

Restructuring the Banking System to Improve Safety and Soundness

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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. Because these core banking services are a critical part of the economic infrastructure and banks are susceptible to disruptions from depositor runs, the structure also included a public safety net to protect depositors and their banks.

The current financial structure is vastly different. Leading up to the financial crisis, the financial system had become dominated by a handful of large, complex financial organizations and it is even more so since the crisis. These companies combine traditional banking activities with a variety of nonbank activities. Banks benefit from additional activities, for example, if they increase the diversification of their assets and revenue streams. However, additional activities can also increase banks’ riskiness and create complexity that makes it more difficult for the market, bank management, and regulators to assess, monitor, and/or contain risk taking that endangers the public safety net and financial stability. Thus, the social costs of additional activities and the associated complexity can greatly exceed the private benefits to an individual bank.

This paper offers a proposal to reduce the costs and risks to the public safety net and financial system and reintroduce accountability by restricting bank activities. The designation of allowable activities is based on the principle that banks should not engage in activities beyond their core services of loans and deposits if those activities disproportionately increase the complexity of banks such that it impedes the ability of the market, bank management, and regulators to assess, monitor, and/or control bank risk taking. Such activities are not essential for conducting the socially valuable core banking activities and lead to unnecessary risk to the safety net and financial system.

Specifically, in addition to their traditional business of providing payment and settlement services, granting loans, and offering deposits, banks also would be allowed to underwrite securities, offer merger and acquisition advice, and provide trust and wealth and asset management services. They 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 benefits of prohibiting banks from engaging in high-risk activities outside of their core business, however, would be limited if those activities continue to threaten stability by mostly 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 moral hazard to take greater risks.

To mitigate the potential systemic effects and moral hazard of shadow banks or other financial companies, this paper makes two additional recommendations. First, money market mutual and other investment funds that are allowed to maintain a fixed net asset value 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 the borrower defaults on its repurchase obligation.

Evolution of current financial structure

- 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 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 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 greater 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

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.

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 protected to the extent banks were protected from outside competition and competition among themselves.
- 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 they met certain accounting (net asset value has to be greater than 99.5 cents) and 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 (repo).
 - It is important to note that although an MMMF investor technically owns equity shares of the fund (i.e., there is zero 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 (i.e., 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).
- 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 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 tend to fund ABS with longer-term sources of funds include mutual funds, pension funds, and insurance companies.

² The description of the shadow banking system and the process described below is largely from “Shadow Banking” by Zoltan Pozsar, Tobias Adrian, Adam Ashcraft, and Hayley Boesky, Staff Report no. 458, Federal Reserve Bank of New York, July 2010.

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.

- 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 funded by MMMFs and other MMI funds with \$1 NAVs.
 - c. Investment banks and FHCs purchased ABS for a variety of reasons. They may have been 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 were typically funded with repo and sometimes ABCP, which again were funded by MMMFs and other MMI funds with \$1 NAVs.
- Increased competition for banks from the shadow banking organizations combined with regulatory capital requirements (stemming from the first Basel 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 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 and through 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, floatation, 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 not willing to do when their own money was at risk. In addition, the risks were exacerbated by relying on debt financing, i.e., leverage, much of which was short-term repo. 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, risk, 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 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.
 - Similarly, the larger investment banks now engage in activities traditionally limited to commercial banks, which exposes them to commercial bank risks. By switching from a partnership to public corporate structure, taking on leverage, and making direct investments and loans that were 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 funds available to creditors 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.

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.

- 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 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 are exposed to the 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 underlying ABS had fallen below par value, 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 of an off-balance-sheet entity. As a result of this arbitrage of regulatory capital requirements, FHCs are much riskier because they can 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

⁷ In a September 2010 working paper “Securitization Without Risk Transfer,” Viral Acharya, Philipp Schnabl, and Gustavo 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.

ABS are technically bankruptcy remote, FHCs either purchase assets and bring them on balance sheet or provide capital 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 repo and ABCP to fund ABS held as part of their proprietary trading business, as inventory for filling customer trades, or for creating CDOs.
- 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. These companies benefit from additional activities, for example, if they increase the diversification of their assets and revenue streams. However, these benefits are outweighed by the significant complications it poses for the market, bank management, and regulators to assess, monitor, and/or contain risk taking that endangers the public safety net and financial stability. Specifically, as explained below, combining banking and nonbanking activities makes it more difficult to supervise and regulate banks, to price deposit insurance, and for bank management to manage risks. It also reduces market discipline by making banks less transparent.
- Some activities make it more difficult to supervise banks.
 - The goal of prudential supervision is to control bank risk taking so that they are safe and sound and do not endanger the safety net. This is done by monitoring a bank's financial condition, lending, operational, risk management, and other practices and enforcing regulatory rules. Due to the periodic nature of bank supervision, supervisors are able to get only a snapshot of bank processes, risk exposure, and capital positions at a given point in time. These snapshots are useful only as long as they are able to predict the bank's processes, risk exposure, and capital positions between the supervisory examinations. The flexibility to adjust risk profiles between exams depends to some extent on the activities banks engage in 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 and can be used to quickly change a bank's risk profile. For example, trading and market-making are high frequency activities that can take place between exams with little evidence that they ever occurred. As a result, a snapshot of positions of these activities on one day has no predicative value for the positions, for example, a week later. Monitoring these activities on a high-frequency basis would be very costly for banks and supervisors. Moreover, it requires substantial transparency that banks are likely to strongly oppose. Thus, while examiners may err in their judgment on the riskiness of any activity, they do not have the tools to monitor the riskiness of many traditional non-banking activities.
- Banks with a variety of activities require much more complex regulations.
 - 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. Complex capital requirements are very difficult to monitor and understand for banks, supervisors, and the market.
- One problem is that the various capital requirements under Basel are essentially relative prices, which generally will be incorrect when they are administratively set. As a result, the regulatory capital requirements did not adequately align bank risks with capital levels. In particular, it 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.
 - The difficulty in determining appropriate requirements is even more difficult when banks face a variety of risks, such as credit, market, and interest risk. Understanding and formally modeling these risks and their relationships is very difficult, especially after a systemic shock or during a financial crisis. In addition, the variety of assets held by the complex banks meant regulators had to rely on bank internal models, which provided banks opportunities to game the capital regulations. The incentive to game regulations is a problem particularly for banks suffering large losses because it buys them more time to find a way out of their problems.
- Complexity of activities makes it difficult to price deposits insurance: Deposit insurance would not create moral hazard 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
 - Complex financial institutions are hard to resolve in a quick and orderly manner. Lehman Brothers 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 over a weekend, which made it difficult to find a buyer. And Lehman Brothers was a relatively simple company as compared to a bank like Citigroup, which has more than 2,000 majority-owned subsidiaries that include a "Lehman Brothers" equivalent. It would be much harder to wind down or find the number of separate buyers necessary to transfer Citigroup's operations to third parties.
 - In addition to the difficulty in resolving complex banks, the fallout from the Lehman Brothers failure shows that complex institutions are more likely to be bailed out in the future. The probability of an implicit government guarantee from a bailout creates additional moral hazard. Moreover, if the market and banks expect bailouts, banks have an increased incentive to become more complex, and it will be supported by a lack of market discipline.
 - Banks with a variety of activities are less transparent. Relative to nonfinancial companies, it is difficult for investors to evaluate the condition of banks and their riskiness because their

balance sheet assets and activities are opaque and easily changed.⁸ Traditional banking is opaque because only the bank knows the risk and quality of its 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 depend on the confidentiality of the positions and speed with which the banks are able to change their exposures. Given the lack of transparency, regulators must play a larger role relative to the market in monitoring and disciplining banks. However, as already discussed, regulators are also at a disadvantage when dealing with banks engaging in complex activities.

- Complexity makes risk management much more difficult.⁹
 - Risk management is particularly difficult when there are many different operation and activities divisions in a bank. 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.
 - The risk management of a complex institution will also vary with the background of the senior leadership. For example, the risk tolerance is likely to be lower if the senior leadership of a large, complex bank has a commercial banking background 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 its risks.
- 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 that are not supported by a public safety net or subject to prudential supervision. 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 have increased. The industry is dominated by a handful of companies that combined are as large as half of annual U.S. economic output, of which the failure of any could cause financial instability. Finally, because these companies are so large and complex, they and other institutions that could be deemed systemically important receive an implicit government guarantee on their debt – and sometimes on their equity – they have an incentive to take extra risk, which further increases systemic risk (the too-big-to-fail problem).

⁸ Donald Morgan provides evidence on the increased opacity of banks from combining lending and trading activities in “Rating Banks: Risk and Uncertainty in an Opaque Industry,” *American Economic Review*, September 2002.

⁹ All aspects of managing a large, complex financial company is difficult, but given the context of this paper, the focus is on risk management.

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 the market, bank management, and regulators in assessing, monitoring, and/or controlling bank risk taking. 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. Following the proposal, alternative proposals are discussed and critiqued.

Restricting activities of banking organizations

- The financial activities of commercial, investment, and shadow banks can be categorized in the following six groups:¹⁰
 - Commercial banking – deposit taking and lending to individuals and businesses.
 - Investment banking – underwriting securities (stocks and bonds) and advisory services.
 - Asset and wealth management services – managing assets for individuals and institutions.
 - Intermediation as dealers and market makers – securities, repo, over-the-counter (OTC) derivatives.
 - Brokerage services – retail, professional investors, and hedge funds (prime brokerage).
 - Proprietary trading – trading for own account, internal hedge funds, private equity funds, and holding unhedged securities and derivatives.
- Based on the criterion that permissible activities should not significantly impede the market, bank management, and regulators in assessing, monitoring, and/or controlling bank risk taking, banking organizations should be able to conduct the following activities: commercial banking, investment banking as defined above, 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 have always been allowable for banks.
- In contrast, the other three categories of activities – dealing and market making, brokerage, and proprietary trading – do not have much in common with core banking services and create risks that are difficult to assess, monitor, and/or 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.¹¹ In addition, allowing customer but not proprietary trading would be conducive to “concealing” proprietary trading as part of the inventory necessary to

¹⁰ This categorization of financial activities is from Matthew Richardson, Roy Smith, and Ingo Walter in Chapter 7 of *Regulating Wall Street: The Dodd-Frank Act and the New Architecture of Global Finance*, edited by Viral V. Acharya, Thomas F. Cooley, Matthew Richardson, Ingo Walter, New York University Stern School of Business, John Wiley & Sons, Inc., 2010.

¹¹ Banking organizations would be allowed to purchase and sell derivatives to hedge their assets and liabilities.

conduct customer trading. Prime brokerage services not only require the ability to conduct trading activities, but also essentially allow companies to finance their activities with highly unstable uninsured “deposits.”

- Prohibiting these activities would make banks more transparent and would enable better market discipline, supervision, regulation, and resolution.
 - Because these activities involve taking positions that can be continuously adjusted and manipulated, they are inherently opaque and difficult for supervisors to monitor and regulate and for investors to understand.
 - Moreover, regulatory arbitrage between balance-sheet and off-balance-sheet activities and between banking and trading books is difficult to prevent with regulation.
- The proposed activity restrictions also will improve the management of banks by focusing their activities solely on the traditional banking business with exposure only to risks inherent in these activities.
 - There is an inherent difference in the underlying factors that make commercial banking and 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 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.
 - 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, banking organizations should be prohibited from holding "complicated" securities, such as multilayer structured securities (e.g., CDOs) because it is difficult to determine and monitor their 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.
 - Restricting banks to the activities mentioned above will allow capital regulation to be simplified and improved. As noted in the previous section, the complexity of Basel capital regulation is necessary but still ineffective because there is no ability to satisfactorily model

the wide range of complexity and risk characteristics of current allowable activities. Capital regulation will be simpler and more effective because there is less need for complicated risk-based requirements if the balance sheet is largely limited to loans and investment grade securities, i.e., a relatively high simple leverage ratio would be effective.¹²

- 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. 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. In fact, a more recent study from the mid-2000s suggests there are economies of scale for the largest banking organizations, but 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 nonbank financial industry would emerge and thrive.
 - 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

¹² Anat R. Admati, Peter M. DeMarzo, Martin R. Hellwig, and Paul Pfleiderer provide an excellent discussion of the reasons for substantially increasing bank capital requirements in “Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not Expensive,” August 2010, Rock Center for Corporate Governance at Stanford University Working Paper No. 86, Stanford Graduate School of Business Research Paper No. 2065. Martin Hellwig provides arguments for abandoning risk-sensitive capital requirements in “Capital Regulation after the Crisis: Business as Usual?” Reprints of Max Planck Institute for Research on Collective Goods 2010/31.

¹³ Robert DeYoung comments in the Federal Reserve Bank of Minneapolis *Region* (2010) 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 A survey of empirical studies on economies of scale is provided by Matthew Richardson, Roy Smith, and Ingo Walter in Chapter 7 of *Regulating Wall Street: The Dodd-Frank Act and the New Architecture of Global Finance*, edited by Viral V. Acharya, Thomas F. Cooley, Matthew Richardson, Ingo Walter, New York University Stern School of Business, John Wiley & Sons, Inc., 2010.

the 2007-9 crisis, 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 and 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 and other investment funds that are allowed to maintain a fixed net asset value of \$1 should be required to have floating net asset values.
 - The primary MMIs today are MMMFs and repo (ABCP has largely disappeared as a funding instrument for financial companies since the financial crisis). Individuals, institutional investors, and nonfinancial companies are the primary holders of MMMF and other MMI funds with a \$1 NAV, which in turn are major investors in repo 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 \$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 were uninsured when invested in MMMFs.
- The second recommendation addresses potential disruptions stemming from the repo financing of shadow banks – the bankruptcy law for repurchase agreement collateral should be rolled back to the pre-2005 rules. This change would eliminate mortgage-related assets from being exempt from the automatic stay in bankruptcy when a borrower defaults on its repurchase obligation.
 - One reason for the runs on repo 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 repo rose sharply or the repo was 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 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 repo collateralized by MBS, CMOs, CMBS, and CDOs backed by mortgage-related assets were exempt from the automatic stay.

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.

- We believe the threat of runs by repo lenders would be significantly reduced by rolling back the bankruptcy law for repurchase agreement collateral to the pre-2005 rules.
- 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” funding and more reliant on term funding. Term wholesale funding 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.

Alternative proposals

- A variety of alternative policy reforms, which are not necessarily mutually exclusive, have been proposed to improve the stability of the financial system. These proposals address the structure of banking organizations (size limitations), bank regulation and supervision (stronger resolution authority, stronger capital regulation, systemic risk fees, improved supervision) and institutional changes (government guarantees for repo similar to deposit insurance).
- Size limit
 - Banking organizations have been prohibited from merging if the new company would hold more than 10 percent of national deposits since 1994, and the Dodd-Frank Act prohibits mergers of financial companies if the new company would hold more than 10 percent of financial industry liabilities. These provisions do not limit organic growth.
 - We are not in favor of a strict size limit because it is not clear what the size limit should be or how it should change over time.
- Resolution authority (would only address the too-big-to-fail problem and not systemic risk more generally) – the Dodd-Frank Act includes a provision for resolving systemically important companies.
 - We believe resolution authority is necessary but it may not be sufficient for very large, complex financial institutions. The resolution authority is too political because the Treasury secretary makes the final decision to close a failing company as opposed to independent supervisory authorities.
 - But even if it were up to the supervisory authorities, it is not clear they would use it when faced with the failure of a systemically important company. Liquidating a large and complex financial company will always impose costs and disruptions even under ideal circumstances, but is more likely to cause systemic problems. Given the tradeoff between costs and economic disruption that are large, highly visible, and immediate versus benefits that may take years to be recognized, the more likely scenario is that regulators will choose to bail out the company. This decision is even more skewed to avoiding the short-run costs because of pressures on regulators from politicians and the big banks.

- Improve capital regulation – this is the approach taken by the Basel Committee in developing the Basel III capital requirements. The Dodd-Frank Act also has provisions to improve capital regulation.
 - Basel III attempts to correct the problems with Basel II and is an improvement. It increases the minimum capital requirement (capital to risk-weighted assets), introduces a leverage ratio and capital conservation buffer, tightens restrictions on what counts as capital so that common equity is the predominant source of capital, improves the treatment of off-balance-sheet exposures and funding, and includes a proposal for counter-cyclical capital requirements.
 - Some countries require an even higher minimum capital requirement than the recommended 7 percent (Tier 1 common equity base plus capital conservation buffer) in Basel III. For example, Switzerland is requiring a 10 percent Tier 1 equity risk-based ratio and a 19 percent total capital risk-based ratio. The preliminary report of the U.K.’s Independent Commission on Banking, the Vickers report, also recommends a 10 percent Tier 1 common equity risk-based capital requirement for British banks.
 - Nevertheless, we do not believe Basel III capital rules will be effective largely because of the complexity of the largest financial companies and the variety of their activities. The complexity and variety of activities requires complex, risk-based capital rules, which were reflected in the 1996 revision to Basel I and the 2004 Basel II requirements. However, the requirements depend on regulators setting relative prices in the form of risk weights for the various asset classes, or for the firms to set their own requirements based on internal model risk calculations. Basel III is an extension of these previous standards, and the underlying problems causing instability remain. In addition, the leverage ratio is based on Tier 1 capital instead of common equity and is only 3 percent. Stronger minimum leverage ratios have been recommended by economists and some regulators.
 - The Dodd-Frank Act requires regulators to set more stringent capital requirements for BHCs and FHCs with more than \$50 billion in assets and nonbank financial companies determined to be systemically important than for other banking organizations. The capital requirements, however, are based off the Basel III requirements.
- Systemic risk fee
 - These proposals are based on the traditional economic policy of taxing externalities. Market data on financial companies and historical data on financial crises are used to assess the expected cost of financial crises and the individual contributions of financial institutions to these costs. Based on these estimates, a fee is charged so that financial institutions internalize the systemic impact of their decisions.¹⁶ Presumably, the fee would also account for the increased systemic risk of being too big to fail. By charging the appropriate fee, companies would reduce or even divest activities that are no longer profitable.

¹⁶ The New York University Stern School of Business Vlab project proposes a method to assess the systemic relevance of financial institutions.

- Charging a fee clearly is an appropriate policy option, but we believe it would be very hard to implement in practice for the same reasons as implementing the risk-based capital requirements along the lines of Basel II. It is extremely hard in practice to calibrate the risk-weights and fees in such a way that the banks are not able to arbitrage them away. In addition, because it is impossible to always charge the right fee on a continuous basis, some firms will still end up taking too much risk. While the likelihood of a crisis would be reduced, the cost of a crisis may still be too large.
- Improve supervision
 - The Dodd-Frank Act made the Federal Reserve the consolidated supervisor for BHCs and FHCs with more than \$50 billion in assets and nonbank financial companies determined to be systemically important. The Act also requires the Federal Reserve to establish more stringent prudential standards for these organizations than for other banking organizations.
 - We do not believe enhanced supervision will be effective without restricting the activities of the largest financial companies. First, there is evidence that the largest financial companies did not fully understand the extent of their risk exposures for a variety of reasons.¹⁷ If the organization does not fully understand the risks, it is infeasible for the regulatory authority to understand the risks and effectively supervise the organization.
 - Second, many of the activities that pose the greatest risks to the organization and to the broader financial system and economy are not conducive to prudential supervision because of the short-term nature of the risks. As noted earlier, activities that have high short-term risks cannot be effectively monitored because supervision and regulation occurs periodically at potentially irregular intervals.
 - Essentially, the overall regulatory system for the largest financial companies broke down by not keeping up with the evolution of the financial system. Commercial and investment banking organizations began engaging in activities that the market, bank management, and regulators cannot assess, monitor, and/or control very well. As a result, expanding supervision to the same activities that cannot be supervised well will not fix the problem.
- Guaranteeing repo – a variety of proposals have been made, many of which include provisions to limit government liability, such as limiting collateral to very safe securities and charging a fee.¹⁸
 - The idea behind this approach is that repo is a primary source of funds for much of the shadow banking system, but also provides value to large financial and nonfinancial companies that have a demand for repo because they want a risk-free asset for cash management purposes and bank deposits are only insured up to \$250,000.

¹⁷ The Senior Supervisors Group provides a number of reasons for poor risk management practices in complex financial institutions in the March 2008 report “Observations on Risk Management Practices during the Recent Market Turbulence.”

¹⁸ Gary Gorton and Andrew Metrick propose a system of insurance for money market mutual funds combined with strict regulation of securities used as collateral in repo transactions in “Regulating the Shadow Banking System.”

- We see no reason why the government and taxpayer should step in and insure positions taken by sophisticated investors with abilities to analyze the risk of securities that back their loans. Therefore, there is no rationale for the government to provide guarantees even in exchange for heavier regulation and supervision of repo markets.