

MINSKY ON THE REREGULATION AND RESTRUCTURING OF THE FINANCIAL SYSTEM

Will Dodd-Frank Prevent “It” from Happening Again?¹

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PREFACE

This monograph is part of the ongoing Levy Institute research program on Financial Instability and the Reregulation of Financial Institutions and Markets funded by the Ford Foundation. This program has undertaken an investigation of the causes and development of the recent financial crisis from the point of view of the late Levy Institute Distinguished Scholar Hyman P. Minsky.

The monograph draws on Minsky's extensive work on regulation to review and analyze the recent Dodd-Frank Wall Street Reform and Consumer Protection Act enacted in response to the crisis in the US subprime mortgage market, and to assess whether this new regulatory structure will prevent "It"—a debt deflation on the order of the Great Depression—from happening again. It seeks to assess the extent to which the Act will be capable of identifying and responding to the endogenous generation of financial fragility that Minsky believed to be the root cause of financial instability.

But Minsky also believed that regulation should be linked to the structure of the financial system. One of the major drawbacks of the current legislation is that it does not propose an alternative to the financial structure that produced the recent crisis. Indeed, Minsky viewed the "decline of traditional banking" as one of the causes of financial instability, and he had very clear views on what the ideal structure should look like. For Minsky, any regulatory regime must be consistent with, and sensitive to, the evolving nature of financial innovation, and should seek to foster two critical structural objectives: (1) ensuring the long-term stability of the financial system, and (2) promoting the capital development of the economy.

The monograph thus builds on Minsky's views as expressed in his published work, his official testimony, and his unfinished draft manuscript on the subject. In particular, his views are in concert with those who believe that the only way to make the large, "too big to regulate, and too big to fail" banks is to break them down into smaller units. There is a close correlation between the "originate and distribute" model of banking that produced the crisis and large bank size. Smaller banks, more closely linked to their borrowers and the community, would provide the possibility of restoring the "originate and hold" banking model that concentrated on the creditworthiness of borrowers rather than maximizing the generation of doubtful assets to be sold via securitization. It would also change the incentive structure and the level of earnings of the financial sector.

Irrespective of the emergent financial structure, regulators will have to be more cognizant of the endogenous processes that, in Minsky's view, are the root of the instability that produces crisis. Indeed, one of the tasks of the new Financial Stability Oversight Council is to identify and take measures to prevent financial instability. This monograph provides suggestions on how Minsky's analytical framework can be used to develop measures of financial instability, in the form of fragility indices for various sectors of the economy to help regulators detect emerging crises.

Whether the Dodd-Frank Act "to promote the financial stability in the United States by improving accountability and transparency in the financial system, to end 'too big to fail,' to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for

other purposes” will be able to fulfill the promise of its title is an open question. Minsky repeatedly pointed out that a financial crisis, rather than being a peculiar event, is the natural response of markets to a period of relative stability and innovations in risk management. He argued that issues of financial instability were not important simply because of their impact on the financial system, but because a stable financial system is central to the productive investment needed for income growth and full employment.

Indeed, this was the main object of Minsky’s research at the Levy Institute. His proposal for financial stability was to shift emphasis from capital-intensive investment in growth to investment in jobs as a means of ensuring both stability and an equitable income distribution. Employment, Minsky argued, should be the major objective of economic policy, with government acting as employer of last resort (ELR). A direct, federally funded employment guarantee program, one providing a job opportunity to any individual willing and able to work, would act as an automatic economic stabilizer, enabling households to meet their financial commitments and substantially reducing the impact of financial shocks.

As Minsky wrote in his landmark work *Stabilizing an Unstable Economy*, “A new era of reform cannot be simply a series of piecemeal changes. Rather, a thorough, integrated approach to our economic problems must be developed; policy must range over the entire economic landscape and fit the pieces together in a consistent, workable way: Piecemeal approaches and patchwork changes will only make a bad situation worse” (2008 [1986], 323). This has been one of the organizing principles of the project that has generated this monograph.

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INTRODUCTION

The demise of the new-millennium real estate and commodity boom has come to be known as the “Minsky moment.” Economists versed in Hyman Minsky’s specification of hedge, speculative, and Ponzi financing schemes quickly identified the conditions in the market for securitized subprime mortgages as a Ponzi scheme of colossal proportions. Those familiar with the process by which the scarcity of liquidity can generate a debt deflation were also quick to see the rapid transmission of distress in the financial markets into the full-scale depression from which we have yet to emerge. Aside from the major life support measures (TARP, the stimulus bill, ZIRP, and QE), the major response has been that we cannot let “It”—another Great Depression—happen again. Many recognize that radical changes are required in the regulations governing the financial system to make sure that such widespread support measures will never again be necessary to prevent the collapse of the financial system. Congress thus moved rapidly to write and approve a major overhaul of financial market regulations, with the rallying cry that the American taxpayer will never again be required to finance the bailout of Wall Street and Wall Street will never again bring about the collapse of Main Street.

But in this response to the crisis, discussion of Hyman P. Minsky has virtually disappeared, to be replaced by more pragmatic lobbyists seeking to defend vested interests. Although politically expedient, this is unfortunate, since the majority of Minsky’s work was generated by an interest in the design of a financial system and financial regulations that would make sure that “It” would not happen again (see Minsky 1964, 1972). His continual refrain in this work was that the financial structure should be designed in such a way as to ensure that it provides the necessary support for the financing of the productive investment needed by the economy, without generating excessive financial fragility (see Wray 2010). Here, Minsky was a realist. He believed that the normal competitive profit-seeking process would lead financial institutions to adopt innovations in their management of liquidity that circumvented existing regulations, which would lead to an endogenous process of increasing instability. Thus, while regulations to support financial stability would be important, they could not outlive the natural evolution of financing operations that accompanied what he considered the normal process by which stability engenders fragility. Chapter 1 of this monograph thus seeks to provide a Minskyan view on the current regulatory process. It highlights the fact that the introduction of landmark legislation is less important than its implementation and monitoring.

Minsky believed that the New Deal legislation was the expression of a liability structure that was already outmoded when it was introduced and was not appropriate to the increased influence of government that would subsequently emerge (Minsky 1986, 87). This generated endogenous forces that sought to erode the effectiveness of the legislation through administrative decree, legal interpretation, and legislative relief (see Kregel 2010). In particular, the process of securitization that lies at the heart of the shift from “originate and hold” to “originate and distribute” that played such an important role in subprime lending could not have occurred without a series of ad hoc administrative and legal decisions, each of which appeared to respond to industry best practice, but which culminated in producing a structural change in financial operations that was highly unstable. Much of this same process, built around granting banks “all such incidental powers as shall be necessary to carry on the business of

banking” (as it was expressed in section 16 of Glass-Steagall), provides the justification for the inclusion in the Dodd-Frank legislation of a series of exemptions from regulation when associated with the provision of client services that sharply reduces the effectiveness of the reforms. The expedient of moving suspect activities from the insured banking entity to arm’s-length affiliates simply encourages and concentrates the growth of such activities in what has come to be called the “shadow banking” sector, with a very low probability of regulation.

Chapter 2 presents a survey of Minsky’s contributions to the debate over the reform of the financial structure that was under way in the United States in the 1980s and early 1990s, drawing on publications, testimony, and an uncompleted monograph that he was working on at the time of his death in 1996. Since a tenet of Minsky’s view of regulation is that financial innovations will always keep financial institutions one step ahead of regulators and supervisors, he believed in the importance of reacting to those changes before they produced financial fragility.

The recent financial legislation creates a Financial Stability Oversight Council charged with identifying unstable practices in financial institutions. Chapter 3 thus provides an attempt to formulate a financial fragility index that might be of use in satisfying the Council’s mandate and that could be used by regulators to intervene to make sure the natural process of financial innovation does not allow “It” to happen again. This preemptive approach to financial stability also highlights the role of supervisors in the implementation of regulations and the identification of inappropriate financial practices.

CHAPTER 1. Will Dodd-Frank Prevent “It” from Happening Again?

Two Approaches to Financial Regulation

The starting point for Hyman Minsky’s approach to financial regulation was the observation that the subject could not be discussed on the basis of a theory in which financial disruption was impossible. The problem is that mainstream, intertemporal equilibrium posits the existence of markets for contingent contracts for events at all future dates and states of the world. Thus, all possible risks can be hedged and counterparties can always honor their commitments in any possible outcome. Given that all possible outcomes can be insured against, this approach to equilibrium implies the absence of insolvencies. It is the equivalent of the punter putting money on every horse in the race: he will always have a winner. If real-world experience produces different outcomes, this is not the result of market failure, but rather the absence of a requirement that markets allow agents to enter into the full complement of contingent contracts. Thus, orthodoxy embraces the belief that the market produces equilibrium and encourages the development and introduction of all new financial instruments and contracts to allow the real world to offer complete markets.

This was the approach of the Federal Reserve under Alan Greenspan and the belief that a wider distribution of risk across market participants, intermediated by the exchange of these new instruments in new markets, would provide a more stable financial system. The new instruments would transfer risk more efficiently to those most willing and able to hold it. But the emphasis was on the creation of these new instruments rather than on the creation of new markets and the conditions required to make the markets more efficient and competitive. The product innovation that was encouraged and produced by competition amongst financial institutions was in general limited to over-the-counter (OTC) bilateral trading or the creation of bespoke structured lending vehicles tailored to the needs of individual clients. The financial incentives to the originators of new financial products led to an emphasis on the sale of the products to those willing to bear risk (or those unable to recognize it) rather than on the redistribution of risk to those most able to bear it.

In the development of these new financial products banks initially played the traditional role of intermediary between clients with offsetting financial requirements. But they eventually found that they could profit from acting as principal in these trades, taking position with their own capital. As an example, the initial development of interest rate swaps saw banks bringing together higher-credit fixed-rate and lower-credit floating-rate borrowers, providing reduced interest costs for both parties and earning a commission from the savings. But the failure to find matching clients soon led banks to offer swaps to one client, warehousing the other side of the trade. This allowed banks to provide off-the-shelf interest rates swap services to clients. Eventually, this temporary service was seen to provide opportunities for trading profits, and the banks became principal counterparties for their swap clients. Provision of client services as a market-making dealer and proprietary trading thus became inexorably linked.

The result of such initial swap contracts was an increase in risk, as the lender’s risk of repayment of a traditional bank loan was replaced by the risk of nonperformance by both the buyer and seller of the

swap. However, this increased risk was augmented when banks shifted from the role of mere intermediaries, without risk in the transaction, to taking principal position. And rather than leading to the development of new markets that were transparent and self-regulated, the activity remained bilateral, with information only available from perusal of the aggregate data presented in financial statements and regulatory filings. Most financial innovations followed this path, leading to an increase in proprietary trading by banks to facilitate the offer of bilateral, nonmarket transactions. But in this case, the markets were far from perfect or nonexistent, information far from full, and the reduction in risk more than offset by the increase in counterparty risk and principal trading by financial institutions.

Minsky, on the other hand, believed that regulation could only be discussed within a theory that allowed for financial distress as an endogenous occurrence in the normal development of the economic system. Even in the presence of the perfect operation of complete markets, Minsky's approach suggested that the financial system would become increasingly exposed to financial disruption and, eventually, a systemic breakdown in the form of a financial crisis. It was to fill this gap in existing theory that he developed the financial instability hypothesis, to provide a framework for discussing regulation that might provide a more stable, and more equitable, financial system. Despite the formulation of this approach in the 1960s and its continued adaptation and adjustment to evolving conditions in financial markets, it has never been used as the basis for regulation of the financial system. Now that the recent financial meltdown has been dubbed a "Minsky moment," perhaps it is time to recognize that the greatest contribution of his theory is provision of a basis for the formulation of financial regulation.

A. Changes to the regulatory structure before the crisis

One of the most important consequences of the application of mainstream general equilibrium theory as the framework for financial regulation was the decision to replace the Glass-Steagall legislation with the Financial Services Modernization Act at the end of 1999. The Gramm-Leach-Bliley (GLB) Act, as it's commonly known, abolished the segregation of financial institutions by financial activity that had been imposed under Glass-Steagall and instead allowed for the creation of integrated financial holding companies that could provide any combination of financial services. This was the culmination of a long-term initiative orchestrated by the financial services industry to repeal the New Deal legislation. It was based on the argument that there were substantial economies to be achieved by cross-sales of financial services and the resulting possibility to increase the internal cross-hedging of risks within large multifunction financial conglomerates. It was claimed that the symbiosis across different financial services would increase incomes for financial service providers as well as decrease the risks borne by the larger institutions.

In addition, it was argued that no other country had legislation similar to Glass-Steagall, and foreign institutions were generally allowed multifunction financial institutions. Thus, the new legislation was required to allow US institutions to compete on a level, global playing field. This argument was specious, since US regulations did not apply to US institutions' global operations, and foreign institutions operating in the United States were in general subject to US regulations.

The introduction of integrated multifunction financial service corporations had two important consequences. First, it implied that financial holdings companies would be much larger than either commercial deposit-taking banks or noninsured investment banks had been in the past, since expansion would not be limited to the provision of any particular service as had been the case under Glass-Steagall. In the case of investment banks, size had been constrained by the prohibition on raising core deposits and their partnership structure. The latter constraint was removed when investment banks converted to limited-liability public companies to raise capital in equity markets. Until the deregulation of capital markets in the 1970s, the NYSE forbade such listing; the move was initiated by the brokerage firm Donaldson, Lufkin & Jenrette, to be followed in the 1980s by the larger investment banks, the last being Goldman Sachs, in preparation for the repeal of Glass-Steagall in 1998.

Second, the economies of scale and risk reduction that resulted from internal cross-hedging of positions meant that risk was more broadly spread across different activities, and thus increased the correlation of risks across different activities. However, as reported by the Senior Supervisors Group,² even if this did occur, it appears that there was very little sharing of information concerning exposures in different functions of the conglomerate financial institutions—what has come to be called the “silo” mentality of financial management, in which information remains isolated in each separate activity of the financial institution. The result of cross-hedging and product integration was the creation of financial conglomerates that were both too big and too integrated to allow any of them to be resolved when they became insolvent. Indeed, rather than distributing risk to those most able to bear it, risk was distributed and redistributed until it became impossible to locate who was in fact the counterparty responsible for bearing the risk. Counterparty risk thus joined the more traditional funding/liquidity and interest rate risks facing financial institutions. It replaced what was initially the most important of bank risks: lending or credit risk.

However, large size does have one undeniable benefit, given that even regulators admit that such institutions will not be allowed to fail. On the one hand, through the operation of moral hazard it allows the use of riskier, higher-return investments, bolstering the top-line earnings; at the same time, the implicit guarantee of government support means that borrowing costs will be lower, bolstering the bottom line. Smaller banks will thus find it more difficult to compete, and the resulting concentration may allow larger banks to impose higher charges for customer services. In Minsky’s use of Keynes’s terminology, both borrowers’ and lenders’ risks are reduced for large conglomerate banks, and they have increased monopoly power over prices. This may be the real cause of the favorable performance of large bank groups. But this is not the result of the efficiency of large banks; it is in reality a government subsidy that can only be withdrawn with difficulty.

The impetus for large size was also the result of a change in the instruments of monetary policy introduced by the globalization of the market for provision of financial services. In the United States,

² The Senior Supervisors Group was formed to assess how weaknesses in risk management and internal controls contributed to industry distress during the financial crisis, and comprised senior supervisors from seven financial agencies: the French Banking Commission, German Federal Financial Supervisory Authority, Swiss Federal Banking Commission, UK Financial Services Authority, and, in the United States, the Office of the Comptroller of the Currency, the Securities and Exchange Commission, and the Federal Reserve. For their joint review, see SSG 2008.

Paul Volcker had introduced control of the money supply and attempted to introduce capital ratios to reduce bank lending in an effort to stop inflation. Largely as a result of Volcker's policy moves, US banks shifted some liability operations to the European euro-dollar market to reduce the cost of funding their lending. This led to the globalization of US banking, which up to that point had been largely domestic. Once in the global markets, they met global competition, in particular, from Japanese banks.

After the collapse of the Herstatt Bank in Germany as the result of failing to complete an international transfer to US banks, which subsequently caused them losses, it became clear that all banks were interlinked and needed some form of common regulation. The Basel Committee thus proposed the introduction of global rules for risk-adjusted capital adequacy ratios. Up to that time, monetary policy had been primarily implemented through adjustment of reserve ratios, and then, more exclusively, through open market operations. While the capital ratios were meant to make riskier activities more expensive to fund, and thus less profitable and less attractive, they had a rather perverse result. First, this encouraged banks to expand their activities in the riskiest, highest-return activities in each particular risk category. Second, it encouraged banks to move as much as possible of their lending that had the highest risk weight off their balance sheets and into special-purpose vehicles (SPVs) that largely escaped regulation and reporting. This created a new type of counterparty risk, and since the credits were no longer formally the responsibility of the bank, it transferred credit risks to the SPVs while also removing the incentives to apply creditworthiness analysis of the loans that were made and the securities to be sold to the off-balance-sheet entity. However, when the crisis hit, the risks came back to the banks, through a variety of routes.

As a result of increased globalization, regulators were concerned not only with the safety and soundness of financial institutions but also with the ability of US banks to compete on a global scale. In the international regulatory environment, Glass-Steagall was an anomaly, and in many countries universal banking—allowing banks to engage in all types of financial services—was the norm. Thus, in conditions of rising US external account deficits, supporting global expansion of US banks became an additional objective of regulation. Indeed, the report produced by US Treasury Secretary Paulson before the crisis dealt primarily with the changes in regulations required to ensure the competitiveness of US markets in trading global securities and the competitiveness of US banks in competing in international markets (USDT 2008). This was simply an extension of the position supported by US Treasury Under Secretary Lawrence Summers that argued in favor of open entry for US financial services providers into foreign markets, rather than for free international capital flows.

B. Reform in the aftermath of the crisis: The Dodd-Frank Act

The current approach to regulation embodied in the Dodd-Frank legislation continues to be based on the mainstream theoretical framework that sees stability in complete markets and synergy in the provision and hedging of financial services.³ It thus accepts that US banks will continue to be large and

³ Reuters (2011) notes that “cross-selling between Bank of America and Merrill Lynch, something that many thought would be difficult” improved in 2010; “the wealth management division, mainly Merrill Lynch and US Trust, took in more than 5,300 referrals from other divisions at Bank of America, more than three times the referrals in 2009. The wealth management unit also referred more than 8,000 clients to the commercial and

integrated. Indeed, Treasury Secretary Geithner has supported the view that the current size of US banks, which has increased substantially as a result of the resolutions undertaken during the crisis, is desired and even necessary if they are to compete in global markets. According to a *New Republic* interviewer, Geithner “told me he subscribes to the view that the world is on the cusp of a major ‘financial deepening’: As developing economies in the most populous countries mature, they will demand more and increasingly sophisticated financial services, the same way they demand cars for their growing middle classes and information technology for their corporations. If that’s true, then we should want US banks positioned to compete abroad. . . . ‘I don’t have any enthusiasm for . . . trying to shrink the relative importance of the financial system in our economy as a test of reform, because we have to think about the fact that we operate in the broader world,’ he said” (Scheiber 2011). Geithner went on: “Now financial firms are different because of the risk, but you can contain that through regulation.” This was the purpose of the recent financial reform, he said.⁴

Thus, the basic theoretical argument that large, integrated financial institutions create synergy in providing a broad range of financial services and reduce risk by pooling is maintained by those who are most influential in “reform,” while the difficulties these institutions caused in the financial crisis will be managed by better regulation and provisions to ensure that if they do collapse, they will be allowed to fail without requiring support from public funds. The two major pillars of the reform package are regulations to better manage the risks undertaken by large, “systemically significant” financial institutions, and the means to force them into bankruptcy liquidation without the need for anything but temporary public assistance. The problems faced in the last crisis are not seen to result from the size and integration of multifunction institutions, but the absence of a mechanism to allow all bank and nonbank financial institutions to fail without public assistance. Thus, banks will be allowed to function more or less as before the crisis, within financial holding companies, but to be subject to clear rules on their rapid dissolution rather than their resolution.

Minsky, on the other hand, basing his views on a theory that says financial disruption is a natural consequence of the operation of the system, would have argued that it is impossible to formulate

banking and markets divisions, a 71 percent increase over 2009.” Note that this refers primarily to marketing rather than cost efficiency in provision of services or in risk management.

⁴ The interview continued: “I asked Geithner if he had a grand vision for the post-crisis landscape—for, say, a less bloated financial sector with a smaller role in the economy—and a map for how to get there. Could he be a figure like George Marshall, who helped win the World War and then remade Europe so that it couldn’t happen again?”

“Geithner hunched his shoulders, pressed his knees together, and lifted his heels up off the ground—an almost childlike expression of glee. ‘We’re going, like, existential,’ he said. He told me he subscribes to the view that the world is on the cusp of a major ‘financial deepening’: As developing economies in the most populous countries mature, they will demand more and increasingly sophisticated financial services, the same way they demand cars for their growing middle classes and information technology for their corporations. If that’s true, then we should want U.S. banks positioned to compete abroad.

“‘I don’t have any enthusiasm for . . . trying to shrink the relative importance of the financial system in our economy as a test of reform, because we have to think about the fact that we operate in the broader world,’ he said. ‘It’s the same thing for Microsoft or anything else. We want U.S. firms to benefit from that.’ He continued: ‘Now financial firms are different because of the risk, but you can contain that through regulation.’” This was the purpose of the recent financial reform, he said. In effect, Geithner was arguing that we should be as comfortable linking the fate of our economy to Wall Street as to automakers or Silicon Valley.”

regulations that would ensure the absence of financial disruption. Regulators should thus be concerned, not only by the size of banks, but also by their operations as multifunction financial service providers. Financial innovation will always be driven by regulatory arbitrage, and as a result there can be no assurance that regulations can make large financial institutions safe from crisis. Indeed, the very idea that large banks will be allowed to fail means that banks will continue to become ever larger since a bank that is resolved or wound up will have to have its insured liabilities absorbed by an existing bank or reconstituted under new management via a bridge bank. In either case, banks will continue to grow in size. The best example of this is the growth in the size of the largest banks as a result of the resolution of failed banks in the recent crisis. The answer to Minsky's rhetorical question, "Can 'It' happen again?" would once again be in the affirmative.

Finally, the approach to reform continues to support the idea that markets provide efficient price discovery. This is the case not only for the pricing of financial assets, but also for compensation. While many economists have noted the distorted incentive structure determining compensation for traders as well as management, the response has been restricted to proposals to introduce limits on the size and form of compensation. It has not generally been recognized that these distorted incentives are the result of structural factors linked to the shift in the business model employed by financial institutions. The shift in the generation of bank profits from net interest income generated by originating loans and ensuring that they do not default, to the generation of profits from fees, commissions, and trading incomes by originating loans and selling them as rapidly as possible (or taking position and unloading it at a profit as rapidly as possible), produces an incentive to take on higher risk exposures, reduces the risk of loss for the institution due to implicit government guarantees, and effectively eliminates it for management.

This is more than the idea of the private appropriation of profit and the socialization of losses. As long as position taking is financed with external funding there will be a compensation structure with zero risk of loss and only the possibility of profit. In the leveraged buyout period in the 1980s, corporate raiders earned incomes irrespective of losses, which were the responsibility of the bond or equity holders. Michael Milken also provided a system in which losses were not the responsibility of the junk bond issuers, but rather shifted to capital markets. The current expansion of "securitization" and what is now called "shadow banking" function on the same principle: the originator earns the fees and any short-term profits while capital market investors take the losses. It is the structure of financial transactions that generates the distorted incentives and simple limits, caps, or temporal structures will have little impact on the support this system gives to increased risk taking and financial fragility. This sort of activity is what Minsky identified as "money manager" capitalism (see Wray 2009, 2011), in which the manager of institutional funds earns a return irrespective of results but has an incentive to take higher risks because he does not participate in any losses. Since the current approach to reform leaves the basic business model of finance intact, it also leaves the distortions on incentives intact.

C. The Financial Stability Oversight Council

The centerpiece of the Dodd-Frank legislation is the creation of the Financial Stability Oversight Council (FSOC). It has the objective of providing collective accountability for identifying risks and responding to

emerging threats to financial stability. To help minimize the risk of a nonbank financial firm threatening the stability of the financial system, the Council has the mandate and authority to identify all systemically important institutions, both financial and nonfinancial, that contribute excessive risk to the operation of the financial system; and to avoid the regulatory gaps that existed before the recent crisis. It also has the ability to apply regulations in addition to those stipulated by their applicable regulatory agency. This means that virtually any financial or nonfinancial institution may be designated systemically important allowing the Council to impose conditions to eliminate any threat to financial instability. The FSOC is also mandated to identify emerging risks to financial stability via direction to, and requests for, data and analyses from the Office of Financial Research, which was also created by the Act; and to formulate and compile databases of financial information from all market participants, to aid in the identification of unstable financial practices and conditions.

Despite this charge, Treasury Secretary Geithner, who heads the Council, has stated that in his view it is not possible to create effective, objective criteria for evaluating the risk a financial firm poses to the system. “It depends too much on the state of the world at the time. You won’t be able to make a judgment about what’s systemic and what’s not until you know the nature of the shock.” This would make the identification of systemically important financial and nonfinancial firms difficult and make the identification of emergent risks nearly impossible. Geithner added that lenders would simply “migrate around” whatever objective criteria of emergent risks or significant institutions that policymakers developed in advance. With reference to the requirement that resolution of insolvent firms should be undertaken without government bailouts or taxpayer support for shareholders or management, Geithner takes the contrary view that “In the future, we may have to do exceptional things again if we face a shock that large. . . . You just don’t know what’s systemic and what’s not until you know the nature of the shock” (quoted in SIGTARP 2011).

The idea of identifying specific institutions as systemically significant seems to miss Minsky’s explanation of the endogenous creation of systemic risk that it is not specific to institutions, but rather is the result of how the system evolves over time and its structure changes in response to regulation and innovation. One of the failures of the BIS requirements in preventing a crisis is that they function on the principle that if each individual bank can be made to follow commonly accepted standards and codes, then none can contaminate any other bank in the system. The decision on which and how many institutions will be classified as systemically significant is still a matter of debate but may be significant in generating moral hazard if it creates the perception that the additional regulation and oversight applied to designated institutions provide some sort of increased guarantee of solvency. The real problem is to identify the endogenous accretion of fragile financing structures, and to recognize their potential impact on systemic stability. An attempt to provide a mechanism to do this is presented in chapter 3.

D. The Volcker rule

Most of the regulatory actions in the Dodd-Frank Act call for measures to correct difficulties that have emerged from the multifunction banking that was permitted by the GLB Act. The FSOC is responsible for implementing the most important of these measures, the so-called “Volcker rule” provisions set out in section 619 of the Act that calls for limitations on the use of proprietary funds for financial speculation

by banking entities that benefit from federal insurance, or any explicit or implicit government guarantees. The separation of the use of depositors' funds for bank business-lending operations and the use of deposits for any operations in securities markets except those provided as a complement to client services was the fulcrum of the Glass-Steagall regulations. The intention was to prevent banks from using retail deposit funds, guaranteed by the new government deposit insurance fund, for speculative trading. Such activity was to be limited to noninsured investment banks whose partners used their own capital resources to generate income by underwriting and trading in securities. In the 1980s, most investment banks were transformed into limited-liability corporations and eventually became bank holding companies, eliminating the relation between the kind of investment activity (commercial loans or securities) and the kind of funding (deposits or own capital) in distinct types of financial institution (commercial or investment banks).

Since it is no longer possible under the 1999 Act to separate the use of deposit funds from the proprietary trading financed by bank capital, such trading can produce losses that jeopardize the bank's ability to repay depositors, and would thus require the Federal Deposit Insurance Corporation (FDIC) to meet the losses created by trading risks that were undertaken and should be borne by the bank's owners and managers. The Volcker rule thus seeks to preclude the use of the capital of the financial institution for the purposes of proprietary trading—that is, trading in which the bank acts as principal—if the bank qualifies for any government support for losses to its depositors. The intention of the rule is to prevent banks from using any of its deposits or capital funds to take leveraged risks on positions whose value is determined by changes in the price of financial assets, and, in particular, to limit the use of leverage that has been a traditional part of such activities. In general, the leverage that is associated with speculative and arbitrage activities is in noninsured areas such as repo markets and other commercial borrowing, so the rule implicitly seeks to limit the leverage that can be generated by funding proprietary trading in repo markets or in under-margined or non-margined over-the-counter derivatives structures.

Since the rule would exclude bank activities that provide services to clients, there is also difficulty in determining when such precluded activities are required for supporting client requests for services and when they are simply for the bank's own activities. For example, a bank providing foreign exchange or interest rate hedging services may find it necessary to warehouse such contracts in order to provide the best execution for clients, and it would be difficult to differentiate such activities from pure proprietary speculation. As noted above, all these difficulties were avoided under Glass-Steagall's simple proscription on securities trading by insured deposit-taking banks. The difficulties in the interpretation of the Volcker rule would thus seem to stem from an attempt to reintroduce Glass-Steagall separation of activities within the GLB Act in which they are permitted.

Some of the difficulties raised by the Volcker rule are dealt with in another of the major areas of regulation in the Act: the ability of banks to operate and act as dealers in derivative contracts, and the formal transfer of derivatives clearing and trading to regulated market institutions. The former deals with the so-called "Lincoln amendment" that sought to prohibit banks active in the swaps markets from receiving various forms of "federal assistance," including federal deposit insurance and access to the Fed discount window or any Fed credit facility. However, the amendment also created difficulties due to the

retention of existing GLB legislation and emerged with a push-out provision that allowed insured entities to continue their derivatives activities under certain conditions.

The regulation forbids federal assistance for a generic category, “swaps entities,” that is defined as “any swap dealer, security-based swap dealer, major swap participant, [or] major security-based swap participant.” In turn, swap dealers and security-based swap dealers are persons or entities that hold themselves out as swap dealers, make markets in swaps, regularly enter into swaps with counterparties as an ordinary course of business for their own accounts, or engage in any activity causing them to be commonly known in the industry as swap dealers or market makers. However, even if an entity is not classified as a “swaps dealer,” it may nonetheless be classified as a “major swap participant” or “major security-based swap participant” subject to the regulation if it maintains “substantial positions” in swaps, or if it possesses outstanding swaps that create substantial counterparty exposure that could have serious adverse effects on the financial stability of the US banking system or financial markets.

Since this provision, which is to come into effect in July 2012, would create substantial difficulties for banks in providing derivatives-based client services, or in using such instruments to hedge their own risks via the use of derivative contracts, the “push out” provision would allow banks to retain Federal insurance and support if their swap activities are carried out through an affiliate. The insured entities could then directly engage in their own and certain client-based hedging activities without being classified as swap dealers. The affiliates may be created by any depository institution that is part of either a bank holding company or savings-and-loan holding company, on condition that the affiliate complies with sections 23A and 23B of the Federal Reserve Act and any other requirements that the Commodity Futures Trading Commission (CFTC), Securities and Exchange Commission (SEC), and Fed may determine necessary. In effect, this is the equivalent of the section 20 exemption under Glass-Steagall that permitted commercial banks limited securities-market activities.

The activities that can be engaged in by the insured entity itself include acting as principal in swaps with customers in connection with originating loans for those customers; engaging in “de minimis” swaps dealing; entering swap agreements for the purposes of “hedging and other similar risk mitigating activities directly related to the insured depository institution’s activities”; and acting as swaps entities for activities involving rates or reference assets that are permissible for investment by a national bank. Again, these mirror exemptions that had already been approved under Glass-Steagall and did much to undermine its application. Regulations specifying the formal content of these limits and definition are to be formulated by the SEC and CFTC as appropriate.

E. Swaps and futures regulation

These exemptions do not, however, apply to credit default swaps (CDSs) unless they are cleared through derivatives-clearing regulations that are called for under the Act. The financial industry fought hard to limit reforms on the trading of CDSs to the requirement that they be cleared, arguing that this would be sufficient to ensure safety. However, Michael Greenberger (2010) has argued that, while clearing regulations would help to ensure capital adequacy of trading partners, this alone is not sufficient protection. For example, Greenberger states that the following regulations are necessary as well:

transparency of pricing and of the trading party identities, prudential and competency regulation of intermediaries, adequate self-regulation by the industry to help regulators, complete record keeping, prohibitions on fraud and manipulation, full disclosure to regulators and counterparties, and competent private enforcement. This would create a structure similar to stock market rules, regulations, and operating procedures. Exchange trading, strict antifraud requirements that are enforced by state and federal governments, and bans on “abusive” CDSs that are designed to cause economic injury (through bankruptcy) were seen to be needed to prevent a repeat of the problems that led up to the crisis.

It is interesting that a new market in synthetic collateralized debt obligations is rapidly developing, based on the sharp increase in junk bond issuances that has been stimulated by the low interest rates and spreads in the corporate bond market. The instruments enable investors to take a position on the junk bond market without holding a long position in the underlying instruments. They are created through derivatives on junk bond indices and resemble the instruments that created such difficulty in the mortgage market, while providing exposure similar to a credit default swap. It is not clear that the new regulations will be able to prevent a like collapse in the event of a rapid increase in policy rates, spreads, or junk bond default rates.

The full implementation of the Volcker and Lincoln amendments requires provisions to shift OTC trading in derivatives onto federally mandated clearing mechanisms and regulated markets. The Act thus calls for the creation of a comprehensive framework for the regulation, clearing, and exchange trading of OTC derivatives. Now defined as “swap” contracts, federal legislation has always excluded them from similar formal regulations that originated in the initial regulation of futures contracts in 1922. This is due in part to the fact that futures contracts were initially developed in the agricultural sector and thus were subject to commodity futures trading regulation monitored by the CFTC, while other derivatives contracts were primarily financial and therefore under the regulatory rubric of the SEC. Thus, although futures contracts, whether of a financial or commodity nature, could not be legally traded outside of a formally regulated market without a specific exemption, other derivatives were always fully exempt and thus developed in the OTC market. The current regulation thus seeks to apply the exchange and clearing regulations of futures to virtually all standardized swap contracts.

While swaps and futures represent similar “time” contracts, swaps, unlike futures, were customized to the specific commercial hedging needs of businesses and financial institutions; and, as noted, financial institutions initially acted as intermediaries bringing together swap counterparties in private bilateral negotiations. Since most of these contracts were negotiated without exchange of principal, risk exposure was limited to marginal changes in the market price of the contracts and prescriptive regulation was not considered necessary. As banks began to take on principal positions as counterparties to client requests, they also accepted risk on the nonperformance of counterparties, but this was also considered minimal. The most popular swaps contracts were interest rate and Forex swaps, which were generated by the breakdown of the Bretton Woods system of fixed exchange rates and have since become an integral part of the hedging in the flexible interest and exchange rates in the international financial system. As they increased in volume, the International Swaps and Derivatives Association provided standardized terms and documentation, reducing the need for specific conditions and bilateral negotiation.

The definition of swaps in the Act covers most commonly traded OTC derivatives, including options on interest rates, currencies, commodities, securities, indices, and various other financial or economic interests or property; contracts in which payments and deliveries are dependent on the occurrence or nonoccurrence of certain contingencies (e.g., a credit default swap); and swaps on rates and currencies, total return swaps, and various other common swap transactions.

Due to the parallel development of commodity-based and financial-based contracts, the Act defines and provides for a common approach to “security-based swaps,” which are generally swap transactions involving a single security or loan or a narrow-based security index. In broad terms, these will be regulated by the SEC while “commodity swaps” will be regulated by the CFTC, preserving the historical division of labor between the two agencies.

Another high-volume area of the market that might be considered a prime example of contracts that might benefit from regulated market trading are foreign exchange swaps and forward contracts. These contracts are primarily the domain of banks and are currently exempt from regulatory oversight. They will be subject to regulation under the Act; however, given the major participation of banks in providing client services and the traditional absence of regulation since the breakdown of the Bretton Woods system, the Act provides the Treasury secretary with the power to exclude them from regulation if the contracts negotiated have not been structured to evade the reach of the legislation. This exemption is expected in the near future.

Banks, dealers, and other financial institutions active in the derivatives markets may be classified as “(security) swap dealers”—that is, any person who holds himself out as a dealer in swaps, makes a market in swaps, regularly enters into swaps with counterparties as an ordinary course of business for his own account, or engages in any activity causing him to be commonly known in the trade as a dealer or market maker in swaps—and will become subject to registration and record-keeping requirements.

Given the prominent role in providing client services, a number of institutions will be exempt from classification as (security) swap dealers: an insured depository institution, to the extent it offers to enter into a swap with a customer in connection with originating a loan with that customer; an entity that buys or sells swaps for such person’s own account, either individually or in a fiduciary capacity, and not as “part of a regular business”; and an entity that engages in a “de minimis quantity” of swap dealing in connection with transactions with or on behalf of its customers.

The major obligation of swap dealers will be the application of minimum capital standards and initial and variation margin requirements for swaps that are not cleared as required by the appropriate prudential regulatory agency or commission.

F. Dealing with insolvent institutions

As noted, the major sections of the Act do little to reverse the trend toward larger and larger multifunction bank conglomerates. The Act attempts to deal with the increased risks presented by such institutions, whether caused by moral hazard or simple management deficiencies, by creating a system for the dissolution of such institutions when they become insolvent. Indeed, the overarching theme of

the Act is not so much to prevent crises as to preclude the possibility of using public funds in meeting losses or rescuing insolvent institutions. This is understandable considering the criticism of the use of the TARP program to sustain and recapitalize insolvent financial institutions while insolvent households were forced into foreclosure. Congress clearly wanted to wash its hands of any responsibility for the use of public funds in support of financial institutions.

The absence of a common legal framework for dealing with insolvent institutions was one of the main difficulties noted by regulators in responding to the recent crisis. For example, the Federal Reserve has argued that it had no mandate to act in the case of Lehman Brothers, while the Treasury had no mandate to impose bankruptcy on American International Group (AIG). In the absence of clear FDIC authority to resolve noninsured, nonbank financial institutions, direct government support appeared to be the sole alternative. Title II of the Dodd-Frank Act is meant to meet this difficulty through the creation of an “orderly liquidation authority” (OLA) that gives the FDIC power to seize control of such institutions on the determination by the Treasury secretary that they threaten the financial stability of the United States. It mandates the FDIC to liquidate such designated institutions so as to maximize the value received from the disposition of the company’s assets, minimize any loss, mitigate the potential for serious adverse effects to the financial system, ensure timely and adequate competition and fair and consistent treatment of bidders on assets and deposits, and prohibit discrimination.

According to the Act, implementing orderly liquidation requires that the FDIC determine that such action is necessary for purposes of the financial stability of the United States, and not for the purpose of preserving the covered financial company; ensure that the shareholders of a covered financial company do not receive payment until after all other claims and the Deposit Insurance Fund are fully paid; ensure that unsecured creditors bear losses in accordance with the priority of claims; ensure that the management and board of directors responsible for the failed condition of the covered financial company are removed (if still present at the time at which the FDIC is appointed receiver); and not take an equity interest in or become a shareholder of any covered financial company or any covered subsidiary.

Another reason for the use of direct government intervention in the recent crisis was the need for rapid action in order to prevent further deterioration of the financial condition of the institutions in difficulty and the risk of contagion. However, under OLA, the determination by the Treasury secretary has to be made on recommendation of certain designated federal regulatory authorities (such as the FSOC) and with an evaluation of why the institution should not be dealt with under the Bankruptcy Code, and after consultation with the president. The Act also requires that before the Treasury secretary can make the determination that the FDIC should be appointed receiver, he must first make a requisite series of specific underlying findings, including that the company is in default or is in danger of default; that should the company so default, the resolution of the company under the otherwise applicable federal or state law would have serious adverse consequences for the financial stability of the United States; that there are no private sector alternatives available that would avoid such adverse consequences; that there are no inappropriate potential effects on the claims or interests of creditors, counterparties, or shareholders that would result from such appointment; and that the seizure of such company under an OLA will prevent or otherwise limit damage to the financial stability of the United States (analysis must

consider the effectiveness of such seizure in mitigating the potential adverse effects on the financial system, the cost of such resolution to the general fund of the Treasury, and the potential of such seizure and resolution for increasing excessive risk taking going forward).

In the view of Joshua Rosner (2011), there is a fundamental flaw in the OLA process caused by the fact that it creates two different regimes under which a large financial firm can be wound up: traditional bankruptcy and the OLA. He notes that the value of a firm in its “going concern” state is dependent on the resolution process employed when it fails. All nonfinancial firms and most financial institutions use the Bankruptcy Code; commercial banks use the Federal Deposit Insurance Act; broker-dealers use the Securities Investor Protection Act. There may be different systems for different types of firms, but there are not, and there should not be, multiple processes for the same firm. In sum, the absolute worst thing that regulators can do is exactly what they’re doing now: signaling to the public and the markets, ex ante, which firms will cause systemic instability and then providing a US Treasury–funded bailout scheme through the Orderly Liquidation Authority. Where investors have great certainty and clarity about the workings of the US bankruptcy process, the OLA’s dangerous subjectivity, increased opacity, preference for short-term creditors, and ambiguity in how it will treat similarly situated creditors will only increase the uncertainty among creditors of a failing institution and cause necessary risk capital to pause at precisely the time this capital is most needed.

The OLA provision also mandates that the financial industry pay (after the fact) for the costs of any such dissolution activity undertaken by the FDIC. The powers granted to the FDIC as the liquidator are thus very similar to those currently in use for insured institutions, including, where necessary, the ability to continue the operations of a designated institution by means of an unencumbered bridge bank. The Act empowers the FDIC to establish such rules and regulations as it deems necessary or appropriate for implementing an OLA. This is one area in which its operations concerning insured and noninsured designated institutions will differ. In its resolution of normally insured depository institutions, the FDIC has considered the assets transferred by any institution to an arm’s-length SPV via structured financing securitization as claimable by secured creditors. However, the FDIC has indicated that it does not intend to apply this procedure in implementing the new OLA, thus protecting assets transferred to a special entity from the liquidation.

One of the difficulties faced by the FDIC in dealing with the resolution of large banks is the limited size of the deposit insurance funds. (Just like the Federal Savings and Loan Insurance Corporation in the 1980s!) While the ultimate source of funds is the federal government, and thus the Federal Reserve, the idea is that it should be self-financing, based on insurance premia charged to the insured institutions. Given the leitmotif of the Act to eliminate the use of public funds to rescue the financial system, Dodd-Frank mandates measures to increase the size of the insurance fund, as well as measures to adapt the premia to the risk that institutions introduce into the system.

The Act, in section 334, thus raises the minimum designated reserve ratio of fund assets to insured deposits (DRR), which the FDIC must set each year, to 1.35 percent (from the former minimum of 1.15 percent), and removed the upper limit on the DRR (which was formerly capped at 1.5 percent) and therefore on the size of the fund; required that the fund reserve ratio reach 1.35 percent by September

30, 2020 (rather than 1.15 percent by the end of 2016, as formerly stipulated); required that, in setting assessments, the FDIC offset the effect of requiring that the reserve ratio reach 1.35 percent by September 30, 2020, rather than 1.15 percent by the end of 2016, on insured depository institutions with total consolidated assets of less than \$10,000,000,000; eliminated the requirement that the FDIC provide dividends from the fund when the reserve ratio is between 1.35 percent and 1.5 percent; and maintained the FDIC's authority to declare dividends when the reserve ratio at the end of a calendar year is at least 1.5 percent, in addition to granting the FDIC sole discretion in determining whether to suspend or limit the declaration or payment of dividends. The FDIC has acted to exceed the requirements of the Act, raising the DRR to 2 percent in 2011.

The Act also requires that the FDIC amend its regulations to redefine the assessment base used for calculating deposit insurance assessments. Under Dodd-Frank, the assessment base must, with some possible exceptions, equal average consolidated total assets minus average tangible equity. The FDIC has proposed eliminating risk categories and the use of long-term debt issuer ratings for large institutions, using a scorecard method to calculate assessment rates for large and highly complex institutions, and retaining the ability to make a limited adjustment after considering information not included in the scorecard. The final rule will define a large institution as an insured depository institution that had assets of \$10 billion or more as of December 31, 2006 (unless, by reporting assets of less than \$10 billion for four consecutive quarters since then, it has become a small institution); or that had assets of less than \$10 billion as of December 31, 2006, but has since held \$10 billion or more in total assets for at least four consecutive quarters, whether or not the institution is new. In almost all cases, an insured depository institution that has held \$10 billion or more in total assets for four consecutive quarters will have a CAMELS rating; however, in the rare event that such an institution has not yet received a CAMELS rating, it will be given a weighted average CAMELS rating of 2 for assessment purposes until actual CAMELS ratings are assigned. An insured branch of a foreign bank is excluded from the definition of a large institution.⁵

On the insurance provided by the Depositors Insurance Fund, the Act calls in the FDIC to fully insure the net amount that any member or depositor at an insured credit union maintains in a noninterest-bearing transaction account. Such amount shall not be taken into account when computing the net amount due to such member or depositor. The normal insurance level remains at \$250,000 for each separate, normal interest-bearing account.

Many commentators have suggested that while the FDIC was unwilling to intervene to resolve “too big to fail” institutions, it was certainly able to do so. This position has been made very forcefully by Thomas Hoenig (2009), president of the Federal Reserve District Bank of Kansas City, on the basis of his experience in dealing with the resolution of Continental Illinois Bank. To facilitate the ability of the FDIC to deal with these very large financial institutions (which, as already noted, Dodd-Frank considers a fact

⁵ US Regulators use a rating scale of 1 to 5 based on a series of indicators to assess the soundness of a bank. They include (C) capital adequacy, (A) asset quality, (M) management, (E) earnings, (L) liquidity, and (S) sensitivity to market risk.

of life), the Act mandates the formulation of so-called “living wills” in the form of the preparation of resolution plans and credit exposure reports.

The Act calls upon the Board of Governors of the Fed to require nonbank financial companies and bank holding companies that it supervises to periodically report the plan of such company for rapid and orderly resolution in the event of material financial distress or failure, which shall include: information regarding the manner and extent to which any insured depository institution affiliated with the company is adequately protected from risks arising from the activities of any nonbank subsidiaries of the company; full descriptions of the ownership structure, assets, liabilities, and contractual obligations of the company; identification of the cross-guarantees tied to different securities; identification of major counterparties; and a process for determining to whom the collateral of the company is pledged.

In addition, the Act calls for credit exposure reports covering the nature and extent to which the company has credit exposure to other significant nonbank financial companies and significant bank holding companies, and the nature and extent to which other significant nonbank financial companies and significant bank holding companies have credit exposure to that company.

The Fed and the FDIC will review these reports, and if, based on their review, the resolution plan of a nonbank financial company supervised by the Board of Governors or a bank holding company is not credible or would not facilitate an orderly resolution of the company, shall notify the company of the deficiencies in the resolution plan; the company shall resubmit the resolution plan within a timeframe determined by the Fed and the FDIC with revisions demonstrating that the plan is credible and would result in an orderly resolution, including any proposed changes in business operations and corporate structure to facilitate implementation of the plan.

The “living will” is thus designed to show ex ante that some firms are too big to fail, and will clearly put the major burden on large multifunction banks with complex global operations, such as Citigroup, Bank of America, JPMorgan Chase, Goldman Sachs, and Morgan Stanley. The head of the FDIC has recently suggested that the inability of a big bank to provide a credible resolution plan would be a condition for requiring that it be broken up by the transformation of its foreign operations into foreign subsidiaries subject to foreign regulators, in order to realign its legal structure and, if necessary, make it easier for regulators to liquidate the bank. “If they can't show they can be resolved in a bankruptcy-like process . . . then they should be downsized now,” said FDIC Chairman Sheila C. Bair (quoted in Clark 2011). The aim of orderly liquidation is to avoid a repeat of 2008, when the Bush administration bailed out AIG and other firms but not Lehman Brothers. Lehman's bankruptcy virtually froze capital markets.

As will be seen in chapter 2, Minsky always promoted smaller banking institutions as a way to ensure local management and local knowledge could be used in the assessment of creditworthiness. He favored the imposition of the originate-and-hold banking model, which would have incentive structures that promoted financial stability rather than risk taking. Finally, he believed that promotion of small-to-medium-sized financial institutions would be more consistent with a general policy biased against concentration of economic power—in both the financial and nonfinancial sectors. He would thus have been less willing to emphasize an OLA and resolution plans and more in favor of breaking up the large

financial holding companies. It is interesting that under Glass-Steagall, banks were given one year to divest themselves of their securities affiliates and other prohibited activities, and there were no difficulties in meeting this timetable.

G. Provision of liquidity

The main instrument of Federal Reserve support during the crisis was its authority to open the discount window in urgent and exigent circumstances, as stipulated in section 13(3) of the Federal Reserve Act, to virtually any financial or nonfinancial institution against virtually any type of collateral. As a result of the express desire of Congress to ensure that no support be given to failing financial institutions, the Dodd-Frank Act seeks to ensure that the Fed's discretion to provide emergency support to insolvent institutions does not circumvent an OLA. The Act thus calls on the Board of Governors, "in consultation with the Secretary of the Treasury, to establish the policies and procedures to ensure that any emergency lending program or facility is for the purpose of providing liquidity to the financial system, and not to aid a failing financial company, and that the security for emergency loans is sufficient to protect taxpayers from losses and that any such program is terminated in a timely and orderly fashion. The policies and procedures established by the Board shall require that a Federal reserve bank assign, consistent with sound risk management practices and to ensure protection for the taxpayer, a lendable value to all collateral for a loan executed by a Federal reserve bank" (Sec. 1101[a]).

In addition, the Act requires the Fed to establish procedures to prohibit borrowing from programs and facilities by insolvent borrowers. Further, it limits the ability of the Board to establish any emergency facility without the prior approval of the Treasury secretary, and, if approval is obtained, to report within seven days to the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Financial Services, providing the justification for the assistance; the identity of the recipients; the date, amount, and form in which the assistance was provided; and complete particulars of the assistance. The particulars include duration; collateral pledged and the value thereof; all interest, fees, and other revenue or items of value to be received in exchange for the assistance; any requirements imposed on the recipient with respect to employee compensation, distribution of dividends, or any other corporate decision in exchange for the assistance; the expected costs to the taxpayers of such assistance; and similar information with respect to any outstanding loan or other financial assistance, to be reported every 30 days.

And if such reporting were not sufficient, the Act gives the comptroller general of the United States the power to conduct audits, including onsite examinations, of the Board of Governors, a Federal Reserve Bank, or a credit facility, if the comptroller determines that such audits are appropriate, solely for the purpose of assessing, with respect to a credit facility or a covered transaction, the operational integrity, accounting, financial reporting, and internal controls governing the credit facility or covered transaction; the effectiveness of the security and collateral policies established for the facility or covered transaction in mitigating risk to the relevant Federal Reserve Bank and taxpayers; whether the credit facility or the conduct of a covered transaction inappropriately favors one or more specific participants over other institutions eligible to utilize the facility; and the policies governing the use, selection, or payment of third-party contractors by or for any credit facility or to conduct any covered transaction.

From his very early work on the reform of the Fed discount window, Minsky argued that the emergency actions provided by section 13(3) should be made permanent and part of the ordinary operation of the discount window. For Minsky, the reason was quite obvious: there is only one financial institution that does not face a liquidity constraint, and that is the Federal Reserve. As Chairman Bernanke has reiterated, the Fed has the ability to provide liquidity at the push of a computer key. In a complex, layered financial system in which every institution's liabilities must have a higher liquidity premium than its assets, all institutions ultimately rely on the banking system for support in the case of a shortfall of cash inflows and the need to refinance their liabilities. And the banking system relies on the Fed. Thus, limiting discount lending to the banks means allowing a liquidity crisis to morph into an insolvency crisis in the rest of the financial system before it reaches the banks and access to the discount window becomes an option. Better to lend directly to the institutions facing liquidity difficulties. Indeed, this is what the Fed did in the current crisis, and it is the source of the criticism that the agency was bailing out insolvent institutions. However, the problem was that the Fed extended the reach of the discount window only after a crisis broke out. It provided support only after Bear Stearns was in difficulty, but then extended support to all equivalent institutions. The same was true in the case of Lehman, which was allowed to fail—and *then* the window was opened to other broker-dealer institutions. For Minsky, it would have been much better to open the window to these institutions as a matter of course, which might have prevented their decline into insolvency. Use of the liquidity facilities early on also could have been made transparent, leaving the Fed less open to the criticism that it was picking winning and losers.

For Minsky, opening the window would have provided the Fed with a “window” into the operations of the institutions seeking support, which would have alerted it much more quickly to the condition of their balance sheets. Instead of continually arguing that the crisis was contained, the Fed, had it been the lender to all financial institutions, would have known much earlier how much the decline in house prices and the markets for securitized structure had impacted all financial institutions.

H. The future of securitization: Risk retention

For many, abuse of securitization was at the root of the financial crisis. It was certainly a crucial part of the shift to the originate-and-distribute business model adopted by most large financial institutions and the rise of off balance sheet entities and shadow banks. It also was a source of significant fraudulent activity. It is therefore not surprising that Dodd-Frank Act should propose regulation of these structures. However, the new regulations are not extensive and are limited to the imposition of requirements for credit risk retention requirements of not less than 5 percent for securitizers and, in certain circumstances, originators of asset-backed securities. Issuers of a Qualified Residential Mortgage (the characteristics of which have yet to be defined by regulators) or the originator of the asset that meets minimum underwriting standards to be determined by the appropriate regulatory agencies will be exempt from the risk retention requirement. This is based on the presumption that if banks had retained some risk, they would have been more diligent in monitoring the quality of the mortgages that they securitized. Yet, in actual fact, one of the causes of the large losses experienced by institutions engaged in securitization was that they had voluntarily retained a substantial amount of investment-grade

tranches of subprime securitizations. Indeed, in this case, having skin in the game did not lead to greater concern for asset quality but was, rather, a cause of increased instability.

In a study prepared under the mandate in Dodd-Frank, the FSOC (2011) offers several principles and recommendations that should inform the design of a risk-retention framework, so as to strengthen the securitization process and facilitate economic growth by allowing market participants to price credit risk more accurately and allocate capital more efficiently.

The study argues that a risk-retention framework should seek to meet the following objectives: align incentives without changing the basic structure and objectives of securitization transactions; provide for greater certainty and confidence among market participants; promote efficiency of capital allocation; preserve flexibility as markets and circumstances evolve; and allow a broad range of participants to continue to engage in lending activities, while doing so in a safe and sound manner.

A risk-retention framework can be structured in a number of ways to meet these objectives. The form of risk retention, allocation of risk retention to various participants in the securitization chain, amount of risk retention, allowances for risk management, and exemptions from risk retention—all are important variables in the design of any such framework. Although a risk retention framework can help align incentives and improve underwriting standards, the macroeconomic implications of risk retention are complex. A risk-retention framework can incent better lending decisions and consequently help strengthen the quality of assets underlying a securitization. It may also help mitigate some of the procyclical effects that asset-backed securitization can have on the economy. However, if overly restrictive, risk retention could constrain the formation of credit, which could adversely impact economic growth. The challenge is to design a risk-retention framework that maximizes benefits while minimizing its costs.

It is interesting that the accounting conditions that determine whether or not securitizations can be considered off-balance-sheet nonrecourse sales of assets make no reference to “risk retention,” leading to the possibility that the framework will not necessarily make these structures more transparent or better monitored. According to the Federal Reserve’s report to Congress on risk retention (Board of Governors 2010), a recourse agreement requiring the originator or holder of assets to absorb a percentage of the credit loss for the assets after sale would not appear to negate any of the conditions required for consolidation on the issuer’s balance sheet. However, it goes on to note that if the risk retention requirements increase the instances of consolidation of the assets and liabilities of an ABS entity, the agencies should consider the incentives that such an outcome would create.

This raises a number of issues. First, regulatory capital requirements for banking institutions generally state that consolidated assets must be risk weighted in the same way as assets on the balance sheet that have not been securitized. In addition, if balance-sheet assets are subject to either impairment analysis on a periodic basis or fair-value measurement, this would then apply to securitized assets that do not qualify for exclusion. If these assets require an allowance for credit losses, including loans and leases, this will affect earnings and regulatory capital. Assets measured at fair value, including many securities, also will affect earnings and regulatory capital. The impact on earnings and capital may continue to

encourage institutions to engage in deal structuring for the purpose of achieving off-balance-sheet treatment. This may lead to the same arbitrage of activities that plagued Basel I, creating a wedge between economic risk and regulatory risk of the bank portfolio. Under Basel I risk weights, financial institutions were encouraged to retain the riskiest assets in each category. Instead of solely economic factors determining an appropriate level of credit and liquidity protection necessary for asset-backed security (ABS) issuances, institutions might desire to retain only the minimum level of risk required by regulation, if the minimum level enabled the institution to avoid consolidation. Similarly, companies may be encouraged as a result of those earnings and capital effects to avoid consolidating assets and liabilities by ceding power over special entities when it is not feasible to limit benefits to an amount that meets regulatory requirements. For example, institutions may cede power over ABS issuance entities—which in some cases results from their ability to manage assets held by the issuance entities—by selling servicing rights or distancing themselves from their customers in order to avoid consolidating the assets and liabilities of the issuance entities. As a result, it is not clear that the de minimis 5 percent “skin in the game” thresholds included in Dodd-Frank will inhibit the difficulties caused by off-balance-sheet entities in the recent crisis. It is also doubtful that these structures will, in fact, isolate the institutions from the impact of the performance of these assets. Indeed, in the recent crisis, virtually all of the risk of variable-interest entities and other off-balance-sheet activities were eventually subject to recourse and returned to bank balance sheets, further aggravating the crisis. For example, if the fees and trading profits earned by securitizing risky assets is believed by banks to more than offset the risk to capital of retaining a 5 percent share of “skin in the game,” then the rules will not change behavior. And there is the additional danger that, due to off-balance-sheet commitments, the true share could be much higher. Reforms should not be based on the presumption that banks want to avoid risks. Further, perceived risk depends on the operating environment—the “great moderation” lowered perceived risk across the spectrum of assets. That also changed behavior, because the reward for risk fell. This was probably a big impetus to bank activities that appeared to shift risk but in fact did not.

Finally, it should be noted that the SEC had instigated changes in the regulation of securitization before the passage of the Dodd-Frank Act and has continued the process of consultation prior to final rule making in this area. Securitization had been practiced since the 1970s without incident until the recent crisis. The objective should be to preserve the principle by producing regulation that prevents instability.

I. Capital and leverage ratios

Some commentators believe that the shift toward securitization was driven by the introduction of risk-weighted capital ratios in the Basel requirements, which increased the costs of certain types of investments for banks. There are other experts who argue that these requirements have become too detailed and too onerous, and should be replaced by simpler, traditional capital-to-gross-assets and liquidity ratios. Despite these criticisms, the Act mandates the appropriate federal banking agencies to establish minimum leverage and risk-based capital requirements on a consolidated basis for insured depository institutions, depository institution holding companies, and nonbank financial companies supervised by the Board of Governors. The minimum leverage capital requirements proposed should not be quantitatively lower than the generally applicable leverage capital requirements that were in effect

for insured depository institutions as of the enactment of the Act. In addition, the federal banking agencies are mandated to develop capital requirements applicable to insured depository institutions, depository institution holding companies, and nonbank financial companies supervised by the Board of Governors that address the risks that the activities of such institutions pose, not only to the institution engaging in the activity but also to other public and private stakeholders in the event of adverse performance, disruption, or failure of the institution or the activity. Such rules shall address, at a minimum, the risks arising from significant volumes of activity in derivatives, securitized products purchased and sold, financial guarantees purchased and sold, securities borrowing and lending, and repurchase agreements and reverse repurchase agreements; concentrations in assets for which the values presented in financial reports are based on models rather than historical cost or prices deriving from deep and liquid two-way markets; and concentrations in market share for any activity that would substantially disrupt financial markets if the institution were forced to unexpectedly cease the activity.

Given international agreements, the impact of these provisions is to leave the determination of such ratios to the Basel Committee, and its proposals under Basel III, which were not available at the time the Act was drafted.

J. Reform of credit rating agencies

Credit rating agencies and, in particular, nationally recognized statistical rating organizations (NRSROs) have been thought by many to be at the center of much of what went on in the market crisis, especially in the area of structured products. The agencies have come under significant criticism for their methodologies, lack of procedures, and conflicts of interest. Attempts to reform the role of credit rating agencies have been ongoing, reinforced with each financial crisis that breaks out without any prior indication of credit weakness appearing in the ratings issued. These regulatory changes have sought to provide an avenue for an increase in the number of NRSROs and to remove their role in regulation, but regulations have not been provided for the NRSROs themselves. For example, on September 17, 2009, the SEC moved to eliminate references to NRSROs in the “References in Rules and Forms” under the Securities Exchange Act of 1934, the Investment Company Act of 1940, the Exchange Act, the Securities Act, the Investment Company Act, and the Investment Advisers Act.

Title IX of the Dodd-Frank Act breaks with the hands-off treatment and calls for the creation of an Office of Credit Rating with the authority to fine credit rating agencies, to administer the rules of the SEC regarding the practices of NRSROs. The Office will examine all NRSROs at least annually, with each examination to review the following: the NRSROs’ established procedures for assigning ratings, whether conflicts of interest are effectively managed, the NRSROs’ ethics policy, NRSRO corporate governance procedures; and the processing of complaints. The Office of Credit Rating will publish annual reports summarizing the findings of the examinations of the NRSROs.

All NRSROs will be required to establish, maintain, enforce, and document an effective internal control structure for determining credit ratings. They must submit annual internal controls reports, attested to by the CEO, to the SEC that describe management’s responsibility to establish and maintain effective internal controls for determining credit ratings. NRSRO compliance officers must prepare certified

annual reports and submit those reports to management and the SEC. All NRSROs must disclose information on each initial credit rating assigned and on any subsequent changes to a credit rating. This information must be prepared to allow users of the credit rating to evaluate the accuracy of ratings and to compare the performance ratings of NRSROs. Further, NRSROs will have to disclose their use of third parties for due diligence efforts, and if an NRSRO is made aware of credible and significant information from other sources, it must consider that information in assigning a rating. The Act also requires the removal of all references to credit ratings in various other statutory schemes—among them, the Federal Deposit Insurance Act, the Federal Housing Enterprises Financial Safety and Soundness Act, the Investment Company Act, and the Exchange Act—in order to eliminate overreliance on credit ratings. All Federal agencies must substitute references in regulations to credit ratings with other standards of creditworthiness.

In addition, the SEC must commission a study regarding the feasibility or desirability of standardizing credit ratings for all NRSROs, standardizing stress testing, requiring a quantitative correspondence between credit ratings and a range of default probabilities, and standardizing credit rating terminology; and the Government Accountability Office must conduct a study to evaluate different methods for compensating NRSROs in order to create more incentives for providing accurate ratings, as well as a study on the feasibility and desirability of creating an independent professional organization for rating NRSRO analysts. Thus, major reform of the operation and role of NRSROs remains to be determined after the completion of the mandated studies.

A key part of the new provisions deals with the structure of the rating agencies. Each NRSRO is required to have a board of directors, at least half of whom are independent. The board is charged with overseeing the implementation of internal controls regarding policies and procedures for determining ratings, as well as compensation and promotions within the organization. It is also responsible for overseeing the management of conflicts of interest through the implementation of appropriate policies and procedures.

The organization is required under the Act to maintain a documented, effective system of internal controls for determining ratings. The Commission is charged with requiring that each NRSRO prepare an annual report regarding its controls. The report must include an attestation by the CEO that describes the responsibility of management for establishing and maintaining the system. Each NRSRO is also required to designate a compliance officer. That officer cannot perform credit ratings or participate in marketing or sales activities. Likewise, the compensation of the officer cannot be tied to the financial performance of the organization. Rather, it must be arranged to assure independence.

The compliance office is charged with preparing an annual report addressing changes in the internal compliance procedures and code of ethics of the organization. The report must also examine compliance with the securities laws and the organization's policies and procedures. The SEC is required to review the code of ethics and conflict of interest policy of the organization annually, and whenever there are material changes.

The Act also addresses the “revolving door” issue between NRSROs and their clients. In this regard, Dodd-Frank requires that each NRSRO report to the SEC any case where, within the previous five years, a senior officer of the agency (and certain other employees) is hired by the sponsor or underwriter of a security for which the agency issued a credit rating in the 12 months prior to the hiring.

Several sections of the Act address the potential liability or litigation defenses of NRSROs. These include the application of expert liability. NRSROs will now be liable under section 11 of the Securities Act. Dodd-Frank overrides Rule 436, which exempted these organizations from being considered part of a registration statement. Accordingly, to include a report in a registration statement, consent from the NRSRO will have to be obtained. The Commission is required to remove the exemption for credit rating agencies under Regulation FD. The Act also requires all federal agencies to review and modify regulations to remove references or reliance on credit ratings, and to substitute an alternative standard of creditworthiness. The Act specifies that statements made by credit rating agencies are subject to liability in the same manner as those of accounting firms and securities analysts under the federal securities laws.

Finally, Dodd-Frank requires the preparation of studies and reports that may impact the future regulation of credit rating agencies. These include a report to Congress on the credit rating process for these products within 24 months of conclusion. It must include a study regarding the feasibility of establishing an independent organization to assign NRSROs to determine credit rating agencies, a report on the independence of NRSROs and how this impacts ratings, a study on the feasibility and desirability of standardizing credit rating terminology across credit rating agencies and asset classes, and a study of alternative means for compensating NRSROs to create incentives for more accurate ratings.

The SEC had already made some regulatory references to assigning ratings on a voluntary basis in 2009, but the Act now makes this obligatory. The SEC has indicated that it will resuscitate a plan it proposed in 2008, whereby rating references will be removed from the simplified registration form designed to expedite the process for a primary offering of public securities. Companies can qualify for this process if the debt is given an investment grade rating, so an alternative will need to be proposed—for example, a history of issue of more than \$1 billion in nonconvertible debt securities over a three-year period. An alternative will also need to be provided for the qualification of securities held by money market mutual funds.

The difficulties surrounding the removal of ratings from formal regulations and the suspension of the liability exemption for NRSROs is visible in the fact that SEC regulations requiring credit ratings for public securitization issues remain to be eliminated at a future date, while the removal of the legal liability for ratings they issue went into effect upon passage of the Act. As a result, the rating agencies announced that they would no longer allow their ratings to appear in registration documents for new securitizations. Immediately after the passage of the Act, the SEC was forced to announce a six-month ratings exemption in registration statements for securitizations other than those issued as private placements under Rule 144a.

K. The role of hedge funds and the reforms

While hedge funds suffered substantial losses of both asset value and clients as a result of the crisis, it is generally believed that they played little role in the genesis of the crisis and those that were negatively impacted have been closed through normal processes of asset redemption—although with significant restrictions on the timing of payouts. Thus, the Dodd-Frank legislation does not create substantial new regulations for hedge funds. The two basic provisions are the possibility that the FSOC may classify a large fund as systemically important, and thus subject to additional regulations similar to those applied to other regulated institutions; or as a major swaps participant or swaps dealer, and thus subject to the swaps regulation discussed above.

The other basic change is the requirement on registration and record keeping. For funds in the managed-asset range of \$25 million to \$100 million, registration is required in the state of residence, unless the state does not have an exam requirement; if funds operate in more than 15 states that require registration, then SEC registration substitutes. For funds with managed assets exceeding \$100 million, SEC registration is required unless the assets are under \$150 million and deal only with private funds. As noted above, the Volcker rule prohibits banks from owning more than a certain share of hedge funds. This regulation is meant to ensure that a bank might use a hedge fund in the same way it uses a securities affiliate.

As noted, there are exemptions that depend on the sophistication and net wealth of the investor in the case of private sales of assets by certain financial institutions. The value of the investor's house, which has until now been included in the calculation of net investor wealth will be excluded, although this may seem a case of acting after the horse has bolted.

On the other hand, given the restrictions placed on banks' proprietary and speculative activities, it is likely that hedge funds will continue to grow in size and number. Indeed, many banks have shut down their proprietary trading desks have shifted personnel into client asset management units or seen their best traders leave to form stand-alone hedge funds—often with the backing of the bank they are leaving.

L. Multiple and overlapping regulatory authorities

One of the criticisms that have traditionally been made of US financial regulation is the existence of multiple regulatory agencies, often with overlapping mandates. This is in part due to the federal structure of the United States, which leaves jurisdiction over certain activities to the individual states. For example, while the Constitution forbids the issue of currency by the states, it does not prevent them from chartering banks, with the result that there is an overlap between state and federal regulations. When the federal government attempted to regain its monopoly on the issue of bank notes in order to provide a uniform, national currency, it created the Office of the Comptroller of the Currency to oversee the national banks that issued the notes. Thrift institutions had their own state and federal regulatory structure, and when the Federal Reserve was created, it, too, took on regulatory powers, overseeing the issue of Federal Reserve notes. The introduction of deposit insurance under the New Deal led to the

creation of the FDIC to operate that system, as well as the creation of the SEC. The CFTC was created to oversee agricultural futures. The current reform legislation does not resolve this problem, and only eliminates one regulatory agency, the Office of Thrift Supervision (OTS). There are few thrifts still in existence, and the OTS had a reputation for lax oversight, which led to agency shopping; this was the regulatory agency that was responsible for AIG, and Countrywide made acquisitions designed to bring it under the authority of the OTS.

On the other hand, the Federal Reserve's regulatory responsibilities were sharply increased, and it is now charged with overseeing all systemically important institutions as well as those classified as such by the FSOC. As a result, the potential conflict between the Fed's role in designing and implementing price and output stabilization policy and undertaking the responsibility for financial stability assigned it by the Act have substantially increased. Minsky continually highlighted the fact that these two regulatory functions would be competing rather than complementary, and that this conflict would increase financial fragility in the system. This conflict can be seen in the current criticisms of the quantitative easing policy implemented by the Fed in order to restore financial stability, but which many see as inflationary. Minsky was more concerned with those periods in which the Fed would use tight monetary policy to dampen the level of activity and at the same time cause speculative funding units to become Ponzi units as the restrictive policy caused cash inflows to shrink. An example would be the increase in interest rates at the beginning of 1994, which produced a bond market crash and a reduction in global wealth that was much larger than the stock market break of 1987.

It was for this reason that Minsky argued in favor of a greater role for the central bank in promoting financial stability, given its position as unconstrained lender to the rest of the system; in exchange, it would leave economic policy to the fiscal decisions of the Treasury. Despite the fact that many of its critics have suggested that the Fed has usurped the fiscal policy role of the Treasury, it has nonetheless seen its power over economic policy increased as its role in maintaining financial stability has grown. Indeed, many argue that the next financial crisis may be generated by the withdrawal of quantitative easing to counter inflation, with the rise in interest rates causing collapsing bond prices and losses for financial institutions and households on their holdings of what they considered to be safe assets.

Rather than using variations in the Fed funds rate and open market purchases and sales to attempt to influence the decision of financial institutions to fund the spending decisions of the private sector, Minsky favored more direct influence over bank lending by ensuring that financial institutions were always short reserves; that is, that the normal state of affairs would be for financial institutions to borrow from the Fed at the discount window. By providing most reserves through lending (rather than through open market purchases), the Fed could influence lending by choosing assets it would accept for discounting. In this manner, it would refuse to discount assets that resulted from what it perceived to be imprudent lending (e.g., subprime mortgages in a real estate bubble). It would also provide the Fed with more immediate information on the lending activities, and the associated innovations, of financial institutions. As a lender to financial institutions, the Fed would have access to their portfolios—and could issue warnings and “cease and desist” orders as necessary. This is a system that has been practiced with success in Germany, where financial institutions were normally “in the bank”—that is, using Bundesbank credit on a normal basis.

M. Can Dodd-Frank prevent “It” from happening again?

While Dodd-Frank contains many generic proposals for improvements to supervision, regulation, and resolution of financial institutions, its full implementation will require over 200 rule-making provisions by regulatory agencies, over 60 special reports and, and an additional 22 reports. It thus places not only major responsibility for success of the Act in those bodies responsible for writing the specific rules but also an even greater burden on the supervision of those rules. There are some, such as a former chairman of the Board of Governors, who believe that this is a mission impossible that will cause the Act to fail.

Thus, the final form will be largely determined by the interaction between the political incentive for reform and the ability of the various government agencies to fulfill the intentions of the legislation and the supervisory bodies to monitor compliance. However, as noted, the most important failing is that it leaves in place the underlying business model for financial institutions and the contradictions inherent in the 1999 legislation that were at the core of the crisis. Indeed, the underlying logic of the Fed and Treasury rescue operations has been to restore this system. If the problem was the structure of the financial system, then Dodd-Frank will not prevent another crisis. It is likely that the next crisis will be handled in a better manner. However, since the reforms do not envision a policy to reduce concentration and size, resolution will involve institutions at least as big as those that faced problems in 2007. The next chapter will examine Minsky’s view on fundamental reform—reform that would include restructuring of the financial sector.

CHAPTER 2. Minsky on What Banks Should Do⁶

Introduction

Chapter 1 indicated that none of the regulatory changes that have been introduced correspond to what Hyman Minsky would have recommended. It has also been noted that many of the measures are an attempt to reintroduce specific aspects of Glass-Steagall legislation to the Gramm-Leach-Bliley world of multifunction financial holding companies. In addition, most of these measures have exemptions that are based on the provision of client services, reminiscent of the interpretations of the “business of banking” clause in section 16 of the 1933 Act that eventually gutted it of its rigor. While this process took over 30 years in the case of Glass-Steagall, it is not encouraging that it is already written into the Dodd-Frank Act.

But there is another basic difference between the current regulations and Glass-Steagall. The 1933 legislation had a very clear idea of the causes of the system’s collapse and the desired structure of the reformed financial system (see Kregel 2009). Regulations were drafted and introduced to produce a financial structure that would be stable. Basically, the problem was located in the securities affiliates that used “other peoples’ money” to speculate in capital markets (often in the shares of the parent firm). The regulations produced a system in which commercial banks could not operate such affiliates and deposits could not be used to finance speculation on price changes in capital markets.

There is no such clarity in Dodd-Frank. The main problem to be solved appears to be the use of public funds to rescue failed institutions. The financial structure that ultimately will emerge will be the same the current one: large, multifunction institutions generating incomes from originate-and-distribute operations. The only change is that the zero risk of loss incentive structure will be replaced by the threat of bankruptcy, which even experts consider to be unrealistic. This then leaves open the question of what the ideal financial structure should look like. And this means answering the question of what the financial system should do.

A. Designing the financial system for stability

Minsky considered the following to be the essential functions of the financial system:

- a safe and sound payments system;
- short-term loans to households and firms and, possibly, to state and local government;
- a safe and sound housing finance system;
- a range of financial services, including insurance, brokerage, and retirement savings services;
- long-term funding of positions in expensive capital assets.

⁶ For more detail, see Wray 2010.

There is no economic reason why these services should be provided by a single financial institution or conglomerate. Indeed, the New Deal reforms of the 1930s aimed at preventing this, while the 1999 Modernization of Financial Services Act promoted it. However, Minsky recognized that Glass-Steagall had already become anachronistic by the early 1990s. He insisted that any new reforms must take into account the accelerated innovations in both financial intermediation and the payments mechanism. He believed these changes were largely market driven, and not due to deregulation. To some degree, the 1999 Act codified what had already taken place.

In an uncompleted draft book manuscript (written between 1991 and 1993), Minsky dealt in detail with a US Treasury proposal for “modernizing” the financial system. This document made recommendations for “safer, more competitive banks,” by “strengthening” deposit insurance, weakening Glass-Steagall and state limits on branching, allowing corporations to own banks, and consolidating regulatory supervision in the Treasury at the expense of reducing the role of the Fed. Minsky argued that the Treasury proposal was at best superficial because it ignored shadow banks. While he was critical of the approach taken to rescue the FDIC (recall that most thrifts had failed and many of the largest banks were in difficulty as a result of the collapse in real estate investments at the end of the 1980s), he agreed that deposit insurance had to be strengthened. He argued that weakening Glass-Steagall and removing limitations on bank branching represented an attempt to “fix something that is not broke,” because small-to medium-sized banks are more profitable due to their practice of relationship banking. He saw no reason to allow or promote the rise of hegemonic financial institutions operating in national or international markets and providing a broad scope of financial services. As many others have long argued, the economies of scale associated with banking are achieved at the size of relatively small banks.

Minsky was not swayed by the Treasury’s argument that banks were becoming uncompetitive because they could not branch across state lines or because certain practices were prohibited to them. He believed that repealing these constraints would simply reduce the profitability of the smaller, relationship-oriented banks. He recognized that the smaller banks would lose market share anyway, due to competition from shadow banks. Hence, the solution would not be found in promoting bigger, less profitable banks that were not interested in relation-oriented banking. Rather, Minsky argued in favor of allowing greater scope to the activities of the small community banks—a defense against encroachment by shadow banks.

We might call this “intensifying” banking by allowing each small institution to provide a greater range of services, as opposed to promoting branching and the concentration of power in the hands of a few large bank holding companies with a variety of subsidiaries.

In a proposal for development of the newly independent Eastern European nations, Minsky stated that the critical problem was to “create a monetary and financial system which will facilitate economic development, the emergence of democracy and the integration with the capitalist world” (Minsky 1992c, 28). Except for the latter goal, this statement applies equally well to promotion of the capital development of the Western nations (see also, Minsky 1993).

B. Promoting the capital development of the economy

In Minsky's view, capital development of the economy can be "ill done" in two main ways: the "Smithian" way and the "Keynesian way." The first refers to "misallocation": the wrong investments are financed by the financial system. The second refers to an insufficiency of investment, which leads to a level of aggregate demand that is too low to promote high employment. The 1980s suffered from both, but mostly from an inappropriate financing of investment, especially in the boom in commercial real estate investment that left large amounts of uninhabited or partially finished housing and commercial real estate projects. (He also argued that the leveraged buyout boom of the 1980s was another example of "ill done" finance because it loaded "cash cows" with unserviceable debt.) Minsky would surely have considered the property boom of the 2000s "ill-done," "Smithian" capital development, since far too much finance flowed into the commercial and residential real estate sector.

In the 1980s, the deregulated thrifts, which did not hold mortgages and had employed reduced underwriting standards, had funding capacity that flowed into commercial real estate; in the 2000s, the mania for risky (high-return) asset-backed securities fueled subprime lending. In a discerning analysis, Minsky argued that the way the mortgages were packaged made it possible to sell off a package of mortgages at a premium and enable the originator and the investment banking firms to walk away from the deal with a net income and no recourse from the holders. The instrument originators and the security underwriters did not hazard any of their wealth on the longer-term viability of the underlying projects. Obviously, in such packaged financing the selection and supervisory functions of lenders and underwriters are not as well done as they might be if the fortunes of the originators were at hazard over the longer term (Minsky 1992b, 22–23).

The implication is rather obvious: good underwriting is promoted when the underwriter is exposed to the longer-term risks. This brings us to Minsky's skeptical banker: "When we go to the theater we enter into a conspiracy with the players to suspend disbelief. The financial developments of the 1980s [and 1990s and 2000s!] can be viewed as theater: promoters and portfolio managers suspended disbelief with respect to where the cash would come from that would [validate] the projects being financed. Bankers, the designated skeptic in the financial structure, placed their critical faculties on hold" (Minsky 1992a, 37). As a result, the capital development was not done well. Decentralization of finance may well be the way to reintroduce the necessary skepticism.

Decentralization plus maintaining exposure to risk could reorient institutions back toward relationship banking. Unfortunately, most trends in recent years have favored concentration. The issues surrounding the response to institutions that are "too big to fail" dates back to the problems created in the 1970s by the rapid expansion of banks such as Continental Illinois, and gives an obvious advantage to the biggest banks. These banks benefit from financing costs below those of smaller institutions because of the implicit guarantee that they will be rescued by government intervention. Small local banks will be subject to higher costs as they attempt to offset this disadvantage by attracting more local deposits, opening more offices than necessary. They will also face higher costs for "wholesale" deposits in national markets. Even in the case of FDIC-insured deposits (which carry no default risk), smaller banks

pay more simply because of the market's perception that they are riskier, since they will be resolved rather than rescued if they face difficulty.

As a result of the Fed's response to the crisis in 2008, what were formerly nondeposit-taking investment banks are now allowed to attract FDIC-insured deposits to finance their speculative investments, and to rely on Fed and Treasury protection should their risky trades go bad. A small bank is hard pressed to compete with these large institutions, which have not only FDIC-insured liabilities but also the protection of uninsured deposits afforded institutions that are "too big to fail." The interest rate "subsidy" they receive is sufficient to make even big, inefficient institutions more profitable than smaller, more efficient ones.

C. How to restore relationship banking

How can the system be reformed to favor relationship banking that seems to be more conducive to promoting the capital development of the economy? First, it would be useful to reduce government protections for less desirable banking activities. The government currently provides two important kinds of protection: liquidity and solvency. Liquidity is mostly provided by the Fed, which lends reserves at the discount window and buys assets (in the past, mostly government debt, but in recent years the Fed has bought private debt as well). Refusing to provide liquidity is not the right way to discipline the financial system. Minsky always advocated extending discount window operations to include a wide range of financial institutions. If the Fed had lent reserves without limit to all financial institutions when the crisis first hit, the liquidity crisis probably could have been resolved more quickly. Hence, this kind of government protection should not be restrained.

The second kind of protection, against default, is more problematic. Deposit insurance guarantees full payment on certain classes of deposits—now up to \$250,000. This guarantee is essential for clearing at par and for maintaining a safe and secure payments system. There is no good reason to limit FDIC insurance to \$250,000, so the cap should be lifted. The question is, which types of institutions should be allowed to offer such deposits? Or rather, which types of assets would be eligible for financing using insured deposits? Some considerations would include riskiness of assets, maturity of assets, and whether purchase of the assets fulfills the public purpose: the capital development of the economy. Risky assets put the FDIC on the hook, since it must pay out dollar for dollar; but if the FDIC resolves a failing institution, it receives only cents on each dollar of assets. In his discussion of the Treasury's proposal for rescuing the FDIC, Minsky made clear that "cost to the Treasury" should not be a major concern (another reason for removing the cap: it is not important to limit the Treasury's losses to the first \$250,000 of a deposit).

For the same reason, while riskiness of assets financed by issuing insured deposits should be a concern, potential losses for the FDIC are not the problem. As Minsky argued, these guarantees are in fact the responsibility of the Federal Reserve, which will always be able to meet them. Further, the maturity of assets is no longer a concern if the Fed stands ready to lend reserves as needed; a bank could always meet deposit withdrawals by borrowing reserves at the discount window, so it would not need to sell longer-term assets. Hence, the major argument for limiting the ability of financial institutions to finance

asset positions by issuing insured deposits is that government has a legitimate interest in promoting the public purpose. Banks should be prevented from issuing insured deposits in a manner that causes the capital development of the country to be “ill done.”

Banks that receive government protection in the form of liquidity and (partial) solvency guarantees are essentially public-private partnerships. They promote the public purpose by specializing in activities that they can perform more competently than the government can. One of these is underwriting: assessing creditworthiness and building relations with borrowers that enhance their willingness to repay. Over the past decade, a belief that underwriting is unnecessary flowered and then collapsed. Financial institutions discovered that credit rating scores could not substitute for underwriting, in part because those scores can be manipulated, but also because the elimination of relationship banking changes the behavior of borrowers and lenders. This means that past default rates become irrelevant to assessing risk (as credit rating agencies seem to have discovered). If banks were not underwriting, why would the government need them as partners? The government could just finance directly those activities that it perceives to be in the public interest: home mortgages, student loans, state and local government infrastructure, and even small-business activities (commercial real estate and working capital expenses). Where underwriting is not seen to fulfill a public purpose, then the government can simply cut out the middleman.

Indeed, there has been movement in that direction with the decision to bring student loans back under government control. When the government guarantees deposits as well as loans (e.g., mortgages and student loans), the banks’ role becomes merely to provide underwriting.

D. Restoring profitability to relationship-based banking

The problem banks have faced over the past three or four decades is the “cream skimming” of their business by uninsured financial institutions, or “shadow banks” (which Minsky argued had been produced by the rise of what he called managed money). Uninsured checkable deposits in managed funds (such as money market mutual funds) offered a higher-earning and relatively convenient alternative to insured deposits, allowing much of the payments system to bypass banks. In Minsky’s view, credit cards also diverted the payments system away from banking (although the larger banks now dominate the credit card business).

At the same time, banks were squeezed on the other side of their balance sheet by the development of the commercial paper market, which allowed firms to borrow short term at interest rates below those on bank loans (sometimes, firms could even borrow more cheaply than some banks). Larger banks recaptured some of that business in fees earned by providing credit line guarantees for issuers of commercial paper.

But these competitive pressures caused banks to abandon expensive relationship banking in favor of the originate-to-distribute model. There is no simple solution to these competitive pressures, although Minsky offered some ideas. Minsky argued that policy should move to make the payments system a profit center for banks. “One weakness of the banking system centers around the American scheme of

paying for the payments system by the differential between the return on assets and the interest paid on deposits. In general the administration of the checking system costs some 3.5 percent of the amount of deposits subject to check. If the checking system were an independent profit center for banks, then the banks would be in a better position to compete with the money funds” (Minsky 1992a, 36).

It may not be desirable to return to the conditions of the early postwar period, when banks and thrifts monopolized the payments system; however, in the 1800s the federal government eliminated private banknotes by placing a tax on them. In a similar manner, transaction taxes could be placed on payments made through managed funds, or these funds could be made subject to formal regulation by the Fed and legal reserve requirements and preferential treatment given to payments made through banks, to restore a competitive edge. In addition, banks could be offered lower, subsidized, fees for use of the Fed’s clearing system. Minsky (1992d) also held out some hope that by substituting debit cards for checks, banks could substantially lower their costs and increase their profits from operating the payments system—something that does seem to be happening.

Part of the problem today is that the Fed requires that a portion of a bank’s funding come from retail deposits. As mentioned above, Minsky believed this causes local banks to incur excessive costs by opening more offices than necessary in order to compete for retail deposits. Part of the reason for the New Deal’s Regulation Q was precisely to eliminate competition for such deposits, on the belief that it raised the costs of such funds and allowed large reserve city banks to attract deposits from smaller rural banks and invest them in stock market speculation.

The biggest “brand name” banks more easily attract retail deposits, and they also have the advantage that they are perceived to be safer. This advantage could be eliminated if banks could fund themselves by borrowing reserves on demand at the Fed and their cost of funds would be the Fed’s overnight interest rate—plus any “frown costs.”⁷ Some, including Minsky’s one-time Levy colleague Ronnie Phillips (1995a, 1995b), have called for a return to the 100 percent money proposal of Irving Fisher and Milton Friedman, whereby deposit-issuing banks would be allowed to hold only Fed reserves and Treasury debt as assets. Minsky argued that this proposal loses sight of “the main object: the capital development of the economy. The key role of banking is lending or, better, financing” (Minsky 1992a, 36–37). To be sure, Minsky did not categorically reject the narrow bank proposal. He simply believed such a proposal addresses only a peripheral problem: the safety and soundness of the payments and savings systems. It does not directly address promotion of the capital development of the economy. However, to the degree that the payments system can be made a profit center, this helps to promote relationship banking. This will probably require some separation of “shadow banks” from banks that are allowed to run the payments system.

⁷ For this reason, Warren Mosler (2010) has called for the elimination of any requirement that banks maintain a specified proportion of their funding in the form of retail deposits.

E. Alternative funding source for relationship banking

The alternative approach is to provide banks with a secure and cheap source of funding. Rather than using deposits, they might simply borrow at the Fed to finance their positions in assets. Recall the Smithian problem and the Keynesian problem: banks might finance the wrong projects, and they might not finance the right amount. Opening the discount window to provide an elastic supply of reserve funding ensures that banks can finance positions in as many assets as they desire at the Fed's target rate. (As discussed above, the Fed would lend reserves on demand and remove financing by means of retail deposits.) This does not guarantee that we have solved the Keynesian problem, since banks might finance too much or too little activity to achieve full employment. Offering banks unlimited funding addresses only the liability side of banking; it leaves the asset side open. It is somewhat easier to resolve the "too much" part of the Keynesian problem: the Fed or other regulators can simply impose constraints on bank purchases of assets when banks are financing too much activity. For example, during the recent real estate boom it was obvious (except, apparently, to mainstream economists and to many at the Fed) that lending should be curtailed.

The problem is that the orthodox response to too much lending is to raise the federal funds target rate. And because borrowing is not very interest sensitive, especially in a euphoric boom, rates must rise sharply to have much effect. Further, raising rates conflicts with the Fed's goal of maintaining financial stability, since—as the Volcker experiment showed—interest rate hikes that are sufficiently large to kill a boom are also large enough to cause severe financial disruption (something like three-quarters of all thrifts were driven to technical insolvency during the S&L crisis). In fact, Minsky argued that the early 1990s banking crisis was due to the aftermath of the Volcker experiment of a decade earlier. Indeed, this recognition is part of the reason that the Greenspan/Bernanke Fed turned to "gradualism," a series of very small rate hikes that are well telegraphed. Unfortunately, markets have plenty of time to prepare and to compensate for rate hikes, which means that lending is even less interest sensitive.

For these reasons, rate hikes are not an appropriate means of controlling bank lending. Instead, the controls should be direct: raising down payments and collateral requirements, and even issuing cease-and-desist orders to prevent further financing of some activities. For a while, imposing capital requirements was seen as a proper way to regulate bank lending: higher capital requirements not only make banks safer but also constrain bank lending, unless the banks can raise capital. Unfortunately, neither claim was correct. Higher capital requirements were imposed in the aftermath of the S&L fiasco, and codified in the Basel agreements. Rather than constraining bank purchases of assets, banks simply moved assets and liabilities off their balance sheets.

Basel also imposed risk-adjusted weightings for capital requirements to encourage banks to hold less risky assets, for which they were rewarded with lower capital requirements. Unfortunately, the regulations had unintended consequences since the banks supported profits by lending in the riskiest positions in each class and worked with investment banks to create credit guarantees that reduced or eliminated capital requirements.

Finally, Minsky (1986) argued that, all else being equal, high capital ratios necessarily reduce the return on equity (and hence, the growth of net worth), so it is not necessarily true that higher capital ratios

improve bank safety, since they mean lower profitability. Indeed, with higher capital ratios banks must select a higher risk/return asset portfolio to achieve a targeted return on equity (Tymoigne and Wray 2009). Again, if regulators want to constrain the growth rate of lending, direct credit controls may be more efficient.

Solving the Smithian problem may thus require direct oversight of a bank's activity, mostly on the asset side of its balance sheet. Financial activities that further the capital development of the economy need to be encouraged; those that cause it to be "ill done" need to be discouraged. One of the reasons that Minsky wanted the Fed to lend reserves to all comers was so that private institutions would be "in the bank"—that is, indebted to the Fed. As a creditor, the Fed would be able to ask the banker the question, How will you repay me?

The Federal Reserve's powers to examine are inherent in its ability to lend to banks through the discount window. As a lender to banks, either as the normal provider of the reserve base to commercial banks (the normal operation prior to the great depression) or as the potential lender of last resort, central banks have a right to knowledge about the balance sheet, income and competence of their clients, banks and bank managements. This is no more than any bank believes it has the right to know about its clients. (Minsky 1992d, 10)

The Fed would ask to see evidence for the cash flow that would enable the bank to service loans. It is common practice for a central bank to lend against collateral, using a "haircut" to favor certain kinds of assets (e.g., a bank might be able to borrow 100 cents on the dollar against government debt but only 75 cents against a dollar of mortgage debt). Collateral requirements and haircuts can be used to discipline banks—to influence the kinds of assets they purchase.

Examination of a bank's books also allows the Fed to look for risky practices and keep abreast of developments. The Fed failed to appreciate the risk of the crisis that began in 2007, in part because it generally supplied reserves in open market operations rather than at the discount window. Forcing private banks "into the bank" gave the Fed more leverage over their activities. For this reason, Minsky opposed the Treasury's proposal to strip the Fed of some of its responsibility for the regulation and oversight of institutions. If anything, he would have increased the Fed's role, and used the discount window as an important tool for oversight.

F. Promoting an alternative to megabanks: Community development banks

Minsky worried that the trend toward megabanks "may well allow the weakest part of the system, the giant banks, to expand, not because they are efficient but because they can use the clout of their large asset base and cash flows to make life uncomfortable for local banks: predatory pricing and corners [of the market] cannot be ruled out in the American context" (Minsky 1992d, 12). Further, since the size of loans depends on the capital base, big banks have a natural affinity for the "big deals," while small banks service smaller clients: "A 1 billion dollar bank may well have 80 million dollars in capital. It therefore would have an 8 to 12 million dollar maximum line of credit. . . . [In the US] context this means the

normal client for such banks is a community or smaller business: such banks are small business development corporations” (ibid.).

For this reason, Minsky advocated a proactive government policy to create and support small community development banks (CDBs) (Minsky et al. 1993). Very briefly, the argument advanced was that the capital development of the nation and of communities is fostered via the provision of a broad range of financial services. Unfortunately, many communities, lower-income consumers, and smaller and start-up firms are inadequately provisioned with these services. For example, many communities host far more check-cashing outlets and pawnshops than bank offices. Many households do not even have access to the transaction system because they do not have a checking account.

Small businesses often finance activities using credit card debt. Indeed, some credit card companies offer special credit card services in support of the financing of small businesses that do not have access to bank lending. Minsky’s proposal would create a network of small community development banks to provide a full range of services—a sort of universal bank for underserved communities and small businesses:

- a payment system for check cashing and clearing, and for credit and debit cards;
- secure depositories for savings and transaction balances;
- household financing for housing, consumer debts, and student loans;
- commercial banking services for loans, payroll services, and advice;
- investment banking services for determining the appropriate liability structure for the assets of a firm, and placing those liabilities; and (6) asset management and advice for households. (Minsky et al. 1993, 10–11)

The institutions would be kept small, local, and profitable. They would be public-private partnerships, with a new Federal Bank for Community Development Banks created to provide equity and to charter and supervise the CDBs. Each CDB would be organized as a bank holding company. Examples of its composition would be: a narrow bank to provide payments services, a commercial bank to provide loans to firms and mortgages to households, an investment bank to intermediate equity issues and long-term debt of firms, and a trust bank to act as a trustee and to provide financial advice. Such institutions have long been present in Europe, serving special groups such as farmers (Raiffaisen banks), small businessmen (cooperative banks), and local residents (friendly societies). Almost all of these institutions were mutual banks; that is, the depositors and clients of the banks were the owners and beneficiaries.

Conclusion: Promote enterprise and industry over speculation

Over past decades, the belief that “markets work to promote the public interest” gained in popularity. Minsky was skeptical. He believed that it was necessary to make “industry” more important than

“speculation.”⁸ If investment is misdirected, we not only waste resources but also get a boom-and-bust trajectory. If investment is too low, we not only suffer from unemployment but also achieve profits too low to support commitments, leading to default. Further, when profits are low in “industry,” problems arise in the financial sector, since commitments cannot be met. In that case, individual profit-seeking behavior leads to incoherent results, as financial markets, labor markets, and goods markets all react in a manner that causes wages and prices to fall, generating a debt deflation. Unfortunately, things are not better when investment is too high: it generates increased layering of financial commitments and high profits that reward unnecessary innovation, leading to greater risk taking and eventually producing a financial structure that is too fragile. As Minsky always argued, the really dangerous instability in a capitalist economy is in the upward direction—toward a boom. That is what makes a debt deflation possible, as asset prices become overvalued and too much unserviceable debt is issued.

⁸ Echoing Keynes (1936), “The position becomes serious when enterprise becomes the bubble on a whirlpool of speculation” (chap. 12, 159).

CHAPTER 3. A Minsky Index Measuring Financial Fragility⁹

Introduction

If the Financial Stability Oversight Council (FSOC) is to become capable of “identifying threats to the financial stability of the United States” as mandated in Dodd-Frank, it will require a comprehensive framework to understand and measure financial fragility. Such an index can be developed on the basis of Hyman Minsky’s analytical framework. The main purpose of such an index is to provide supervisors with an understanding of how the financial practices that economic units use to acquire assets are changing, and how these practices generate Minskyan financial instability. The objective is not to detect financial crises or economic recessions, but rather to provide supervisory bodies with the knowledge required to allow them to intervene proactively to prevent a crisis from occurring, or at least to limit its impact on the nonfinancial business sector. The idea is to stop dangerous funding practices before they can degenerate into financial instability.

Concentration on changes in the impact of funding practices on financial fragility would provide an alternative measure of risk compared to low default rates on lending and/or rising profitability that may not necessarily reflect financial strength (this was exemplified by the recent housing boom, which recorded very low default rates and high profitability until the end of 2006). The idea behind the construction of the index is that intervention should occur well before an unsustainable increase in asset prices becomes self-generating.

While there is a large body of literature that focuses on developing early warning systems for financial crises (Tymoigne 2010; Galati and Moessner 2010), most financial crises involve events that are unforeseen. A more appropriate approach is to follow Minsky’s insight and focus on the growth of financial fragility during periods of economic stability. In his view, significant economic and financial crises are the result of a long process during which the economic and financial system becomes more fragile. The idea is to place focus on position-making risk, and therefore on the risk of debt deflation—something that supervisors have had a tendency to ignore.

It should also be clear that identifying financial fragility is not equivalent to identifying the existence of asset-price bubbles. Indeed, the three degrees of financial fragility defined by Minsky—hedge, speculative, and Ponzi—are independent of the efficiency of markets in pricing assets to reflect underlying fundamentals. As the footnote below shows, the cash-flow definition of Ponzi finance¹⁰ has a

⁹ For a fuller presentation, see Tymoigne 2011a.

¹⁰ Ponzi finance means that an economic unit is not expected to generate enough net cash flow from its routine economic operations (NCF_0), nor to have enough cash reserves to meet the capital and income servicing due on outstanding financial contracts (CC). At time 0, it is expected that the following applies until a date n :

$$E_0(NCF_{0t}) < E_0(CC_t) \quad \forall t < n$$

Note that this implies that Ponzi finance involves what Minsky called (defensive) position-making operations, i.e. refinancing and asset liquidation. More precisely, Ponzi finance relies on an expected growth of refinancing loans

corollary balance-sheet definition. This highlights the fact that Ponzi finance does not require the existence of a bubble (i.e., that the asset price $[P_A]$ be above its “fundamental” value, however defined); it just requires rising prices of collateral assets or other assets held by the entity involved in a Ponzi process. The aim is to detect debt-deflation risks that result from the interaction between debt and asset values on the upside. The economy may thus be highly fragile even if there is no bubble, and a bubble may exist but financial fragility may be limited because of the limited recourse to external funding. In that case, a debt deflation process may not be in operation, since extensive debt financing is not involved.

Financial Fragility Index: Construction and Interpretation

A. Construction

In order to build the financial fragility index, Ponzi finance is taken as a point of reference. The index tries to capture as many elements of the cash-flow definition and the balance-sheet definition as possible. Following Minsky, the framework builds an index on the basis of macroeconomic variables related to the funding methods. Two major datasets are the Flow of Funds of the Federal Reserve Board and the National Income and Product Accounts (NIPA) of the Bureau of Economic Analysis, but there are additional datasets used. All of the datasets are available on a quarterly basis, and each of them is smoothed by calculating a four-quarter moving average. A quarterly annual growth rate is then calculated on the basis of the moving average data. The next step is to assign weights to each of the variables identified.

Given that Ponzi finance is the point of reference, greater weight is given to variables that most directly reflect refinancing and liquidation pressures. Minsky’s framework provides clues to the ordinal importance of the relevant variables but does not provide an indication of their cardinal importance. Thus, the actual value given to the weights must be determined by experience and intuition. As will be discussed below, the trend movements in net worth or debt, while relevant, are not in themselves a sign of distress and are therefore assigned a smaller weight.

On the other hand, variables such as the debt-service ratio, refinancing volume, and proportion of liquid assets relative to debt are assigned a larger weight. However, the importance given to these variables will depend on how well the available data reflect refinancing and liquidation pressures. Thus, the

(L_R) , and/or an expected full liquidation of asset positions at growing asset prices (P_A) in order to meet debt commitments on a given level of outstanding debt (L).

$$E(CF_{PM}) = \Delta L_R + \Delta P_A Q_A > 0 \text{ and } \Delta(E(CF_{PM})/L) > 0$$

Note that Ponzi finance is defined independent of the fundamental value of asset prices, however one chooses to define this fundamental value. At the microeconomic level, an economic unit that uses Ponzi finance to fund its asset positions is highly fragile financially. At the macroeconomic level, if a majority of economic units is involved in Ponzi finance the economic system is highly prone to debt deflation because position-making risk (i.e., unavailable refinancing sources and decline in market liquidity) is high.

weight assigned to a specific variable will vary with respect to its relation to the definition of Ponzi finance and in relation to its reliability.¹¹

Consider the impact of the trend evolution of net worth (or the debt-to-asset ratio) and its weight attributed in the index. Minsky suggested a distinction:

With speculative finance, net worth and liquidity can increase even as debt is refinanced, whereas for a Ponzi unit net worth and liquidity necessarily decrease.
(Minsky 1986, 340)

While Ponzi finance does ultimately lead to a decline in net worth, this may not be reflected in the recorded data until defensive position-making operations actually occur. Moreover, if assets are valued on a market basis, and if their price grows fast enough to compensate for higher debt or fewer liquid assets, the decline in net worth may be avoided (Minsky 1964, 213ff.). In that case, the solvency of economic units involved in a Ponzi process may depend highly on the expected continuation of rising asset prices rather than on the capacity to generate an income from the ownership of the asset.

Ponzi positions can result due to mistakes (income is lower than expected) and adverse shocks (a member of the household becomes unemployed). For example, a borrower might expect income to rise in order to enable payment commitments to be met out of income. If income does not rise, then the additional debt-service requirements cannot be met except by taking on even more debt (capitalizing interest). In those cases, net worth usually declines given everything else, and as Minsky used to say, sometimes a lender gets trapped: refusing to lend to a Ponzi unit can force bankruptcy, so the lender might choose to lend on the hope that the financial position can be turned around and the cost of bankruptcy avoided.

We will not try to detect directly these sources of Ponzi finance as they are impossible to uncover in the data and are potentially less damaging for the economy. We will take a broader approach and focus on Ponzi financing that involves deliberate underwriting based on expected asset-price appreciation, and therefore on expected rising net worth due to rising asset prices. Let's call them collateral-based Ponzi schemes; they may or may not involve fraud. In this type of Ponzi process, continued access to Ponzi financing requires that expected net worth continues to grow, especially if there is no expectation that income from the use of assets will ever cover debt commitments. Indeed, refinancing at low costs (not only in terms of interest rate but also in terms of down payments or margins) cannot occur if net worth goes down;¹² and if net worth goes down, liquidation of assets makes it difficult to cover outstanding

¹¹ In order to check briefly the sensitivity of the index to changes in weights, the annex shows what the index would look like if all variables had the same weight. The main implications would be a higher growth rate for financial fragility on average, with a similar pattern overall.

¹² Honest bankers have no incentive to refinance projects that are never expected to generate a rising net worth. Bankers involved in fraud maybe indifferent about the success of a loan because their fortune does not depend on it; therefore, they may be willing to provide refinancing regardless of future net worth. In this case, the financial success of a banker will depend on looting its company, and by continuing the fraud scheme he will become wealthy at the expense of his company (Black 2005).

debts. Of course, a Ponzi unit might be able to hide the fact that its net worth is declining, preserving its access to refinancing.

Overall, net worth is of limited use in detecting financial fragility because rising net worth is not necessarily a sign of financial health, while declining net worth is not necessarily a sign of financial problems. In fact, an economic unit involved in Ponzi finance could record short-term profits and rising net worth in the short period.¹³ But when the required refinancing ceases, that may produce insolvency, and when insolvency has already appeared, net worth is of no use in identifying fragility. In the end, what we would like to measure is borrowing against expected increases in asset prices and net worth. However, we cannot obtain data on expected asset price appreciation. Hence, we must use data on actual asset prices and net worth, so rising net worth is used as a criterion for detecting Ponzi finance.

B. Interpretation

At the macroeconomic level, financial fragility will grow over time because of the compounding effect and the volume effect. Compounding refers to the length of time economic units have been involved in Ponzi finance. As the length of time increases, refinancing and liquidation needs grow because the size of interest payments due grows exponentially. The volume effect refers to the fact that, as more people are involved in Ponzi finance, financial fragility grows. Therefore, the longer and more widely Ponzi finance is used, the more destructive the debt-deflation process.

The goal of the index is to capture changes in the funding methods that economic units use to fund their activities. Following Minsky's framework, during periods of economic stability, financial fragility grows and accelerates as more people become involved in Ponzi processes and the longer these processes persist. The index thus measures how fast the risk of debt deflation grows, given the length of time over which Ponzi finance was used and the volume of Ponzi finance that occurred prior to a crisis.

C. Limits

Obviously, the index is only as reliable as the variables and weights used. As shown below, there are intrinsic limits to the data, which in turn limits the capacity to detect refinancing and liquidation risks. The variables chosen are proxy macroeconomic variables that may overestimate or underestimate actual risks. And as noted above, the choice of weights is not without its own problems.

¹³ We know that $P/E = P/A * A/E$; that is, the return on equity (profit over equity) is equal to the return on assets (ROA) multiplied by the leverage ratio (assets over equity). Collateral-based Ponzi finance usually involves higher leverage, and therefore, given the ROA, higher ROE. This type of Ponzi scheme may help to improve the ROE in two other ways. First, a debt-inflation process may be generated that boosts the ROA through capital gains. This sort of dynamic will apply when a lot of economic units are involved in a collateral-based Ponzi process (the typical example is the recent housing boom). Second, if Ponzi finance is combined with fraudulent practices (which does not have to be the case), higher ROA may also be achieved for a short period of time (Black 2005). In both cases, however, the gain in terms of the ROA will not last.

It is important to remember that Ponzi finance is based on expectation about the future. There may be no current need to refinance or liquidate in order to meet cash commitments, and Ponzi positions may not materialize if net cash flows from core operations turn out to be higher than expected, and/or interest rates turn out to be lower than expected, and/or borrowing for a longer maturity than expected is available. In fact, the disappointment of expectations is part of the internal dynamics of the financial instability hypothesis. However, if the state does materialize and position-making operations are used, the index should capture their impact on fragility.

The fact that expectations are involved has two implications for empirical analysis. A first implication is that Ponzi financial practices will be going on in underwriting procedures before they are captured in actual data about refinancing operations, debt levels, and other variables (Kregel 1997; Suzuki 2005; Knutsen and Lie 2002). Thus, macroeconomic data will tend to capture the development of Ponzi finance with a delay. In order to deal with this issue, it is important to monitor how loan underwriting is done, as in traditional bank supervision. Following Minsky, there are two central questions to be determined at this level: Will debts be repaid? (expected default rate and recovery rate) and How will repayment of debts occur? (sources of cash flows for repayment and amount of defensive position making operations needed). As Minsky (1975) noted decades ago, this second question is not usually the concern of banking supervisors, who tend to concentrate on detecting fraud and mismanagement through verification of documentation.

D. The financial fragility index

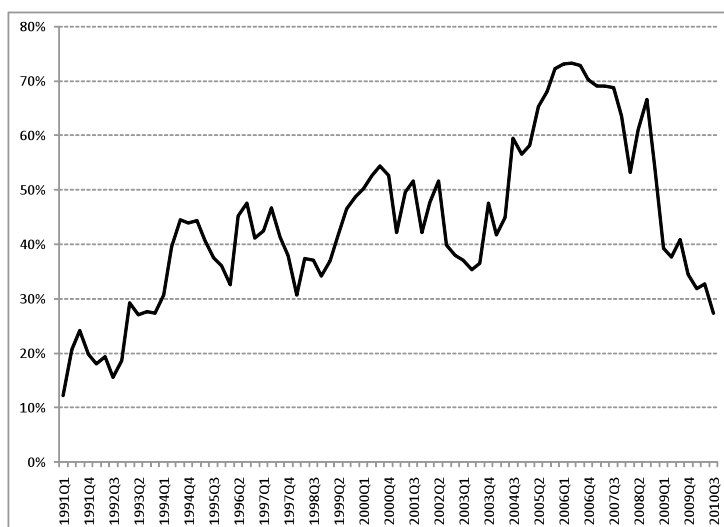
The financial fragility index was constructed for the household sector; the nonfinancial, nonfarm corporate sector; and the financial business sector. While economic units within the household and nonfinancial sectors are relatively homogenous in terms of their financial activities, the financial business sector contains firms with very diverse financial purposes and methods of operation. Further elaboration of the index will have to reflect these differences.

E. Household sector

The availability of data for the household sector made possible the construction of two indexes: a general index that checks households' funding practices, and a funding index that focuses on the financial practices underlying the acquisition of housing.

The overall index includes outstanding total liabilities (L), net worth (NW), debt-service ratio (DSR), monetary instruments relative to outstanding liabilities, or MLR (monetary instruments include dollar-denominated currency, demand and time deposits, and money market mutual fund shares), cash-out refinance mortgage loans as a proportion of mortgage refinancing loans overall (COR), and revolving consumer debt (RCD). All data come from the Federal Reserve Board (Flow of Funds and other datasets) except the cash-out refinance data, which comes from the Federal Housing Finance Agency and is shown in Figure 1.

Figure 1. Cash-out Refinance as a Proportion of All Refinance Mortgages



Source: FHFA (Loan purposes by quarter: <http://www.fhfa.gov/Default.aspx?Page=87>)

Each dataset is used to capture some aspects of financial fragility that can be classified into refinancing risk and liquidation risk. L and DSR measure the debt burden and so capture both risks. MLR is used to capture the liquidation risk; that is, the risk that one needs to sell illiquid assets to meet debt payments. COR and RCD are used to capture refinancing risk.

In order to determine the weight put on each variable it is necessary to determine which variables most accurately measure refinancing risk and/or liquidation risk. As explained above, even though they are essential to financial fragility dynamics (e.g., growing net worth is necessary for Ponzi finance to grow), net worth and outstanding debt are not as reliable an indicator of financial problems as the other variables, so they are given a lower weight. DSR is the variable that more directly measures the debt burden, and so it is given a higher weight. A higher weight is also given to MLR because it is able to more directly capture liquidation pressures. Finally, variables that measure refinancing risk are given a total weight of 30 percent that is equally split between COR and RCD. The weights on those variables are not larger because they are specific to some economic activities (housing and consumption) rather than general to the household sector. Thus, they are not relevant for households that do not hold mortgage debt. As shown below, when specific economic activities are analyzed, more weight can be put on refinancing variables if they are considered sufficiently reliable.

The index is calculated as follows:

$$I_H = 0.1D_L + 0.1D_{NW} + 0.25D_{DSR} + 0.25D_{MLR} + 0.15D_{COR} + 0.15D_{RCD}$$

with $I_H \in [0, 1]$ and D_X a dummy variable for variable X, defined as follows for all variables except MLR:

$$D_X = \begin{cases} 1 & \text{if } g_{X_t} > g_{X_{t-1}} > 0 \\ 0.9 & \text{if } g_{X_t} > 0 \\ 0 & \text{if } g_{X_t} = 0 \\ -0.9 & \text{if } g_{X_t} < 0 \\ -1 & \text{if } g_{X_t} < g_{X_{t-1}} < 0 \end{cases}$$

For MLR we have:

$$D_X = \begin{cases} 1 & \text{if } g_{MLR_t} < g_{MLR_{t-1}} < 0 \\ 0.9 & \text{if } g_{MLR_t} < 0 \\ 0 & \text{if } g_{MLR_t} = 0 \\ -0.9 & \text{if } g_{MLR_t} > 0 \\ -1 & \text{if } g_{MLR_t} > g_{MLR_{t-1}} > 0 \end{cases}$$

In order to capture the intensity of the growth of financial fragility, some allowance is made to account for differences in growth rates, but for the most part the direction of the index is driven by the sign for the growth rate of each variable.

The home funding index follows the same logic but focuses exclusively on homeownership (a similar index could be built for consumption). It contains the following variables: home mortgage of households (L), home price index (P), proportion of cash-out refinance (COR), mortgage financial obligation ratio (MOR), and ratio of monetary assets to mortgage debt (MMR). The index for household home funding is constructed as follows:

$$I_{HHF} = 0.1D_L + 0.1D_P + 0.2D_{COR} + 0.3D_{MOR} + 0.3D_{MMR}$$

with $I_{HHF} \in [0, 1]$. Dummy variables work exactly in the same way as presented above. More weight is put on MOR and MMR because they are the variables that most directly reflect debt burden and liquidation risk. COR is also given a high weight because it provides a proxy of mortgage refinancing risk. However, COR is not given as high a weight as the previous variables because it only reflects cash-out refinance loans as a proportion of refinancing loans rather than as a proportion of all mortgages. Similar to the previous indicator, rising home prices and rising mortgage debts are not by themselves signs of growing fragility. Even though they are necessary for fragility to grow, they are not intrinsically signs of refinancing risk or liquidation risk, so they are given a lower weight. The index will be higher if all variables behave simultaneously in a specific fashion. A high growth of the debt-service ratio is not enough to have a high index value, but if refinancing grows simultaneously, home prices rise, and the liquidity ratio declines, then the index will be very high.

The indexes are presented in Figure 2 and Figure 3. The availability of data limited the range from the first quarter of 1992 to the third quarter of 2010. If one studies the household funding index, the fragility of the household sector has grown quite rapidly over the past two decades. The second part of the 1990s recorded rising fragility due to a consumption boom based on credit that was encouraged by the stock market boom. Leveraged speculation in financial markets and house funding methods (as shown below) also played a role toward the end of the 1990s. In the new millennium, the growth of

financial fragility increased rapidly from 2002 onward. Today, financial fragility is declining, as households pay off their debts and save. However, given that financial fragility grew rapidly for a long period of time, the level of financial fragility remains high and the repayment of debts and rebuilding of savings have led to a massive decline in home prices.

The broad view of the cause of financial fragility in the household sector can be examined more closely by looking at the funding of a home. As one can see from Figure 3, the fragility of house financing has grown rapidly since the end of 1999. At that time, some FOMC members were already becoming concerned, among them, Jerry Jordan:

There are people making real estate investments for residential and other purposes in the expectation that prices can only go up and go up at accelerating rates. Those expectations ultimately become destabilizing to the economic system. (Quoted in FOMC 1999, 123)

Fed Governor Gramlich had similar concerns, especially in relation to subprime lending and predatory lending. The 2001 recession led to a short decline in the growth of fragility, but it was back in full force from 2002 and at its maximum from 2003 until the end of 2006. Without that brief recession, the housing boom would probably have started (and finished) much earlier.

Figure 2. Household Index

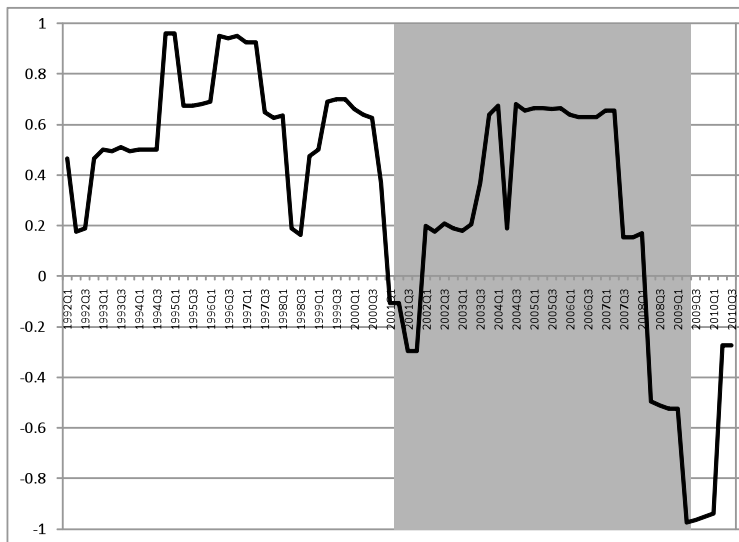
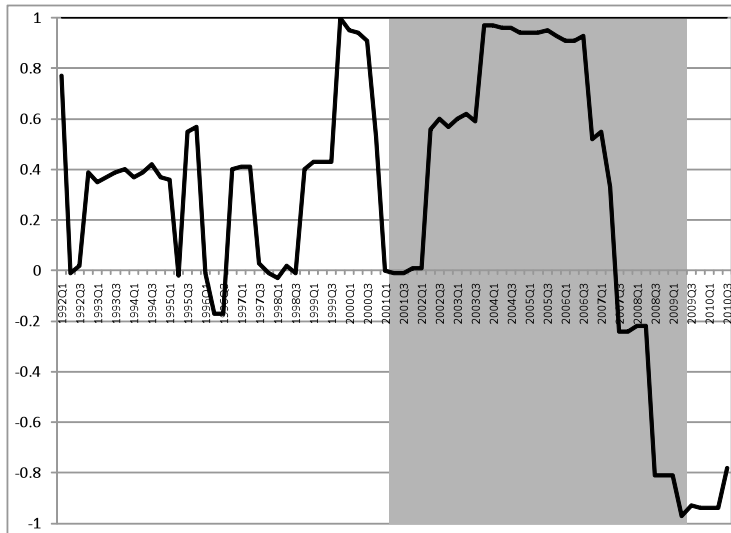


Figure 3. Home Funding Index



This reflects the point made earlier that the index is not designed to predict economic recessions. Thus, while the home funding index is high before the 2001 crisis, this most probably is not a direct cause of the crisis, since fragility had just started to accumulate. This should not, however, have prevented supervisors from investigating underwriting practices (see Tymoigne 2011b), because the practices that led to the current housing crisis emerged as early as 1999. The lengthy mortgage crisis, still occurring as the economic recession officially ended in the second quarter of 2009, is directly related to the home funding index, which was high for an extended period of time. This is where the index is useful: it detects the accumulation financial problems, even if the latter may not have immediate negative economic consequences.

F. Financial business sector and nonfinancial, nonfarm corporate sector

Indexes can also be developed for the business sector, but data availability shrinks dramatically. Two core datasets are unavailable: the debt-service ratio and refinancing volume. The debt-service ratio is approximated by the interest-service ratio (ISR). The interest-service ratio is equal to:

$$ISR = \text{monetary interest paid} / \text{after-tax sources of income}$$

Sources of income are equal to net operating surplus plus income receipts on assets. Net operating surplus is a proxy for the net cash inflow that results from production. It is equal to the monetary value of production (sales and changes in inventories), less charges induced by production (intermediate consumption, compensation of employees, taxes on production and imports less subsidies, and consumption of fixed capital), and inventory capital gains/losses are eliminated. It is a measure of the

monetary return on assets used in production, which excludes any capital gains or losses (Hodge and Corea 2009; Guitierrez et al. 2007; Evans et al. 2002).¹⁴

Ideally, all elements that do not generate a cash inflow or cash outflow should be excluded. For example, higher inventories are not a source of cash inflows and principal servicing generates cash outflows. In addition, following Minsky, cash inflows and outflows should exclude any exceptional financial gains that are unrelated to routine business operations. If a business routinely makes money from the turnover of assets, this should be included in the sources of income (Minsky 1962, 1972). The data from NIPA does not allow such an adjustment, and the Flow of Funds dataset does not provide cash-flow data for the business sector. Figure 4 shows the interest-service ratio for the corporate sector.

Even though there is an aggregate value for income receipts from assets, the latter is not disaggregated by industry. The only disaggregated component is interest received, which is available on an annual basis. The fact that interest received is the only component available is not too limiting, since it represents over 80 percent of asset incomes. The bigger challenge is that the data is only available annually. To deal with this problem, quarterly data were created through extrapolation and by using moving averages.

¹⁴ Net operating surplus is not corporate profit. Interest payments are made out of net operating surplus, not corporate profit. Corporate profit is equal to sources of income, less uses of income; or, alternatively, the sum of retained earnings, corporate income taxes, and dividends distributed. More specifically, the following holds in the NIPA tables for the business sector (corporate and noncorporate):

$$\text{Sources of income} = \text{uses of income} + \text{corporate profit}$$

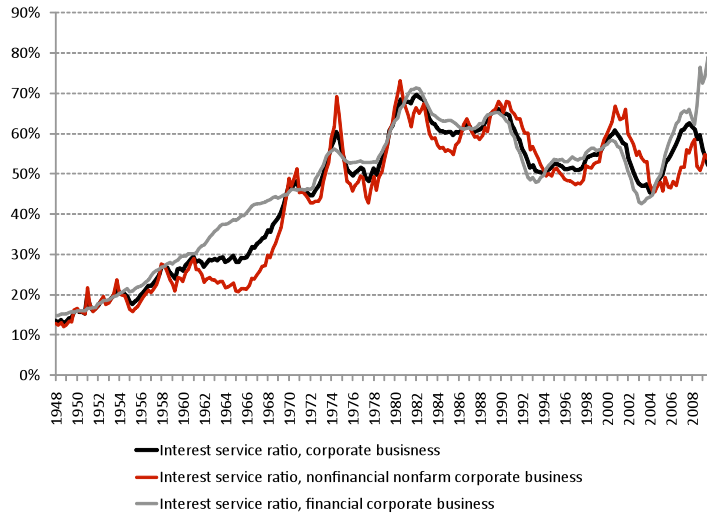
This can be broken into:

$$\text{Net operating surplus} + \text{asset income receipts} = \text{asset income payments} + \text{net business transfer payments} + \text{proprietor's income} + \text{rent} + \text{corporate income taxes} + \text{dividends paid} + \text{retained earnings}$$

From that, one can derive corporate net operating surplus (Hodge and Corea 2009, NIPA 1.14):

$$\text{Corporate net operating surplus} = \text{corporate profit with IVA and CCadj} + \text{net interest receipts} + \text{net business transfer payments}$$

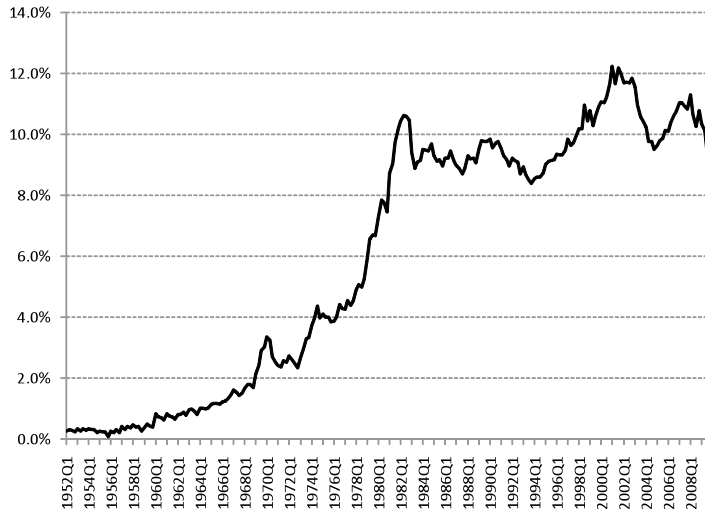
Figure 4. Interest-service Ratio: Corporate Sector



Sources: BEA (NIPA, Tables 1.14, 7.11)

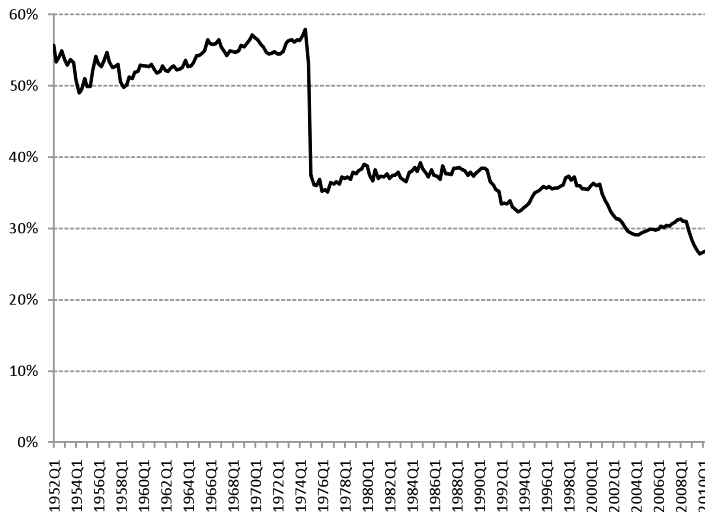
One of the main drawbacks of the ISR is that it excludes principal servicing. This is an important component, because principal servicing may, in part, capture refinancing pressures. Indeed, the shorter the maturity of outstanding debt, the higher the principal service given outstanding debts, and the greater the pressure to roll over debt. In order to account for refinancing pressures in some ways, the proportion of short-term debts relative to total debts is used. The amount of short-term debt is provided for the nonfinancial, nonfarm corporate sector but not for the financial business sector; for the latter, short-term debts are approximated by the sum of money market mutual fund liabilities, federal funds and security repurchase agreements, and open-market paper outstanding. Monetary authorities' liabilities were removed from the liabilities of the financial business sector. Figure 5 and Figure 6 provide the proportion of short-term debts for each sector.

Figure 5. Proportion of Short-Term Debt: Financial Business



Source: Federal Reserve Board

Figure 6. Proportion of Short-Term Debts, Nonfinancial, Nonfarm Corporate Business



Source: Federal Reserve Board

Note: There is a big drop in the proportion around 1973. This is due to a large increase in the amount of miscellaneous liabilities resulting from a change in the computation of Flow of Funds data.

Aside from refinancing needs and the debt-service ratio, the other variables used are very similar to those used for the household sector measure, and the index works in a similar fashion. For both business sectors, the index is constructed in the following way:

$$I = 0.125D_L + 0.125D_{NW} + 0.3D_{ISR} + 0.3D_{MLR} + 0.15D_{ST}$$

The weights are assigned in a fashion similar to that for households. However, a greater weight is given to liabilities and net worth and a lower weight is given to the proportion of short-term debts, since the latter is not necessarily a good proxy for refinancing needs. Figure 7 and Figure 8 show the index of financial fragility for each sector. Given the limited data availability, the indexes could only be computed from the first quarter of 1954 to the fourth quarter of 2009.

The most striking aspect of these two indexes is that the financial sector is much more prone to financial fragility than the nonfinancial sector, which is something that the Minskyan framework predicts. If one focuses on what happened in the last two decades, the growth of fragility in the nonfinancial sector was high, especially at the end of the 1990s and the end of 1980s. For the financial sector, the fragility was very high at the end of the 1980s, most of the second half of the 1990s, and from 2004 until 2007. The tranquil post-World War II period, extending to the late 1960s was also characterized by a rapid growth of the fragility in the financial industry, as banks leveraged on the massive amount of liquid secondary reserve assets they had accumulated during the war (Minsky 1983).

Figure 7. Index of Financial Fragility: Nonfinancial, Nonfarm Corporate Sector

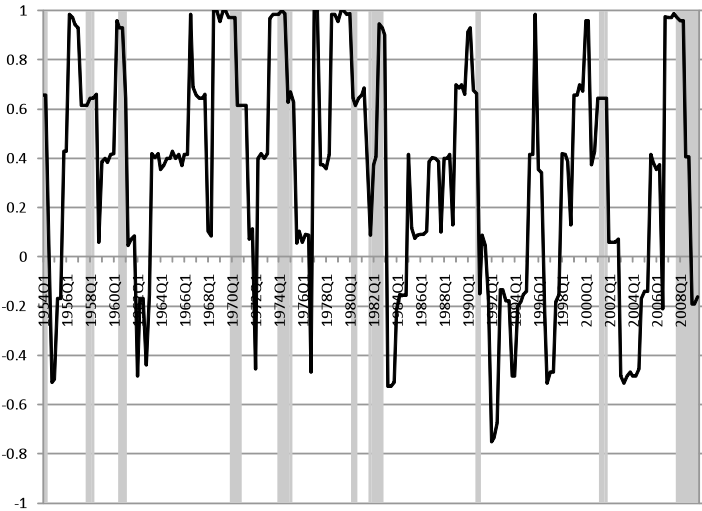
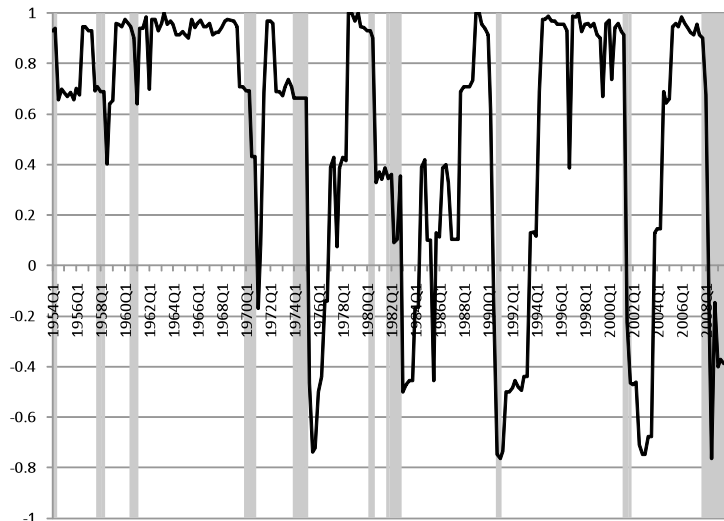


Figure 8. Index of Financial Fragility: Financial Business



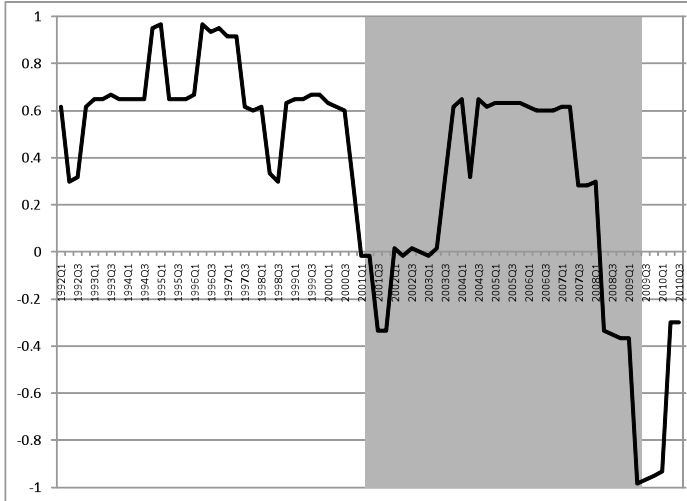
With the collapse of Lehman Brothers at the end of 2008, the financial system recorded massive instability—the direct result of a long period of rapidly growing financial fragility from 2004 to 2007. This illustrates how the index can provide a signal to financial supervisors that distress may be accumulating even when there is little evidence from traditional indicators such as default rates, risk premia, profitability, and so on. Today, the fragility of financial firms is declining; as businesses are wound down, leverage declines and restructuring occurs.

Conclusion

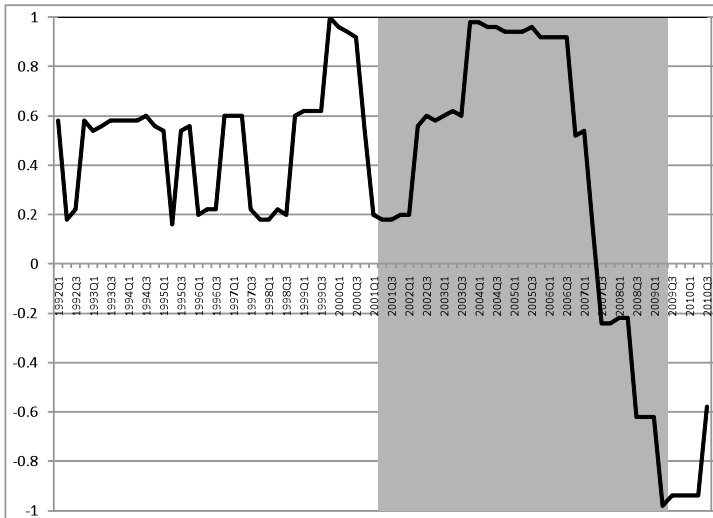
The index of financial fragility presented here is based on Minsky’s framework of analysis, using existing macroeconomic data. More precisely, the index focuses on an analysis of how economic units actually fund their economic activity, in order to determine if their economic activity is viable. Following Minsky’s hedge/speculative/Ponzi definition of financial fragility, an economic activity that simultaneously involves a rising debt-service ratio, growing refinancing, rising asset prices, and a declining proportion of liquid assets is not a viable economic activity and promotes financial instability. This is true regardless of how low default rates are or how fast net worth is growing. The index provides regulators with a means to detect the emergence of financial fragility before it produces instability in the productive activity of the economy. The index shows that financial market data (CDS spreads, risk premia, and credit ratings, among other data) need to be supplemented in order to capture the risk of financial instability before it occurs. Another implication of this index is that it sets a very specific research agenda for the Treasury’s Office of Financial Research. The amount of data available about sources of refinancing needs, the debt-service ratio, cash-inflow sources, and cash-outflow sources is currently extremely limited. The Office’s research efforts should thus be oriented toward improving our understanding of the funding practices of economic units and further development of the index in order to support the FSOC mandate of “identifying threats to the financial stability of the United States.”

APPENDIX. Indexes with Equal Weight for All Variables

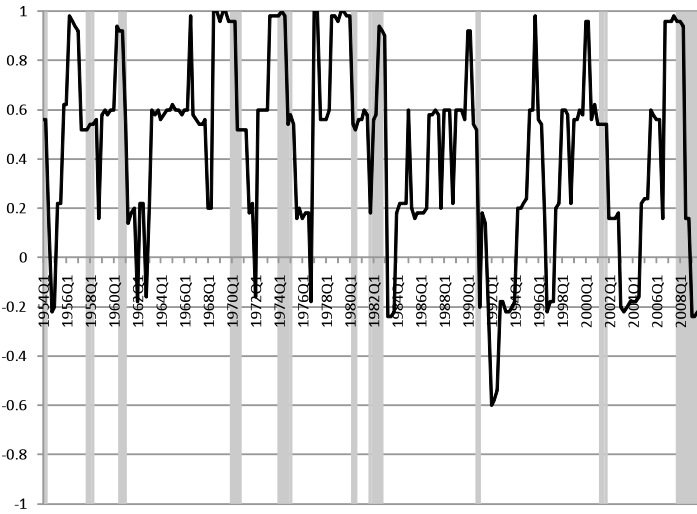
Household Financial Fragility Index



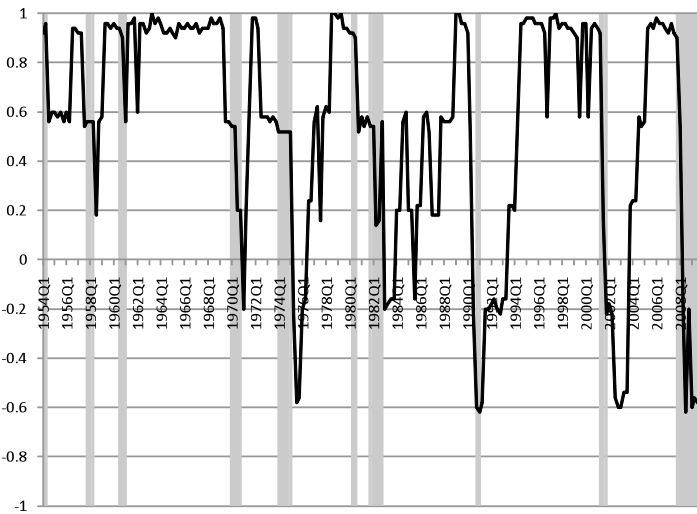
Household Home Funding Fragility Index



Corporate Nonfinancial Business Financial Fragility Index



Financial Sector Financial Fragility Index



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