

Restructuring the Banking System to Improve Safety and Soundness

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Original version: May 2011
Revised: December 2012

The views in this paper are those of the authors and not those of the Federal Deposit Insurance Corporation, the Board of Governors of the Federal Reserve, the Federal Reserve System, or the Federal Reserve Bank of Kansas City. Michal Kowalik, an Economist in the Banking Research Department at the Bank, contributed substantially to the proposal. The authors would like to thank Viral Acharya, Matt Richardson, Larry White, Richard Sylla, Thomas Philippon, Lasse Pedersen, Jacob Goldfield, and Nada Mora for helpful comments and suggestions.

Executive Summary

Proposal

- This paper provides a specific proposal to limit the financial activities that are covered and thus subsidized by the government safety net in order to protect the financial system and the economy. The U.S. safety net, which consists of central bank loans to solvent but liquidity strained banks and federal deposit insurance, was developed in the early 1900s to protect commercial banks.
- The safety net originally was limited to commercial banks because they are critical to an economy's overall health and growth. Their core activities of making loans funded by short-term deposits provide essential payment, liquidity, and credit intermediation services. But banks also are inherently unstable because depositors will "run" if they believe their bank is in financial trouble.
- While the safety net solves the instability problem, it also creates incentives to take excessive risk because it subsidizes banks. With safety net protection, depositors and other protected creditors are willing to lend to banks at lower interest rates, given the amount of risk. This cheaper funding and reduced market discipline creates incentives for banks to make riskier investments and increase leverage. The subsidy and associated incentive to take greater risks have grown substantially over the past 30 years because the activities the safety net supports has expanded beyond the core banking activities considered necessary to protect.
- The recommendation in this paper is to limit the safety net – and thus its subsidy – to what the safety net should protect by restricting banking organization activities by business line. Under the proposal, banking organizations would continue to provide the core services of commercial banks – making loans and taking deposits to provide payment and settlement,

liquidity, and credit intermediation services. Other allowable services would be securities underwriting, merger and acquisition advice, trust, and wealth and asset management.

Banking companies would not be allowed to conduct broker-dealer activities, make markets in derivatives or securities, trade securities or derivatives for either their own account or customers, or sponsor hedge or private equity funds.

- The difference between what banks would and would not be allowed to do is based on the principle that beyond their core services, they should not conduct activities that create such complexity that their management, the market, and regulators are unable to adequately assess, monitor, and control bank risk taking. Current activities conducted by banks that would be prohibited for them, such as trading and market making, are important to the economy. But they should not be subsidized by the safety net because it causes their overproduction, and therefore imposes unnecessary risks and costs on the financial system and economy. In fact, by removing the safety-net's protection for activities such as securities and derivatives market-making, the market for these services should become more competitive and less dominated by the largest investment banks, which currently are all affiliated with commercial banks.
- The benefits of prohibiting banks from conducting high-risk activities outside of their core business, however, would be limited if those activities continue to threaten stability by migrating to the "shadow" banking system. Shadow banks are financial companies not subject to prudential supervision and regulation that use short-term or near-demandable debt to fund longer-term assets. In other words, shadow banks essentially perform the same critical, core functions as traditional banks, but without an explicit safety net or prudential regulation. As a result, the shadow banking system is susceptible to disruptions that threaten

financial and economic stability and lead to additional implicit government guarantees and the associated incentive to take excessive risks.

- To mitigate the incentive for shadow banks and other financial companies to take excessive risk and the associated potential systemic effects, this paper makes two additional recommendations. First, money market mutual funds and other investment funds that are allowed to maintain a fixed net asset value (NAV) of \$1 should be required to have floating net asset values. Second, bankruptcy law for repurchase agreement collateral should be rolled back to the pre-2005 rules, which would eliminate mortgage-related assets from being exempt from the automatic stay in bankruptcy when a borrower defaults on its repurchase obligation.
- The problem with fixed NAVs and current bankruptcy law is they provide special treatment – that is, they essentially subsidize – short-term funding. As with the safety net for banks, the subsidy leads to the overproduction of risky shadow banking activities. By reining in this subsidy, these two recommendations should greatly curtail shadow banking activities by exposing shadow bank creditors to the true costs of their investments.

Why Restricting Activities is the Solution

- The reduced market discipline and incentive to take excessive risk caused by the safety net has long been recognized, which is one of the major reasons for the prudential supervision of banks. The incentive to take *excessive* risk traditionally has been contained through strong on-site examinations and minimum capital requirements that were supplemented as appropriate based on the exam results. This does not mean that banks do not take risks, nor that they do not make mistakes that cause them to fail. Banking is a business of risk taking, and when they do make bad decisions that lead to insolvency or liquidity problems, they

should fail and be resolved. Thus, it is the prevention of excessive risk taking arising from the safety net subsidy that prudential supervision is supposed to stop.

- This traditional financial structure and regulatory framework worked well for many years, and it still does for those banks that still operate within the framework, which includes all but the largest universal banks. That framework has three components. First, it limits bank activities to those essential to the economy but inherently unstable. Second, it provides a safety net for banks and their limited activities, which prevents the instability but has undesirable side effects. Third, it includes strong supervision to control the side effects.
- The current financial structure, however, is vastly different. Leading up to the financial crisis, the financial system became dominated by a handful of large *and* complex financial organizations, and these companies have become even more dominant. These complex universal banking companies combine traditional banking activities with a variety of investment banking and insurance activities.
- The problem with this change in structure is not that banks are larger, but that the scope of the safety net and its subsidy – and therefore their sizes – has expanded beyond the traditional bank activities that provide external social benefits. The subsidy is provided, either explicitly or implicitly, to the organization as a whole and not limited to the specific activities for which it was intended. The riskiness of banks can be reduced by the additional activities, for example, if they increase the diversification of bank assets and revenue streams. However, the riskiness of banks also can be increased by the additional activities because they not only are subsidized by the safety net, but also because they create complexity that makes it more difficult for bank management, the market, and regulators to assess, monitor, and contain the excessive risk taking induced by the safety net. Moreover,

the large size of the universal banks – both individually and collectively given the increased interconnections among them – further endangers the stability of the financial system and the overall economy. Thus, the social costs of extending the safety net to large, complex universal banks that cannot be sufficiently monitored by their own management, the market, or regulators greatly exceeds the private benefits to an individual bank.

Evolution of current financial structure

- Over the past 30 years, the U.S. banking system has changed dramatically from the stylized view of banking that arose from the banking panics of the early 1930s. The structure of the banking industry that emerged from the 1930s separated investment banking and other financial services from “traditional” commercial banking – making loans and taking deposits to provide payment, liquidity, and credit intermediation services. These core banking services are the foundation of the financial infrastructure that is critical for the overall health of an economy and its growth.

Regulation

- The 1930s financial structure that lasted largely until the end of the century was shaped by three major legislative and regulatory changes: the Glass-Steagall Act, creation of federal deposit insurance, and the Federal Reserve’s Regulation Q.
- The Glass-Steagall Act refers to four provisions of the Banking Act of 1933 that separated commercial and investment banking. Deposit (i.e., commercial) banks were prohibited from conducting securities activities (underwriting and dealing) or affiliating with companies that conducted securities activities. The rationale was that banks are crucial for a well-functioning economy because they settle payments, provide deposits that are available at par

value on demand, and are the primary source of credit for the vast majority of businesses and individuals. These functions are a critical part of the economy's financial infrastructure.

- Banks are provided access to a public safety net because of their importance and susceptibility to runs from using demand deposits to fund longer-term, illiquid loans. Prior to the 1930s, the Federal Reserve's discount window provided a limited safety net for solvent banks.¹ The public safety net was significantly enhanced in 1933 by passage of the Federal Deposit Insurance Act and the associated provision of limited deposit insurance because it protected depositors of banks that failed.
- Access to a safety net, however, increases the incentive for banks to take excessive risks. Given the importance of a stable banking system, the necessity of a public safety net to provide the stability, and an incentive to take greater risk, a mechanism is needed to prevent banks from taking excessive risks and endangering the safety net. The market cannot be solely relied upon to prevent the risk taking because some deposits are insured and banks are inherently opaque. As a result, prudential supervision and regulation must be used to prevent excessive risk taking.
- One of the key regulations of the Banking Act of 1933 was the prohibition of paying interest on demand deposits and the authority to impose ceilings on savings deposit rates, which was implemented through the Federal Reserve's Regulation Q. The rationale for Regulation Q was to prevent competition for deposits from causing instability in the banking system.
- The combined effect of the Glass-Steagall Act, bank access to a government safety net, prudential supervision and regulation, and deposit rate ceilings was a fairly stable, profitable banking industry with a positive franchise value for many years. The franchise value was

¹ Also, only members of the Federal Reserve could borrow from the discount window until the Monetary Control and Depository Institutions Deregulation Act of 1980.

protected to the extent banks were protected from outside competition and competition among themselves.

Increased competition

- Over time, banks faced increasing competition on both the liability and asset sides of the balance sheet. The increase in competition was spurred by advancements in portfolio theory, investment and money management techniques, and information technology combined with greater volatility of the economic environment.
- On the liability side, banks had to compete with money market mutual funds (MMMFs) and savings association NOW accounts that paid interest on close substitutes for bank demand deposits. They also faced greater competition for household savings from mutual funds, pension funds, and insurance companies.
 - MMMFs started in 1971 as a competitive alternative to bank deposits because they paid a market interest rate and were allowed to maintain a net asset value (NAV) of \$1 a share as long as their actual NAV is greater than 99.5 cents (i.e., they do not “break the buck”) and not too far above \$1, and they met certain investment (quality and maturity) requirements. They allow investors to withdraw funds on demand and have limited check-writing privileges. MMMF shares are held by individuals, institutional investors, and corporate and noncorporate businesses as an alternative to bank deposits for cash management and payments purposes. MMMFs started out investing in highly-rated financial and nonfinancial company commercial paper (CP) and short-term Treasury securities, and then over the years expanded to other money market instruments (MMIs), such as asset-backed commercial paper (ABCP), and short-term repurchase agreements (repos).

- It is important to note that although an MMMF investor technically owns equity shares of the fund – that is, there is *no leverage* – the investor is more like a depositor because the expectation is that funds can be withdrawn at a par value of \$1 a share – that is, there is no equity and *leverage is infinite*. As a result, MMMF investors act more like depositors and will run whenever they are concerned about a fund’s safety so they can redeem their shares for \$1 before the fund “breaks the buck” and reduces the value of the shares.
- NOW accounts were developed by savings and loans in the early 1980s as a competitive alternative to demand deposits that paid interest. NOW accounts essentially were just like demand deposits – funds were available upon demand and had unlimited check-writing privileges – but they could pay interest because the depository institution reserved the right to require notice before allowing funds to be withdrawn or transferred by check.
- On the asset side, banks faced competition in making loans from investment banks (junk bonds, securitization, and nonfinancial commercial paper), mortgage brokers, and specialty lenders such as unaffiliated finance companies (primarily consumer lending), captive lenders (auto financing, retailers), and factors (trade receivable lending).
 - Banks have long faced competition in making loans from unaffiliated and captive finance companies and factors. Commercial paper became a competitive alternative to bank operating loans for large, highly-rated nonfinancial companies in the late 1960s and early 1970s.
 - Competition for bank loans increased substantially beginning in the 1980s with the growth of junk bonds and an ability to originate and distribute loans through the development of mortgage-backed securities (MBS), followed by other types of asset-

backed securities (ABS), which are typically backed by consumer loans (credit cards, auto, student).

Shadow banking

- The combination of alternatives to bank deposits and loans created an alternative system for providing complete end-to-end banking – from gathering funds to making loans – which collectively comprises the so-called shadow banking system.²
 - In contrast to a typical bank that conducts the entire process of borrowing funds from savers, making loans to ultimate borrowers, and holding the loans to maturity, credit intermediation through the shadow banking system is a vertical process that takes place through a series of entities – collectively called shadow banks – similar to a supply-chain manufacturing process.
 - Funding for each of the entities takes place in wholesale markets. Money market instruments – specifically CP, ABCP, and short-term repos – are a major source of funds at virtually each step in the process.³ The major investors in the MMIs are MMMFs and other short-term investment funds that have a fixed NAV of \$1.⁴ At some steps of the process, major funding sources also include medium-term notes and ABS that are purchased by long-term investors, such as mutual funds, pension funds, and insurance companies.
 - A typical example of the shadow banking intermediation process is as follows:
 1. A loan is made by either a nonbank financial company or a bank. The nonbank companies finance the initial loans with CP or medium-term notes (MTN).

² The description of the shadow banking system and the process described below is largely from Pozar, Adrian, Ashcraft, and Boesky.

³ The one exception is the step that actually securitizes loans into MBS/ABS.

⁴ There are also direct investors in these money market instruments, such as securities lenders.

2. The loan is sold to a bank or broker-dealer conduit, which is an intermediate entity that temporarily warehouses the individual loans until it has enough to package together as an MBS or ABS. The conduits are funded with ABCP.
3. The loan warehouse sells the package of loans to a securitization sponsor that sets up a trust to hold the loans, which is financed by selling MBS/ABS backed by the loans. This is the only step in the process not financed by MMIs.
4. The ABS are purchased by a variety of entities that are funded by a variety of sources.
 - a. Entities that purchase ABS and tend to fund them with longer-term sources of funds include mutual funds, pension funds, and insurance companies.
 - b. BHCs may purchase ABS and hold them on bank balance sheets funded by deposits. However, prior to the financial crisis, they generally held them in off-balance-sheet entities, such as structured investment vehicles (SIVs) or other conduits, that were funded by CP or ABCP. The CP or ABCP, in turn, was typically purchased by MMMFs and other MMI funds with fixed \$1 NAVs.
 - c. Investment banks and BHCs purchase ABS for a variety of reasons. They may be held by a securities subsidiary as a proprietary trading asset, in inventory for filling customer trades, or warehoused for creating collateralized debt obligations (CDOs). The ABS are typically funded with repos and sometimes ABCP, which again are funded by MMMFs and other MMI funds with fixed \$1 NAVs.

Expansion of bank activities

- Increased competition for banks from the shadow banking organizations combined with regulatory capital requirements (stemming from the Basel I Accord) that were higher than for

their competitors led to reduced profits and declining franchise values. As a result, banking organizations looked for alternative activities, revenue streams, and business models, which included the originate-to-distribute shadow banking business model. Whereas the traditional banking model of making loans and holding them to maturity earned profits from loan-deposit rate spreads, the shadow banking model earned profits from fees and trading gains.

- Some banks responded to the increased competition by focusing first on being able to engage in traditional investment banking and securities activities and later more broadly on broker-dealer and shadow banking activities.
 - Banks were able to whittle away at the Glass-Steagall Act restriction on investment banking activities in the 1990s by creating Section 20 securities subsidiaries that were supported by Federal Reserve Board approvals of higher thresholds for being “principally engaged” in securities activities.⁵
 - To fully participate, however, banks needed the Glass-Steagall Act prohibition on affiliation with securities companies to be repealed, which was achieved with the passage of the Gramm-Leach-Bliley Act (GLBA) in 1999. The GLBA allowed the formation of financial holding companies (FHCs), which were BHCs engaged in certain nonbanking activities, such as securities underwriting, broker-dealer activities, and insurance underwriting, not permitted for BHCs.

⁵ One of the Glass-Steagall Act provisions was Section 20 of the Banking Act of 1933. Section 20 prohibited Federal Reserve member banks from affiliating with organizations that “engaged principally in the issue, flotation, underwriting, public sale, or distribution of stocks, bonds, debentures, notes, or other securities.” For many years, the administrative limit for not being “principally engaged” was that underwriting and dealing accounted for 5 percent or less of a subsidiary’s gross revenue. As banks became larger, underwriting and dealing became cost effective even with the 5 percent revenue limit. Over time, banking organizations began petitioning for larger limits, which the Federal Reserve agreed to based on assessments of the risks and benefits to the economy, with the limit eventually rising to 25 percent in 1997.

- Significant changes in the investment banking industry also occurred to take full advantage of the opportunities of the shadow banking industry. With the growth of bond markets and the development of MBS securities in the 1980s, investment banks moved from partnership structures to public corporate structures. The corporate structures essentially allowed the investment banks to engage in riskier activities that put the firm's capital at risk, such as proprietary trading, leveraged lending, and hedge fund sponsorship, that the partners were much less willing to do when their own money was at risk. The risks were exacerbated by relying on debt financing, i.e., leverage, much of which was short-term repos. In fact, it became much easier to use debt after 2004 when the SEC allowed broker-dealers to use their internal risk management models to compute the haircuts for calculating their net capital.⁶

Implications for financial structure, stability, and risk

Changes in financial structure and stability

- The sharp line between commercial and investment banks is significantly blurred as each has engaged in shadow banking activities.
 - The larger banking organizations engage in activities that were traditionally limited to investment banks, which exposes them to investment bank risks. Traditional banks that take in deposits and make and hold loans to maturity have to manage credit and interest rate risk. As FHCs have expanded activities to earning fees from trading and ABS underwriting, their risk exposures expanded to include market risk from trading and the risk from having to roll over uninsured wholesale money market funding risks.

⁶ Prior to the 2004 SEC ruling, the SEC determined the haircuts used to calculate the leverage ratios of broker-dealers. The 2004 ruling allowed the broker-dealers to use their internal risk management models to compute these haircuts. The ruling followed a similar change to the Basel I Accord from 1996, under which commercial banks could compute their capital requirements for trading positions using their own models.

- Similarly, the larger investment banks now engage in activities that were traditionally limited to commercial banks, which exposes them to commercial bank risks. By switching from partnerships to public corporate structures, taking on leverage, and making direct investments and loans that are held on the balance sheet, investment banks expanded their risk exposures beyond market risk to credit and funding risk.
- With the largest financial companies – both banking and investment banking organizations – being the key players in shadow banking activities, both types of organizations play a special role in the economy that once was limited to commercial banks. Through shadow banking activities, both types of organizations ultimately provide the same credit intermediation function of traditional banks – lending long term using short-term funds available upon demand.
- The expansion of activities by commercial and investment banks has led to a less stable financial system because it is dependent on wholesale, money market funding without an explicit safety net of insurance and access to central bank lender-of-last-resort facilities.
 - Just like banks were subject to depositor runs that created liquidity crises before deposit insurance was available, virtually every step of the shadow banking process is dependent on uninsured investments in MMMFs and other MMI funds with fixed NAVs of \$1.
 - Investors in these money market funds have full access to their money as long as the underlying NAV is \$1 or more, so once concerns arise about the quality of the underlying assets, i.e., that the underlying NAV will drop below \$1, investors have an incentive to withdraw their funds before others. A loss in funding at any step of the process will cause the system to break down just like a loss in funding at a traditional commercial bank.

- The heavy involvement of large banking organizations (in the form of FHCs) and investment banks in shadow banking activities exposes them to similar risks that previously had been eliminated by deposit insurance in retail banking.
 - Bank subsidiaries are still protected from insured depositor runs, but the holding companies and banks are now exposed to money market fund runs.
 - The bank subsidiaries also are exposed to money market runs because the banks often provide credit lines on the ABCP that fund ABS held by affiliated holding company subsidiaries, such as off-balance-sheet conduits and SIVs. The ABCP often needs a credit line or guarantee so that it has the AAA rating needed to make it an eligible investment for MMMFs. So if MMMFs decide not to roll over their ABCP investments in an SIV and the value of the underlying ABS is below par, the SIV would sell the ABS to the bank guarantor at par, which means the bank takes the loss and has to fund the ABS on balance sheet. In other words, the credit and funding risk to the bank from guaranteeing the off-balance-sheet funding of ABS with ABCP is the same as if it held the underlying ABS on its own balance sheet.
 - To make matters worse, even though the risks to the bank of holding assets on balance sheet or guaranteeing them off balance sheet are the same, FHCs had an incentive to move the assets off balance sheet because it can fund those assets with much less capital.⁷ Specifically, the risk-based capital requirements of FHCs had a much higher risk weight for holding the loans or ABS on balance sheet than for guaranteeing the ABCP funding

⁷Acharya, Schnabl, and Suarez provide evidence consistent with regulatory arbitrage being a reason for the use of ABCP programs by banks. They also document changes in regulatory rules that enabled banks to perform this type of regulatory arbitrage. In July 2004, the OCC, Federal Reserve, FDIC, and OTS exempted assets in ABCP programs from the calculation of risk-weighted assets. As a result, assets moved from banks' balance sheets to ABCP programs did not have to be considered when calculating risk-weighted assets for capital requirements. Moreover, under the Basel I and Basel II Accords, assets placed in ABCP programs carried lower capital charges than the same assets carried on balance sheets.

of an off-balance-sheet entity. As a result of this arbitrage of regulatory capital requirements, FHCs became much riskier because they could fund the credit risk with much higher leverage.

- FHCs also are exposed to runs by money market investors even if the MMIs are not fully guaranteed because of reputational risk. Although subsidiary conduits and SIVs that hold ABS are technically bankruptcy remote, FHCs either purchase assets and bring them on balance sheet or provide capital support to avoid the negative reputational effects of defaulting on the securities funding the subsidiaries.
- Finally, the broker-dealer subsidiaries of investment banks and FHCs also are exposed to MMI runs. As already noted, broker-dealers use repos and ABCP to fund ABS held as part of their proprietary trading business, as inventory for filling customer trades, and for creating CDOs.

New activities make it more difficult to manage and monitor risk

- Overall, the largest financial companies conduct a variety of traditional and non-traditional banking activities, many of which have increased the complexity of their operations and portfolios. The potential problem is not that the new activities are risky – all financial activities are inherently risky, even traditional banking activities. These companies may even benefit from additional activities, for example, if they increase the diversification of their assets and revenue streams. However, it is more likely that these benefits are outweighed by the significant complications the activities pose for bank management, the market, and regulators to assess, monitor, and contain risk taking that is ultimately borne by the public safety net and endangers financial stability. Specifically, as explained below, combining banking and nonbanking activities makes it more difficult for bank management to manage

risk, for the market to monitor and effectively discipline banks, and for regulatory authorities to supervise and regulate banks and price deposit insurance.

- Complexity makes *risk management* much more difficult.⁸
 - Risk management is particularly difficult when a banking organization has many different operational divisions and activities. Examples include understanding all of the different business lines and their interactions, having appropriate management information systems, and appropriately allocating and pricing capital across activities. Such difficulties and shortcomings in risk management practices and effectiveness at several U.S. and foreign global banking organizations leading up to and during the recent financial crisis are highlighted in two reports by the Senior Supervisors Group (2008, 2009).
 - The risk management of a complex institution can also vary with the background of its senior leadership. For example, trading is risky in the short term, so it attracts people predisposed to taking risks. In contrast, lenders tend to have a longer term perspective. As a result, an organization's risk culture and appetite is likely to be lower if its senior leadership has a commercial banking background rather than a trading background.
 - To the extent that a bank's senior management has difficulty understanding and managing its risks, it is even more difficult for supervisors to scrutinize and monitor a banking organization's risks.
- Reduced transparency reduces *market discipline*. Banking organizations with a variety of nontraditional activities tend to be less transparent than others, which makes it difficult for the market to discipline their risk taking. Relative to nonfinancial companies, it is difficult

⁸ All aspects of managing a large, complex financial company is difficult, but given the context of this paper, the focus is on risk management.

for investors to evaluate the condition of traditional banks and their riskiness because their balance sheet assets and activities are opaque and easily changed.⁹ Traditional banking is opaque because banks have more information than investors about the quality and risk of their loans. Banks that engage in nontraditional activities, such as trading, hedge funds, private equity, and market making are even less transparent because the success of these strategies depends on the confidentiality of their positions and speed at which their exposures can be changed. Given the lack of transparency, regulators must play a larger role relative to the market in monitoring and disciplining banks, but as discussed below, regulators also are at a disadvantage when dealing with banks that are engaging in nontraditional activities.

- Some activities make *bank supervision* more difficult.
 - The goal of prudential supervision is to control excessive risk taking by banks so that they are safe and sound and do not endanger the safety net. Supervision includes reviewing a bank's operations and risk management policies; monitoring its financial condition, lending, operations, risk management, and other practices; and enforcing regulatory rules. Because of the periodic nature of bank supervision, supervisors get only a snapshot of bank processes, risk exposures, and capital positions at a given time. Even for the largest complex banking organizations, at which supervisory staff work on site and are continuously looking at some part of the organization and its operations, supervisors still only have snapshots of various operations, albeit at higher frequencies. These snapshots are limited in their ability to predict the safety of a bank's processes, its risk exposures, and its capital positions between supervisory examinations. The

⁹ Morgan provides evidence on the increased opacity of banks from combining lending and trading activities.

flexibility to adjust risk profiles between exams depends, to some extent, on a banking organization's activities and the nature of the risks.

- Many of the nontraditional activities that the large, complex banking organizations engage in are difficult to supervise effectively because they are very risky in the short term, which can quickly change a bank's risk profile. For example, trading and market-making are high frequency activities that result in thousands of daily transactions. As a result, snapshots of the positions of these activities may have limited predictive value for future positions. Continuous supervision at the largest banking organizations clearly provides a better understanding of their risks than the traditional approach of periodic exams. Nevertheless, understanding and monitoring the risks still can be difficult, especially when management itself has difficulties in understanding and monitoring risk. Thus, while bank supervision is not meant to prevent risk taking, and is subject to errors regardless of a bank's activities, effective supervision of complex organizations that engage in many nontraditional banking activities is even more difficult.
- Banks with a variety of activities require much more *complex regulations*, which can be difficult for management, the market, and regulators to monitor and understand.
 - The history of the Basel capital requirements provides a good example of the difficulty in effectively regulating complex financial companies. The increased variety and complexity of bank activities required much more complex capital standards, which the financial crisis showed were not very effective in adequately aligning bank risks with capital levels.
 - One problem is that the various capital requirements under Basel are essentially relative prices, and they are set either administratively through regulation or using the banks' own

internal models. Administratively setting risk weights generally will misprice risks. In addition, allowing banks to set risk weights with their own risk models can systematically under price risk. In fact, news articles (Braithwaite, Vaughan) cite several examples of U.S. and foreign banks that plan on “managing” risk weights or are engaging in “risk-weighted asset optimization” to lower their risk-weighted assets and increase their risk-based capital ratios. Thus, it should not be surprising that leading up to the financial crisis the regulatory capital requirements did not adequately align bank capital levels with their risk.

- The Basel requirements also created opportunities for regulatory arbitrage that was a major contributor to the risk taking of the large, complex banking companies and the financial crisis. For example, the capital charge for an MBS based on a pool of subprime loans was lower than that for a portfolio of mortgages held on the balance sheet. Capital charges were also lower for an MBS held in off-balance-sheet conduits than on the balance sheet.
- Complexity of activities makes it difficult to *price deposit insurance*. Deposit insurance would not lead to excessive risk taking if the premiums were priced appropriately to reflect a bank’s risk. However, pricing deposit premiums correctly is difficult for the same reasons that it is difficult to determine capital requirements.
- To the extent it is possible, *resolving large, complex banks* is much more difficult and costly. Even with the FDIC’s new authority under the Dodd-Frank Act to liquidate a failed complex banking organization, doing so in a quick and orderly manner will be difficult.
 - The Lehman Brothers failure in 2008 is a good example of the difficulty in resolving a complex company. The number of transactions and complexity of interconnections made

it very difficult to determine the company's value quickly enough to find a buyer and have it reopened the following Monday morning. Moreover, Lehman Brothers was a relatively simple company compared to some of the largest BHCs. Some of these BHCs have a thousand or more majority-owned subsidiaries, several of which could be as large and complex as Lehman Brothers. It would be much harder to wind down or find enough buyers to transfer the critical operations necessary for an orderly resolution.

- In summary, the financial system has become less stable over the past 30 years as banks and other financial companies have expanded into more complicated activities. The root of the problem is that large, complex financial companies are funding long-term, illiquid assets with liabilities available upon demand. In addition, after the crisis, the concentration of the industry and complexity of activities at the largest banks increased. The industry is dominated by a handful of companies that combined are half as large as annual U.S. economic output, and the failure of any of them could cause financial instability. Finally, because these companies are so large and complex, they and other institutions that are viewed as systemically important receive an implicit government guarantee on their debt and sometimes on their equity, which creates the incentive to take excessive risk, thereby further increasing systemic risk (the too-big-to-fail problem).

Proposal to Reduce Costs and Risks to the Safety Net and Financial System

- This proposal to reduce costs and risks to the safety net and financial system has two parts.
 - The first part proposes to restrict bank activities to the core activities of making loans and taking deposits and to other activities that do not significantly impede bank management, the market, and regulators in assessing, monitoring, and controlling risk. However, prohibiting banks from engaging in activities that do not meet these criteria and that

threaten financial stability would provide limited benefits if those activities migrate to shadow banks.

- The second part proposes changes to the shadow banking system by making recommendations to reform money market funds and the repo market.

Restricting activities of banking organizations

- The financial activities of commercial, investment, and shadow banks can be categorized in the following six groups (Richardson, Smith, and Walter):
 - Commercial banking – deposit taking and lending to individuals and businesses.
 - Investment banking – underwriting securities (stocks and bonds) and providing advisory services.
 - Asset and wealth management services – managing assets for individuals and institutions.
 - Dealing and market making – securities, repos, over-the-counter (OTC) derivatives.
 - Brokerage services – retail, professional, and institutional investors, and hedge funds (prime brokerage).
 - Proprietary trading – trading for own account and owning hedge and private equity funds.
- Using the criterion for permissible activities stated above, banking organizations would be able to conduct the following activities: commercial banking, investment banking, and asset and wealth management services. Investment banking and asset and wealth management services are mostly fee-based services that do not put much of a firm's capital at risk. In addition, asset and wealth management services are similar to the trust services that always have been allowed for banks.
- In contrast, the other three categories of activities – dealing and market making, brokerage, and proprietary trading – have little in common with core banking services and create risks

that are difficult to assess, monitor, and control. Banking organizations would not be allowed to do any trading, either proprietary or for customers, or make markets because it requires the ability to do trading.¹⁰ In addition, allowing customer but not proprietary trading would be difficult to enforce because the securities inventory used to facilitate customer trading cannot be easily distinguished from proprietary assets. Prime brokerage services not only require the ability to conduct trading activities, but also allow companies to finance their activities with “free balances,” which can be highly unstable funds.¹¹

- Other potential restrictions include limits on bank investments. Historically, bank investments were restricted to loans and investments in investment-grade securities. As demonstrated in the financial crisis, the complexity of many asset-backed securities made it very difficult to determine their credit quality. As a result, consideration should be given to restrictions on investing in "complicated" securities, such as multilayer structured securities (e.g., CDOs) that are difficult to value, and to determine and monitor credit quality.
- Off-balance-sheet holdings and exposures should be supervised and regulated as if they were on-balance-sheet because, as was also demonstrated in the crisis, they ultimately put a bank's capital at risk.
- The recommended activity restrictions would make banks more transparent and would enable better risk management, market discipline, supervision, regulation, and resolution.
- The proposed activity restrictions will improve the risk management of banks by focusing their activities solely on the traditional banking business with exposure only to risks inherent in these activities.

¹⁰ Banking organizations would be allowed to purchase and sell derivatives to hedge their assets and liabilities.

¹¹ Hedge funds hold cash balances with their prime brokers to finance and facilitate transactions. “Free balances” is the cash a hedge fund client has a right to demand on short notice.

- The underlying factors that make commercial banking successful are inherently different from those that make securities firms successful. Banking is based on a long-term customer relationship where the interests of the bank and customer are the same. Both the bank and loan customers benefit if borrowers do well and are able to pay off their loans. In contrast, trading is an adversarial zero-sum game – the trader’s gains are the customer’s losses. Thus, restricting these activities removes a conflict of interest between a bank and its counterparty customers, which could produce a more stable, less risky company.
- The inherent riskiness of securities trading, dealing, and market-making attracts, and in fact requires, people who are predisposed to taking short-term risks rather than lenders with a long-term perspective. The combination of securities with commercial banking activities in a single organization provides opportunities for the senior management and boards of directors to be increasingly influenced by individuals with a short-term perspective. As a result, the increased propensity of these corporate leaders to take risk leads to more of a short-term-returns culture throughout the organization.
- Prohibiting the activities mentioned above would allow capital regulation to be simplified and improved. Capital regulation would be simpler and more effective because there would be less need for complicated risk-based requirements if the balance sheet is largely limited to loans and investment-grade securities. For example, capital regulation could be structured as a relatively high, simple leverage ratio combined with supervision.¹² Moreover, regulatory

¹² Admati, DeMarzo, Hellwig, and Pfleiderer provide an excellent discussion of the reasons for substantially increasing bank capital requirements. Hellwig provides arguments for abandoning risk-sensitive capital requirements.

arbitrage between balance-sheet and off-balance-sheet activities and between banking and trading books is difficult to prevent with regulation.

- Critics of restricting bank activities argue it would reduce the economies of scale and scope that are critical for the largest banks to be successful in global markets and that large corporations want one-stop shopping for their financial services. These arguments, however, are not persuasive.
 - First, there is no strong evidence of economies of scale at the sizes of the largest banking companies. There are many conceptual and empirical problems with studies of economies of scale.¹³ Nevertheless, older studies from the 1990s show that there are no economies of scale when banks are larger than about \$250 million in assets, although the threshold is likely to be higher in today's economy because of inflation and advancements in information technology. Although a more recent study from the mid-2000s suggests there are economies of scale for the largest banking organizations, the results are highly questionable because there are so few banks at the sizes in question and the study uses data prior to the problems that banks had during the financial crisis.
 - Second, there is even less evidence of economies of scope.¹⁴ In fact, there is evidence that multiple functions of large, complex banks actually increase systemic risk and anecdotal evidence that if bank activities are restricted as suggested here, a more competitive nonbank financial industry would emerge and thrive.

¹³ DeYoung comments that it is not really possible to provide empirical evidence for or against existence of economies of scale in large and complex financial institutions because there are too few of them for a meaningful statistical analysis to be conducted.

¹⁴ Richardson, Smith, and Walter provide a survey of empirical studies on economies of scale.

- Third, large corporations would still be able to do one-stop shopping for commercial and traditional investment banking services, although they would have to go to securities dealers to purchase swaps and other derivatives for hedging purposes.
- Finally, even if there are economies of scale or scope, it does not necessarily mean that banks should be allowed to continue to conduct all of their current activities. Whether they should depends on comparing the marginal benefits from the reduced private costs of operation to the social costs associated with financial crises. Given the large costs of the 2007-9 crisis and the continued weakness of the economic recovery five years after the crisis began, the efficiencies and cost benefits of size and scope would need to be extremely large.
- Critics of restricting activities also question how we would go about divesting the prohibited activities. The divestitures that were required by the Glass-Steagall Act and the breakup of AT&T in the 1980s suggest that divestitures can be conducted in an orderly manner in a relatively short period of time.
- Critics of restricting activities also are concerned that it would cause two major problems for U.S. banks because they would face a competitive disadvantage relative to universal banks, mostly from Europe, that are allowed to conduct the full range of activities.
 - One problem is it would drive U.S. banks to move to other countries. However, it seems highly improbable that any other country would be willing or able to expand its safety net to new large and complex banking organizations.
 - Second, the competitive disadvantage of U.S. banks would lower their franchise values, which would provide an incentive to take even greater risks to raise lost revenues and maintain ROEs. However, the virtue of restricting activities is that it is easier for the

supervisors and the market to detect, prevent, and if necessary punish excessive risk taking.

Reforming the shadow banking system

- Restricting the activities of banking organizations alone, however, does not completely address the stability of the financial system. In fact, it could worsen the risk of financial instability by pushing even more activities from the regulated banking sector to large, interconnected securities firms, which would expand the sector that was an integral part of the financial crisis.
- As previously discussed, the source of this instability is the use of short-term funding for longer-term investment in the shadow banking market, i.e., the maturity and liquidity transformation conducted by a lightly regulated/unregulated sector of the financial system. We believe this source of systemic risk can be significantly reduced by making two changes to the money market.
- The first recommendation addresses potential disruptions coming from money market funding of shadow banks – money market mutual funds and other investment funds that are allowed to maintain a fixed \$1 NAV should be required to have floating net asset values.
 - The primary MMIs today are MMMFs and repos. Individuals, institutional investors, and nonfinancial companies are the primary holders of MMMF and other MMI funds with a fixed \$1 NAV, which in turn are major investors in repos along with other financial companies.
 - Some have suggested that MMMFs should be backed by government guarantees. We see no reason why the safety net should be extended and the taxpayer put at risk when other solutions are feasible. In addition, providing government guarantees would require

prudential supervision to prevent excessive risk taking, but it would not be effective because of the ability of funds to rapidly shift their risk profiles.

- The runs during the crisis on MMMFs occurred because of concerns about the quality of their investments and because of the promise to maintain a \$1 NAV. MMMF investment rules have been strengthened by increasing the minimum average quality and decreasing the maximum average maturity of their investments.¹⁵ However, because of the difficulty in calibrating these requirements, it is not clear that the vulnerability of MMMFs to runs in a systemic event would be significantly reduced as long as the fixed \$1 NAV is maintained. We believe reliance on this source of short-term funding and the threat of disruptive runs would be greatly reduced by eliminating the fixed \$1 NAV and requiring MMMFs to have floating NAVs.
- Critics of eliminating a \$1 NAV for MMMFs argue that this limits cash management options for large corporations. However, MMMFs were first introduced to evade interest rate ceilings on deposits, and the only remaining Regulation Q deposit rate ceiling – the prohibition of paying interest on business transactions deposits – was eliminated by the Dodd-Frank Act. Some may be concerned that their deposits will be largely uninsured, but they are uninsured when invested in MMMFs. In addition, European MMMFs historically have mostly used floating NAVs. Although the percentage of fixed NAV European MMMFs has increased in recent years, the majority still have floating NAVs.
- The second recommendation addresses potential disruptions stemming from the repo financing of shadow banks – the bankruptcy law for repurchase agreement collateral should

¹⁵ Some of the new rules for MMMFs are: 30 percent of assets must be liquid within one week, no more than 3 percent of assets can be invested in second-tier securities, the maximum weighted-average maturity of a fund's portfolio is 60 days, and MMMFs have to report their holdings every month.

be rolled back to the pre-2005 rules. By making this change, mortgage-related assets would no longer be exempt from the automatic stay in bankruptcy when a repo borrower defaults on its repurchase obligation.

- One reason for the runs on repos during the crisis was because of the prevalence of repo borrowers using subprime mortgage-related assets as collateral. Essentially, these borrowers funded long-term assets of relatively low quality with very short-term liabilities. The price volatility of subprime MBS rose sharply when subprime defaults started reducing MBS income flows. As a result, haircuts on subprime repos rose sharply or the repos were not rolled over.
- The eligibility of mortgage-related assets as collateral exempt from the automatic stay in bankruptcy in case of default by the borrower is relatively recent. The automatic stay exemption allows the lender to liquidate the collateral upon default as opposed to having to wait for the bankruptcy court to determine payouts to secured creditors.
- Prior to 2005, collateral in repo transactions eligible for the automatic stay exemption was limited to U.S. government and agency securities, bank certificates of deposits, and bankers' acceptances. The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 expanded the definition of repurchase agreements to include mortgage loans, mortgage-related securities, and interest from mortgage loans and mortgage-related securities. This meant that repos collateralized by MBS, CMOs, CMBS, and CDOs backed by mortgage-related assets became exempt from the automatic stay.
- We believe the problem of runs by repo lenders would be significantly reduced by rolling back the bankruptcy law for repurchase agreement collateral to the pre-2005 rules. The problem with the current bankruptcy law for repos is it provides special treatment – that

is, it essentially subsidizes – short-term funding with mortgage-related collateral relative to other longer-term repo collateral or securities-based lending. As with the safety net for banks, the subsidy leads to the overuse of short-term repo funding, and therefore the overproduction of risky shadow banking activities.

- Overall, these two changes to the rules for money market funds and repo would increase the stability of the shadow banking system because term lending would be less dependent on “demandable” wholesale funding and more reliant on term funding. Fixed NAVs, like the just-noted problem with current repo bankruptcy law, provide special treatment and therefore subsidize short-term funding. These subsidies lead to an overreliance on short-term funding and excessive risk in shadow banking activities. With the recommended changes, shadow banks would rely less on short-term wholesale funding and more on term funding, which would continue to be provided by institutional investors such as mutual funds, pension funds, and life insurance companies. While this might increase the cost of funds and, therefore, the cost of mortgages and other consumer loans, it would be less risky and more reflective of the true costs.

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