Statement for the Senate Subcommittee on Financial Institutions and Consumer Protection Hearing:

"What Makes a Bank Systemically Important?"

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What Makes a Bank Systemically Important?

Chairman Brown, Ranking Member Toomey, and distinguished members of the Subcommittee, thank you for convening today's hearing, "What Makes a Bank Systemically Important?" and thank you for inviting me to testify. I am a resident scholar at the American Enterprise Institute, but this testimony represents my personal views. My research is focused on banking, regulation, and financial stability. I have years of experience working on banking and financial policy as a senior economist at the Federal Reserve Board, as a Deputy Director at the IMF and most recently for almost ten years as Director of the FDIC Center of Financial Research where I served a three-year term as chairman of the Research Task Force of the Basel Committee on Bank Supervision. It is an honor for me to be able to testify before the subcommittee today.

I will begin with a high-level summary of my testimony:

- There is a trade-off between financial intermediation and economic growth. When prudential regulations reduce financial intermediation, they will restrict economic growth. The Dodd-Frank Act (DFA) does not recognize this trade-off.
- The DFA does not define systemic risk, and this ambiguity allows regulators wide discretion to interpret DFA new DFA powers.
- When designated non-bank financial firms, DFA criteria is unclear. Should the firm be designated if its isolated failure causes financial instability, or is the criterion that the firm's failure in the midst of crisis and many other financial failures will cause financial instability? These two cases represent very different standards for designation.
- Because DFA assigns regulators with the (impossible) task of ensuring financial stability without recognizing and limiting regulators' ability to slow economic growth by over-regulating the financial system, DFA builds in a bias toward over-regulation of the financial system.
- DFA gives regulators many powers to meet vague objectives. There are few controls over the exercise of regulators' powers and extremely limited ability to appeal regulatory decisions to judicial review. In many cases these regulatory powers can be exercised arbitrarily resulting in limiting or even canceling investor property rights without compensation or due process.
- Designating bank holding companies larger than $50 billion for enhanced prudential supervision and regulation is arbitrary and a clear case of over regulation.
- The imposition of explicit enhanced prudential regulations for the largest institutions creates a two-tied system of regulation that will have long run negative implications for the structure of the financial industry.
- The provision of enhanced prudential power to limit the use of short-term debt does not recognize that a substantial finance literature finds that the use of short-term (uninsured) debt is a method investors use to control risk-taking by borrowers. Short-term debt is cheaper, in part, because of this risk control mechanism and the imposition of binding short-term debt restrictions will lead to higher borrowing costs.
- Mandatory Board of Governor stress tests have many negative side effects. They involve highly intrusive and detailed modeling of individual bank operations. Stress loss estimates are not the output of pure modeling exercises, but loss estimates depend to a substantial degree on judgments made by the Board of Governors. Along with enhanced prudential regulations for the largest institutions, the stress test process creates investor perceptions that the largest institutions are too-big–to-fail. Since the historical track record of stress-test

based regulation is checkered at best, it is likely that there may be a time when the Board of Governors has the largest financial firms fully prepared for the wrong crisis.

- A Title II resolution using the FDIC's single point of entry (SPOE) strategy does not fix the too-big-to-fail problem. In order to keep subsidiaries open and operating to avoid creating financial instability, in many cases, SPOE will require the extension of government guarantees that are far larger than those that would be provided under a bankruptcy proceeding and Federal Deposit Insurance Act (FDIA) resolution.
- The Title II and SPOE create new uncertainty regarding which investors will be forced to bear losses when a bank holding company fails.
- When Title II is used on a bank holding company because a subsidiary bank failed, it creates a conflict of interest between contributors to the deposit insurance fund and contributors to the orderly liquidation fund.
- Title II and SPOE alter investor property rights without prior notice, compensation, or due process and with little scope for judicial protection.
- Contingent capital is a more attractive means for address the consequences of the distress of a large and important financial intermediary. Its benefits are even more apparent in a crisis, when multiple financial institutions may be in distress.
- The FDIA resolution process should be improved to avoid creating too-big-to-fail banks. Title I orderly resolution plan powers can be used to require the FDIC to plan to break up large institutions in an FDIA resolution rather than use a whole bank purchase. This may require legislation to amend the FDIC's least cost mandate if favor of requiring large institutions to be broken up in the resolution process even if it imposes a larger loss on the insurance fund.
- Improvements in the FDIA resolution process can be a substitute for mandatory enhanced supervision and prudential standards that apply to many institutions that exceed the Section 165 size threshold.

I. Financial Intermediation, Economic Growth and Systemic Risk

It is has long been recognized that banks play a special role in capitalist economies. Today, the idea that "banks are special" is such a cliché that many may have forgotten what underlies this belief. Since government regulations are designed around the idea that banks are special, it is useful to briefly review the economic functions of banks and highlight the link between bank regulation and economic growth.

In many capitalist economies, banks are the only intermediaries that collect consumer savings and channel them into private sector investments. In bank-centric economies, if banks make sound investment decisions, the economy grows, banks profit, and consumers earn interest and their deposits are safe. If banks make poor investment choices, their investments fail, consumers lose their savings and economic growth plummets.

Some economies, including the U.S. economy, also benefit from non-bank financial intermediation, sometimes called "shadow banking." Non-bank financial intermediation occurs when consumers channel their savings into private sector investments without the intermediation of a bank.

In the most common form of non-bank intermediation, firms issue publicly-traded securities that consumers can purchase and own directly, but savers may also purchase and own securities indirectly through collective investment vehicles like mutual funds, insurance companies, private equity, hedge

funds or other non-bank financial institutions. These intermediaries along with broker-dealers are part of the financial infrastructure that makes it possible for consumers to purchase and sell securities and thereby channel their savings into investments without using the banking system as the investing intermediary.

The ability to invest saving using non-bank forms of intermediation generally gives savers more control over their investment decisions as well as the ability retain a larger share of the profit (or the loss) generated by their investment decisions. Non-bank intermediation is typically a cheaper source of funding for firms that have achieved a good reputation among investors by repeatedly honoring the financial claims they have issued in the past and through public disclosures that help to make their operations and financial condition as transparent as possible to investors.

Banks also play a key role in creating the supply of money that consumers use as a store of value and medium of exchange. Transferable bank deposits are an important part of the money supply. Money is an extremely important economic invention. It allows consumers to specialize in their most productive labor activity in exchange for receiving compensation in the form of a widely accepted medium of exchange (money) they can use to purchase the goods and services they choose to consume or to save using bank or non-bank intermediation.

Without money, consumers would have to barter. Without money, consumers must find someone offering the goods or services they want, and at the same time, the counterparty must want the output their own labor services. Making an investment is even more difficult because a saver must also trust that the counterparty will be willing and able to provide the promised service in a future period. When an economy lacks money, it must satisfy "a double coincidence of wants," and economic output and growth are severely limited.

Money facilities trade, but it is costly for firms and consumers to hold money. Cash pays no interest. Bank deposits offer minimal yield, and banks may impose costs to transfer deposit balances. If firms and consumers can find ways to minimize their holding of cash and bank deposits, they are better off because they have more control over where their savings are invested, they have the potential to earn higher returns, and they save on bank transactions costs. However, because transactions in real goods and services require the transfer of cash or bank deposits, firms and consumers either need to own money balances before transacting or be able to borrow them from somewhere. But most firms and consumers do not have established reputations that allow them to borrow based only on their pledge to repay in the future.

The market solution to the borrower reputation problem is to use liquid long term debt securities issued by reputable firms as collateral for borrowing.[1] Liquid long term debt securities that are perceived to have stable values that are largely insensitive to new information are ideal collateral for borrowing. These securities can be traded among savers without the need to spend a large amount of effort to collect information and evaluate the likelihood that they will maintain their value in the near term. |Firms and consumers may purchase these securities not for their ultimate cash payoffs, but to use them to secure borrowing when they are unable to borrow based on their promise of repayment alone.

Securities that are widely perceived as having a stable predictable value function as so-called inside-money. They are held by firms and consumers as a temporary store of value in lieu of bank deposits because they offer higher yields and can be quickly converted into cash and deposit money at

[1] Other securities can also be used as collateral but high quality information insensitive long term debt securities like U.S. government securities and highly rated corporate debt are preferred collateral.

minimal cost. When firms or consumers need to transact, they exchange the securities for cash. A real world example of inside money is the market for repurchase agreements for government, agency and high-quality structured and corporate credits. The stock of inside money is an important component of the economy's effective money supply.

Defining Systemic Risk

Against this background, it is useful to consider a definition for systemic risk. My preferred definition of systemic risk is that it is the possibility that a disruption in the financial intermediation process could cause a significant reduction in real economic growth.

In the simple stylized economy have I described in the prior section, financial intermediation can be disrupted in two ways. The first is that the failure of a financial intermediary or many financial intermediaries will disrupts financial intermediation. To take an extreme example, if the economy has only a single bank and it fails, consumers can no longer use it to channel their savings into investments, its bank deposits are no longer acceptable as money, and economic growth will clearly decline.

The non-bank intermediation process can also be disrupted and cause systemic risk. The failure of a key intermediary could make it very difficult for savers to purchase or sell securities. An important failure or series of intermediary failures could cause important disruptions in this form of intermediation.

Non-bank intermediation can also be interrupted without an intermediary failure. Events or new information can make savers reluctant to purchase existing securities making it difficult or impossible for investors to sell the securities they own. When the value of existing securities is materially diminished, the agents holding securities for use as collateral have a diminished ability to borrow or may be unable to borrow at all and this will restrict their ability to transact in goods and services.

The Dodd-Frank Act and Systemic Risk

The Dodd-Frank Act uses the phrase "systemic risk" 39 times in directing the financial regulatory agencies to identify, mitigate, and minimize "systemic risk." But the Dodd-Frank Act never defines systemic risk. Because the term is ambiguous, the law allows the regulatory agencies wide discretion to interpret the powers it conveys. The DFA directs agencies to draft and implement rules to control and minimize "systemic risk" without requiring the agencies to identify specifically what they are attempting to control or minimize.

Another troubling aspect of the Dodd-Frank Act is that the law does not recognize that rules and regulations that reduce systemic risk will have an impact on economic growth. The necessity of such a relationship is easiest to see in a bank-centric economy. If systemic risk reduction is accomplished by imposing regulations that limit the risk of bank investments, regulation will also limit economic growth. A fundamental principle of finance is that risk and return are positively related. Regulations that limit the risk of bank investments, if they are effective, will necessarily constrain banks to low-risk, low-return investments. Very stringent bank regulation may ensure that bank deposits remain safe, but they will also force banks to channel consumer saving into low-risk, low-return investments, and the economy will grow more slowly than it otherwise would.

The Dodd-Frank Act takes a very naïve approach toward controlling systemic risk. Instead of clearly identifying what it is trying to accomplish and legislating appropriate measures, it defines financial

stability as the absence of systemic risk and grants regulators an extensive set of new powers while assigning them the responsibility of ensuring U.S. financial stability.

One way to ensure financial stability and remove systemic risk is to restrict financial intermediation. If there is little or no financial intermediation, then it cannot be a source of systemic risk. Unfortunately this solution has very serious consequences for economic growth.

An alternative solution is to restrict the kinds of financial intermediation that cause systemic risk. This is the Dodd-Frank approach. It requires regulators to separate "good" financial intermediation from "bad" financial intermediation and to impose rules to stop bad intermediation. The problem is that is unclear that any person or agency has the capacity to distinguish good intermediation from bad intermediation, and stopping intermediation has negative consequences for economic growth. While this problem is inherent to some degree in any form of financial regulation, Dodd-Frank grants regulators extensive new powers to identify and stop "bad" financial intermediation as the means to achieve an ultimate (and impossible goal) of ensuring financial stability without any requirement that regulators recognize the implicit cost on economic growth.

Post Dodd-Frank, if we do not achieve financial stability, then easiest conclusion is that the regulators failed because they did not stop enough "bad" intermediation since regulators had been given sweeping powers to stop bad intermediation. Whether the conclusion is true or not does not matter. The fact that the conclusion will be made by some builds in a clear bias encouraging regulators to over-regulate in their pursuit of financial stability. Clear constraints on regulatory power are necessary, or regulators will over-regulate and economic growth will suffer.

I will now discuss in detail some of the specific issues that were raised in the invitation to testify at today's hearing.

Section 113 Designation

Section 113 of the DFA provides the FSOC guidelines that should be followed when designating nonbank financial firms to be supervised by the Board of Governors and subjected to heightened prudential standards. The standard for designation is "if the Council determines that material financial distress at the U.S. nonbank financial company, or the nature, scope, size, scale, concentration, interconnectedness, or mix of the activities of the U.S. nonbank financial company, could pose a threat to the financial stability of the United States."

Issues Associated with Section 113

Section 113 includes a laundry list of factors that the Council can consider in making the designation, but the language merely identifies factors the Council can consider; it does not include any quantitative standards to guide the designation process. The characteristics that may be considered for designation are very broad, but without quantitative guidance, the guidelines are arbitrary and impose little rigor on the designation process. For example, the guidelines never mention whether the firms' distress should be considered in isolation in an otherwise well-functioning financial market, or whether the threat to financial stability engendered by firm distress should be assessed in the context of a dysfunctional financial market under the assumption that many other banks and non-bank financial institutions are also failing. Clearly,

the financial stability consequence of a firm failure in an otherwise quiescent financial market is far less severe than a failure under stressed financial market conditions.

In practice, Section 113 guidelines merely restrict the FSOC's designation discussion and the case (if any) it makes to support its decision, but the designation outcome is completely governed by the Council vote. Moreover, since the directive lacks objective standards for designation, the criterion used to designate firms will almost certainly across administrations as different politically-appointed officials are represented on the Council. Without objective minimum quantitative standards for designation, there is little scope for continuity over time or for a designated firm to use data, analysis, or case precedent to overturn an opinion rendered by the Council.

One especially telling feature of Section 113 is that the designation guidelines do not require the Council to simultaneously recommend specific heightened prudential standards for the designated firm to mitigate systemic risk or consider whether the heighted prudential standards that otherwise apply (set by the Board of Governors) will reduce the probability that the firm's financial distress would pose a material threat to the financial stability of the United States. Indeed all of the Council's designations to date have been made without any Council recommendations for specific heightened prudential standards and before the Federal Reserve has revealed how it will supervise the non-bank financial institutions or what heightened prudential standards the designated firms must satisfy.

There is no requirement in Section 113 that the Council specify what specific characteristics or activities of the non-bank financial firm lead the Council make a designation. The justifications for all of the Council's designations made thus far are vague and lack any specific information that would inform the designated firm or other potential designees of the actions they might take to avoid designation. Should the council take an interest in designating an institution, there is little or no objective information the institution might use to proactively modify its operations, capital, or organizational structure to reduce its "systemic risk" to acceptable levels.

In summary, the legislation that guides the designation process for non-bank financial institutions gives financial firms little or no ability to protect themselves against an arbitrary designation by the Financial Stability Oversight Council. Moreover, the criterion used to designated financial firms will likely vary as administrations and their politically-appointed FSOC representatives change. Since designation has the potential to materially change an institution's regulatory framework as well as the potential to restrict its investments options and business processes, the designation process should be amended to include minimum quantitative standards for designation and a requirement that the Council credibly establish that Federal Reserve supervision and the enhanced prudential standards that will apply reduce the potential for the firm's distress to create financial instability.

Sections 115: FSOC Recommendations for Enhanced Regulation

Section 115 empowers the FSOC to recommend specific enhanced prudential standards for designated financial institutions. The FSOC has authority to recommend that the Board of Governors impose heighted prudential standards on designated firms. These recommendations

can require firm-specific standards and may include enhanced leverage ratio and risk-based capital requirements, liquidity requirements, short-term debt and concentration limits, contingent capital requirements, enhanced risk management requirements, resolution planning and credit exposure reports, and enhanced public disclosure.

Issues Relate to Section 115 Powers

Section 115 includes no guidelines or requirements to constrain the heightened prudential standards that the FSOC may recommend. Indeed Section 115 does not even discuss a process that must be followed to issue a recommendation. For example it is unclear whether the issuance of an FSOC recommendation requires an FSOC vote or the voting majority need for approval. Section 115 lacks any requirement that the FSOC support its recommendation for heightened prudential standards with objective evidence that shows that the recommended standards will successfully limit the firm's ability to destabilize the US financial system should the firm become distressed.

Sections 121: FSOC Discretion to Grant Board of Governors Additional Corrective Powers

Section 121 gives the Board of Governors the authority to request FSOC approval for additional powers that enable it to restrict the activities of a specific designated firm including preventing the institution from entering into mergers, barring it from specific investment activities or offering specific financial products, requiring changes to its business practices, and even requiring divestures if the Council determines that the institution poses a grave threat to US financial stability that cannot be mitigated by other means.

The primary issue raised by Section 121 powers is that Section 121 does not require that FSOC produce specific evidence to demonstrate that its restriction recommendation will curtail systemic risk or improve the stability of US financial markets. Section 121 requires no objective criteria to limit or constrain the FSOC's powers and protect the property rights of the designated financial firm's shareholders and creditors.

Section 165: Enhanced Supervision and Prudential Standards

Section 165 directs the Board of Governors to establish heighted prudential standards that apply to bank holding companies in excess of $50 billion and non-banks financial firms designated by the Council. The Board of Governors is required to set heightened prudential standards for risk-based capital requirements, liquidity requirements, concentration limits, risk management requirements and resolution plans and credit exposure reports. The Board of Governors is also empowered to set standards for short-term debt limits, contingent capital requirements, enhanced public disclosure, or other standards the Board of Governors deems appropriate to mitigate or prevent risks to financial stability that may arise from the distress of a designated company.

Section 165 also requires the Board of Governors to administer annual stress test to bank holding companies with consolidated assets in excess of $50 billion and designated non-bank financial institutions and to publically report on the results. The Board of Governors may use the results of

the stress test to require designated institutions to modify their orderly resolution plans. In addition, Section 165 requires that all financial institutions or holding companies larger than $10 billion with a primary Federal regulator must conduct annual stress tests similar to the Board of Governors stress test and report the results to their primary Federal regulator.

Section 165 also provides the Board of Governors and EDIC with the powers to impose heighted prudential standards on designated firms that do not submit resolution plans that provide for a rapid and orderly resolution under Chapter 11 Bankruptcy in the event the designated firm suffers material financial distress or failure.

Issues Raised by Section 165 Requirements

When does a bank become systemic and require heighted prudential standards?

There is no science evidence that supports a threshold of $50 billion for subjecting bank holding companies to heightened prudential standards. While the factors that are mentioned in Section 165 as potential indications that an institution may be a source of systemic risk—size, leverage riskiness, complexity, interconnectedness and the nature of the institutions financial activities—are reasonable features to consider, there is no economic research that supports the use of a specific thresholds for any of these individual factors to indicate a need for heightened prudential regulation.

As of March 2014, the U.S. has 39 bank holding companies with consolidated assets in excess of $50 billion. Of these, 4 had consolidated assets greater than $1 trillion, 4 had assets between $500 billion and $1 trillion (and none of the 4 are primarily commercial banks), 8 had assets between $200 and 500 billion (5 of these are specialty banks), and 23 had assets less than $200 billion. Of the 23 banks with under $200 billion in consolidated assets, most are almost exclusively involved in commercial banking and many might be characterized as "regional" banks.

There are huge differences in the characteristics of the 39 bank holding companies that are subjected to enhanced prudential supervision by the $50 billion limit imposed under Section 165. Very few of these institutions can truly be considered systemically important. Moreover, for the vast majority of these institutions, their failure could be handled using an FDI Act resolution if the appropriate planning were undertaken using Title I orderly resolution planning authority. There should be no need to invoke Title II. Thus, in my opinion, the $50 billion threshold set for enhanced prudential standards in Section 165 has erred on the side of excessive caution.

Enhanced capital and leverage requirements for designated bank holding companies

The enhanced bank capital and leverage standards required by Section 165 have been enthusiastically supported by many economists and policy makers, and I agree that higher bank capital requirements are appropriate for institutions that are truly systemic. But the class of institutions that is truly systemic is far more restricted than the class prescribed in Section 165.

The enhanced capital and leverage requirements that have been implemented by the Board of Governors are associated with the US implementation of Basel III. These requirements have been designed for use by banks and bank holding companies. They are not appropriate for non-

bank designated firms who are also subject to the heightened prudential requirements under Section 165.

Enhanced capital and leverage requirements for designated non-banks

Section 165 seems to give the Board of Governors the discretion to modify these enhanced prudential requirements and tailor them to more closely fit the businesses of non-bank designated firms. Thus far, the Board of Governors has not modified any of these enhanced prudential standards and argued that the Collins amendment imposes Basel I capital requirements as a minimum standard on all designated companies. Legislation clarifying that the DFA Collins amendment does not apply to insurance companies has passed the Senate and been introduced in the House of Representatives.

Still, the issue of the applicability of Section 165 enhanced prudential standards highlights fundamental weakness in the drafting and implementation of the Dodd-Frank Act. The Financial Stability Oversight Council has designated a number of non-bank financial institutions without either knowing what enhanced prudential standards will apply or assuming that non-banks will have to meet the same standards as bank holding companies. In either case, it is doubtful that the Council's deliberations considered how designation would improve U.S. financial sector stability.

A two-tiered system of bank regulations will stimulate the growth of large institutions

A second issue raised by the imposition of enhance prudential standards on the largest institutions in the banking system is that a two-tiered system of regulations officially recognizes two distinct types of banks: (1) those that are small and can be allowed to fail without social cost; (2) those that are very large and create large failure costs that must be avoided by stricter regulation. Under this system, the smaller banks may benefit from less burdensome regulation. But investors understand that these institutions will be allowed to fail and softer regulations seemingly makes their failure more likely. In contrast, large banks have added regulatory burden, but they also have been explicitly identified by the government as so important that they need additional regulation to ensure their continued existence.

The differences in capital and leverage regulations between small and large banks mandated by Section 165 and implemented as Basel III are mechanical and may not be the decisive factor that differentiates the largest banks. However, the Board of Governors stress test and the resolution plans (joint with the FDIC) mandated by Section 165 include very intrusive correctional powers where the Fed or the FDIC can require extensive operational changes or additional capital at the largest institutions. For the largest institutions, post Dodd-Frank, it is not hyperbole to say the Board of Governors (and to a far lesser extent the FDIC) now have a direct and important role managing the largest bank holding companies.

When the government is intimately involved in planning and approving large bank operations, why wouldn't investors believe that their investments were safer in the largest banks? The enhanced prudential standards imposed by Section 165 contribute to investor perceptions that the largest banks are too big to fail.

Over time, the two-tiered approach to banking regulation will erode the ability of small banks to compete for uninsured deposits and reduce their ability to issue unsecured liabilities. Since Dodd-Frank also prohibits the use of trust preferred securities, small bank options to fund growth beyond their retail deposit bases will be severely limited. As a consequence, Section 165 requirements are likely to encourage additional consolidation in the US banking system as large deposits and assets further migrate into the institutions that are required to meet enhanced prudential standards.

Limits on the use of short-term debt

Section 165 short-term debt limits give the Board of Governors the power to require designated financial firms to extend the maturity of their funding debt (except for deposits, which are exempted from the rule) and restrict the use of short-term collateralized funding including the use of repurchase agreements. Curiously, the deposit exemption is not restricted to fully insured deposits. Banks may issue uninsured deposit without restrictions even though this source of funding is among the most volatile and the first to run.

Short-term debt restrictions limit one of the most visible symptoms of a financial crisis—the inability of financial firms to roll-over their maturating debt. They try to alleviate this problem by requiring that firms have, on average, a longer time buffer before they face the inevitable maturing debt roll-over. But all going-concern debt eventually becomes short-term and must be refinanced.

The idea for short-term debt restrictions is also popular in many post-crisis academic papers that argue that there is an underlying market failure that can be fixed by short-term debt limits. Banks gain private benefit from funding short term because they have a monopoly on issuing demandable deposits and an implicit guarantee advantage in issuing other short-term deposit-like liabilities. The bank benefit is that short-term funding is usually the cheapest source of finance.

The market failure arises when there is a liquidity shock and investors for some reason become unwilling to roll-over banks' short-term liabilities and banks are forced to sell assets to meet redemption requirements. Because many banks are using "excess" short-term funding because of the apparent interest cost savings, they must all shed assets, and this depresses the market price of assets, causing a so-called "fire-sale" decline is asset prices. The decline is asset prices must be recognized by all institutions, even ones that may not be funding with excess short term-debt. And so the lesson from these models is that "asset fire sales" are an externality attached to the over-use of short-term debt, and if regulators restrict bank's ability is fund short term, then the externality can be controlled. Well maybe, but there will be real economic costs that are not recognized in these models.

First, all debt eventually become short term, so limiting the amount of banks and other financial firms short term debt does not remove the issue that all debt must eventually be rolled over regardless of maturity. The economic models that demonstrate "fire sale" externalities are highly stylized and static. In these models, if banks fund long term (in the third and final model period) they do not have to refinance in the second period when the fire sale occurs. By forcing banks to issue claims in the "last" period of the model, the claims magically never have to be refunded in the horizon of interest. While this solves the fire sale problem in these economic models, it does

not fix the real life problem that seemingly far-off future periods have a habit if turning into tomorrow, and debt that was once long-term, becomes short term and must be rolled over.

The "fire sale" models of short-term debt also ignore a large literature in corporate finance that argues that short-term debt is cheaper because it is a mechanism for controlling the risk that the managers of a financial institution (or any corporation for that matter) take. If the manager of a corporation is forced with the discipline of continuously rolling over a significant share of the corporation's funding, then the manager must ensure that the corporations finances are always sound and its debt holders are never surprised by the firm's is investments.

Short-term debt is a bonding device. The need to roll over debt helps to keep the manager from investing in longer-term risky investments with uncertain payoffs unless debt holders are fully aware and approve (i.e. are already compensated) for such investments. If the manager conveys that the firm investments in short term and relatively safe activities, should debt holders learn otherwise, the manager's debt holders may refuse to roll over the debt at existing rates and the manager will be forced to abandon longer term investments before they can (possibly) produce the desired high payoff.

When short-term debt controls the risks the manager takes, investors can charge lower rates. Thus, short-term debt provides cheaper funding in part because it limits borrower risk-taking. Indeed academic many papers argue that, before deposit insurance, banks funded themselves with demandable deposits because depositors required the demandable feature to discipline the bank, since the soundness of the bank's assets could not otherwise be verified by depositors. Deposit insurance largely destroys the risk control benefits of demandable deposits. I say largely because there is evidence that some insured deposits still run.

Thus, there are sound economic reasons for arguing that short-term debt restrictions on designated financial firms may be less advantages than they might seem. Short-term (noninsured deposit) debt controls risk taking, and the current wave of theoretical economic models that produce "asset fire sales" do not consider the risk control benefits of short-term debt. If financial firms are forced to fund themselves longer-term debt, their cost of debt will increase, and either the institutions will absorb these costs and be less profitable or pass these cost on to customers in the form of higher loan rates and lower returns on deposits. Section 165, and indeed the current wave of macroprudential economic models, do not recognize that short-term debt restrictions are likely to have real economic costs on borrowers.

Mandatory Board of Governors annual stress tests

Section 165 Board of Governor stress tests are perhaps the most problematic form of enhanced prudential supervision required by the Dodd-Frank Act. The value of these exercises for identifying and mitigating financial sector excesses is highly questionable, and yet the Federal Reserve System spends an enormous amount of resources on this activity. Indeed senior Federal Reserve officials have argued that Basel regulatory capital rules should be suspended, and the Board of Governors annual stress test should be formally recognized as the means for determining minimum capital requirements for large bank holding companies.

Aside from the confidence of senior Federal Reserve officials, there is no evidence that coordinated macroeconomic stress tests will be effective in preventing future financial crisis. Already, these stress tests have missed the "London Whale" at JPM Chase and a multibillion dollar hole in Bank of America's balance sheet. Fannie Mae and Freddie Mac both passed severe government-designed macroeconomic stress test right before they failed in September 2008. Even before the financial crisis, many countries produced financial stability reports that included bank stress tests and none anticipated or prevented the crisis. Prior pan-European EBA stress tests failed to identify a number institutions that become problematic in short order. Based on the track record to date, stress tests have a pretty poor record for detecting "problem" institutions.

A stress-test based approach for setting bank capital has two gigantic measurement problems. First, the macroeconomic scenario must actually anticipate the next financial crisis. And secondly, regulators must be able to translate the macroeconomic crisis scenario into accurate predictions about actual bank profits and losses.

Few regulators possess the prescience necessary to accomplish this first step. Rewind your clock to 2006 and ask yourself if the Board of Governors would have used a scenario that predicted the housing crisis. It was less than 2 years away, but the Fed did not see it coming. The New York Fed's staff was publishing papers that dismissed the idea of a housing bubble and the Federal Reserve Chairman's speeches argued—worst case—there may be some "froth" in local housing markets. Even as the subprime bubble burst, the new Fed Chairman publicly opined that the economy would suffer only minor fallout.

Even if the Board of Governors stress scenario correctly anticipates a coming crisis, the crisis must be translated into individual bank profits and losses. The problem here is that bank profits and losses are not very highly correlated with changes in macroeconomic indicators. Quarter-to-quarter bank profits do not closely follow quarterly changes in GDP, inflation, unemployment, or any other macroeconomic indication. The best macroeconomic stress test models explain only about 25 percent of the quarterly variation in individual bank profits and losses, meaning that more than 75 percent of the variation in bank profit and losses cannot be predicted using GDP, unemployment, or other business cycle indicators.

Because of these measurement issues, bank loss predictions from macroeconomic stress tests have very little objective accuracy. Even using the best models, there remains a great deal of uncertainty surrounding how each bank may actually perform in the next crisis, presuming the stress scenario anticipates the crisis.

These issues are real and serious and they make macroeconomic stress testing more of an art than a science. There is no formula or procedure that will lead to a single set of stress test bank loss estimates that can be independently calculated by different stress test modelers. Thus, it is not surprising that the Board of Governors and the U.S. banks rarely agree on stress test results. The Fed uses its artistic judgment to produce large losses while the banks' aesthetics favor smaller loss estimates. Both the bank and the Fed are probably wrong, but the Fed's judgment always prevails when it comes to the stress test capital assessment.

The stress test process requires the Board of Governors to be intimately involved in modeling the operations and exposures of each large banking institution. It also requires the Federal Reserve Board to use its own judgment to set each large bank holding company's "stress tested" capital plan. What if the Board of Governors is wrong? How can they let an institution that they are

essentially managing fail? When regulations get so intrusive that the regulator virtually "runs the bank," it becomes difficult for the government to impose losses on the institution's shareholders and bondholders if the institution fails. This precarious situation could easily encourage the Board of Governors to over regulate the largest institutions to ensure that there is never a failure on its watch. This outcome is a recipe for permanently slower economic growth and stagnant financial institutions.

It may not be widely appreciated, but the coordinated macroeconomic stress test approach to regulation encourages a "group think" approach to risk management that may actually increase the probability of a financial crisis. Stress test crisis scenarios have to be specific so that banks and regulators can model the same event. Moreover, the Board of Governors imposes some uniformity in loss rates across all designated banks by using its own stress test estimates. The Board of Governors is very much like a coach or a central planner that tries to ensure some coherence in each designated firms estimates and capital plans. Unintentionally perhaps, by requiring all firms to approach the stress test problem the Board of Governors approve way, the process is encouraging all large institutions to think and operate the same way. What happens when all the largest banks are steeled against the wrong crisis scenario? Could the financial losses generated by a different an unexpected crisis actually be made worse by the coordinated stress test exercise?

The finial Section 165 issue I will discuss is related to the requirement that designated firms file an annual orderly resolution plan. Section 165 directs the Board of Governors and the FDIC to determine whether designated firms' orderly resolution plans are credible or whether they would fail to facilitate an orderly resolution of the company under title 11 of United States Code. However, Section 165 does not provide any specific guidance that constrains the agencies' judgment. There are no specific criteria specified that can be used to identify a credible plan; there are no objective standards that must be met. The credibility of a plan is entirely based on subjective judgments by the Board of Governors and the FDIC.

Title II: Orderly Liquidation Authority

Title II creates a special administrative process similar to the Federal Deposit Insurance Act (FDIA) administrative process for resolving failed banks. Title II also creates a special funding mechanism that can be used to "liquidate failing financial companies that pose a significant risk to the financial stability of the United States in a manner that mitigates such risk and minimizes moral hazard. (Sec. 204 (a))"

Title II is invoked when two-thirds of the serving members of the Federal Reserve Board and FDIC[2] board of directors make a written recommendation for the use of Title II to the Secretary of the Treasury. The recommendation must include:

- A determination that that the financial firm is endanger of default
- A determination that default under the Bankruptcy Code would have a serious destabilizing impact on the financial system
- A summary of the effect of default on financial conditions

[2] If the SIFI is primarily a broker-dealer, The FDIC plays a consultative role and is replaced in its primary role by two-thirds of the sitting members of the Securities and Exchange Commission. If the SIFI is primarily an insurer, the FDIC has a consultative role and the case is made by the FRB and the Director of the Federal insurance Office.

- An assessment of the likelihood of a private sector solution
- An evaluation of why a normal Bankruptcy process would be problematic
- A recommendation for Title II actions to be taken
- An evaluation of likely impacts on counterparties, creditors, shareholders and other market participants.

Based on this recommendation, the Secretary of the Treasury in consultation with the President of the United States makes the final determination to use Title II powers.

When Title II is invoked, the Secretary of the Treasury notifies the distressed financial firm's board of directors that the FDIC will be appointed receiver under Title II of the DFA. Should the board of directors not consent to the appointment, the Secretary of the Treasury can petition the United States District Court for the District of Columbia for an order that appoints the FDIC as receiver. The Court has 24 hours to object to the petition as arbitrary and capricious and provide a reason supporting this determination. Faced with an objection, the Treasury Secretary can amend and refile the petition and continue this process until the Court appoints the FDIC as receiver.

Once a petition is filed, the Court must decide within 24 hours or the FDIC is appointed receiver. Once the FDIC is appointed as receiver, the special resolution process cannot be stayed by the courts. The FDIC has three years to complete its receivership duties, but the time limit can be extended to 5 years with Congressional approval.

Title II assigns the FDIC specific responsibilities that must be satisfied in the resolution process. These responsibilities are summarized in Table 1. Title II allows the FDIC to treat similarly situated creditors differently if it improves recovery values or limits disruptions to the financial system. However, any disadvantaged claimants must receive a recovery at least as large as they would receive in a Chapter 7 bankruptcy. The FDIC also has the power to charter a bridge financial institution to affect the resolution and it can make use of an Orderly Liquidation Fund (OLF) to fund the resolution.[3]

The OLF is an FDIC line of credit with the US Treasury that can be used to fund Title II resolutions. The FDIC can pledge receivership assets to secure funding. Within the first 30 days of the appointment of the FDIC as receiver, Title II limits the amount of OLF funding to 10 percent of the consolidated assets of the distressed holding company as reported on its last available financial statement. After 30 days, the FDIC can borrow up to 90 percent of the fair value of the total consolidated assets of each covered financial company that are available for repayment.

To access OLF funds, the FDIC must secure the Secretary of the Treasury's approval of an orderly liquidation plan, a specific plan for the liquidation of the receivership that demonstrates

[3] The FDIC can move any assets and liabilities of its choosing from the receivership into the bridge financial companies. The bridge financial company is exempt from regulatory capital requirements and all taxes: US, state, county, territory, municipality, or other local taxing authority. The bridge company charter is for two years but can be extended to up to five years.

an ability to amortize OLF loan balances and pay interest consistent with the repayment schedule agreement. The interest rate on the OLF loan will be set by the Secretary of the Treasury, but it must be at least as large as the prevailing interest rate on similar maturity corporate loans.[4]

Should the projected repayment schedule from the receivership be unable to discharge the OLF loan terms within 60 months of the loan origination, the FDIC must follow a prescribed assessment protocol to collect the additional funds needed to discharge the debt. In the protocol, the FDIC first recovers any additional benefits that it paid out to similarly situated creditors in order to maximize the recovery value of the receivership or attenuate systemic risk (Section 210 (o) (D)). If this recovery is insufficient, the FDIC then must impose a risk-based assessment on all financial firms with consolidated assets in excess of $50 billion. Title II includes an extensive list of criteria the FDIC must consider in setting the assessment rate[5] and it requires the Council to produce a "risk matrix" for criteria that the FDIC must take into consideration when setting OLF repayment assessment rates.

Table 1: FDIC Responsibilities Under1 DFA Title II

- Manage receivership to promote financial stability, not to preserve the failed institution
- Ensure that receivership recoveries respect the following claims priority:
    a. Administrative expenses of the receiver
    b. Amounts owed the US government
    c. Employee salary and benefits
    d. Other general or senior unsecured liabilities
    e. Subordinated debt holder claims
    f. Wage & benefits of senior officers & directors
    g. Shareholder claims
- Ensure that the management responsible for SIFI distress is removed
- Ensure that board of directors of the failed institution is removed
- Prohibited from taking an equity interest in the distressed firm or any of its subsidiaries
- Manage the assets and companies in the receivership to maximize the value of the receivership consistent with maintaining financial stability
- Ensure that that the maximum liability imposed on any claimant against the receivership is consistent with the amount that the claimant would have received in a Chapter 7 Bankruptcy
- Develop a plan for repayment of any borrowings from the Orderly Liquidation Fund, including risk-based assessments of financial companies larger than $50 billion and all non-bank designated SIFIs should projections of the bridge financial entity's revenues fall short of the amount needed to repay borrowed OLA funds in full within 60 months of the date these obligations were issued.

[4] The DFA says the interest rate must be at least as large as the prevailing rate on US government obligations of a similar maturity plus and interest rate premium at least as large as the different between the prevailing rate in a corporate bond index of similar maturity and the prevailing rate on US government securities of a similar maturity. The DFA does not specify the credit quality of the corporate bonds that should be used to set a lower bound on the credit spread.

[5] The criteria are given in Section 210 (o) (4). Among the criteria for setting assessment rates is a particularly striking catchall criterion: "any risks presented by the financial company in the 10-year period immediately prior to the appointment of the Corporation as receiver for the covered financial company that contributed to the failure of the covered financial company (p. 1511).

Title II clearly states that distressed financial firms should be resolved through the normal judicial bankruptcy process unless the bankruptcy destabilizes the financial system. To increase the probability that a financial firm can be resolved through a normal bankruptcy process, DFA Title I Sec. 165 requires designated financial firms to submit annual plans that outline a strategy to affect their orderly reorganization under a chapter 11 bankruptcy. The plan must be approved by the Board of Governors and the FDIC, and should objections be raised, designated firms are required to remedy objections and the Board of Governors and FDIC have the power to require any needed changes.

The FDIC Single Point of Entry Title II Resolution Proposal

Title II creates a new Orderly Resolution Authority, assigns the task to the FDIC, and imposes some broad guidelines the FDIC must follow but it does not dictate exactly how the FDIC must resolve a company put into Title II receivership. Title II leaves the FDIC with significant discretion to manage a receivership. To provide clarity to the Title II process, the FDIC has released a proposed strategy for executing a Title II resolution. The strategy envisions taking the top holding company of the distressed financial firm into receivership. This objectives of this "Single Point of Entry" strategy (SPOE)[6] are summarized in the FDIC Federal Register release,

> The SPOE strategy is intended to minimize market disruption by isolating the failure and associated losses in a SIFI to the top-tier holding company while maintaining operations at the subsidiary level. In this manner, the resolution would be confined to one legal entity, the holding company, and would not trigger the need for resolution or bankruptcy across the operating subsidiaries, multiple business lines, or various sovereign jurisdictions. p. 76623.

Under a SPOE Title II resolution, the FDIC will be appointed receiver of the failing institution's top holding company. The FDIC will then charter a bridge financial institution, fire the existing management, hire new management, transfer all holding company assets into the bridge bank (p. 76617), and the bridge institution would function as the new top holding company. The holding company shareholders and most of its liabilities will remain in the receivership to absorb the failed institutions losses.

The FDIC has the power to treat similarly-situated creditors of the receivership differently if disparate treatment is necessary to maximize the return to creditors left in the receivership or to maintain essential operations of the bridge financial holding company. Using this power, vendors and liabilities related to retained employees would be transferred to the bridge holding company so they could maintain continuity in essential vendor and employee services. Also, secured holding company claims would be transferred to the bridge bank along with the collateral assets.

Most of the liabilities of the distressed financial firm's top holding company would be converted into receivership certificates. Since most holding company liabilities would not be transferred

[6] http://www.fdic.gov/news/board/2013/2013-12-10_notice_dis-b_fr.pdf

into the bridge holding company, the new bridge company would be predominately equity funded. With the help of government guarantees using the OLF if necessary, the bridge bank will issue new debt instruments and downstream the proceeds to recapitalize any subsidiaries that suffered losses or replace lost funding so that subsidiaries do not have to shed assets in a "fire sale" to meet redemption demands.

The SPOE is designed to have the equity and debt holders of the parent company absorb all of the losses of holding company subsidiaries, but the FDIC anticipates circumstances when this may not be possible:

> …if there are circumstances under which the losses cannot be fully absorbed by the holding company's shareholders and creditors, then the subsidiaries with the greatest losses would have to be placed into receivership, exposing those subsidiary's creditors, potentially including uninsured depositors, to loss. An operating subsidiary that is insolvent and cannot be recapitalized might be closed as a separate receivership. Creditors, including uninsured depositors, of operating subsidiaries therefore, should not expect with certainty that they would be protected from loss in the event of financial difficulties (p 76623).

Issues Raised by a Title II SPOE Resolution

Most large financial firms that might be subject to Title II are primarily banks

Most of the large financial institutions that might be candidates for a Title II resolution are bank holding companies. For the majority of these institutions, their primary asset is a bank or a subsidiary bank holding company. Figure 1 shows the share of each parent holding company's equity that is invested in a subsidiary, affiliated bank, or a subsidiary bank holding company for all bank holding companies larger than $10 billion in consolidated assets. For most of these institutions, their primary asset is a bank, and even in cases where these institutions have multiple banks or subsidiary bank holding companies, they usually have one large depository institution that holds most of the holding company's consolidated assets and issues most of the holding company's consolidated liabilities. This feature is important because if the bank holding company's largest asset is a big bank, the holding company will only be in financial distress when the largest bank is in distress.

For most Title II candidate firms, parent equity = consolidated holding company equity

To understand how well the SPOE might work in practice, it is instructive to take a closer look at the equity and liability characteristics of bank holding companies larger than $100 billion, banks that might require a Title II resolution. Table 2 reports March 2014 data on all holding companies larger than $100 billion. Two of these holding companies are savings and loan holding companies which have less detailed disclosures reported in the Federal Reserve public data base. The first important point to recognize in Table 2 is that when the equity in the parent holding company is exhausted by losses in its subsidiaries, then there is, at best, only a tiny amount of equity remaining in the consolidated institution.

Table 2 shows that, for most of these institutions, once the parent is facing insolvency because losses exhaust its equity, any equity in its remaining solvent subsidiaries would be consumed by the losses in the holding company's insolvent subsidiaries. So if the parent's equity is exhausted or nearly exhausted when it is taken into a Title II receivership, then parent liability holders must be relied on to bear the receivership losses.

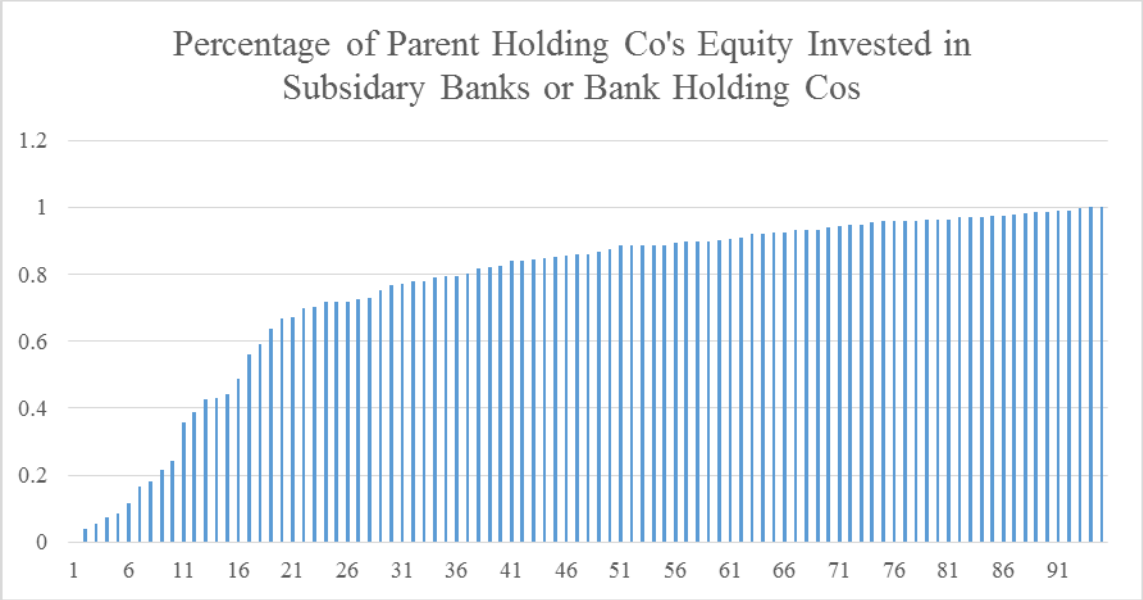

Figure 1: Percentage of parent bank holding company's equity invested in subsidiary or affiliated banks and subsidiary bank holding companies for all bank holding companies largest than $10 billion in consolidated assets. Source: Author's calculation using bank holding company data from the Federal Reserve Board National Information Center. http://www.ffiec.gov/nicpubweb/nicweb/nichome.aspx

In many cases Title II and SPOE will provide larger government guarantees than bankruptcy

To keep a financial firm's subsidiaries open and operating, the FDIC will have to guarantee all the subsidiary liabilities so that counterparties do not undertake additional insolvency proceedings that would suspend subsidiary operations and tie up their assets in additional (potentially foreign) legal proceedings. If the FDIC guarantees subsidiary liabilities, then only the parent holding company's liabilities remain to absorb losses and recapitalize and fund subsidiaries.

The final column of Table 2 shows that, in most cases, the parent's liabilities comprise only a small fraction of the consolidated liabilities of these financial firms. This pattern is most pronounced when the holding company's largest assets are held in subsidiary banks. The implication is that a Title II SPOE resolution will extend government guarantees to the largest majority of the financial firm's liabilities and impose the losses on only a small share of liabilities issued by the consolidated financial firm. This feature creates a government guarantee that is, in many cases, much larger than the government guarantee that would arise when a bank fails and the holding company goes into a commercial bankruptcy proceeding.

Holding Company	Consolidated Assets	Parent Holding Company Total Assets	Parent only Equity as a Percentage of Consolidated Equity	Parent only Liabilities as a Percentage of Consolidated Liabilities
1 JPMORGAN CHASE & CO.	$2,476,986,000	$463,296,000	99.80%	10.80%
2 BANK OF AMERICA CORPORATION	$2,152,533,000	$459,156,000	99.98%	11.83%
3 CITIGROUP INC.	$1,894,736,000	$400,870,000	99.15%	11.42%
4 WELLS FARGO & COMPANY	$1,546,707,000	$292,852,000	99.54%	8.55%
5 GOLDMAN SACHS GROUP, INC.	$915,705,000	$277,360,000	99.65%	23.71%
6 MORGAN STANLEY	$831,381,000	$256,383,098	95.45%	24.87%
7 AMERICAN INTERNATIONAL GROUP, INC.	$547,111,000	$143,344,000	99.44%	8.93%
8 GENERAL ELECTRIC CAPITAL CORPORATION	$516,971,228	$574,047,466	99.48%	113.32%
9 U.S. BANCORP	$371,289,000	$55,108,119	98.39%	3.97%
10 BANK OF NEW YORK MELLON CORPORATION	$368,241,000	$64,103,000	97.48%	7.93%
11 PNC FINANCIAL SERVICES GROUP, INC.	$323,586,973	$45,692,264	96.44%	0.85%
12 HSBC NORTH AMERICA HOLDINGS INC.	$308,847,926	$36,245,589	93.46%	1.97%
13 CAPITAL ONE FINANCIAL CORPORATION	$290,886,180	$54,978,022	100.00%	4.91%
14 STATE STREET CORPORATION	$256,672,720	$30,430,990	99.98%	3.89%
15 TEACHERS INSURANCE & ANNUITY ASSOCIATION OF AMERICA*	$252,936,464	$252,936,464	NA	NA
16 TD BANK US HOLDING COMPANY	$237,493,754	$34,023,813	98.05%	4.37%
17 BB&T CORPORATION	$184,651,158	$33,770,316	99.60%	6.40%
18 SUNTRUST BANKS, INC.	$179,553,408	$28,966,042	99.42%	4.61%
19 AMERICAN EXPRESS COMPANY	$151,497,000	$33,256,685	99.95%	10.10%
20 ALLY FINANCIAL INC.	$148,452,000	$45,224,000	99.99%	22.96%
21 CHARLES SCHWAB CORPORATION	$144,066,000	$12,794,000	100.00%	1.49%
22 STATE FARM MUTUAL AUTOMOBILE INSURANCE COMPANY*	$132,022,280	$132,022,280	NA	NA
23 FIFTH THIRD BANCORP	$129,654,487	$20,607,584	99.74%	5.04%
24 UNITED SERVICES AUTOMOBILE ASSOCIATION	$127,322,366	$35,300,145	100.35%	9.99%
25 RBS CITIZENS FINANCIAL GROUP, INC.	$127,295,624	$21,021,496	100.00%	1.46%
26 REGIONS FINANCIAL CORPORATION	$118,136,516	$18,363,716	100.00%	2.19%
27 BMO FINANCIAL CORP.	$114,499,474	$19,357,799	99.96%	5.27%
28 SANTANDER HOLDINGS USA, INC.	$109,168,077	$20,992,661	82.90%	3.53%
29 UNIONBANCAL CORPORATION	$107,237,659	$15,228,926	98.29%	0.83%
30 NORTHERN TRUST CORPORATION	$103,832,578	$11,352,157	100.00%	3.55%

* Indicates savings and loan holding company which have limited data collected in regulatory reports.

Table 2: Equity and liability characteristics of bank and thrift holding companies with consolidated assets in excess of $100 billion. Source: Author's calculations calculation using Federal Reserve Board holding company data. http://www.ffiec.gov/nicpubweb/nicweb/nichome.aspx

Holding company minimum debt regulations will be as complicated as Basel capital regulations

If the FDIC plans to keep subsidiary entities open and operating to maintain financial stability, and the SPOE is the resolution strategy, then Title II is likely to expand the government safety net beyond what would happen in a bankruptcy proceeding. The FDIC and Board of Governors position on this critique is that the agencies will in time craft new debt requirements for the parent holding company to ensure that it has an adequate stock of senior and subordinated debt to absorb substantial losses. But crafting holding company minimum debt requirements is a process that is analogous to the process of calculating regulatory capital requirements. The development of regulatory capital requirements has taken tremendous regulatory and bank resources, not to mention more than 15 years of development time. Moreover, holding company minimum debt requirements will also have international competitive implications if large foreign banks do not face similar requirements. This sets up the case for another yet another Basel process to set international requirements for holding company debt issuance.

The OLF is a new guarantee fund that conflicts with the deposit insurance fund

If the parent holding company liabilities are insufficient to support receivership losses and distressed subsidiary recapitalization needs, the FDIC will have to use the OLF to fund the receivership. This will require an FDIC assessment of all financial firms with consolidated assets larger than $50 billion to fund the receivership.

While it has not been widely discussed since the passage of the DFA, the OLF Title II mechanism sets up a new government guarantee fund. Under the SPOE, it will guarantee all but the parent holding company liabilities of the failing financial firm unless the FDIC decides to put some subsidiaries into default. Unless there are some operational details yet to be released, resources from the OLF will be available to guarantee deposits at a bank subsidiary. Consequently, Title II creates a conflict of interest between banks that support the deposit insurance fund and larger institutions that will be assessed to fund the OLF. This conflict becomes transparent when considering a SPOE resolution for a bank holding company whose primary asset is a single large bank.

Among bank holding companies with consolidated assets greater than $50 billion, there are 13 institutions that own a single bank subsidiary. Selected characteristics of these institutions are reported in Table 3. Of these institutions, only Goldman Sachs and Ally Financial have significant investments in non-bank subsidiaries. Investments in the operating subsidiaries in the remaining 11 holding companies are concentrated in the holding company's single bank. If any of these holding companies is in distress, their bank must also be failing. If any of these designated institutions becomes distressed and imperils the financial stability of the US financial system, then the Secretary of the Treasury and the President must make a decision whether to put the distressed firm through an FDIA resolution, or invoke Title II and use a SPOE resolution. This decision has important consequences.

An FDIA bank resolution resolves the bank using the FDIC's long standing administrative resolution process. Under this process, the failed bank's shareholders and senior and subordinated debt holders bear the institution's losses. Deposit protection, if needed, is provided by the deposit insurance fund, a fund that is built from assessments on all insured banks. Under an FDIC bank resolution, the holding company equity holders will suffer very large losses, and the holding company is often forced to reorganize in bankruptcy. Holding company senior and subordinated debt holders may have a better experience, and indeed they may even suffer no loss in bankruptcy.[7]

Under a Title II resolution, the investors that own senior and subordinated debt in the bank will be fully protected under the SPOE strategy. Bank deposits, insured and uninsured, will also be fully protected under a Title II resolution. The SPOE will impose losses on investors in senior and subordinated holding company debt holders if the receivership losses cannot be fully absorbed by the holding company's equity. Any additional losses and recapitalization needs that cannot be covered by the holding company debt will be borrowed from the OLF. Repayment of these OLF funds will be assessed against any financial firm with assets greater than $50 billion.

[7] For example, the senior and subordinated debt holders in WAMU bank suffered large losses while the senior and subordinated debt in the holding company had a 100 percent recovery on their securities.

With Presidential approval, Title II empowers the Secretary of the Treasury to change property rights without prior notice, public debate, or Congressional action.

The decision to use an FDIC Act resolution versus a Title II SPOE resolution has important consequences for investors. While holding company bankruptcy and FDIA resolutions are the presumed status quo where bank debt holders bear losses and bank holding company debt holders have a better chance of recovery, the Secretary of the Treasury and the President can, quickly and without public debate or Congressional approval, change the rules.

If Title II is invoked, losses are shifted onto holding company debt holders, and bank deposits, investors in bank debt, and the deposit insurance fund are fully protected against any losses. Title II allows the President and his appointed Secretary of Treasury to completely change property rights and shift losses among distinctly different investors without prior notice, public debate, or any vote from Congress.

Institution	Parent holding company liabilities	Bank liabilities	Parent liabilities as a percentage of bank liabilities
Goldman Sachs	$198,261,000	$84,341,000	235.07%
US Bancorp	$13,054,119	$326,154,482	4.00%
PNC Financial Services	$2,371,454	$274,311,095	0.86%
State Street	$9,158,101	$232,239,094	3.94%
BB&T	$10,311,260	$158,039,434	6.52%
Suntrust	$7,275,141	$153,490,040	4.74%
Ally Financial	$30,765,000	$82,572,057	37.26%
Fifth-Third	$5,781,902	$111,360,115	5.19%
Regions	$2,504,733	$101,004,081	2.48%
Northern Trust	$3,403,814	$96,299,648	3.53%
Key Corp	$3,349,783	$78,597,573	4.26%
Huntington Bancshares	$1,600,186	$54,774,690	2.92%
BBVA	$122,173	$63,120,164	0.19%

Table 3: Selected characteristics of bank holding companies with consolidated asset in excess of $50 billion with a single subsidiary bank. Source: Author's calculations calculation using Federal Reserve Board holding company data http://www.ffiec.gov/nicpubweb/nicweb/nichome.aspx and FDIC Statistics on Depository Institutions http://www2.fdic.gov/sdi/index.asp

Unless the holding company has specific characteristics that are uncommon among the largest holding companies, invoking Title II has the potential to provide government guarantees far in excess of those that might be in force under an FDI Act resolution. The last column of Table 3 reports the liabilities of the parent holding company as a percentage of the subsidiary bank liabilities. Except for Goldman Sachs and Ally Financial, a Title II SPOE resolution would impose losses on only a very small fraction of liabilities issued by the consolidated holding company. If the bank subsidiary liabilities were protected by the SPOE, it is probable that a large share of the holding company's losses would be borne by the firms that must contribute to the OLF.

Title II provides inadequate funding to prevent asset "fire sales"

The SPOE raises a few additional issues. Under Title II, access to OLF funds are limited to 10 percent of the value consolidated assets of the failed financial firm as reported on its last financial statement. After 30 days, or when the FDIC completes an assessment of the market value of the receiverships' assets, OLF funding can increase to up to 90 percent of the market value of assets available to fund the receivership. The 10 percent cap on SPOE funding raises some important issues.

It is highly unlikely that a large financial institution fails because it prepares its financial statements and discovers that it is undercapitalized. Instead, long before financial statements reflect true distressed values, market investors lose confidence and withdraw funding from the firm. The firm ultimately suffers a liquidity crisis that forces it to find a buyer or to reorganize. In the case of Wachovia and WAMU, somewhere close to 10 percent of their depositors "ran" in the weeks before they failed. Thus, history suggests that a large financial institution that is in danger of failing will have losses that require capital injections, but they will also face funding withdrawals that must be replaced if they are to avoid asset "fire sales."

When the FDIC is required to quickly replace funding withdrawals and inject capital using the OLF, the 10 percent funding cap could become an important impediment. To avoid the cap, the FDIC may have to revalue the receivership assets quickly and then request funds in excess of 10 percent of holding company's initial consolidated assets. In reality, the FDIC does not have the capacity to value receivership assets that quickly, especially if the failure is a surprise. While I believe that the 10 percent funding cap is an example of good Congressional governance on paper, in practice, the FDIC will likely be forced into a speedy and less than rigorous revaluation because it will have access additional OLF funding in the early days of a Title II receivership.

How will Title II work when and a bank subsidiary is simultaneously being resolved under the FDI Act?

Some of my criticisms of the SPOE have been anticipated in the FDIC Federal Register proposal where the FDIC reserves the right to take the subsidiary bank or non-bank subsidiaries into separate receiverships:

> …if there are circumstances under which the losses cannot be fully absorbed by the holding company's shareholders and creditors, then the subsidiaries with the greatest losses would have to be placed into receivership, exposing those subsidiary's creditors, potentially including uninsured depositors, to loss. An operating subsidiary that is insolvent and cannot be recapitalized might be closed as a separate receivership. Creditors, including uninsured depositors, of operating subsidiaries therefore, should not expect with certainty that they would be protected from loss in the event of financial difficulties (p 76623).

It is unclear how this policy would work when a large financial holding company is predominately comprised of a large bank, especially of the bank is internationally active. The overarching goal of the SPOE's is too keep critical subsidiaries of the holding company open and operating to facilitate global cooperation, prevent "ring-fencing," multiple competing insolvencies, and counterparty reactions that create operational difficulties and systemic risk. The resolving the large bank subsidiary would certainly create the problems SPOE tries to avoid.

The FDIC's SPOE proposal does not explain how a Title II resolution would work when it is paired with a FDIA resolution of a bank subsidiary. It is unclear how losses will be allocated between bank and holding company creditors and between contributors to the deposit insurance fund and the OLF. It is also difficult to envision how the FDIC might be able to close a very large internationally active bank subsidiary, and impose losses on its creditors, while keeping it open and operating and out of extra-national bankruptcy proceedings.

Does Title II work in a true financial crisis?

The last and biggest issue is how Title II and the SPOE would work when multiple large financial firms are simultaneously in distress. Would SPOE be used to simultaneously to resolve multiple large financial institutions through bridge banks? How different is this from nationalizing these banks which could comprise a large part of the banking system?

Title II and SPOE do not fix the too-big-to-fail resolution problem in a true financial crisis when the distress of large financial institutions is mostly likely to arise. In my judgment, Title II complicates and compounds the too-big-to-fail issue at times when a single large institution fails in isolation without providing a practical solution in a financial crisis when many large financial firms are likely to be distressed simultaneously.

If Not Title II and SPOE, then What?

I have argued that Title II implemented using SPOE does not fix the too-big-to-fail problem and instead introduces many new complications into the resolution process. There may be better policies available to deal with the distress of a large systemically important financial institutions and I briefly discuss some of these options.

Mandatory contingent capital

I would argue that a requirement for large institutions to fund themselves with an adequate buffer of contingent capital is probably a better solution than SPOE. First, it is useful to realize that SPOE operates similarly to a contingent capital buffer, only the Secretary of the Treasury decides when to trigger the conversion of debt into equity, and to date, no requirements have been issued that force designated holding companies to issue a minimum amount of senior or subordinated debt that might be converted.

Under Title II and the SPOE, neither investors in holding company debt nor investors in the senior and subordinated debt of the subsidiary bank know whether they will be called on to convert their debt claims into an equity claim against the receivership. As a consequence, both groups of investors will demand a risk premium for the additional uncertainty.

Contingent capital, or a requirement to issue so-called "co-cos" would solve many of the problems associated with SPOE. Its issuance would be required by all designated firms *ex ante* and not just required *ex post* in a Title II resolution. Presumably co-cos would be required at the holding company level so that all designated firms are treated through the same recapitalization mechanism. Conversion triggers should be explicit and written into the contingent capital contract terms before bonds are sold, so that investors have the best available information to price the securities correctly. Provided issuance requirements are sufficient, co-cos would avoid the need to use of the OLF.

To the best of my knowledge, European approaches for requiring contingent capital do not require immediate management removal. Managers may continue to serve (or not) according to the preferences of the shareholders after conversion. DFA requires managers and directors to be fired and replaced in a Title II resolution. To satisfy this requirement, the FDIC claims it will have a collection of vetted managers waiting to run a SPOE bridge institution. This claim seems a bit of a stretch. There are probably few people with such a capability, and my guess is that they are already fully employed and well compensated.

Unlike the SPOE, it is easy to envision how contingent capital might work in a financial crisis when many designated firms simultaneously approach distress. Multiple conversions would recapitalize designated institutions without the need to resort to simultaneous Title II resolutions.

There are still many unresolved issues related to the use of contingent capital to solve the too-big-to-fail problem. Foremost among these is the design of appropriate conversion triggers. Triggers should be based on objective criteria and not left to the discretion of regulators. A second issue is what happens if you need a resolution mechanism after conversion is triggered? Even allowing that open issues remain, still I think that contingent capital is a more practical solution relative to Title II and a SPOE resolution.

Using Title I to fine-tune FDIC large bank resolutions

Historically, when large banks fail, the FDIC arranges a whole bank transaction in which a larger, typically healthier bank, assumes all the deposits and most if not all of the institutions assets. Sometimes the FDIC uses a loss share agreement to partially cover losses on the failed bank assets that are of questionable quality. A whole bank transaction was used to resolve WAMU, the largest bank failure in US history, without cost to the deposit insurance fund.

The problem with whole bank resolutions is that there needs to be a bigger heathier bank to purchase the failing institution, and even when one exists, if a sale is successful, it creates a new larger institution. One step toward fixing the too-big-to-fail problem, is to require the FDIC to break up failing banks when they sell them in a normal FDI Act resolution.

There are costs associated with changing the public policy priorities in an FDIC resolution. Whole bank purchases often impose the least cost on the deposit insurance fund because bidders value acquiring the entire franchise intact. It may be costly and require significant time and resources to separate and market large failing banks piecemeal. For example, it may be difficult to identify all bank operations associated with a single customer relationship, and more difficult yet to package these customer relationships into sub-franchises that are readily marketable. But the added resolution costs are costs that must be born to avoid creating too-big-to-fail banks through the resolution process. Indeed the FDIC SPOE envisions a similar process in a Title II resolution.

There may be practical ways to reduce the cost of requiring the FDIC to break up large banks in an FDIA resolution. For example, the FDIC could be required to use Title I orderly resolution planning powers to require organizational changes within the depository institution that would allow the institution to be more easily broken apart in a resolution. This may involve organizational changes to information systems, employee reporting lines or other process to ensure that the bank has the capacity to conduct key operations in house and is not relying on

venders or consultants in a manner that would inhibit the break-up of the institution in a resolution process.

There are many complicated, complex, and potentially costly issues that must be solved before a large bank could be successfully dismantled and sold in pieces in an FDIC resolution. However, these issues are a subset of the issues the FDIC must solve if it is to undertake a Title II resolution of the largest, most complex and internationally active institutions and downsize them in the resolution process.

Once large regional banks can be managed and downsized in the course of a normal bank resolution, there would no longer be a case to require these banks to meet heightened prudential capital, leverage, stress test, or other regulatory standards prescribed by Section 165 (excepting the requirement to submit a satisfactory orderly resolution plan). Improvements in the resolution process can substitute for overly-rigorous prudential regulations that limit economic growth.