting a special resolution regime for failing systemically important firms. A comprehensive policy is likely to incorporate more than one approach, as some approaches are aimed at preventing failures and some at containing fallout when a failure occurs.

Parts of the Dodd-Frank Wall Street Reform and Consumer Protection Act (P.L. 111-203) address each of these policy approaches. For example, it created an enhanced prudential regulatory regime administered by the Federal Reserve for non-bank financial firms designated as "systemically important" (SIFIs) by the Financial Stability Oversight Council (FSOC) and banks with more than $50 billion in assets. The Economic Growth, Regulatory Relief, and Consumer Protection Act (P.L. 115-174) raised this threshold to $250 billion in assets, but gave the Federal Reserve discretion to apply individual provisions as needed to banks between $100 billion and $250 billion in assets. Thirteen U.S. bank holding companies and a larger number of foreign banks have more than $250 billion in assets, and FSOC designated three insurers (AIG, MetLife, and Prudential Financial) and GE Capital as systemically important. MetLife's designation was subsequently rescinded by a court decision, and AIG's and GE Capital's designations were rescinded by FSOC. A handful of the largest banks face additional capital, leverage, and liquidity requirements stemming from Basel III, an international agreement. The Dodd-Frank Act also allowed FSOC to designate payment, clearing, and settlement systems as systemically important "financial market utilities" (FMUs) that are subject to enhanced prudential regulation.

The Dodd-Frank Act also created the "orderly liquidation authority" (OLA), a special resolution regime administered by the Federal Deposit Insurance Corporation (FDIC) to take into receivership failing firms that pose a threat to financial stability. This regime has not been used to date, and has some similarities to how the FDIC resolves failing banks. Statutory authority used to prevent financial firms from failing during the crisis has either expired or been narrowed by the Dodd-Frank Act.

The fact that most large firms have grown in dollar terms since the enactment of the Dodd-Frank Act has led some critics to question whether the TBTF problem has been solved and propose more far-reaching solutions, such as repealing parts of the Dodd-Frank Act, breaking up the largest banks, or restoring Glass-Steagall. Others argue that systemic risk regulation should focus

on risky financial activities, regardless of firm size. (Fannie Mae and Freddie Mac remain in government conservatorship and have not been addressed by legislation to date.)

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Introduction

Although "too big to fail" (TBTF) has been a perennial policy issue, it was highlighted by the near-collapse of several large financial firms in 2008. Bear Stearns (an investment bank), GMAC (a non-bank lender, later renamed Ally Financial), and AIG (an insurer) avoided failure through government assistance. Lehman Brothers (an investment bank) filed for bankruptcy after the government decided not to offer it financial assistance. Fannie Mae and Freddie Mac (government-sponsored enterprises) entered government conservatorship and were kept solvent with government funds. The Federal Deposit Insurance Corporation (FDIC) arranged for Wachovia (a commercial bank) and Washington Mutual (a thrift) to be acquired by other banks without government financial assistance. Citigroup and Bank of America (commercial banks) were offered government guarantees on selected assets they owned.[1]

In many of these cases, policymakers justified the use of government resources on the grounds that the firms were "systemically important," popularly called "too big to fail." TBTF is the concept that a firm's disorderly failure would cause widespread disruptions in financial markets that could not easily be contained. Although the government had no explicit policy to rescue TBTF firms, several were rescued on those grounds once the crisis struck. TBTF subsequently became one of the systemic risk issues that policymakers grappled with in the wake of the recent crisis.

Systemic risk mitigation, including eliminating the TBTF problem, was a major goal of the Dodd-Frank Wall Street Reform and Consumer Protection Act (hereinafter, the Dodd-Frank Act; P.L. 111-203), comprehensive financial regulatory reform enacted in 2010.[2] Different parts of this legislation jointly address the "too big to fail" problem through requirements for enhanced regulation for safety and soundness for "systemically important" (also called "systemically significant") financial institutions (SIFIs), limits on size and the types of activities a firm can engage in (including proprietary trading and hedge fund sponsorship), and the creation of a new receivership regime for resolving failing non-banks that pose systemic risk. In addition, Basel III, an international agreement, placed heightened requirements on the largest banks. Title IV of the Economic Growth, Regulatory Relief, and Consumer Protection Act (P.L. 115-174) reduced the number of banks to which the Dodd-Frank Act and Basel III provisions apply.[3] (There has not yet been legislation enacted to reform Fannie Mae and Freddie Mac, which remain in government receivership.)

Some critics argue that the Dodd-Frank and Basel III policy reforms do not go far enough to solve the TBTF problem, and others argue they have had the perverse effect of exacerbating the TBTF problem. Ultimately, the failure of a large firm is the only test of whether the TBTF problem still exists.

This report discusses the economic issues raised by TBTF, broad policy options, and policy changes made by the relevant Dodd-Frank provisions, as amended.

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[1] Broadly based financial crisis government programs to solvent firms are not considered for purposes of this report. For more information, see CRS Report R43413, *Costs of Government Interventions in Response to the Financial Crisis: A Retrospective*, by Baird Webel and Marc Labonte.

[2] For an overview, see CRS Report R41350, *The Dodd-Frank Wall Street Reform and Consumer Protection Act: Background and Summary*, coordinated by Baird Webel. For more information on systemic risk provisions, see CRS Report R41384, *The Dodd-Frank Wall Street Reform and Consumer Protection Act: Systemic Risk and the Federal Reserve*, by Marc Labonte.

[3] For more information, see CRS Report R45073, *Economic Growth, Regulatory Relief, and Consumer Protection Act (P.L. 115-174) and Selected Policy Issues*, coordinated by David W. Perkins.

Economic Issues

Context

Evidence on the size of financial firms can be viewed in absolute and relative terms—relative to other industries and within the industry (i.e., concentration). In the first quarter of 2018, there were 13 financial holding companies with more than $250 billion in assets in the United States, of which four had more than $1.9 trillion in assets. In 2003, there was only one U.S. holding company with more than $1 trillion in assets.[4]

In recent decades, the U.S. banking industry has become more concentrated, meaning that a greater percentage of total industry assets is held by large banks. According to one study, the three largest banks held 5% to 15% of total commercial banking depository assets from the 1930s until the 1990s. The share of the top three then rose until it had reached about 40% by 2008.[5] Assets of the five largest bank holding companies (BHCs) totaled 48% of total BHC assets as of December 31, 2017.[6] This share has been relatively steady in recent years. By international standards, U.S. banks are not that large, however. Relative to GDP, the combined assets of the top three U.S. banks were the lowest of any major OECD economy in 2009.[7]

The four largest BHCs each held a majority of their assets in commercial bank subsidiaries. Not all very large financial institutions are commercial banks, however. Companies with more than $100 billion in assets include insurers, broker-dealers, investment funds, specialized lenders, and government-sponsored enterprises (Fannie Mae and Freddie Mac are among the largest firms overall by assets). As the financial system has evolved over the long run, large non-banks have emerged, which may or may not be chartered as bank holding companies or thrift holding companies. Today, a bank can incorporate as a financial holding company that has depository subsidiaries, insurance subsidiaries, and broker-dealer subsidiaries, for example. The financial crisis reduced the number of large financial firms, but also led to an increase in the size of the remaining large firms, through a series of mergers and acquisitions.[8]

Compared with other industries, financial firms are large in dollar terms when measured by assets and liabilities, but not by measures such as revenue because of the nature of financial intermediation. For example, there is only one firm (Berkshire Hathaway) with revenues from financial businesses—and it also has substantial non-financial revenues—and no BHCs among the 10 largest Fortune 500 firms in 2018 when measured by revenue, but financial companies are

[4] Data from National Information Center, http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx. This list includes any type of institution that includes a depository subsidiary. These data exaggerate changes in the relative importance of large banks since they do not take into account inflation or growth in the economy.

[5] Andrew Haldane and Robert May, "Systemic Risk in Banking Ecosystems," *Nature*, vol. 469, January 2011, p. 351.

[6] Federal Reserve Bank of Chicago, *Top Banks and Holding Companies*, period ending June 30, 2015, available at http://www.chicagofed.org/webpages/banking/financial_institution_reports/top_banks_bhcs.cfm. In addition, the top five savings and loan holding companies hold 60% of total assets and the top five state-member banks hold 46% of total assets; banks in those categories are considerably smaller in absolute terms than bank holding companies (BHCs), however.

[7] Organization of Economic Cooperation and Development, *Bank Competition and Financial Stability*, 2011, Figure 1.1.

[8] According to one estimate, mergers and acquisitions during the crisis increased the assets of the four largest banks from 30% to 44% of total bank assets. Richard Fisher, "Two Areas of Present Concern," speech before the Senior Delegates' Roundtable of the Fixed Income Forum, Federal Reserve Bank of Dallas, July 23, 2009.

the only Fortune 500 firms in the top 10 for assets or with more than $1 trillion in assets.[9] Financial firms are also not as concentrated as some other industries.[10] The top four firms' shares of industry revenues in 2012 were 29.9% in credit intermediation, 17.3% in securities and commodities, and 14.1% in insurance, respectively.[11] In layman's terms, there is no "Pepsi/Coke" dominance in the financial sector. These comparisons may help to illustrate why traditional policy tools such as antitrust have not been used against large financial firms recently and suggest that the TBTF phenomenon in finance lies in the nature of financial intermediation, which is the topic of the next section.

Economic Effects of Too Big to Fail

Contagion can be transmitted from small or large financial institutions (see the following text box), but large firms pose unique problems. Firms are likely to have more counterparty exposure to large firms, and the losses or disruptions caused by counterparty exposure when a large firm fails could be severe enough to lead to failure of third parties. Problems at large firms could also lead to "fire sales" in specific securities markets that depress market prices, thereby imposing losses on other holders of similar securities.[12] Some economists argue that the real problem is some firms are "too interconnected to fail." That is, it is not the sheer size of certain firms that causes contagion, but the fact that most activity in certain key market segments flows through those firms.[13] According to the International Monetary Fund (IMF), a few large firms "dominate key market segments ranging from private securitization and derivatives dealing to triparty repo and leveraged investor financing."[14] Were the interconnected firm to fail, other firms would have difficulty absorbing the failed firm's business, and there would be disruptions to the flow of credit. If problems in one market segment undermine an interconnected firm, problems can spread to the other market segments in which the firm operates. The systemic risk posed by Lehman Brothers suggests that a firm that is not one of the largest in absolute terms can nevertheless be too interconnected to fail. Finally, since policymakers cannot be certain beforehand which firms pose systemic risk, more firms could be politically TBTF than economically TBTF.

[9] Data can be accessed at http://money.cnn.com/magazines/fortune/fortune500/. The lack of financial firms in the top 10 by revenue does not appear to be driven by the effects of the financial crisis. For example, there were two predominantly financial firms in the top 10 by revenue in 2006.

[10] One study of the 10 most concentrated industries did not include any financial firms. See Andrea Alegria et al., "Highly Concentrated: Companies that Dominate Their Industries," *IBISWorld*, February 2012, http://www.ibisworld.com/Common/MediaCenter/Highly%20Concentrated%20Industries.pdf. See also Bipartisan Policy Center, *The Big Bank Theory*, October 2014, p. 31, at http://cdn.bipartisanpolicy.org/wp-content/uploads/2014/10/BPC-Big-Bank-Breakup-Arguments.pdf.

[11] U.S. Census Bureau, Economic Census, 2012. Data accessed from factfinder.census.gov. Subindustries within financial services had higher concentration rates.

[12] An alternative perspective is that the simultaneous failure or emergency experienced by many firms during the crisis was primarily caused by a lack of diversified risk that led to many firms experiencing losses on similar investments (in this case, mortgage-related investments), as opposed to losses being caused by counterparty exposure. This perspective does not necessarily require a TBTF problem to explain the crisis. For example, see Daniel Tarullo, "Regulating Systemic Risk," speech at 2011 Credit Markets Symposium, Charlotte, North Carolina, March 31, 2011, http://www.federalreserve.gov/newsevents/speech/tarullo20110331a.htm.

[13] Hereinafter, for convenience, this report will use the terms "too big to fail" and "too interconnected to fail" interchangeably.

[14] International Monetary Fund, *United States—Selected Issues*, July 13, 2009, p. 24.

Why Are Financial Firms Vulnerable to Instability?

Economists consider financial firms to be uniquely vulnerable to instability because a fundamental feature of financial intermediation is the use of short-term liabilities (debt or deposits) to finance long-term assets (e.g., loans). As a result, assets cannot be liquidated fast enough or at a sufficient price to fund redemptions in a panic. The use of liabilities, rather than equity, to finance most assets (referred to as "leverage") can result in losses exceeding equity, which results in insolvency, or an inability to meet obligations to all creditors in full. These features make financial intermediaries inherently vulnerable to runs—since those who redeem funds first are thought more likely to access their funds, there is an incentive for creditors to rush to redeem, whether the firm is suffering from a liquidity problem or a solvency problem. Panics can be self-fulfilling: whether or not the institution originally had financial problems, a panic can lead to its failure. Panics are also prone to contagion—the observation of a run at one institution can lead creditors to run on other institutions, because of perceived connections or similarities to the original firm.

The classic run involves depositors at banks, but the recent crisis demonstrated that other debt markets can also be susceptible to runs for banks and non-bank financial firms. Non-bank financial firms were highly reliant on short-term borrowing, through financial instruments such as repurchase agreements and commercial paper. They favor short-term borrowing because in normal conditions these short-term funds are inexpensive and readily available. The short maturity of these instruments meant that loans needed to be rolled over frequently. The proximate cause of most of these firms' failure was the inability to roll over maturing debt. When these firms experienced financial difficulties, counterparties became reluctant (or were not in a position) to transact and maintain business relationships with them. For example, major investment banks are "market-makers" (ready buyers and sellers) for securities markets; provide prime brokerage services for hedge funds; are major participants in over-the-counter markets for securities such as derivatives; play important roles in payment, clearing, and settlement activities; and so on. If counterparties in any of these areas are no longer willing to transact with the firm because of fears of a run, the firm's financial difficulties can quickly compound.

While some policymakers have dismissed the claim that any firm could be too big to fail, many analysts believe the failure of Lehman Brothers, occurring in the context of difficulties at several large financial firms, was the proximate cause of the worsening of the crisis in September 2008.[15] It is debatable whether policy actions in the months leading up to Lehman Brothers' failure made its failure more or less disruptive, but it is fair to say that it is unlikely that the panic that followed could have been avoided since the nature of the disruptions its failure caused (notably, its effect on money markets) was not widely foreseen. "Bailing out" TBTF firms may not be an intended policy objective, but may become the second-best crisis containment measure when the failure of a TBTF firm is imminent to prevent fallout to the broader financial system and the economy as a whole.

While many people object to rescuing TBTF firms on moral or philosophical grounds, there are also economic reasons why having firms that are TBTF is inefficient. In general, for market forces to lead to an efficient allocation of resources, finding a good use of resources must be financially rewarded and a bad use must be financially punished. Firms generally run into financial problems when they have persistently allocated capital to inefficient uses. To save such a firm would be expected to retard efforts to shift that capital to more efficient uses, and may allow the firm to continue making more bad decisions in the future. The TBTF problem results in too much financial intermediation taking place at large firms and too little at other firms from the perspective of economic efficiency, although not necessarily from the perspective of non-economic policy rationales.[16] Because large and small financial firms do not serve exactly the

[15] See, for example, Financial Crisis Inquiry Commission, *Final Report*, chap. 18, http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/fcic_final_report_full.pdf. For an alternative perspective on the importance of Lehman Brothers, see "Dissenting Views" in the same report.

[16] In the case of Fannie Mae and Freddie Mac, this was arguably the policy goal—Fannie Mae's and Freddie Mac's low-borrowing costs were seen by some as desirable insofar as it led to lower borrowing costs for homeowners. A key feature of the housing bubble was overinvestment in housing, spurred by the over-availability of mortgage credit.

same customers or operate in exactly the same lines of business, too much capital will flow to the customers and in the lines of business of large firms and too little to those of small firms in the presence of TBTF.

Preventing TBTF firms from failing is argued to be necessary for maintaining the stability of the financial system in the short run. But rescuing TBTF firms is predicted to lead to a less stable financial system in the long run because of moral hazard that weakens market discipline. Moral hazard refers to the theory that if TBTF firms expect that failure will be prevented, they have an incentive to take greater risks than they otherwise would because they are shielded from at least some negative consequences of those risks.[17] In general, riskier investments have a higher rate of return to compensate for the greater risk of failure. If TBTF firms believe that they will not be allowed to fail, then private firms capture any additional profits that result from high-risk activities, while the government bears any extreme losses. Thus, if TBTF firms believe that they will be rescued, they have an incentive to behave in a way that makes it more likely they will fail.

To see how the moral hazard problem is transmitted, it is helpful to examine who gets directly "rescued" when the government intervenes to prevent the fallout to the overall financial system and broader economy. The direct beneficiaries of a rescue will include some combination of the firm's management, owners (e.g., shareholders), creditors (including depositors), account holders, and counterparties. Under bankruptcy, these groups would bear losses to differing degrees depending on the legal priority of their claims. Government assistance, depending on its terms, can protect some or all of these groups from losses. In some recent government rescues, management has been replaced; in others, it has not. Even if management believes that losses will lead to removal, managers may prefer excessive risk-taking (with higher expected profits) because they are not personally liable for the firms' losses.[18] In some cases, shareholders have borne some losses through stock dilution, although their losses may have been smaller than they would have been in a bankruptcy. Creditors, account holders, and counterparties have generally been shielded from any losses. Thus, government rescues have not mitigated the moral hazard problem for creditors and counterparties. Because the government will only intervene in the case of extreme losses, moral hazard may manifest itself primarily in areas affected only by systemic events (referred to as "tail risk"). For example, extreme losses from counterparty risk may be ignored by counterparties to TBTF firms if they believe that government will always intervene to prevent failure; if so, costs (such as the amount of margin a counterparty will require) will be lower for TBTF firms than competitors in these markets.

Do TBTF Firms Enjoy a Funding Advantage or Implicit Subsidy?

Economic theory predicts that in the presence of moral hazard, creditors and counterparties of TBTF firms provide credit at an inefficiently low cost. Some studies have provided evidence that the funding advantage exists, although many of these studies cover time periods that end before

[17] Evidence that larger banks are consistently riskier than smaller banks is mixed. For example, one measure of riskiness is leverage (the proportion of liabilities to equity held by a bank). One study found that large U.S. commercial banks were less leveraged than small banks on average during the past decade, but the median large bank was modestly more leveraged than the median small bank. Large banks also had more off-balance-sheet activities, which some believe made banks appear to be less risky than they turned out to be. The study also found that investment banks were much more leveraged than commercial banks, and large investment banks were more leveraged than small ones. Source: Sebnem Kalemli-Ozcan, Bent Sorensen, Sevcan Yesiltas, "Leverage Across Firms, Banks, and Countries," National Bureau of Economic Research, working paper no. 17354, August 2011. Anecdotal evidence points to a number of large banks whose risky behavior resulted in failure or rescue during the crisis, but most failing banks over the past few years were small banks.

[18] Economists refer to this as a "principal-agent" problem.

the enactment of the Dodd-Frank Act.[19] Identifying a lower funding cost for large banks alone is not enough to prove a moral hazard effect because lower cost could also be due to other factors, such as greater liquidity or lower risk (e.g., greater diversification).[20] A Government Accountability Office (GAO) review of the empirical literature found that a funding advantage for large firms during the financial crisis had declined by 2011. Its own econometric analysis found evidence of a funding advantage during the crisis, but mixed evidence on the existence of a funding advantage in 2012 and 2013—indeed, more versions of their model found higher funding costs for large banks rather than the expected lower costs, holding other factors equal.[21]

Some view the decision by certain credit rating agencies to rate the largest financial firms more highly because they assume the firms would receive government support as evidence of the funding advantage, although two of the three major rating agencies have reduced the magnitude of this "ratings uplift" in recent years.[22] (It should be noted that credit ratings do not directly determine funding costs.)

This funding advantage is sometimes referred to as the TBTF subsidy, although a subsidy typically implies a government willingness to provide the recipient with a benefit. Note also that a subsidy typically takes the form of an explicit direct payment, financial support, or guarantee, whereas in this case, if the funding advantage exists, it would derive from the expectation of future support that has not been pledged.

Policy Options and the Policy Response After the Crisis

This report organizes policy options for addressing TBTF into the following six broad categories:

- "Bailouts";
- Limiting Firm Size;
- Limiting Scope of Activities;
- Regulation;
- Minimizing Spillovers; and
- Resolving a Failing Firm.

The Dodd-Frank Act contained provisions in each of these categories, but its most significant changes were in the areas of regulation and resolution. Likewise, recent legislative proposals can be found in each of these areas.

[19] Studies using empirical evidence to estimate the TBTF funding advantage are reviewed in Financial Crisis Inquiry Commission, "Governmental Rescues of 'Too Big To Fail' Financial Institutions," Preliminary Staff Report, August 2010, chap. 3, http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/2010-0831-Governmental-Rescues.pdf; Randall Kroszner, "A Review of Bank Funding Cost Differentials," University of Chicago, working paper, November 2013, https://www.stern.nyu.edu/sites/default/files/assets/documents/con_044532.pdf; Thomas Hoenig, Testimony before the Committee on Financial Services, U.S. House of Representatives, June 26, 2013, Attachment 3, http://financialservices.house.gov/uploadedfiles/hhrg-113-ba00-wstate-thoenig-20130626.pdf.

[20] See Goldman Sachs, "Measuring the TBTF Effect on Bond Pricing," *Global Markets Institute*, May 2013.

[21] Government Accountability Office, *Large Bank Holding Companies – Expectations of Government Support*, GAO-14-621, July 2014, pp. 40-55.

[22] Government Accountability Office, *Large Bank Holding Companies – Expectations of Government Support*, GAO-14-621, July 2014, p. 24 and Financial Stability Oversight Council, *Annual Report*, 2014, p. 117.

Policy options for TBTF can be categorized as preventive (how to prevent TBTF firms from either emerging or posing systemic risk) or reactive (how to contain the fallout when a TBTF firm experiences a crisis). A comprehensive policy is likely to incorporate more than one approach because different approaches are aimed at different parts of the problem. A policy approach that would not solve the TBTF problem in isolation could be successful in conjunction with others. Some policy approaches are complementary—others could counteract each other.

When considering each policy option discussed in this section, an alternative perspective to consider is that problems at large firms during the crisis—such as overleveraging, a sudden loss of liquidity, concentrated or undiversified losses, and investor uncertainty caused by opacity—were not TBTF problems per se. If, in fact, they were representative of problems that firms of all sizes were experiencing, policy should directly treat these problems in a systematic and uniform way for all firms, and not just for TBTF firms, in this view. In other words, prudential regulation, a special resolution regime, and policies limiting spillover effects could be applied to all firms operating in a given area rather than just large firms, so arguments for and against these policy options do not apply only to their application to large firms. If the causes of systemic risk are not tied to firm size or interconnectedness, then policies based on differential treatment of TBTF firms could result in systemic risk migrating to non-TBTF firms rather than being eliminated.

End or Continue "Bailouts"?

"Bailouts" are defined differently by different people. For the purposes of this report, they are defined as government assistance to a single firm to prevent it from failing (i.e., allow it to meet all ongoing obligations in full), in contrast to widely available emergency government programs to provide liquidity to solvent firms. TBTF bailouts could be delivered through assistance unique to the firm or through existing government programs on a preferential, subsidized basis.[23] They could come in the form of federal loans, insurance, guarantees, capital injections, or other firm-specific commitments.

When addressing TBTF, the first question to ask is, what should happen to large financial firms when they are no longer financially viable—should they be bailed out, as was the case for some firms during the crisis, or should they be wound down in some way?

Current Policy

TBTF policy before the crisis could be described as purposeful ambiguity—policy was not explicit about what would happen in the event that large financial firms become insolvent, or which firms were considered TBTF.[24] (Certain statutory benefits conferred to Fannie Mae and Freddie Mac came closer to an explicit TBTF status, and markets treated them as such by lending to them at interest rates closer to government than private-sector borrowing costs.)

Arguably, a TBTF policy was not explicit because it did not have to be—there had not been a comparable episode of financial instability since the Great Depression. Aside from a couple of

[23] A GAO evaluation found that while the largest banks received a majority of the assistance from the Fed's broadly based emergency programs in dollar terms, they had the lowest ratio of assistance to total assets, whereas the smallest banks had the highest ratio. By contrast, the largest banks had the highest ratio of guaranteed debt to assets in the FDIC's TGLP and the highest ratio of capital to assets in TARP while participating. Government Accountability Office, *Government Support for Bank Holding Companies*, GAO-14-18, November 2013, Table 4, 5, and 6.

[24] Financial Crisis Inquiry Commission, "Governmental Rescues of 'Too Big To Fail' Financial Institutions," Preliminary Staff Report, August 2010, chap. 3, http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/2010-0831-Governmental-Rescues.pdf.

isolated incidents, such as the bank Continental Illinois[25] and the hedge fund Long Term Capital Management,[26] there was also little experience since then with large firms needing to be rescued. Financial turmoil in the decades prior to the crisis had been neutralized using the Federal Reserve's normal monetary and "lender of last resort" tools. The Fed was authorized to provide liquidity to banks through collateralized loans at the discount window, with limitations for banks that are not well capitalized. In previous episodes of financial turmoil such as 1987 and 1998, the Fed's decision to flood markets with liquidity had proven sufficient to restore confidence.[27] There was no standing policy to provide liquidity to non-bank financial firms to guard against runs before the recent crisis, perhaps because there was less historical experience with non-bank runs, and perhaps because non-bank financial firms have become a more important part of the financial system over time. The Fed had broad existing emergency authority under Section 13(3) of the Federal Reserve Act to lend to non-banks, but prior to the crisis had not done so since the 1930s or articulated under what circumstances it would do so.

Policy during the recent crisis could be described as reactive, developing ad hoc in fits and starts in reaction to events. Ultimately, some banks and non-bank financial firms received federal assistance, despite the lack of an explicit safety net and federal prudential regulation in the case of non-banks AIG and Bear Stearns. In the absence of explicit authority to rescue a TBTF firm, as the crisis unfolded, broad standing authority was used: Section 13(3) was used to prevent the failures of Bear Stearns and AIG. Section 13(3) and the FDIC's systemic risk authority[28] were used to offer asset guarantees to Bank of America and Citigroup. These authorities were also used to create broadly based emergency programs. Other programs were created after the crisis began under authority granted by Congress in 2008. Assistance was given under the Housing and Economic Recovery Act (HERA; P.L. 110-289) to prevent Fannie Mae and Freddie Mac from becoming insolvent. In October 2008, Congress passed the Emergency Economic Stabilization Act (EESA; P.L. 110-343), creating the Troubled Asset Relief Program (TARP), which was used, among other things, to inject capital into several large financial firms.[29] The HERA and EESA authority expired in 2010 and were not replaced, although funds continued to be available after expiration under several outstanding contracts.

At the time, it appeared that the ultimate cost to the government of TBTF "bailouts" could run into the hundreds of billions, collectively.[30] In hindsight, all of the special assistance to large financial firms (Bear Stearns, the GSEs, Ally Financial, Chrysler Financial, AIG, Citigroup, and Bank of America), as well as the broadly based emergency programs that large and small

[25] For more information, see Federal Deposit Insurance Corporation, "Continental Illinois and 'Too Big to Fail,'" in *History of the Eighties*, chap. 7, http://www.fdic.gov/bank/historical/history/235_258.pdf; Federal Deposit Insurance Corporation, "Continental Illinois National Bank and Trust Company," in *Managing The Crisis*, part 2, chap. 4, August 1998, http://www.fdic.gov/bank/historical/managing/history2-04.pdf.

[26] For more details, see U.S. General Accounting Office, *Long-Term Capital Management*, GGD-00-3, October 1999, http://www.gao.gov/archive/2000/gg00003.pdf.

[27] As discussed above, due to the nature of financial intermediation, financial firms can never hold enough liquidity to survive a run. Nevertheless, critics have argued that the Fed's response to turmoil enabled firms to take on excessive liquidity risk. This policy is sometimes referred to as the "Greenspan put," referring to the fact that the Fed's willingness to provide liquidity in times of trouble provided firms with a hedge against liquidity risk.

[28] 12 U.S.C. 1823(c). In total, GAO reports that the FDIC's systemic risk exception was invoked five times during the crisis. See Government Accountability Office, *Federal Deposit Insurance Act: Regulators' Use of Systemic Risk Exception*, GAO-10-100, April 2010.

[29] Information on government assistance provided during the crisis can be found in CRS Report R43413, *Costs of Government Interventions in Response to the Financial Crisis: A Retrospective*, by Baird Webel and Marc Labonte.

[30] For example, CBO expected TARP alone to have a subsidy cost of $190 billion in January 2009. See Congressional Budget Office, *The Budget and Economic Outlook*, January 2009, p. 25.

financial firms accessed, turned out to be cash-flow positive for the government (i.e., income and principal repayments exceeded outlays).[31] Cash-flow measures, however, do not reflect the economic cost of assistance, which would factor in the rate of return a private investor would have required to make a similar investment, incorporating risk and the time value of money. On an economic basis, the Congressional Budget Office has estimated that special assistance through TARP to Citigroup, Bank of America, the auto financing firms, and broadly based programs have generated positive profits for the government, while the TARP assistance to AIG was subsidized.[32] Although there were ultimately no net losses in these cases, these government interventions exposed the government to large potential losses.

Maintaining broad discretionary standing authority while attempting to limit its scope to prevent bailing out insolvent firms could be seen as the approach taken by Title XI of the Dodd-Frank Act. It limited the Fed to providing emergency assistance only through widely available facilities, required the Fed to issue rules and regulations on how such assistance will be provided, and prohibited the Fed from lending to failing firms.[33] It also created new statutory authority for the FDIC to set up emergency liquidity programs in the future with restrictions and limitations, including that the recipient must be solvent, rather than allowing the FDIC to again rely on an open-ended systemic risk exception. Earlier, EESA ruled out future uses of the Exchange Stabilization Fund to guarantee money market funds. Few other standing authorities to intervene in financial markets are available.

Policy Debate

The crisis left many policymakers and observers criticizing ad hoc bailouts as arbitrary, unfair, lacking in transparency, and requiring too much taxpayer exposure (although funds were eventually repaid in full with interest).[34] Many economists would also credit it with eventually restoring financial stability, however, by restoring healthy and unhealthy financial firms' access to liquidity and capital.[35]

There has been widespread support among policymakers since the crisis for eliminating future bailouts. In theory, if creditors believed that a firm would not receive government support, they would not enable firms to take what they perceived to be excessive risks, and risky actions would be priced more efficiently.[36] Unfortunately, imposing "market discipline" is not necessarily

[31] CRS Report R43413, *Costs of Government Interventions in Response to the Financial Crisis: A Retrospective*, by Baird Webel and Marc Labonte.

[32] Congressional Budget Office, *Report on the Troubled Asset Relief Program*, March 2015. There is no recent estimate of the economic costs for programs outside of TARP. Economic gains on assistance to AIG outside of TARP partly or wholly offset economic costs to AIG through TARP.

[33] The Fed issued a proposed rule, "Extensions of Credit by Federal Reserve Banks," January 6, 2014, available at http://www.federalreserve.gov/newsevents/press/bcreg/20131223a.htm.

[34] See, for example, Financial Crisis Inquiry Commission, *Final Report*, chap. 18, http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/fcic_final_report_full.pdf; Congressional Oversight Panel, *An Overall Assessment of TARP and Financial Stability*, 112th Cong., 1st sess., March 4, 2011, S.Hrg.112-3. For an overview of government assistance during the crisis, see CRS Report R43413, *Costs of Government Interventions in Response to the Financial Crisis: A Retrospective*, by Baird Webel and Marc Labonte.

[35] An alternative perspective is that government intervention worsened the crisis by creating policy uncertainty. See, for example, John Taylor, *The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong*, November 2008, working paper, http://www.stanford.edu/~johntayl/FCPR.pdf.

[36] As will be discussed in the section below entitled "Resolving a Large, Interconnected Failing Firm," the failure could be resolved by the bankruptcy process or a special receivership regime, similar to how banks are resolved. If the latter is used, then issues arise as to what government support becomes available to creditors through the receiver.

achieved simply by proclaiming a "no bailouts" policy. If the moral hazard problem is to be avoided, market participants must be convinced that when faced with a failure that could potentially be highly damaging to the broader economy—and just how damaging cannot be fully known until after the fact—policymakers will not deviate from the stated policy and provide bailouts. But current policymakers cannot prevent future policymakers from offering assistance to a failing TBTF firm. Although it is in the long-term interest of policymakers to withhold assistance to prevent moral hazard, it is in the short-term interest of policymakers to provide assistance to prevent systemic risk. This logic underpinned the decision to rescue firms in the crisis, and the fact that it happened then may lead creditors to conclude that the same thing would happen again in the next crisis. This makes it difficult to craft a "no bailouts" policy that is credible to market participants.[37] Even if policymakers did intend to maintain a market discipline policy, as long as creditors disbelieved such a policy would be maintained in the event of a crisis, the moral hazard problem would remain.

Although it is impossible to prevent future policymakers from making statutory changes to current policy, current policymakers can make it more difficult for future policymakers to "bail out" firms by repealing or limiting the existing standing authority that policymakers used to provide assistance in the recent crisis. Enacting new authority is likely to be a higher hurdle than invoking existing authority. The Dodd-Frank Act narrowed emergency authority to prevent future bailouts, but critics believe that emergency authority remains broad enough that regulators would be likely to use it to save TBTF firms in the future. Policymakers have debated repealing or further limiting standing authority such as the Fed's 13(3) emergency authority, the Treasury's Exchange Stabilization Fund, and the FDIC's systemic risk exception to least cost resolution.

The advantage to maintaining broad discretionary emergency authority is that it allows policymakers to react quickly to unforeseen contingencies, and the authority may be needed for purposes other than bailouts, as defined in this report. If assistance became necessary in a fast-moving crisis, new authority might take too long to enact. By then, the damage to the economy could be worse. In other words, eliminating broad authority could still result in a TBTF rescue, but after more financial disruption had occurred. TARP is an example of authority that was enacted unusually quickly during a crisis; nevertheless, its enactment took weeks, whereas contagion can spread in days.

Three other disadvantages to the ad hoc approach to bailouts are often cited. First, assistance could be provided arbitrarily or on the basis of favoritism. Second, a lack of contingency planning shifted risk to the taxpayer. Third, it led to policy uncertainty, which can heighten systemic risk. Arguably, lack of explicit policy added to the panic after Lehman Brothers failed, because market participants may have incorrectly based decisions on the expectation that Lehman Brothers would receive the same type of government assistance that Bear Stearns received.[38] All three of these disadvantages could be addressed through a no bailouts policy—or, alternatively, by explicitly stating the terms and conditions under which companies will receive assistance and creating a funding mechanism beforehand. The latter approach could make the moral hazard problem worse, however, by leaving no ambiguity about which firms will receive assistance.[39]

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[37] Economists refer to this as a "time inconsistency" problem. See Gary Stern and Ron Feldman, *Too Big to Fail*, Brookings Institute Press, Washington, DC, 2004, chap. 2.

[38] See, for example, John Taylor, *The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong*, November 2008, working paper, http://www.stanford.edu/~johntayl/FCPR.pdf.

[39] A related approach would be to allow TBTF firms to fail, but stop contagion by creating standing credit facilities ahead of time to aid solvent counterparties. This would reduce moral hazard on the firm's part (because its managers would have a greater incentive to avoid failure), but would not eliminate it because counterparties would have less

The optimal approach to bailouts from an economic perspective is arguably the one that is least costly to the economy in the short and long run. The cost of TBTF to the economy includes the direct expenditures by the government and the costs of a less stable financial system due to moral hazard. Budgetary costs do not include preventing the broader costs of a systemic disruption to the economy, which would have feedback effects on the federal budget. It can be argued that a failure to bail out TBTF firms would be more costly in the short run because it would potentially allow systemic risk to spread. Alternatively, if bailouts increase moral hazard, it can be argued that greater moral hazard causes the system to be less stable in the long run by encouraging TBTF firms to act less prudently. However, even without moral hazard, firms would sometimes fail, as finance is inherently risky.

The 2008 experience lacks a counterfactual to definitively answer the question of which approach is least costly in the short run. In this sense, the question of whether it is more costly to bail out TBTF firms or allow them to fail cannot be definitively settled. The crisis worsened after Lehman Brothers was allowed to fail and ended after TARP and other broadly based emergency programs were created. Standard measures of financial stress, such as the spread between Treasury rates and the London Inter-bank Offering Rate (LIBOR), did not begin to fall until legislation creating TARP was enacted.[40] Ad hoc rescues of failing TBTF firms had not succeeded in stabilizing financial markets to that point, but it is unknown whether financial conditions would have eventually normalized had that ad hoc policy been pursued for Lehman Brothers and beyond. There is also no counterfactual as to what would have happened if there had been a consistent policy of allowing firms to fail in the crisis dating back to Bear Stearns, but the outcome that policymakers believed would occur if Bear Stearns had not been rescued is similar to events following the Lehman Brothers bankruptcy.

Successfully eliminating bailouts does not address the fundamental problem posed by TBTF—how can a large interconnected firm fail without causing financial instability? Effective market discipline may reduce the likelihood of a firm failing, but reducing the probability to zero is not a realistic or desirable goal of creditors. The experience of the Lehman Brothers bankruptcy suggests that the existing bankruptcy process can lead to financial instability, at least in an already stressed environment. Thus, if policymakers wish to eliminate bailouts and maintain financial stability, that goal must be paired with one or more of the other approaches below.

Limiting the Size of Financial Firms

One approach to eliminating TBTF is to alter the characteristics of firms that make them TBTF. If TBTF is primarily a function of size, policymakers could require TBTF firms to sell businesses, divest assets, or break up to the point that they are no longer TBTF. Alternatively, policymakers could tax size—explicitly or implicitly through punitive regulatory requirements—to put large firms at a competitive disadvantage (or eliminate advantages that stem from perceptions of TBTF).

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reason to monitor the firm's riskiness. An example of this approach is the decision to let Lehman Brothers fail, then subsequently offer a blanket guarantee for money market mutual funds (MMFs) to prevent a run triggered by one such fund's financial difficulties related to its holdings of Lehman debt. As the MMF example illustrates, sometimes this approach could require assistance to be extended much more broadly than to just direct counterparties. Further, if standing facilities are too easily accessed, they could crowd out private inter-firm lending.

[40] An alternative perspective is that government intervention worsened the crisis by creating policy uncertainty. See, for example, John Taylor, *The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong*, November 2008, working paper, http://www.stanford.edu/~johntayl/FCPR.pdf.

Current Policy

Size limits are in place in current law, but only to approve mergers or when there is a threat to financial stability. Before the crisis, mergers or consolidations were prohibited if they would result in a BHC holding more than 10% of national deposits and 30% of any state's deposits. Section 622 of the Dodd-Frank Act prevents mergers or consolidations that would result in a firm with more than 10% of total liabilities of certain financial firms or, in the case of a bank, 10% of the total amount of deposits of insured depository institutions in the United States. This limit can be waived in the case of the acquisition of a failing firm. The limit does not prevent firms from increasing their market share "organically."[41] The Financial Stability Oversight Council (FSOC) determined that Section 622 would limit the acquisitions of only the four largest BHCs in 2011.[42]

Section 121 of the Dodd-Frank Act, as amended by P.L. 115-174, allows the Federal Reserve to prevent mergers and acquisitions, restrict the products a firm is allowed to offer, terminate activities, and sell assets if the Federal Reserve and at least two-thirds of FSOC believe that a firm that has more than $250 billion in assets poses a "grave threat to the financial stability of the United States." It does not allow the Fed to undertake these actions simply because a firm is large.

The Dodd-Frank Act, as amended by P.L. 115-174, allows fees to be assessed on banks with more than $50 billion, $100 billion, or $250 billion in assets, depending on the fee, and non-banks designated as systemically important. The fees were intended to finance the costs of supervision and resolution, as well as the budget of the Office of Financial Research, as opposed to being a deterrent on size, however. Regulations applying only to large financial firms that make size more costly are discussed in the section below entitled "Regulating TBTF."

Under the terms of conservatorship, the GSEs have been reducing their investment portfolio balances by 15% a year until they reach $250 billion by the end of 2018.[43] These size restrictions apply only to the GSE's investment holdings; they do not limit their other activities and are not set by statute.

Policy Debate

Size can be measured in different ways (assets, liabilities, revenues, etc.), and regulators would likely need to use discretion to weigh a number of measures.[44] It is also not obvious at what size a firm becomes a source of systemic risk—should the line be drawn at, say, $1 trillion, $100 billion, or $50 billion of assets? A firm could be TBTF because of its overall size or because of its size or importance in a particular segment of the financial market, suggesting that overall size alone may not be a sufficient determinant of systemic importance. It is also possible that if all institutions were smaller because of a size cap, the largest institutions would still be systemically important, even though their size would not be large by today's standards. A parallel might be the decision to

[41] A final rule implementing the limit was released in November 2014. The rule, "Concentration Limits on Large Financial Companies," can be accessed at http://www.federalreserve.gov/newsevents/press/bcreg/20141105a.htm.

[42] Financial Stability Oversight Council, *Study and Recommendations Regarding Concentration Limits on Large Financial Companies*, January 2011, p. 8, http://www.treasury.gov/initiatives/Documents/Study%20on%20Concentration%20Limits%20on%20Large%20Firms%2001-17-11.pdf.

[43] Department of the Treasury, *Treasury Department Announces Further Steps to Expedite Wind Down of Fannie Mae and Freddie Mac*, press release, August 17, 2012, at https://www.treasury.gov/press-center/press-releases/Pages/tg1684.aspx.

[44] One variation on this approach would be to cap borrowing, so that a firm would face no size limit when financing its activities through capital, but in effect could not grow past a specified threshold through the use of leverage.

rescue Continental Illinois in 1984—it was the seventh-largest bank, but had assets of only $45 billion at its peak, as geographic restrictions meant that the average size of all banks was smaller.[45]

The benefits of reducing the size of firms are that, if successful, it could eliminate the moral hazard and the need for future "bailouts" stemming from TBTF. Other potential costs and benefits are more ambiguous.[46] Size restrictions may raise the cost or reduce the quality of financial products currently provided by TBTF firms to consumers and investors; whether this is good or bad from an economic perspective depends on the cause. If low costs currently stem primarily from the TBTF "subsidy," then economic efficiency would improve if large firms are eliminated even if costs rose as a result.[47] Alternatively, if low costs currently stem primarily from economies of scale, then economic efficiency would be reduced by size restrictions.[48] Beyond cost, large firms may make markets more liquid and enhance customer convenience (such as a nationwide physical presence). Large non-financial firms may also have financial needs (such as the underwriting of securities) that would overwhelm small financial firms.[49] Similarly, if the success of the largest firms comes primarily through their ability to innovate and provide more sophisticated or superior products, then size restrictions could reduce economic efficiency.[50] Alternatively, if success of large firms comes primarily through the ability to extract monopoly rents, size restrictions could improve economic efficiency.[51] While reducing size should reduce systemic risk, there is mixed evidence on whether large firms are more or less likely to fail than small firms.[52] They could be less likely to fail because of greater diversification or more sophisticated risk management. Canada's unique experience in avoiding the 2007-2009 financial crisis is attributed by some to its highly concentrated banking system.[53]

Unless rules to limit the size of financial firms are global, size restrictions could place U.S. firms at a disadvantage at home and abroad in their competition with foreign financial firms. (Some

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[45] Federal Deposit Insurance Corporation, "Continental Illinois and 'Too Big to Fail,'" in *History of the Eighties*, chap. 7, http://www.fdic.gov/bank/historical/history/235_258.pdf.

[46] For an overview of these issues, see Bipartisan Policy Center, *The Big Bank Theory*, October 2014, at http://cdn.bipartisanpolicy.org/wp-content/uploads/2014/10/BPC-Big-Bank-Breakup-Arguments.pdf.

[47] See, for example, Anat R. Admati et al., *Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Expensive*, working paper, March 23, 2011, https://gsbapps.stanford.edu/researchpapers/library/RP2065R1&86.pdf.

[48] The evidence on the existence of economies of scale is reviewed in Inci Otker-Robe et al., "The Too-Important-to Fail Conundrum," International Monetary Fund, *Staff Discussion Note SGN/11/12*, May 2011, available at http://www.imf.org/external/pubs/ft/sdn/2011/sdn1112.pdf. See also David Wheelock and Paul Wilson, "Do Large Banks Have Lower Costs? New Estimates of Returns to Scale for U.S. Banks," Federal Reserve Bank of St. Louis, Working Paper 2009-054E, May 2011, http://research.stlouisfed.org/wp/2009/2009-054.pdf.

[49] According to Hamilton Place Strategies, the largest syndicated loan in 2012 involved underwriting by the four largest U.S. banks and two foreign banks. See Hamilton Place Strategies, "Banking on Our Future," *HPSinsight*, February 2013.

[50] These benefits are also discussed in Hamilton Place Strategies, "Banking on Our Future," *HPSinsight*, February 2013.

[51] Financial Stability Oversight Council, *Study and Recommendations Regarding Concentration Limits on Large Financial Companies*, January 2011, http://www.treasury.gov/initiatives/Documents/Study%20on%20Concentration%20Limits%20on%20Large%20Firms%2001-17-11.pdf.

[52] See Thorsten Beck, "Bank Competition and Financial Stability, Friends or Foes?," in *Competition in the Financial Sector*, Bank Indonesia and Banco de Mexico, 2008; Antonio Ruiz-Porras, "Banking competition and financial fragility: Evidence from panel-data, *Estudios Economicos*, vol. 23, no. 1, 2008.

[53] See Renee Haltom, "Why Was Canada Exempt From the Financial Crisis?, *Economic* Focus, Fourth Quarter, 2013, p. 22.

types of financial activities can be performed abroad more easily than others, so the relevance of this factor depends on the activity in question.) If business were to shift to large foreign firms, the overall level of systemic risk in the financial system (which already involves large international capital flows) may not decline, or could even increase if prudential regulation in the foreign firm's home country were inferior to U.S. regulation.

An alternative to restricting size would be to penalize size through a tax or assessment on assets or liabilities above a stated threshold. In theory, the tax could be set at the rate that would neutralize any funding advantage that a bank enjoys because of its TBTF status. Given that it is uncertain at what size a financial firm becomes TBTF, a tax could be viewed as less harmful than a cap if set at the wrong threshold and perhaps more easily adjusted over time. Other policy options that raise funding costs for large firms, such as higher capital requirements, can be viewed as having a similar effect to a tax.[54]

If policymakers decided to reduce the size of firms, a phase-in or transition period might be desirable to avoid significant short-term disruptions to the overall financial system as business shifted away from the largest firms.[55] Likewise, when designing a policy that applies only to firms above a size threshold, one consideration is whether to make the threshold graduated to avoid cliff effects. Otherwise, firms might take actions to remain just below the threshold.

Limiting the Scope of Financial Firms

Some policy options, such as Glass-Steagall and the Volcker Rule, focus on limiting the types of activities that certain financial firms may engage in.

Current Policy

Most large financial firms are organized as bank holding companies. The activities in which bank subsidiaries may engage are restricted by statute, but BHCs may own non-bank subsidiaries. The subsidiaries of, and off-balance sheet entities associated with, the largest BHCs are active participants, to varying degrees, in multiple lines of business outside of traditional bank lending, including asset-backed securitization, trust services, insurance, money market mutual funds, and broker-dealers.[56] Some large firms are predominantly engaged in one line of finance, while others are more evenly mixed. A large firm's presence throughout the financial system is one source of its "interconnectedness."

Section 619 of the Dodd-Frank Act, popularly referred to as the "Volcker Rule," prohibited banks from engaging in proprietary trading and owning hedge funds and private equity funds in the United States, and required additional capital to be held by systemically important non-banks that engage in proprietary trading or own hedge funds and private equity funds in the United States.[57] Insurance companies are largely excluded from the Volcker Rule. Exemptions from the Volcker

[54] See Jeremy Stein, "Regulating Large Financial Institutions," speech at the International Monetary Fund, April 17, 2013.

[55] A discussion of potential short-term disruptions can be found in Bipartisan Policy Center, *The Big Bank Theory*, October 2014, p. 37, at http://cdn.bipartisanpolicy.org/wp-content/uploads/2014/10/BPC-Big-Bank-Breakup-Arguments.pdf.

[56] Tobias Adrian and Adam Ashcraft, *Shadow Banking: A Review of the Literature*, Federal Reserve Bank of New York, Staff Report no. 580, October 2012.

[57] For more information, see CRS Report R43440, *The Volcker Rule: A Legal Analysis*, by David H. Carpenter and M. Maureen Murphy (out of print but available to congressional clients upon request).

Rule include the purchase and sale of assets for purposes of underwriting, market making, hedging, and on behalf of clients. Securities issued by federal, state, or local governments and government-sponsored enterprises (GSEs) are exempted, as are investments in small business investment companies. A final rule implementing the Volcker Rule was adopted in December 2013, with conformance required by June 2015.[58] P.L. 115-174 exempted banks with less than $10 billion in assets and minimal trading activities from the Volcker Rule.

Section 716 of the Dodd-Frank Act required banks to "push out" certain swap dealer activities outside of the depository subsidiary and into a separately capitalized subsidiary.[59] The stated goal of the provision is to prevent swap dealers and major swap participants from accessing deposit insurance or the Fed's discount window. The rule implementing Section 716 was effective July 2013, with a two-year transition period.[60] A provision in the FY2015 appropriations bill (P.L. 113-235) limited the scope of the pushout rule.[61]

The housing GSEs are an example of large financial firms with a charter that permits only a narrow range of business activities.

Policy Debate

Imposing a size restriction on firms is relatively straightforward—it requires establishing a measure of size, identifying the threshold size that makes a firm TBTF, and preventing firms from exceeding that threshold. Altering firms so that they are not too interconnected to fail is more complicated because there is less consensus on what characteristics make a firm "too interconnected."[62] If interconnectedness is taken to mean that the firm is an important participant in several different segments of financial markets, then policymakers could take what has popularly been described as the "reinstate Glass-Steagall" approach.[63] Echoing Glass-Steagall's separation of banking and investing, the essence of this proposal is to prevent a single financial holding company from operating in multiple lines of financial business.[64] Reintroducing the separation of lines of business alone would not necessarily prevent the existence of very large or interconnected firms within a market segment, however, in which case the TBTF problem would not be eliminated.

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[58] The final rule, "Prohibitions and Restrictions on Proprietary Trading and Certain Interests in, and Relationships With, Hedge Funds and Private Equity Funds; Final Rule," is available at http://federalreserve.gov/newsevents/press/bcreg/20131210a.htm.

[59] For more information, see CRS Report R41398, *The Dodd-Frank Wall Street Reform and Consumer Protection Act: Title VII, Derivatives*, by Rena S. Miller and Kathleen Ann Ruane.

[60] "Prohibition Against Federal Assistance to Swaps Entities," June 10, 2013, available at http://federalreserve.gov/newsevents/press/bcreg/20130605a.htm.

[61] For more information, see CRS Legal Sidebar WSLG1135, *Will an Amendment to the Swaps "Pushout" Rule Push the "Cromnibus" to Defeat?*, by David H. Carpenter (out of print but available to congressional clients upon request).

[62] The Financial Stability Oversight Council has grappled with coming up with developing metrics for these concepts in its rulemaking (12 CFR Part 1310, RIN 4030-AA00). Different perspectives on defining the concepts can be found in the public comments to the rulemaking. See also International Monetary Fund, Bank for International Settlements, Financial Stability Board, *Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments*, report, October 2009, available at http://www.imf.org/external/np/g20/pdf/100109.pdf.

[63] Reinstating the Glass-Steagall Act in its entirety would involve many other policy areas as well that have changed significantly over time. Proponents of reinstating Glass-Steagall are usually understood to be focused on four key provisions. For more information, see CRS Report R44349, *The Glass-Steagall Act: A Legal and Policy Analysis*, by David H. Carpenter, Edward V. Murphy, and M. Maureen Murphy.

[64] Under current law, there are still limits on the types of business activities that banking subsidiaries can undertake, but non-banking subsidiaries within the same holding company may operate in different lines of financial business.

The benefits of reducing the scope of firms are that, if successful, it could reduce the riskiest activities of large firms and thus the need for future "bailouts" stemming from TBTF. It could also reduce the complexity of large firms, making it easier for regulators and creditors to monitor them. Weighed against those benefits would be a number of costs that lead other policymakers to prefer to eliminate policies that limit scope.

First, there may be economies of scope that make the financial system more efficient and complete if firms are large, diversified, and interconnected. Customers may benefit from the convenience, sophistication, and savings of "one-stop shopping" and expertise in multiple market segments.

Second, large firms that operate in multiple lines of business may be better able to reduce risk through diversification, making them less prone to instability in that sense. Traditional banking is not inherently safe, so forbidding banks from engaging in other activities is no panacea to avoid bank failures. Fannie Mae and Freddie Mac are examples of firms that were deemed "too big to fail" and rescued on those grounds, although their business was narrowly focused in the mortgage market.

Third, reintroducing Glass-Steagall separations of businesses without other changes to the regulatory system would reinforce a system in which banking is subject to close federal prudential regulation and other financial firms are not. This system would only mitigate systemic risk if non-banking activities and institutions could not be a source of systemic risk—the recent crisis experience casts doubt on that assumption. In some cases, activities may still be a source of systemic risk even if banks or TBTF firms are banned from conducting them. Further, the growth in "shadow banking" makes it more difficult to segregate activities and their regulation by charter—financial innovation has blurred the distinction between different lines of business in finance to the point where the distinction may not be meaningful. In other words, some activities of non-banks are not fundamentally different from core banking activities from an economic perspective. Thus, the activities that banks could undertake would be limited, but it would be difficult to prevent non-banks from engaging in bank-like activities with the same implications for systemic risk, but less or no prudential regulation. Similar arguments apply to the potential for activities to migrate abroad, where "universal banking" is common.

Another policy approach would be to limit or ban TBTF firms' participation in activities that are deemed inherently too risky—particularly those likely to generate large losses at times of financial stress—and not central to the business model of the firm. This approach usually focuses on banks because of their access to the "federal safety net" (deposit insurance and Fed lending), and hence justified in terms of limiting risk to taxpayers. For example, the Volcker Rule has been justified on the grounds that banks should not participate in proprietary trading of private securities with the bank's own funds.[65] Although all financial activities are risky, some risks can be more easily managed through techniques such as hedging and supervised by regulators. Whether proprietary trading is an inherently riskier activity than other banking functions, such as lending, is subject to debate. In addition to proprietary trading, Thomas Hoenig and Charles Morris have proposed to also ban banks from acting as broker-dealers and market-makers in securities and derivatives.[66]

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[65] Financial Stability Oversight Council, *Study and Recommendations on Prohibitions on Proprietary Trading*, January 2011, http://www.treasury.gov/initiatives/Documents/ Volcker%20sec%20%20619%20study%20final%201%2018%2011%20rg.pdf.

[66] Thomas Hoenig and Charles Morris, *Restructuring the Banking System to Improve Safety and Soundness*, Federal Reserve Bank of Kansas City, working paper, December 2012.

Another variation of this proposal, made by the Vickers Commission in the United Kingdom[67] and the Liikanen Group in the European Union,[68] is to "ring fence" banking activities from these other types of activities into legally, financially, and operationally separate entities within a holding company structure.[69] This type of approach can be seen in the United States in the swap push out rule.[70]

A drawback to limiting permissible activities is that there is unlikely to be any sharp distinction between the risky activity and similar activities that are central to the firm's core activities. As a result, regulators may have to make arbitrary distinctions between which activities fall under the ban, and firms would have an incentive to skirt the ban by designing transactions that resemble allowed activities but accomplish the same goals as the banned activity. For example, proprietary trading ("playing the market" with a firm's own assets) may be hard to distinguish from market-making (providing clients with a ready buyer and seller of securities) or hedging (buying and selling securities such as derivatives to reduce risk), and there may be economies of scale to market-making that concentrate those activities at large firms.[71]

It should also be noted that proposals limiting scope would generally apply to all banks, small and large. As a practical matter, large banks are more likely to operate in a wide range of non-bank businesses, however.

Regulating TBTF

Another approach to addressing the TBTF problem takes as its starting point the view that no policy can prevent TBTF firms from emerging. In this view, the dominant role of a few firms in key segments of the financial system is unavoidable. Breaking them up or eliminating all spillover effects is unlikely to be practical or feasible, for reasons discussed elsewhere. If so, regulation could be used to try to counteract the moral hazard problem and reduce the likelihood of their failure. Prudential regulation, such as capital requirements, could be set to hold TBTF firms to higher standards than other financial firms, whether or not those firms are already subject to prudential regulation. This approach would involve a choice between setting a quantitative threshold (based on size, for example) and applying standards to all firms over that size or designating firms believed to systemically important to be subject to the standards on a case-by-case basis.

Current Policy

Generally, the regulatory regime before the crisis was not based on firm size, but rather on charter type. A framework for prudential regulation is well established in depository banking regulation, featuring the establishment of safety and soundness standards and regulatory supervision to ensure adherence to those standards. Depository institutions were regulated for safety and

[67] Independent Commission on Banking, *Interim Report*, United Kingdom, April 2011.

[68] High-Level Expert Group on Reforming the Structure of the EU Banking Sector Chaired by Erkki Liikanen, *Final Report*, European Union, October 2, 2012.

[69] In the United States, some have argued that each subsidiary within a holding company should be made legally and operationally separate. See, for example, Sheila Bair, *Bull by the Horns*, Simon and Schuster (New York: 2012), p. 329; Brad Miller, "Use Stand-Alone Subsidiaries to Break Up Megabanks," *Wall Street Journal*, October 21, 2012.

[70] The term *swaps* refers to over-the-counter derivatives. It is statutorily defined in 7 U.S.C. 1a(47).

[71] See American Bankers Association, *Letter to Alastair Fitzpayne: Information on the FSOC Notice 2010-0002*, November 3, 2010, http://www.aba.com/aba/documents/news/VolckerTrust11410.pdf; SIFMA, *Volcker Rule*, http://www.sifma.org/issues/regulatory-reform/volcker-rule/position/.

soundness to minimize the costs of, and the moral hazard that results from, deposit insurance and access to the Fed's discount window. Because some non-bank financial firms did not receive analogous government protection before the crisis, there was not seen to be a moral hazard problem that justified regulating them for safety and soundness. Pre-crisis safety and soundness regulation did not explicitly address the additional moral hazard that results from TBTF, in part because TBTF firms were not explicitly identified.

Before the crisis, large financial firms were subject to Fed prudential oversight at the holding company level if they were organized as BHCs or financial holding companies.[72] In 1997, the Fed and the Office of the Comptroller of the Currency (OCC) set up an internal team to supervise large complex banking organizations.[73] Regulation at the holding company level did not mean that all subsidiaries were regulated in the same way as depository subsidiaries. "Firewalls" were meant to protect the depository subsidiary from losses at non-bank subsidiaries. The holding company had to demonstrate that it was a source of strength for the depository subsidiary.[74] Government-sponsored enterprises, such as Fannie Mae, Freddie Mac, and the Federal Home Loan Banks, were also subject to prudential regulation by their own regulators.

Some of the large firms that experienced financial difficulties in the recent crisis, however, were not BHCs, under Fed regulation, at that time. Types of large firms that were not BHCs included some government-sponsored enterprises, insurance companies, investment banks (or broker-dealers), and hedge funds. Insurance subsidiaries were regulated for safety and soundness at the state level. Investment banks complied with an SEC net capital rule. Some large financial firms, including AIG and Lehman Brothers, were thrift holding companies supervised by the Office of Thrift Supervision before the crisis. The Office of Thrift Supervision was mainly concerned with the health of AIG's and Lehman Brothers' thrift subsidiaries, although those were a minor part of their businesses. Some large financial firms voluntarily became BHCs during the crisis. The five largest investment banks either merged with BHCs (Bear Stearns, Merrill Lynch), became BHCs (Goldman Sachs, Morgan Stanley), or declared bankruptcy (Lehman Brothers) in 2008.

Title I of the Dodd-Frank Act created an enhanced prudential regulatory regime for all large bank holding companies and "systemically important" non-bank financial firms. It grants the FSOC the authority to identify non-bank systemically important financial institutions (SIFI) by a two-thirds vote, which must be supported by the head of FSOC (the Treasury Secretary). Such a firm would be deemed systemically important on the basis of a council determination that "material financial distress at the [firm] or the nature, scope, size, scale, concentration, interconnectedness, or mix of the activities of the [firm] could pose a threat to the financial stability of the United States." Foreign financial firms operating in the United States could be identified by the council as systemically important. By regulation, firms with consolidated assets of less than $50 billion are exempted. Besides the $50 billion threshold, FSOC stated in its final rule that under its three-stage process it would consider designating only firms with at least $30 billion in gross notional credit default swaps outstanding in which it was the reference entity, $3.5 billion of derivatives

[72] Thrifts, credit unions, and banks that did not have holding company structures were not subject to prudential oversight by the Fed. In this sense, some large banks were regulated differently than some small banks before the crisis, although not all BHCs were large and not all thrifts were small.

[73] Since there was no explicit TBTF policy, it is speculative as to whether the Fed considered all of the banks it identified as large complex banking institutions to be TBTF. Prior to the crisis, there was not authority to set higher quantitative prudential standards for TBTF banks, although regulators do enjoy discretion in their supervision. See Federal Reserve, *Framework for Risk-Focused Supervision of Large Complex Institutions*, Handbook, August 1997, http://www.federalreserve.gov/boarddocs/srletters/1997/sr9724a1.pdf.

[74] For more information, see Mark Greenlee, *Historical Review of "Umbrella Regulation" by the Board of Governors of the Federal Reserve System*, Federal Reserve Bank of Cleveland, working paper 08-07, October 2008.

liabilities, $20 billion in debt outstanding, a 15 to 1 leverage ratio (a capital-asset ratio that is not risk-weighted), or a 10% short-term debt ratio.[75]

FSOC has designated three insurers (AIG, Metlife, and Prudential Financial) and one other firm (GE Capital)[76] as systemically important, and therefore subject to heightened prudential regulation, but only Prudential Financial's designation remains in place.[77] On March 30, 2016, the U.S. District Court for the District of Columbia struck down MetLife's designation; the government initially appealed this decision, but requested a dismissal of its appeal in 2018. In April 2015, GE announced that it intended to sell most of GE Capital over the next 18 months to 24 months in an effort, in part, to no longer be designated as systemically important.[78] As a result, FSOC rescinded GE Capital's designation on June 28, 2016. In 2017, FSOC rescinded the designation of AIG, which played a central role in the financial crisis and was rescued by the government.[79] FSOC has researched whether any "asset managers" (a diverse group that includes mutual funds, hedge funds, and private equity funds) are systemically important, but has not designated any to date.[80]

Under Subtitle C of Title I of the Dodd-Frank Act, the Fed became the prudential regulator for firms that the FSOC has designated as a non-bank SIFI and any BHC with total consolidated assets of more than $50 billion. The Fed, with the FSOC's advice, is required to set "enhanced" safety and soundness standards that are more stringent than those applicable to other non-bank financial firms and BHCs that do not pose a systemic risk.[81] P.L. 115-174 raised the $50 billion threshold to $250 billion in assets,[82] but granted the Fed discretion to apply individual enhanced prudential provisions to individual BHCs with assets between $100 billion and $250 billion if it would promote financial stability or the institution's safety and soundness. There are currently 13 U.S. BHCs with more than $250 billion in consolidated assets.[83] Under the "Hotel California"

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[75] FSOC issued a final rule in April 2012. It can be accessed at http://www.treasury.gov/initiatives/fsoc/rulemaking/Documents/Authority%20to%20Require%20Supervision%20and%20Regulation%20of%20Certain%20Nonbank%20Financial%20Companies.pdf.

[76] GE Capital is often referred to as a non-bank lender because it does not mainly fund its loans through deposits. Nevertheless, it is chartered as a savings and loan holding company.

[77] Information on designated firms can be accessed at http://www.treasury.gov/initiatives/fsoc/designations/Pages/default.aspx.

[78] GE, Conference Call (Transcript), April 10, 2015, at http://www.ge.com/sites/default/files/ge_webcast_transcript_04102015_0.pdf.

[79] Financial Stability Oversight Council, *Notice and Explanation of the Basis for the Financial Stability Oversight Council's Rescission of Its Determination Regarding American International Group*, September, 29, 2017, at https://www.treasury.gov/initiatives/fsoc/designations/Documents/American_International_Group,_Inc._(Rescission).pdf.

[80] See Financial Stability Oversight Council, *Update On Review Of Asset Management Products And Activities*, April 2016, at https://www.treasury.gov/initiatives/fsoc/news/Documents/FSOC%20Update%20on%20Review%20of%20Asset%20Management%20Products%20and%20Activities.pdf; Office of Financial Research, *Asset Management and Financial Stability*, September 2013, at http://www.treasury.gov/initiatives/ofr/research/Documents/OFR_AMFS_FINAL.pdf.

[81] Some of these provisions are also applied to the BHC's depository subsidiary by the subsidiary's primary regulator, which could be the Fed, FDIC, or OCC.

[82] Banks with under $250 billion in assets that have been designated as Globally Systemically Important Banks (G-SIBs), defined below, would also be subject to enhanced regulation.

[83] A current list of depository hold companies with over $10 billion in assets is available at https://www.ffiec.gov/nicpubweb/nicweb/HCSGreaterThan10B.aspx. Some of the firms on this list are not bank holding companies. Other types of depositories, such as savings and loan holding companies, with more than $50 billion in assets are not currently subject to enhanced regulation.

provision, BHCs that participated in the Capital Purchase Program (part of the Troubled Asset Relief Program) would not be able to change their charter to avoid this regulatory regime without FSOC's permission. To date, this has happened once. In 2018, Zions converted from a BHC to a bank without a holding company structure. Since enhanced regulation is applied only to BHCs and designated firms, Zions could not be released from enhanced regulation without FSOC's permission.[84]

A large number of foreign banks operating in the United States are also subject to the enhanced prudential regime, as amended by P.L. 115-174, because they have over $250 billion in global assets. If these foreign banks are operating with more than $50 billion in assets in the United States, they are required to set up intermediate BHCs that will be subject to heightened standards comparable to those applied to U.S. banks. Less stringent requirements apply to large foreign banks with less than $50 billion in assets in the United States.

Rulemaking implementing enhanced regulation for non-bank SIFIs has not yet been finalized, to date. Final rules have been promulgated incorporating most enhanced regulatory standards for large BHCs, including stress tests, liquidity standards, capital planning, and risk management standards. At the recommendation of the council or on its own initiative, the Fed may propose additional prudential standards not required by the Dodd-Frank Act, and P.L. 115-174 requires the Fed to set different standards for different systemically important firms or categories of firms based on various risk-related factors. Fees are assessed on banks and non-banks regulated under this regime to finance the costs of supervision, as well as the budget of the Office of Financial Research.

Regulation of large banks is tiered—it becomes increasingly stringent as asset size increases. In addition to the $250 billion threshold, the Dodd-Frank Act, as amended by P.L. 115-174, requires banks with more than $10 billion in assets that are publicly held to establish risk committees on their corporate boards and banks with more than $100 billion in assets to undergo Fed-run stress tests.

In conjunction with the Dodd-Frank Act, bank regulation was reformed after the financial crisis by Basel III, a nonbinding international agreement implemented in the United States through the rulemaking process.[85] One tier of enhanced regulation applies to banks subject to the Basel III "Advanced Approaches" rule, which are those banks with $250 billion or more in assets or $10 billion or more in foreign exposure. Another tier of regulation applies to "global systemically important banks" (G-SIBs). Since 2011, the Financial Stability Board (FSB), an international forum that coordinates the work of national financial authorities and international standard setting bodies, has annually designated G-SIBs, based on the banks' cross-jurisdictional activity, size, interconnectedness, substitutability, and complexity.[86] The FSB has currently designated 30 banks as G-SIBs worldwide, 8 of which are headquartered in the United States. In addition, several of

[84] Financial Stability Oversight Council, "Financial Stability Oversight Council Announces Final Decision to Grant Petition from ZB, NA," press release, September 12, 2018, at https://home.treasury.gov/news/press-releases/sm478.

[85] Many provisions of the Basel III Accord were adopted in rulemaking in July 2013. The 2013 final rule does not include the capital surcharge for G-SIBs. For more information, see http://federalreserve.gov/bankinforeg/basel/USImplementation.htm.

[86] FSB, "Policy Measures to Address Systemically Important Financial Institutions," November 4, 2011, http://www.financialstabilityboard.org/publications/r_111104bb.pdf. The identification methodology is described in Basel Committee on Banking Supervision, "Global Systemically Important Banks: Assessment Methodology," *Consultative Document*, July 2011, http://www.bis.org/publ/bcbs201.pdf.

the foreign G-SIBs have U.S. subsidiaries.[87] Tiered regulation for advanced approaches banks and G-SIBs includes the following:

- Advanced approaches banks must meet a 3% supplementary leverage ratio, which includes off-balance sheet exposures. In April 2014, the U.S. bank regulators adopted a joint rule that would require the G-SIBs to meet a supplementary leverage ratio of 5% at the holding company level in order to pay all discretionary bonuses and capital distributions and 6% at the depository subsidiary level to be considered well capitalized as of 2018.[88]
- Basel III also required G-SIBs to hold relatively more capital in the form of a common equity surcharge of at least 1% to "reflect the greater risks that they pose to the financial system."[89] In July 2015, the Fed issued a final rule that began phasing in this capital surcharge in 2016.[90] Currently, the surcharge applies to the eight G-SIBs, but under its rule, it could designate additional firms as G-SIBs, and it could increase the capital surcharge to as much as 4.5%. The Fed stated that under its rule, most G-SIBs would face a higher capital surcharge than required by Basel III.
- In addition, the Fed issued a final rule implementing a Basel III counter-cyclical capital buffer that is applied to the "Advanced Approaches" banks that can be modified over the business cycle to counteract excessive credit growth.[91] Since implementation, it has been set at zero, and it is unclear how likely it is that regulators would raise it above zero, and under what circumstances an increase would be triggered.
- Basel III also created two liquidity standards, the liquidity coverage ratio and the net stable funding ratio, that apply only to large banks. In September 2014, the banking regulators finalized a rule implementing the liquidity coverage ratio. The liquidity coverage ratio would require firms to hold enough liquid assets to meet cash flow needs during a stress period.[92] In May 2016, the banking regulators proposed a rule implementing the net stable funding ratio.[93] The net stable funding ratio would require firms to have stable funding to meet net outflows in a stressed environment over a year. These rules do not apply to non-bank SIFIs, but regulators indicated that non-bank SIFIs would face their own liquidity requirements.

Size thresholds are also used in other regulations besides enhanced regulation. For example, in the Dodd-Frank Act as amended, the Volcker Rule and debit card interchange fees (the "Durbin

[87] FSB, "2017 List of Global Systemically Important Banks," press release, November 21, 2017, http://www.fsb.org/wp-content/uploads/P211117-1.pdf. The FSB is an international forum of which the United States is a member.

[88] The rule can be viewed at http://federalreserve.gov/newsevents/press/bcreg/20140408a.htm.

[89] Bank for International Settlements, *Basel III Summary Table,* http://www.bis.org/bcbs/basel3/b3summarytable.pdf.

[90] The rule, "Risk-Based Capital Guidelines: Implementation of Capital Requirements for Global Systemically Important Bank Holding Companies," can be accessed at https://www.federalreserve.gov/newsevents/press/bcreg/20150720a.htm.

[91] The final rule, "Regulatory Capital Rules," is available at https://www.federalreserve.gov/newsevents/press/bcreg/20160908b.htm.

[92] The final rule, "Liquidity Coverage Ratio: Liquidity Risk Measurement Standards," can be accessed at http://www.gpo.gov/fdsys/pkg/FR-2014-10-10/pdf/2014-22520.pdf.

[93] The proposed rule, "Net Stable Funding Ratio," can be accessed at https://www.federalreserve.gov/newsevents/press/bcreg/20160503a.htm.

Amendment") apply only to banks with over $10 billion in assets; CFPB supervision for consumer compliance applies only to banks with over $10 billion in assets; and executive compensation rules for financial firms apply only to firms with over $1 billion in assets, with more stringent requirements as asset size increases.

The FSB has also identified nine insurers as "globally systemically important insurers," three of whom (AIG, Prudential Financial, and MetLife) are headquartered in the United States.[94] FSB members have agreed to require designated insurers to develop recovery and resolution plans and hold more capital than other insurers by 2019. The FSB has released a methodology for identifying global systemically important firms that are not banks or insurers, but has not designated any to date.[95]

Statutory changes to GSE prudential regulation await broader GSE reform.

Policy Debate

Successfully containing TBTF through regulation involves a series of considerations. What types of financial firms pose systemic risk? How can the government best identify which firms are systemically important? Can prudential regulation be effective for all types of firms? Could regulation backfire and make the TBTF problem worse?

Historically, banks have been subject to a closer and more intense federal prudential regulatory regime than non-banks because of the systemic risk and moral hazard problems they posed. Some argue that banks generate unique sources of systemic risk (such as deposit taking) that have no analogue in other types of financial firms.[96] If the recent crisis leads to the conclusion that TBTF non-bank financial firms can also be sources of systemic risk and contagion, the same arguments made for regulating banks for systemic risk also apply to TBTF non-banks, however.[97]

There are a wide variety of types of large non-banks, with diverse features. Some non-banks have some of the features that have been viewed as a source of systemic risk, such as leverage and vulnerability to runs, while others do not. There are a few large insurers, which are already regulated for safety and soundness at the state level. On the other hand, state regulators may not be equipped to regulate noninsurance subsidiaries or the overall firm for systemic risk. A study by the Office of Financial Research (OFR) identified several channels through which "asset managers"—a diverse group that includes hedge funds, pension funds, and mutual funds—could pose systemic risks. Others have argued that only activities, not firms, in this industry pose systemic risk. The OFR report identified 10 asset managers each with more than $1 trillion in assets under management.[98]

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[94] FSB, "2016 List of Global Systemically Important Insurers," November 21, 2016, http://www.fsb.org/wp-content/uploads/2016-list-of-global-systemically-important-insurers-G-SIIs.pdf.

[95] FSB, "Assessment Methodologies for Identifying Non-Bank Non-Insurer Global Systemically Important Financial Institutions," January 8, 2014, http://www.financialstabilityboard.org/publications/r_140108.htm.

[96] The potential for each type of financial firm to be a source of systemic risk is evaluated in Douglas Elliot, *Regulating Systemically Important Financial Institutions That Are Not Banks*, Brookings Institution, working paper, May 9, 2013, available at http://www.brookings.edu/research/papers/2013/05/09-regulating-financial-institutions-elliott.

[97] Whether all non-bank firms or only TBTF ones performing a given financial activity are important sources of systemic risk is beyond the scope of this report, but if all were, a case could be made that a prudential regulatory regime should be applied uniformly to all such firms, and not just large ones.

[98] See Office of Financial Research, *Asset Management and Financial Stability*, September 2013, http://www.treasury.gov/initiatives/ofr/research/Documents/OFR_AMFS_FINAL.pdf; Douglas Elliott, *Systemic Risk and the Asset Management Industry*, Brookings Institution, May 2014.

A "one size fits all" model for regulating firms in different businesses for safety and soundness is unlikely to be practical. Bringing non-banks under the Fed's purview raises questions about whether rules designed for banks can be applied to non-banks, and whether the federal bank regulators have the expertise to do so effectively. For example, insurers have argued that bank regulations are not suitable for them, and the Fed does not have any specialized expertise in the area of insurance. Another issue is whether to regulate all of the activities of holding companies operating across several lines of business for safety and soundness, or regulate only certain activities that are deemed systemically important, perhaps with legal and financial "firewalls" that isolate the risks of nonregulated activities to the overall holding company.

Prudential regulation does not and cannot prevent all failures from occurring—large, regulated depository institutions failed, and the GSEs were taken into conservatorship during the recent financial crisis. Nor is a system without any failures necessarily a desirable one, since risk is inherent in all financial activities. Regulation could aim to prevent large financial firms from taking greater risks than their smaller counterparts because of moral hazard. If successful, fewer failures or episodes involving disruptive losses would occur.

The success of the regulatory approach versus the market discipline approach depends on whether regulators or creditors can more accurately identify risk. Both markets and regulators failed to predict the losses and failures (of firms with and without access to the federal safety net) that led to the financial crisis. Even if market participants were more accurately able to identify risk than regulators, market participants have a higher tolerance for risk than society as a whole because they are unlikely to internalize the systemic risks associated with a TBTF firm's failure. In addition, regulators potentially have greater access to relevant information on risk than creditors and counterparties if opacity is a problem with large, complex firms.

Those who are skeptical that regulation will succeed point out that the same regulators were arguably unable or unwilling to prevent excessive risk-taking before and during the crisis by at least a few of the firms that they regulated.[99] Regulators have adapted to weaknesses raised by the crisis, but the next crisis is likely to pose a novel set of problems. Although regulation is intended to limit risky behavior, regulators may inadvertently cause greater correlation of losses across firms by encouraging all firms to engage in similar behavior. Some have argued that large firms are "too complex to regulate," meaning regulators are incapable of identifying or understanding the risks inherent in complicated transactions and corporate structures. For example, the six largest BHCs had more than 1,000 subsidiaries each, and the two largest had more than 3,000 each in 2012. Further, their complexity has increased over time—only one BHC had more than 500 subsidiaries in 1990, and the share of assets held outside of depository subsidiaries has grown over time for the largest BHCs.[100] One response to addressing this complexity is to make the regulatory regime more sophisticated, but some critics argue that this approach is likely to backfire and simple regulations are more likely to be robust.[101] Others have argued that large firms are "too big to jail," meaning regulators cannot take effective supervisory actions against firms if those actions would undermine the firm's financial health, and thus financial stability.[102]

[99] See also Arthur Wilmarth, "The Dodd-Frank Act: A Flawed and Inadequate Response to the Too-Big-To-Fail Problem," *Oregon Law Review*, vol. 89, April 6, 2011, p. 951.

[100] Dafna Avraham, et al., "Peeling the Onion: A Structural View of U.S. Bank Holding Companies," *Liberty Street Economics*, July 20, 2012, available at http://libertystreeteconomics.newyorkfed.org/2012/07/peeling-the-onion-a-structural-view-of-us-bank-holding-companies.html#.U-TnELFgi68.

[101] See, for example, Thomas Hoenig, "Back to Basics: A Better Alternative to Basel Capital Rules," Federal Deposit Insurance Corporation, speech delivered to the American Banker Regulatory Symposium, September 14, 2012.

[102] This issue was discussed by the Attorney General at a 2013 hearing. See U.S. Congress, Senate Judiciary

One way that a regulatory approach could potentially backfire is if a special regulatory regime for TBTF firms is not strict enough, in which case it would exacerbate the moral hazard problem. Critics fear that such a regime would be particularly vulnerable to "regulatory capture," the phenomenon in which the regulated exercise influence over their regulators to ease the burden of regulation. If so, a special regulatory regime could wind up exacerbating the moral hazard problem by, in effect, making TBTF status explicit, signaling to market participants that firms in the special regime enjoyed a protected status and would not be allowed to fail.[103] Instead of increasing the cost of being TBTF, firms in the special regulatory regime could end up borrowing at a lower cost than other firms (since, in effect, these firms would enjoy a lower risk of default).

Many would point to the experience with the GSEs, Fannie Mae and Freddie Mac, before conservatorship as a historical example of how a special regulatory regime could backfire. The GSEs could borrow at a lower cost than other firms because markets believed that the government would not let them fail—they enjoyed even lower borrowing costs than firms that markets might believe were implicitly TBTF but not chartered by the government like the GSEs.[104] Institutional shortcomings, critics argue, led to regulatory capture. The GSEs were subject to their own unique capital requirements, set by statute, under which they were found well capitalized by their regulator at the time, OFHEO, two months before being taken into conservatorship.[105] Yet compared with depositories, GSEs held little capital, were not well diversified, and experienced large losses during the crisis. The worst-case scenario of opponents of a separate regulatory regime for TBTF firms is that such a regime would provide a competitive advantage, such as the GSEs' ability to borrow at lower cost than other firms, that would enable more risk-taking than before.

Enhanced regulatory safeguards may increase overall costs in the financial system, but in the presence of TBTF, market costs may otherwise be too low from a societal perspective, since risk-taking is too high. For example, requiring loans to be backed with more capital may make lending more expensive and less available, but make the firm less likely to fail. If more capital succeeded in creating a more stable financial system, then the availability of credit could be less volatile over time. At least partly offsetting the higher costs of capital for firms designated as systemically important would be relatively lower costs of capital for other firms.[106]

Even if a heightened prudential regime worked as planned, it could still partly backfire from a systemic risk perspective. To the extent that it causes financial intermediation to migrate away from TBTF firms to firms that are not regulated for safety and soundness, the result could be a less regulated financial system.

Determining which financial firms should be subject to enhanced regulation can be done on a case-by-case basis (as with the FSOC designation process for non-bank SIFIs) or automatically according to some quantitative threshold (as with the $250 billion asset threshold for banks). Many economists believe that the economic problem of "too big to fail" is really a problem of too complex or interdependent to fail. Size correlates with complexity and interdependence, but not

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Committee, *Oversight of the U.S. Department of Justice*, 113th Cong., 1st sess., March 6, 2013.

[103] During the debate of the Dodd-Frank Act, policymakers considered keeping the identities of regulated firms confidential, but they concluded that this would be impractical.

[104] Congressional Budget Office, *Measuring the Capital Positions of Fannie Mae and Freddie Mac*, June 2006.

[105] Office of Federal Housing Enterprise Oversight, "Fannie Mae and Freddie Mac Capital," *Mortgage Market Note 08-2*, July 17, 2008.

[106] Assuming that the overall supply of credit remained constant, raising the cost of capital at TBTF firms would reduce the amount of credit supplied to those firms, thereby increasing the supply of credit available to other firms. Economic theory predicts that the greater supply of credit available to other firms would reduce their cost of capital.

perfectly. It follows that a size threshold is unlikely to successfully capture all those—and only those—firms that are systemically important. A size threshold will capture some firms that are not systemically important if set too low or leave out some firms that are systemically important if set too high. (Alternatively, if policymakers believe that size is the paramount policy issue, then a numerical threshold addresses the issue most directly, although policymakers may debate the most appropriate number.) Size is a simpler and more transparent metric than complexity or interdependence, however.

A case-by-case designation process would be more time-consuming and resource-intensive, however. For example, only four non-banks were designated as SIFIs in three years under the existing process. Furthermore, there is no guarantee that FSOC will correctly identify systemically important firms since there is no definitive proof that a firm is systemically important until it becomes distressed. Critics believe the designation process is not transparent enough—although FSOC modified the process to increase transparency in 2015[107]—and does not provide designated firms enough opportunity to address the reasons that FSOC deems them to be systemically important. Some fear that FSOC could make an incorrect judgment about a firm's systemic importance because most members of FSOC do not have expertise in any given business line or because the Treasury Secretary has effective veto power. Some Members of Congress have been concerned that the FSB designation process is superseding the FSOC designation process.[108] Thus, policymakers face a trade-off between using a simpler, transparent but imperfect proxy for systemic importance, or trying to better target enhanced regulation on a more laborious case-by-case basis.

Minimize Spillover Effects

One set of policy options focuses on mitigating contagion via a TBTF firm's spillover effects on other firms. Counterparty risk is the exposure to losses because a counterparty in a transaction cannot fulfill its obligations. If counterparty exposure is large enough, the failure of one firm could cause its counterparty to fail. Examples of how counterparty risk can be reduced include moving transactions to clearinghouses and exchanges, requiring capital/margins for transactions, requiring risk exposures to be hedged, and placing limits on exposure to specific counterparties (transactions, debt, equity holdings, etc.).[109] If spillover effects could be adequately contained, then a firm might cease to be TBTF (or more precisely, too interconnected to fail), regardless of its size, in the sense that its failure would no longer cause contagion.

Current Policy

The Federal Reserve's Regulation F (12 C.F.R., Part 206)—in place before the crisis—limits counterparty exposure for depository institutions. Under Title I of the Dodd-Frank Act, as amended by P.L. 115-174, the Fed has set single counterparty credit exposure limits of 15% to 25% of a company's capital per counterparty for BHCs with more than $250 billion in assets.[110]

[107] For more information, see CRS Legal Sidebar WSLG1190, *FSOC Announces Rule Change to Increase Transparency in Designating SIFIs*, by M. Maureen Murphy (out of print but available to congressional clients upon request).

[108] Hon. Jeb Hensarling et al., "Letter to Secretary Lew, Chair White, and Chair Yellen," May 9, 2014.

[109] Gary Stern and Ron Feldman, *Too Big to Fail* (Washington, DC: Brookings Institution Press), 2004.

[110] Federal Reserve, "Single-Counterparty Credit Limits for Bank Holding Companies and Foreign Banking Organizations," *Federal Register*, vol. 83, No. 151, August 6, 2018, p. 38460, https://www.federalregister.gov/documents/2018/08/06/2018-16133/single-counterparty-credit-limits-for-bank-holding-companies-and-foreign-

Counterparty limits for non-bank systemically significant financial institutions have not yet been proposed.

To reduce counterparty risk, Title VII of the Dodd-Frank Act requires certain swaps, particularly those that involve large financial institutions, to be traded through clearinghouses or exchanges and be subject to margin requirements.[111] Title VIII of the Dodd-Frank Act allows the Financial Stability Oversight Council to identify certain payment, clearing, and settlement systems and activities as systemically important "financial market utilities," and allows the Federal Reserve, Securities and Exchange Commission, or Commodity Futures Trading Commission to regulate those systems and activities for enhanced prudential supervision. It also allows systemically important systems to borrow from the Fed in "unusual or exigent circumstances." In 2012, regulators issued a final rule implementing Title VIII and designated eight financial market utilities, including major clearinghouses, as systemically important.[112]

Policy Debate

A criticism of regulation before the crisis was that regulators did not focus enough on how a firm's failure would affect its counterparties or broader financial conditions, or conversely, whether a firm could withstand a stressed environment. Another approach holds that if firms are TBTF because their failure would cause spillover effects that would impair the overall financial system, then regulators should try to neutralize spillover effects to the point where the failure of a firm would not impair the broader financial system. According to this view, once creditors believed that a firm could now safely be allowed to fail regardless of its size or interconnectedness, the moral hazard problem associated with TBTF would vanish.

A drawback to this approach is that spillover effects cannot always be identified beforehand. If counterparty exposure were transparent, in theory all market participants could hedge themselves against failure ahead of time and the failure would not have contagion effects, or at least the government could manage the exposure to prevent contagion. In practice, linkages have proven complex and opaque, and the sources of contagion have proven hard to predict. For example, in September 2008, policymakers reasoned that market participants and policymakers had had several months after the rescue of Bear Stearns to prepare for the failure of Lehman Brothers (indicators such as credit default swaps had signaled an elevated risk of default for months), so allowing it to enter bankruptcy should not be disruptive.[113] Nevertheless, few anticipated that Lehman Brothers' failure would lead to a run on money markets, which proved highly disruptive to commercial paper markets, causing financing problems for many financial and non-financial issuers.

Identifying spillover effects is likely to be more difficult if a firm is not already regulated for safety and soundness. Without a prudential regulator closely monitoring the firm's activities and examining its counterparties, it is less likely that policymakers could quickly and accurately identify who would be exposed to a firm's failure. In theory, creditors could demand a premium

banking-organizations.

[111] For more information, see CRS Report R41398, *The Dodd-Frank Wall Street Reform and Consumer Protection Act: Title VII, Derivatives*, by Rena S. Miller and Kathleen Ann Ruane.

[112] For more information, see CRS Report R41529, *Supervision of U.S. Payment, Clearing, and Settlement Systems: Designation of Financial Market Utilities (FMUs)*, by Marc Labonte.

[113] An alternative view is that Lehman Brothers' bankruptcy was more disruptive because the rescue of Bear Stearns led creditors to conclude that other large investment banks would also be rescued.

from firms that do not limit counterparty risk; in reality, much of the necessary information to make that judgment is unlikely to be identifiable or publicly available.

Another issue is that some solutions shift, rather than eliminate, counterparty risk. For example, moving certain activities on to an exchange or clearinghouse would increase the systemic importance of those entities. The Dodd-Frank Act addresses this issue by designating financial market utilities for enhanced prudential regulation and emergency access to Fed lending, but critics argue that designation causes moral hazard by creating expectations that they will be rescued.[114]

Reducing counterparty risk may increase overall costs in the financial system. For example, counterparty limits and margin requirements could reduce liquidity and raise costs for transactions. In the presence of TBTF, however, market costs may otherwise be too low from a society-wide perspective, because firms lack the proper incentives to monitor or insure against counterparty risk.

Resolving a Large, Interconnected Failing Firm

If a TBTF firm were to fail, there are potentially two established approaches that could be used to manage the failure. Prior to the financial crisis, failing banks were resolved through the FDIC's resolution regime, while certain other financial firms, such as broker-dealers, were resolved through the corporate bankruptcy system.[115] Bankruptcy is a judicial process initiated by creditors in order to recover debts and other liabilities, while the FDIC's resolution regime is an administrative process initiated by the FDIC.

Current Policy

If a bank is heading toward insolvency, the FDIC normally takes it into receivership and resolves it. Examples of the types of powers that the FDIC can exercise to resolve a depository include transferring and freezing assets, paying obligations, repudiating contracts, and obtaining judicial stays.[116] One rationale behind a resolution regime for banks is that the need to safeguard federally insured deposits (which can be withdrawn rapidly) requires a swift resolution and gives the FDIC, which insures the deposits, priority over other creditors. Prompt corrective action and least cost resolution requirements are intended to minimize losses to the FDIC. The FDIC may initiate a resolution before failure has occurred—thereby limiting losses to the FDIC and other creditors—whereas a bankruptcy process cannot be initiated by creditors until default has occurred. Least cost resolution may also help to minimize moral hazard, because bailing out firms (i.e., making creditors whole) is often more costly than shutting a firm down. But, by statute, least cost resolution could be waived by the Treasury Secretary, upon the recommendation of the FDIC and Federal Reserve, if a systemic risk exception were invoked.[117] Thus, market participants may have expected that the systemic risk exception would be invoked for large firms—as it was in the

[114] House Committee on Financial Services, *The Financial CHOICE Act*, June 23, 2016, p. 40, at http://financialservices.house.gov/uploadedfiles/financial_choice_act_comprehensive_outline.pdf.

[115] For more information, see CRS Report R40530, *Insolvency of Systemically Significant Financial Companies (SSFCs): Bankruptcy vs. Conservatorship/Receivership*, by David H. Carpenter (out of print but available to congressional clients upon request).

[116] See out-of-print CRS Report RL34657, *Financial Institution Insolvency: Federal Authority over Fannie Mae, Freddie Mac, and Depository Institutions*, by David H. Carpenter and M. Maureen Murphy (available to congressional clients upon request).

[117] 12 U.S.C. 1823(c).

failure of Wachovia (although not ultimately needed) and to guarantee a portfolio of Citigroup's assets.[118]

The FDIC typically resolves failed banks through the "purchase and assumption" method, under which the bank is closed and some or all of the assets and deposits of the failed bank are sold to healthy banks. If losses are too large to be absorbed by creditors, they are absorbed by the FDIC's deposit insurance fund, which is prefunded through assessments on depositories, to protect depositors. The purchase and assumption method avoids open-ended government assistance and keeps the FDIC out of the business of running banks.

Before the crisis, a failed non-bank was subject to the standard corporate bankruptcy process; there was no standing policy of government involvement in the failure of a non-bank, with the exception of federal resolution authority for Fannie Mae and Freddie Mac and state resolution authority for state insurance subsidiaries.[119] In July 2008, Congress enacted the Housing and Economic Recovery Act (HERA), which included provisions creating a new regulator (the Federal Housing Finance Agency, or FHFA) for the housing GSEs (the Federal Home Loan Banks, Fannie Mae, and Freddie Mac). The FHFA was given augmented powers to resolve the GSEs.[120] Under these powers, FHFA can manage assets, sign contracts, terminate claims, collect obligations, and perform management functions. In September 2008, FHFA determined that Fannie Mae and Freddie Mac were critically undercapitalized and they entered FHFA conservatorship, upon which FHFA took control of their operations while maintaining them as ongoing enterprises.[121] HERA also gave the Treasury Secretary unlimited authority to lend or invest in the GSEs through the end of 2009. This authority has been used to cover the GSEs' losses and prevent insolvency during conservatorship, and funds from Treasury continued to be transferred until 2012. Fannie Mae and Freddie Mac have operated under government conservatorship ever since—unlike FDIC practice in bank resolutions. While existing shareholders saw their equity value plummet at the time of conservatorship, creditors and other counterparties have continued to be paid in full.

Title I of the Dodd-Frank Act, as amended by P.L. 115-174, required systemically important firms (SIFIs) and BHCs with at least $250 billion in consolidated assets to periodically prepare resolution plans, also called "living wills," explaining how they could be resolved in a rapid and orderly manner. Failure to submit a credible resolution plan would trigger regulatory action. Title I, as amended by P.L. 115-174, also created early remediation requirements for domestic and foreign BHCs with at least $250 billion in assets and non-bank SIFIs that are in financial distress.

Title II of the Dodd-Frank Act created the Orderly Liquidation Authority (OLA), a resolution regime for any financial firm whose failure would have "serious adverse effects on financial stability." (The firm does not have to have been previously subject to enhanced prudential regulation under Title I to be resolved under Title II.) However, subsidiaries that are insurance companies would be resolved under existing state resolution regimes, certain broker-dealers

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[118] See Government Accountability Office, *Regulators' Use of Systemic Risk Exception*, GAO-10-100, April 2010, at http://www.gao.gov/assets/310/303248.pdf.

[119] For more information on the GSEs, see out-of-print CRS Report RL34657, *Financial Institution Insolvency: Federal Authority over Fannie Mae, Freddie Mac, and Depository Institutions* (available to congressional clients upon request).

[120] For more information, see CRS Report RL34623, *Housing and Economic Recovery Act of 2008*, coordinated by N. Eric Weiss.

[121] For more information, see out-of-print CRS Report RL34657, *Financial Institution Insolvency: Federal Authority over Fannie Mae, Freddie Mac, and Depository Institutions*, by David H. Carpenter and M. Maureen Murphy (available to congressional clients upon request). Before HERA, Fannie Mae's and Freddie Mac's regulator had more limited powers of conservatorship and no powers of receivership.

would be resolved by the Securities Investor Protection Corporation, and insured depository subsidiaries would be resolved under the FDIC's traditional resolution regime. The process for taking a firm into resolution has multiple steps and actors. First, a group of regulators (the group varies depending on the type of firm, but must always include the approval of two-thirds of the Federal Reserve's Board of Governors) must make a written recommendation to the Treasury Secretary that a firm should be resolved, explaining why bankruptcy would be inappropriate. Second, the Treasury Secretary must determine that resolution is necessary to avoid a default that would pose systemic risk to the financial system, and default cannot be prevented through a private-sector alternative. Prior identification by the FSOC could be used as evidence that the firm's failure poses systemic risk, but it is not a necessary condition. Third, if the company disputes the Treasury Secretary's findings, it has limited rights to appeal in federal court. Finally, the FDIC manages the resolution. If these steps are not met, then the failing firm would enter the standard bankruptcy procedure or any other applicable resolution process.

The Dodd-Frank Act provides the FDIC with receivership powers, modeled on its bank receivership powers, with some differences, such as requirements that the FDIC consult with the primary regulator. As receiver, the FDIC can manage assets, sign contracts, terminate claims, collect obligations, and perform management functions. The Dodd-Frank Act sets priorities among classes of unsecured creditors, with senior executives and directors coming last before shareholders in order of priority. It requires that similarly situated creditors be treated similarly, unless doing so would increase the cost to the government. The FDIC is allowed to create bridge companies, as a way to divide good and bad assets, for a limited period of time to facilitate the resolution. Unlike FHFA's resolution regime, the Dodd-Frank regime does not allow for conservatorship.

The Dodd-Frank Act calls for shareholders and creditors to bear losses and management "responsible for the condition of the company" to be removed. The FDIC is allowed to use its funds to provide credit to the firm while in receivership if funding cannot be obtained from private credit markets. Unlike the resolution regime for banks, there is no least cost resolution requirement and the regime is not pre-funded (the FDIC may borrow from Treasury to finance it). Instead, costs that cannot be recouped in the process of resolution must be made up after the fact through assessments on counterparties (to the extent that their losses were smaller under receivership than they would have been in a traditional bankruptcy process) and risk-based assessments on financial firms with assets exceeding $50 billion. Since the rationale for limiting losses to counterparties is to prevent systemic risk, it is unclear how those counterparties could be assessed after the fact without also posing some systemic risk. A lack of pre-funding means that a firm's resolution will, in effect, be financed temporarily by the taxpayers and ultimately by its competitors (i.e., firms with assets exceeding $50 billion) instead of itself. The FDIC is limited to providing assistance in the resolution up to 10% of the failed firm's total consolidated assets in the first 30 days of the resolution; thereafter the limit becomes 90% of total consolidated assets available for repayment.

The FDIC has stated that

> the most promising resolution strategy [under Title II] from our point view will be to place the parent company into receivership and to pass its assets, principally investments in its subsidiaries, to a newly created bridge holding company. This will allow subsidiaries that are equity solvent and contribute to the franchise value of the firm to remain open and avoid the disruption that would likely accompany their closings....
>
> Equity claims of the firm's shareholders and the claims of the subordinated and unsecured debt holders will be left behind in the receivership....

> Therefore, initially, the bridge holding company will be owned by the receivership. The next stage in the resolution is to transfer ownership and control of the surviving franchise to private hands....
>
> The second step will be the conversion of the debt holders' claims to equity. The old debt holders of the failed parent will become the owners of the new company.... [122]

This approach has been dubbed "Single Point of Entry," and the FDIC proposed a rule implementing it in December 2013.[123] For the Single Point of Entry approach to succeed, the holding company must hold sufficient common equity and debt at the parent level that can absorb losses in resolution; otherwise, investors will anticipate that public funds will be used to absorb losses.[124] In December 2016, the Fed finalized a rule to require G-SIBs to meet a "total loss-absorbing capacity" (TLAC) requirement through equity and long-term debt held at the parent level of the holding company.[125]

Policy Debate

Part of what makes some financial firms too big to fail is the nature of the bankruptcy process, according to some analysts. A firm that dominates important financial market segments cannot be liquidated without disrupting the availability of credit, it is argued. They argue that the deliberate pace of the bankruptcy process is not equipped to avoid the runs and contagion inherent in the failure of a financial firm, and that the effects on systemic risk are not taken into account when decisions are made in the bankruptcy process. The bankruptcy experience of Lehman Brothers is viewed as evidence of why the current bankruptcy process cannot be successful for a TBTF firm.

The Federal Reserve, with Treasury support, intervened to prevent the failure of Bear Stearns and AIG because it did not believe that those firms could be taken through the bankruptcy process without undermining financial stability. Thus, a resolution process removes one rationale for bailouts.

Proponents argue that a resolution regime for all TBTF financial firms, regardless of whether the firm is a depository, offers an alternative to propping up failing firms with government assistance (as was the case with Bear Stearns and AIG in 2008) or suffering the systemic consequences of a protracted and messy bankruptcy (as was the case with Lehman Brothers).[126] Supporting the argument for a special resolution regime, the failures of large depositories during the crisis that were subject to the FDIC's resolution regime, such as Wachovia and Washington Mutual, were less disruptive to the financial system than the failure of Lehman Brothers, even though Wachovia and Lehman Brothers were sequential (46th and 47th largest, respectively) on *Fortune*'s list of the 500 largest companies of 2007.[127] Neither resolution involved government assistance. Losses

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[122] Martin J. Gruenberg, Acting Chairman of the Federal Deposit Insurance Corporation, Remarks to the Federal Reserve Bank of Chicago Bank Structure Conference; Chicago, IL, May 10, 2012.

[123] The proposed rule can be accessed here: http://www.gpo.gov/fdsys/pkg/FR-2013-12-18/pdf/2013-30057.pdf. For more information on the FDIC as receiver under Title II, see http://www.fdic.gov/resauthority/.

[124] Christopher Payne and Tony Costello, "Will Orderly Resolution Work?," *BGOV Analysis*, May 19, 2014.

[125] TLAC would also apply to the U.S. operations of foreign G-SIBs. The rule, "Total Loss-Absorbing Capacity," can be accessed at https://www.federalreserve.gov/newsevents/press/bcreg/20161215a.htm. For a critique of SPOE and TLAC, see Stephen Lubben and Arthur Wilmarth, "Too Big and Unable to Fail," *GW Legal Studies Research Paper*, no. 2016-44, 2016.

[126] See, for example, Sheila Bair, "We Must Resolve to End Too Big to Fail," remarks at the 47th Annual Conference on Bank Structure and Competition, Federal Reserve Bank of Chicago, May 5, 2011, http://www.fdic.gov/bank/analytical/quarterly/2011_vol5_2/Article1.pdf.

[127] The Fortune list can be accessed at http://money.cnn.com/magazines/fortune/fortune500/2007/full_list/index.html.

were imposed on stockholders and unsecured creditors in the resolution of Washington Mutual.[128] (The FDIC arranged for Wells Fargo to acquire Wachovia before the FDIC formally became receiver.) Whether the resolution of a non-bank could be handled as smoothly as these two banks is an open question.[129]

Typically, banks in receivership are resolved through acquisition by healthy firms. In the case of a large failing firm, the only entity capable of absorbing it in whole might be an even larger institution, leading to greater concentration. Were one of the nation's very largest firms to fail, it is not clear what firm would have the capacity to acquire it, in which case some other method of resolution would be necessary.

Critics argue that Title II gives policymakers too much discretionary power, which could result in higher costs to the government and preferential treatment of favored creditors during the resolution. In other words, it could enable "backdoor bailouts" that could allow government assistance to be funneled to the firm or its creditors beyond what would be available in bankruptcy, perpetuating the moral hazard problem.[130] The normal FDIC resolution regime minimizes the potential for these problems through its statutory requirements of least cost resolution and prompt corrective action. It would be expected that a resolution regime for TBTF firms, by contrast, would at times be required to subordinate a least cost principle to systemic risk considerations, which the FDIC regime permits. Therefore, a resolution could be more costly to the government than the bankruptcy process. (On the other hand, an administrative resolution process could potentially avoid some of the costs of bankruptcy, such as some legal fees and runs by creditors that further undermine the firm's finances.) Critics also point to the conservatorship of Fannie Mae and Freddie Mac—which have received government support on an ongoing basis since 2008—as evidence that a resolution regime could turn out to be too open ended and be used to prop up TBTF firms as ongoing entities, competing with private-sector rivals on an advantageous basis because of direct government subsidies. Title II does not allow conservatorship, but the Housing and Economic Recovery Act (HERA; P.L. 110-289) required mandatory receivership for the GSEs if they became insolvent; quarterly transfers from Treasury prevented insolvency to allow conservatorship to continue.

If policymakers, wary of the turmoil caused by Lehman Brothers' failure, were unwilling to pursue the bankruptcy option in the future, opposing a resolution regime may be tantamount to tacitly accepting future "bailouts," unless some other policy change is made that future policymakers view as a workable alternative. As an alternative to a special resolution regime, some critics call for amending the bankruptcy code to create a special chapter for complex financial firms to address problems that have been identified, such as a speedier process and the ability to reorganize.[131] To some extent, these concerns are already addressed in the bankruptcy code. For example, the bankruptcy process already allows qualified financial contracts to be

[128] Federal Deposit Insurance Corporation, "JPMorgan Chase Acquires Banking Operations of Washington Mutual," Press Release PR-85-2008, September 25, 2008.

[129] The FDIC gives a detailed explanation of how the failure of a firm like Lehman Brothers could have been managed more smoothly under a resolution regime in "The Orderly Liquidation of Lehman Brothers Holdings Under the Dodd-Frank Act," *FDIC Quarterly*, vol. 5, no. 2, 2011, p. 31, http://www.fdic.gov/bank/analytical/quarterly/2011_vol5_2/lehman.pdf.

[130] See, for example, Jeffrey Lacker and John Weinberg, "Now How Large is the Safety Net?" *Economic Brief 10-06*, June 2010, http://www.richmondfed.org/publications/research/economic_brief/2010/pdf/eb_10-06.pdf.

[131] See, for example, Kenneth Scott and John Taylor, "How to Let Too Big to Fail Banks Fail," *Wall Street Journal*, May 16, 2013, p. A15; Hoover Institute, Resolution Project publications, available at http://www.hoover.org/taskforces/economic-policy/resolution-project/publications. For a comparison, see Sabrina Pellerin and John Walter, "Orderly Liquidation Authority as an Alternative to Bankruptcy," Federal Reserve Bank of Richmond, *Economic Quarterly*, vol. 98, no. 1, First Quarter 2012, p. 1.

netted out. In the case of Lehman Brothers, healthy business units were sold to competitors relatively quickly through the bankruptcy process, and remain in operation today. But unlike Title II, the bankruptcy process could not—for better or worse—base decisions on financial stability concerns or ensure that a financial firm has access to the significant sources of liquidity it needs.

Unlike the bailout of AIG, a failing firm would not continue as an ongoing concern with the same ownership under Title II, but that does not guarantee that creditors would suffer losses. Given the size of the firms involved and the unanticipated transmission of systemic risk, it remains to be seen whether the government could impose losses on creditors via Title II without triggering contagion—or would be willing to try. A receiver would face the same short-term incentives to limit losses to creditors to limit systemic risk that caused policymakers to rescue firms in the recent crisis in order to restore stability. If the receiver is guided by those short-term incentives, the only difference between a resolution regime and a "bailout" might turn out to be that shareholder equity is wiped out, which would presumably not generate enough savings to avoid costs to the government. (The TLAC requirement creates a strong explicit assumption that losses would be imposed on those debtholders, however.) Unlike bailouts, a mandatory funding mechanism exists in Title II to recoup losses to taxpayers. But since that mechanism is not "pre-funded," there would be at least temporary taxpayer losses.

Until a TBTF firm fails, it is open to debate whether a special resolution regime could successfully achieve what it is intended to do—shut down a failing firm without triggering systemic disruption. As noted above, uncertainty before the fact about which firms are TBTF may lead policymakers to err on the side of taking more failing firms than necessary into the special resolution process instead of allowing them to enter bankruptcy. One key challenge that has been identified is the resolution of foreign subsidiaries, requiring intergovernmental cooperation.[132]

Conclusion

Contagion stemming from problems at TBTF (or too interconnected to fail) firms is widely regarded to have been one of the primary sources of systemic risk during the acute phase of the recent financial crisis. To avoid contagion, a series of ad hoc government interventions were undertaken that protected creditors and counterparties—and in a few cases, also managers and shareholders—of large and interconnected firms from losses. Economic theory predicts that these interventions exacerbated the moral hazard implications of TBTF, reducing the incentive for creditors and counterparties to safeguard against extreme outcomes, and increased the incentive to become larger and more interconnected going forward. Competing theories blame the lack of regulatory authority and failed regulation for the role of TBTF in the recent crisis. The failures of both highly regulated banks and lightly regulated non-banks suggest that neither lack of regulation nor failed regulation were solely responsible for TBTF.

Policy before the financial crisis could be characterized as an implicit market discipline approach with ambiguity about which firms policymakers considered to be TBTF and how the imminent failure of a systemically important firm might be addressed. This ambiguity was defended on the grounds that it would result in less moral hazard than if TBTF firms were explicitly identified, since the ambiguity would promote market discipline. As the crisis unfolded, policy quickly shifted to an expectation of government assistance, where Bear Stearns, Fannie Mae, Freddie Mac, and AIG received direct government support and several emergency programs were instituted to ensure that other financial firms remained liquid and solvent. Not every large failing

[132] International Monetary Fund, *Resolution of Cross-Border Banks – A Proposed Framework for Enhanced Coordination*, June 2010, available at http://www.imf.org/external/np/pp/eng/2010/061110.pdf.

firm received assistance, however, with Lehman Brothers being the notable exception. Both before and during the crisis, policy could be characterized as ad hoc because arguably no general approach or principles were articulated that clearly signaled to firms or investors how a systemically important firm could expect to be treated in different scenarios. Some believe that this policy uncertainty made the crisis worse.

The rapid shift from market discipline to government assistance during the crisis undermines the future credibility of the pre-crisis policy approach. If policymakers wanted to return to a market discipline approach, making that approach effective would arguably require statutory changes that "tie the hands" of policymakers to make assistance more difficult in the event of a future TBTF failure. This could be accomplished by eliminating broad, open-ended authority that was invoked during the last crisis, such as Section 13(3) of the Federal Reserve Act and the FDIC's systemic risk exception to least cost resolution. Policymakers dispute whether Dodd-Frank Act changes that narrow but preserve emergency authority have accomplished this goal.

A Congress may not bind future Congresses, however. Policymakers cannot be prevented from enacting future legislation allowing assistance, much as TARP was enacted expeditiously when the crisis worsened in September 2008. If investors do not believe that market discipline will be maintained because policymakers face short-term incentives to provide government assistance in times of crisis, then a "no bailouts" promise would not prevent moral hazard. One view is that the genie cannot be put back in the bottle—market participants now believe that the government will provide assistance to TBTF firms based on the 2008 experience, in which case they face little incentive to monitor or respond to excessive risk-taking. If so, the policy options to mitigate moral hazard are to regulate TBTF firms for safety and soundness or use government policy to reduce the systemic risk posed by TBTF firms.

In theory, a special regulatory regime for TBTF firms, such as the one created by the Dodd-Frank Act, could set safety and soundness standards at a strict enough level to neutralize moral hazard effects. The complexity and interconnectedness of large firms complicates their effective regulation, however. Moreover, a special regulatory regime for TBTF firms could backfire if regulatory capture occurs. Special regulation makes explicit which firms are TBTF, removing any ambiguity that might promote market discipline. As market discipline wanes, the burden on regulators to mitigate moral hazard increases. If regulators are unwilling or unable to apply regulatory standards strict enough to negate the benefits of being TBTF, then being subject to the special regulatory regime could give TBTF firms a competitive advantage over their industry rivals. The experience of Fannie Mae and Freddie Mac points to the dangers of this approach. Those two firms were subject to their own regulatory regime prior to the crisis and were able to borrow at lower interest rates than other financial firms, presumably because of the implicit government guarantee of their obligations.

Systemic risk stemming from TBTF can also be mitigated by reducing potential spillover and contagion effects. Examples of Dodd-Frank Act provisions intended to reduce contagion effects include a special resolution regime for failing systemically important firms (OLA) and placing limits on counterparty exposure to large firms. Events in 2008, however, demonstrate the challenge in eliminating systemic risk posed by TBTF firms because it is unlikely that policymakers will correctly anticipate all of the channels of contagion in a crisis. Moreover, in determining whether to use government resources to limit losses to creditors, the receiver faces the same short-term incentives to spare creditors from losses that lead to moral hazard. Critics point to the open-ended assistance to Fannie Mae and Freddie Mac since 2008 as a cautionary tale, although this was through government conservatorship, rather than receivership.

Some argue for eliminating TBTF directly by reducing the size or scope of the largest firms. It is uncertain what size limit would eliminate TBTF—given that interconnectedness is a nebulous

concept—and policymakers would only know if they had set the right size limit by observing what occurs after a firm fails. Weighed against the benefits of eliminating the TBTF problem by eliminating large firms, the benefits to the financial system that would be lost are also disputed. In the case of reducing scope, some very large firms would remain, and they would be less diversified against risk. Fannie Mae and Freddie Mac are examples of large, narrowly focused firms that many nonetheless viewed as TBTF.

A comprehensive policy is likely to incorporate more than one approach because different approaches are aimed at different parts of the problem. Some approaches focus on preventive measures (keeping TBTF firms out of trouble), whereas others are reactive (addressing what to do in the event of a TBTF failure). Some policy approaches are complementary—others could undermine each other. A market discipline approach is arguably most likely to succeed if coupled with size limits—although size limits thwart market-based profit incentives and outcomes. Policies that involve identification of TBTF firms, such as a special regulatory regime, are less compatible with a market discipline approach. Efforts to minimize spillover effects could be more effective if the TBTF firms are regulated for safety and soundness, so that spillover effects can more easily be identified ahead of time. Policymakers have historically coped with the moral hazard associated with deposit insurance through a combination of safety and soundness regulation, a resolution regime, and limits on spillover effects (e.g., limits on counterparty exposure). (Market discipline's role is limited by deposit insurance, but it plays a role with uninsured depositors and other creditors.) Yet TBTF poses some additional challenges to the bank regulation model, such as the difficulties of imposing a strict least cost resolution requirement on a resolution regime and effectively regulating firms with complex and wide-ranging activities.

Each of these policy approaches to coping with TBTF has strengths and weaknesses; there is no silver-bullet solution to the problem because future policymakers face incentives to deviate from the approach to avoid crises, please interest groups, increase financial innovation and the availability of credit, and so on. Judging the relative merits of each policy approach depends in part on which approach future policymakers can best commit to and effectively carry out.

The Dodd-Frank Act devised a strategy to end TBTF that, to varying degrees, incorporated each approach discussed in this report. Its attempts to limit the size and scope of firms were narrow and limited, however. Some take the fact that many of the largest financial firms have become larger since the crisis (at least in dollar terms) as a sign that the TBTF problem has not been solved. The existence of very large firms is necessary but not sufficient evidence that a TBTF problem exists. In principle, the TBTF problem can be eliminated even if large firms do not shrink, but it is difficult to verify success because ultimately, the only definitive test of whether the strategy succeeds is whether the failure of a large firm can be managed without a "bailout" and whether large firms stay healthy in a financial downturn—events that may not occur for years or even decades. Until then, perceptions of whether the TBTF problem still exists may develop (and be observable in market data), which could subsequently be proven true or false.

Although TBTF was one source of systemic risk in the recent crisis, it was not the only one. Arguably, TBTF did not "cause" the crisis—TBTF firms were as much victims as perpetrators of the housing bubble and the collapse of the MBS market—but it did exacerbate the crisis. The Dodd-Frank Act also attempted to address other sources of systemic risk. Although the broader issue of systemic risk is beyond the scope of this report, some policy options discussed in this report may be more effective at mitigating systemic risk if applied more broadly than to TBTF firms exclusively. Otherwise, some sources of systemic risk may migrate to firms not regulated for safety and soundness, without increasing the stability of the overall financial system. If systemic risk mainly stems from certain activities, regardless of size, a policy focus on large institutions could risk creating a false sense of security.

Risk is central to financial activity, so an optimal system is probably not one where large firms never fail. An optimal system is one in which a large firm can fail without destabilizing the financial system. The only system that can guarantee that large firms will not cause systemic risk is one without large firms, but a system without large firms may be less efficient and more prone to instability from other sources. Other approaches seek to limit systemic risk to acceptable levels. Creating a more stable financial system by mitigating the moral hazard associated with TBTF may result in credit becoming more expensive and less available in the short run, but the availability of credit could be less volatile over time. At least partly offsetting the higher costs of capital for firms designated as systemically important would be relatively lower costs of capital for other firms. Some policymakers would consider a tradeoff of less credit for a more stable financial system to be a tradeoff worth taking, considering that the recent crisis resulted in the deepest and longest recession since the Great Depression. Arguably, part of the cause of the crisis was that credit became too readily available, at least in some sectors (e.g., the housing bubble).

Appendix. Enhanced Prudential Requirements for Large Banks Under the Dodd-Frank Act, as Amended by P.L. 115-174

Title I of the Dodd-Frank Act imposed a number of enhanced prudential regulatory requirements on bank holding companies and foreign banks operating in the United States with over $50 billion in assets, and non-banks designated as systemically important financial institutions (described in the section above entitled "Regulating TBTF"). P.L. 115-174 raised these thresholds, primarily to $250 billion in assets,[133] but also gave the Fed the discretion to apply these requirements to banks in the $100 billion to $250 billion asset range on a case-by-case and bank-by-bank basis if necessary to promote financial stability or the bank's safety and soundness. This discretionary authority is not provided for most of the requirements classified in **Table A-1** as emergency powers. The Fed may also apply these provisions to foreign banks operating in the United States with over $100 billion in *global* assets, although some provisions are currently applied only to foreign banks with over $50 billion in *U.S.* assets.

Table A-1 divides these provisions into three broad categories:

1. requirements, implemented through rulemaking, that large institutions must adhere to on an ongoing basis;
2. emergency powers that may be imposed only under certain conditions, such as if there is a finding that an institution poses a threat to financial stability; and
3. assessments on large institutions to finance the administration of certain duties.

Most of the ongoing requirements have already been implemented, whereas the emergency powers have never been invoked.

[133] They also apply to BHCs with less than $250 billion that have been designated as G-SIBs.

Table A-1. Enhanced Regulation Thresholds for Banks Under S. 2155
(billions of dollars)

Provision	Asset Threshold
Ongoing Requirements	
Risk committee (for public companies)	Automatic at $50, below $50 at Fed's discretion
Supervisor-run stress tests	Automatic at $100
Chief risk officer requirement	Automatic at $250, $100-$250 at Fed's discretion
Company-run stress tests	Automatic at $250, $100-$250 at Fed's discretion
Resolution plans ("living wills")	Automatic at $250, $100-$250 at Fed's discretion
Liquidity requirements	Automatic at $250, $100-$250 at Fed's discretion
Counterparty credit limits	Automatic at $250, $100-$250 at Fed's discretion
Capital planning	Automatic at $250, $100-$250 at Fed's discretion
Credit exposure report	Automatic at $250, $100-$250 at Fed's discretion
Emergency Powers	
15-1 debt to equity limit	Automatic at $250, $100-$250 at Fed's discretion
FSOC reporting requirements	Automatic at $250
Authority to prevent mergers, acquisitions, and to require divestitures	Automatic at $250
Approval of acquisitions	Automatic at $250
Management interlocks	Automatic at $250
Early remediation requirements	Automatic at $250
FDIC enhanced examination and enforcement powers	Automatic at $250
Assessments	
To finance large firm regulation	Automatic at $100, tailored for $100-$250[a]
To finance the Office of Financial Research	Automatic at $250

Source: CRS.

Note: All provisions also automatically apply to G-SIBs.

a. Also applies to thrift holding companies.

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