January 16, 2011

Identifying and Regulating Systemically Important Financial Institutions: The Risks of Under and Over Identification and Regulation

Douglas J. Elliott and Robert E. Litan[1]

Context for this Policy Brief

Certain financial institutions are so central to the American financial system that their failure could cause traumatic damage, both to financial markets and to the larger economy. These institutions are often referred to as "systemically important financial institutions" or SIFIs. Among its numerous provisions, the Dodd-Frank Act, the comprehensive reform legislation signed into law during the summer of 2010, requires financial regulators belonging to the Financial Stability Oversight Committee (FSOC)[2] to designate those financial institutions that are systemically important.[3] Such SIFIs are to be supervised more closely and potentially required to operate with greater safety margins, such as higher levels of capital, and to face further limitations on their activities.

Dodd-Frank designated all commercial banking groups with $50 billion or more in assets as SIFIs, but left the decision about which non-bank financial institutions should receive that designation up to the FSOC, with advice from the Federal Reserve Board (Fed).

This policy brief is intended to assist the Fed and the FSOC with this difficult task. We pay particular attention to the risks of including too many or too few institutions as SIFIs, as well as touching on the related risks of over- or under-regulating SIFIs. As with so many issues related to financial regulation, the key is to strike the right balance, allowing financial institutions to respond as they see fit to market forces and customer demands, except where there is a true public interest in constraining that response.

---

[1] Douglas Elliott is a Fellow in the Economic Studies Program at the Brookings Institution. Robert E. Litan is a Senior Fellow in the Economic Studies program at Brookings and Vice President for Research and Policy at the Kauffman Foundation.

[2] Members of the FSOC include the Treasury Secretary (chair), the Chairman of the Federal Reserve System, the Comptroller of the Currency, the Chairman of the Federal Deposit Insurance Corporation, the Chairman of the Securities and Exchange Commission, the Chairman of the Commodities Futures Trading Commission, the Director of the Bureau of Consumer Financial Protection, the Director of the Federal Finance Housing Agency, the Chairman of the National Credit Union Administration Board, a member with insurance expertise designated by the President and confirmed by the Senate, and various non-voting members (such as a representative of state bank regulators).

[3] There is some ambiguity in the legislation as to whether all systemically important financial institutions must be designated as such, or only those where the FSOC feels it is necessary to do so. Section 113(a)(1) uses the term "may" whereas Section 112(a)(12)(H) indicates a requirement.

The Sources of Systemic Risk

Although there are many definitions of "systemic risk" there seems to be little consensus about the term. Some examples of definitions, including one contained in Dodd-Frank itself, are provided in the appendix.

For our purpose here, we believe a workable definition refers to any one of a multiple set of events in the financial sector whose combined consequences are sufficiently large that they would contribute to a substantial decline in real economic activity. We further believe that it is useful to focus on two sources of systemic risk: the failure of one or more large "systemically important financial institutions" that trigger domino or contagious effects on other economic actors, or the popping of an "asset bubble" (typically one fueled by leverage) that has similar consequences. The two sources or triggers of systemic risk can be intertwined, as we saw in the recent mortgage-related financial crisis, but they need not be. For example, the 1929 stock market crash triggered a loss of confidence that eventually so permeated the financial and economic system that many financial and non-financial "dominos", large and small, fell, taking the economy down with them.

Systemic Risk from Certain Financial Institutions

There are multiple ways in which a financial institution can be systemically important – by its size, the degree to which to which it is "interconnected" with other parties, or conceivably by its reputation and thus influence in financial markets. There is also considerable disagreement among analysts about what thresholds should trigger a designation of the institution as being systemically important. But despite the disagreements about identification, the central common concern is to home in on any financial institution systemically important enough that its failure would somehow cause or at least threaten to cause serious damage to the financial system, and thereby to the rest of the economy. The sources of that damage could be any one or more of the following, and perhaps others as well:

Counterparty and other credit risks. One of the most obvious concerns is that when a SIFI goes under, it may impose substantial, if not crippling, losses on other financial institutions and parties who are owed money by the institution. Such losses can mount if the various "counterparties" cannot then repay each other. The systemic problem arises because financial counterparties, like the SIFIs themselves, are often highly leveraged institutions, so that a sizeable loss may significantly impair their net worth. By definition, lending by highly levered institutions is governed to a major extent by how much capital (effectively net worth) they have in relation to their loans or other outstanding credit exposures. A major loss by one or more SIFIs that leads to a cavalcade of losses at other counterparties could thus significantly cut back total credit available in the economy, eventually causing a significant contraction (or at the very

least a significant cut in the rate of growth) in the activity of the "real sector" of the economy – the non-financial institutions that make and service things and that often depend on credit to continue operating.

Contagion. Sometimes the principal damage from the collapse of a financial institution comes from serving as a "bad example" that causes the market to reassess which other organizations might wind up in the same difficulties. This is a particular problem with financial institutions, since they show a distinct "herding" behavior in that many of them follow similar business strategies or make similar bets on housing or other asset categories or business sectors. This creates a systemic exposure to the possibility that an event will cause an abrupt change in the industry's views and trigger a stampede in the opposite direction by creditors and other parties.

Thus, one of the most damaging effects of the Lehman bankruptcy was that a number of other investment banks were viewed by the markets and customers to be in a similar position to Lehman's. Their credit became suspect not primarily because they were exposed to losses from Lehman, but because a new set of risk factors came to the fore in the market's psychology. This contagion effect is exaggerated by the potential for a "fire sale" mentality to take hold after a crisis has happened, when many institutions try simultaneously to reduce their exposure to particular asset classes, even if it requires taking a major loss in order to induce someone new to buy into the market.

Problems with deposit-taking activities. One of the key reasons that banks are regulated so highly in the first place is that consumers and businesses place deposits with them which they count upon to be readily available and riskless. There can be severe economic disruptions if depositors were to find that the funds they placed with the institution suddenly were not available to them. Historically, "bank runs," where a wave of simultaneous depositor withdrawals sinks a number of banks, were major causes of national and regional recessions. Deposit insurance from the Federal Deposit Insurance Corporation (FDIC) has largely ended runs on insured banks in the US[4]. However, non-bank financial institutions operating in a similar manner could create severe economic disruptions if their suppliers of short-term funds, the equivalent of depositors, were to panic. This kind of "run" – which hit large investment banks and finance companies during the recent financial crisis – is closely related to the contagion effects described above.

Maturity mismatches. Financial institutions often operate by "borrowing short and lending long", since the interest rates on short-term borrowings are typically below the interest rates earned on longer-term loans and other assets. Indeed, the deposit-taking activity described above inherently creates such a maturity mismatch unless the deposit funds are invested in extremely short-term instruments. While the maturity mismatch strategy can, and frequently does, work well, it is exposed to the risk of a sudden liquidity freeze which makes it highly

[4] Although there were some isolated instances during the recent financial crisis.

expensive, if not impossible, for institutions to "roll over" their short-term liabilities. If this occurs, and the institutions have insufficient cash or other liquid assets to repay the firms' obligations as they come due, then failure is all but assured. Excessive maturity mismatches of this type thus can become a systemic problem if they are too widespread or if one or a handful of systemically important institutions get caught operating this way, interacting with other problems that can lead to a system-wide crisis.

Market utility interruptions. Some institutions play a central role in the day-to-day functioning of financial markets. For example, it is widely understood that because of their custodial activities, State Street and BNY Mellon sit at the center of so many transactions that the damage done by a potential failure of either organization would be much larger than their asset size would suggest.

The relationship of the size of an institution as measured by its balance sheet and its contribution to systemic risk varies with the potential risk factor. Straightforward credit risk has a strong correlation with size, although the degree of concentration among an institution's creditors also matters. (The failure of a big institution that hurts a wide range of other institutions a little bit is not as bad as a failure which directly cripples a few other large lenders.) Contagion bears some relationship to size, since bigger institutions receive more attention, but mostly has to do with whether the business model or strategy of these institutions is shared by a number of other market participants. Accordingly, depositors or other funders of institutions that are similarly situated to one or more institutions that run into trouble will be more likely to run than if the institutions are widely understood to be substantially different. Similarly, market utilities (such as custodial banks, stock exchanges or clearinghouses) may not have relatively large balance sheets, but may still be at the center of a large number of transactions whose interruption could cause uncertainty and perhaps panic.

These various sources of vulnerability can remain dormant for years at a time until triggered by a shock of one kind or another. Some shocks could be idiosyncratic, such as the discovery of particularly bad lending at one institution or the death of a domineering CEO that shakes confidence in a firm. Most shocks, however, are more widely based. They can result from problems in the "real economy," such as a recession. Or they can result from problems peculiar to the financial sector, including changes in market psychology that cause prices for houses, or stocks, or foreign currency to move sharply.

Systemic Risk and Asset Bubbles

Many of the worst financial crises, including the most recent one, have been associated with a combination of asset price bubbles and an excessive growth in credit in the economy. The combination of both factors is especially troublesome. Asset bubbles that are not financed principally by credit, such as the Tech Bubble in the stock market in the early part of the last decade, tend to do considerably less damage when they burst, both to the financial system and

to the economy as a whole than bubbles that are financed by credit. By the same token, in principle, excessive credit growth that supports sound investments should also be relatively unthreatening when credit expansion slows or stops. This may be a fairly theoretical point, though, since truly excessive credit growth is almost always associated with an increase in speculation and excessive risk-taking in unproductive or inefficient activities or assets.

The foregoing expression of concern about credit-financed asset bubbles is not just 20-20 hindsight stemming from our experience of the recent crisis. Analysis by David Aikman and colleagues at the Bank of England[5] showed that about three-quarters of the serious financial crises in Anglo-Saxon countries were preceded by credit booms. A number of other studies have reached broadly similar conclusions that asset bubbles associated with credit booms frequently lead to severe financial crises[6]. Thus, it is both sensible and natural to give particular thought to systemic risk related to, or exacerbated by, credit-financed asset bubbles.

The bursting of an asset bubble could in theory cause system-wide damage even if no SIFI were placed in serious danger. In practice, however, it would be very hard to develop the toxic combination of excessive credit growth and an asset price bubble without pulling in many, if not most, of the largest financial institutions which dominate credit provision. The first domino to fall may be a relatively small one, such as happened during the recent crisis in the UK with the failure of the Northern Rock bank, but the effects generally spread so devastatingly because of the loss exposures at the largest institutions to the bursting of the asset bubble.

It is important to distinguish the kind of system-wide effects seen in the recent credit-financed asset bubble from the less severe, though significant, damage during the savings and loan crisis of the 1980s. During that period, well over half of the thrift industry eventually went out of business, largely because of excessively risky commercial mortgage and business loans – activities that were not central to the core mission of these institutions, which were initially chartered to extend residential mortgages. Not only were the thrifts inexperienced in these new activities, but they were allowed to engage in them with thin or even non-existent capital cushions, which had previously been wiped out by a large maturity mismatch of assets and liabilities earlier that decade. Hoping to save money by not closing the many insolvent thrifts in the early 1980s, regulators (and Congress) engaged in a massive program of forbearance that ultimately proved very costly to the federal government, but not nearly as costly as the most recent mortgage related crisis. The central reason for the difference is that the S&L crisis did not involve SIFIs, but rather many smaller institutions that were not deeply interconnected with the rest of the financial system.

---

[5] Speech by David Aikman, Andrew G. Haldane, and Benjamin Nelson in November 2010 entitled "Curbing the Credit Cycle," presented at the Columbia University Center on Capitalism and Society Annual Conference. The citation is from page 20.

[6] See, for example, various papers by Kenneth Rogoff and Carmen Reinhart and their book, *This Time It's Different: Eight Centuries of Financial Folly*, as well as Chapter 3 of the IMF's Fall 2009 World Economic Outlook.

In contrast, during the same decade, the major money center banks in the United States – almost all that today would be considered to be systemically important – were close to or near insolvency because of large losses in their lending to sovereign governments (and to a lesser extent to commercial real estate developers and sponsors of leveraged company buyouts). Fearing a systemic meltdown, perhaps analogous to what almost happened during the most recent financial crisis, regulators granted these institutions forbearance too, but also tightened up their supervision of their activities. Eventually, the banks at issue earned their way out of their financial difficulties, though not without Citigroup having a near brush with insolvency in the early 1990s (certain other large banks did fail, the largest being the Bank of New England).

In sum, policy makers should take extra caution about potential sources of systemic risk that may be associated with rapidly growing asset bubbles, financed by credit. Property lending repeatedly recurs as a major source of such systemic risk, both residential mortgage activity and that in the commercial sector, with construction loans being particularly dangerous. In designating non-bank financial institutions as systemically important – the subject we address next -- regulators thus would be wise to pay special attention to the larger ones engaged in this type of lending.

Identifying SIFIs

Identifying which institutions are systemically important will not be an easy task and it is made all the harder by the fact that systemic risk is not constant. A particular institution may not be systemically significant even under many crisis scenarios, yet may be critical in certain other cases. Nonetheless, the FSOC has a responsibility to identify SIFIs, taking a balanced view of the risks facing the overall system.

As we have noted, commercial banking groups with more than $50 billion in assets are effectively already defined in Dodd-Frank as SIFIs. It is quite unlikely that any banks of smaller size would be designated as SIFIs, although it is theoretically possible if the financial system evolves in some surprising manner that would justify including somewhat smaller banks.

The key designation questions therefore revolve around non-banks. There are several major categories of non-banks that could theoretically be caught in the net; the considerations that could lead to their designation are discussed briefly below.

Bank holding companies and other affiliates of commercial banks. These are technically non-banks, but either own one or more commercial banks or are owned by a common parent. If the group associated with a commercial bank has at least $50 billion in assets, it would automatically be included in the Dodd-Frank definition of a SIFI.

Banking groups that are not affiliated with a commercial bank. There are a number of other financial institutions engaged in banking-type activities under charters different from the commercial bank charter. These include savings and loans and industrial loan companies, for example. It is quite likely that the same $50 billion threshold will apply, but the final answer is not yet clear.

Finance companies. Until the recent crisis, there were a number of major lenders to consumers and small businesses which financed themselves by issuing short to intermediate term debt in the wholesale financial markets, in contrast to commercial banks that raise their funds primarily with insured deposits. When financial markets froze, this finance company business model proved to be too risky, except in special circumstances, since it exposed the firms to the danger that they would be unable to "roll over" their debts. Borrowing short-term and lending long-term only works if the ability to borrow short-term is not interrupted for any extended period. The recent crisis showed once again that such liquidity freezes occur too frequently to be assumed away.

Smaller finance companies may not pose a systemic risk if they fail, since in a crisis the markets may still be willing to fund their larger competitors. However, when large finance companies are threatened with failure, they may indeed pose systemic risks. This may even be the case with the few finance companies that have ties to large, highly creditworthy parents, such as General Electric, since the markets may infer that if such companies can fail, others that do not have such ties may be in even greater danger. Because of the risks of the finance company business model that were revealed in the recent crisis, a number of the solvent finance companies that have survived have converted to bank status in order to have access to insured deposits even in difficult economic conditions.

Investment banks and broker/dealers. The nation's largest investment banks are now affiliated with commercial banks and would automatically be designated as SIFIs. However, there are many smaller investment banks, as well as a number of securities broker/dealers which do not undertake significant investment banking activities. In general, these are not likely to have sufficient size or interconnections to be considered SIFIs.

Life insurers. Some life insurance entities already own or are affiliated with banks that collectively cross the $50 billion asset threshold and will therefore automatically be pulled into the ranks of SIFIs. Others are so large that their sheer size makes them obvious candidates since other financial institutions will have major credit exposures to them. On the other hand, the types of activities they undertake tend not to be as risky for the system, especially since they are generally funded by quite long-term liabilities, such as life insurance policies and annuities that have substantial fees for early surrender. In general, the systemic risk created by a life insurer is likely to be considerably less per dollar of asset size than would be true for a bank, taking into account probabilities rather than just worst cases. However, each case must be examined on its

own merits and regulators must watch out for the development of activities at one or more life insurance groups that might spawn greater systemic risk in the future.

Hedge funds. These funds cover a very wide range of activities, most of which would not warrant SIFI designation. If any do, it would almost certainly be because they operated with quite significant amounts of financial leverage and were of considerable size (as was LTCM in the late 1990s before the Fed helped arranged a private sector reorganization). The combination of size and leverage could generate sufficiently large credit exposures for other SIFIs to merit inclusion of these funds or they might exacerbate other potential sources of risk, including contagion.

Other fund models. Two other important fund business models are venture capital (VC) and private equity (PE) funds. Both typically operate as general partnerships, with limited partners as the principal source of funds. Both use these funds, collected from the LPs over a lengthy period (often as long as 10 years) in "capital calls", to make illiquid investments in companies (relatively new ones in the case of VCs) or mature, often under-performing firms (for PEs), with the intention of "exiting" at a profit several years later, either through an initial public offering (IPO) or sale to another firm. VCs generally do not use leverage, and neither do many PEs (though some do).

The VC structure does not raise systemic risks. There can be no "run" by the LPs even if the investments turn sour, although in difficult times, some LPs may have difficulty meeting their capital calls and thus may be forced into fire sales of their LP interests. Even in that event, VCs do not liquidate their underlying investments, nor is there a material risk of contagion. Simply put, VCs should be not be designated as SIFIs.

The same reasons create a presumption against SIFI designate for PEs, though there can be exceptions. Large, highly leveraged private equity firms can resemble banks, with highly illiquid assets and debts that cannot be easily rolled over. It is conceivable that the failure of such institutions could lead to domino or contagion effects. Likewise, PEs that own or have effective ownership interests in SIFIs may be swept into the SIFI designation, much as bank holding companies under Dodd-Frank.

Mutual funds. These fund groups are an interesting case, since some of them are of very large size, yet they are essentially pass-through entities and seldom use very much in the way of leverage. The small amount of leverage employed means correspondingly less credit exposure to lenders. There may be significant credit exposures for trading counterparties, but the lack of leverage makes it hard for the funds to go broke and therefore fail to be able to meet their obligations. Given their importance in the financial system as a whole, regulators may wish to know what these funds are up to and thus possibly demand additional information beyond what they are required to submit now, but because of their pass-through nature they are likely to be small contributors to systemic risk.

Most mutual funds are part of larger fund groups or families that share a common affiliation through a management company or companies with common ownership. However, each fund is a separate legal entity with its own distinct shareholders, investments, and borrowing, if any. Therefore, it is not clear that problems at a stock market fund within a group, for example, would have any particular effect on another fund within that group that invests in, say, government bonds. On the other hand, there will be some commonality of investment approaches within a fund group and some contagion effects could operate across the whole group. Whether these potential effects justify a designation of any fund *group* as systemically important seems doubtful to us, unless an individual fund or particularly closely linked set of funds were of sufficient importance on their own. In general, it would be surprising if any mutual fund or group represented sufficient systemic risk to warrant designation as a SIFI.

Money-market mutual funds. Consumers often use money market funds almost as if they were bank accounts, including writing checks against them in order to make day-to-day transactions or to easily withdraw cash from them. Many consumers view them as riskless or nearly so and therefore may rely upon their ability to withdraw their funds at any time and at full value. Most individuals also use bank accounts, so there is clearly not complete substitution, but the roles of money market funds and bank accounts in the economy are quite similar for consumers. This is generally not true in regard to institutional investors in money market funds, who hold more than half of all money market fund assets. These investors normally view such funds as just another investment tool for deploying cash in the short run.

A second key role for money market funds is that they are large purchasers of commercial paper (CP) issued by both financial and non-financial corporations. In the midst of the recent financial crisis when the main alternative to CP financing -- bank loans -- essentially was unavailable, the continued viability of these funds was (and remains) especially important.

It was for both these reasons that the federal government felt compelled to guarantee money market funds in the recent crisis. The rescue came after one medium-sized fund, the Reserve Fund, threatened to “break the buck” -- not return investors 100 cents on the dollar -- because of the losses it faced on Lehman’s CP when that company failed. The government feared, quite rightly in our view, that a potential major run on many, if not all, money market funds constituted a substantial risk to the financial system.

That said, the degree of systemic risk may vary considerably with the type of money market fund, since funds invested almost entirely in short-term Treasury bonds are less at risk than those that place their funds even in highly-rated commercial paper. The degree of systemic risk may also depend on the types of investors in these funds, whether individuals or businesses, for example.

A number of changes have already been made to the regulation and operation of money market mutual funds in order to reduce their systemic risk, including a shortening of the maximum maturities of their investments and the creation of expanded disclosure. Overall, however, given the recent experience with these funds, there is a reasonable, if not compelling, case for at least designating the largest money market funds as SIFIs, as long as they continue to promise to repay their investors at par (that is, not to break the buck). As noted below, there are multiple options for regulation of SIFIs and money market SIFIs are likely to warrant quite different regulation from other SIFIs, given their unique nature.

We recognize that the same overall logic could lead to designation of even smaller money market funds as well, but this would present an anomaly – these institutions would be the smallest of all those designated and would entail the risks of over-inclusiveness, which we discuss below. It should be noted, however, that there are other analysts who would take a different approach by making major changes to the entire money market industry that they believe would eliminate or sharply reduce the systemic risks.

Other institutional investors. There are numerous other categories of institutional investors whose members could theoretically be designated as SIFIs, but where this is unlikely to occur in practice. These include pension funds, endowments, and sovereign wealth funds, among others. In general, these share the characteristics of very low leverage, long-term funding, and the absence of a primary role as a financial intermediary. As a result, even the largest of these organizations is unlikely to represent sufficient system risk to be designated as a SIFI.

Financial market utilities. There are many entities that operate behind the scenes to implement financial transactions, such as stock and commodities exchanges, clearing houses for derivatives transactions, etc. Some of these, such as the largest clearing houses, will clearly present enough systemic risk to qualify as SIFIs, in part because of their combination of sheer size and their volume of counterparty credit risk.

Risks in Identification

There are risks in both directions when trying to identify SIFIs. Failing to include some SIFIs would reduce the effectiveness of policy actions designed to track and limit the total risk in the system. On the other hand, including non-systemically important institutions as if they were true SIFIs could either give them undue incentives to take risks or subject them to costly and unnecessary regulation on those businesses, with a net loss to the economy either way.

Risks from under-inclusion

Failure to track the full measure of systemic risk. SIFIs will receive considerably more regulatory scrutiny than other financial institutions, in part to ensure that all major systemic risks are fully

captured in the information regulators track. Failing to include some SIFIs could lead to underestimates of the true systemic risk, although this problem should be reduced by two facts: (1) that some of the measures that are tracked will include information gathered from institutions that are not designated as SIFIs: and (2) certain "true" SIFIs that are not designated as such at the outset are likely to grow over time, at least in asset size, and thus eventually are likely to be designated as SIFIs.

Lessened regulatory influence over key players. The SIFI designation will bring with it considerably enhanced regulatory powers, as discussed below. A true SIFI which is not designated as such may be more likely to take actions that create excessive systemic risk than a designated SIFI that is subject to effective regulatory constraints.

Continuation of incentives to create systemic risk. One of the key reasons for the SIFI designation is to allow and encourage regulators to impose costs and constraints intended to counteract the incentives that otherwise exist to ignore the "externalities" created by certain institutional actions. For example, the formerly independent, large investment banks funded themselves with excessively short-term liabilities, exposing not only them but the entire financial system to a "run" when investors in these securities refused to roll them over in a crisis (two of these institutions converted to bank holding companies and thus gained access to the Federal Reserve's discount lending window to address this very problem in the future). Failing to designate a true SIFI would leave institutions operating in an excessively risky manner from a systemic perspective without offsetting regulatory constraints. Of course, the constraints themselves must be effective, too, otherwise, the "moral hazard" incentives created by the SIFI designations – which may give the perception that the government will protect the creditors of these institutions at all costs – will encourage potentially even more excessive risk-taking than might otherwise occur. (We discuss this issue immediately below in connection with the risks of over-inclusion).

Risk of regulatory arbitrage. There will be both positives and negatives for institutions designated as SIFIs, but the negatives (more regulation) are likely to outweigh the positives (potentially lower funding costs) in most cases. The major reason for this, we believe, is that once an institution is designated it is subject not only to what may be a current set of additional regulatory measures, but to a continuing process of possibly strengthened oversight in the future. This uncertainty about the course of future regulation alone is a cost that most institutions would probably want to avoid if they could. (We discuss this problem in the following section in more detail).

Meanwhile, failing to designate a true SIFI may give that organization a competitive advantage that allows it to take business away from safer institutions that are producing less systemic risk. The one comfort is that there is a limit as to how far and how long this advantage can go before the FSOC reacts by designating any growing organization as a SIFI and thus subjecting it to the SIFI regulatory regime.

Risks of over-inclusion

Moral hazard. Customers and financial market participants may view the SIFI designation as equivalent to a government declaration that the institution is "too big to fail," with an implicit promise of a government rescue of otherwise uninsured liabilities, if necessary. Such a belief would incline customers and markets to ignore risk-taking by SIFI's, which would work against the regulatory attempts to rein in such behavior. Similarly, markets may charge lower borrowing costs for SIFIs, giving them a competitive advantage which could lead to over-concentration in the industry, although as already noted, the uncertainties of SIFI regulation may easily offset this effect. Furthermore, any apparent funding advantage may be more than offset by the regulatory costs imposed by SIFI designation. There is also a real possibility that all of the institutions with a SIFI designation already may be viewed by the markets as too big to fail because of their size or other measures of their systemic importance, in which case the formal designation might make little difference.

The Dodd-Frank Act, and various regulations being put in place both domestically and internationally, attempt to reduce the moral hazard issues by modifying the procedures for handling insolvent financial institutions or those in great danger of becoming insolvent. Changes to these "resolution regimes" are important, but are unlikely to completely eliminate this form of moral hazard in the financial system.

Dangers of a business "monoculture." SIFIs are likely to be regulated in a common manner on many important dimensions. If this is carried too far, as it easily might be, institutions with quite different business models may be regulated in the same way[7]. For example, if capital regulations are applied to institutions for which capital levels are actually relatively immaterial, it may force them to hold considerably more capital and to make business decisions based on the effects on their actual capital relative to what is required. In essence, this kind of decision-making could force any non-bank SIFIs to act more like banks, even when their business models would not otherwise push them in that direction. This reduction in diversity could expose the system to greater risk from factors common to the regulatory approach. A useful analogy is the danger of a "monoculture" in crops. If the entire Midwest is planted with wheat, for example, then the dangers of contagion from a virus that attacks wheat become more severe. The same kind of risk may be created when otherwise different kinds of institutions are effectively forced to behave in a similar manner.

Excessive regulation is costly. With a few fortunate exceptions, greater safety at financial institutions usually comes with a cost. For example, equity capital is significantly more expensive, in practice if not in theory, than other sources of funding. Requiring more capital

[7] Regulators are aware that there are significant differences between different types of institutions and will attempt to take this into account appropriately. However, there will also be bureaucratic and political pressures to use common approaches, even when these are not entirely sensible, in addition to a natural human tendency to use tools with which one is already comfortable.

therefore adds a cost that will have to be absorbed by some combination of customers, employees, stockholders, and others who deal with the firm[8]. Deciding what regulations to impose and choosing which firms they are imposed on must be a balancing act. Forcing the SIFI designation, with its greater regulatory costs, on institutions that do not truly create significant systemic risk would add economic costs without sufficient benefits to the public.

Business models may be altered in unfortunate ways to avoid SIFI designation. One of the ways excessive regulation can be costly is by creating incentives for businesses to build their strategies around the regulations rather than based directly on business fundamentals. Indeed, many "financial innovations" (good and bad) have been motivated by the desire to legally circumvent government regulation. One of the worst recent examples of this kind of behavior was the creation by a number of larger banks of "structured investment vehicles" – ostensibly off-balance sheet entities that were used to hold some of the riskiest mortgage-backed securities. Although these SIVs technically complied with the post-Enron/Worldcom accounting rules relating to off-balance sheet firms, in fact they were so closely tied to their bank creators that in the run-up to the crisis when the SIVs found themselves unable to roll over their short-term liabilities, the banks eventually took the SIVs – and their damaged assets – back on their balance sheets. In the process, this cut into the banks' capital at the very worst time, when they and many others were forced to recognize large losses on their mortgage-related holdings.

Looking ahead, institutions that believe they may be "close to the line" of SIFI designation may take similar socially undesirable measures to avoid designation that ultimately could expose them and the financial system as a whole to greater risk.

SIFI designation could chill or distort innovation. If SIFIs are indeed regulated in an excessively uniform way, then it may become more difficult for organizations to develop innovative new approaches to business. In particular, if SIFI regulation and supervision entails any sort of pre or post approval of innovative products or ways of doing business, this prospect could be enough to keep the innovation from being introduced. At the same time, the greater regulatory costs of SIFI designation may also spur some organizations to use "financial engineering" to create new securities or transaction types that appear to pass risk on, without in fact fully doing so. Again, the SIV structures that were created during the boom period and contributed to the recent financial crisis are an example of this type of structure.

---

[8] See, for example, the study by the Macroeconomic Assessment Group set up by the Basel Committee on Banking Supervision and the Financial Stability Board, "Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements (Final report)", December 2010, http://bis.org/publ/othp12.pdf. This report references a large number of other studies on the effect of capital requirements on credit provision and on the real economy.

Uncertainty about future regulation and supervision. The cost of regulation does not come just from the actual regulatory choices of policymakers. The sweeping powers of the FSOC over SIFIs create considerable uncertainty for shareholders, creditors, and counterparties, which is likely to be priced into any transactions. Equity investors would demand higher expected returns to compensate for the greater risk and opacity of the business. Debt holders would similarly increase their demanded interest rates and some would switch to investing in other industries. Lenders may feel compelled to charge borrowers more to compensate for the greater uncertainty about the rules under which the lenders will be operating. These uncertainty effects could more than offset any tendencies toward lower borrowing costs for SIFIs whose creditors could appear to be protected by federal authorities in future crises.

On a procedural note, some argue that decisions about the regulation of SIFIs of different types should be made prior to designating SIFIs. The core of that argument is that it is difficult to judge the pros and cons of SIFI designation without knowing what regulation would be triggered as a result. On the other side of the argument, there is a logic to first identifying the SIFIs and then determining how best to regulate them.

Regulating SIFIs

Once SIFIs have been identified, it is almost certain that they will then be regulated differently from other financial institutions. (These, of course, are not the only powers that regulators have to deal with systemic risk. There are many tools at their command that do not require a SIFI designation, which is one reason that it is desirable to avoid over-designation of SIFIs.) There are at least five ways additional regulation of SIFIs could occur:

Regulating at least certain non-bank SIFIs in a manner consistent with banks. One of the hardest questions in financial regulation is where to place the "perimeter of regulation." In this case, the key question is which entities should face the heavy regulation that banks and their close affiliates do. (Banks also benefit from special privileges, such as access to deposit insurance and the Fed's discount window, but regulation of other SIFIs may not bring such advantages in the current environment.) One of the concerns expressed in the Dodd-Frank debates was how to prevent some institutions from acting very much like banks, while being regulated much more lightly. Dodd-Frank provides quite considerable powers that could be used to add many bank-like regulations (such as activity restrictions) for certain non-bank SIFIs.

If such a broad scope of regulation is applied, it is likely only to be for institutions regulators view as acting like banks. Finance companies could be caught in this net and it is theoretically possible that a large hedge fund that went after banking type business could also be brought in. This is unlikely to be an issue for the large majority of non-bank SIFIs, such as insurance groups that do not already own deposit-taking institutions. That said, Dodd-Frank does provide that certain restrictions should apply to all SIFIs even though the specifics appear to have been

designed primarily with banks in mind. The Volcker Rule and the Collins amendment on capital fall to some extent in this category.

Information reporting. SIFIs will doubtless be mandated to provide a great deal of information, with particular emphasis on aggregate credit and counterparty exposures to other SIFIs and near-SIFIs. Other information requirements will likely include exposures to particular asset classes, capital levels, and the results of stress tests. It is also likely that many *non-SIFIs* will be subject to some additional reporting obligations as well, both to determine whether they qualify at some point as SIFIs themselves, and also for the FSOC and its new staffing agency in the Treasury, the Office of Financial Research, to better monitor overall system-wide financial risks.

Counterparty exposure limits. Dodd-Frank requires that banking groups limit their total exposure to individual counterparties. Non-bank SIFIs could be faced with similar requirements.

Activity limits. Banking groups are also limited by the "Volcker Rule" included within Dodd-Frank, which requires them to limit or eliminate certain types of proprietary trading and investment activity. Similarly, provisions pushed by Senator Lincoln created restrictions on the ability of banking entities to act as derivatives dealers. Non-bank SIFIs might be placed under similar restrictions on activities that are perceived as being particularly risky and not at the core their business models, or at least the business models policymakers view as being in the public interest.

Capital requirements. One of the most important ways that regulators can encourage safety at financial institutions is to require appropriate levels of capital as a margin for error against losses that might come through bad luck or errors. Banking groups already face substantial capital requirements which are being tightened significantly (though over an extended phase-in period) through the so-called Basel III process, coordinated by the Basel Committee on Banking Supervision. Insurers also have substantial capital requirements imposed by their regulators for similar reasons. Dodd-Frank specifically calls for SIFIs to face higher capital requirements than non-SIFIs, with the details to be determined by the regulators.

Capital requirements are such a universal, and important, element of the regulatory approach to banks that there is a strong likelihood that non-bank SIFIs will be subjected to similar requirements. This is most likely for SIFIs that perform a classic intermediation function and have large balance sheets, such as finance companies, which play a role fairly similar to banks. Some sort of capital regulation might also be extended to hedge funds, although these funds may be able to argue that their differences from banks justify an exemption from any capital regulation. Other asset managers, such as mutual funds or venture capital management companies, are the least likely to have this requirement, since they have no large balance sheets or financial counterparties. The same result should apply to many (but not necessarily all) private equity firms.

Capital regulation is an extremely powerful tool to affect the behavior of financial institutions, since it very directly alters their ability to provide an adequate return to their shareholders. This is even more powerful since top managers in financial institutions almost invariably hold a considerable amount of their net worth in company stock. If this powerful tool is applied too widely, such as to funds managers that act as pass-through entities and not true intermediaries, it could substantially change the ability of otherwise valid business models to work. Ironically, adding an unreasonable burden to, say, mutual funds could push financial assets into the hands of financial intermediaries instead that present greater systemic risks.

Conclusions

Given that much of the financial crisis and the subsequent Dodd-Frank legislation centered around SIFIs, the designation of such institutions under the new law will have critically important effects not only on the designated institutions but on entire industries and indeed the economy. We have outlined here what we believe are many of the main considerations that the FSOC, with advice from the Fed, should use to carry out this important responsibility. As with many regulatory decisions, there are dangers of including too few and too many institutions. The tough regulatory assignment is to steer a middle course, avoiding the dangers of either extreme.

Appendix
Alternative Definitions of Systemic Risk and Related Concepts

Dodd-Frank Language on Designation of Systemic Importance

SEC. 113. AUTHORITY TO REQUIRE SUPERVISION AND REGULATION OF CERTAIN NONBANK FINANCIAL COMPANIES.

(a) U.S. NONBANK FINANCIAL COMPANIES SUPERVISED BY THE BOARD OF GOVERNORS.—

(1) DETERMINATION.—The Council, on a nondelegable basis and by a vote of not fewer than 2?3 of the voting members then serving, including an affirmative vote by the Chairperson, may determine that a U.S. nonbank financial company shall be supervised by the Board of Governors and shall be subject to prudential standards, in accordance with this title, 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.

(2) CONSIDERATIONS.—In making a determination under paragraph (1), the Council shall consider—

(A) the extent of the leverage of the company;

(B) the extent and nature of the off-balance-sheet exposures of the company;

(C) the extent and nature of the transactions and relationships of the company with other significant nonbank financial companies and significant bank holding companies;

(D) the importance of the company as a source of credit for households, businesses, and State and local governments and as a source of liquidity for the United States financial system;

(E) the importance of the company as a source of credit for low-income, minority, or underserved communities, and the impact that the failure of such company would have on the availability of credit in such communities;

(F) the extent to which assets are managed rather than owned by the company, and the extent to which ownership of assets under management is diffuse;

(G) the nature, scope, size, scale, concentration, interconnectedness, and mix of the activities of the company;

(H) the degree to which the company is already regulated by 1 or more primary financial regulatory agencies;

(I) the amount and nature of the financial assets of the company;

(J) the amount and types of the liabilities of the company, including the degree of reliance on short-term funding; and

(K) any other risk-related factors that the Council deems appropriate.

SEC. 804. DESIGNATION OF SYSTEMIC IMPORTANCE. [for financial market utilities]
(a) DESIGNATION.—

(1) FINANCIAL STABILITY OVERSIGHT COUNCIL.—The Council, on a nondelegable basis and by a vote of not fewer than 2⁄3 of members then serving, including an affirmative vote by the Chairperson of the Council, shall designate those financial market utilities or payment, clearing, or settlement activities that the Council determines are, or are likely to become, systemically important.

(2) CONSIDERATIONS.—In determining whether a financial market utility or payment, clearing, or settlement activity is, or is likely to become, systemically important, the Council shall take into consideration the following:
(A) The aggregate monetary value of transactions processed by the financial market utility or carried out through the payment, clearing, or settlement activity.
(B) The aggregate exposure of the financial market utility or a financial institution engaged in payment, clearing, or settlement activities to its counterparties.
(C) The relationship, interdependencies, or other interactions of the financial market utility or payment, clearing, or settlement activity with other financial market utilities or payment, clearing, or settlement activities.
(D) The effect that the failure of or a disruption to the financial market utility or payment, clearing, or settlement activity would have on critical markets, financial institutions, or the broader financial system.
(E) Any other factors that the Council deems appropriate

Treasury Secretary Geithner's Testimony on Regulating Risk

http://blogs.wsj.com/economics/2009/03/26/3889/
In identifying systemically important firms, we believe that the characteristics to be considered should include: the financial system's interdependence with the firm, the firm's size, leverage (including off-balance sheet exposures), and degree of reliance on short-term funding, and the importance of the firm as a source of credit for households, businesses, and governments and as a source of liquidity for the financial system.

In general, the design and degree of conservatism of the prudential requirements applicable to such firms should take into account the inherent inability of regulators to predict future outcomes.

Simon Johnson blog post responding to Secretary Geithner's testimony
http://baselinescenario.com/2009/03/27/big-and-small/#more-3089

Given the existence of "systemically important firms," I agree they need careful regulation. But why does Geithner assume that they have to exist at all?

There are a few main things that made companies like AIG and Citigroup systematically important. One was interconnectedness: they did business with lots of counterparties. One was complexity: when push came to shove, the regulators were not able to assess the potential damage a failure could cause, and therefore erred on the side of bailing them out. But the big one was size, and this is why we call it Too Big To Fail. The companies in question were so big, and had so many liabilities, that they could cause a lot of damage if they suddenly defaulted on those liabilities.

Report to the G20 Finance Ministers and Governors by the IMF, BIS, and FSB

http://www.bis.org/publ/othp07.pdf

Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations

The paper defines systemic risk as a risk of disruption to financial services that is (i) caused by an impairment of all or parts of the financial system and (ii) has the potential to have serious negative consequences for the real economy. Fundamental to the definition is the notion of negative externalities from a disruption or failure in a financial institution, market or instrument. All types of financial intermediaries, markets and infrastructure can potentially be systemically important to some degree.

Three key criteria that are helpful in identifying the systemic importance of markets and institutions are: *size* (the volume of financial services provided by the individual component of the financial system), *substitutability* (the extent to which other components of the system can provide the same services in the event of a failure) and *interconnectedness* (linkages with other components of the system).

For institutions, the size of exposures, volumes of transactions or assets managed are indicative of the extent to which clients and counterparties could be disrupted. Clusters of institutions can be individually small but collectively significant because they fall into distress at the same time. Some institutions, for example those providing key services such as clearing and settlement, lack immediate substitutes for this role. Interconnectedness captures situations when distress in one institution raises the likelihood of distress in others.

For markets, assessing systemic importance presents more conceptual challenges. The systemic importance of a market derives to an extent from that of the institutions that participate in it. However, the size of a market is a determinant of potential economic costs in case of malfunction. If the function of a stressed market cannot be replicated by other mechanisms, the economic impact can be significant. Interconnectedness refers to markets' interdependence on each other as well as on institutions.

Interbank lending and systemic risk by Jean-Charles Rochet , Jean Tirole , Raghuram G. Rajan
http://www.questia.com/googleScholar.qst;jsessionid=F6E64E7A137FC1285DC82CE02CA553C8.inst3_1b?docId=5001640577

SYSTEMIC RISK refers to the propagation of an agent's economic distress to other agents linked to that agent through financial transactions. Systemic risk is a serious concern in manufacturing, where trade credit links producers through a chain of obligations,' and in the insurance industry through the institution of reinsurance. The anxiety about systemic risk is perhaps strongest among bank executives and regulators. For banks' mutual claims, which, by abuse of terminology, we will gather under the generic name of "interbank loans" or "interbank transactions", have grown substantially in recent years. These include intraday debits on payment systems, overnight and term interbank lending in the Fed funds market or its equivalents, and contingent claims such as interest rate and exchange rate derivatives in OTC markets. To the extent that interbank loans are neither collateralized nor insured against, a bank's failure may trigger a chain of subsequent failures and therefore force the central bank to intervene to nip the contagion process in the bud.