

# REAL TIME SOLUTIONS for FINANCIAL REFORM

An NYU Stern Working Group on Financial Reform

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## Forward

In November of 2008, as the global financial system was facing collapse, it became clear that the crisis which began in 2007 had entered a new and dangerous phase. That time we called together a group of colleagues to review our best understanding of the roots of the crisis, where things stood at the time, what measures needed to be put in place to prevent future crises, how the key policies – the massive creation of liquidity, the TARP, the auto bailouts, the financial bailouts - were being used to address the crisis. The result was a collection of 18 “white papers” that were bound, reproduced and circulated before the end of December and subsequently published in March 2009 by John Wiley and Son, entitled *Restoring Financial Stability: How to Repair a Failed System*.

Now, one year later, we have reached a new inflection point in the most serious financial turmoil most of us have ever seen. The U.S. House of Representatives is about to begin debate on HR 4173, the *Wall Street Reform and Consumer Protection Act of 2009*. The U.S. Senate is about to begin marking-up the *Restoring American Financial Stability Act*. These bills could well change the financial architecture, achieving greater robustness at relatively little cost to financial efficiency. But if we get it wrong, renewed financial paralysis and its debilitating effects on the real economy may not lie too far down the road.

Once again we have assembled a group of our colleagues, each a specialist in a relevant discipline, to assess the strengths and weaknesses of the legislation that is now on the table. At the outset of our debates on the specifics of the legislation we found no consensus but a surprising degree of agreement on its strengths and weaknesses. In the individual policy assessments that follow we attempt to summarize the key issues, offer our views on the suggested approaches to regulatory reform, and provide an assessment of the specific proposals that have been put forward.

Not all of the issues addressed in the current legislation are equally important. Some, such as financial sector compensation and consumer protection - are perhaps not central to future financial stability. Others, such as the future role of the Federal Reserve, the approach to systemic risk, the restructuring of too-big-to-fail institutions, and the shadow banking system that houses OTC derivative and money markets, are undoubtedly critical to the future safety and soundness of the financial system. The debates will be both heated and ongoing. Our commentary will be as well, so each commentary will be subject to revision in the weeks and month ahead. Our goal is to provide an unbiased, real-time external view of the debate as it evolves.

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## Chapter 1

### Summaries

**Chapter 2 – The architecture of financial regulation.** Assuming the financial architecture will continue to be dominated by institutions imposing high levels of systemic risk, the creation of a new systemic risk regulator is a central component of post-crisis financial reform. This new regulator would supervise the growing cohort of financial conglomerates and through a regulatory council work in tandem with the Federal Reserve and three reconfigured functional regulators to both macro-prudential and micro-prudential responsibilities. This task will be facilitated if risk is priced more appropriately and as a result institutions are encouraged to follow more specialized business strategies.

**Chapter 3 – The Independence of the Fed.** Pending legislative proposals to alter the functioning of the Federal Reserve would compromise its independence, politicize its role and hamper its ability to react swiftly in the event of a crisis. These proposals, in our view, may actually work against their stated goals of strengthening the U.S. financial system and making monetary policy more effective.

**Chapter 4 – Measuring Systemic Risk.** Before systemic risk can be contained, regulators must first be able to identify systemically important institutions and then to quantify that risk in an organized manner. The House and Senate bills rely largely on simple systemic risk criteria, such as size, leverage and interconnectedness; we believe that market-based measures, which are more continuously variable, would be extremely useful in the process, as well.

**Chapter 5 – Managing Systemic Risk.** Both the House and Senate proposals that deal with managing systemic risk recognize that systemic institutions must be subject to higher standards, and ultimately, they must be charged for the implicit guarantees that they enjoy. Yet given that risk, leverage and interconnectedness can never be measured perfectly, other remedies, such as forcing systemic firms to separate out those activities that expose taxpayers to excessive risk, may also be warranted.

**Chapter 6 – Taxing Too-Big-To-Fail.** Current House and Senate proposals call for the establishment of a risk-based systemic fund that would guarantee obligations of certain financial institutions in the event of a crisis. The capital in the fund would be paid for by systemic institutions based on some measure of their complexity. The House bill is flawed in that it focuses more on a firm's size than its systemic risk profile, and the legislation fails to address the appropriate level of assessment on financial institutions.

**Chapter 7 – Capital and Liquidity Requirements.** The current House and Senate proposals call for stricter standards to be imposed on systemically risky institutions in the form of capital requirements, leverage limits and liquidity requirements. While the legislation correctly focuses on these issues, it fails to define these requirements. We believe that major capital loopholes should be closed and that there should be less reliance on rating agencies.

**Chapter 8 – Breaking Up Too-Big-To-Fail.** Current proposals before the House and the Senate do not call for the breakup of massive financial conglomerates, but they do set forth standards that would cap credit exposure. We do not favor breaking up complex financial institutions based on size considerations, but we do find merit in some such breaking up based on activities.

**Chapter 9 – Contingent Capital.** Both the House and Senate bills call for the issuance of contingent capital to be a potential additional standard to face systemically important institutions. We believe this is a sound idea, but as proposed, it does not go far enough. In addition to contingent capital and resolution plans, an explicit fee should be charged to banks in good times, based on their expected losses and contribution to systemic risk.

**Chapter 10 – Financial Institutions Subject to the Bankruptcy Code.** The House and Senate bills both try to create a mechanism to unwind failing systemically significant financial companies in an orderly way through receivership. The positive aspect of the bill is that it gives legal authority to deal with large complex financial institutions that are not just depository institutions, but the legislation does not go far enough to reduce the uncertainty surrounding bankruptcy.

**Chapter 11 – Money Market Funds.** In response to the financial crisis, and to avoid the type of run on money market funds that occurred in September 2008, the SEC has proposed several changes to the way money market funds are regulated. While we believe that these amendments are sensible and would increase the general safety of the money market fund sector, they do not adequately address the issue of likely government guarantees in future financial crises.

**Chapter 12 – Hedge Funds.** Hedge funds and mutual funds did not cause, or even materially contribute to, the recent financial crisis. Nevertheless, there may be circumstances under which they might impose externalities on the financial system by generating systemic risk in future crises. The House bill recognizes this possibility by making them eligible to be taxed when they likely are generating systemic risk, just like other large financial institutions. Significant implementation issues remain.

**Chapter 13 – Government-Sponsored Enterprises.** The collapse of Freddie Mac and Fannie Mae during the 2008 financial crisis raises questions about how these GSEs should be structured going forward. Financial legislation must address these issues – most importantly, eliminating the proprietary trading function of the GSEs.

**Chapter 14 – Insurance Industry.** We support the creation of the National Insurance Office. However, we recommend that the legislation go further and create a National Insurance Regulator and an optional or even mandatory federal charter for financial institutions with a significant presence in the insurance industry. There is hardly any discussion in either bill about specific regulation of insurance companies relating to their systemic risk.

**Chapter 15 – Credit Rating Agencies.** Credit rating agencies -- central players in the subprime residential mortgage crisis -- are now being examined in current legislation before the House and Senate. The goals of the proposals are to strengthen regulation, to keep rating agencies accountable, and to ensure that the agencies produce high-quality information on the risks of the

securities they rate. The legislation, however, does little to prevent issuers from “shopping” for the best rating.

**Chapter 16 – OTC Derivative Reforms.** The House Financial Services Committee has approved a bill to regulate the massive OTC derivatives business. The proposed legislation calls for sweeping changes in the structure of the OTC marketplace and its regulation, requiring most standardized derivatives to be traded on a newly defined entity called a Swaps Exchange Facility or an electronic exchange. We believe that many of these proposed changes have the potential to stabilize the derivatives markets and improve their functioning and their regulation.

**Chapter 17 – Securitization.** Securitization created serious systemic problems that played a major role in the financial crisis. Current proposals before Congress call for securitizers to have “skin-in-the-game” and for more transparency, but fall short on three dimensions: (i) they adopt a “a one-size-fits-all” approach to the retention of risk that should be maintained by securitizers; (ii) they are too sweeping in their disclosure requirements, while not specifying the risk implications in any detail; and, most importantly, (iii) they fail to address the critical regulatory loopholes in capital adequacy regulations that led to the systemic problems, while imposing large accounting and regulatory compliance costs that would impede efficient intermediation.

**Chapter 18 – Consumer Finance Protection Agency.** In response to the financial crisis and to address growing concern about consumers’ lack of financial knowledge and vulnerability in light of the complex financial products they face, Congress has proposed the creation of the Consumer Financial Protection Agency. The CFPA would unify the supervision and enforcement of existing consumer protection laws – a role that is currently spread across at least 11 agencies. While we support the creation of such an entity, we suggest changes to the House and Senate proposals that close loopholes, encourage innovation, and extend the authority of the agency to intervene prudently.

**Chapter 19 – Compensation and Governance.** Outrage about the large bonuses paid to employees of financial institutions that received federal bailout money has spurred Congress and the Federal Reserve to review and suggest changes to financial firms’ compensation policies. While we welcome many of the proposed reforms that focus on reducing shareholder/regulator and manager/shareholder conflict, we believe that the prohibition of “excessive” compensation at financial firms is problematic.

**Chapter 20 – Independence of Accounting Boards.** The financial crisis has focused a spotlight on the setting of accounting standards – notably on making GAAP more amenable to the goals of bank regulation. We believe that bank regulators should have no significant power over GAAP and that if politicians want to allow bank regulators to exercise regulatory forbearance, modifications should be made to regulatory accounting principles, not GAAP.

**Chapter 21 – Banks’ Loan Loss Reserving.** Various parties have proposed changes to the way that banks reserve for loan losses, contending that using the “incurred loss model” exacerbates the cyclicity of the financial system. We believe that an “expected” loss approach – not “dynamic” -- is more consistent with fair value accounting. Furthermore, we believe that encouraging banks to build up capital during periods of economic strength is a worthy goal, but that it must not be accomplished by compromising the consistency of GAAP.

**Chapter 22** –Market Illiquidity and Fair Value Measurement. There are practical problems that arise when measuring fair value in illiquid markets. We favor exit value over amortized cost as the preferred measurement basis for banks’ financial instruments and also believe that increased disclosure is imperative.

**SECTION 1 --  
U.S. FINANCIAL ARCHITECTURE**

## Chapter 2\*

### The Architecture of Financial Regulation

#### Overview

Assuming the financial architecture will continue to be dominated by institutions imposing high levels of systemic risk, the creation of a new systemic risk regulator is a central component of post-crisis financial reform. This new regulator would supervise the growing cohort of financial conglomerates and, through a regulatory council, work in tandem with the Federal Reserve and three reconfigured functional regulators regarding both macro-prudential and micro-prudential responsibilities. This task will be facilitated if risk is priced more appropriately and as a result institutions are encouraged to follow more specialized business strategies.

Financial regulation in the best of circumstances tries to achieve a fine balance among several benchmarks – financial efficiency, innovation, transparency, competitiveness in global markets, and safety and soundness. With this many objectives, there are inevitable tradeoffs. Measures that assure greater financial robustness may make financial intermediation less efficient or innovative, for example. The reverse may also be true. Unfortunately the benchmarks are not easy to define in detail, and even more difficult to measure in practice. We know that excessive regulation involves costs, but what are they? We also know that under-regulation can unleash disaster, which can be observed only after the fact. So optimum regulation is the art of balancing the unmeasurable against the unknowable – no wonder financial regulation is so difficult to do well.

Adding yet another layer of complexity are the institutions charged with executing regulatory mandates. Should regulators be organized by function – such as commercial banking, investment banking and financial markets, asset management and insurance - allowing them to gain enough industry expertise to have a reasonable understanding of what it is they are regulating? Or should they be structured in line with the firms they are regulating, ranging from financial conglomerates to community banks, so they can better oversee the complexities and avoid overinvestment in regulatory infrastructure where it isn't needed? And who should watch out for the buildup of systemic risk in the financial structure as a whole (macro-prudential risk), which goes well beyond the remit of regulators covering individual firms (micro-prudential risk)? This in turn raises the question of who gets to determine when firms have failed, and how do we “resolve” them if they are insolvent? And, should those doing the resolution have been involved in preventing the insolvency in the first place?

In great architecture, form follows function. Financial architecture is no different. The institutional structure that should be created to implement the regulatory changes now being discussed by the House and the Senate depends critically on certain macro decisions about the goals of the regulation. If certain activities are carved-out of financial conglomerates into independent financial specialists, for example, a sensible regulatory overlay may be very different from one that would be needed if financial conglomerates are left intact. In addition,

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there are important issues of regulatory execution. We have seen many examples of well intentioned regulation undermined by regulatory arbitrage distorting the intent and implementation of financial regulations over the years.

The bills now being debated in the United States Congress and the discussions being held elsewhere in the G20 nations are already the reflection of popular sentiment (notably emotional antipathy toward bankers), lobbying by special interests, and political posturing. But, that is the history of both our financial system and financial regulation. Here our goal is to offer informed commentary on the new structures for financial regulation that are being proposed and an idea of what might be better in our independent view. Since regulation and government intervention is an explicit acknowledgment of market failure, there is an inherent acceptance that of the cliché that we should not let the perfect be the enemy of the good.

There are many regulatory issues at stake right now. How do we protect consumers? What should we do about corporate pay? What should we do about mortgages? How should we regulate derivatives? And so on. All are important to someone but there is one issue that is important to all. How do we construct a system of regulation in which decisions made in one or a few financial institutions can bring the entire system to halt and the world's economies to their knees? This is the problem of regulating systemic risk. It is **the** primary issue.

To preview our line of thinking, we believe that the best way to address systemic risk is to make the firms that create it pay for having created it - for having put the economy at risk. This requires measuring, pricing and taxing that risk. Alternatively we could require institutions that are very risky and complex to become simpler by separating their riskier activities into smaller independent firms.

Who should make these determinations? We believe the regulator of financial institutions capable of creating this kind of risk (often called Large Complex Financial Institutions or LCFI's) should be a de novo institution that absorbs key micro-prudential functions of the Federal Reserve and should be charged as well with the authority to "resolve" (re-organize or dissolve) insolvent institutions. In addition, that regulator would have responsibility for macro-prudential surveillance. The new regulator would work closely with the Fed and the functional regulators (notably the FDIC, the SEC, the CFTC and a new national insurance regulator or oversight board). The new regulator could be closely linked to reinvigorated international regulatory bodies if that became feasible. In our view such a structure stands the best chance of performing well in the real world of banking, financial markets and political economy. In addition the new regulator would liberate the Federal Reserve to pursue its primary function as an independent institution created to execute monetary policy and act as lender of last resort function.

## **The Crisis - Aftermath**

Twenty months after the onset of the financial crisis, the public guarantee of the liabilities of large financial institutions continues to overshadow financial markets and distort the allocation of capital and competition among financial intermediaries. Taxpayer support has been important to these institutions as they work themselves out of the crisis, and it is not our goal to question

the decisions made to provide it. But government support has severely distorted incentives and decision making. At the moment it is putting the weakest institutions at a disadvantage and providing a windfall to the strongest players, severely distorting the financial marketplace. This distortion will eventually come at a high cost to the economy.

In June 2009 the Administration announced a package of proposed regulatory reforms and new measures to deal with systemic risk. These proposals would apply tough new requirements on the quantity and quality of capital, leverage and liquidity to both banks and nonbanks. Financial firms would be free to choose their business models, but if they are deemed systemic they would come under the new rules. The idea is to sufficiently suppress systemic risk through rules and monitoring, so that the probability of having to use the public safety net will be reduced. The value of the implied guarantee for systemic risk - and its distorting effect on markets and capital allocation - would disappear under these proposals. But it was clear from the start that the success of this approach will depend on the government's ability to install and enforce effective new rules through effective regulatory agencies for a wide variety of different types of institutions. This is a tall order, given that regulators have had a dismal record of preventing crises through the enforcement of rules in the existing regulatory structure.

An alternative to the Administration's approach, championed for example by former Fed Chairman Paul Volcker, would narrow the scope of any implicit government guarantee of financial intermediaries only to commercial banking and client-driven investment banking. It would disavow guarantees for other types of financial institutions such as investment banks, insurance companies or investment companies like hedge funds. If these ideas are implemented in lieu of the Administration's plan, the moral hazard of a government safety net would be limited to a relatively small number of important financial institutions (both highly specialized and more diversified) rather than extended across the entire spectrum of financial intermediaries. Banks would be transformed into low-risk public utilities, and nonbanking activities such as proprietary trading, principal investing, commodity speculation and running in-house hedge funds would be carried out in nonbank firms which would not be entitled to the implicit safety net and would have to manage themselves prudently in the absence of any assurance of a government bailout if they ran into trouble. It does not imply that these remaining institutions could not be systemically risky. But, that would be addressed by having procedures for the orderly failure of non-banks and their supervision by competent, dedicated functional regulators without resorting to taxpayer support.

This approach would greatly simplify the challenge of effective regulation. The argument is that the more focused the regulatory targeting, the more successful the regulator in understanding what's going on and verifying regulatory compliance, whether or not the firm is systemic. Under such a system the FDIC would be the lead regulator for institutions having commercial banks at their core, the SEC for investment banks, hedge funds, mutual funds and other specialized intermediaries as well as key markets, and ideally a new national insurance regulator for the life and non-life insurance industries. Such a structure would require a council of regulators and would not preclude regulatory oversight at the state level, especially given the success of the states in surfacing issues that federal regulators have missed in the past and benefiting from a certain degree of regulatory competition.

We assume, given the current proposals under discussion in Congress that the option just discussed - the simpler one from the perspective of institutional design - will not be enacted. Consequently our comments will focus on how to regulate systemic financial conglomerates that will potentially be active in all aspects of financial intermediation – and that will continue to consolidate, become more complex and grow in size in proportion to the national economy, and therefore pose even greater systemic risk that they already have. .

## **Current Proposals**

The House of Representatives recently passed the legislation (HR 4173, the *Wall Street Reform and Consumer Protection Act of 2009*) that provides that the Federal Reserve take a lead role in overseeing large financial firms regardless of their institutional structure and, if necessary, intervene in those whose failures pose a risk to the economy. It imposes fees on financial firms that would be pooled in a "systemic resolution fund" to cover any bailout costs incurred by the government.

Reform proposals under consideration in the Senate (*Restoring American Financial Stability Act*) would strip the Federal Reserve of proposed authority to supervise and restructure the nation's biggest banks and financial firms. It would consolidate regulatory authority in a single national bank regulator, replacing most bank regulatory powers held by the Federal Reserve and the Federal Deposit Insurance Corporation and eliminating the Office of the Comptroller of the Currency and the Office of Thrift Supervision.

Both the House and Senate bills support the creation of a new regulatory oversight council, composed of existing regulatory agencies, to monitor and create rules for large firms with more than \$10 billion in assets. The Senate bill proposes that the oversight council be headed by a presidential appointee who is subject to confirmation in the Senate, while the House bill provides that the Treasury secretary chair the council. The Senate bill would also alter the funding of the Securities and Exchange Commission in order to give it a "self-funding" structure to provide more resources to detect fraud.

## **Evaluation of Current Proposals**

The House bill requires that Congress legislate new powers to the government to take over failed non-banking financial institutions, and that this power be vested in the Federal Reserve, in agreement with the Administration's proposals, subject to oversight of a committee of senior officials. It is hard to imagine a more complex and politicized task, starting with severe reluctance on the part of Congress to further enhance the Fed's already vastly expanded powers and entrust it with monitoring and controlling an array of new, complex risks which have heretofore successfully eluded its scrutiny.

Neither the House nor the Senate bills anticipate any line-of-business restrictions or activity carve-outs, but instead envisage that enhanced risk limitations can be successfully imposed and enforced by the functional and systemic regulators. The danger is that the rules may end up being too weak, or too complex to be enforced effectively, or too easy to end-run in a political environment where the regulators themselves are captured by those they are supposed to

regulate. Or the regulation may turn out to be too restrictive for bank-based financial conglomerates to be able to compete successfully in the capital markets and related financial businesses, which could deprive them of their competitive advantages. Getting the balance right is tricky if not impossible.

There are significant measurement problems for systemic supervision. Which metrics will be used to define systemic risk exposure, and how might these metrics be “gamed?” This is a significant issue in implementing any kind of regulation. In the run-up to the recent crisis, banks and nonbank financial firms were able to “game” the prevailing metrics, and the regulators either acquiesced or failed to realize what was happening. The general philosophy was rooted in the Basel II risk-based capital ratios, adopted after eight years of wrangling among regulators, which turned out to rely excessively on flawed internal risk models, assigned the wrong capital weights on what emerged as troubled asset classes, failed to deal with effective stress-testing of credit portfolios, and omitted a key focus on market risk and liquidity risk. Whatever could go wrong with Basel 2 ended up going wrong -- although the US was spared some of the damage by not adopting the Basel 2 standards because of concerns on the part of the FDIC.

Going forward, the cohort of systemic financial firms will not be very large in number (perhaps 15 to 20 firms in the US, perhaps 30 worldwide), but it will require a group of smart, well-trained and well-paid regulators to control them. Qualitative measures related to issues such as risk control capabilities, risk-based incentives, and the adequacy of corporate governance practices together with the appropriate quantitative indicators might be enough to get an agreement that is acceptable internationally. Time will tell.

## **Recommendation**

In the absence of functional separation or carve-outs of highly risky financial activities that pose a threat to conglomerate financial firms whose failure would injure the integrity of the financial system, a powerful regulatory capability is essential. The crisis has shown the inability of managerial self-regulation, proper corporate governance, industry self-regulation and market discipline to successfully contain the systemic risk, and it is too late to argue that lessons have been learned to make sure that firm-level and system-level risk management works better next time. And, there will surely be a next time. Once large risks have been socialized, the public has a right to affect the terms and conditions under which risks are engaged going forward.

We favor material reform and strengthening of functional regulation in the commercial banking, investment banking, asset management and insurance sectors to effectively incorporate systemic threats posed by specialized but systemically-sensitive financial firms. This includes hedge funds and insurers, including the creation of a national insurance regulator. With the exception of the latter, this would mainly involve significant beefing-up of the existing functional regulators – the FDIC, the SEC / CFTC – with clearly delineated flows of information and accountability for systemic risk dimensions. The latter would be the key responsibility of a new systemic risk regulator, uniquely responsible for large financial conglomerates as well as (together with the responsible functional regulators) any specialized financial firms whose failure is judged to pose a systemic threat. The systemic risk regulator would also be responsible for assessing aggregate sources of risk developing in the system, in close cooperation with the Federal Reserve. The

systemic and functional regulators, along with the Federal Reserve and the Treasury, would comprise a regulatory council which would create an emergency response system including contingency planning, backup options and failure resolution capabilities including living wills.

We do not believe the Federal Reserve should serve as the new systemic risk regulator. We believe central bank monetary policy independence is a valuable asset that favors long-term economic performance. Micro-prudential activity on the part of the central bank invariably undermines that independence and the Federal Reserve, however necessary its crisis interventions may have been, will have a hard time winning it back. Assigning a micro-prudential role to the Federal Reserve runs the risk of hijacking monetary policy in times of stress, and the market will expect this to happen – making sound monetary policy much more difficult to achieve and creating large doses of moral hazard in the system. Nevertheless, close cooperation with an independent systemic risk regulator through a systemic risk council could influence Federal Reserve Policy targeting to prevent incipient crises.

## Chapter 3\*

### Central Bank Independence and the Role of the Fed

#### The Fed and the Crisis

The actions or inactions of the Federal Reserve figure prominently on many lists of the causes of the financial and economic crisis of 2007-2009. At the same time, the rapid and creative responses of the Fed are widely credited for limiting the spread and depth of the crisis. Amid the accolades and criticisms, there is agreement that the Fed's role and structure need to be reviewed in the light of recent experience. Financial regulatory reform legislation pending in both the House and Senate would significantly change the way the Fed operates, as well its ability to respond to crises.

Congress created the Fed in 1913, after all too frequent crises and banking panics in 1873, 1884, 1890, 1893, and 1907. European nations, following Englishman Walter Bagehot's 1873 articulation of the idea of a "lender of last resort," had already established central banks and experienced fewer crises than the United States. Central bank lending provides liquidity when and where it is needed to maintain systemic stability or to prevent a run on one financial institution from leading to a systemic panic. Financial crises obviously have not disappeared since the Fed was established nearly a century ago, but they have become far less frequent.

In the wake of the Great Depression of the 1930s, the Fed's powers were centralized and broadened. It gained the authority to respond to emergency situations among nonbanks and nonfinancial firms by lending to them against appropriate collateral (section 13(3) of the Federal Reserve Act). After the Depression, these powers were not used again until March 2008. The Fed's use of this authority in regard to Bear Stearns and AIG has been criticized as an unjustified bailout and has motivated legislative proposals to curb these special lending powers. What is missing from the public debate is an appreciation of why a central bank has such lending authority in the first place.

#### Current Proposals

Current legislative proposals to alter the functioning of the central bank would emasculate some key central bank functions that have served the U.S. economy well for many years. If approved, the ability of U.S. authorities to respond quickly to an economic crisis would be seriously impaired. If the lending operations of the Fed in 2008 had to conform to legislation now proposed, the Fed might well have been unable to forestall a cascading failure of financial institutions and a collapse of financing for businesses and households alike. Furthermore, the proposed legislation compromises the ability of the central bank to maintain a credible long-run monetary policy that reflects its mandate to maintain stable prices and maximum sustainable employment.

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Our initial premise is that the government has a clear mandate to maintain financial stability. This provides the rationale for regulation and examination of financial institutions to be conducted by a central bank, by regulatory agencies or by a combination of the two. The premise also provides the rationale for a central bank with the authority to lend to financial institutions. Historically, the Fed's discount window provided liquidity to the banking system when there were no other sources. Other common sources of liquidity, such as the federal funds market, the secondary market in government securities and the repurchase agreement market are later inventions. Toward the end of the 20<sup>th</sup> century, discount lending virtually disappeared, but the lender of last resort aspect of discount lending remained important. At various times, such as the failure of Continental Illinois Bank in 1984, the stock market crash of 1987, and the disruption of many financial operations in the days following the September 11 attacks, the Fed used the discount facility vigorously and successfully to prevent systemic crises from emerging.

Maintaining the Fed's role as an effective lender of last resort is vitally important. Although the proposed legislation leaves the Fed's traditional lending facility intact, both the Senate and House proposals would nonetheless inhibit the ability of the Fed to conduct such lending.

The Senate proposal would remove all bank regulatory and examination functions from the Fed. If that happens, the Fed would have no reliable way of monitoring or evaluating potential borrowers at the discount window. Although the legislation allows the Fed to request information from a new regulatory agency or to ask to participate in examinations, it would be far removed from information regarding potential borrowers and ill-prepared to make sound judgments about them. Under the House bill, the Fed has a continuing role in financial regulation, but the Chairman of the Board is only a member of the new systemic regulator, the Financial Services Oversight Council, which would determine when emergency lending by either the Fed or the FDIC is warranted.

The risks involved in separating lending authority from oversight are illustrated by the experience of the Bank of England and the Financial Services Authority in 2008, when Northern Rock collapsed. Insufficient exchange of information between the lender, the Bank of England, and the regulator delayed an effective response, magnifying the damage from the collapse.

There are elements of both the House and Senate proposals that would politicize monetary policy and crisis management operations of the Fed in ways that could easily prove counterproductive to economic stability. Both bills call for reviews or audits of lending programs introduced in response to the crisis with only limited restrictions on maintaining the confidentiality of information. The House bill, which now incorporates provisions of the Paul-Grayson amendment, calls for an immediate and extensive audit of the Fed's responses to the crisis and also removes the exclusion of monetary policy deliberations from regular audits in the future.

## **Recommendation**

Understanding three pillars of central banking theory and practice would better meet the legitimate objectives of reform:

First, the central bank should have an ongoing role in financial sector regulation. Central bankers need to know about the institutions that borrow from them. This does not mean that the

Fed should be the sole regulator of those institutions. Plans to consolidate the fragmented array of bank regulators in the U.S. into a new agency or agencies promise to make financial regulation more effective. But this should not eliminate the regulatory and supervisory roles of the central bank. Similarly, plans in both the Senate and House bills to establish new systemic regulatory authorities are commendable, and the authority to identify systemic risks and recommend regulatory responses can be shared between the central bank and regulatory authorities. However, the central bank's monetary policy decisions, which include concern for aggregate credit growth and, at times, asset prices, are closely related to concerns for systemic stability.

Second, there is a need for a broad-based emergency lending facility. A lesson of the recent crisis is that central bank lending is needed to provide funding liquidity when markets cease operating and institutions cannot roll over their funding sources. Widespread short-term funding problems in 2007-2009 created enormous systemic problems. Hence, using the Fed's 13(3) emergency powers, the lender of last resort facility was extended to investment banks, money market funds, insurance companies, and in the case of commercial paper issuers, to nonfinancial firms. In a future crisis, funding problems with potential systemic implications may arise in institutions that are still outside the formal purview of the central bank, such as critical financial clearinghouses, exchanges or, possibly, in institutions that have yet to be invented. Thus, it is important that the central bank continue to have a mechanism for providing an emergency response to funding problems that have systemic implications.

The experience of the crisis does suggest ways to improve the Fed's emergency lending authority. The systemic risk regulator (either within the Fed or externally) defines solvency criteria for financial institutions. Those that are deemed insolvent should be put in the hands of the resolution authority. Any institution that does not meet the solvency criteria in a stress test conducted by the Fed, and is not likely to after using the lender of last resort facility, is not eligible for access to the facility.

Pending legislation would severely limit the ability of the Fed to respond to emergencies. The Senate bill would allow emergency lending by the Fed only to institutions that the newly formed Agency for Financial Stability deemed to be systemically important. The House bill would allow for emergency lending, but only after the systemic regulator has asked the President to certify that an emergency exists and only if those voting for the loans believe that there is "a 99 percent likelihood that all funds dispersed or put at risk ...will be repaid" (H.R. 4173, section 1701). Such standing facilities, however, are not designed for unexpected shocks or to aim lending in an emergency in an unanticipated but needed direction.

Broad-based emergency lending by the Fed would be severely hampered or, at best, politicized and delayed. The government would be left without a direct means of response to a financial crisis even in the event of war or terrorist attack. Emergency lending powers are a potent tool, of course, and must be subject to careful controls. Hence, any Fed lending to individual nonbanks should require the approval of the Secretary of the Treasury, as well as a majority of the members of the Board of Governors of the Federal Reserve. Moreover, to preserve the independence of Federal Reserve monetary policy, the Treasury Secretary should be required to propose a supplementary budget for Congressional approval that would remove such lending from the Fed balance sheet at face value within one year.

Third, central bank independence -- both in terms of monetary policy decisions and lending activities -- should not be compromised. A hallmark of an effective central bank is its independence. There are two good reasons to value such independence: (1) monetary policy decisions should be made outside of the political arena because history shows that elected governments have a strong bias toward inflation; and (2) independence is needed so that both regular and emergency lending authority can be used without any fear of political influence.

That politics and the effective functioning of a central bank do not mix is borne out by experience. Throughout U.S. history, fears that the central bank might be overreaching its proper boundaries -- whether expressed through Congress or the White House -- have led to bad results. In 1811 and 1832, such fears put then well-functioning central banks out of existence. In 1913, when the modern Fed was created, it was structured as a decentralized "system" of regional banks, which functioned sub-optimally -- notably in the 1930-33 Depression -- until the modern, centralized governance structure was created in 1935. Even then, the Fed remained subordinate to the Treasury and was not formally granted independence until the 1951 Accord, a circumstance that effectively fueled higher than desirable rates of inflation during the years immediately after World War II.

Provisions of the House bill, in particular, would seriously compromise the independence of the Fed. Subjecting monetary policy deliberations and decisions of the Fed to an external audit by the Government Accountability Office (GAO) would move the process squarely into the political realm. While governments around the world have worked to insulate monetary policy from political influence, this legislation would reverse that progress in the U.S. and weaken the credibility of the Fed's commitment to keep inflation low and stable.

Provisions in the Senate bill affecting the governance of the regional Federal Reserve Banks are aimed at encouraging accountability. However, the changes (section 1202) would essentially make the leadership of the regional banks political appointees and risk undermining the Fed's anti-inflation credibility.

Over the past 20 years, the Fed has slowly, often reluctantly, increased the transparency of its monetary policy decision making. More can be done in this regard. Other countries and central banks publish more detailed policy objectives, alternative scenarios and risks of forecasts than the U.S. does at present. The Fed should take further steps in that direction. But increased transparency in the conduct of monetary policy can, and should, be achieved without compromising the independence of the decision makers to articulate their views and reach their own conclusions.

Similarly, to function effectively as a lender of last resort, the Fed must be able to resist political pressures. Requirements in legislation pending in the Senate (section 1201) that Fed lending (amounts, terms, names of the borrower, etc.) be reported to Congress within seven days would make central bank lending a political decision. Although the proposals allow the Fed to request a delay for up to one year, that would do little to reaffirm the independence of lending decisions. Experience tells us that making such information public could easily have a destabilizing influence. In 1932 and early 1933, Congress required the Reconstruction Finance Corporation to reveal names of the recipients of its loans. The effect was to exacerbate the catastrophic run on a fragile banking system, rather than to stabilize it.

Transparency and accountability should accompany independence. Greater transparency about the objectives and future path of Fed policy can anchor expectations and lead to better policy outcomes. But transparency should be enhanced without compromising the independence of monetary policy decision makers.

## **Conclusion**

In sum, proposed legislation would compromise three important tenets of central banking: (1) the ability of the lender of last resort to have detailed knowledge about those who borrow from it; (2) the ability of the central bank to respond in a timely and effective fashion to extraordinary crisis situations; and (3) the ability of the central bank to keep policy making out of the political arena. Rather than working to strengthen the U.S. financial system or to make monetary policy more effective, we believe that current legislative proposals in these three areas would achieve the opposite outcome.

**SECTION 2 --  
SYSTEMIC RISK**

## Chapter 4\*

### Measuring Systemic Risk

#### Overview

The most important lesson from the financial crisis of 2007-2009 has been that failures of some large financial institutions can impose costs on the entire system. We call these “systemically important” financial institutions. Their failures invariably put regulators in a compromised situation since, absent pre-arranged resolution plans, they are forced to rescue the failed institutions to preserve a functioning financial system. In the recent crisis, this has involved protecting, not just insured creditors, but sometimes uninsured creditors and even shareholders. The anticipation that these bailouts will occur compromises market discipline in good times, encouraging excessive leverage and risk-taking. This reinforces the systemic risk in the system. It is widely accepted that systemic risk needs to be contained by making it possible for these institutions to fail, thus restraining their incentives to take excessive risks in good times. First and foremost, however, regulators need to ascertain which institutions are, in fact, systemically important. Indeed, the systemic risk of an individual institution has not yet been measured or quantified by regulators in an organized manner, even though systemic risk has always been one of the justifications for our elaborate regulatory apparatus.

There are some institutions that follow highly cyclical activities and are thus heavily correlated with aggregate economic conditions. If these institutions are also highly levered, especially with short-term debt, then they face “runs” in the event of sufficiently adverse news about their condition. This makes them more prone to failure and liquidation. If their failure were unrelated to aggregate conditions, their liquidation would be straightforward, as there would be healthy players in the financial sector to acquire them or their assets. However, when institutions’ asset risk is correlated with that of the economy, they are likely to fail when the rest of the financial sector is under stress too, and their liquidation is difficult and potentially destabilizing for other players if fire-sale asset prices lead to externalities. In this case, systemic risk propagates through the effect of firm failures on asset prices. Many observers attribute the markdowns in prices of illiquid “toxic” assets during the crisis of 2007-2009 (at least partly) to several, highly levered financial firms having taken a one-way bet on the housing price in the economy – a bet that went bad and produced difficult funding conditions for much less levered financial institutions that were holding similar assets.

Interconnection among financial firms can also lead to systemic risk under crisis conditions. Financial institutions are interconnected in a variety of networks in bilateral and multilateral relations and contracts, as well as through markets. Under normal conditions, these interconnections are highly beneficial to the financial system and its constituents. For example, they can be used by financial institutions to diversify risk as well as to accumulate capital for specific functions. Under crisis conditions, this is not the case: First, these interconnections (including markets) may fail to function in their normal way, resulting in particular institutions’ facing excessive and unexpected risks. Second, many interconnections and commitments cannot be altered quickly and therefore, in a crisis, may transfer risk and losses across financial firms,

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resulting in cascading failures. Third, certain institutions are central to key financial networks, and their failure can result in widespread failures. These institutions may be "too large" (to fail) but may also be highly interconnected, although not particularly big.

The failures of Bear Stearns, Lehman Brothers and AIG all contributed to systemic risk in the form of uncertainty about which interconnections would transmit default risk. In the case of Bear Stearns, the risk was stemmed through government support. In the case of Lehman Brothers, the risk spread as losses on Lehman bonds caused the Reserve Primary Fund, a money market fund, to "break the buck," causing a run on it and several other money market funds. And in the case of AIG, its counterparty position was so large in terms of exposures of other potentially systemic institutions and municipalities, in the United States as well as in Europe, that it could not be allowed to fail.

Finally, while size by itself need not lead to systemic effects of failures, it may if large-scale liquidations are feared and lead to disruption of markets, interconnections, and the loss of intermediation functions that they might take months, or years, to rebuild. Cases in point are the Continental Illinois Bank's failure in 1984, the near collapse of Long-Term Capital Management in 1998, and that of Citigroup in the autumn of 2008. Of course, this brings with it the curse of "too-big-to-fail" expectations and the attendant moral hazard problems.

### **Current Proposals**

The House Financial Services Committee in the United States has approved legislation that would establish tough new federal controls on "systemically important" financial firms. The House bill (H.R. 4173) considers a company as systemic if material financial distress at the company could pose a threat to financial stability or the economy; or the nature, scope, size, scale, concentration, and interconnectedness, or mix of the company's activities could pose a threat to financial stability or the economy. In particular, the bill recommends that the systemic risk regulators consider the following criteria: (1) the amount and nature of the company's financial assets; (2) the amount and nature of the company's liabilities, including the degree of reliance on short-term funding; (3) the extent of the company's leverage; (4) the extent and nature of the company's off-balance sheet exposures; (5) the extent and nature of the company's transactions and relationships with other financial companies; (6) the company's importance as a source of credit for households, businesses, and state and local governments and as a source of liquidity for the financial system; (7) the nature, scope and mix of the company's activities; and (8) the degree to which the company is already regulated by one or more federal financial regulatory agencies.

The Senate bill adds another criterion to the above list: (9) the operation of, or ownership interest in, any clearing, settlement or payment business of the company.

To the best of our knowledge, no specific list of systemic firms has yet been determined. We believe that based on the House and the Senate bills, even once a list is determined, it may not be disclosed publicly. Internationally, the Financial Stability Board, an international body of regulators and central bankers, based out of the Bank for International Settlements, has compiled a list of 30 global financial institutions; these firms are considered as "Systemic Risk

Institutions” for cross-border supervision exercises, such as drawing up living wills or recovery and resolution plans. This list includes six insurance companies and 24 banks from the United Kingdom, Continental Europe, North America, and Japan, even though the exact criteria employed have not been revealed.

## **Evaluation of Current Proposals**

Our evaluation of these proposals is centered around four themes: individual criteria for determining systemic institutions versus employing market-based continuous measures of systemic risk; identification of those institutions that serve “public utility” functions inside a private enterprise; employing stress tests and aggregated risk exposure reports to measure interconnectedness and assess the risk of the system as a whole; and whether the list of systemic institutions should be made public.

- 1) While we do not disagree with the list of criteria suggested by the House bill, we do not recommend a pure reliance on classification based on rigid criteria. Suppose for example that banks are divided into systemic risk categories by size and suppose that resolution plans applied only to the top size category. Clearly, there would be tremendous advantage for banks that are near the lower threshold of the top size category to remain just below that size. Indeed, larger banks may simply break themselves up yet retain virtually identical models; the true systemic risk will not be reduced, even though it is now contained in many more, smaller institutions. The same regulatory arbitrage rule applies for coarse categorization based on leverage. A corollary of this argument is that a group of institutions that are individually small but collectively exposed to the same risk -- for example, money market funds -- could all experience runs when there is an aggregate crisis and high-quality issuers of commercial paper also get close to default. These should be considered as part of a potentially systemic risk pocket of the economy.

An alternative to coarse categorization of systemic risk is to employ market-based measures that are more continuously variable. In this case, we prefer using stock market data because it is least affected by bailout expectations. For instance, a simple measure called Marginal Expected Shortfall (MES) estimates, in a given past period (say one year), on the worst 5% days of the market or the financial sector index, the average stock return of a given financial firm. This average return is called its MES, and the more negative the MES, the more systemically risky is that financial firm. Academic research<sup>\*</sup> has shown that firms ranked by such a systemic risk measure, computed pre-crisis, were also ranked in terms of their realized losses during the crisis. It also shows that the MES of firms is also linked to their capitalization/leverage, but that certain types of institutions (securities dealers and brokers) appear inherently more systemically risky than others (depository institutions) each year. In principle, these measures can be estimated with greater sophistication that takes into account the pro-cyclicality of risk and the leverage of financial firms. Also, there are more sophisticated techniques available to measure the types of losses that might occur in rare events such as financial crises.

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<sup>\*</sup> Acharya, Viral V, Lasse Pedersen, Thomas Philippon, and Matthew Richardson, 2009, “Measuring Systemic Risk,” Working Paper, New York University Stern School of Business.

Overall, we see the two approaches – relying on simple systemic risk criteria such as size, leverage and interconnectedness and relying on market-based estimates of systemic risk – as complementary. The first is more transparent and likely to flag obvious candidates; the second is a reality check based on market perceptions as to whether some candidates have been missed altogether under the obvious criteria or some obvious ones are less systemic than they seem at first blush. For instance, securities dealers and brokers show up as being most systemic in every single year since 1963, based on stock market data (MES), even though they have remained essentially unregulated. By contrast, AIG is a natural one-way insurance provider of large quantities that is not identified by stock market data as being significantly systemic until a year into the crisis. Also, while systemic risk categories can be “arbitraged” by market participants, market-based systemic risk measures are more difficult to evade when the firm’s true systemic risk has not diminished.

- 2) It is certainly useful to examine financial institutions that have a huge concentration in volume of one or more product areas. These firms are generally likely to be making markets in that product. Hence, we particularly endorse the Senate addition to the systemic risk criteria that firms operating or significantly owning public utility functions -- such as clearing (for instance, Bear Stearns for credit derivatives until its failure in March 2008 and JPMorgan Chase and Bank of New York for repurchase agreements) and payment and settlement (several large commercial banks that provide banking services to households and corporations) -- participate in the payments system and move reserves around in the economy. These entities are likely to be systemic in that their failures would impose significant counterparty risk and disruptions on other financial institutions. Hence, they should be deemed as systemic regardless of any other criteria. Indeed, our recommendation – discussed in Chapter 16 – is to move the public utility function out of private financial firms (for instance, as clearinghouses), to subject the public utility to sufficiently high capital standards, and thereby eliminate most of the systemic risk associated with performance of the function.
- 3) A key issue that arises in measuring systemic risk is that interconnections of financial institutions are somewhat opaque, and their precise nature may be entirely different in a stressed scenario than under normal conditions. For instance, counterparty exposures can reverse signs when conditions change. And deep out-of-the-money options, such as those sold by AIG to banks as synthetic insurance, can lead to defaults due to margin or collateral calls even before events being insured materialize. There is no simple answer to these questions, but two important steps can be taken:
  - a. First, in order to have any hope of assessing interconnectedness of a financial institution and its pivotal role in a network, detailed exposures to other institutions through derivative contracts and interbank liabilities is a must. This requires a legislation compelling reporting, such that all such connections are registered in a repository immediately after they are formed or when they are extinguished, along with information on the extent and form of collateralization and the risk of collateral calls when credit quality deteriorates. These reports could be aggregated by risk and maturity types to obtain an overall map of network connections.

Indeed, a key benefit of producing these risk reports and making them transparent is that they help address another risk *within* an institution – the so-called “operational risk” – which can also lead to systemic risk concerns if it brings down a sufficiently large and systemically important firm. Operational risk is typically attributed to deficiencies in corporate processes (a company's risk management systems), in its people (due to incompetence, fraud or unauthorized behavior), and in its technology (its information systems, quality of its data, its mathematical modeling, etc.). Risk management systems benefit considerably from information transparency (intra- as well as inter-company), while satisfying all corporate, regulatory and privacy constraints.

Within a company, there have to be rules for daily aggregation of positions that are reported to the higher levels in the company -- preferably in conjunction with matching aggregate information received from the more important counterparties in order to reduce probabilities of errors and fraud. At the corporate level, the net positions of the separate divisions of the company have to be compiled and analyzed (including dependencies and risk correlation analyses, etc.). It is thus beneficial if a top-down structure from risk reports required by the systemic risk regulator is in place, whereby minimum standards are imposed on individual firms to gather and aggregate such information on their own exposures. At regular time intervals, the aggregate information would be shared with the regulator and other counterparties.

- b. Second, in order to be able to project into infrequent future scenarios, such scenarios need to be modeled and considered in the first place. An attractive way of dealing with such projection is to conduct stress tests – along the lines of the Supervisory Capital Assessment Program (SCAP) exercise conducted by the Federal Reserve during February to May 2009. To report its objectives and findings, we quote from the report:<sup>\*</sup> *“From the macroprudential perspective, the SCAP was a top-down analysis of the largest bank holding companies (BHCs), representing a majority of the U.S. banking system, with an explicit goal to facilitate aggregate lending. The SCAP applied a common, probabilistic scenario analysis for all participating BHCs and looked beyond the traditional accounting-based measures to determine the needed capital buffer. The macroprudential goal was to credibly reduce the probability of the tail outcome, but the analysis began at the microprudential level with detailed and idiosyncratic data on the risks and exposures of each participating BHC. This firm-specific, granular data allowed tailored analysis that led to differentiation and BHC-specific policy actions, e.g., a positive identified SCAP buffer for 10 BHCs and no need for a buffer for the remaining nine.”*

We recommend making such stress tests a regular part of the Federal Reserve toolkit to determine the risk of institutions in stressed systemic scenarios, as well as to assess the overall systemic risk of the financial sector in such scenarios. There has been valuable knowledge and experience developed in the exercise of SCAP 2009, and this

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<sup>\*</sup> See the Federal Reserve Bank of New York report on the SCAP exercise (Hirtle, Schuermann and Stiroh, 2009) at [http://newyorkfed.org/research/staff\\_reports/sr409.html](http://newyorkfed.org/research/staff_reports/sr409.html)

could be built upon. The Federal Reserve should conduct stress tests at the request of the systemic regulator. Such assessments should be done more frequently in a crisis and may complement the firm's own test (as recommended by the Securities and Exchange Commission in SEC.1114.Stress Tests). Indeed, we find it comforting that the House bill calls for systemic institutions to be subject to quarterly or semi-annual stress tests.\*

- 4) We recommend a fully transparent approach to systemic risk measurement and categorization. The primary objection to the public disclosure of systemically important institutions is that it implicitly confers too-big-to-fail or too-interconnected-to-fail guarantees on such institutions. The two issues must be separated. The problem of implicit guarantees is best resolved by the creation of a resolution authority and a process that limits the fallout from failure. The problem of transparency has to do with releasing valuable capitalization and counterparty exposure information that market participants can use to price more accurately risk in contracts with each other and to employ suitable risk controls. Indeed, all the evidence suggests that the information released by the SCAP exercise of 2009 on relative strengths and weaknesses of banks was perceived as welcome news in the marketplace. Furthermore, continuously varying market-based measures of systemic risk such as MES are easily computable by market participants, and they obviate for opacity.

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\* HR 4173. Sec. 1114

## **Chapter 5\***

### **Managing Systemic Risk**

#### **Overview**

We now know that guaranteeing the liabilities of major U.S. financial institutions seriously distorts the allocation of capital and competition among financial intermediaries. The guarantee provides these firms with an unfair advantage, because they can raise capital at a lower cost. Because the guarantee is so valuable and pervasive, these giant intermediaries face little market discipline and have a perverse incentive to expand their scope, scale, risk exposure, leverage, and financial interconnectedness. The result is that the economy at large suffers a triple whammy – massive taxpayer-financed bailouts, a less competitive and less efficient financial system, increasingly populated by firms that are deemed too-big-to-fail, and a greater likelihood of future economic and financial crises.

#### **The Crisis**

The short account of the current crisis is that a large number of banks and other major intermediaries managed to shift risks by exploiting loopholes in regulatory capital requirements to take an undercapitalized, highly leveraged, one-way bet on the economy -- particularly tied to residential real estate, but also to commercial real estate and consumer credit. They bet their houses on the persistence of favorable economic and financial conditions. This bet was financed largely by lenders who, because of government guarantees (such as insured depositors and uninsured large creditors of Fannie Mae, Freddie Mac, and too-big-to-fail banks that figured they would be bailed out no matter what), were more or less indifferent to the consequences if they were wrong. Things turned out for these lenders pretty much as expected. And given the bailout of creditors of virtually all the heavily exposed financial intermediaries, as necessary as it may have been ex post, the moral hazard from government guarantees has only gotten worse. The emergency mergers and acquisitions during the crisis have created even larger systemic institutions, exacerbating the problem. Even if many of these firms are well-run in the future, it would only take a few isolated cases to put the entire system at risk.

#### **The Current Proposals**

Both the House and Senate bills recognize the problem of having too-big-to-fail financial institutions. For example, the Senate bill states that “in order to prevent or mitigate risks to United States financial system stability and economic growth that could arise from the material financial distress or failure of large or complex financial institutions, the Agency shall establish prudential standards and reporting and disclosure requirements applicable to specified financial companies that— (1) are more stringent than those applicable to financial companies that do not present similar risks to United States financial system stability and economic growth; and (2)

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\* Working group: Viral Acharya, Thomas Cooley, Matthew Richardson, Roy Smith and Ingo Walter

increase in stringency with the size and complexity of the specified financial company.”\* The House bill contains almost identical language.<sup>†</sup>

These stricter standards should include “(i) risk-based capital requirements; (ii) leverage limits; (iii) liquidity requirements; (iv) a contingent capital requirement; (v) resolution plan and credit exposure report requirements; (vi) prompt corrective action requirements; (vii) concentration limits; and (viii) overall risk management requirements.”<sup>‡</sup> Other than the contingent capital requirement, the House bill is identical.<sup>§</sup> Both bills also call for a risk-based assessment on all financial institutions into a systemic fund to be used for future bailouts of the sector.

In addition, the House bill calls for a study of “the economic impact of possible financial services regulatory limitations intended to reduce systemic risk. Such study shall estimate the effect on the efficiency of capital markets, costs imposed on the financial sector, and on national economic growth, of—(1) explicit or implicit limits on the maximum size of banks, bank holding companies, and other large financial institutions; (2) limits on the organizational complexity and diversification of large financial institutions; (3) requirements for operational separation between business units of large financial institutions in order to expedite resolution in case of failure; (4) limits on risk transfer between business units of large financial institutions; (5) requirements to carry contingent capital or similar mechanisms; (6) limits on commingling of commercial and financial activities by large financial institutions; and (7) segregation requirements between traditional financial activities and trading or other high risk operations in large financial institutions.”\*\*

## **Evaluation of Current Proposals**

In terms of the broad issues relating to systemic risk, the Congressional bills have it about right. The bills recognize that systemic institutions must be subject to higher standards and these increase in the degree of systemic risk. Moreover, these prudential standards cover all the likely suspects.

That said, from an economic point of view, the best solution to contain the excessive systemic risk created by too-big-to-fail financial institutions is to charge them for the implicit taxpayer guarantees they enjoy. They should pay what amounts to an insurance premium both for their expected losses in the event of failure (similar in theory, though not in practice, to the FDIC deposit insurance premium), and for expected losses when failure occurs in the context of a systemic crisis (broadly defined as the financial system as a whole becoming undercapitalized). To avoid these insurance premiums – which could also be charged in the form of increased capital ratios or deposit guarantee charges -- these firms will be encouraged to rethink their business models. In particular, they will have to consider reducing their scope, scale, risk exposures, leverage, and the interconnectedness, thus trading off the returns from such activities

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\* Senate bill, Sec. 105.

† H.R. 4183, Sec. 1103.

‡ Senate bill, Sec. 107.

§ H.R. 4183, Sec. 1104.

\*\* H.R. 4183, Sec. 1112.

against the insurance premiums attached to them. Market discipline and managerial discretion would then work hand in hand with correct pricing of systemic risk to create a more stable and efficient financial architecture.

However, there are two difficulties. First and foremost, regulators can never perfectly measure bank risk, leverage or interconnectedness -- especially when institutions under scrutiny are complex and perform almost all possible financial intermediation activities. Simply, if regulation is based on noisy observables, these institutions have an incentive to undertake “regulatory arbitrage” and load up risks on the dimension where regulation is most imprecise. Hence, it is prudent to reduce the unavoidable noise in implementation of a systemic risk premium. Second, in the real political economy, the special interests that have enjoyed the benefits of taxpayer subsidies for years will try their best to retain them. Alternatives that reduce the systemic nature of any individual institution in the first place must therefore be considered.

To address both of these difficulties, a possible alternative is to force systemic financial firms – by fiat or through incentives -- to carve out activities that expose the taxpayer to excessive risk and place them in specialized, independent firms that are not likely to be bailed out and whose risks are more easily observed and regulated than financial conglomerates.

We can look to history for clues as to how to achieve this. In the wake of the banking crises of the 1930s and the Great Depression, the Glass-Steagall provisions of the Banking Act of 1933 created deposit insurance, an explicit government guarantee to stop bank runs. Because Congress understood that insurance goes hand in hand with excessive risk-taking, they set up four counteracting barriers: an insurance premium to be paid by banks more or less calibrated to expected losses; winding-down provisions and enhanced supervision of individual banks; requirements that banks maintain adequate liquidity and capital against possible credit losses; and ring-fencing the risk-taking activities of banks by separating commercial banking from investment banking, since the latter was considered more risky.

While there are many reasons for the relative stability of the U.S. financial system during the 50 years after the Great Depression, many analysts give substantial credit to the financial regulation that was enacted at that time. There is considerable debate about why this stability began to unravel in the 1980s, but the general consensus is that technology changed the nature of banking and therefore competition in the banking sector. Those changes led to substantial growth of the “shadow” banking system, consisting of investment banks carrying out banking-type functions, mutual funds, hedge funds, off-balance sheet vehicles and the like. The commercial banks themselves pushed aggressively into the shadow system, and the Glass-Steagall provisions became largely irrelevant. Deregulation gradually peeled away at Glass-Steagall restrictions until its formal repeal in 1999, but no new regulation was put in its place, leaving what was by now a hybrid system of commercial banking and shadow banking vulnerable to the too-big-to-fail problem of systemic financial firms.

Hence, we recommend an approach that reforms the regulation of 1930s to address the modern forms of banking but retains its sound economic principles of charging for government guarantees and limiting the attendant moral hazard problem. The following chapters discuss existing proposals for four major ways for regulators to reign in the too-big-to-fail institution: a

systemic premium; capital and liquidity requirements; breaking up the institution; and imposing contingent capital requirements.

## Chapter 6\*

### Taxing Too-Big-to-Fail Institutions

#### The Current Proposals

Legislation that has been proposed in both the House and the Senate calls for a risk-based systemic fund that would be used to guarantee obligations of certain financial institutions during a crisis.<sup>†</sup> The capital in the fund would in theory be paid for by systemic institutions in the form of a premium tied to “the complexity of operations or organization, interconnectedness, size, and direct or indirect activities of the financial institution.” Both congressional bills agree on this basic framework, though the Senate proposal allows for a two-year implementation period.

Nevertheless, there are several major differences between the House and Senate versions:

- (1) The House specifies the size of the institutions that would potentially face a systemic assessment, namely financial companies that have assets of \$50 billion or more, and hedge funds with over \$10 billion of assets under management. Whether the institution actually pays a levy, however, would still depend on the systemic risk it produces.
- (2) The House bill calls for a special assessment if the Systemic Dissolution Fund cannot cover the losses. This fee is tantamount to an ex post charge on the systemic funds described above.
- (3) The House bill implies that the systemic risk charges will be countercyclical to the extent that the assessments would increase during more favorable economic conditions and decrease during less favorable ones.

In terms of international reforms along these lines, only the Group of Twenty (G20) explicitly addresses the need for a capital surcharge to mitigate the risk of systemic financial institutions.

#### Evaluation of Current Proposals

It is helpful to view the systemic risk of each financial institution as producing an external cost – in effect, pollution – on the financial system. Institutions will continue to produce this cost until they are forced to internalize it. Negative externalities of this sort cannot be solved in the private market. It is well-known that an optimal way to address such a problem is to impose a tax on the externality (often denoted a Pigovian tax in honor of the economist Arthur Pigou, who developed the idea in 1912). In this sense, the idea of charging systemic institutions ex ante for future bailouts is appropriate.

The purpose of a Pigovian tax is to force the institutions to internalize the systemic cost so that the firm will organically want to produce less systemic risk. The legislation is more focused on the revenues produced from the tax. Consider the House bill, which calls for an ex post special assessment on systemic institutions when the Systemic Dissolution Fund falls short of

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<sup>†</sup> The House bill, H.R. 4173, Sec. 1609 denotes it as a “Systemic Dissolution Fund,” while the Senate bill, Sec. 115 names it a “Financial Stability Fund.”

funds. This ex post charge is problematic in three ways: this clause should not be used to justify a lower ex ante premium than would otherwise be justified; in a crisis, these same systemic institutions will not be in a position to cover the losses; and more importantly, the charge should be related to the expected losses of the institution conditional on a crisis, not the actual ex post losses. If the crisis is worse than expected or occurs earlier than predicted, it does not make economic sense to charge the firms.

The criteria for the systemic assessment should be the firm's systemic risk. While it is logical to assume that this risk will be related to the amount of assets held by the institution, it is not necessarily so. The House legislation is therefore flawed in highlighting a dollar figure either for financial companies or hedge funds.

It is certainly correct that the "true" systemic assessment is most likely pro-cyclical. The House bill calls for the charge to be adjusted so that it is countercyclical. The problem with procyclicality is that, in the midst of a crisis, charging financial firms already short of capital will worsen their trouble, which in turn will force them to sell assets, causing asset prices to fall, leading to other firms' running aground, and so on. From this perspective, introducing some degree of countercyclicality makes sense.

There are two elements missing from the congressional proposals. First, other than a cursory reference to the level of systemic risk, the most important question has been avoided and perhaps rightly so. That is, what is the appropriate level of assessment on financial institutions? In Chapter 4, we discuss the measurement of systemic risk. It is an important concern, because the risk-based premium approach of the FDIC has not been successful and is not a good model.

It will be difficult for a regulator to get this assessment right. An alternative approach would be to require each financial institution to take out insurance against its own losses during a general crisis. The price of this insurance would be set by the private insurance industry. If losses take place, the payment does not go to the financial institution, but to the systemic fund. Thus, the insurance acts like an assessment in the spirit of the House and Senate legislation. One of the issues is that there may not be enough capital available in the private insurance industry to cover the potential losses from a systemic event. Thus, we advocate that the majority of the insurance (say 90%) is offered by the government. The insurance fees would be paid to the government, and the government would provide self-insurance. There is already a successful program that does something similar, namely the Terrorism Risk Insurance Act of 2002.

Second, while the legislation addresses the systemic risk of too-big-to-fail institutions, it does not address the now-explicit guarantee the institution is afforded in a crisis. While some of these guarantees are muted through the other suggested regulation – capital requirements, contingent capital and some form of receivership -- it raises the question of whether there should be a charge analogous to what FDIC-insured companies pay for their own expected losses upon default, crisis or no crisis. The counter argument may be that any guarantees implied by the resolution authority via the systemic fund (i.e., making whole some creditors) would apply only in a crisis. If this is true, then the systemic charge should take care of that portion.

## Chapter 7\*

### Capital and Liquidity Requirements

#### Overview

Systemic risk is increasing as firms become more highly leveraged. Leverage is a double-edged sword. On one hand, it pushes the financial firm closer to its default boundary. If the firm is too-big-to-fail, then, in a crisis, its increase in default creates added risk to the system. On the other hand, with the implicit government guarantee of too-big-to-fail, market discipline imposed by creditors disappears. This gives the financial institution an incentive to shift its risk -- that is, to transfer the riskiness of its underlying assets to creditors (or with the guarantee to taxpayers). The value to risk shifting increases with leverage. Therefore, without adequate capital safeguards, the firm is potentially at risk during adverse economic periods.

It is generally believed that imposing higher capital requirements is quite costly. While this ultimately depends on the definition of capital, the most basic theorem in finance (Modigliani and Miller (1958), shows that the value of the firm's assets will be independent of how those assets are financed -- in other words, choosing investments should be based on whether the return on the project's assets exceeds its cost of capital for those assets. Increasing the return on equity via leverage is just a wash. Given that the systemic costs to leverage are so high, this suggests that higher capital requirements will not be so socially costly. While the Modigliani and Miller model is not reality, it is a useful starting point.

Putting aside the tax benefits of debt, the issue of how costly it is to raise equity depends on whether one believes the agency problems of financial institutions are due primarily to conflicts between shareholders and managers or to conflicts between shareholders and creditors/regulators. If it is indeed the latter, then the relatively higher cost of equity financing compared with debt financing is being driven by the mispriced guarantees accorded to creditors. Fixing this problem (i.e., charging for the guarantees and systemic risk), is tantamount to charging for higher leverage, which will, in turn, put the cost of capital for debt and equity on equal footing.

Systemic risk does not just result from leverage. Both regulated and unregulated institutions have fragile capital structures in that they hold assets with long-term duration or low liquidity, while their liabilities are highly short term in nature. Deposit insurance and central bank lender of last resort support protect pure deposit institutions from large-scale runs. Other institutions, however, are vulnerable, and many of them -- notably Bear Stearns, Lehman Brothers, and several managed funds in the money market and hedge fund arena -- did experience "wholesale" runs during the crisis. Importantly, commercial banks are also subject to localized runs in the wholesale funding and interbank markets, if they are perceived to have exposure to institutions experiencing large-scale runs.

#### The Crisis

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\* Working group: Viral Acharya and Matthew Richardson.

The current crisis can be explained in terms of financial institutions' risk shifting and being subject to localized runs in wholesale funding. With respect to risk shifting, these firms exploited loopholes in regulatory capital requirements to take an undercapitalized \$2- to 3-trillion highly leveraged, one-way asymmetric bet on the economy, particularly tied to residential real estate but also commercial real estate and other consumer credit. This feat was performed in four ways: First, they funded portfolios of risky loans via off-balance sheet vehicles (SIVs and conduits). These loans, however, were effectively recourse so the credit risk never left the financial institution. Second, they bought "underpriced" protection on securitized products from monolines and AIG. Third, they made outright purchases of AAA-tranche of non-prime securities, which were treated as having low credit risk and zero liquidity and funding risk. Fourth, in August 2004, investment banks successfully lobbied the SEC to amend the net capital rule of the Securities Exchange Act of 1934, which effectively allowed for leverage to increase. On the funding side, all the major investment banks – Bear Stearns, Lehman Brothers, Merrill Lynch, Morgan Stanley, and Goldman Sachs – faced sudden withdrawals of liabilities during this crisis. The \$3-trillion plus money market sector also faced a run after Lehman Brothers failed. Many point to these runs as the trigger for the crisis going pandemic.

### **The Current Proposals**

Both the House and Senate legislation call for stricter prudential standards for systemically risky institutions. These standards include risk-based capital requirements, leverage limits and liquidity requirements. According to the House bill, the leverage limit "specifies the ratio of tangible equity to total assets at which a financial holding company subject to stricter standards is critically undercapitalized."<sup>\*</sup> Moreover, this limit cannot fall less than 2% of total assets and not more than 65% of the required minimum level of capital under the leverage limit.

While neither risk-based capital nor liquidity requirements are defined in either bill, the House bill states that "the computation of capital requirements shall take into account off-balance sheet activities." The off-balance sheet activities are defined broadly to include letters of credit, repurchase agreements, asset sales with recourse against the seller, and various derivative contracts, among other items. There is no mention of liquidity requirements, but the House bill states that "in order to limit the risks that an overaccumulation of short-term debt could pose to financial holding companies and to the stability of the United States financial system, the Board shall by regulation prescribe a limit on the amount of short-term debt."

The House bill requires that "establishing capital requirements under this Act or other provisions of Federal law for banking institutions, seek to make such requirements countercyclical so that the amount of capital required to be maintained by a banking institution increases in times of economic expansion and may decrease in times of economic contraction, consistent with the safety and soundness of the institution."<sup>†</sup>

In terms of international reforms, there has been a tremendous focus on capital requirements. All the major regulatory institutions -- the Group of Twenty (G20), Bank of England (BoE), European Central Bank (ECB), Financial Services Authority (FSA), Bank for International

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<sup>\*</sup> H.R. 4173, Sec. 1104.

<sup>†</sup> H.R. 4173, Sec. 1255.

Settlements (BIS), Financial Stability Board (FSB), International Monetary Fund (IMF), Organization for Economic Cooperation and Development (OECD), and European Commission (EU) -- have proposed detailed capital adequacy requirements and leverage ratios. The common threads include the following: capital requirements should be increased substantially; capital requirements should help mitigate procyclicality; off-balance sheet financing should be incorporated; regulators should introduce a leverage ratio as a supplemental measure; and the definition of capital and leverage should be defined consistently across jurisdictions.

There has also been considerable work done on issues related to liquidity. The G20, FSA, BIS, IMF, and EU have all published statements calling for the creation of liquidity buffers and stress tests to determine these buffers -- in particular, incorporating financial institutions' holdings of liquid assets, the maturity mismatch between assets and liabilities, and the reliability of funding sources.

## **Evaluation of Current Proposals**

In general, the House and Senate bills correctly focus on higher capital and liquidity requirements for systemically important institutions as one way to combat this risk.

### *Capital Requirements*

As we have learned from this crisis, capital requirements can be gamed. So to some extent, the financial system must rely on the power and supervisory expertise of the regulator. That said, it does seem that some significant improvements are possible by closing major capital loopholes, and by relying less on rating agencies.

With respect to the loopholes, a good rule of thumb is that if the credit risk of the loans from off-balance sheet financing is effectively still the bank's risk, then the capital at risk should be treated as such. Moreover, counterparty credit risk exposures to financial firms, including over-the-counter derivatives and securities financing transactions, should also be taken into account. The House legislation directly addresses this concern.

While the international standard imposed through Basel II did expand the notion of risk for financial institutions, in hindsight, the accord chose simplicity over accuracy in determining how capital should be treated. In the United States, there was a heavy reliance on rating agencies to provide the appropriate measure of risk. It seems reasonable to consider not only the credit risk of defaultable assets, but also liquidity, funding, market and specification risks.\* While the House legislation does not describe how risk-based capital requirements should be applied, elsewhere in the legislation in a section entitled "Accountability and Transparency in Rating

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\* Specifically, liquidity risk refers to the ability of the holder to convert the security or asset into cash. Funding risk refers to the mismatch in the maturity of the assets and liabilities. The systematic risk refers to the non-diversifiable portion of the asset. Specification risk, which is rarely discussed, refers to the fact that the measurement error of risk varies across assets. All of these risks should be part of the consideration for risk-based capital, not least because securities faced with these risks tend to offer higher yields. There is no free lunch. This is especially true for market risk and liquidity risk, and the risk-weights should be even greater as the spreads are being very much driven by crisis-like events.

Agencies Act,” the bill calls for the removal of statutory references to credit ratings and requirements of reliance on credit ratings in preference of standards set by the respective regulator.\*

In terms of the House bill, countercyclical capital requirements are sensible. As a crisis approaches, and financial firms begin to struggle to meet their regulatory minimum, these firms are forced to sell assets and/or raise capital. Of course, the firms are being forced to take these actions, e.g., fire sales, during the least advantageous times, thus, increasing the risk of a liquidity spiral. There is a drawback, however, of having time-varying capital buffers. The incentive for financial institutions to risk shift is greatest when asset volatility and/or leverage is at its highest. Asset volatility tends to be very countercyclical, i.e., high in a crisis, low in normal times. Thus, if capital requirements are relaxed in a crisis, financial firms will have an even greater incentive to take excessive risk.

Both congressional bills, and many international reforms, call for both risk-based capital requirements and a plain vanilla leverage ratio. To some analysts, this might seem like overkill, but we believe it is a reasonable idea. Risk-based measures are not perfect and can be gamed, so a simple, non-risk-based leverage constraint can serve as a minimum requirement. In fact, in most of the empirical research applied to the crisis, leverage measured this way is a primary input, and it has considerable explanatory power for fingering which firms ran aground.

### *Liquidity Requirements*

Liquidity risk matters. Illiquid securities offer a spread because there are periods when it is difficult to convert these securities into cash equivalents. Particularly important to prudential regulation of financial firms is that these periods are usually associated with financial crises. Liquidity issues are more serious when the financial institution faces significant funding risk, i.e., a mismatch between the maturity of its assets and liabilities. Specifically, there is a tendency for financial institutions to hold long-term assets collateralized using cheap short-term funding. But this exposes the institution to greater risk of a run, if short-term funding is removed during a crisis.

The Congressional bills are mostly silent on what precisely they mean by liquidity requirements, with the only reference being the possible restriction on short-term debt accumulation. The restriction seems somewhat arbitrary. In general, it would be useful to know how much “liquid” assets the financial institution has against short-term funding. One could imagine that the higher the ratio, the less an institution is subject to a liquidity shock, and therefore the less risky it is. The House bill would be better off taking this approach.

A more regulatory approach would be to impose liquidity requirements on financial institutions that are similar in spirit to the way capital requirements are imposed. The basic idea would be to require that a proportion of the short-term funding must be in liquid assets -- that is, ones that can be sold immediately in quantity at current prices. This requirement might also be sufficient to prevent runs. It will, in effect, increase the cost of financial institutions’ taking on carry trades and holding long-term asset-backed securities.

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\* H.R.4173, Sec. 6009 and 6010.

For example, consider the securitization market. The business model of securitization was developed under the premise of “originate to distribute.” In this crisis, financial firms did not follow this model. Instead, firms held onto these securities and funded these purchases short term, creating a significant mismatch, and making them susceptible to runs. Of course, by imposing liquidity requirements, these trading activities would naturally migrate to the capital market at large (e.g., pension funds, mutual funds, hedge funds, and trading accounts of wealthy individuals) where they arguably belong.

That said, the problem is greatly complicated by the fact that some institutions benefit from a government guarantee of their short-term funding, in the form of deposit insurance and the implicit too-big-to-fail guarantee. If the guarantee is credible, then there is no systemic risk. But the purpose of the guarantee (at least in the case of deposit insurance) is that banks can provide loans to the real sector of the economy without the threat of a run, not so they could load up on illiquid, long-term securities. Of course, once they enter this market, and if their guarantee is mispriced, then their activities will distort other market participants and possibly prices.

## Chapter 8\*

### Is Breaking Up the Big Financial Companies a Good Idea?

#### The Current Proposals

Neither the legislation that has been proposed in the House nor the Senate calls for a breakup of today's massive, complex financial conglomerates as a way to reduce the likelihood of future financial crises. Both pieces of legislation, however, do call for standards that prohibit any "financial holding company from having credit exposure to any unaffiliated company that exceeds 25% of the identified financial holding company's capital stock and surplus or such lower amount as the Board may determine by regulation."<sup>†</sup> In fact, this would have done nothing to prevent the recent financial crisis.

The House bill goes further and states that "to mitigate the risks to United States financial stability and the United States economy posed by financial activities and practices" the Federal Reserve Board "shall recommend prudential standards that include prescribing the conduct of the activity or practice in specific ways (such as by limiting its scope, or applying particular capital or risk-management requirements to the conduct of the activity) or prohibiting the activity or practice altogether."<sup>‡</sup> This presumably involves carving out, into independent firms, specific risky activities that could cause systemically important financial conglomerates to fail – simply put, no more casinos inside public utilities.

The House bill also proposes that if, even after new prudential standards have been implemented, a financial firm is deemed to represent a threat to the system, activities that constitute the source of that threat could be terminated or carved out or sold to separate unaffiliated financial firms. Specifically, some of these activities include the following: terminating one or more activities; imposing conditions on the manner in which a financial holding company subject to stricter standards conducts one or more activities; limiting the ability to merge with, acquire, consolidate with, or otherwise become affiliated with another company; and; and restricting the ability to offer a financial product or products.<sup>§</sup> This part of the bill includes two qualifiers. The first allows for judicial review of the regulator's decision. The second requires that any decision made by the regulator must take into account the international competitiveness of the United States financial services industry in the context of comparable regulatory developments taking place elsewhere. We assess this section of the bill as recommending a breakup based on *activities* of financial firms, but there is a big loophole. The bill leaves wide open the likelihood that firms can lobby successfully against any interference on the grounds that it affects their competitiveness.

Paul Volcker, the highly respected former Fed Chairman, has also urged that the scope of any implicit federal guarantee be limited to a relatively small number of important banking

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<sup>†</sup>H.R. 4173, Sec. 1104. Senate bill, Sec. 112.

<sup>‡</sup>H.R. 4173, Sec. 1107. Senate bill, Sec. 119, includes similar language.

<sup>§</sup> H.R. 4173, Sec. 1105.

institutions, rather than extended across the spectrum of financial intermediaries. In exchange for the banking safety net, Volcker would recommend banks be allowed to engage in the full range of commercial and investment banking functions but not be permitted to engage in such nonbanking activities as proprietary trading, principal investing, commodity speculation, and hedge fund management.\* These other activities would be spun off to asset management firms and would be subject to whatever regulation is necessary for those types of institutions. The surviving banks would have no economic interest in the spun-off entities.

Perhaps, in response to this suggestion, the House bill also calls for a potential curb in proprietary trading – defined as the trading of stocks, bonds, options, commodities, derivatives, or other financial instruments with the company’s own money and for the company’s own account.† These restrictions would be placed on systemically important firms, and only if the proprietary trading activity was determined to be a “foreseeable threat” to the soundness of the firm and not being used for either market making or hedging risk. Of some note, the bill calls for the financial regulatory agencies to issue regulations to carry out this particular section of the bill.

The only mention of an outright breakup of any financial institutions comes through an amendment to the Senate legislation. Senator Bernard Sanders (I-VT) has proposed the notion of “Too Big to Fail, Too Big to Exist Act.” Under the Sanders amendment, the Secretary of Treasury must submit within three months of enactment a list of too-big-to-fail financial companies, and then within a year, “the Secretary of the Treasury shall break up entities included on the Too Big to Fail List, so that their failure would no longer cause a catastrophic effect on the United States or global economy without a taxpayer bailout.”‡ Our reading is that the Sanders amendment recommends a breakup based on the *size* of financial firms.

In terms of international activity so far, the Group of Twenty (G20), Bank of England (BoE), Financial Services Authority (FSA), European Central Bank (ECB), Bank for International Settlements (BIS), Financial Stability Board (FSB), International Monetary Fund (IMF), Organization for Economic Cooperation and Development (OECD), and European Commission (EU) have considered the regulatory options and the need for international coordination, but given the universal banking traditions in most other countries, there is little appetite for reductions in the scope of systemic financial firms. The one exception is the EU Commissioner for Competition, who is mandating carve-outs by bailed-out financial conglomerates (the Dutch bank, ING, being a case in point) in order to restore a more competitive playing field – in contrast to the Antitrust Division of the U.S. Department of Justice, which has been conspicuously silent on the issue.

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\* We would generally add to this list the asset management business. Because of the fee structure in that business, financial institutions own a claim on the underlying assets, making the economics of asset management essentially equivalent to that of principal investing.

† H.R. 4173, Sec 1116.

‡ Sec 3. Breaking up too-big-to-fail institutions.

## Evaluation of Current Proposals

Although it is not very specific, the Sanders amendment essentially calls for breaking up large financial institutions into smaller ones, as they would pose less of a threat to the financial system. This may help may solve the too-big-to-fail problem, but it also carries with it potential costs and unintended consequences.\* We do not know enough about the optimal size of a financial institution conducting a multitude of activities in our contemporary global financial system. But it does seem that certain activities, like dealer functions and intermediation between large institutions, require a high degree of interconnectedness and scale for firms to compete effectively and reduce risks by diversifying them across a number of counterparties. So blanket size constraints are likely to involve substantial efficiency losses.

The House bill section with respect to proprietary trading is similar to the Volcker proposal, and in our opinion, is more reasonable, calling for a curtailing of certain activities of systemically important financial conglomerates. The supporting argument is mainly as follows. Academic research has found few credible economies of scope, if any, that argue persuasively for investment management (either internal or external funds) to be located inside a financial conglomerate. But there are systemic costs when one activity's failure endangers performance of the other. And a key disadvantage of such combinations from a societal standpoint is the low cost of funding given government guarantees enabling these institutions to take on risky activities that would be unprofitable in the absence of these guarantees.

Hence, from the economic standpoint of addressing excessive systemic risk, we find the approach of limiting government guarantees to core banking activities to be sound. This approach is akin to that of the 1930s, but adapted to the modern financial activities.

In particular, we do *not* favor breaking up of the large, complex financial institutions simply based on size restrictions. We do, however, support some such breaking up based on activities. There are two alternatives here.

- One is to require a complete separation of proprietary trading and asset management business – activities that facilitate high-powered and opaque risk-taking and are also highly cyclical – from commercial banking operations, which have access to government-guaranteed deposits and which lend to the real economy. This approach assesses costs of *any* commingling of these activities as harmful.
- The second is to charge premiums that are commensurate with the systemic risk contributions of different activities – proprietary trading and asset management are likely to face higher premiums – and then let financial firms break up organically if they find it profitable to do so.† This approach assesses that commingling of different activities may be socially desirable for at least

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\* Suppose a large bank gets broken up into ten identical smaller banks. It is not clear that the systemic risk of the former conglomerate, and thus the de facto government guarantee, would not carry over in some way to the collection of surviving firms.

† See Chapter 6, “Taxing Too-Big-to-Fail Institutions.”

some firms but not for others, and faced with higher premiums for riskier activities, the latter group (or its subset) may carve out these activities.

While the commingling of commercial banking with investment banking activities such as underwriting and market making dealer activities was ruled out in the 1930s, such commingling did not contribute to the current crisis. Our recommendation is thus short of “narrow” commercial banking (which would also be stripped of any investment banking activity), but regulators should prudentially observe, and wherever possible, keep under check, likely spillovers from investment banking to the payment system and real lending.

It should be noted that even under our proposals, some systemic risk would likely remain in the system. Along with commercial banking activities, restructured and slimmed-down banking institutions (or hedge funds) will continue to perform normal market- and client-oriented transactions, such as trading in foreign exchange, fixed-income and derivatives, as well as services like bridge financing, prime brokerage, and the like. As such, some of these institutions may need to be subject to conventional micro- and macro-prudential regulation. The key benefit is that their business models would be far simpler and their accounts far more transparent than those of today’s systemic financial conglomerates. This, in turn, would give equally specialized regulators a better shot at understanding and containing the risks that need taxpayer bailouts, and perhaps most importantly, firms’ ability to abuse government guarantees intended for one activity by supporting riskier ones would be limited. Each way, the endemic problem of government guarantees’ compromising market discipline and engendering future crises will have been alleviated.

## Chapter 9\*

### Contingent Capital

#### Overview

"Contingent capital" (often also referred to as reverse convertible bonds or CoCo bonds) constitutes a form of uninsured debt that converts automatically to equity when certain pre-specified triggers are hit. In terms of requiring banks to hold additional capital, this appears to be a preferred route taken by regulators in the United States, as well as in the United Kingdom. For instance, Lloyds Bank, which is owned by the U.K. Government, recently issued such capital as part of its capital-raising exercise, whereby whenever its Tier 1 capital ratio fell sufficiently low, this debt will convert to equity. Discussions are under way between the Federal Reserve and the banking industry to introduce slivers of such contingent capital in the U.S. banks.

Contingent capital is designed to facilitate the transfer of losses when a firm's equity is being depleted to its creditors, and by simultaneously converting some debt into equity, to ensure that the bank will still have some capitalization. In other words, it forces a bank with deteriorating credit quality to recapitalize in a pre-arranged manner and thereby lowers the point of its default. Imposing losses on creditors implies that some of the market discipline will be restored, and lowering the point of default, implies that the need for regulatory forbearance would be reduced, in turn, lessening the too-big-to-fail or the too-interconnected-to-fail problem.

#### The Current Proposals

Both the House and Senate bills call for the issuance of contingent capital to be an additional standard potentially faced by systemically important institutions. In particular, the regulator may "require a financial holding company subject to stricter standards to maintain a minimum amount of long-term hybrid debt that is convertible to equity when—(1) a specified financial company fails to meet prudential standards established by the agency; and (2) the agency has determined that threats to United States financial system stability make such a conversion necessary."<sup>†</sup>

In addition, the House bill calls for a "study to determine an optimal implementation of contingent capital requirements to maximize financial stability, minimize the probability of drawing on the Systemic Resolution Fund in a financial crisis, and minimize costs for financial holding companies subject to stricter standards." In particular, the study includes "(1) an evaluation of the characteristics and amounts of convertible debt that should be required, including possible tranche structure; (2) an analysis of possible trigger mechanisms for debt conversion, including violation of regulatory capital requirements, failure of stress tests, declaration of systemic emergency by regulators, market-based triggers and other trigger mechanisms; (3) an estimate of the costs of carrying contingent capital; (4) an estimate of the effectiveness of contingent capital requirements in reducing losses to the systemic resolution fund in cases of single-firm or systemic failure; and (5) recommendations for implementing legislation."

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\* Working group: Viral Acharya and Matthew Richardson

<sup>†</sup> H.R. 4173, Sec. 1609.

## Evaluation of Current Proposals

As noted above, in the House bill, one key issue concerning contingent capital is how the triggers are defined. The Lloyds issue in the U.K. includes a trigger based only on its own Tier 1 capitalization levels. In contrast, the current discussions at the Federal Reserve include an institution-level capitalization trigger, as well as a systemwide trigger. The systemwide trigger must be rule-based, for example, when the average Tier 1 ratios in the financial system fall below 5%, rather than at the discretion of regulators. If discretionary, the systemwide trigger when hit would convey severe adverse news to the market, causing a possible downward spiral. In contrast, a rule-based trigger would be well-anticipated and would not have such consequences. Another issue is whether the capitalization should be based on book measures of equity or market measures of equity. While market measures of equity are somewhat vulnerable to short squeezes and manipulative efforts, book measures of equity are somewhat under managerial discretion and often lag true capitalization of firms. Hence, on balance, we prefer the market-based trigger as it is likely to be more timely.

Contingent capital is clearly a good idea, but in our opinion, it is not enough, especially in the form it is proposed. If there was a progressive conversion of debt to equity all the way down the capital structure of financial firms as conditions deteriorate, then indeed all firm losses could eventually be passed to creditors. Such progressive conversion could be a part of the firm's "living will" or resolution plan. Nevertheless, we envision several scenarios in which before such a plan can be fully executed, some counterparty risk or large-scale liquidation risk may arise necessitating receivership or bankruptcy of some form. In other words, we should not rule out yet the possibility that there will be systemic crises in the future that for lack of any other choice involve bailouts of certain systemically important financial firms. Furthermore, some part of bank debt is explicitly insured, and this debt cannot be converted to equity ex post.

While contingent capital restores some market discipline, it does not fully address the fact that beneath both contingent capital and equity capital of banks lie a significant portion of debt – deposits, secured debt (repos), non-contingent debt of other types, liabilities to derivatives transactions – that will remain explicitly and, in some exigencies, implicitly guaranteed by governments. The cost of such debt in good times will not reflect the true risks of banks, and as long as this is true, both contingent capital and equity capital will find it desirable to undertake excessive risks at the expense of guaranteed debt (taxpayer money).

It is important and high time to recognize that the real problem is not between unsecured creditors and bank shareholders, but between the government and uninsured capital providers. While resolution plans can be designed to limit the extent of government transfers to uninsured capital providers, some such transfers will necessarily arise in future. The moral hazard arising from such transfers is best addressed by imposing a fee based on systemic risk contributions of individual institutions. Unless banks are appropriately charged for losses they impose on the system during aggregate crises, they will not internalize these losses.

To summarize, we recommend that in addition to contingent capital and resolution plans, an explicit fee be charged to banks in good times based on their expected losses and their systemic risk contributions (measured as described in Chapter 4, "Measuring Systemic Risk").

## Chapter 10\*

### Financial Institutions Subject to the Bankruptcy Code

#### Overview

Systemic risk can be broadly thought of as the failure of a significant part of the financial sector – one large institution or many smaller ones – leading to a reduction in credit availability that has the potential to adversely affect the real economy. Systemically important companies can generally be defined as financial intermediaries who are not only commercial banks taking deposits and making loans, but also include investment banks, money-market funds, mutual funds, insurance firms, and potentially even hedge funds, whose failure poses a systemic risk or “externality” to the financial system. This externality can come through multiple forms including an information contagious effect on other financial institutions, a depressing effect on asset prices and/or reduction in overall market liquidity.

With respect to counterparty risk, the failure of a highly interconnected firm can have a ripple effect throughout the system. For example, consider the over-the-counter derivatives market. The main reason for systemic risk in OTC markets is that bilaterally set collateral and margin requirements in OTC trading do not take account of the “counterparty risk externality” that each trade imposes on the rest of the system, allowing systemically important exposures to be built up without sufficient capital to mitigate associated risks. The prime example in the current crisis is AIG who built up \$450 billion of one-sided credit default swap exposure on the so-called AAA-tranches of securitized products. These positions were built up with little or no capital support. Because all the trades were in the same direction, once the trades lost value, it meant that AIG’s failure would be passed on throughout the financial system.

The second, and related, way systemic risk can enter the market is through spillover risk that arises as one institution’s trouble triggers liquidity spirals, leading to depressed asset prices and a hostile funding environment, pulling others down and thus leading to further price drops and funding illiquidity, and so on, causing a “death” spiral.

The third type of systemic risk is that financial institutions operating in the shadow banking system are subject to “bank-like” runs. The new model of banking relied heavily on the short-term, wholesale funding market. Examples that illustrate this point are (i) the volume of repo transactions going from \$2 trillion daily in 1997 to \$6 trillion a decade later in 2007, and (ii) money market funds accumulating over \$4 trillion in assets compared to the \$8 trillion of deposits in the banking sector. Since these funds are rolled over on a short-term basis, sudden withdrawal of these funds due to uncertainty about a financial institution’s health can ironically cause the institution to fail. When a particular institution fails in this manner, uncertainty about the health of similar institutions can lead to a wide-scale run. And therefore otherwise well-capitalized firms can face runs on their short-term liabilities, causing a systemic crisis.

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The above discussion highlights the problem of having a large, complex, financial institution (LCFI) fail and go into bankruptcy. The analysis therefore suggests that any regime setup by the government for the insolvency of LCFI must follow three basic principles:

- The counterparty risk of the LCFI must be contained. While the hope is that this risk is mitigated through ex ante prudential regulation, the question arises what happens if this regulation fails.
- There needs to be a procedure for dealing with a large amount of illiquid assets. As mentioned above, forced asset sales of financial institutions can have a catastrophic effect on the system.
- There must be well-defined rules for what happens to the liabilities of the financial firm when it fails, otherwise a run on most of the firm's liabilities will occur. A general reduction in uncertainty about the bankruptcy process, and greater transparency, will also contain the system-wide run.

## **The Crisis**

In fact, a reason frequently given for the bailout, rather than bankruptcy, of LCFIs during this crisis is that if these firms entered bankruptcy, the contest over their assets could paralyze them and the broader financial markets in the process. The collapse and bankruptcy of Lehman Brothers is cited as an example of such an event.

The idea would be to require such firms to have a wind-down plan in advance of financial crisis so that in the event of such crisis the firms could dispose of their assets in a quick, orderly fashion. In the process, those obligations that were still in the money despite the firm's insolvency could be fully honored, thus "cabining" the effect of the firms' failure to those obligations that could not be paid.

## **Current Proposals**

While the FDIC can close down a large commercial (depository) bank, that bank is often part of a bank holding company. The bank holding company may engage in inefficient internal transfers of capital to keep the bank from closure and play the waiting game. Typically, the bank holding company also issues a lot of debt and trades in systemically risky assets such as credit default swaps and other OTC derivatives. And, if closure of the bank leads to contagious runs on the non-bank subsidiaries of the bank holding company – such as broker dealers, insurance companies, etc. – then they may also end up in a disorderly bankruptcy and the entire financial institution may fail.

The House and Senate bills both try to address this issue. They create a mechanism to unwind failing systemically significant financial companies through receivership.\* The

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\* Their plan also argues for the financial institutions themselves to develop a plan for winding down their institution upon failure (H.R. 4173, Sec. 1104). Having the institutions write up the plan seems appropriate given the enormous legal complications involved with multinational, complex institutions. Presumably, with the plans in place, international coordination could then be initiated.

provisions in the bill allow for some open assistance though these “bailout” costs of unwinding the companies will come from a systemic fund paid for by systemically important financial firms.

The House bill describes several steps towards the dissolution of a LCFI.<sup>\*</sup> The first is that, upon the written recommendation of the Federal Reserve Board and the appropriate regulatory agency, if the Secretary of the Treasury determines the LCFI is close to default and its failure would have adverse effects on financial stability, the FDIC will be appointed as receiver for this company for the period of one year.<sup>†</sup> The second is that the FDIC would have the authority to take certain actions towards the company such as (i) making loans to or purchasing any debt obligations, (ii) purchasing any of its assets, (iii) guarantee its obligations to a third party, (iv) taking a lien on its assets, and (v) selling or transferring its assets, liabilities or obligations. The third is that the cost of these actions would be paid for by the pre-funded “systemic dissolution fund” and the proceeds of asset sales of the company. If these amounts are not enough, then an additional assessment would be charged to systemically important firms. The fourth is that the FDIC would “prescribe rules and regulations regarding the allowance or disallowance of claims by the Corporation and providing for administrative determination of claims and review of such determination”.<sup>‡</sup> According to the section of the bill, these rules might adopt the provisions of the Federal Deposit Insurance Act with respect to the “determination of claims for a covered financial company as if the covered financial company were an insured depository institution.” The rules in general cover procedures for determination of creditors and the authority to repudiate contracts albeit with certain exemptions for qualified financial contracts.

## **Evaluation of Current Proposals**

The bills are modeled on FDIC legislation and thus can borrow established convention and precedent from that law. The positive aspect of the bill is that it gives legal authority to deal with systemically important financial institutions that are not just depository institutions. These institutions can avoid Chapter 7-like liquidations, which create havoc on the financial system.

Nevertheless, if the goal of the legislation is to reduce the uncertainty surrounding bankruptcy of a LCFI, the proposed law has all sorts of imprecision, such as how fraudulent conveyance is treated. Moreover, if the government’s investment is at stake, the legislation applies a 20% haircut<sup>§</sup> to “secured claims” as well as those subject to the stay; but note that the proposal also provides that qualified financial contracts, including securities, commodities, futures, forward, repurchase, and swap agreements are exempted from the stay, and the rights of holders of those contracts, including the rights to under “any security agreement”, are not to be limited.

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<sup>\*</sup> H.R. 4173, Sec. 1603 and 1604.

<sup>†</sup> The Senate bill reads very similarly. The main difference is that the recommendation comes from the newly created Agency for Financial Stability as opposed to the Federal Reserve Board.

<sup>‡</sup> H.R. 4173, Sec. 1609.

<sup>§</sup> H.R. 4173, Sec. 1609, page 306.

In addition, it is not clear how the receivership addresses the three principles mentioned above to deal with systemic risk.

### *Counterparty Risk*

One of the most serious problems associated with the receivership of a LCFI is how to handle the counterparty risk that results from the LCFI's failure. The regulator can guarantee all counterparty risk but that creates moral hazard. This aside, it still means that millions of OTC derivative transactions would need to be managed in a receivership. Fears of unwinding positions and fire sales in the OTC market can lead to the market freezing and counterparty risks popping up elsewhere in the system. This is what happened in the current crisis when Lehman Brothers and AIG failed.

One solution is to look to the origins of the OTC derivative market and look to how financial institutions (before the deregulation of the late 1990s) dealt with the bankruptcy issue. In the early 1990s, dealers created separate facilities to be market makers in OTC derivatives. In the event of bankruptcy of the parent company, all OTC contracts of the facility were closed out at the midpoint between the bid and ask price. Thus, there was no issue with respect to the bankruptcy infecting the rest of the OTC market. With respect to capitalization, the facility was required to hold enough capital to be able to cover the liquidation at the midpoint, thus, creating the incentive for the facility to not have net exposures.

Building on these ideas, the resolution process could have the stipulation that all OTC derivative contracts of the LCFI get closed out at the midpoint. The contracts would be ring-fenced and the dollar amounts netted against each other, so that only the net proceeds became a liability of the failed LCFI (if in fact they faced losses). The counterparties would then become general creditors of the firm on a pro rata basis. As an incentive to reduce systemic risk, all derivative dealers (and other financial institutions who are large OTC players) would be required to hold enough capital to cover any losses at the midpoint, the exact same provision the aforementioned facilities faced as independent subsidiaries.\*

### *Asset Sales*

How would the financial institution be organized in a receivership so that the regulator can balance the systemic risk of fire sales of assets of the financial firm against a quick resolution of the firm to maintain its enterprise value and a well-functioning financial market? One idea is to take the healthy assets and most of the bank's valuable ongoing operations and place them in a "good bank". Deposits would also follow. Some of these deposits may be insured, others (e.g., businesses and foreign holdings) are not. But the likelihood is that the good bank is now so well capitalized that there would be no threat of a bank run. The net equity, i.e., assets minus deposits, would be a claim held by the other existing creditors of the bank, namely shareholders, preferred shareholders, short-term creditors and long-term creditors according to their original priority. The goal would be to re-privatize the good bank as soon as possible. After all, the point of the

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\* Upon bankruptcy, however, this excess capital would go into the general pool of assets and not be secured against any net losses from OTC derivatives.

exercise is to create healthy financial institutions which can start lending again to creditworthy institutions.

The tricky part of a receivership is the handling of the bad assets. The bad assets would be divided into two types – those that need to be “managed” such as defaulted loans in which the bank would own the underlying asset, and those that are of the “hold to maturity” type such as AAA-rated securities and subordinated tranches of asset-backed securities. With respect to the former, the government could hire either outside investors, much like the Fed has done by hiring BlackRock to manage some of the Bear Stearns and AIG portfolios it has back-stopped, or create partnerships with outside investors as was done with the Resolution Trust Corporation in the S&L crisis. Along with the equity of the good bank, these bad assets would be owned by the existing creditors. The proceeds over time would accrue to the various creditors according to the priority of the claims. Most likely, the existing equity and preferred shares would be wiped out in such an arrangement and at least some of the debt would effectively have been swapped into equity in the new structure.

There is an additional way to dispose of the bad assets of a failing LCFI. Some argue that the government is not best suited to manage bad assets of a failing institutions and that this is the job and expertise of true private sector bankers. When privatizing the assets and liabilities of a failed LCFI, the government could include both the bad and the good assets into that transaction and provide – via properly priced government guarantees of the bad assets after a first loss for the creditors – an incentive to the private investors purchasing the privatized bank to take over both the good and the bad assets. This is the approach that was used by the government in the privatization of IndyMac after its takeover by the FDIC.

### *Managing the Systemic Risk of Runs*

The Congressional bills do not address the systemic risk associated with runs. This market failure arises because, not dissimilar to the 1930s, regulated institutions as well as their unregulated siblings have fragile capital structures in that they hold assets with long-term duration or low liquidity but their liabilities are highly short-term in nature. Going back to the Panic of 1907 and the Banking Crises of 1930, 1931 and 1932, those crises involved massive system-wide runs on banks. Arguably, the current crisis also went pandemic when there was a run on the investment banks and money market funds after Lehman Brothers failed. Like these past runs, the runs on investment banks and money market funds occurred because there was uncertainty and lack of information about the health of these institutions, and their funding source was short-term and mobile (i.e., repo and securities lending transactions for investment banks, fund flows for money market funds).

The question is whether the legislation reduces the likelihood of runs via the proposed orderly dissolution of the financial firm? Most likely not. One possibility would be to make the too-big-to-fail guarantees of short-term funding explicit and, through a system of insurance premiums, reserve requirements and limits on activities, attempt to manage the resulting moral hazard problem.

The second is to create, as part of the insolvency regime, a mechanism by which the systemwide run is reduced without guaranteeing the liabilities. Consider the repo market. The basic idea is that, in a financial crisis, the resolution authority has the right to place a stay on repo transactions, thus, preventing a massive withdrawal of funding for relatively illiquid positions. Of course, lenders use the repo market precisely because it is collateralized and short-term. Thus, to maintain some degree of liquidity during this period, the Federal Reserve would open up its lender of last resort facility (LOLR) albeit at a sharp haircut and for a fee. This would give time for the underlying collateral of the repo to be sold albeit potentially at a loss. The stay and LOLR, however, would provide a temporary lifeline to a solvent firm to survive an “undeserved” run. Of course, it is important to note that if the firm were deemed to be insolvent, then the Fed would not be a LOLR, and the firm would go into receivership. The goal is not to save failing firms but rather make sure the systemic risk does not spread.

A significant problem remains. The government receivership model outlined in the bill will not accomplish its purpose if the assessment tax for being systemic is too low.<sup>\*</sup> Moreover, even with the appropriate charges, the financial firm has an incentive to bait-and-switch, which is the standard hidden action problem associated with moral hazard. Specifically, as written, the bills allow for a government backed corporation, funded in part by risk-based assessments of too-big-to-fail financial institutions, to take a failing institution into receivership and at its discretion pay or guarantee obligations as it deems necessary to stabilize the financial markets. Consequently, financial instruments held in these too-large-to-fail institutions have government insurance that the same instruments held by smaller institutions do not. This should funnel capital into the largest institutions, and unless they are sufficiently regulated prior to failure exacerbates moral hazard. So this, combined with the apparent exemption from the stay for qualified financial contracts (mentioned above), seems to be a continuation (albeit at a lower level) of the government subsidy.

### *A Living Will*

To deal with this problem, the regulator needs to create a credible plan that both avoids the costs of liquidation in bankruptcy but allows for creditors to pay for the risks they incurred. This is important as it will bring back market discipline to the financial sector and remove the implicit government guarantee for the LCFI.

The concept of a corporate living will is well-established in the academic bankruptcy literature.<sup>†</sup> The proposal is, in essence, to divide a firm’s capital structure into a hierarchy of priority tranches. In the event of an uncured default (after ample opportunity for cure) on a firm’s debt obligation, the equity of the firm would be eliminated and the lowest priority debt tranche would be converted to equity. If elimination of the lowest priority debt tranche created enough liquidity to pay the firm’s remaining debt obligations than there would be no need for further

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<sup>\*</sup> See Chapter 6, “Taxing Too-Big-to-Fail Institutions”.

<sup>†</sup> See Barry E. Adler, *Financial and Political Theories of American Corporate Bankruptcy*, 45 Stanford Law Review 311 (1993). See also, Robert C. Merton, *The Financial System and Economic Performance*, 4 J. Fin. Services Res. 263 (1990) (also proposing a debt-to-equity conversion, but through the liquidation of a holding company rather than through a transformation of obligations within a firm).

restructuring. If obligations to the higher debt tranches remained in default (after opportunity for cure) the process would repeat until either all defaults were cured or the highest priority tranche was converted to equity. Only at the point where a firm defaulted on its most senior obligations, after the elimination of all junior debt, would holders of those senior obligations have reason to foreclose on collateral, as elimination of the junior debt classes would, until that point, provide liquidity that could stabilize the firm and perhaps stem any run on the firm's assets.

Significantly, in no case would there be a need for a judicial valuation or determination of which obligations were or were not entitled to satisfaction. The prospect of default-driven transformations of the tranches from debt to equity would provide firms eternal solvency -- or at least solvency until a class of secured claims is impaired -- and without the need for bankruptcy restructuring beyond simple adherence to the prescribed capital structure or, to use the terminology of the current debate, without need for bankruptcy beyond simple adherence to the firm's living will.

There are potential drawbacks to the living will concept. For the proposal to be effective, the transformation, or winding down, of the firm must be triggered by an easily verifiable signal such as default on obligations rather than a difficult one such as inherent asset value. The key to the proposal, after all, is to provide swift rescue and payment of those obligations still in the money despite the firm's inability to make good on all its obligations. Such a transformation, or winding down, runs the risk that a firm in financial crisis will eliminate an interest that might have later proven to be valuable in a traditional bankruptcy reorganization, where time and the debtor's continued search for liquidity might resolve the crisis. But there are costs, too, to a traditional reorganization, including uncertainty and the potential paralysis of the financial markets that has led to the recent proposal that regulated financial institutions have living wills. Moreover, the market has recently shown an appetite for the idea, or something like it; Lloyd's TSB, for example, issued reverse-convertible debt, which would be transformed into equity in the event the firm failed to maintain a specified capital requirement. The idea behind contingent capital is discussed in Chapter 9.

A note of caution is in order here. If the living-will concept is to be effective, current legal impediments must be removed. For example, the bankruptcy law should be amended so that a bankruptcy judge would lack the authority to stay a transformation or winding down of the firm in accordance with the firm's preordained plan. Also, unless the requirement of a living will is intended as an implicit tax increase, the law should clarify that a potential transformation of interest-bearing debt to equity under a living will would not render the debt "equity" for the purposes of interest-payment deductions.

**SECTION 3 –  
INSTITUTIONS**

## Chapter 11\*

### Money Market Funds: How to Avoid “Breaking the Buck”

#### Overview

A money market fund is a financial intermediary in which investors pool funds to get exposure to a diversified portfolio of securities. Money market funds finance themselves by selling shares priced at one dollar per share to investors. The primary objective of a money market fund is to maintain the value of the principal of its assets. Thus, money market funds only invest in low-risk, short-term securities, such as commercial paper, certificate of deposits, and Treasuries. From the investors’ perspective, holding shares of money market funds is similar to holding cash, because investors can withdraw money from a fund anytime without a penalty. The benefit relative to holding cash is that money market funds earn a small yield relative to what cash yields in bank deposit accounts. Money market funds emerged in the 1970s as an alternative to bank deposits. By 2007, the size of the money market fund sector had grown to about \$2.4 trillion.

#### The Crisis

During the early phase of the financial crisis of 2007-09, money market funds provided a safe haven for risk-averse investors. From January 2007 to early September 2008, the money market sector grew from \$2.4 trillion to \$3.45 trillion. However, on September 16, 2008, the Reserve Primary Fund -- a large money market fund with \$65 billion of assets under management -- announced that it had suffered significant losses on its \$785 million holdings of Lehman Brothers’s commercial paper and that its shares were worth only 97 cents. In other words, the fund “broke the buck” – an occurrence that had happened only once before in the history of money market funds.<sup>†</sup> This news triggered the modern-day equivalent of a bank run, leading to about \$172 billion worth of redemptions on money market funds within a few days. The run only stopped on September 19, 2008 – three days later – when the U.S. Government announced that it would provide deposit insurance to money market fund investors.

#### Current Proposals

Money market funds are open-end management investment companies that are registered under the Investment Company Act of 1940 and regulated under rule 2a-7 of the Act. The regulation imposed under rule 2a-7 requires money market funds to invest in a restricted set of high-quality, short-term debt instruments.

The Securities and Exchange Commission (SEC) has proposed several amendments to the regulation. The amendments aim to reduce risk-taking by restricting investments to the highest-quality securities, reducing the average maturity of money market fund holdings, requiring funds

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\* Working group: Viral Acharya, Marcin Kacperczyk, Stanley Kon, Anthony Lynch, Antti Petajisto, Matthew Richardson, Philipp Schnabl, Kermit L. Schoenholtz and Robert Whitelaw

<sup>†</sup> In 1994, the Community Bankers US Government Fund broke the buck, paying investors 96 cents per share.

to maintain a portion of their portfolios in instruments that can easily be converted into cash, and providing monthly holdings reports. Regarding the liquidation of funds, the amendments would allow money market funds that have broken the buck to suspend redemptions to allow for an orderly unwinding of the fund. The SEC is also seeking comments on whether money market funds, like other mutual funds, should be priced at a floating net asset value, rather than a fixed net asset value, of one dollar.

## **Evaluation of Current Proposals**

Money market funds perform two important functions. First, they are effectively part of the payment system, because money market fund investors can redeem their shares on demand. Second, money market funds primarily invest in short-term securities issued by the financial sector. Hence, they are an important source of short-term financing for other financial intermediaries.

Why should the government regulate money market funds? During a financial crisis, there are usually concerns about the viability of the payment system and access to short-term financing for financial intermediaries. If either the payment system fails or financial intermediaries cannot refinance themselves, there can be large negative effects on the rest of the economy. Given that money market funds provide both payment services to investors and refinancing to financial intermediaries, there is a strong case for the government to support money market funds during a financial crisis by guaranteeing the value of money market fund investments. Money market funds therefore may have an incentive to take on excessive risk, as do other financial institutions with explicit or implicit government guarantees.

Prior to Lehman's bankruptcy, guarantees to money market funds may have been perceived as unlikely. However, after the guarantees were provided in September 2008, most investors will expect similar guarantees during future financial crises, independent of whether the guarantees are made explicit or not. Hence, we evaluate the current proposals in terms of their suitability to address the prospect of government support during future financial crises.

The SEC has proposed the following changes (the examples in brackets refer to money market funds geared toward institutional investors):

- Minimum portfolio liquidity (e.g., 30% of money market funds holdings must be liquid within one week);
- Maximum portfolio maturity (e.g., the weighted average maturity of money market fund holdings cannot exceed 120 days);
- Restrict money market fund holdings to first-tier securities;
- Periodic stress tests to evaluate fund's ability to withstand shocks;
- Monthly disclosure of money market fund holdings; and
- Authorize the fund's board of directors to suspend redemptions if a fund breaks the buck.

In addition, the SEC seeks comments on introducing a fluctuating net asset value for money market funds. The reasoning behind introducing a fluctuating net asset value is that investors

would focus less on whether a fund breaks the buck if net asset values also fluctuated under normal circumstances, and this might make money market funds more resilient during a crisis.

We believe that these amendments are sensible and would increase the safety of the money market fund sector. However, we emphasize that the changes proposed by the SEC cannot entirely eliminate runs on money market funds. Like other financial intermediaries, money market funds transform illiquid securities (e.g., commercial paper) into liquid demand deposits. As long as the regulator does not impose liquidity requirements of 100% – and thereby effectively outlaw money market funds – there will be the possibility of a run. In fact, many money market funds already satisfied the new criteria proposed by the SEC and were still subject to runs after Lehman’s bankruptcy. Hence, even though the new amendments would make the money market fund sector more secure (and also less profitable), they would not eliminate the issue of government support during systemic crises.

Regarding the question of stable versus fluctuating net asset values, we point out that money market funds would lose their special status of being almost equivalent to cash or bank deposits if they convert to fluctuating net asset values. To the extent that such services (that is, marked-to-market fluctuating net asset values) are valued by investors, we would expect the emergence of money market funds that have (nominally) fluctuating net asset values but that effectively provide a stable net asset value, most of the time. Such funds would only break the buck during a systemic crisis.

Our key departure from the current proposals is in observing that they do not sufficiently address the issue of likely government guarantees during future financial crises. We therefore recommend considering the following alternative proposals:

#### *Glass-Steagall for Money Market Funds*

Our first solution is based on the principle that money market funds inherently look just like banks and are engaged in maturity mismatch. Under this alternative, we envision that the government explicitly recognizes its commitment to support money market funds during a systemic crisis. The provision of guarantees should be restricted to large systemic crises and can be at the discretion of a financial regulator. In exchange for the expected cost of the guarantee, the government should charge a fee to money market funds. The fee should be charged in normal times and not after the crisis has arisen. To avoid risk-taking at the expense of the guarantee, the SEC should require investment restrictions on portfolio maturity and eligibility. In addition, we recommend restrictions on exposure to a single issuer by aggregating exposure across securities. The fee charged against the guarantee would thus typically be lower than the cost of the guarantee provided on bank deposits, because investments by money market funds would be more restrictive than those of banks availing deposit insurance.

#### *Discount Window for Money Market Funds*

Our second solution is based on the principle that even though money market funds can in principle be treated differently from banks - that is without explicit guarantees to deposits, in a systemic crisis when several financial institutions are in trouble, there will invariably be a collective run on money market funds since they primarily invest in short-term commercial paper and a large part of the market for this paper consists of issuance by banks and financial institutions. Recognizing this possibility, some resolution of such collective runs must be planned in advance. Individual runs on funds may be easy to resolve through requiring that funds in trouble simply liquidate their assets and pass on the losses to investors. However, such a resolution may be difficult when several funds are in trouble at the same time as it would require large-scale liquidations of commercial paper all at once.

Hence, under this second alternative, we propose that the government announces not to provide guarantees to money market funds during a systemic crisis. To make such an announcement credible, the government needs to outline a clear procedure for stopping runs on money market funds. First, the government allows money market funds to place a “stay” on redemptions in the case of a run -- that is, a temporary suspension of the right of investors to redeem their invested funds. The primary purpose of the stay is to allow for an orderly liquidation of the fund. This measure recognizes that putting a stay on a single fund’s redemptions can trigger a run on the rest of the money market fund sector, leading to a stay on the entire industry. Second, the government establishes a liquidity window (similar to the discount window for banks), which lends to money market funds freely against liquid collateral (such as bonds of governments of the highest credit quality). On illiquid assets, either the central bank could lend through the liquidity window against a fee and a sizable haircut (depending on current market conditions), or preferably, the illiquid assets should be liquidated in an orderly manner during the period of the stay. These three features -- a stay, the liquidity facility, and the orderly liquidation of illiquid assets -- should allow investors to withdraw money during the liquidation process, but only after first paying for losses on liquidations and fees to the central bank.

In addition, the regulator can require money market funds to purchase guarantees from affiliated financial intermediaries. Before Lehman’s bankruptcy, several fund families supported their funds to avoid breaking the buck. The regulator could require fund families explicitly to recognize -- and suitably capitalize -- such guarantees. Funds outside of fund families would be required to purchase guarantees from financial institutions of comparable financial strength as fund families.

## **Recommendation**

We believe that either of the two approaches is needed to address the issue of government guarantees to the money market fund sector during a systemic crisis. On balance, most of us prefer the second approach of imposing a stay on redemptions on money market funds during a systemic crisis, with the central bank lending freely to funds against their liquid assets, but requiring that fund investors bear losses on illiquid assets – either through their orderly liquidation during the stay or through sizable haircuts paid to the central bank for borrowing against these assets.

## Chapter 12\*

### Hedge Funds and Mutual Funds

#### Overview

Hedge funds and mutual funds are major participants in the so-called shadow banking system, which runs parallel to the more standard banking system. Hedge and mutual funds add value to the financial system by being primary providers of liquidity and a source for sophisticated capital.

Hedge funds can be highly levered asset management organizations. A significant drop in the value of their underlying assets could, therefore, cause the hedge fund to fail. If the hedge fund held a large quantity of illiquid assets that generated fire sales, or if the fund were interconnected to many other financial firms, systemic counterparty risk could result. There are many ifs, but the collapse of Long-Term Capital Management (LTCM) in 1998 shows that there are circumstances under which hedge funds and mutual funds may impose externalities on the financial system.

Mutual funds are much less levered, so, on the surface, these funds would appear to be at little risk. Many mutual funds, however, are subject to daily redemptions. If a large enough economic shock took place, or some type of operational risk were realized, then these funds could be susceptible to runs. Since mutual funds hold large quantities of assets, systemic risk could emerge through fire sales or a run on the system. Money markets aside, however, no example of this type of event has occurred.

#### The Crisis

While the first major realization of the financial crisis came about when two of Bear Stearns's large levered hedge funds collapsed in June 2007, there is no evidence to suggest that this, or later failures, caused the recent financial crisis or that they contributed to its severity in any significant way. In fact, a case could be made that hedge and mutual funds that invested in structured finance products actually reduced systemic risk in the crisis by taking these toxic products off the books of the banking sector.

#### Current Proposals Concerning Hedge Funds

While hedge funds are largely unregulated, they compete with regulated banks that have advantages like the explicit guarantee of deposit insurance and the implicit "too-big-to-fail" guarantee. Almost all mutual fund regulation is designed to protect investors. The case for hedge and mutual fund regulation can be built on two separate justifications: the potential for systemic risk; and investor protection in general. Regulation that limits the ability of hedge and mutual funds to impose externalities by generating systemic risk often diminishes their ability to add value to the financial system and their investors. Balancing these considerations is important.

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The Senate bill requires hedge funds to register with the Securities and Exchange Commission (SEC) as investment advisers and raises the assets threshold for federal regulation of investment advisers from \$25 million to \$100 million, a move expected to increase the number of advisers under state supervision by 28%. According to the Senate bill, the SEC may require any investment adviser registered with the SEC to maintain such records and file such reports as necessary and appropriate in the public interest and for the protection of investors, or for the assessment of systemic risk by the Agency for Financial Stability.<sup>\*</sup> This data will be shared with the Agency for Financial Stability. The records and reports required to be filed with the SEC shall include a description of the following: (1) the amount of assets under management and the use of leverage; (2) counterparty credit risk exposure; (3) trading and investment positions; (4) valuation methodologies of the fund; (5) types of assets held; (6) side arrangements whereby certain investors in a fund obtain more favorable rights or entitlements than other investors; (7) trading practices; and (8) such other information as the SEC, in consultation with the Agency for Financial Stability, deems necessary and appropriate in the public interest and for the protection of investors or for the assessment of systemic risk. Further, the SEC shall conduct periodic inspections and other inspections prescribed as necessary by the SEC of all records maintained by an investment adviser registered with the SEC. The Senate bill also requires investment advisers to use independent custodians for client assets to prevent Madoff-type frauds.

The House bill calls for the establishment of a Systemic Dissolution Fund to facilitate and provide for the orderly and complete dissolution of any failed financial company or companies that pose a systemic threat to the financial markets or economy. According to the House bill, the regulator can assess levies on hedge funds with \$10 billion or more (adjusted for inflation) of assets under management, using the same guidelines as those to be used for large financial corporations. The House bill also proposes that the regulator, in consultation with the Financial Services Oversight Council (FSOC), shall create a risk matrix to be used in establishing assessments that takes into account a number of factors, including the risks presented by the financial company to the financial system, and the extent to which the financial company has benefited, or likely would benefit, from the dissolution of a financial company under the bill. The House bill explicitly includes the following factors: (1) the nature (including the amount when applicable) of the activities, assets, liabilities, sources of funding, as well as the market share and leverage level of the financial company; (2) the potential exposure to sudden calls on liquidity precipitated by economic distress; (3) the nature of the financial company's financial obligations to, and relationship with, other financial companies; and (4) the financial company's importance as a source of liquidity for the financial system.

In terms of international reforms of hedge funds, the Group of Twenty (G20), Financial Stability Board (FSB) and European Commission (EU) all call for the oversight of hedge funds, with a special emphasis on improving transparency, especially with respect to their leverage.

## **Evaluation of Current Proposals**

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<sup>\*</sup> H.R. 4173, Sec. 5003 and 5004.

The House bill does not mention mutual funds, while the Senate bill only asks for studies into the financial literacy of mutual fund investors and into mutual fund advertising, both with a view to generating recommendations to improve investor protections. Yet the issues associated with regulating mutual funds overlap substantially with those of regulating hedge funds. The major differences are that hedge funds can use leverage, while mutual funds cannot, and hedge funds can slow or even halt redemptions, while mutual funds cannot. It is important to realize that long-only hedge funds have the same systemic risk characteristics as mutual funds.

The Senate bill gives very extensive powers to the SEC to regulate hedge funds as it sees fit: In addition to the listed items, the SEC is also given the authority to require anything else it deems necessary to achieve its objectives. Given that the SEC likely has its own conflicts of interest and has been prone to ineffectiveness in the past, it would be better if the SEC's mandate were instead limited to a few prespecified items that are clearly described in the bill.

### *Proposals Regarding Systemic Risk*

Transparency to regulators can help them measure and manage possible systemic risk and is relatively costless. Consequently, we support the Senate bill's proposal that hedge funds provide information to the SEC about their trades and portfolios necessary to assess systemic risk. The information needs to be provided in a regular and timely fashion about both their asset positions and leverage levels.

If a hedge fund or group of hedge funds generates systemic risk for the financial system, then that hedge fund or group of hedge funds needs to be treated as a systemic institution and regulated (and taxed) as such. By requiring the regulator to assess levies on hedge funds with \$10 billion or more of net asset value (NAV) for the Systemic Dissolution Fund using the same guidelines that are to be used for large financial corporations, the House bill is potentially a step in this direction. However, NAV alone is not sufficient to determine if a hedge fund (or mutual fund) is generating systemic risk. As we discuss above, the House bill recognizes this by explicitly listing a number of factors to be taken into account by the regulator when determining assessments -- factors that likely affect the ability of a hedge fund to generate systemic risk. It is critical that the regulator take these factors into account when determining assessments on hedge funds, and it may even be that after considering these factors, no hedge fund ends up being charged assessments. The House bill also leaves the door open for groups of hedge funds, which together are imposing systemic risk on the system, to be charged assessments by the regulator for the Systemic Dissolution Fund, since it leaves open the possibility (no matter how remote) that hedge funds with less than \$10 billion in NAV could be charged such assessments.

### *Proposals Regarding Investor Protection*

It is not at all clear that additional regulation is needed to improve protections for hedge fund investors. There are several important considerations: (1) such regulation is costly to funds; (2) the effectiveness of regulators like the SEC is questionable; (3) private information providers play an important role in the dissemination of information to investors; and (4) fiduciaries who are investing money in hedge funds on behalf of pension funds and other investors have the primary responsibility to do due diligence. However, we support the requirement in the Senate

bill that investment advisers use independent custodians for client assets, since it is a simple way to prevent misappropriation of the hedge fund assets.

Under the Senate bill, the new threshold for required registration as an investment adviser with the SEC is \$100 million up from \$25 million. If the argument for registration is to provide investors with necessary information about the operational characteristics of funds, it is not clear why this requirement should be limited to funds over \$100 million. It is perhaps better to have them register with the SEC and file the mandated Form ADV disclosure, as all mutual funds are required to do without artificial limitations on asset size or lockup period exception. Form ADV does not reveal competitive concerns such as positions taken and strategies used, but it does reveal conflicts of interest, both internal and external to the fund, and the existence of past legal or regulatory issues. In addition, registration opens the fund up to possible audit by the SEC. The mandated disclosures would have the additional benefit of shifting the burden of proof to fiduciaries who would otherwise claim "nobody told us, we did not know."

If any legislation is enacted with the purpose of protecting investors, we support greater disclosure of all expenses charged to fund investors, as well as greater transparency about any fund-level tax discrimination between investors. This is because both fees and taxes have a first-order impact on the investors' net return, and neither is well-disclosed in today's hedge fund business.

## Chapter 13\*

### Toward a New Architecture for U.S. Mortgage Markets:

#### The Future of the Government-Sponsored Enterprises

##### Overview

One of the most dramatic events of the financial crisis of 2008 was the collapse of the two Government-Sponsored Enterprises (GSEs), Freddie Mac and Fannie Mae. They were put into conservatorship in September 2008, and a \$200-billion lifeline from the U.S. Government was extended to each. The GSE bailout will probably have the largest net costs (outlays minus recoveries) of all of the government's bailout efforts.

The GSEs have been performing two separate roles. Their first function – the guarantee function -- is arguably the most important: guaranteeing the credit risk in conforming (prime non-jumbo) mortgages. The GSEs buy conforming mortgages from mortgage originators, bundle them, and sell them off to private investors in the form of mortgage-backed securities. However, the GSEs bear all the default risk in these mortgages. They charge a small fee to the mortgage originators for this guarantee. They hold 45 cents of capital for every 100 dollars of mortgage face value guaranteed. Ex post, it appears that the GSEs received inadequate compensation for the default risk they were bearing. This is one reason why their capitalization is somewhat inadequate relative to the risks they bear.

The second role is essentially the proprietary trading function: purchasing both prime and non-prime (Alt-A and subprime) mortgage-backed securities. They financed these asset purchases by issuing debt (so-called “agency” debt). Because of the implicit government guarantee (which has now become an explicit guarantee), the GSEs are able to borrow at below-market rates. The leverage ratio of the GSEs was a stunning 40:1 at the height of the housing boom, again illustrating that GSEs – through their own choice of leverage -- have been inadequately capitalized. When the market prices of the prime assets, and especially the non-prime assets, in their portfolio reflected greater default expectations, the thin equity cushion was quickly wiped out. The GSEs are effectively insolvent.

The current financial legislation is completely silent on the future of the GSEs. We believe this is a mistake given the central role they played in the crisis, their systemic nature and their structural weaknesses, which will persist unless these issues are addressed with urgency.

##### Recommendation

We believe there are three key issues that need to be dealt with by the Obama Administration and the Congress:

(1) First and foremost, the proprietary trading function of the GSEs needs to be discontinued entirely. There is no role for a gigantic government-sponsored hedge fund, trading in mortgage-related contracts. The original rationale for this trading was to promote liquidity in the secondary

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mortgage market. This reasoning is obsolete, because markets have now had more than 30 years of experience in trading conforming mortgage-backed securities. We envision that the government could slowly wind down the assets on the GSEs' balance sheets, for example, by corralling them into a kind of Resolution Trust Corporation, like the one created to during the Savings and Loan crisis in the late 1980s and early 1990s. This entity could hold on to the mortgage-backed securities until maturity or slowly sell them to the private market. Management groups from the GSEs could raise private capital and could be among the purchasers of these assets.

(2) Second, the ownership structure of the guarantee function of the GSEs should be revisited and possibly discontinued. This could be accomplished in several ways.

One option is to fully nationalize the guarantee business for conforming loans. The rationale for such nationalization is that in the next large mortgage crisis, the government would inevitably bail out any private securitization firm, say the re-privatized Freddie Mac or Fannie Mae. A downside of this approach is that no market information is available to ensure the government receives the correct insurance fee and the guarantee function remains economically viable. The current guarantee fee is too low and needs to be recalibrated in case this option is employed.

A second option is to fully privatize the guarantee business. In this scenario, the GSEs would be completely dismantled. This would eliminate the distortions that arise because of the implicit government guarantees, such as artificially low financing costs and artificially low mortgage rates. Note that conforming mortgages are loans that are conservatively underwritten: For example, all loans in the pool have loan-to-value ratios of 80% or less and have documented debt-to-income ratios of 35% or less. Therefore, these loans will have low credit risk to begin with. The idea is to structure these loans into tranches. The most senior tranche would effectively have no credit risk, and therefore would not need any credit guarantees. This tranche could be as large as 70% of all conforming loans (the default rate would need to exceed 60% with a 50% recovery rate before the senior tranche would take its first dollar loss). Under this scenario, the remaining 30% of loans would be securitized as subordinated tranche(s) that would contain (some) credit risk, and trade as such in private markets. Subordinated tranches may or may not contain insurance from private companies, such as the monolines.

A third option, which is also a private option, would see the GSEs disappear, but it would keep all conforming mortgage-backed securities guaranteed. From the investors' side, one potential advantage of keeping all conforming mortgage-backed securities guaranteed (credit risk-free) is that an investment community with substantial human capital was built up around default-free mortgage-backed securities. Under this scenario, private mortgage securitizers would purchase mortgage loans from originators and issue default-free mortgage-backed securities. Instead of bearing the credit risk, private securitizers would purchase mortgage default insurance for the mortgage-backed securities. In practice, this would only be necessary for the 30% subordinated debt mentioned above. However, it still may require too much private capital to insure the credit risk of all conforming mortgages in mortgage-backed securities. We believe there is an important role for the government here. In particular, mortgage default insurance would be offered through a new private-public partnership structure, modeled after the Terrorism Risk Insurance Act of November 2002. Specifically, the securitizer would purchase, say, 10% of its insurance from a large monoline insurance company and 90% from a newly formed government entity. As with terrorism risk insurance, the private insurance market would help to

establish a market price for mortgage default risk. The newly formed government entity would charge a fee based on this market price. This would ensure that the government also receives adequate compensation for the credit risk, a key difference with the pre-crisis approach.

In the private scenarios, regulation would need to be imposed to prevent securitizers from engaging in proprietary trading and to ensure that monoline insurance companies that provide private insurance are well-capitalized.

In principle, the public-private insurance could be purchased not only for conforming loan pools, but also extended to non-conforming loans (prime jumbo, Alt-A, and subprime). Indeed, such a structure may help to revitalize the non-prime mortgage market. In fact, we recommend such an approach for the non-conforming mortgage market, as well. It would ensure that the government receives compensation for the systematic credit risk, which it ultimately bears on all mortgages. As in the 2008 crisis, most of that default risk in the event of a major housing crisis is, in fact, concentrated in the non-prime mortgage segment.

Regardless of which option is chosen, we recommend abolishing the conforming loan limit (capped at \$730,000 in 2009), as long as all other underwriting standards are preserved.

(3) Third, the GSEs should get out of the business of promoting home ownership for low-income households and underserved regions. We believe that whatever decision is made about the future of the GSEs, the current two mandates of making mortgage markets liquid and well-functioning and of promoting access to mortgage credit by underserved groups of regions are incompatible. The current approach of government intervention through the GSEs -- to keep mortgage interest rates artificially low for all households -- is both too expensive and ineffective. If the policy objective is to promote and subsidize low-income home ownership, then the Federal Housing Administration and its securitizer, Ginnie Mae, are much better suited to perform the role for the underserved groups or regions, rather than for all households at large. Such a focused approach would be both more transparent and more effective.

## Chapter 14\*

### Insurance Industry

#### Overview

The social welfare created by insurance is unquestionable. Insurers pool and diversify idiosyncratic risks with potentially catastrophic consequences for individuals and businesses. In competitive markets, Insurers price diversifiable risks on an actuarial basis, yielding tremendous utility gains to the previously exposed individuals and businesses. The broad role of insurance in the global economy is therefore not surprising. For example, premiums collected by Life, Health, and Property Casualty insurers total \$1.28 trillion or 9.0% of nominal GDP in the United States in 2008 (National Association of Insurance Commissioners).

#### The Financial Crisis

The insurance sector played a crucial role in creating the boom of 2004-2007 by deviating from the traditional insurance model and providing insurance against macroeconomic events and other nondiversifiable risks. Some insurers, notably the monoline insurers and AIG, did so by writing financial guarantees on structured financial products tied to subprime mortgages.<sup>†</sup> These guarantees – which insurers provided in the form of both insurance policies and significantly substitutable credit derivatives – yielded huge losses and/or liquidity requirements for the insurers when the guaranteed assets declined in value, as the housing market and overall economy deteriorated during the financial crisis. Mortgage insurers were similarly affected by the deterioration in the housing market. In addition, some large life insurers, notably AIG, Hartford Financial Services and Lincoln National, deviated from the traditional insurance model by aggressively writing investment-oriented life insurance policies with minimum guarantees and other contract features that exposed the insurers to equity and other investment markets. These insurers experienced large losses as these markets declined during the crisis.

Insurers' impaired solvency and liquidity contributed significantly to the severity of the financial crisis and the need for governmental support. Downgrades in the monoline insurers' credit ratings led to declines in the value of the guaranteed bonds and contributed to the overall dysfunction in debt markets. AIG remains under government receivership, and Hartford Financial Services and Lincoln National have received significant capital infusions from the government.

The insurance sector assumed nondiversifiable risks with inadequate capital and liquidity, and its impaired solvency and illiquidity during the financial crisis exacerbated systemic risk worldwide. It is surprising, therefore, that regulatory reform plans have not focused to any significant extent on the insurance sector beyond suggesting a few preliminary steps.

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† AIG also incurred large losses on its securities lending and repurchase agreement transactions.

## Current Proposals

The bills under consideration in the House of Representatives and Senate contain four main proposals regarding the regulation of insurance. First, the House Bill proposes the establishment of the Federal Insurance Office within the Department of the Treasury with the following mandate:

(A) To monitor the insurance industry to gain expertise. (B) To identify issues or gaps in the regulation of insurers that could contribute to a systemic crisis in the insurance industry or the United States financial system. (C) To recommend to the Financial Services Oversight Council that it designate an insurer, including its affiliates, as an entity subject to stricter standards. (D) To assist the Secretary in administering the Terrorism Insurance Program established in the Department of the Treasury under the Terrorism Risk Insurance Act of 2002 (15 U.S.C. 6701 note). (E) To coordinate federal efforts and develop federal policy on prudential aspects of international insurance matters, including representing the United States as appropriate in the International Association of Insurance Supervisors or any successor organization and assisting the Secretary in negotiating covered agreements. (F) To determine whether State insurance measures are preempted by [certain] covered agreements. (G) To consult with the states regarding insurance matters of national importance and prudential insurance matters of international importance.

This list indicates that the proposed Federal Insurance Office would investigate and represent the insurance industry but have no direct regulatory powers. Instead, it would refer any regulatory problems it identifies to other regulators. For example, it would “recommend to the Federal Reserve any insurance companies that the Office believes should be supervised as Tier 1 Financial Holding Companies.” The Senate bill is substantially the same as the House bill regarding the Federal Insurance Office.

Second, both the House and Senate bills propose systemic risk regulators: the Financial Services Oversight Council in the House bill and the Agency for Financial Stability in the Senate bill. Both bills do not give adequate recognition to the potentially systemically risky nature of insurance. For example, the voting membership of the Financial Services Oversight Council would not include any member with insurance expertise. A nonvoting member would be taken from the state insurance regulators, but not from the Federal Insurance Office. The voting membership of the Agency for Financial Stability would at least have a member with “experience in insurance industry or regulation,” but again not from the Federal Insurance Office.

Third, both bills propose mechanisms to bring strong federal regulatory authority over any bank or financial holding company with significant systemic risk. This would presumably include “AIG-like” insurance entities but not the other large insurance companies such as Hartford Financial Services, Metropolitan Life or Lincoln National.

Fourth, the Senate bill contains some specific proposals for reforms of state-based insurance regulation.

## **Evaluation of Proposals**

We support the creation of the National Insurance Office. However, we recommend that the legislation go further and create a National Insurance Regulator and an optional or even mandatory federal charter for financial institutions with a significant presence in the insurance industry. The National Insurance Regulator would develop deep expertise in insurance and in the institutions it regulates. It should have equal status in the systemic risk regulator (i.e., the Financial Services Oversight Council or Agency for Financial Stability) as the regulators in the commercial banking, securities and asset management industries. The creation of a National Insurance Regulator and federal charter would be less costly and otherwise more efficient than the current state-level insurance regulation for insurers operating nationally.

There is no mention in the bills about the State Guarantee Funds, which currently impose ex post assessments on the healthy insurers operating in a state to pay the claims of the policyholders of insolvent insurers (for some lines of business only). These funds are inadequate to deal with the multiple insurer insolvencies that could result in financial crises. We recommend that these funds be replaced with a National Insurance Guarantee Fund analogous to the FDIC that imposes ex ante premiums on insurers. Such an entity would be in a better position to anticipate and manage insurer insolvencies. Currently, there is an implicit federal guarantee for the large insurance companies without any adequate funding to provide such guarantees when needed.

We support a dedicated regulator for financial institutions that impose systemic risk to the financial system. This regulator should have the mandate and expertise to cover all of the functional areas of the financial system, including insurance. We are surprised that the bills do not mention insurance companies (besides financial holding companies like AIG) as potentially systemically risky. Six of the top 30 systemically important global institutions identified by the Financial Stability Board of Bank for International Settlements are insurance companies. A primary focus of this regulator should be on understanding the interconnectedness of the activities of these institutions and anticipating how they could lead to systemic risk. This regulator should charge these institutions a fee for their systemic risk contributions.

There is hardly any discussion in the bills about specific regulation of insurance companies relating to their systemic risk. On this front, we recommend that

- a. Insurance companies should not be able to offer protection against macroeconomic events and other nondiversifiable risks unless the insurance is backed by adequate capital and liquidity. Currently, insurance companies are able to take one-way undiversified bets on risks without holding adequate capital or liquidity. Such protection would cover credit-default swaps on AAA-tranches of CDOs (collateralized debt obligations), insurance against a nuclear attack, the systematic portion of insurance on municipal bonds, minimum guarantees on equity indices, and so forth.

- b. Financial reporting by insurance companies should provide regulators and investors with better information about insurance policies that effectively are written put options on macroeconomic variables and other nondiversifiable risks. These disclosures should clearly indicate concentrations of risk, how historical data are used to value the positions, and other important estimation assumptions.

Some additional accounting changes are necessary for insurance companies: The accounting for insurance policies should be made more/reasonably consistent with the accounting for risk-transferring financial instruments, such as derivatives. Fair value accounting, the usual accounting approach for these other financial instruments, is the best way to do this, but a not-too-distant alternative such as fulfillment value accounting may be adequate. In particular, the income smoothing mechanisms in statutory accounting principles (SAP) should be eliminated.

## Chapter 15\*

### Regulation of Rating Agencies

#### Overview

Credit rating agencies (CRAs) are firms that offer judgments about the creditworthiness of debt instruments – specifically, their likelihood of default – that have been issued by various kinds of entities, such as corporations, governments, and most recently, securitizers of mortgages and other debt obligations. Beginning in the 1930s, financial regulation has mandated that the rating agencies be the central source of information about the creditworthiness of bonds in U.S. financial markets. Reinforcing this centrality was the Securities and Exchange Commission's (SEC's) creation of the Nationally Recognized Statistical Ratings Organization (NRSRO) designation in 1975 and its subsequent protective entry barrier around the incumbent NRSROs.

Most financial market analysts would agree that the current payment model of CRAs can lead to severe conflict of interests that tend to reduce the quality of ratings and the accountability of the rating agencies. The conflict of interest stems from not only who pays but also the fact that the rating agencies provide other revenue-generating services to rated companies. In the current “issuer pays” model, the issuer can troll NRSROs for the “best” rating. If the rating is inflated or of low quality, there is very little accountability, and in general, there is almost no incentive for rating agencies to compete on quality. Even if the model switched to “investor pays,” and the free rider problem of investors could be solved, it is not clear the conflict of interest would be eliminated. Many investors use ratings not to measure risk internally but to exploit prudential regulation. In the ratings market, there is a race to the bottom. Given that ratings are an important part of the regulatory process, this suggests there is a need for reform.

#### The Crisis

The three largest U.S.-based credit rating agencies -- Moody's, Standard & Poor's, and Fitch - were clearly central players in the subprime residential mortgage debacle of 2007-2008. Their initially favorable ratings were crucial for the successful sale of the bonds that were securitized from subprime residential mortgages and other debt obligations. The sale of these bonds, in turn, was an important underpinning for the U.S. housing boom and bubble of 1998-2006. When house prices ceased rising in mid-2006 and then began to fall, the default rates on the underlying mortgages rose sharply, and those initial ratings proved to be wildly over-optimistic. The prices of the mortgage bonds cratered, wreaking havoc throughout the U.S. financial system and damaging the financial systems of many other countries, as well. The latest severe criticism comes after prior rating debacles involving the Asian crisis of the late 1990s and many fraud related, but fairly transparent, cases like Enron and WorldCom of the early 2000s. It is therefore no surprise that the legislative proposals for financial regulatory reform have included specific provisions for regulating the credit rating agencies.

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## Current Proposals

The U.S. House and Senate have recently proposed legislation to strengthen the regulation of rating agencies and to restore investor confidence in the rating process.

Both the House and Senate bills present new rules for internal control and governance, independence, transparency, and liability standards. A key element in the Senate bill, which is also included in the House bill, is the establishment of an Office of Credit Ratings at the SEC to “administer the rules of the Commission (*i*) with respect to the practices of nationally recognized statistical rating organizations (NRSROs) in determining ratings, for the protection of users of credit ratings and in the public interest; (*ii*) to promote accuracy in credit ratings issued by NRSROs; and (*iii*) to ensure that such ratings are not unduly influenced by conflicts of interest.”\*

Both bills also propose an internal control structure and annual ratings review process, which gives the SEC the right to suspend temporarily or to revoke the registration of an NRSRO with respect to a particular class or subclass of securities if the NRSRO “has failed over a sustained period of time to produce accurate ratings for that class of securities” and/or “the performance of the NRSRO has been significantly worse than the performance of other NRSROs.”†

Both bills address in some way the reliance on NRSRO ratings in financial regulation, independence of rating agencies, alternative business models, and methods of compensation.

- (1) The House bill recommends the development of “rules providing for the establishment of a system of payment for each NRSRO that requires that payments are structured in a manner designed to ensure that the NRSRO conducts accurate and reliable surveillance of ratings over time, as applicable, and that incentives for reliable ratings are in place.”‡ As one example, the bill solicits a study on creating a system in which NRSROs are assigned on a rotating basis to issuers seeking a credit rating.
- (2) The House bill explicitly calls for regulatory agencies to reduce their reliance on credit ratings and to develop separate “standards” of creditworthiness. This includes removing the language dealing with investment and non-investment grade.

To enhance transparency, both bills require that each NRSRO disclose considerable information on the procedures and methodologies used in estimating credit ratings and potential limitations of the ratings and the types of risks not included in the rating (such as liquidity, market and other risks). The House bill also goes into much more detail about how ratings should be publicized (there is a proposal for 3-digit ratings in the bill, where the first digit gives a “base case rating,” and the second and third digits would reflect the impact of mild and severe stress tests). Furthermore, rating agencies are required to indicate the five key determinants of the rating and how sensitive the rating is to changes in these determinants.

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\* Sec. 931 Regulation of Nationally Recognized Statistical Rating Organizations. See also H.R. 4173, Sec. 6002 Establishment of SEC Office.

† Sec. 931 Suspension or Revocation for Particular Class of Securities.

‡ H.R. 4183, Sec. 6002 Corporate Governance, Organization and Management of Conflicts of Interest.

The House bill removes the exemption from the fair disclosure (FD) rule for credit rating agencies.

In order to incentivize the rating agencies to do their job correctly and effectively, both bills define liability standards for knowingly or reckless failure to investigate or obtain analysis from independent sources. The Senate bill requires qualifying exams and continuing education for rating analysts.\*

International proposals by the Group of Twenty (G20), Financial Services Authority (FSA), Financial Stability Board (FSB), International Monetary Fund (IMF), Organization for Economic Cooperation and Development (OECD), and the European Commission (EU) all call for stronger (and internationally coordinated) regulatory oversight of registered rating agencies, in order to ensure good governance and manage conflicts of interest, and require an increase in transparency and quality of the rating process. Similar to the U.S. House bill, the G20, FSA and EU proposals recommend the introduction of differentiated ratings for structured products. The OECD proposal focuses on increasing the competitiveness of the rating industry by lowering barriers to entry through simpler registration requirements and by encouraging unsolicited ratings to stimulate expansion of small credit rating agencies with new business models. In comparison with the U.S. House and Senate bills, the EU and OECD proposals appear to be more explicit in recommending changes in the business model of rating agencies (e.g., the EU proposal suggests an internationally coordinated switch from the “issuer pays” to “investor pays” model) and a reduction in the use of NRSRO ratings in financial regulation.†

## **Evaluation of Current Proposals**

The legislation proposed represents a major change in the way credit rating agencies would be regulated. The legislation, especially the House version, does address the two core problems: first, the central role of NRSRO ratings in financial regulation and the dominance of a few rating agencies in the industry; and second, the conflict of interest in the issuer pays model and how some investors use these ratings.

With respect to the role of NRSROs, on the positive side, the legislation is a clear attempt to hold the rating agencies accountable and to open up the system to higher quality information on the risk of securities. Specifically, we favor the following aspects of the proposals:

- Some regulatory oversight, since regulators are among the largest consumers of ratings through determining capital requirements of financial institutions and prudent rules for investors.
- The periodic audit of ratings provided by NRSROs and the ability of the SEC to rescind the NRSRO status based on its findings.
- The removal of specific language requiring regulatory agencies to rely on credit ratings. This is quite important, as ratings are not sufficient to measure the risk of fixed-income securities. That said, we endorse the idea that rating agencies provide more than a single

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\* H.R. 4183, Sec. 6007.

† Both U.S. bills propose a GAO study looking into the desirability of these issues within a year of enactment of the legislation (see Sec. 937, Studies and Reports, and H.R. 3890, Sec. 7, Studies and Reports).

point estimate of risk with the addition of potential stressed outcomes, -- for example, beyond a single estimate of default risk, a specification of a reasonable distribution of different scenario outcomes. But the regulator should look to other sources for risk measurement. Beyond the default risk estimated by rating agencies, both the regulator and investor need to consider “model/misspecification” error, liquidity/funding risk, and market risk.

We have concerns, however, with the legislation with respect to the NRSRO status. While oversight of NRSROs is needed, some of the provisions are quite onerous in terms of compliance, yet would appear to yield only small benefits. In practice, given their fixed-cost nature, this will impose a relatively heavier burden on innovative startup NRSROs, cementing the monopoly of the larger rating agencies. The amount of oversight should be streamlined. In addition, the success of the legislation depends on the ability of the SEC to implement oversight -- an area in which it has not been particularly successful. One suggestion would be to explore creating the equivalent of the public company accounting oversight board for rating agencies. Finally, holding the NRSROs accountable introduces the notion of legal liability. While legal liability will clearly increase their accountability and thus improve their “behavior,” it may impose considerable costs on the system. By construction, almost any ex ante credit rating is wrong ex post upon default of the issuer. This could lead to frivolous lawsuits.

With respect to the current “issuer pays” model, the legislation does little to prevent ratings shopping -- the process whereby asset issuers shop around for the highest possible rating. While the proposal to force more disclosure of preliminary ratings sounds like a step in the right direction, it is easily circumvented. Investment banks are well aware of the methodologies that raters use and can figure out which agency is likely to offer the highest rating. Imposing more uniformity on ratings -- by penalizing agencies that perform worse than their peers or by dictating ratings methodologies -- may reduce the variety of ratings. However, by making ratings more similar, these measures also diminish the additional information content of multiple ratings, which may leave investors -- and more importantly regulators -- less well-informed.

A reform that could reduce the scope for ratings shopping, without compromising agencies’ willingness to voice a diversity of opinions, is to have the SEC choose a rating agency, either at random or according to expertise, to rate each asset. Removing issuers’ choice of rating agency diminishes the scope for ratings shopping and removes the incentive for agencies to attract business by offering favorable ratings. If the SEC uses expertise as a criterion, this reform will also more likely spur competition among agencies to produce a higher-quality product. We are pleased that the House bill explicitly calls for a study of such a proposal.

There is little discussion in either bill of the problem that ratings are currently used by some investors to conduct regulatory arbitrage -- that is, simultaneously to take excessive risk while adhering to regulator’s safety standards because of the NRSROs’ overly optimistic rating. This suggests that alternative models, such as “investor pays,” may suffer from similar abuses and not provide a solution to the rating agencies’ problem. The House legislation’s requirement that the sole reliance on ratings by regulatory agencies be removed is one way to solve this problem.

As a final note, the House bill's removal of the FD exemption for rating agencies will clearly reduce the monopoly power of the NRSROs, but also lead to unintended consequences. Empirical evidence suggests that the removal of the exemption from Reg FD will reduce the information content of rating changes, and thus may reduce the efficiency of financial markets.

# **SECTION 4 -- MARKETS**

## Chapter 16\*

### Regulating OTC Derivatives

#### Overview

Over-the-counter (OTC) derivatives account for a significant portion of overall banking and intermediation activity. On the one hand, they enable end customers (typically corporations, but also financial firms, such as asset managers) to hedge their underlying risk exposures (for example, future commitments of an airline to buy jet fuel, or the risk of exchange rate movements) in a customized manner. On the other hand, they enable banks and financial intermediaries – the providers of hedging services to end-users – to earn profits, as they, in turn, hedge the OTC products they sell, either by diversifying the risk across different end-users or by shedding the risk to other intermediaries via liquid markets for standardized derivatives. It is clear that there is value to the economy from the derivative products, which enable users to hedge and transfer risk by altering the patterns of their cash flows. Interest rate swaps, for example, are among the largest OTC derivative products and have contributed remarkably to the management of interest rate risk on corporate and commercial bank balance sheets. It is not surprising, therefore, that these markets have grown by leaps and bounds in many countries, covering equity, interest rate, foreign exchange, commodity, and credit markets.

The financial crisis of 2007-2009 has, however, highlighted two aspects of the OTC derivatives market that deserve reflection and reform. The first aspect is that while financial innovation – the design of new, customized products – typically occurs in the OTC space, this is also the arena in which banks can tailor their own risk-taking and leverage buildup, since some of these positions are not reflected on their balance sheets. This is especially true because regulatory capital requirements are not suitably adjusted to reflect all aspects of OTC exposures, such as their illiquidity and their counterparty and systemic risks. The lack of such adjustment implies that risk-taking is often more attractive for banks through off-balance sheet, OTC derivatives than on-balance sheet or exchange-traded products: For instance, the “toxic” derivative assets that brought down banks required less regulatory capital relative to the risks incurred.

The second aspect concerns the opacity of exposures in OTC derivatives. Since they have not been exchange-traded or centrally cleared to date for the most part, neither regulators nor market participants have accurate knowledge of the full range of exposures and interconnections. Primary concerns surrounding the failures or near-failures of Bear Stearns, Lehman Brothers and AIG all had to do with uncertainty about how counterparty risks would spread through the web of OTC connections involving credit default swaps, and in the end, they presented a fait accompli to regulators to engage in massive bailouts in two of these three cases.

#### Current Proposals

The House Financial Services Committee has approved a bill to regulate the massive OTC derivatives business. The proposed legislation calls for sweeping changes in the structure of the OTC marketplace and its regulation. Under this bill, most standardized derivatives will be

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required to be traded on a newly defined entity called a Swaps Exchange Facility or an electronic exchange. Once a large swap participant accepts the standardized derivative contract that is offered, the contract will be executed against a central clearinghouse, which will take the offsetting position with another market participant. Both participants will be required to post margin to ensure that the central counterparty is able to meet its commitments to all counterparties. The amount of margin required will be marked-to-market (vary over time) as the position gains or loses money. If the position is in the money, the margin account should have a positive balance that can be withdrawn. If some market participants become insolvent, then their margins would be forfeited, covering losses to the clearinghouse. The data from these transactions will be reported to a registry, and aggregated versions will be made public.

The above description applies only to standardized contracts, and that too, only to dealers and large swap participants. Contracts that do not have an electronic marketplace will be traded bilaterally as they are now. However, in contrast to current practice, there will be mandated margins by the relevant regulators at least for large swap participants and dealers. All such non-cleared contracts will be reported to the registry, which will be visible to the regulators, so that they can see interconnections in the whole market in order to monitor systemic risk. Capital requirements against these non-cleared positions will be set at a higher level than for cleared transactions, reflecting the increased risks to the counter-parties and the whole system.

Finally, the bill also exempts end-users who are not large swap participants from the requirement to post margins or clear standardized products. To close regulatory gaps, the bill clarifies that both SEC (Securities and Exchange Commission) and CFTC (Commodity Futures Trading Commission) are to regulate in the sense that they must jointly approve rules and if they fail, Treasury will do so. This joint body also can designate market participants as major swap participants, if they take large and systemically risky positions. Thus, the excluded end users can be brought under the regulatory umbrella if necessary.

### **Evaluation of Current Proposals**

We believe that many of these proposed changes have the potential to stabilize the derivatives markets and improve their functioning and their regulation. But implementation details are important. As a cautious step-by-step approach to getting the details right, our overall recommendation is to start with applying changes to the credit derivatives market, which was the primary source of OTC market stress in this crisis. Following that, the costs and benefits of the migration from OTC to centralized clearing can be considered and evaluated for other markets such as interest-rate, foreign exchange and commodity derivatives.

Setting aside this issue of which OTC markets should be moved to centralized exchanges or clearing houses, the bill is silent on one central issue concerning OTC markets, namely their opacity. We do recommend that reporting requirements – that all trades be reported to a centralized data repository and be disseminated in some aggregated form (see Point 4b below) – be applied right away to *all* OTC derivatives, and not just credit derivatives. This is to ensure

that regulators have the required information on the interconnectedness of financial institutions in future systemic crises.\*

Equally significantly, there are improvements that should be considered in the next level of discussion, especially because the bill appears to leave sufficient flexibility to allow a healthy financial sector to adapt to this framework through “regulatory arbitrage,” -- that is, by designing slight variants of centrally cleared products so that they can remain OTC purely for the reason of being subject to weaker regulatory requirements.

We summarize our assessment and concerns about the specifics of moving OTC markets to centralized exchange or clearinghouse as follows:

1. By requiring that standardized products – which trade in large volumes and are sufficiently commoditized – trade on exchanges or centralized clearinghouses (existing or newly formed), the bill goes quite some distance in reducing the systemic risk of the OTC derivatives business and reducing the systemic costs of bankruptcy of a major market participant.
2. The transparency associated with exchange-based trading should improve the performance of some of the larger OTC markets in that transaction costs should be reduced and price discovery improved. Furthermore, the end users would, in fact, save the cost of credit insurance taken out against counterparty risk that they currently face in buying customized hedges from dealers. The price of buying credit protection on dealers and other financial counterparties becomes quite expensive during periods of stress, when end users value the quality of their hedges the most. Thus, in contrast to what they often argue, there could in fact be a big saving for the end users in periods of crisis.
3. While the exact setting of collateral requirements is ultimately a practice that each exchange or clearinghouse evolves over time, we highlight one important issue concerning credit derivatives that might be relevant for setting collateral. Different derivatives products would have to be margined based on their specific nature, we stress that risk exposure for credit derivatives is of a different character from that borne by traditional derivative products such as interest rate swaps. Like other swaps, the mark-to-market value of a single name credit default swap fluctuates from day to day as the market's assessment of the underlying entity's credit risk varies. These daily fluctuations are similar to daily price movements for other derivatives and can be handled adequately within a standard margining system. However, upon the occurrence of a credit event, the potential liability of the protection seller to its counterparty suddenly jumps to as much as 100% of the contract's notional principal. In nearly every case, this will greatly exceed the value of the collateral posted to cover daily variation margin flows and leave the protection buyer exposed to significant counterparty risk. Under central clearing, this would ultimately devolve on the clearinghouse. Requiring collateral equal to the full notional principal amount on

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\* International coordination has become extremely important in dealing with today's global capital markets. In particular, it is important for regulators to have information on derivatives risk exposures not just in clearinghouses and exchanges in their own jurisdiction, but also in others.

all of a protection seller's swaps would eliminate the potential counterparty risk, but would be prohibitively expensive. A feasible alternative that would nevertheless eliminate nearly all counterparty risk in the case of a credit event would be to require a protection seller to post margin equal to 100% of its single *largest* exposure to an individual reference entity. This additional margin would guarantee that the protection seller could always cover the potential liability from any credit event that it has sold protection against. Only in the case of simultaneous defaults by multiple entities covered by the same protection seller would there be any residual counterparty risk. This credit-event-based margin requirement would be in addition to posting the margin required to cover daily fluctuations in the values of all of its open positions in the absence of a credit event.\*

4. In addition, some of the exceptions in the bill deserve more careful examination. In particular, the question of which contracts are “standard” enough to be cleared is left to the regulators. A slightly modified nonstandard contract – an OTC “clone” of the cleared product -- can be traded bilaterally and only reported to the repository, which would lead to regulatory arbitrage in many cases. Such bilateral trades tend to be profitable to the dealers and the proposed regulatory structure may encourage financial innovation designed *only* to keep products from central clearing.
  - a. Under the current proposal, regulators will be obliged to set margins and capital requirements on dealers for these new and potentially complex products but may be challenged to keep up with the flood of variations.
  - b. An alternative and much simpler solution to this current proposal that deals well with non-cleared OTC transactions is *transparency*. If all inter-dealer transactions were confirmed bilaterally and required to be posted in a public site, perhaps on a weekly basis, then the risk of a bilateral deal with any counterparty could be more accurately assessed. The reporting can be aggregated for each institution and between institutions by risk type and maturity bucket. It should also include the extent and form of collateralization and the amount of collateral at risk under future changes in counterparty credit quality. Some such reporting is provided even in current quarterly balance sheets of dealers, but it is by and large too coarse to be directly useful in assessing bilateral counterparty risk. With such information, the market would be able to price better the counterparty risk. This would provide a far more powerful disincentive to excessive risk-taking than the threat of regulatory capital requirements. Further, any regulatory capital treatment assumes that such information would be gathered. Hence, the additional cost to our market transparency alternative seems to be small. Third parties would assemble counterparty exposure data and sell credit information to market participants.

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\* In effect, our recommendation amounts to imposing a position limit but one whose size – as it applies to each market participant – is determined by the participant subject to the requirement that its largest position on the clearinghouse be fully collateralized.

Any dealer who did not want his transaction made public would have an incentive to move to a cleared product.

5. End users of OTC derivatives may however be concerned about such additional transparency for two reasons. First, they may be concerned that an increase in overall costs of dealer activities may raise their costs of hedging, and dealer preference for cleared products (which tend to be standardized ones) would reduce their ability to find customized hedges, increasing their “basis” risk. These concerns notwithstanding, we believe that end users will in fact benefit from reduced counterparty risk of dealers. Moreover, in case the dealer activities are efficiently priced by the market for the risks they impose on others, then it is in fact efficient that end users pay a part of this price too. Second, end users may be concerned with transparency of their own positions since their usage of OTC derivatives might in large part be tied to underlying business practices that they might not wish to disclose at high frequency. Also, there are innumerable end users, relative to dealers, which might make information acquisition, reporting and aggregation of all of their exposures somewhat costly. Hence, a pragmatic approach might be to employ “hedge-documentation” (akin to hedge-accounting) for such end users. In particular, to benefit from the hedger exception that margins are not posted on OTC positions, end users must document for each OTC position the underlying risk exposure. Auditing of end users’ hedge-documentation could be performed either by auditing companies or by trade bodies such as the International Swaps and Derivatives Association (ISDA).
6. It is perceived that requiring dealers to post high margins or subjecting them to high capital requirements against centrally cleared or OTC positions might also increase their own costs of hedging underlying economic exposures. For instance, a commercial bank wanting to hedge the credit risk of its loan portfolio may face steep costs in employing credit default swaps for managing such risk. The solution is essentially to treat the hedging activity of such dealers as effectively being of “end user” variety. That is, if a dealer firm has both an underlying banking book and a market-making book, then the two should be required to be segregated into subsidiaries. The banking subsidiary can apply for hedger exception and be subject to hedge-documentation of its positions, with supervision and audit by bank regulators at daily frequency (as with their other risk reports). The market-making or pure dealer subsidiary should however be subject to higher collateral or capital requirement, as proposed by the bill. Failure to satisfy the hedge-documentation standards should lead to removal of the hedger exception for the banking subsidiary for a certain minimum period, say two years. This approach recognizes the economic motive of derivatives trades employed for hedging – subject to ex post verification – and balances economic gains from derivatives against the need for financial stability.
7. It is important for regulators to recognize that once dealers are subject to higher capital requirements and transparency on OTC positions, and end users enjoy a hedger exception, the most likely place for the buildup of excessive risks through OTC markets would be the space of end users. Hence, we agree with the proposal in the bill that certain large participants in OTC derivatives who choose not to be

classified as dealers in order to save on margins and disclosures, but nevertheless maintain one-way or systemically risky positions (as ascertained by audit failures in their hedge-documentation of such positions) should be brought under the same set of regulations as dealers. Their hedger exception should in fact be revoked for a certain amount of time, say two years, following such audit failures. While the proposal in the bill specifically says “large market participants” would be subject to similar rules as dealers, we believe “large” should be evaluated relative to participants’ underlying risk exposures and not in an absolute sense. Clearly, a large corporation will have greater hedging needs and thus require larger OTC positions for its hedging.

8. The centralized counterparty will naturally take some risk. It will prudentially set margins to reduce this risk and it will have capital to back up these risks. In many cases, the centralized counterparty will be a privately owned corporation belonging to dealers and other market participants. While this may ensure it has relatively deep pockets, the risks must be subject to monitoring as for any other systemic risk entity. In the unfortunate case where a centralized counterparty itself becomes bankrupt, there should be little hesitation to rescue it with taxpayer resources. Such systemic risks are indeed exactly what the lender of last resort should be focused upon, since from a moral hazard standpoint, it is far more prudent to rescue a clearinghouse than a private risk-taking institution that blows up on its risky trades and endangers its in-house public utility function (a case in point being Bear Stearns, which was effectively a clearer of a large number of credit default swap contracts). The regulatory apparatus is well-designed to reduce this risk.

## Chapter 17\*

### Securitization Reforms

#### Overview

Securitization allows the transfer of risk from the originators of debt to capital market investors willing to hold the risk. This transfer allows originators, such as banks, to release capital for additional lending, and permits the market for credit to expand. In theory, the balance sheet of the lending bank is less constrained by the loan being made, while the risk is spread across a large number of investors. To ensure that incentive problems between originators, securitizers and investors are minimized, the optimal contract usually calls for some type of risk retention by the originators and securitizers.

#### The Crisis

Unfortunately, securitization created serious systemic problems and led to large losses in the value of securitized products during the financial crisis of 2007-09. The consensus view is that securitization as employed by financial institutions not only did not allow efficient risk transfer to occur but in fact caused them to concentrate risks on their balance-sheets. Furthermore, the general opacity of these products to investors and regulators alike also played a major role in the crisis.

Why did securitization fail us?

First, there is considerable empirical evidence that lending standards slipped considerably in the mortgage market in the five years leading up to the crisis. Several researchers have demonstrated that there is, indeed, a link between securitization and the reduction in loan quality. Unfortunately, given the large number of loans in these structures and the difficulty in monitoring them, private markets did not solve the incentive problem between the borrowers, originators and investors. With little or no originator “skin-in-the-game,” the incentive to screen and monitor the loans disappeared, leading to ever riskier securitized pools of loans over time. This was exacerbated by the rating agencies, whose optimistic credit assessment of these securitized pools and their tranches, encouraged investments from regulated entities restricted to investing in highly-rated securities, and an unfettered securitization market grew without much oversight or disclosure.

Second, although the “originate to distribute” model of securitization and the rating agencies were clearly important factors, the financial crisis occurred because financial institutions did not strictly follow the business model of securitization. Rather than acting as intermediaries by transferring the risk from mortgage lenders to capital market investors, these institutions themselves took on an investment role. They did this in three ways: the outright purchase of securitized products; off-balance sheet securitization (albeit with recourse back to the institution); and the purchase of “underpriced” protection for securitized products from monoline credit insurers and large insurance companies, principally AIG. In effect, securitization became a

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\* Working group: Sabri Oncu, Matthew Richardson, Joshua Ronen, Stephen Ryan, Marti Subrahmanyam, Stijn Van Nieuwerburgh and Lawrence J. White.

vehicle for financial institutions to retain credit risk in a manner that minimized the underlying capital requirements. In other words, credit risk transfer did not take place – financial institutions had, in effect, *too much* skin-in-the-game.

Third, the incentive to retain, rather than transfer, the risks was accentuated by the implicit guarantees offered to the Government-Sponsored Enterprises (GSEs), such as Fannie Mae and Freddie Mac, which accumulated large amounts of the credit risk, not just of prime-quality mortgage-backed securities which they guarantee, but also through financial investments of subprime-quality assets, through their securitized tranches.

## **Current Proposals**

The House and Senate proposals to address securitization are broadly similar. They focus on three areas: the skin-in-the-game issue; better disclosure rules to increase transparency of securitized products; and definition of accounting/regulatory standards for such disclosure.

For example, in the House bill, “the appropriate agencies shall prescribe regulations to require any securitizer of asset-backed securities that are backed by assets to retain an economic interest in a material portion of any such asset used to back an issuance of securities.”\* The bill then proposes regulations to “prohibit a creditor or securitizer from directly or indirectly hedging or otherwise transferring the credit risk such creditor or securitizer is required to retain under the regulation.” A major difference between the House and Senate versions of the bill is the proportion of credit risk that must be retained by the securitizer -- 5% versus 10%, respectively.

Moreover, in terms of disclosure requirements, the House bill requires “each issuer of an asset-backed security to disclose, for each tranche or class of security, information regarding the assets backing that security... the Commission shall set standards for the format of the data provided by issuers of an asset-backed security, which shall, to the extent feasible, facilitate comparison of such data across securities in similar types of asset classes. The Commission shall require issuers of asset-backed securities at a minimum to disclose asset-level or loan-level data necessary for investors to independently perform due diligence. Asset-level or loan-level data shall include data with unique identifiers relating to loan brokers or originators, the nature and extent of the compensation of the broker or originator of the assets backing the security, and the amount of risk retention of the originator or the securitizer of such assets.”†

To the extent that securitization has been addressed internationally as well, the focus has been on securitizers’ or originators’ retaining some portion of the risk of the underlying assets, e.g., the Group of Twenty and European Commission. Indeed, the Financial Stability Board’s

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\* HR. 4173, Sec. 1502. Credit risk retention. See similar language in the Senate bill, Sec. 941. Regulation of credit risk retention.

† HR. 4173. Sec. 1503. Periodic and other reporting under the Securities Exchange Act of 1934 for asset-backed securities. Almost identical language is provided in the Senate version, Sec. 942. Periodic and other reporting under the Securities Exchange Act of 1934 for asset-backed securities.

(FSB) proposals get to the root cause of the crisis by recognizing that financial institutions used securitization as a way to circumvent capital requirements via off-balance sheet financing. The FSB calls for the removal of the rules that allowed such activity to take place and the prescription of a clearer definition of capital adequacy to include such off-balance sheet vehicles.

## **Evaluation of Current Proposals**

### *“Skin-in-the-game”*

The guiding principle behind Congress’s major proposal for securitization -- namely that securitizers should have skin-in-the-game -- is reasonable and is a natural outcome of almost all models of securitization: to align incentives between investors and the securitizers. To the extent that this did not take place -- that is, the market failed -- there is a need for setting and enforcing standards.

Exploring why it failed is important in helping to frame the optimal regulation. While the evidence of a link between securitization and loan quality cannot be ignored, the case is not so straightforward. First, mortgage lenders do have skin-in-the-game to the extent that a considerable portion of their income derives from mortgage servicing fees. In addition, securitizers must house the loans during the securitization process. Second, the question arises as to why the private sector -- securitization firms and asset-backed security (ABS) investors -- could not enter into contracts with lenders to ensure they had right incentives to screen and monitor loans. Such failure might occur if the full costs of poor quality loans are not being borne totally by the holders of the ABS that these loans back, most likely because many of the parties in the marketplace for securitized products (at least for mortgage-related securities) have some type of implicit or explicit guarantee from the U.S. Government.<sup>\*</sup> As long as one of these guaranteed entities is active in the securitization process -- as a lender, securitizer or investor -- incentives will be distorted somewhere, and potentially everywhere, down the chain. For example, the investor in prime MBSs that are guaranteed by a GSE does not necessarily care about the quality of the loan because she may be confident that the principal will be paid regardless. Similarly, if the investor is a depository institution with deposit guarantees from the Federal Deposit Insurance Corporation (FDIC), the external discipline to reject risky loans is diminished.

The presence of such government guarantees for parties involved in the securitization chain creates a potential rationale for government intervention in the securitization process. However, the main concern about Congress’s proposals is that, generally speaking, they are “one size fits all.” While there is room for exemptions, particularly in the House version, the problem is that, if the proposals are implemented, they will likely cause uncalled-for distortions in the securitization market:

- (1) The fixed levels (e.g., 5% or 10%) of economic interest retained do not vary with either the underlying risk or the opacity of the loans, or the specific nature of the tranches of the pool, and other risk characteristics of the structure. Clearly, the level of retention should

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<sup>\*</sup> Examples include the implicit guarantee on the GSEs, the explicit guarantee on deposits by the FDIC for deposit institutions, or the “very” implicit guarantee of too-big-to-fail of large complex financial institutions (LCFIs).

vary with these characteristics. There is no recognition that retention limits may place considerable costs on the institutions that originate or securitize loans with relatively safe assets, for which such fixed levels might end up being too high. As a more extreme case, for some securitized products, the underlying assets are bonds and leveraged loans which are traded securities. It is not clear why any credit risk retention is required in such cases, since these assets are monitored by the market.

- (2) Government guarantees play an important role in failing to align incentives in securitization. Therefore, one possibility is that financial firms with government guarantees should only securitize or purchase loans, such as mortgages, that have been originated by lenders with skin-in-the-game. The pricing of such guarantees should be determined by market conditions taking into account the risk of the structure.

### *Disclosure*

The other proposal by Congress with respect to securitization, namely better disclosure, is reasonable in principle, although the information to be disclosed should be defined more clearly. One of the major problems in the crisis was that, when some financial firms ran aground because of their holdings of securitized products, other firms, which did not have such holdings, were also affected by the contagion. There was general uncertainty about which firms were holding securitized products and what these securities were worth. This uncertainty was resolved, to a large extent, only after the government performed extensive stress tests on the large financial firms, on an equal basis, to separate them by asset quality.

With respect to the actual proposal, it is reasonable to force issuers of asset-backed securities to disclose asset-level or loan-level data, but it is not clear how investors or regulators can use this voluminous information. A more practical solution would be one that calls for a template to facilitate a comparison of risk metrics across securities of similar types of asset classes. Currently, the rating provided by the rating agencies is not sufficient. There should be a broader classification that takes into account the following factors: illiquidity (for example, Level 1, 2 or 3, as classified for financial reporting, and the likely status when the overall market does poorly); the concentration/diversification of the underlying loans; the credit risk of the security (related to the rating); the market risk of the security (performance when the overall market does poorly); and the degree of model error possible in these risk estimates. All these quantities are measurable and can be specified by the regulators, who should be charged with the responsibility for designing and implementing such a template.

### *Capital Adequacy and the Effect of Recent Accounting Changes*

Most importantly, the bills under consideration in Congress do not recognize the primary cause of failure of securitization in this crisis: financial institutions often use securitization to exploit loopholes in regulatory capital requirements in order to take large undercapitalized bets on credit risk, especially residential mortgage credit risk. The Financial Stability Board identified this as an international problem, with similar incentives for undercapitalized off-balance sheet securitization activities existing across countries. Erring in the opposite direction, the Department of the Treasury's recently enunciated "Principles for Reforming the U.S. and International Regulatory Capital Framework for Banking Firms" ([September 3, 2009](#)) propose that the required regulatory capital for securitizations be based (at a minimum) on the recently

issued Financial Accounting Standard Board Statements No. (FAS) 166 and 16. Getting capital requirements right – neither too high nor too low – is of paramount importance.

Specifically, FAS 167 (paragraph 14A) requires financial institutions to consolidate each securitization entity over which they have the power to direct the activities that “most significantly impact the entity’s economic performance” and for which they bear losses or benefits “that could potentially be significant.” While these conditions for consolidation are subject to some interpretation, they are far broader than the conditions for consolidation under prior GAAP, and under our interpretation their application appears to require financial institutions to consolidate most currently off-balance-sheet securitization entities. Such consolidation will bring all of the assets and liabilities of the securitization entities back on to the institutions’ balance sheets. However, recognizing that securitization sometimes transfers risk outside the institution (i.e., its intended purpose), FAS 167 (paragraph 22A) requires separate balance sheet presentation of assets dedicated to the settlement of the obligations of the securitization with no recourse (either explicit or implicit) to the financial institution.

The Treasury’s proposal ignores this required separate presentation and instead stipulates that *all* of the assets and liabilities of securitization entities brought onto a financial institution’s balance sheet be used in computing the institution’s required capital. The inclusion of the separately classified dedicated assets and non-recourse liabilities from this computation has particularly far-reaching and troubling implications, because it requires securitizing financial institutions to hold full regulatory capital even in for securitizations where they bear no or little risk of the securitized assets. This would impose significant costs on securitizers, leading to a smaller volume of securitizations and consequently lending, and possibly impeding economic recovery.

FAS 167’s requirements also directly interact with the skin-in-the-game requirements discussed above. By design, the latter would force financial institutions to bear losses or benefits “that could potentially be significant,” thereby causing financial institutions to consolidate their securitization entities under the former. This “Catch 22” type interaction prompted the Amendment to the bill requiring that a study be conducted to understand the joint impact of the credit risk retention requirements and FAS 166 and FAS 167.

We recommend that the proposals directly address the critical issue of getting capital requirements right. The proper approach is that every dollar of *economic* interest at risk in the securitization should face full regulatory capital requirements. But if and to the extent that financial institutions transfer credit and other risks to the securitization investors, then its capital requirements should be reduced accordingly.

**SECTION 5 --  
GOVERNANCE AND COMPENSATION**

## Chapter 18\*

### Consumer Financial Protection Agency: Is There a Need?

#### Overview

There has been growing concern in recent years that many consumers lack the knowledge they need to evaluate and make decisions about financial products. Some of the most important decisions consumers make in their lifetimes involve financial products: a mortgage to purchase a home, a loan to purchase an automobile, credit to make a large durable purchase, investments for retirement, and insurance to keep one's family secure. In the past, the government and employers often made financial decisions for households, for example by providing defined benefit retirement plans or social security; now, however, households are more frequently on their own. Furthermore, financial products have become increasingly complex over time and consumers face a wide range of product options offered by different service providers, making decision-making more complicated. Consumers need to be financially literate in order to make well-informed choices for such complex decisions.

Markets effectively allocate resources toward their best use if participants have the necessary information at hand and understand their choices. However, when it comes to personal finance, this premise must be questioned. Studies show that many consumers lack the basic financial knowledge they need to make informed decisions. To make matters worse, there is growing concern that some financial firms purposely design and proactively advertise products to mislead consumers about the benefits versus the risks.<sup>1</sup> These market imperfections can lead to a misallocation of resources and are the basis for past and proposed government intervention involving consumer protection.

#### The Crisis

As part of their response to the current financial crisis, the U.S. Congress and Senate have proposed the creation of a Consumer Financial Protection Agency (CFPA). The intent of the CFPA is to unify the supervision and enforcement of existing protection laws in consumer finance and to enhance financial literacy among the public. According to the Senate's proposal, the agency is necessary because "the economic crisis was driven by an across-the-board failure to protect consumers." While we believe that the primary cause of the crisis was the risk-taking of banks, consumer protection was certainly lacking, and we therefore strongly support the creation of a Consumer Financial Protection Agency.

Although consumer protection laws were in place prior to the recent financial crisis, they were clearly ineffective. The authority for enforcement is currently in the hands of at least 11 agencies. All of them have responsibility for only a subgroup of financial firms, and their mandates partly conflict. Among the agencies, the Federal Trade Commission (FTC) is unique in having consumer protection on the list of its primary mandates. We see several major

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\* Working group: Thomas Cooley, Xavier Gabaix, Samuel Lee, Thomas Mertens, Vicki Morwitz, Anjolein Schmeits, Stijn Van Nieuwerburgh, and Robert Whitelaw.

shortcomings of the current regulatory framework. First, consumer protection has an “orphan” status, with no single agency being responsible for regulation and enforcement. Hence, consumer protection does not receive enough attention. Second, financial organizations could, by changing from one form of financial institution to another (e.g., from a bank charter to a thrift charter), pick the regulator and set of regulations they prefer to deal with. Third, most of these agencies do not have any litigation experience. The sole exception -- the FTC -- has only limited jurisdiction over financial institutions. Fourth, due to the distributed control, agencies have underinvested in the collection of information. Thus, we agree, that a unified federal consumer protection agency would be an improvement over the current system.

The House and the Senate both have proposals concerning the creation of an independent CFPA, which would report to Congress. This new agency would be charged with monitoring firms that offer financial services in order to protect the interests of consumers. The CFPA would unify the current regulatory framework without expanding the current legal framework, and consumer protection in many branches of the financial services industry would be subordinate to this single agency. The CFPA’s mandate under both proposals would be to “ensure American consumers get the clear, accurate information they need to shop for mortgages, credit cards, and other financial products, while prohibiting hidden fees, abusive terms, and deceptive practices.”<sup>ii</sup> The specific goals of the CFPA would include the following: to aid consumers in understanding and using relevant information; to protect them from abuse, deception, and fraud, by ensuring that disclosures for financial products are easy to understand; to conduct research; and to provide financial literacy education.

Both proposals assign three main responsibilities to the CFPA. First, the agency will have its own function for data collection and research that allows it to evaluate the appropriateness of financial products, and it is granted the power to acquire information to make competent decisions about regulation. Second, the CFPA would have the authority to set rules under current legislation. For example, the new agency can prescribe fiduciary obligations and operational procedures, but it is explicitly banned from imposing usury caps. Third, it would have a civil enforcement mandate that permits the agency to send investigators to financial service providers.

The primary differences between the current proposals in the House and the Senate are as follows:

- (1) In the House bill, several branches of the personal finance sector are exempted from regulation, including financing provided by automobile dealers, smaller banks and credit unions (those with \$10 billion or less in assets), mortgage, title, credit insurance, real estate brokers and agents, and most retail transactions involving credit. The Senate proposal does not currently include these exemptions.
- (2) The Senate bill gives more enforcement power to states than does the House proposal. Specifically, the Senate bill would allow states to set tougher consumer standards than the federal law, and in this case, all firms would have to abide by state laws. In contrast, under the House bill, if the federal regulator of a national bank determines that state law places it at a competitive disadvantage, it would not have to meet the tougher state standards.

- (3) The Senate bill proposes that the CFPA be run by a five-member board, four appointed by the President with recommendations from the Senate, and one of whom the President will select as Director. The House bill proposes that the CFPA be run by a director who is selected by the President and approved by the Senate. With the consent of the Senate, the President will select five additional members who are experts in consumer protection, fair lending and civil rights, representatives of depository institutions that primarily serve underserved communities, or representatives of communities that have been significantly affected by higher-priced mortgage loans.

## **Evaluation of Current Proposals**

In evaluating the proposed legislation, two models are particularly helpful: the FTC's Bureau of Consumer Protection and the Financial Consumer Agency of Canada. The FTC's Division of Financial Practices under the Bureau of Consumer Protection has the mandate to protect "consumers from deceptive and unfair practices in the financial services industry, including protecting consumers from predatory or discriminatory lending practices, as well as deceptive or unfair loan servicing, debt collection, and credit counseling or other debt assistance practices." <sup>iii</sup> While the FTC's goals and methods are well-suited for providing consumer protection and financial education, its authority is limited to credit market activities by nondepository institutions, and thus is inadequate for protecting consumers across the wide range of financial products they face. Under the current proposals, the CFPA would take over some of the FTC's consumer financial protection responsibilities.

The Financial Consumer Agency of Canada supervises a broad range of financial service providers, including all banks, federally incorporated and registered insurance, trust and loan companies, and retail associations. Its mandate consists of consumer protection and consumer education and thus puts more emphasis on informing the public, compared with its U.S. counterpart. To enforce consumer protection laws, Canada's Financial Consumer Agency can seek a commitment from financial institutions to remedy issues in due time, impose monetary penalties or criminal sanctions, and take further actions if deemed necessary. Canada provided the Financial Consumer Agency with a research arm that also gathers data. This function makes information available to the public -- for example, databases on the rates and features of credit cards. Furthermore, the agency offers online quizzes that allow consumers to test their knowledge of credit cards and mortgages.

We endorse the creation of a consumer protection agency in the United States. While we are concerned that if not done effectively, there is risk of overregulation, we agree with the mission to unify enforcement for consumer protection. However, we strongly suggest several changes to the proposed bills.

Our first proposal concerns the scope of authority given to the CFPA. In particular, the House's proposal excludes regulation of several branches of the financial sector, such as realtors, automobile dealers, tax accountants, and retirement accounts. This carve-out from the direct oversight authority leaves a large part of consumers' assets underregulated. Worse yet, financial firms can exploit these loopholes in the CFPA's design by engaging in regulatory arbitrage. For

instance, financial firms can redirect their credit supply to less regulated sectors. We therefore recommend the removal of most of these carve-outs.

Many consumers are not sufficiently financially literate to assess complex financial products and might make misguided decisions. We agree with the proposed bill that the CFPA should have a broad mandate for financial consumer education and information provision. The CFPA could, for instance, publish consumer guidelines, compare standard rates or contracts, and offer “financial literacy tests.” However, as research demonstrates that financial education may not be enough to protect all consumers from poor choices, we believe that more is needed.

To aid those consumers for whom financial education does not suffice, the CFPA can actively intervene to improve overall welfare. We recommend that the CFPA should have the option of requiring financial service providers to include a “plain vanilla” product in their menu. This offering should be easy to understand, even for the inexperienced customer. It would also serve the purpose of a “point of reference” in comparison with other products. The CFPA should also ensure that default options are prudently chosen, since consumers, especially those who are inexperienced, are likely to refrain from active choices. In addition, the agency could consider marking certain products with a “seal of approval.” Uninformed customers would thus be given the chance to fall back on financial products that have been scrutinized by the CFPA and about which they can get independent information. The proposed bill should endow the CFPA with the authority and the mandate to implement such actions.

Potentially harmful products might require additional measures. We suggest that the CFPA assist customers with litigation in cases of abuse, deception or fraud. As a last resort, we also endorse the CFPA’s right to prohibit the sale of financial products or practices. However, no product should be banned before it has been tried by the market. Bans should only be imposed if consumer litigation and extensive market research have proven that the products or services are widely misused and detrimental to consumers. This proviso aims at curbing the danger of overregulation, which might leave some market participants worse off and might stifle financial innovation.

Lastly, the CFPA should focus not only on protecting consumers from misguided decisions, but also on improving the incentives of their brokers. To ensure good quality of financial advice, we propose that the CFPA should review the licensing practices for brokers and set minimum standards. Furthermore, the CFPA should be given the authority to review and regulate brokers’ compensation. For instance, it could require broker fees to be paid out over time and to be partially dependent on the continued performance of the product. Such measures may help to ensure that consumers receive the sound advice they need to make prudent long-term financial decisions.

## Chapter 19\*

### Regulation of Compensation and Corporate Governance at Financial Institutions

#### Overview

Politicians and taxpayers have expressed outrage at large bonuses paid to employees of those financial institutions that received federal bailout money. Regulators have raised concerns that the risk-taking incentives in compensation structures at financial firms are partly to blame for causing the financial crisis in the first place. In the midst of a broader public outcry against rising levels of executive compensation throughout corporate America, many in Congress have called for regulation and even caps on pay at financial institutions. Financial firms have countered that such constraints would hamper their ability to attract and retain the executive talent needed to steer them back to health and repay taxpayers.

#### The Crisis

To what extent were compensation structures at financial firms to blame for the crisis? Although pay practices based on performance measures that failed to account adequately for downside risk may have been an issue at some firms, we do not believe that compensation by itself was a major cause of the crisis. Compensation at financial firms is substantially share-based, so the interests of managers and shareholders tend to be closely aligned. Indeed, top employees at these firms incurred enormous losses of personal wealth in the crisis. The bigger problem for regulators and society is that because of implicit and explicit federal guarantees, the incentive to take large, potentially systemic, risks is built directly into the equity itself. Some bank boards explicitly encouraged the lending practices that helped lead to the crisis. New banking regulation should focus as much on reducing shareholder/regulator conflict as on reducing manager/shareholder conflict, and only as a last resort should go over shareholders' heads to guide managerial compensation.

#### Current Proposals

Recent “say-on-pay” and corporate governance proposals from Congress empower shareholders at all firms. They give stakeholders the right to a nonbinding vote on executive compensation and proxy access to nominating directors. The proposals mandate better disclosure of incentive compensation and the permissibility of managerial hedging, independence of compensation committees, and clawing back of incentive compensation based on misstated accounting performance. They authorize the use of independent compensation consultants and require shareholder approval of staggered boards. Congress also proposes going over the heads of shareholders at bank holding companies, prohibiting “excessive” compensation.

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The Federal Reserve's proposal for large banking organizations goes further, prescribing specific compensation and governance structures and reserving the right to enforce them. Specifically, the Fed advocates (1) better ex ante risk adjustment in the measures of employee performance that are used to determine compensation, and (2) the use of deferred compensation and longer performance periods, with realized compensation depending on risk outcomes. The Fed also favors involving corporate risk managers in the design of compensation contracts and active oversight of incentive compensation by boards of directors, who would be held responsible for ensuring the organization's safety. In addition, the Fed recommends broad reviews of incentive compensation arrangements at banking organizations to help identify and coordinate the adoption of best practices.

### **Evaluation of Current Proposals**

Congressional proposals to strengthen shareholder control over the compensation process are welcome reforms and may by themselves bring about sufficient compensation reform whenever shareholder interests are aligned with those of society. So to the extent that the conflict of interest between shareholders of financial firms and taxpayers can be resolved -- for example, with correct pricing of federal guarantees -- it may be enough to strengthen shareholder rights to help resolve shareholder/manager conflict and then leave shareholders to dictate managerial compensation themselves.

The Fed argues that because of the federal safety net, shareholder and taxpayer interests cannot be adequately resolved at banking organizations; it therefore seeks to regulate their compensation policies directly. Its ideas of ex ante risk adjustment, deferred compensation, longer performance periods, and ex post settling up are excellent principles for managing risk incentives and reducing moral hazard problems, as are its proposals to strengthen the role of risk management in firm governance. However, while these tenets should serve as important advisory guidelines, the Fed should be cautious about enforcement. Given the heterogeneity of banking organizations and their employees, and thus the diversity of contracts that are likely to be optimal, in our view, the Fed should not attempt to control compensation and governance too tightly. We believe that a reasonable middle ground would be to place the chief risk officer, or even a Fed representative, on the bank's board. The Fed might even broaden the role of bank supervisors to include explicit oversight of compensation policies and outcomes.

The idea of ex ante risk adjustment of performance measures -- so that an employee is essentially charged immediately for the risk consequences of his activities -- is a sound accounting principle. However, where compensation is concerned, it may be difficult to implement adequately because of the complexities of assessing the risks of new activities and the sensitivity of incentives to these measurement errors. For this reason, we believe it is best, whenever possible, to use it in conjunction with the principles of deferred compensation and longer performance periods, with ex post adjustments as needed.

The Fed's plan for a broad review of compensation at banking organizations is excellent and worth expanding to an annual or bi-annual review of firmwide compensation policies and outcomes at systemic firms. This could generate invaluable new information about which schemes work well and which do not. Not only would the review process itself likely spur voluntary improvements, but it would also provide more concrete information than is currently available about those aspects of the process that need regulation.

One idea that seems problematic is the prohibition of “excessive” compensation at financial institutions. Although uniform caps on the level of pay may be popular with voters, they can hamper shareholders’ ability to attract and retain the best talent. They can also fail to serve the regulator/taxpayers’ interest because it is not the level of pay per se, but rather the risk-taking incentives in compensation, that potentially threaten the safety of the banking system. In fact, if employees at financial firms must be forced to bear more downside risk to control their risk appetites, their average pay level may have to go up to keep them on board.

**SECTION 6 –  
ACCOUNTING ISSUES**

## Chapter 20\*

### Bank Regulators Should Not Meddle in GAAP

#### Background

As a result of the financial crisis, political pressure on accounting standard setting has never been higher. This recent scrutiny has focused on making generally accepted accounting principles (GAAP) more amenable to the goals of bank regulation. These goals are twofold: (1) to require banks to hold more capital in good times so as to cushion the blow when the economic cycle turns; and (2) to allow banks to record smaller write-downs in bad times to preserve their diminished regulatory capital. An example of the first goal is the proposal to require “through the cycle” loss reserving to induce banks to build up capital during strong economic times to help them better survive weak economic times when they occur. An example of the second goal is the proposal to suspend fair value accounting during economic crises. We evaluate these troublesome accounting proposals in Sections 7B and 7C of this e-book. Here, we discuss the underlying and equally problematic underlying political pressure on accounting standard setting.

Perhaps the most extreme example of this pressure was Representative Edward Perlmutter’s (D-CO) proposed amendment to the original Financial Stability Improvement Act that was under consideration by the U.S. House of Representatives’ Committee on Financial Services. That amendment would have effectively given a council of bank regulators veto power over GAAP. Fortunately, the Wall Street Reform and Consumer Protection Act (H.R. 4173) that made it through the House Financial Services Committee on December 2, 2009, contains the far less objectionable requirement in Section 1001(c)(11) for this council “[t]o review and submit comments to the Securities and Exchange Commission and any standards setting body with respect to an existing or proposed accounting principle, standard, or procedure.”

Despite this positive development, it would be too optimistic to hope that the political pressure on accounting standard setting is going to disappear. This pressure must be quashed whenever it arises, and in our view, bank regulators should not have any significant power over GAAP.

The most direct way that GAAP requirements might create systemic risk is by reducing banks’ regulatory capital ratios below the required levels during difficult economic times, leading to aggregate deleveraging of the banking system and driving down financial asset prices. If banks’ regulatory capital were the only concern, however, then the natural approaches to deal with it would be to modify either required regulatory capital ratios (e.g., make them higher in good economic times and lower in bad economic times) or the regulatory accounting principles (RAP), upon which those ratios are calculated. (Note: we are skeptical of regulatory forbearance in bad economic times, as discussed below.) Intervening in the GAAP that governs financial reporting is not the solution.

The main impediment to these natural approaches is the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA), which includes various provisions that restrict bank regulators’ ability to exercise regulatory forbearance. These provisions were included in FDICIA for the very good reason that forbearance exercised by bank regulators during the 1970s

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and 1980s delayed, and thereby significantly exacerbated, the costs of the resolution of the thrift crisis.

In particular, Section 121 of FDICIA requires that RAP be “consistent with generally accepted accounting principles...[unless bank regulators determine that] the application of any generally accepted accounting principle to any insured depository institution is inconsistent with the objectives described in paragraph (1), [in which case they] may...prescribe an accounting principle...which is *no less stringent* than generally accepted accounting principles” (emphasis added). Representative Perlmutter’s proposed amendment would have *de facto* repealed Section 121 of FDICIA and allowed bank regulators to exercise regulatory forbearance opaquely by making GAAP less stringent.

### **The Issues**

Representative Perlmutter’s proposed amendment and other political pressures on GAAP invariably would create considerably larger problems than the one they purport to address. The comparative advantages of GAAP and financial reporting are to promote transparency and a well-informed investing public through financial reports that are informative and no more complex than necessary. Transparency plays an essential role in the functioning of financial and other markets, but one that is distinct from the safety-and-soundness role of bank regulation. If potential investors in risky firms and assets do not feel they have transparent information, then they will view those firms and assets with fear and loathing, thus creating illiquid financial markets and exacerbating systemic risk. These problems will exist and weigh on the economy in many ways every day, not just with respect to systemic risk during financial crises.

These political pressures would instead use GAAP for purposes to which it is not suited -- to require banks to build up capital during robust economic times and to allow bank regulators to exercise regulatory forbearance during poor economic times. GAAP’s potential use to allow the exercise of regulatory forbearance is particularly worrisome. Regulatory forbearance has pernicious effects on banks’ incentives -- if banks know it will occur, they will take on more systemic risk *ex ante* -- and so it should be exercised rarely, if at all, and only with extreme caution. When exercised, regulatory forbearance should be implemented in ways that are best understood and most controllable by bank regulators -- through modification of regulatory capital requirements and/or RAP. Regulatory forbearance should also be implemented transparently, because bank regulators are not immune from incentive problems. Giving bank regulators the power to cloak their failures through nontransparent financial reporting is a recipe for faulty bank regulation.

Moreover, bank regulators exhibit very little understanding of accounting. Accounting standard setting is a difficult process that requires broad and deep understanding of accounting standards. These standards are individually complex, collectively intertwined, and involve subtle interpretation in practice. This is particularly true for the highly technical standards that govern the accounting for financial instruments and transactions and that most significantly affect banks. Given these difficulties, the Financial Accounting Standards Board (FASB) occasionally makes poor decisions in retrospect. In its defense, the FASB has also exhibited a remarkable willingness and ability to accept criticism, to address its mistakes quickly, and to write standards that increase overall transparency over time.

It is impossible to believe that bank regulators would perform nearly so well as caretakers of GAAP. Even in their own areas of expertise, bank regulators have often acted sluggishly. For example, officials let the thrift crisis fester from the mid-1970s, when interest rates rose, until the early 1990s. Bank regulators' failure to appreciate the risks of increasingly undisciplined credit extension and highly leveraged investment and consumption throughout the global financial system over a long period played a crucial role in the recent financial crisis.

If politicians want to allow bank regulators to exercise regulatory forbearance, they should sponsor a bill amending Section 121 and other provisions of FDICIA so that bank regulators can modify RAP, not mess with GAAP.

### **Recommendation**

Bank regulators and politicians must not be allowed to meddle in GAAP and financial reporting in their pursuit of more effective bank regulations.

## Chapter 21\*

### Banks' Loan Loss Reserving

#### Background

Banks currently have to reserve for loan losses, under both U.S. and international generally accepted accounting principles (GAAP), using the “incurred loss model.” Under this model, banks accrue allowances (reductions of net loans outstanding) and provisions (expenses) for loan losses only when those losses: (1) are inherent in banks’ existing loan portfolios; and (2) are both “probable” and “capable of reasonable estimation” based on available information. As a proxy for the unobservable losses inherent in banks’ loan portfolios, certain accounting guidance provided largely by bank regulators allows banks to accrue only for loan losses expected to be realized (through loan charge-offs) over a relatively short horizon (such as a year), even when the remaining life of loans is considerably longer than that.

Various parties -- notably the Financial Stability Forum, in an April 2009 report, and the U.S. Treasury, in its June 2009 proposals to reform the financial system -- have argued that the incurred loss model yields loan loss allowances in good economic times that are too low to absorb loan losses when the economic cycle turns, as it inevitably does, thereby exacerbating the cyclicity of the financial system. These parties often suggest replacing the incurred loss model with “dynamic” loan loss reserving -- in which banks accrue for loan losses based on long-run or “through the cycle” default probabilities and expected losses given default, even when the expected time until the cycle turns is beyond the remaining life of the loans. Dynamic loss reserving is intended to induce banks to build up more capital in good economic times so that they are better able to weather periods of economic weakness.

“Expected” loss reserving constitutes a middle ground between the incurred loss model and dynamic loss reserving. Under this approach, banks reserve for loan losses expected to occur over the remaining life of their existing loans. That is, this approach eliminates the probable and capable of reasonable estimation thresholds to accrual of loan losses, as well as the use of a horizon shorter than the remaining life of the loans. Expected loss reserving is similar to the incurred loss model for banks with loans whose remaining life is shorter than the time to the expected turn of the business cycle, and is similar to dynamic loss reserving for banks with loans whose remaining life is longer than the time to the expected business cycle turn. Expected loss reserving is currently under consideration by the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB).

#### The Issues

There are two primary issues: First, should the incurred loss model in GAAP be replaced by either dynamic or expected loss reserving approaches? Second, should GAAP loan loss reserving be tilted to induce banks to build up sufficient capital in good economic times in order to prepare better for the inevitable economic downturns?

We believe that the incurred loss model yields artificially low loss accruals for loans with longer remaining lives than the horizon over which realized losses are considered, and therefore

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should be replaced by an expected loss approach. The same is true for heterogeneous loans for which it is difficult to meet the probable and capable of reasonable estimation thresholds for accounting recognition. Moreover, the expected loss approach is consistent with economic valuation and with the fair value accounting used for some other financial instruments.

The proposal for dynamic loss reserving should be rejected because it is completely at odds with accounting concepts -- which never accrue for firms' general business risks unrelated to existing exposures -- as well as with the accounting for banks' other financial instruments. The effective maturity of most loans is shorter than the highly uncertain period of the business cycle, and so dynamic loss reserving obscures actual credit loss experience and yields artificially smooth earnings.

Dynamic loss reserving is an indirect means to the goal of banks' bolstering capital reserves in good economic times. While that appears to be a worthy goal, it should be addressed head on by requiring higher capital ratios when the economy is robust or through regulatory accounting principles, not by compromising the consistency of GAAP and the transparency of financial reports based on GAAP.

### **Recommendation**

The incurred loss model should be replaced with an expected loss approach because it is more consistent with economic valuation and with the fair value accounting used for other financial instruments. The proposal for dynamic loss reserving is unsuitable, as it is completely at odds with established accounting concepts. Encouraging banks to build up capital during periods of economic strength is a laudable goal, but it must not be accomplished by compromising the consistency of GAAP.

## Chapter 22\*

### Market Illiquidity and Fair Value Measurement

#### Background

In terms of the measurement basis for banks' financial instruments, we believe that fair value is preferable to amortized cost, even when the relevant markets are illiquid and systemic risk is a concern.<sup>†</sup> Amortized cost accounting suppresses the timely reporting of some or all unrealized gains and losses. It thereby reduces firms' need and/or incentives for voluntary disclosure, for the simple reason that there is little or nothing for firms to explain about amortized costs. This suppression of information prolongs price and resource-allocation adjustment processes; the efficiency of these processes is always important, but it is absolutely critical in working through economic crises. We also argue that market illiquidity raises practical problems for estimating fair values that those who set accounting standard should address through expanded disclosures about firms' use of internal models and unobservable inputs to estimate fair value, and about the portion of unrealized fair value gains and losses that result from market illiquidity. In April 2009, the Financial Accounting Standards Board (FASB) required some additional disclosures along these lines.

Financial Accounting Standards (FAS) 157 defines fair value as exit value -- the value a firm would receive from selling an asset or would pay to retire a liability in an orderly transaction at the measurement date. FASB Staff Position (FSP) FAS 157-3 requires the measurement of exit value for an illiquid financial instrument to incorporate a discount rate premium for illiquidity to the limited extent that the terms of trade of hypothetical orderly transactions in the instruments would incorporate such a premium. Intuitively, exit value incorporates discount rate premia for illiquidity only to the extent that market illiquidity enables willing buyers to demand and receive better terms from willing sellers.

As a consequence of this limited incorporation of discount rate premia, the exit value of an illiquid financial asset occupies a hypothetical middle ground between what a firm will receive if it must or chooses to sell the asset (i.e., a fire-sale value) and the value a firm will receive if it holds the asset through the recovery of market illiquidity or maturity, whichever comes first. (We refer to this value as "fulfillment value" and to this holding period as the "liquidity horizon".) This hypothetical middle ground does not correspond either to the transactions that actually occur in currently illiquid financial instruments, whether through immediate fire sales or through orderly transactions at the liquidity horizon. It also does not capture the fact that transactions will not occur when the relevant markets are so illiquid that buyers and sellers cannot agree upon terms of trade.

Many parties have criticized exit value accounting as requiring firms to mark illiquid assets down to fire-sale prices. This criticism reflects an incorrect interpretation of FAS 157 and FSP

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<sup>†</sup> "Fair Value Accounting: Policy Issues Raised by the Credit Crunch," Stephen Ryan, Chapter 9 of *Restoring Financial Stability: How to Repair a Failed System*, Viral V. Acharya and Matthew Richardson editors, John Wiley & Sons, Hoboken, N.J., 2009. The executive summary of this Stern White Paper is available online at <http://whitepapers.stern.nyu.edu/summaries/ch09.html>

FAS 157-3, as already noted. This criticism may accurately reflect auditors' incentives to pressure reporting firms to rely on observable transaction prices, even when those transactions are partly or wholly forced, however.

Some have correctly criticized exit value accounting as requiring firms to mark illiquid financial instruments to a value below fulfillment value, even when they have the ability and intent to hold the instruments through the liquidity horizon. These parties typically suggest that firms with this ability and intent should record the financial instruments at fulfillment value or, more reasonably, at a weighted-average of fulfillment value and fire-sale value, with the weights reflecting the probability that the firm holds the instruments through the liquidity horizon versus sells them before then. We refer to this weighted-average valuation as discounted cash flows.

## **The Issues**

There are two key issues: determining the preferable measurement basis for illiquid financial instruments for the purpose of accounting recognition – exit value or discounted cash flows; and whether firms should be required to disclose the differences between exit value and discounted cash flows for their illiquid financial instruments.

Resolving the first issue requires accounting standard setters to make trade-offs, because the two alternative measurement bases for financial instruments exhibit different strengths and weaknesses when the relevant markets are illiquid. These trade-offs exist because illiquidity risk pertains to breakdowns in market functioning. Unlike the realizations of other (e.g., interest rate, prepayment and credit) risks in liquid markets, the realization of market illiquidity makes a firm's intent and ability to hold a financial instrument through the liquidity horizon economically significant, because the firm cannot sell a financial instrument and acquire an identical instrument without sizable cost. In other words, the opportunity cost to a firm of holding a financial instrument through a realization of market illiquidity depends on whether the firm is willing and able to hold the instrument through the liquidity horizon.

Exit value has three related main strengths compared with the discounted cash flows measurement. First, in principle at least, the use of exit value yields identical valuations for identical financial instruments held by different firms; that is, it is more a market-specific and less a firm-specific measure than is discounted cash flows. Second, exit value does not incorporate firms' unobservable and changeable abilities and intents, and so it is a more verifiable measure. Third, by incorporating some discount rate premium for illiquid financial instruments, exit value diminishes banks' incentive to acquire illiquid instruments instead of otherwise similar liquid instruments compared with a discounted cash flow measure that incorporates a sufficiently high probability of holding the instrument through the liquidity horizon. The main weakness of exit value is that it does not reflect the economic significance of the firm's intent and ability to hold a financial instrument through the liquidity horizon. Discounted cash flows has the opposite strengths and weaknesses of exit value.

Valid arguments can be made on both sides as to whether exit value is preferable to discounted cash flows for the purposes of accounting recognition for illiquid financial instruments. Some favor exit value because of its superior comparability across firms, verifiability, and incentive properties regarding the acquisition of illiquid financial instruments. Others prefer discounted cash flows because of its greater relevance for firms with the ability and

intent to hold financial instruments through the liquidity horizon and because it provides management with the flexibility to signal that intent and possibly other private information. In either case, both measurements are preferable to amortized cost.

The difference between exit value and discounted cash flows is critical information that should be disclosed, regardless of whether the exit value or discounted cash flows method is used. This difference would be of particular relevance to bank regulators in evaluating whether a bank holding illiquid financial instruments likely will be solvent as of the cessation of market illiquidity.

### **Recommendation**

Although reasonable arguments can be made to support the use of either exit value or discounted cash flows, both measurements are superior to amortized cost, which suppresses the timely reporting of some or all unrealized gains and losses. Accounting standards setters will need to make trade-offs, as the two alternative measurement bases offer different strengths and weaknesses when the relevant markets are illiquid. Moreover, firms should be required to provide full disclosure of the difference between exit value and discounted cash flows for their illiquid financial instruments, as this information is relevant to bank regulators.

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<sup>i</sup> Braunstein and Welch (2002), Federal Reserve Bulletin, 2002.

<sup>ii</sup> Senate Committee on Banking, Housing, and Urban Affairs, Chairman Christopher Dodd (D-CT), “Summary: Restoring American Financial Stability – Discussion Draft,” November 10, 2009.

<sup>iii</sup> <http://www.ftc.gov/bcp/bcpfp.shtm>, December 3, 2009.