Initiative on
Business and Public Policy
at BROOKINGS

FIXING FINANCE SERIES 2009-01

Fixing Finance: A Roadmap for Reform

Robert E. Litan and Martin N. Baily

Initiative on
Business and Public Policy
at BROOKINGS

Fixing Finance: A Roadmap for Reform

Robert E. Litan and Martin N. Baily

February 17, 2009

The Initiative on Business and Public Policy provides analytical research and constructive recommendations on public policy issues affecting the business sector in the United States and around the world.

CONTENTS

FROM THE AUTHORS

The authors are grateful for the comments of Doug Elliott, Charles Schultze and Alice Rivlin, and to Adriane Fresh and Matthew Johnson for excellent research assistance.

EXECUTIVE SUMMARY

The Obama Administration has announced that fixing the nation's financial system is one of its highest initial priorities and will shortly release a plan to do that. In this essay, we attempt to provide our own version of a roadmap for reform.

We believe that the central challenge confronting policy makers now is to establish a new regulatory framework that will do a far better job preventing financial abuses and their consequences without chilling innovation and prudent risk-taking that are essential for growth in any economy.

To accomplish that end will require a major restructuring and strengthening of the two pillars upon which an efficient and safe financial system must rest: *market discipline* and *sound regulation*. It would be a mistake, in our view, to conclude that because both these pillars failed to prevent the current crisis that either one should be jettisoned. Neither pillar alone can do the job. There is no alternative, we need both pillars, but both need to work much better in the future.

The United States has a history of enacting major legislation and adopting new rules in response to crises, and this time will be no exception. The critical challenge is to ensure that reforms remedy the flaws in the current framework; that they are sufficiently flexible to adapt to changing circumstances and to head off future, avoidable crises, and, all the while, that they do not amount to overkill, by chilling the innovation and prudent risk-taking on which continued economic growth very much depends. These objectives will most likely be met if policymakers have a suitable roadmap for guiding their reforms. We suggest the following:

1. Multiple measures should be adopted to improve transparency and increase the incentive for prudent behavior throughout the mortgage process.

2. A special set of prudential rules should govern the regulation of systemically important financial institutions (SIFIs), or those whose failure could have systemic consequences, and thus trigger federal rescues.

3. A prudential regulator should require all SIFIs to fund some portion of their assets with long-term, subordinated debt. Such debt might also be convertible to equity in the event the institution's capital-to-asset ratio falls below a certain level.

4. Regulators should encourage the formation of clearinghouses for derivatives contracts, starting with credit default swaps, and empower an overseer.

5. Financial reforms should be written broadly enough, and with enough discretion for regulators, so that policy makers can better anticipate future financial crises, however they might arise.

6. The financial regulatory agencies should be reorganized, so that they have jurisdiction by function or objective (solvency and consumer protection) rather than by type of charter of the regulated financial institution.

7. In the short to intermediate run, the housing GSEs — Fannie Mae, Freddie Mac, and the Federal Home Loan Bank System — should be regulated as public utility "SIFIs" (after recapitalization with public funds) or directly operated as government agencies.

8. While U.S. financial policy makers must support international cooperation on financial regulation they should not wait for international agreement before taking necessary steps to improve our own system.

Section I. Introduction

The financial crisis that began in 2007 has triggered a deep and troubling recession that has become a searing experience for Americans and everyone in the global economy. Trillions of dollars of wealth — in stocks, housing values, and in assets held by a wide range of financial institutions — have disappeared.[1] Employment has been falling since December 2007, the official start-date of the recession, and the number of payroll jobs has fallen by 3.6 million through January 2009 and seems likely to fall much more before the economy turns. Unemployment increased to 7.6 percent in January and threatens to move over 10 percent. The unemployment rate will not start down again until GDP grows faster than about 2.5 percent a year. Even with the record-setting fiscal stimulus that Congress is likely to approve shortly and continuing purchases of mortgage and other securities by the Federal Reserve to enhance liquidity, the economy is unlikely to grow at that pace until later this year, or more likely, some time in 2010. By that point, the recession will have been the longest, and perhaps the deepest when measured from peak to trough, in the 63 years since the end of World War II.

Behind these statistics lie millions of human beings: those who have lost or will lose their jobs, their homes, their health insurance, and in many cases their dignity and hope. Millions more nervously worry about their own economic futures, and those of their children.

All of this is shocking in its own right, but even more so because of its suddenness. Only a few short years ago (which now seems an eternity), policy makers and much of the economics profession were celebrating the "Great Moderation" — the roughly 25 years of reasonably steady growth without high or accelerating inflation that followed the Fed's successful anti-inflationary drive of the early 1980's. To be sure, there were scary bumps in the road, but each time a crisis threatened (the stock market crash of October 1987 and the Asian/Russian financial crises of 1997-98) or a shallow recession intervened (1991-92 and 2000-01), the Fed was able to prevent the worst by loosening monetary policy, giving rise to what commonly became known as the "Greenspan put." The economy was also able to weather the savings and loan and banking crises of the 1980s and early 1990s, as policymakers eventually closed failed institutions (or merged them with healthier partners) and strengthened market discipline by imposing capital standards on depository institutions and enforcing a new system of "prompt corrective action" (PCA) that imposed progressively stiff sanctions on institutions that failed to meet these standards. Even after the Internet stock bubble burst in April 2000, and the financial scandals of the late 1990s and earlier this decade surfaced — Enron, WorldCom, Tyco and others — the economy and the equities market both rebounded.

But then a harsh reality intervened. In 2006, the now all-too-obvious bubble in housing prices began to burst, and the Great Moderation started to unravel. At first, the damage seemed to be limited to the securities backed by "subprime mortgages," but as the losses from these complex instruments cascaded throughout the global financial system, other weaknesses have surfaced. Like dominoes falling on a card table, other segments of the financial system — securities backed by other types of assets (commercial mortgages, auto loans and credit cards), corporate and municipal bonds, and equities — began to buckle. And so did many financial institutions that had invested in (and assembled

1. For example, after rising by $19 trillion from 2000 to 2007, U.S. household net worth has fallen by $12.6 trillion from its peak in 2007 through the fourth quarter of 2008. Data from the Federal Reserve flow of funds accounts and the McKinsey Global Institute.

and issued) these securities. Once household names in finance — Merrill Lynch, Washington Mutual, AIG, Bear Stearns, Lehman Brothers, Wachovia, Fannie Mae and Freddie Mac — disappeared, were propped up by the government, or forced to merge with other institutions, at a stunning rate.

We knew all along how interconnected our modern financial system was and remains — among and between the institutions and markets in this country, and those of other countries. But this crisis has also powerfully demonstrated the fragility of finance: how the trust on which it depends can evaporate in short order, especially for institutions that are highly leveraged and thus highly susceptible to insolvency when asset losses start to mount. At the height of the financial boom, investors seeking high returns seemed willing almost to ignore the risks of loss or default in the assets they were buying — the risk premium fell well below its normal historical level. The implosion of asset values in equities and real estate markets since then reflects a loss of trust, as investors flee to "safe assets" — Treasury bonds and their equivalents, insured depository institution accounts barely paying any interest — rather than hold their wealth in financial instruments issued by private companies or in residential or commercial real properties. Clearly, the pendulum has swung back and the risk premium is now very high. The extraordinary Bernard Madoff scandal that surfaced as 2008 came to a close seemed an apt symbol of the times: even wealthy, and some sophisticated investors and money managers can be duped, along with the regulators who were supposed to be watching. "Who can we trust?" is a question that many even not-so-wealthy investors must now be asking.

It is not only individuals who have lost faith in finance. Banks around the world lost trust in other banks and so the market in interbank lending nearly collapsed this past fall, until it was rescued through capital injections in banks under the Troubled Asset Repurchase Program (TARP) and continued lending and asset purchases by the Federal Reserve.

All eyes are now turned on Washington and to the new Administration of President Obama. The immediate economic challenge is to revive the banks so that normal lending can resume and to stem the freefall of the real economy of jobs and production. But there is also the longer-term challenge of reforming the supervision and regulation of the financial sector in order to reduce the chances of another financial crisis in the future. This crisis has been a sobering experience. No one wants to return to business as usual after the immediate crisis is over.

The Obama Administration has announced that fixing the nation's financial system is one of its highest initial priorities and will shortly release a plan to do that. The Administration's plan will follow a steady stream of prior work and reports:

- The chairmen of the two Congressional committees through which new reform legislation must pass — the Senate Banking Committee and the House Financial Services Committee — have been working on financial reform since well before the election.

- The Bush Treasury Department anticipated the need for comprehensive financial reform legislation when it issued a *Blueprint for a Stronger Regulatory Structure* in March, 2008 (The main aim of that report, however, was to help restore the competitiveness of the U.S. financial system relative to those of other countries, whereas the consensus objective of reform efforts now is to assure the safety and soundness of the system).

- More recently, both the Group of Thirty (an influential group of financial experts co-chaired by Paul Volcker) and the Congressional Oversight Panel (created in October 2008 to oversee the Troubled Asset Repurchase Program, or "TARP") have issued sweeping reports outlining ways to fix the financial system.[2]

2. Group of Thirty, "The Structure of Financial Supervision: Approaches and Challenges in a Global Marketplace" (Washington D.C., 2008) and "Financial Reform: A Framework for Financial Stability" (Washington D.C., Jan 2009); and Congressional Oversight Panel, "Special Report on Regulatory Reform" (Washington, D.C., Jan 2009).

As the new Administration and the Congress go about their work this year, the whole world will be watching. In mid-November, the United States joined with other country members of the G-20 to announce a global effort to revise the architecture for our increasingly global financial system. U.S. policy makers seemed intent on having at least the broad outlines of a reform package to present at the follow-up to that meeting, scheduled for April 2, 2009 in London.

In this essay, we attempt to provide our own version of a roadmap for reform. We will not to pretend to cover every issue that legislators and regulators are likely to address, although we believe we spotted most of the main ones. In doing so, we build on (and in some cases repeat) the preliminary ideas outlined in *The Great Squeeze*[3] released in May, 2008, and in *A Brief Guide to Fixing Finance*[4], released in September 2008.

As we discussed in *The Origins of the Financial Crisis*, we are in this mess today for multiple reasons. Private and public actors held the mistaken belief that residential real estate prices would continue rising, especially at a faster pace than the growth in the economy. Financial institutions, their executives and shareholders, exploited crevices in the financial regulatory system without regard to the cumulative damage they would eventually cause to the financial system. Regulators failed to police this activity, while both lawmakers and regulators failed to adapt financial rules to prevent the untoward side-effects of rapid and increasingly complex financial innovations in mortgage markets specifically and financial markets more generally.

The central challenge confronting policy makers now is to establish a new regulatory framework that will do a far better job preventing financial abuses and their consequences without chilling innovation and prudent risk-taking that are essential for growth in any economy. To accomplish that end will require a major restructuring and strengthening of the two pillars upon which an efficient and safe financial system must rest: *market discipline* and *sound regulation*. It would be a mistake, in our view, to conclude that because both these pillars failed to prevent the current crisis that either one should be jettisoned. Neither pillar alone can do the job. There is no alternative, we need both pillars, but both need to work much better in the future.

In brief, here, we believe, is how:

1. Multiple measures should be adopted to **improve transparency and increase the incentive for prudent behavior throughout the mortgage process:** at loan origination (especially for mortgage borrowers), by mortgage originators and securitizers, and by credit rating agencies. Mortgage securitizers should be required to retain some of the risk of the mortgages they package and distribute as securities. They would then have an incentive to ensure that mortgage holders can actually make their monthly payments. Federal standards should apply to all mortgage originations by all financial institutions, whether regulated at the federal or state level. This would prevent mortgage brokers from creating misleading products that borrowers do not understand and cannot service. And credit rating agencies should be held to new methods of reporting that should make them more accountable to the marketplace.

2. A special set of prudential rules should govern the **regulation of systemically important financial institutions (SIFIs)**, or those whose failure could have systemic consequences, and thus trigger federal rescues. These rules should take account of the differences in the types of institutions and should include higher capital and liquidity requirements, and a system of ear-

3. The Great Credit squeeze was co-authored with our former Brookings colleague, and now Congressional Budget Office Director, Douglas Elmendorf. It is available at http://www.brookings.edu/~/media/Files/rc/papers/2008/0516_credit_squeeze/0516_credit_squeeze.pdf
4. Available at http://www.brookings.edu/~/media/Files/rc/papers/ 2008/0922_fixing_finance_baily_litan/ 0922_fixing_finance_baily_litan.pdf

ly, prompt resolution in lieu of traditional bankruptcy (which should significantly reduce, but entirely eliminate, the need for future federally financed rescues). In addition, all financial regulators, but especially the regulator charged with oversight of SIFIs, should be required to provide an annual report to Congress on the risks to the financial system posed by the institutions subject to their purview. We do not support reforms that would require federal agencies to screen financial innovations in advance; a far better approach, the one we generally take with other new products in our economy, is to monitor closely the impact of innovations after they are introduced into the marketplace, and if harms are occurring, regulate them in a cost-effective manner at that point.

3. To harness stable, market discipline, **the prudential regulator (discussed shortly) should require all SIFIs to fund some portion of their assets with long-term, subordinated debt. Such debt might also be convertible to equity** in the event the institution's capital-to-asset ratio falls below a certain level. Capital standards should be made counter-cyclical by requiring a higher capital cushion in "good times" and allowing lower capital ratios in bad times. After all, if a bank takes losses on its asset portfolio and its capital declines as a result, this means the capital cushion is doing exactly what it is designed for.

4. Regulators should encourage the formation of clearinghouses for derivatives contracts, starting with credit default swaps. At the same time, Congress should authorize an overseer of derivatives markets **to impose minimum capital and liquidity standards for such clearinghouses, while also setting minimum capital and collateral requirements for SIFIs that are counterparties to non-standardized derivatives contracts** that are not likely to be handled by clearinghouses.

5. Financial reforms should be written broadly enough, and with enough discretion for regulators, so that policy makers **can better anticipate future financial crises, however they might arise.** In this connection, bank regulators in particular can encourage, through their annual "CAMEL ratings," banks to use compensation systems that reward long-term performance rather than potentially misleading and risky short-run results. Regulators also should insist that financial institutions verify that their compensation practices are consistent with their internal risk management systems.

6. **The financial regulatory agencies should be reorganized,** so that they have jurisdiction by function or objective (solvency and consumer protection) rather than by type of charter of the regulated financial institution. This should improve financial regulation and eliminate jurisdictional overlaps. If a single solvency or prudential regulator is created for all financial institutions, it should set and enforce the special regulatory regime for SIFIs. The identification of SIFIs could be handled by the Federal Reserve, the solvency regulator, or both jointly. However, financial regulation can be made significantly more effective if the other measures recommended here are implemented, even if the current financial regulatory structure is not reorganized.

7. **In the short to intermediate run, the housing GSEs — Fannie Mae, Freddie Mac, and the Federal Home Loan Bank System — should be regulated as public utility "SIFIs" (after recapitalization with public funds) or directly operated as government agencies.** Any such plan should have an automatic sunset, perhaps after 5 or 10 years, with an orderly liquidation procedure implemented thereafter unless Congress specifically provides for some other outcome. Further, policy should promote affordable home ownership hereafter in a much more transparent fashion, through on-budget matching subsidies to assist homeowners in making down payments.

8. U.S. financial policy makers must support international cooperation on financial regulation.

> Most large financial institutions operate globally and there must be a mechanism for exchange of information and ideas among global regulators. In addition, there should be efforts to keep the playing field level for global competitors and to limit the ability of regulatory havens, such as the Cayman Islands, to undermine U.S. and global regulation. Given that the US originated this global crisis, however, we must get our own house in order. **U.S. policy makers should not wait for international agreement before taking necessary steps to improve our own system.**

We recognize that other proposals for fixing finance beyond those mentioned or considered here will continue to emerge and be debated by the Congress in the coming weeks and months. We will either update this essay or provide additional commentary on this website on some or all of these ideas as the situation warrants.

Section II: Addressing Threshold Issues

Before outlining a roadmap for reform, it is useful — indeed essential — to step back and address several fundamental or threshold questions.

1. What is the rationale for additional legislation/regulation? Private markets learn from crises and move to self-correct — is this enough?

2. If new legislation or regulation is warranted, what are the key failures that government should now correct?

What Is The Rationale For Additional Legislation/Regulation?

Markets are powerful institutions. Without the hand of the state, they provide powerful incentives for individuals and firms to act in their own interest, and in the process to serve society's interest. This can be true even when markets "fail" — that is, when for any number of reasons, private actors lack sufficient information to make appropriate decisions, or because the costs of their actions are not fully reflected in the prices of the goods and services they buy. Although the impulse for policy makers after a crisis "to do something" is a powerful one, government policies can easily over-react and stifle change and innovation. The political power of interest groups can result in regulation that protects incumbents rather than encouraging competition. Moreover, markets are self-correcting; people and firms learn from their mistakes. Not every calamity, therefore, necessarily merits a legislative or regulatory response and it is important to be clear on where the market failures occurred and where policymakers can actually improve the outcome.

The market reaction to the financial crisis has been swift and decisive, halting or trimming many of the activities that led up to or aggravated it. No longer is it possible, for example, for individuals with less-than-prime credit to buy a house with no or little money down, or with mortgages carrying ridiculously low "teaser rates" (only to reset two or three years later at much higher, and potentially unaffordable, interest rates). Lenders acting in their self-interest won't make such loans. Likewise, credit rating agencies will not rate nor will investors buy the complex "collateralized debt obligations" (CDOs) that were constructed to provide financing for subprime mortgages and other kinds of credit. No longer can investment banks borrow 30 or more dollars for every one dollar of shareholders' capital to gamble on risky investments; indeed, the formerly independent investment banks themselves are "no longer," having been turned by their managers and shareholders into bank holding companies in order to attract deposits, thus having a more stable source of funding.

And no longer will the market permit commercial banks to leverage themselves beyond what would be permitted by prevailing capital rules by forming off-balance sheet entities such as "Structured Investment Vehicles" (SIVs) to hold the now toxic mortgage securities that the banks had once profited by forming and then selling to investors. Indeed, one major reason the largest banks have suffered such large losses is that after investors stopped funding the SIVs, the banks felt compelled to assume their liabilities in order to preserve their reputations and relationships with their customers.

An important point also is that many of the needed policy changes do not require additional legislation but can be accomplished under existing rules. Regulators have acted swiftly to prevent repetitions of at least some of the behaviors that created or worsened the crisis. The Federal Reserve Board has strengthened its rules governing mortgage loans that put borrowers — and ultimately their lenders — at too much risk (among other things, by requiring lenders to verify borrowers' income and assets and by requiring borrowers to qualify for loans at higher, adjusted mortgage interest rates rather than at low, initial teaser rates). Of particular importance, the Board has lowered the interest rate threshold for high-cost (typically subprime) loans at which the various restrictions on mortgage design under the Homeowners Equity Protection Act (HOEPA) apply.[5]

Furthermore, it is easy to forget in the midst of new and even more shocking revelations of financial fraud and misconduct, that there are already laws against these kinds of misbehavior — ones our law enforcement officials are charged with upholding. Already, numerous investigations by federal and state authorities have been mounted against mortgage fraud, which appears to be common among subprime mortgage loans that have become delinquent.[6] At this writing, a thorough housecleaning of the SEC is under way due to the Commission's failure to stop the Madoff ponzi scheme long ago, when the agency clearly had the chances and warnings to do so.[7] To be sure, prosecutions inevitably chase horses after they have left the barn. But criminal prosecutions and the various meritorious civil lawsuits that have been filed or are likely to be launched — against predatory lenders, and those who failed to disclose material facts about mortgage securities and other exotic financial products — are also essential to deter future abuses and wrongdoing (though in light of past experience obviously not sufficient).

Despite these important caveats, we believe there are several reasons why *additional* laws and rules are needed.

First, memories in financial and credit markets can be short, especially as new participants come into the field while others leave. Strengthening existing rules, and filling in gaps, can thus help prevent future generations of financial and real estate market participants from engaging in the kinds of speculation and abuse that led to the current difficulties, as well as prevent others from being victims of such activities. In addition, although prosecutions and civil lawsuits may punish wrongdoers, well-crafted government requirements that are also well enforced can ensure that market participants are better protected long after the current round of litigation and publicity about it passes.

Second, as we discuss later in more detail, existing laws or regulations do not cover all abuses or problems that have contributed to the crisis. In particular, bank capital standards for our largest banks have proven inadequate, by themselves, to provide sufficient market discipline to encourage prudent risk-taking by those institutions. The regulatory framework governing credit rating agencies obviously has failed to encourage appropriate risk ratings. The credit default swap market, even after clearinghouses are established, is still not adequately regulated. More broadly, financial regulators lack sufficient Congressional direction to anticipate and ideally prevent new problems from surfacing and causing future financial crises.

Third, although market and regulatory reactions to the current crisis are helpful, each can over-react, thereby extending the pain of the aftermath and slowing recovery. One reason that investors have run to safety and avoided securities with any risk is

5. HOEPA is the main federal statute aimed at controlling what has widely come known as "predatory lending" — or, roughly, lending that takes advantage of the lack of financial sophistication of certain borrowers. HOEPA gives the Federal Reserve Board the authority to limit the terms on "high-cost" mortgages, in particular, on the theory that these are most likely to fall into the predatory category. Previously, the Fed defined a mortgage loan as "high cost" under HOEPA only if it had an annual percentage rate (APR) more than 8 percentage points above the yield on Treasury securities of comparable maturity and fees exceeding 8 percent of the loan amount, or $400 (adjusted for inflation since 1994). Effective in early 2008, the Board lowered the HOEPA high-cost threshold to 3 and 5 percentages points above the comparable Treasury rate for first and second mortgages, respectively. For other changes to the Board's mortgage rules, as well as a summary of the rules that already were place, see *The Great Credit Squeeze*, pp. 102-115.

6. Adam B. Ashcraft and Til Schuermann, "The Seven Deadly Frictions of Subprime Mortgage Credit Securitization," *The Investment Professional*, Fall 2008, pp. 2-11.

7. See Kara Scanell, "Madoff Chasers Dug for Years, to No Avail," *The Wall Street Journal*, January 5, 2009, p. C1. For one striking example of how the SEC was warned for over nine years about Madoff's unlawful conduct, see Michael Lewis and David Einhorn, "The End of the Financial World as We Know It," *The New York Times*, January 3, 2009.

that, apart from the poor macroeconomic environment that increases the risk of non-payment, market participants also lack confidence in the wake of the crisis in the rules governing mortgage and other credit markets. Banks, in particular, are currently getting mixed signals from government authorities that may be reducing the availability of credit when it is in great demand. Thus, even as the Treasury Department has injected government funds into banks to shore up their capital to enable them to maintain or expand lending, federal banking supervisors are both intensifying their review of bank lending to discourage imprudence and requiring banks to maintain more capital than is minimally required so that they have sufficient cushions against further losses they might suffer on their assets (loans and securities). At least in principle, if policy makers can put more appropriate rules in place to govern financial institutions and credit markets, they may not only shorten the recession, but also increase the odds that lending will resume in a more prudent fashion than otherwise would be the case, when macroeconomic conditions improve.

Finally, as several of the previous points imply, the financial crisis has shattered the trust that borrowers and investors had placed in financial institutions and markets, and which is vital for any financial system to efficiently mobilize savings and channel it to its best uses. Left to their devices, markets eventually will restore trust, but that self-correcting process could take a very long time. Through appropriate legislation and rulemaking, policy makers have the chance to accelerate this process. The creation of the FDIC and the SEC during the Depression, for example, enhanced Americans' confidence in banks and securities markets, not just during those years, but throughout the post-War period. Likewise, tougher capital standards for banks and savings institutions put in place after the rash of failures in the 1980s helped restore confidence in the nation's depository institutions.

But one cannot expect confidence-enhancing institutions and policies to work forever in the same way. The economy and our financial system are not static. They continue to evolve, driven by financial and technological innovations, demographic and cultural changes. And as these changes occur, so do new opportunities arise for abuses and misconduct which, if not stopped, would undermine peoples' confidence and trust in financial institutions and markets. Recent examples include the accounting and financial reporting abuses earlier this decade, and of course, the flaws in the financial system that allowed and deepened the current crisis.

The constant challenge for policy makers is thus to design rules of the road that adapt to, and ideally anticipate, these untoward developments. When this does not occur, as recent events clearly illustrate, policy makers must change the policy framework in a way that prevents future abuses without at the same time chilling socially beneficial innovation and risk-taking. That is a tall order.

What Are The Key Failures That Government Should Now Correct?

There are three popular views of what caused the current crisis: a failure of "the market" to prevent abuses and excesses; the failure of regulators to police the market and its participants; and financial innovation more broadly. There is truth behind each of these critiques, but also some misconceptions. It is important for policy makers and the wider public to understand the distinction between the two.

Market Failures

One frequently heard critique in the wake of the current crisis is that because "the market" so clearly failed, financial regulation must be strengthened. As we discuss in the next sub-section, we not dispute the need for regulatory reform and strengthening. At the same time, it is important that reform be done in a way that strengthens the incentives for market participants to exercise appropriate caution. Too many market participants benefitted by taking risks with other people's money. The market incentive pillar needs strengthening as well as the regulatory pillar.

In this connection, it is critical to recognize that financial markets work — allocating scarce funds to their best uses or activities that promise the highest risk-adjusted returns — only when the parties to transactions have money at risk, or "skin in the game." It is a fundamental principle of economics and of human nature that people care a lot more about how their money is used when it is possible they can lose it than when there is no risk of loss. Creditors and stockholders, who can lose money on their investments, therefore have strong reasons to care about the financial performance of the companies that issue these financial instruments. In contrast, large bank depositors with amounts under the federal insurance limit have no reason to care about how prudently (or imprudently) their banks behave,[8] while the FDIC is on the hook for any losses and hence must regulate and supervise banks to assure their financial soundness.

The subprime mortgage crisis can be traced to a considerable degree to the failure to ensure that the parties at each stage of the mortgage process had sufficient skin in the game, or thus an adequate financial incentive to behave prudently or cause others to do so. Consider the following actors and how the rules were not updated to provide them with appropriate incentives to avoid abuses and excessive risks.

Homebuyers

Homebuyers with subprime credit ratings were able to finance their purchases with little or no down payment, with no documentation of their income or assets, and to qualify for loans at low teaser rates rather the higher reset rates. Some subprime borrowers were able to take out "option-adjusted" mortgages that gave them the option to pay back some principle each month if they wanted to; otherwise, they could defer repayment. Lenders extended and borrowers assumed mortgages with these features only on the assumption — eventually proved false —- that continuously rising home prices would allow borrowers to refinance if they couldn't meet the terms of the mortgage.

The ability to buy a home on such generous terms, and then to get out of it and into another mortgage, certainly explains why too many borrowers took on too much debt by buying homes they couldn't afford — especially once housing prices quit rising. Some homebuyers with little financial sophistication also surely were duped by "predatory lenders" into taking on mortgages they could not afford.

Mortgage Lenders

While it is thus quite obvious why borrowers would be so eager to embrace subprime mortgages with such seemingly generous terms and conditions, it is not so readily apparent why lenders also were eager to do so. The ever-rising home price theory provides one explanation, but in our view is not the only answer. The absence of effective market discipline, abetted by misdirected financial innovation, also clearly was an important factor.

As we have noted, the securitization of residential mortgages is one of the more important, socially beneficially financial innovations of our time. Until the past decade, only prime mortgages could be packaged into securities and sold to investors, largely because the two main guarantors of these securities — Fannie Mae and Freddie Mac — restricted their guarantees to securities backed by prime mortgages.

The financial innovation that permitted the securitization of *subprime* mortgages was the collateralized debt obligation (CDO), a much more complex variation of the residential mortgage backed-security (MBS). In brief, the CDO spliced the payments from subprime mortgages and other loans that served as collateral into different "tranches," giving holders of securities in the most senior tranche first claim to the payments, holders of securities in the next most senior tranche second claim, and so on,

8. It is unrealistic and not socially efficient to expect small depositors to monitor their banks' financial health.

down to the "equity" or "residual" tranche, whose holders were the last to be paid and thus the first to bear any losses from delinquencies.[9] The key to the CDOs' success was the assignment by the principal ratings agencies (Fitch, Moody's and Standard & Poor) of a AAA rating to the most senior tranche, since until the subprime crisis emerged in full bloom, investors relied heavily (if not exclusively) on the agencies to do "due diligence" on the credit-worthiness of bonds and other financial assets. Also, because during much of this decade interest rates on government bonds were so low on account of the Federal Reserve's loose monetary policy, investors had especially strong demands for other seemingly safe securities that paid higher interest rates. CDOs, once rated highly by the credit rating agencies, filled the bill.

In sum, with the seal of approval from the ratings agencies, commercial and investment banks began manufacturing and selling CDOs as fast as the subprime mortgages and other credits could be originated. Mortgage lenders and brokers were only too happy to oblige, reaping fees on all the subprime mortgages they could originate, without bearing the risk that the mortgages would default (except during a temporary "put back" period if the borrower violated the mortgage's "representations and warranties"), which was passed on to the securitizer and then ultimately the investors in the securities. This, of course, was a fatal flaw in the originate-to-distribute model of mortgage finance, which gave lenders and brokers with no skin in the game few incentives to monitor the credit-worthiness of borrowers.

Once this mortgage crisis is over, and new rules are developed to make securitization safe again (discussed further below), it is possible that financial institutions will develop much less complex securities, those without the multiple tranches, which are backed by subprime mortgages. Such new securitized instruments would carry higher interest rates, to reflect their higher risks, and would be more transparent. This would be a welcome outcome were it to happen.

The Ratings Agencies

Lenders would not have acted so imprudently, however, had the ratings agencies been more careful. Yet seemingly, the agencies are subjected to market pressure to behave responsibly. After all, don't they care about their reputations if their ratings are mistaken?

Of course, the answer to this question is "yes": the ratings agencies do care about their reputations. But the agencies, like economic forecasters, are reluctant to stray too far from the pack. Each agency may be wrong, but if it has company, it is less likely to be punished in the market than if it is the only one whose rating proves later to be erroneous. This tendency to stick with the others was and continues to be reinforced by the concentration in the industry.

There is an even more important reason, however, why the market failed to discipline the ratings agencies: because the agencies are paid by issuers, the more securities the agencies rated, the more money they made.[10] This inherent conflict of interest would not exist if the agencies were able to charge investors rather than issuers, but the information revolution — the telephone, the fax machine, and now the Internet — has made it impossible for the agencies to prevent others from free riding on any buyers who might purchase their ratings.

9. The CDO structure has been explained in numerous publications. For one example, see our discussion in *The Great Credit Squeeze*, at pp. 24-32 and in *The Origins of the Financial Crisis*, at pp. 27-28.

10. See Ashcraft and Schuermann. Frank Partnoy has calculated that through 2005, one of the top ratings agencies, Moody's, was earning a return on capital of more than 50%. See his "How and Why Credit Ratings Agencies Are Not Like Other Gatekeepers," in Yasuyuki Fuchita and Robert E. Litan, eds., *Financial Gatekeepers* (Brookings Institution Press, 2006), pp. 55-99.

The Securitizers

Even with high ratings on the most senior tranches of CDOs, the commercial and investment banks that created and sold these securities still would have been at risk to the extent they retained the junior or equity tranches of the securities. And by holding these securities, the securitizers then should have had some market-based reason to be careful about the quality of the mortgages that collateralized the CDOs.

But that is not the way it turned out, for several reasons. For one thing, many securitizers did not retain the most junior slices of the CDOs they sold,[11] or used their sponsored SIV to purchase them. In either case, the securitizers would have behaved as if they no longer had any CDO risk and thus would not have performed the same degree of due diligence of the quality of the underlying mortgages had this not been the case. Likewise, those securitizers who retained the most senior tranches of the CDOs, thinking that they were insulated from credit risk (and believing the credit ratings in this respect), also would not have behaved as if they had their own skin in the CDOs either. That some commercial banks later took their SIVs back on their balance sheets to preserve their reputations was wholly unexpected, and would not have influenced their lack of oversight of mortgage quality at the time the mortgages were bought for the CDOs.

Indeed, the fact that commercial bank originators of CDOs were able to form and use SIVs is another indication of how the banks evaded prevailing capital standards and thus undermined market discipline. (The SIVs may have technically complied with the special-purpose entity rules post-Enron at the time, but regulators could have taken the position that there was a reasonable risk that if the SIVs ran into financial difficulties their bank sponsors would assume their liabilities, which in fact is what they did. Had this position been taken for regulatory purposes, with bank capital standards applied to the SIVs, they very likely would not have been created in the first place). Likewise, securities regulators permitted the formerly independent investment banks during the run-up to the subprime mortgage crisis to operate with substantially greater leverage than they had before. With less shareholder money at risk for each dollar of assets invested, the largest commercial and investment banks that believed the federal government would never permit their creditors to suffer loss (which proved right in the case of Bear Stearns and AIG, but wrong in the case of Lehman) were less constrained by market forces than would have been the case had more stringent capital (and thus leverage) rules applied.[12]

The GSEs

The GSEs were prevented by rule from buying subprime mortgages directly and did not lead the charge into this segment of the mortgage fiasco. However, these institutions were encouraged by Congress to expand lending for affordable housing and encouraged by their shareholders to make higher returns, so Fannie and Freddie purchased CDOs backed heavily by subprime and less-than-prime (Alt A) mortgages.[13] In addition, Fannie and Freddie were subject to less stringent capital standards than those that apply to commercial banks. Furthermore, their debt throughout this period was widely (and as it turned out accurately) perceived to be guaranteed by the U.S. government, which enabled the GSEs to borrow at cheaper rates than

11. See Gunter Franke and Jan P. Krahnen, "The Future of Securitization," conference paper prepared for the Brookings-Wharton-Tokyo Club conference, October 2008 (and forthcoming in Yasuyuki Fuchita, Richard Herring and Robert E. Litan, eds, *The Future of Securitization*, Brookings Institution Press, 2009).
12. As we discuss below, the more stringent capital rules need not have required banks to have had more equity capital per assets than they did; even more effective discipline could have been supplied by a mandatory subordinated debt requirement for the largest banks in particular.
13. If home prices continue to fall, both GSEs may suffer even greater losses in the future on their *prime* loans. See Jan Hatzius and Michael A. Marschoun, "Home Prices and Credit Losses: Projections and Policy Options," Goldman Sachs, Global Economics Paper No. 177, January 13, 2009.

those available to any private sector borrower and which clearly blunted any incentives by creditors and purchasers of the debt they guaranteed to monitor the financial health of the GSEs.

Bond Insurers and Credit Default Swaps

Finally, subprime mortgage origination and securitization was encouraged by other sorts of weak market discipline.

In particular, one way securitizers were able to convince the credit rating agencies to assign strong ratings to the senior-level slices of some CDOs was to obtain insurance from the co-called "monoline" bond insurers (companies that had previously insured only municipal bonds and a limited range of other financial instruments). Yet, the largest bond insurers made the same mistakes as the credit rating agencies: both misjudged the risks of subprime debt primarily by relying on a limited historical record of defaults of these newer mortgage instruments. The capital standards governing these insurers clearly thus proved to be too low, and thus market discipline too weak.

Some investors in CDOs also sought to limit their risks by purchasing credit default swaps (CDS), which as we have noted, was just another form of bond insurance. Yet as the AIG episode has so clearly illustrated, AIG was able to issue CDS without adequate collateral or capital. Had the company's CDS been subject to the rules of a clearinghouse or to adequate capital/collateral requirements, or if all aspects of AIG's business had been subject to federal solvency regulation, AIG may never have required a federal rescue.

Summary

In order for markets to function effectively and safely, market participants must have clear economic incentives to allow for and judge the risks involved in different investments. Taking risks is an important part of finance and an important driver of economic growth, but taking excessive risk and passing that risk on to someone else, especially to individuals and institutions who do not realize the nature of the risks involved, eventually will lead to crisis. To improve the market pillar of our financial sector it is important to have rules in place that require participants either to bear the costs of their actions or to reveal the nature of the risks to the investors that ultimately end up with the risk. Innovation is important and should be encouraged, but innovation should not be a mechanism for pulling the wool over the eyes of investors.

Regulatory Failures

Markets, like organized games, cannot function effectively without certain rules. Buyers and sellers will not transact with each other in any way that requires performance in the future unless contracts are enforced. Individuals and firms will not have incentives to invest — in physical goods (buildings and equipment) and in generating ideas — unless the legal system enforces property rights. Investors will not buy stock issued by private companies unless their liability for loss is limited to their investment and they have certain rights to oversee management (through election of boards of directors, for example). Likewise, bankruptcy laws that also limit the liability of entrepreneurs to their financial commitments are also crucial for capping the risks of failure, as well as for facilitating the reorganization of companies that fall on hard times for whatever reason.

In short, the "rule of law" is essential for capitalism to work because it enables parties who do not know each other well to *trust* that the transactions they undertake will be honored.[14] This considerably reduces some of the potentially enormous risks of starting and running an enterprise that otherwise would exist.

14. See, e.g., Kenneth Dam, *The Law-Growth Nexus* (Brookings Institution Press, 2006) and Francis Fukuyama, *Trust* (Free Press, 1995).

Trust is also key to an effective and socially constructive financial system. The current financial crisis, as we noted at the outset, illustrates what happens when people and lenders lack trust: they take little or no risk with their funds, preferring to invest in "safe" investments (government bonds or insured bank accounts) rather than in stocks, other bonds, and real estate. Risk-taking entrepreneurs and growing companies can be thus starved for capital in an environment where trust is missing. An economy without trust and without risk-taking is one that simply cannot and will not grow.

There are multiple ways for government to provide trust in finance. Each has its benefits, but also it limits. Both must be recognized and balanced against each other in designing appropriate policies to guide financial activities.

For example, the government can supply trust by insuring certain investments, as it has done with bank accounts below periodically increased ceilings since the Federal Deposit Insurance Corporation was created in 1934. Most recently, in response to market uncertainties in the wake of the failure of Lehman Brothers, the Treasury Department extended federal insurance to money market accounts held before mid-September, 2008, through December 31, 2009, while Congress has authorized a temporary increase (until the end of this year) up to the bank deposit insurance ceiling to $250,000 per account.

The downside to government guarantees, however, is that they create a "moral hazard", by removing any incentives for the parties guaranteed to monitor the financial health of the institutions in which they have invested. (After-the-fact "bailouts" of creditors or other parties can have the same effect, as we discuss further below.) This is the reason why governments require institutions benefiting from such guarantees to back a certain portion of their assets with shareholder funds (capital), and why regulators audit the books and records of the institutions and supervise their risk-taking — all in an effort to offset any such moral hazard. In addition, the U.S. government historically has limited risk-taking by depository institutions directly by prohibiting from engaging in certain activities (whether or not such prohibitions actually accomplish this purpose is a hotly debated issue).

Government can also supply trust by setting and enforcing rules of the road that give people confidence that their money is secure, such as capital standards for financial institutions (banks, insurance companies, and securities firms). In addition, because financial products and services are offered by sellers that have more information than buyers, government can even the playing field and also enhance customers' confidence and trust by requiring financial providers to provide sufficient information and make appropriate disclosures so that informed customers can make reasoned financial decisions. When regulation and supervision function well, they reinforce discipline provided by the market.

But there can be and are shortcomings to regulation and supervision. There are limits to the numbers of supervisors and to their effectiveness. Our largest banks have long hosted on-site examiners from the federal regulatory agencies, and yet the banks were able to take imprudent risks literally right under the supervisors' noses. There are also costs to relying too heavily on supervisors to constrain risk-taking. There is a fine line, one which is very difficult if not impossible to discern in advance, between regulation and supervision that prevents managers at an institution from taking *imprudent* risks, and oversight which chills *prudent* risk-taking and innovation. All that can be safely said is that as one adds supervisors and more rules to the mix, the odds of crossing that line grow. This is a danger that it would be a mistake to ignore post-crisis, given the current macroeconomic environment in which financiers and entrepreneurs already have become more risk averse.

Likewise, while a certain kind and amount of information must be disclosed if customers and investors are to make reasoned choices, there are costs to excessive disclosure, especially to unsophisticated users of finance. We are all familiar as consumers with the lengthy patient-packet inserts written in pages of fine print that are included with many pharmaceutical prescriptions. In our view, these disclosures are so extensive that they are overwhelming; we doubt that many patients read through and fully understand them. Similar dangers exist with financial documents, and related disclosures, which are typically written in legalese, and can be difficult sometimes even for experts to understand, let alone for untrained lay individuals.

The limited benefits of even mandated disclosures, especially for the unsophisticated, are sometimes cited as a reason why government should do more to protect consumers — by approving financial forms (in the case of insurance policies), or by limiting or regulating the design of financial instruments (mortgages in particular). In this vein, we have noted how the Federal Reserve Board already has extended the mortgage limitations under HOEPA to a wider class of high-cost (less-than-prime) mortgages. Abuses by some (uncertain) number of mortgage lenders very likely will drive Congress to add further restrictions on mortgages. These restrictions could include a ban on prepayment penalties beyond a certain period, or conceivably over any period.

Without getting into the details of the various possible new limitations, we want to stress here that Congress and regulators should attempt to balance the benefits of any new limitations (mainly the reduced harm to potential borrowers) against their costs. Yes, there are costs to design mandates, which could induce lenders to curtail the availability of credit to some credit-worthy borrowers. For example, while prepayment penalties can lock in borrowers to potentially onerous payments if interest rates go down, by reducing the risk to lenders that their loans will refinance, there is evidence that the penalties on prepayment also allow lenders to charge lower interest rates (since they face less risk that their mortgage will be paid back early and their yield therefore cancelled).[15] Conversely, to the extent that regulators raise capital requirements for banks and other financial institutions, this will reduce their ability to lend (because of less leverage) and thereby tend to make credit less available and more expensive. Similarly, if Congress gives bankruptcy courts new authority to modify mortgages in an effort to reduce the number of prospective foreclosures growing out of the current subprime mortgage crisis, lenders may raise interest rates on such mortgages extended in the future to account for the added risk of mandatory (rather than voluntary) loan modification.

That there are costs to amending the bankruptcy laws or raising capital requirements does not mean that these reforms should not be pursued (we discuss each of these ideas in greater detail below). Rather, it merely suggests that when Congress or regulators add new requirements they do so with their eyes open, fully attentive to both the costs and benefits of their actions, just as Executive branch regulators have been required to do for over three decades, by Presidents of both parties, under successive Executive Orders. Furthermore, when regulators do take action, the Executive Orders and the consensus of the literature in regulatory economics advises that, to the extent possible, regulations that address market failure should do their best to "mimic the market" and take the form of the least restrictive of the alternatives.[16] We attempt to follow this advice in outlining reform ideas shortly.

One especially meritorious idea would be for some federal agency — perhaps a new Federal Mortgage Origination agency (as proposed by Secretary Paulson in the Treasury's 2008 *Blueprint*) — to set some minimum standards for all mortgages, whether reg-

15. See C.J. Mayer, T, Piskorski, and A. Tchitstyi, "The Inefficiency of Refinancing: Why Prepayment Penalties are Good for Risky Borrowers," available at http://ssrn.com/sol3/papers.cfm?abstract_id=1108528.
16. One prominent way in which regulation has mimicked the market is the use of tradable pollution permits by the Environmental Protection Agency. One of the seminal writings in the use of market-like approaches to regulation was authored by our long-time Brookings colleague, Charles L. Schultze, *Public Use of the Private Interest* (Brookings Institution Press, 1977).

ulated by federal authorities (for depository lenders) or state regulators (for state-chartered mortgage lenders). The same end could be accomplished if Congress were to subject all mortgage lenders to federal oversight. Apart from protecting consumers against abuses in mortgage design, minimum standards would further standardize mortgages originated throughout the country, and thereby facilitate their securitization and, perhaps, their modification in the event of delinquency.

Finally, it is important for policy makers to distinguish between mandated disclosures by financial institutions to their supervisors and those for the public — specifically borrowers, creditors and shareholders. In particular, corporations may be required to provide information relating to their strategies that are suitable only for regulators, but not the public (especially competitors), to see. Policy makers should be cognizant of this distinction.

Financial Innovation

Finally, some have pinned the blame for much of the crisis on "financial innovation," with the implication either that financial innovation is always or mostly bad, or at the very least that because of the dangers such innovation poses to the economy more broadly, financial innovations must be tightly and perhaps preemptively regulated. This criticism is too simplistic, in our view, and if believed and acted upon, could make our financial system less safe and/or less efficient.

That some innovations proved to be far more costly than envisioned should not discredit financial innovation in general, for the fact is that many financial innovations have yielded clear social benefits. A few examples suffice to make the point:

- The securitization of all kinds of loans — mortgages, auto loans, credit card loans, and business loans — has allowed risks to be pooled and reduced the cost of credit by enabling millions of participants in credit markets in the United States and elsewhere around the world, and not just U.S. depository institutions, to finance what were once thought to be individualized loan transactions.

- Money market funds (MMFs), now repositories of over $3 trillion in wealth, opened up the Treasury bond and commercial paper markets to individual investors, allowing them to earn a positive rate of return on safe demand deposits.

- Exchange traded funds (ETFs) permit investors seeking different forms of diversification to hold their wealth in instruments that trade like stocks, and thereby to have more control over when to realize gains and losses than is possible when investing in a mutual fund.

- New forms of payment, such as PayPal and BillMeLater, are changing the way Americans buy things on the Internet.[17]

- The development of a variety of financial derivatives has been essential to the rapid growth of international trade and investment. Although now much maligned, these financial instruments allow companies to hedge against exchange rate risk, credit default and swings in interest rates, permitting firms to focus on what they do well, making and trading goods and building and running factories and operations around the world. The collapse of the financial system in this crisis has caused a massive drop in international trade, caused in part by the breakdown of the international derivatives markets.

To be sure, this crisis has all too clearly demonstrated that some recent "innovations" had little redeeming merit or mixed effects at best, while some "innovations" were really not innovative at all. For example, as they were structured and essentially approved by

17. We are editing a set of papers on this theme that were presented at a conference held at Brookings on September 16, 2008. The edited volume, *Moving Money*, will be published by The Brookings Press later this year.

the ratings agencies, CDOs turned out to be dangerous devices for securitizing subprime mortgages. Likewise, there was no discernable social benefit to the off-balance sheet SIVs banks created to circumvent bank capital regulations. In the area of derivatives, the failure of AIG pointed to problems in the market for CDS. In this and other derivative markets there have been problems because derivative trading was not regulated or reported. AIG blithely assumed it would never have to make good on many of the CDS they were issuing and did not set aside the capital needed to support the actual risks the company was taking. Derivatives trading in general provided a way to avoid the capital and regulatory requirements in place for traditional insurance products.

But the social value of financial innovations, like their counterparts in the real economy, should be judged on their results, not their motivations or causes. If they are properly structured and capitalized, derivatives are a vital tool that allows the global economy to function smoothly. Much financial history could be written as the story of a continuing game between market actors and those who would police them (industry bodies or governments), with the former generally outpacing the latter, and the latter typically cleaning up the messes left by the former. It is doubtful that any legislation or set or rules will eliminate this dynamic. The best that can be hoped for is that policy makers, and specifically regulators (to whom the job of overseeing financial markets has been delegated), be much more responsive in the future to the dangers of financial innovations as soon as they appear.

Some who are more skeptical about the value of financial innovation — and more fearful of its dangers, especially in the wake of the current crisis — have advocated a more conservative approach: to give regulators the authority, if not the duty, to approve financial innovations as "safe" for the financial system *before* they are allowed into the marketplace. The idea presumably would be to treat financial innovations like pharmaceuticals or medical devices, as so potentially dangerous that regulators must have some evidence that the innovations will not cause systemic damage. The preemptive approach also bears a strong resemblance to the "precautionary principle" followed in the European Union, where those who take actions that might result in adverse effects in a wide array of circumstances (the environment, food safety, trade, and so forth) must demonstrate through other actions or policies, such effects will not occur.

With rare exceptions — notably, where regulatory approval is required before certain types of derivative contracts may be traded on exchanges — U.S. financial regulatory policy historically has not embraced the precautionary principle or the logic behind it. We believe there are good reasons for this. For one thing, it is not clear how regulators can run the equivalent of clinical trials for new financial instruments in such a way as to generate meaningful predictions of the impact of the instruments in a wider population. Even a process of tentative approvals would provide only very limited information, which may be of little use in knowing how the instruments or their users would fare when used far more widely.

Second, although we concede there could be a certain logic in defining financial innovations subject to pre-approval as those instruments or trading techniques whose widespread use could have adverse systemic consequences, there nonetheless would be a severe line-drawing problem in applying that principle: how would any regulatory body actually know whether a particular financial instrument or trading technique would pose such dangers?

Third, any pre-approval process would introduce a heavy anti-risk, anti-innovation bias into finance. It is always much easier, and far less politically risky, for regulators to say "no" than to say "yes". With a "no", few if anyone will know what would have been missed, but with a "yes", regulators run the risk that something they approved later could be accused of causing harm (we say "accused" because any harm from the innovation may be due to its misuse or the failure of regulators in the future to limit its dangers). Had automobiles, airplanes, or even computers been subjected to this kind of balancing, it is possible that none would have passed the test. With the risk of this crisis fresh in their minds, regulators given authority or the duty to block future financial innovations that could have adverse systemic consequences likewise would be reluctant to grant approvals.

We believe there is a more constructive lesson about future financial innovation that policy makers should draw from this crisis. Just as the FDA monitors pharmaceuticals for adverse side-effects *after they are introduced into the marketplace*, financial regulators should do the same for financial innovations, or for that matter, any kind of financial activity that *displays rapid growth*. This isn't to say, of course, that anything that grows rapidly is dangerous, but certainly rapid growth is a potential warning sign of future excess. All key financial regulators (however they may be restructured, a topic we address later), especially including any regulator charged with overseeing systemic financial risks to the economy, should be required in the future to issue annual, and if they believe necessary more frequent, reports to Congress on the risks within their purview; to discuss what steps (including regulatory proposals or related initiatives) they are taking to deal with them; and what legislative recommendations, if any, they believe Congress should adopt.

We do not claim that such risk reports would be the silver bullet to prevent future innovations from harming the financial system. As we discuss below, one of the most difficult challenges confronting regulators and elected officials in the future is dampening risk-taking when it is most likely to get out of control. It is hard enough, after all, for the Fed to take away the monetary punch bowl when the economic party is in full swing. But we would all be better off if at least we had institutions or mechanisms in place that would force policy makers, the media, the investment community, and the public to confront financial danger signs when at least some regulatory authorities point them out.

Section III: A Roadmap for Financial Reform

If we want our financial rules to better harness the power of the market, while ensuring that the market itself does not generate and permit excesses, then it is useful to categorize areas for reform by what is required for safe and effective market discipline:

1. All users of finance (investors, savers, borrowers, and issuers of securities) and those with strong interest in the subject (policy makers and taxpayers) benefit from *transparency*. This means that the essential terms, characteristics and risks of financial products and services must be disclosed in a way that, without revealing competitively sensitive secrets, reasonably knowledgeable parties can understand and act upon. Regulatory approvals or product design mandates whose benefits outweigh costs are appropriate and necessary for unsophisticated users. Transparency can and should be augmented by rules that give mortgage originators and securitizers greater incentives to be prudent when extending mortgages.

2. The financial regulatory framework should minimize systemic risks from asset bubbles, but do so in way that preserves incentives for continued, socially beneficial financial innovation.

3. Financial policy should anticipate future crises, not only react to the last one. Our suggestion for annual risk reports by the financial regulatory agencies is one way to advance this objective. Delegating regulatory responsibility to responsible regulators, without hard-wiring rules into legislation, is another. And changing the rules to encourage financial companies to pay their executives and employees in ways that reward long-term rather than short-term performance should also help avoid future crises.

4. Ideally, the financial regulatory system should be reformed so that federal regulators are defined by their function, not by the nature of the charter or type of financial business. As we discuss below, this implies as few as two major financial regulators, one for solvency and the other for consumer protection.

5. We should fundamentally rethink those elements of our affordable housing programs that rely on GSEs to expand home ownership. In the short to intermediate run, we would support either the "public utility" model for the GSEs or housing the current GSE functions directly within the federal government. In the long run we would support a sunset after 5 or 10 years for either public model for supporting mortgage markets, after which a liquidation plan would be implemented.

6. U.S. policy makers should continue to cooperate with their counterparts in other countries on matters of financial regulatory policy and on the sharing of information. However, improving the U.S. regulatory framework does not require on international agreement and need not wait on such agreement. It is important to minimize regulatory arbitrage around the world, but it is not necessary to harmonize our system with approaches followed in other countries.

Our proposals respond to the experience of this crisis. Both market failures and regulatory failures contributed to this crisis. The way to overcome these problems is to *create a more efficient regulatory and supervisory structure that harnesses the power of market incentives* going forward. Good regulation works with private incentives to align individual interests more closely with social interests. Despite the current disaster, we are cautiously optimistic that market discipline, if harnessed and enforced the right way, can be effectively exerted post-crisis. Some critics argue that the measures taken to alleviate the crisis have undermined forever the ability of market incentives to work to curb risk-taking because the government has bailed so many people out. We disagree, for several reasons.

First, the shareholders of financial companies, employees of these companies, from the CEOs on down, and many creditors have taken enormous financial losses as a result of the crisis. The bailouts have not made whole most of the people on Wall Street. Not by a mile. Nobody wants to go through this again and few if any have an appetite for taking excessive risk anytime soon.

Second, as unprecedented in scale as the bailouts have been, they are still temporary. Even the Reconstruction Finance Corporation created during the Depression to inject capital into failing banks and other firms (analogous to the Treasury's TARP program today), eventually was disbanded, albeit after 20 years. The Resolution Trust Corporation created in 1989 to dispose of hundreds of billions of dollars of assets of failed thrift institutions, lasted only six years before it was sunset. Given the lack of enthusiasm by the Administration and the Congress in creating the TARP, there is thus good reason to believe that the TARP and perhaps even much of the Fed's expansion of its balance sheet, will prove to be temporary too.[18]

Third, the unprecedented size and nature of the bailouts suggests that these measures are likely to be very infrequent. After all, the nation has had numerous recessions since the Depression and in no other instance has the government done anything quite like what it has done this time to shore up the financial system in this crisis. This suggests that creditors of financial institutions, and the institutions themselves, should not blithely assume that their future mistakes always will be bailed out by some government agency. To the contrary, our post-Depression history suggests that the general rule is that firms and their creditors do not get bailed out as a matter of course, which leaves plenty of room for the market to discipline actors in a wide variety of circumstances in the future.

Fourth, if policy makers do not operate on the view that there is to be some role for markets to discipline financial actors in the future, they are left to rely entirely on regulators and supervisors to do so. While clearly there is a place for regulation and supervision — which, we argue shortly, is still true even in the wake of regulatory and supervisory failures in the run-up to the subprime crisis — it would be a mistake in our view to put all of the weight of our financial policy framework on this one tool. There aren't enough regulators to do the job without running a significant risk of curtailing the innovation and risk-taking that any dynamic capitalist economy requires. Regulators can and should benefit from the early warning that markets and participants in financial markets can provide. Below, we outline ways we believe this can be accomplished, recognizing that no system of regulation, even if effectively enhanced by market discipline, can prevent all financial institution failures.

Improved Transparency

All markets require transparency for transactions to improve the welfare of both buyers and sellers (especially buyers, since sellers typically know more about their goods, services, and assets than do buyers). There are already a host of laws and regulations that are designed to protect the different users of finance, by requiring sellers to disclose material information and, in certain cases, circumscribing what terms and conditions can be placed in financial instruments and contracts. Nonetheless, these protections proved insufficient to prevent the subprime mortgage crisis. We suggest the following improvements.

18. Indeed, because of the distortions in credit markets and in other private sector decision-making created by the various bailouts, we believe that policy makers should begin focusing sooner rather than later on how to unwind the various bailouts. We plan to discuss with our colleague Doug Elliott the rationale and the options for doing so in a subsequent essay on this website.

Mortgage Borrowers

We begin with borrowers, and specifically, with subprime borrowers whose delinquencies, as a group, were the triggers for the crisis (leverage throughout much of the rest of the financial system greatly aggravated it). Many, how many it is unclear, subprime borrowers took on debt in amounts they wouldn't have — and certainly some would not have purchased homes at all — had they fully understood the risks embedded in their mortgages, especially in those with low initial teaser rates or those which gave borrowers the option whether and when to repay principal. This isn't to say that even with better understanding of the terms of the mortgages, some subprime borrowers would not have erred anyhow. After all, homeowners and lenders alike widely expected housing prices to continue increasing past 2006 or 2007, the years in which when price trends began to reverse, and these expectations would have contributed to the excesses that materialized.

Nonetheless, there is broad agreement among housing analysts that mortgage markets would work better in the future if disclosures relating to mortgages were greatly simplified. Alex Pollock of the American Enterprise Institute has proposed that every mortgage lender be required to provide all necessary disclosures — most importantly, the required monthly payment of principal, interest, and taxes (under the initial interest rate and on relevant dates when the interest rate might change) — on one page. This idea, which Congress considered in 2008, should be adopted. The federal government should also underwrite the cost of pre-mortgage counseling for all subprime borrowers, provided through non-profit organizations such as members of NeighborWorks America.

Mortgage Originators

Clear disclosures are not sufficient protection for unsophisticated borrowers, even those who may qualify for prime loans. That is why federal and state laws contain various limitations on mortgage design. And, as we have noted, the Federal Reserve Board in the past year has strengthened protections for subprime borrowers in particular, by extending the coverage of HOEPA to more loans. The Board also has added other protections for all mortgage borrowers, most notably a prohibition on mortgage brokers paying "yield spread premiums" (fees paid by a lender to a broker for higher-rate loans) unless this arrangement has been disclosed and agreed to by the borrower.[19]

The mortgage landscape, however, is still highly uneven, with mortgages originated by non-bank brokers and lenders not regulated by the federal government — those who originated the large majority of subprime mortgages prior to the crisis — having less consumer protection than those originated by federally insured depository institutions. This imbalance could be corrected by federalizing all mortgage protections or requiring that all state mortgage protections meet certain minimum standards (we do not have a strong preference, but one or the other should be done). In either case, a new "Federal Mortgage Origination" (FMO) agency, as the 2008 *Treasury Blueprint* suggested, could enforce or oversee this process, and be instructed to weigh the benefits against the costs of its mandates.[20] If Congress is not inclined to create yet another federal supervisory agency, it could vest this authority in one of the federal banking agencies.

One attractive idea that either a new FMO or the banking agencies should consider requiring all mortgage lenders to offer on an "opt out" basis, at

19. For a discussion of the previous and new Fed rules relating to protections for mortgage borrowers, see *The Great Credit Squeeze*, pp. 97-111.
20. The *Blueprint* also constructively suggests that the FMO evaluate and issue public ratings of adequacy of state regulation of mortgage origination, assuming that the minimum standards approach is taken instead of federalizing all mortgage lending regulation and supervision.

least to all subprime borrowers, a "default mortgage." The agency would define the terms of the default mortgage, after receiving public input, but at minimum, the mortgage would be extended for 30 years at a fixed interest rate. The mortgage also would require a minimum downpayment, although borrowers would be eligible for any government subsidies for downpayment (a subject we address shortly).[21] The virtue of a default mortgage is that, like in other contexts, it acts like a safety net for individuals who otherwise may not act in their own best interests, but still allows individuals to choose other alternatives if they have strong feelings about doing so.[22] One potential problem with a default mortgage is that originators might "game" the requirement by only offering the default at an unattractive interest rate in order to drive borrowers to more complex, lower cost instruments. Perhaps robust competition among lenders would prevent this outcome, but there is no way to know for sure until and unless the idea is tried.

An alternative (or complementary idea) for improving incentives for mortgage originators, endorsed by the Paulson Treasury Department, is to encourage greater use of "covered bonds" to facilitate the financing of mortgages. In a covered bond, the issuer — presumably the banks — pledges the mortgages as collateral, much as mortgage backed securities are also backed by mortgages. But there are important differences. Covered bonds are not sliced and diced into different tranches, with complicated cash flow structures, and thus are more transparent than MBS and especially CDOs. In addition, the collateral backing a covered bond is limited to loans originated by the issuing institutions, unlike the typical mortgage-backed security, which is backed by mortgages originated by many lenders. Covered bonds are highly popular in Europe, where only recently banks also began to purchase, much to their regret, mortgage-backed securities developed and sold in the United States.

Our view is that more thought must be given before designing policies to encourage banks to issue covered bonds. For one thing, the collateral backing the bonds is likely to be less diversified than the collateral backing mortgage backed securities. More importantly, by pledging a bank's loans to back specific bond issues, fewer assets are available to the FDIC, as insurer of the bank's deposits, in the event of a bank failure. As a result, the FDIC, and ultimately the other banks and their depositors who finance the bonds, are likely to be more exposed to risk. We therefore believe that the better course now is to require mortgage originators or securitizers to retain some portion of the loans they originate and later sell for securitization, outlined next.

Mortgage Securitizers

As have noted, one clear flaw in the originate-to-distribute model of mortgage finance was that original lenders of subprime mortgages were able to rid themselves of all credit risk when selling their loans (subject to a temporary requirement to buy back the mortgage if there was a material breach of the representations and warranties). In principle, it would be possible to require mortgage originators (the bank or financial institution that initially finances the loan) to retain at least a fraction of the risks of the mortgages they originate. If this is not practical, or otherwise unduly dampens mortgage origination, then a risk retention requirement can be and should be imposed on entities that securitize mortgages (those that package mortgages and sell securities backed by them). The risk retained should not be permitted to be hedged, through credit default swaps or their equivalents, in order to ensure that market discipline cannot be easily evaded.

Investors

The subprime crisis was made possible by investors who so eagerly bought the CDOs that were back

21. The idea for the default mortgage is credited to Michael Barr, Sendhil Mullainathan, and Eldar Shafir, which they outline in "An Opt-Out Home Mortgage System," Brookings Institution Hamilton Project, September 2008.
22. For a broader discussion of the virtues of default options, see Richard Thaler and Cass Sunstein, *Nudge* (Yale University Press, 2008).

by subprime debt. The blessings provided by the rating agencies were critical to this outcome. In an environment of very low interest rates, highly rated tranches of CDO securities seemed to promise the proverbial free lunch: much higher yields without the risks.

In retrospect, it is easy to blame investors for being so lazy as to blindly trust the ratings agencies. But as numerous commentators have pointed out, they had reason to: after all, federal and state government agencies had effectively blessed the agencies by imposing all sorts of requirements that financial institutions and agencies only buy "investment grade" securities, which created a larger market for the agencies' ratings.

While we see the logic behind suggestions that governments pare back those requirements, we also worry about the risks that could be taken if financial institutions such as money market funds, pension funds, and insurance companies were permitted to buy any type of securities. Furthermore, even if ratings requirements were suspended, investors still are likely to want ratings of some sort because conducting due diligence themselves is an expensive undertaking. In principle, there are economies of scale in the process, which the ratings agencies should be able to exploit. For now, therefore, we believe primary emphasis should be on improving the ratings process.

The problem is that as long as the ratings agencies are compensated by issuers — and we see no end to this being the case — there will be inevitable conflicts of interest. How can these be overcome or at least mitigated?

In early December, the SEC announced new rules that purportedly would do the job, but we are dubious about the ultimate impact. Under one rule, the SEC has required the ratings agencies to separate their advisory from their ratings services. This is unlikely to have much effect, in our view, since issuers can always submit multiple requests to the ratings arm (without ever formally asking for "advice") until they get the rating they want. Under another rule, the SEC has required the agencies to establish different grading systems for structured products than for corporate or government bonds. We fail to see how multiple ratings systems would have prevented ratings inflation.

To be sure, given the black eyes the agencies have earned as a result of the subprime crisis, they have now pulled back and become more reluctant to hand out strong ratings so freely. If anything, the agencies may be over-compensating in an effort to reestablish their reputations.

Once the memories of this crisis begin to fade, however, the agencies still will have strong incentives to earn higher revenues by handing out inflated grades, unless they are constrained in some manner. We are skeptical that adding another layer of oversight of their ratings by the SEC would provide a lasting benefit. Even assuming the agency stiffens its regulatory backbone in the wake of the Madoff affair, it would be unwise to count on strengthened oversight as a permanent solution, although it might have some benefit temporarily. But on a lasting basis, we are skeptical of the cost-effectiveness of hiring a second set of ratings specialists — namely those working for the government — to be looking over the shoulders of the first set (those in the private sector).

It would be more productive, in our view, to impose more transparency on the ratings agencies, in the hopes of harnessing the market to do a better job of disciplining them. One idea would be to have the SEC, or a contractor, compile and publish regularly a scorecard on the effectiveness of each agencies' ratings, by year — in effect, a *Consumers' Reports* equivalent for the ratings business. Thus, for example, the scorecard would include the key benchmarks for assigning a particular rating — the default probabilities or expected value of losses required for AAA, AA, A ratings, and so forth — and the actual average experience of securities of different types (municipal bonds, corporate bonds, asset-backed securities) issued by year. Armed with such a scorecard, investors would be able to tell how accurate the ratings of securities in particular categories turned out to be. We understand that institutional investors already do something like this for their own benefit. But this information, in fact, is a public good and should be made widely available.

A more ambitious idea, outlined by Professor Charles Calomiris, would be to require the ratings agencies to abandon letter grades entirely, and to publish instead their *numerical estimates* of both the probability an issuer would default, as well as the projected loss given default.[23] These are the projections that really should matter to investors, and requiring the agencies to publish them would impose much greater discipline on them than is now permitted under the looser letter grading system. If this idea were implemented, it should be coupled with our scorecard proposal so that investors would have an easy way to compare the reliability of the agencies' projections.

A third information-enhancing initiative would be to require the ratings agencies to disclose the time periods used to estimate default probabilities, and losses given default, for each security issue rated. Comparisons of these data should be included in the public scorecard issued by the SEC or its designee.

We recognize, of course, that even when armed with more relevant information, investors may still make mistakes. But as we noted, even without government mandated ratings, we believe investors will still demand ratings of some sort, and as long as this is the case, they and the broader financial system will be better served by having regular access to data that will permit at least some market discipline over the ratings process to be exercised.

Minimize Systemic Risks

The subprime crisis has revealed many weaknesses in our financial system and framework for regulating it. But perhaps the greatest weakness that the crisis has exposed is the danger that the failure of large financial institutions — not only banks — can pose to not only the well-being of the entire financial system, but indeed the entire economy. Economists have a word for this: "systemic risk," or the risk "imposed by *interlinkages* and *interdependencies* in a system or market, which could potentially bankrupt or bring down the entire system or market if one player is eliminated, or a cluster of failures occurs at once."[24] The *fear* of systemic risk drove policy makers to protect (bail out) creditors of AIG, Bear Stearns, and Fannie Mae and Freddie Mac; the Treasury to ask Congress for $700 billion for the TARP; and the Fed to greatly expand its credit facilities and open market operations.

Although the federal interventions in credit markets have kept a horrible economic situation from getting even worse, it is safe to say that everyone would have preferred that none of the steps would have been needed. Quite clearly, one of the central challenges for financial reformers going forward, therefore, is to find ways to reduce the exposure of the financial system and the larger economy to systemic risk.

Broadly speaking, there are two ways of meeting this challenge: preventing, or at least reducing, the likelihood of future asset bubbles, and reducing the damage or fallout when those bubbles "pop."

In *The Great Credit Squeeze*, we expressed skepticism about trying to prevent asset bubbles from forming, for several reasons. For one thing, identifying asset bubbles in advance is actually quite difficult, far harder than the Monday morning quarterbacks of

23. Charles Calomiris, "Financial Innovation, Regulation, and Reform," unpublished paper presented at the 2008 Cato Institute annual monetary conference (and forthcoming in the *Cato Journal*).
24. Steven L. Schwarz, "Systemic Risk," *Georgetown Law Journal*, Vol, 97, No. 1, 2008.

the latest housing bubble would have us believe. Of course, some prescient forecasters rightly warned of that bubble was forming, but they were disputed by others. The same is true of the stock market bubble that popped in 2000. Alan Greenspan famously warned of irrational exuberance, but that was in 1996, or four years before the peak. There were some doomsayers about the stock market before its most recent plunge in 2008, but we know of very few who correctly foresaw the magnitude of the decline, the third worst year for the stock market in U.S. history.

In addition, those who want policy makers to prevent asset bubbles typically advocate preemptive monetary policy for the job, despite the fact that all acknowledge that monetary policy is a very blunt and costly instrument for popping bubbles. For example, had the Fed followed a much tighter monetary policy in the years after the 2001-02 recession, GDP growth would have been much slower, and unemployment much higher. In contrast, a more finely calibrated regulatory policy — specifically one that would have restrained imprudent subprime lending (mortgages with low teaser rates, low or no down payments, no documentation of borrowers' income or assets, and mortgages permitting the borrower to skip principal payments) — might have prevented much or all of the bubble without significant macroeconomic cost.

Given the severe negative consequences of the housing bubble that has popped, and the benefits that some preemptive mortgage lending regulation would have had, we now believe some attempt ought to be made at least to *warn* of impending asset price bubbles, and that efforts be made to curtail or prevent them through regulatory means. Our colleague Alice Rivlin has suggested that the job of issuing such warnings be given to the Fed or some other independent body, free of political interference. The latter might include the Government Accountability Office (GAO) or the Congressional Budget Office (although both are creatures of Congress, both have a history and a well-established reputation for independence and credibility). Congress could give added heft to those warnings by instructing each of the federal financial regulatory agencies to take such warnings into account in their supervisory activities, and to initiate any emergency rulemakings or other regulatory initiatives in response to the warnings.

We are not so naïve as to think that warnings alone will prevent all asset bubbles, or even that all warnings will prove accurate. But we already have a system of hurricane warnings — even though meteorologists are far from infallible — that triggers evacuations and other emergency measures to minimize damage from potential hurricanes. In our opinion, economic forecasting (as flawed as it is) is no worse than hurricane forecasting. Given the significant economic damage that may be avoided from listening to an appropriate asset bubble warning, we believe it is worth running the risk of overreacting to a "false warning" from time to time in order to realize the benefits from reacting to a well-deserve warning.

Whatever is done to prevent the frequency of asset bubbles — recognizing that not all bubbles can and will be prevented — we are much optimistic that beneficial steps can be taken to contain the potential systemic damage of the bubbles that survive when they do pop — without resorting to ad hoc, or even more automatic, *ex post* bailouts. Both Fed Chairman Ben Bernanke and the new Treasury Secretary Tim Geithner have observed that up to now our regulatory and supervisory system has concentrated too heavily on ensuring the soundness of individual financial institutions and not enough on the potential systemic risks from the failure or near-failure of many large financial institutions simultaneously, due to one or more underlying causes or imbalances (such as the widespread mistaken belief that housing prices would continue to rise without interruption). We agree with that assessment, and submit that action on two fronts would help rectify this imbalance, while conceivably also reducing the likelihood that financial bubbles of some types may form or grow excessively in the first place:

1. Identifying and regulating "systemically important financial institutions" (SIFIs) in a special manner

2. Providing an institutional framework for clearing derivatives transactions, and regulating derivatives that are too customized to be cleared.

Regulation of SIFIs

Until this crisis, market actors and policy makers believed that in the very worst cases — if large financial institutions central to the functioning of the financial system and economy were threatened with failure — the Federal Reserve, perhaps with the Treasury and the FDIC, would find ways to bail out or at least minimize losses to short-term creditors to prevent a financial system collapse. But at least until now, policy makers have been reluctant to reveal *which* institutions might trigger such protection. This deliberate state of uncertainty was often referred to as "constructive ambiguity" and policy makers were loathe to make the policy less ambiguous — that is, to identify which institutions and which creditors might be bailed out — for "moral hazard" reasons.

The events of the last year, and especially the various ad hoc bailouts not only bank depositors, but of creditors of large non-banks, has left the prior policy of constructive ambiguity in tatters. It is time to recognize that large financial institutions that are systematically important enough to warrant government protection of at least their short-term creditors — both banks and non-banks — require a different level of regulation and supervision than other, smaller financial institutions precisely because short-term creditors now know that future protection is highly likely, if not certain, in extreme circumstances. To be sure, some uncertainty about the likelihood of protection still remains: creditors of large financial organizations cannot be sure that even if their institution runs into trouble it will have sufficient company so that federal authorities feel compelled to provide financial protection. Nonetheless, the recent bailouts clearly have dulled the incentives for short-term creditors of systemically important financial institutions (SIFIs) to monitor the health of those entities. Other means of constraining their risk-taking, even more stringent than those applied to smaller financial institutions of the same type but which by definition do not pose systemic risk if they fail, must be found.

The Group of Thirty recently has come to a similar conclusion, and outlines several enhancements or refinements to the financial regulatory framework that we also broadly endorse.[25]

Higher Capital Requirements

SIFIs that are currently regulated by federal authorities — banks and financial holding companies — should operate with thicker capital cushions than other financial institutions. Large insurers that qualify as SIFIs, which are now regulated by the states, should be regulated for solvency purposes at the federal level. And, as discussed further below, hedge and private equity funds that use large borrowings and/or are highly interconnected with the rest of the financial system, also should be subject to capital requirements.

The capital rules must be far simpler than the flawed risk-based approach attempted so far for banks (and copied to some degree for insurers) by the Basel Committee, as discussed further below. Rules that are simple are easier both to live by and to enforce, and do not run the risk of unintentionally (or intentionally) distorting credit markets.

The Group of Thirty also suggests that capital rules be made less pro-cyclical, having in mind the fact that in downturns, banks held to the same standards as in good times can be forced to shrink or at least not to expand their lending. In *The Great Credit Squeeze*, we were skeptical of making allowances for economic cycles in capital standards, fearing in

25. Group of Thirty, *Financial Reform: A Framework for Financial Stability* (Washington, D.C., 2009).

particular that regulators or their political overseers would lack the will to raise the standards during expansions.

The Group of Thirty implicitly addresses that concern by recommending that capital standards be expressed in ranges, and that in good times institutions be held to the upper end of those ranges. By specifying the range in advance, this would reduce discretion and thus help insulate regulators from political pressure not to raise standards when they need to be raised. We believe the idea of ranges is a good one and should be implemented. Nonetheless, given the current financial crisis, it is neither feasible nor desirable to raise capital standards now. This should be done only once an economic recovery is under way (though the conditions can be set now), and then only gradually.

Finally, capital regulation would be strengthened if the solvency regulator (or regulators) were able to look at market signals to give them early warnings of problems at institutions under their supervision. Those signals, in turn, must come from monitors who cannot easily "run", since by the time any run occurs, the "warnings" are too late. In *The Great Squeeze*, we suggested what we and a number of scholars and prior government financial officials believe could be an excellent source of market discipline: unsecured, long-term bondholders (or "subordinated debt" holders). Unlike depositors, who can take out their money at any time, or commercial paper owners (whose instruments may expire over periods of 90 days or less), long-term bondholders cannot get their money back, by the terms of the bond, until maturity, or unless they sell the bond on the open market. For this reason, government officials are likely to feel less need to protect long-term debt holders of SIFIs than is the case for short-term creditors.

Accordingly, solvency regulators should impose a long-term subordinated debt requirement (as a percent of assets) on all SIFIs, not just banks. As an added twist, the debt might be convertible into equity if the institution's existing equity-to asset ratio falls below a certain level. The conversion feature would thus automatically boost the bank's equity and conceivably bring it back up close to or equal to the minimum required level.[26] As an alternative, or as a supplement, regulators should want to look at CDS prices of debt issued by SIFIs, where such instruments and trading information is available.

To be sure, once it is known that regulators are looking to the prices of subordinated/convertible debt and/or CDSs to guide their decisions — especially with respect to taking over a trouble institution under the PCA regime, as discussed shortly — short-term creditors, who may suffer losses in any takeover absent any explicit federal protection, will do so as well. As a result, the subordinated debt and/or CDS markets may trigger self-fulfilling runs leaving regulators little more time for taking action than otherwise would be the case. Our response to this critique is that such markets still may provide valuable market-based information that regulators ignore at their peril, and that if regulators are worried about premature creditor runs, then they can raise the threshold at which they intervene (reducing the chances for taxpayer losses).

Liquidity Requirements

The current financial crisis has reconfirmed that capital alone does not assure the viability of any financial institution relying heavily on uninsured short-term funding. When investors lose confidence in the ability of a financial institution to meet its obligations, their first instinct is to "run" — to ask for their money back if they can get it, or refuse to roll over their loans once they mature — regardless of how much "capital" the institution may have stated on its books. This is because firms (like individuals) cannot repay their debts in shareholders' equity, only in cash.

Financial solvency regulators, therefore, should set

26. See, e.g. Jeremy Stein, "Convertible Bonds as Backdoor Equity Financing," *Journal of Financial Economics*, Vol. 32, 1992, pp. 3-21.

liquidity requirements for SIFIs (although these may vary by type of institution). Most obviously, this includes the formerly independent investment banks, but also covers large banks whose large depositors are uninsured. The requirements should not only cover liquid assets as a percent of total assets, but also in relation to short-term liabilities (In other words, financial institutions could choose to meet their liquidity requirements either by holding the requisite share of liquid assets or lengthening the maturity of their liabilities). Furthermore, the liquidity rules should take account of the systemic linkages in the financial system. Assets that may appear liquid when held by one or a few institutions may not be liquid at all in a panic. Regulators thus need to aggregate information across all institutions in setting liquidity requirements for each one.

Early, Prompt Failure Resolution

After the thrift and banking crises of the 1980s, Congress introduced a "prompt corrective action" (PCA) regime for regulated depository institutions. The idea behind PCA was to allow banking regulators to press institutions short of capital to raise more or to shrink, and in a worst case, to take over troubled institutions *before* they became technically insolvent — that is, at a point when capital ratio were still positive but well below the required minimum level. In theory, at least, if regulators could seize a troubled but still solvent bank before it actually was insolvent, the FDIC and the banks that support it would suffer no losses. Also, in theory, if after government takeover and subsequent sale or liquidation, any positive value in the institution remained, it would be turned over to shareholders.

That is how PCA worked until the recent crisis. A number of large banks — IndyMac, Washington Mutual, and Wachovia — failed or were induced to merge with healthier institutions, but in the process required FDIC assistance. This indicates that even with PCA in force, bank regulators could not prevent losses to the insurance fund at least with respect to these institutions. The main lesson from this experience: bank regulators should raise the capital-to-asset threshold at which they must be prepared to take over a capital-short institution that has not succeeded in raising its capital ratio to the require minimum.

The current crisis teaches another lesson that is equally if not more important: that PCA must be extended to all SIFIs. Assuming an appropriate intervention threshold, federal taxpayer losses in connection with Fannie, Freddie, and AIG very likely would have been lower than they will turn out to be if the relevant government solvency regulator(s) had the authority to take over these institutions before their capital was depleted. The Obama Administration reportedly plans to give the FDIC authority to assume control of non-banks in a timely manner. This would be welcome, although even with early closure authority, runs or threatened runs by creditors either before or after government takeover may still require federally-backed rescues. The best that can be hoped for with any early intervention proposal is that it will reduce the need for such rescues and their amounts, if they prove necessary.

Identifying SIFIs

As already implied, banks are not the only SIFIs and thus they are not the only such institutions requiring federal solvency regulation. The Group of Thirty urges, and we agree, that large insurers, as well as large hedge and private equity funds that operate with a sizeable amount of borrowed funds and/or are highly interconnected with the rest of the financial system (through derivatives contracts, for example) also merit federal solvency regulation as well (The Group of Thirty explicitly excepts venture funds, which do not operate with borrowed funds, from any federal solvency regulation, and we agree). Solvency standards should take account of the type of institution, however, and need not and probably should not be uniform across different categories of SIFIs (banks, insurers, financial conglomerates, and so on). Should the federal government regulate the solvency of insurers, however, it must also have the ability to preempt state regulations that are inconsistent with that objective, such as rate regulation.[27]

How should SIFIs be identified and who should do so? The Group of Thirty report lists a number of criteria that make sense to us: size, amount of leverage, degree of interconnection with the financial system, and infrastructure services (such as clearinghouses). The report does not outline specific numerical criteria, but instead urges a single federal solvency regulator to do that. An alternative body for identifying the institutions, as we suggest below, could be the Federal Reserve (assuming it is not the solvency regulator). The SIFI determinations must be made case-by-case, and for this purpose, reporting requirements must apply to all non-bank financial institutions at least above a certain size (a lower threshold than would trigger the SIFI designation).[28]

Enhancing the Safety of OTC Derivatives

Even before the current crisis, there were many warnings that the rapid growth of "over the counter" (OTC) derivative contracts — those not traded and cleared through organized trades — posed a significant risk to the soundness of the global financial system. Warren Buffet famously labeled OTC derivatives "financial weapons of mass destruction" because although they were intertwined throughout the financial system, they were also largely unregulated. Today, the notional (face value) derivatives market is roughly $600 trillion (yes trillion) in size, of which roughly $55 trillion are credit default swaps.

Although the true risks of derivatives are substantially less than the notional amounts — which are really benchmarks against which derivatives are valued — the risks of derivatives are still very real and significant. AIG failed, and has required a federal rescue, because the company did not have sufficient collateral to back the vast sums of CDS it wrote on mortgage securities, and policy makers feared the systemic consequences if those contracts were not honored. For this reason, it is virtually certain that Congress will want some agency (at this writing, there is much talk of the Fed being that agency) taking a more active oversight role of derivatives markets.

Two kinds of oversight will be required: capital and liquidity regulation of derivatives clearinghouses for standardized contracts that can be cleared, and of counterparties directly for customized derivatives.

Take the clearinghouses first. In the wake of recent events, the Federal Reserve Bank of New York has been urging private sector derivatives dealers to establish a clearinghouse in credit derivatives, and possibly other derivative contracts now traded "over-the-counter" as well (such as interest rate swaps).[29] At this writing, several clearinghouse ventures are in the organizing stages and could soon be operational. In mid-November, the President's Working Group on Financial Markets announced that a Memorandum of Understanding had been reached by the Fed, the SEC and the CFTC, on broad policy objectives relating to CDS clearinghouses. At roughly the same time, the G-20 agreed in its first post-crisis "summit meeting" in Washington that a central clearinghouse for derivative instruments was needed. As of late December, the SEC had granted a key exemption to one clearinghouse to operate, and another two proposals were in the works.[30] In retrospect, it is unfortunate that regulators here and elsewhere did not do more to encourage the formation of one or more derivatives clearinghouses much earlier.[31]

27. Litan will be shortly publishing on the Brookings website a more detailed discussion and analysis of federal solvency regulation of insurance.
28. One open question is whether, for due process reasons, an institution designated and thus regulated as SIFI may be allowed to contest that designation, and if so, in what manner. From an administrative standpoint, it would be desirable if such contests were not allowed.
29. See Darrell Duffie, "Derivatives and Mass Financial Destruction," *The Wall Street Journal*, October 22, 2008, p. A17. I also thank Professor Duffie for his constructive advice on this section (although I take full responsibility for any errors).
30. Doug Comeron and Kara Scannell, "Regulators Back System to Clear Credit Swaps," *The Wall Street Journal*, December 24, 2008, p. C1.
31. "The Great Untangling," *The Economist*, November 8, 2008, pp. 85-86.

The virtue of a clearinghouse is that parties to a derivative contract would look to the clearinghouse for payment rather than to each other. As a result, when, say, a large issuer of CDSs may not be able to make good on its promises, the clearinghouse — assuming it is adequately capitalized and has sufficient access to liquidity arrangements — would pay the buyers of those contracts. In this way, at least in principle, regulatory authorities need not fear systemic consequences from the failure of an AIG-like entity again, and thus feel compelled to bail it out through loans or possibly equity infusions.

In fact, however, regulatory oversight of derivatives clearinghouses will be required to realize this outcome. To be sure, the clearinghouses themselves will want — and will need — to protect themselves against collapse from the failure of one or more participants. They would do so both by obtaining capital from their owners, and asking the participants to post collateral or margin against any exposures.

But there is no guarantee that clearinghouses will require the socially optimal amounts of capital and collateral, especially if they believe that government will come to their rescue in extreme situations. For this reason, the federal prudential and/or systemic risk regulator (discussed in a subsequent section) must be prepared to impose minimum capital and collateral rules on all derivatives clearinghouses.[32]

Even well-financed clearinghouses cannot remove all of the systemic risks posed by derivatives. This is because clearinghouses are only well suited for *standardized* derivatives contracts, or in other words, those contracts that look like fungible stocks and bonds. Clearinghouses are not likely to accept the many customized derivatives instruments, whose risks are best judged by the counterparties themselves, rather than by the clearinghouse and/or its members.

As with clearinghouses, the regulatory problem arises when counterparties of non-standardized derivatives expect a federal rescue if things go wrong. In that event, any capital or collateral that is in the private interest of the parties will not match what is in the social interest. For this reason, the federal overseer of SIFIs should have the authority not only to enforce minimum capital standards for these institutions, but also to ensure that they meet minimum collateral requirements in their derivatives contracts. Admittedly, these minimum requirements will be difficult to set, and there are dangers either way: standards that are too low will permit too much risk-taking, while standards that are too high can choke off socially valuable means of hedging risks. Nonetheless, the failure of AIG provides powerful support for at least some minimum capital/collateral regulation of derivatives counterparties.

Some have suggested that regulators experiment with ways to incent counterparties to use standardized contracts that can be cleared through clearinghouses. One idea, for example, is to use capital standards to do the job. If regulators retain something like the complex Basel II capital rules, this may be a constructive idea. However, if regulators move to a much simpler system of capital regulation, as we have suggested, then we would counsel against using the formulae in the capital standards to drive parties toward customized derivatives contracts. We invite readers — and policy makers — to develop other kinds of incentives to accomplish this end.

Anticipating Future Crises

The natural temptation after a crisis as traumatic as the one we are all currently experiencing is for policy makers to go back and attempt to "fix" everything they can reasonably identify that contributed to the crisis. But like generals fighting the last war, policy makers who intensely focus on fixing what just went wrong, or seemed to go wrong, can miss the opportunity to prevent future crises, which may

32. For a more skeptical view of the desirability and feasibility of clearinghouses for derivatives, specifically CDSs, see Craig Pirrong, "The Clearinghouse Cure," *Regulation*, Winter 2008-09, pp. 44-51.

end up having very different origins.

The problem is, of course, that it is impossible for policy makers (as it is for those in the private sector) to anticipate every kind of future crisis. That is why the Congress should resist the very understandable urge now to write detailed rules. It is an understandable urge because the current crisis reflects regulatory failure, much as it does gross irresponsibility in the private sector. But, Congress, too, bears some responsibility as well, to the degree that it did not act on warnings to rein in the housing GSEs when they had the chance, and failed to ensure appropriate regulation of state mortgage lenders (either by encouraging the Federal Reserve and other bank regulators to act on the authority they may have had to do so, or if new legislative authority were needed, then by giving it to them).

At the end of the day, our financial regulatory system simply cannot work without significant delegation to regulatory experts. As the Government Accountability Office has recently documented, financial institutions, products and services have become vastly more complex.[33] It is unrealistic to expect any legislative body to have the ongoing expertise to regulate this system in an appropriate manner. That job simply must be delegated to regulatory authorities.

Congress still has a vital role in all of this: to assure that the regulators are accountable, and to provide direction and support as new situations warrant. This requires great courage, not just when times are bad, but perhaps even more importantly, when times are good. Time and again history has shown that rapidly growing assets or activities also entail greater risk; markets have a tendency to overshoot, to give us too much of a good thing. It is precisely in such times when regulators must increase their vigilance, just as monetary policy makers may be forced to take the proverbial punch bowl away (by raising interest rates) just when the party really gets going. One way to focus Congressional and regulatory attention on risk, as we suggested earlier, is to require an agency charged with systemic oversight responsibilities to report annually, or at its choosing more frequently, on the nature and magnitude of the systemic risks facing the financial system and what steps are being taken to address them.

It is not just public officials who must anticipate, and ideally take action, to prevent future crises, but also private actors. This is not easily done, since privately owned institutions, their managers and employees cannot be expected to internalize the costs and benefits of their actions on other parties. Nonetheless, it is clear from the recent crisis that had key actors had greater incentives to take account of systemic risks, they would have benefited themselves and the entire financial system.

In the private sector, the main incentives are monetary. As former GE President Jack Welch and his co-author (and wife) Suzy Welch have noted, if you want to know how people in any organization are likely to behave, look at how they get paid.[34] Many have recognized in the wake of this crisis (and some well before it), that too many employees and executives in the financial industry were given bonuses only on their short-run performance: the number of loans originated, sales or profits this year, and so forth. Clearly, had a substantial portion of the compensation paid to people working at various stages in the mortgage business been tied to the long run performance of those mortgages, it is likely that far fewer loans that have since become delinquent would have been extended and securitized. The same is true of other risky activities — such as the selling of credit default swaps — that have brought portions of the financial industry to their knees.

Going forward, the financial system and the institutions that compete within it are likely to be safer — perhaps considerably so — if compensation is tied to long-run performance. Anil Kashyap, Raghuram Rajan, and Jeremy Stein have suggested that banks

33. United States Government Accountability Office, *Financial Regulation: A Framework for Crafting and Assessing Proposals to Modernize the Outdated U.S. Financial Regulatory System* (January 2009).
34. Jack Welch and Suzy Welch, *Winning* (Collins Business, 2005).

should hold a large portion of bankers' pay in escrow to be paid out of a long period.[35] Compensation could then be made contingent on the long-term success of the bankers' strategies, which would discourage the kind of short-term-ism that led to the creation and marketing of the CDO.

The trick is how to accomplish this outcome. If any one institution adopts the idea, it runs the risk of losing valued employees to competitors who are still paying for short-run results. In other words, finance is plagued in this regard by the infamous "collective action" problem: if the parties could coordinate their pay-setting practices, which they cannot under the antitrust laws, there may be a better outcome for society as a whole.

We do not favor, however, carving out an exception to the antitrust laws for compensation practices since we fear it could be too easily abused. Nor do we support tying a bank's capital standards to its implementation of a long-term compensation program. Such an approach would further complicate an already complex set of capital calculations (the same reason we are skeptical of using capital standards to encourage the use of standardized derivatives).

A better idea, in our view, is to reflect the presence (or absence) of long-term compensation arrangements for senior management in the "management" component of its CAMEL rating by bank supervisors. Bankers take their CAMEL ratings seriously. They are also used by the FDIC to risk adjust banks' deposit insurance premiums. In addition, regulators should also insist that financial institutions verify that their compensation plans are consistent with their own internal risk mitigation strategies.

Regulatory Consolidation

For several decades, various official bodies, academic scholars and policy makers have urged that America's crazy quilt system of financial regulation — which has developed more by historical accident than out of any thoughtful design — be fundamentally and rationally reformed. Past efforts to implement any of these ideas have foundered largely because each the vested interests — of the regulated institutions, of the regulatory agencies, and of their Congressional overseer — feared losing power or authority from any changes to the status quo, and thus have successfully blocked any change.

The current crisis has renewed interest in reforming the financial regulatory structure. In particular, a consensus seems to be building in favor of consolidating and/or reorganizing our federal financial regulators, in particular, *by function or objective* rather than by type of *financial charter*. Broadly speaking, this insight leads to at least regulatory bodies: one to ensure solvency of individual financial institutions, and another to protect consumers. We are also inclined to lodge regulatory responsibility for the solvency of SIFIs in the solvency regulator, although it is possible that this activity could be carried out by a single systemic risk regulator (presumably the Fed). The latter alternative, however, could entail some overlapping jurisdiction with the main solvency regulator, and for this reason it is not our preferred option. Putting aside the different names suggested for these different bodies, this approach (or something like it) has been endorsed by the Committee on Capital Markets, The Group of Thirty, and the Paulson Treasury, among others.

A functional or an objective-based system of financial regulation makes sense and would reduce opportunities for financial institutions and actors to "arbitrage" rules and enforcement practices of different agencies. Consolidation would also eliminate duplication of functions among the regulatory agencies.

At the same time, however, there is always a risk that some kinds of bureaucratic impulses that led so many

35. Anil Kashyap, Raghuram Rajan and Jeremy Stein, "Rethinking Capital Regulation", draft paper presented at the Federal Reserve Bank of Kansas City Jackson Hole conference, August, 2008.

of our large financial institutions and even some of our current financial regulatory bodies astray in the run-up to this crisis could be aggravated if regulatory power were further concentrated. After all, the consolidation of financial regulatory powers in a single supervisory agency in other countries did not prevent their large financial institutions from taking on too many subprime mortgage securities and other risks that have wreaked havoc in their financial systems.

On balance, we believe the benefits of significant regulatory consolidation outweigh the risks. Nonetheless, if for political reasons, it proves to be too difficult to achieve consolidation, substantive reform of the rules governing the financial marketplace along the lines outlined here, still would represent a major improvement over the current state of affairs.

The Future of the Housing GSEs

The federal government has used a number of programs since the Great Depression to facilitate home ownership: among them, the home mortgage interest tax deduction; mortgage insurance and mortgage loans from the Federal Housing Administration; and liquidity and modestly lower interest rates through secondary market purchases and securitizations by the housing government-sponsored enterprises, Fannie Mae and Freddie Mac, and by the Federal Home Loan Bank system.[36] Although some of these programs are targeted at low to moderate income households (for example, those of the FHA), due to the progressive tax code and the structure of the GSEs, most of the federal home ownership subsidies flow to middle and upper income households.

The subprime crisis should not serve as an excuse for federal policy makers to back away from encouraging *sustainable* home ownership. There many documented benefits of ownership, and owning one's home is still part of the American dream. The key policy challenge now is to refine the ways in which the federal government can best promote this goal without at the same time putting households, the financial system and the economy at undue risk.

One clear lesson we have all learned from the current crisis is that we need to fundamentally rethink those elements of our affordable housing programs that rely on GSEs to expand home ownership. The GSE model — half private, half public — turns out to have had severe flaws. There was too much pressure, in seeking to expand affordable housing, to operate the institutions without sufficient capital and attention to risk management. The GSEs also fell victim to the widespread belief that plagued homeowners and private sectors alike that real estate prices would continue rising forever. When real estate prices not only quit rising and began to decline rapidly, mounting losses on the GSEs' expanded subprime mortgage portfolio quickly ate through the entities' thin capital cushion. Congress was forced to put both institutions into conservatorship and to effectively guarantee their debt obligations and guarantees to prevent a major meltdown in the mortgage market.

There were other drawbacks to the GSE model. Although both Fannie Mae and Freddie Mac were created to enhance the affordability of home ownership, they have concentrated their activities toward purchasing and securitizing homes bought by households with middle to upper-middle incomes. This served the GSEs profit-making mission (until it was more than counter-balanced by losses on the GSEs' subprime portfolio), but strayed from the public purposes for which the GSEs were created.

In addition, it was and is inherent in the GSEs' current structure that any subsidies for affordable housing are hidden, non-transparent, and off budget. There is no single place that political leaders or the public can go to find out how much the subsidies are in any year, and how they are distributed by

36. In addition, the federal government enhances the affordability of rental housing by providing subsidies to renters and tax credits to developers of low-income housing.

income group (or in any other way for that matter). Instead, the public has had to rely on the occasional one-off studies by researchers at the Congressional Budget Office and the Federal Reserve, and in academia, to have any idea of the subsidies involved.

We believe there is a better, more focused, more transparent and less risky way to assist homeownership than retaining, even in a more regulated form, any of the housing GSEs: by having the federal government match the borrower's down payment (the amount of the match could be tied, on a sliding scale, to the borrower's income). A matching requirement ensures that the borrower has at least some of his or her own skin in the game, and thus a significant incentive to remain in the home, even under difficult circumstances. Concentrating the subsidy on the down payment, meanwhile, attacks the central problem inhibiting low to moderate income households from purchasing a home: their lack of wealth and thus the inability to provide money up front to qualify for a mortgage.

Down-payment subsidies also should be more targeted to the low to moderate income households who really need the help. As long as federal policy makers make home ownership an important objective, society will realize a greater "bang for the buck" by targeting incentives on those whose behavior is most likely to change as a result than on households that already have the financial resources to buy a home.

It is essential that any home ownership subsidies be transparent and on-budget. Without transparency, there is no way for policy makers or the public to know whether the subsidies are reaching those for whom they will make the greatest benefit, and whether they are worth the cost. Furthermore, given all of the demands on public resources, there is no legitimate reason for exempting any federally supported program from the budget process, or hiding it through implicit guarantees like those that were once extended (and now explicit) through the GSEs.

There are two arguments that justify the continuation of the housing GSEs in some form. One justification is that keeping the GSEs would retain a diversified set of policy tools available for supporting mortgage markets in emergencies, like the one we are currently experiencing. Thus, rather than relying solely on the Federal Reserve to provide liquidity to mortgage markets, policy makers have been able to use the resources of Fannie and Freddie (even more so since an arm of the federal government is their conservator), and less directly, the ongoing ability of the Federal Home Loan Banks to advance funds to mortgage lenders.

Over the longer run, we believe the "emergency diversification argument" is a thin reed upon which to retain the housing GSEs, given their inherent shortcomings that this crisis has exposed. Nonetheless, given the current crisis and the potential risks in withdrawing government support for mortgage lending, now is not the time, in our view, to fully privatize or liquidate the GSEs (Moreover, in light of the government rescue of the current creditors of the GSEs it is not clear to us that "privatizing" them would change market expectations about the status of their debt).

The second argument for retaining the GSEs in some form is, frankly, political. We do not believe there is sufficient political support in this environment for dismantling them.

For these reasons, we favor one strategy for the near term, and another for the long run. In the short to intermediate run, we would support either the "public utility" model for the GSEs outlined by former Treasury Secretary Paulson (under which the GSEs' return on capital and their activities would be tightly limited), or housing the current GSE functions directly within the federal government, as recently suggested by Presidential adviser and former Federal Reserve Chairman Paul Volcker. Under the public utility model, in particular, the GSEs should be recapitalized with public funds and then be subject to regulation as are other SIFIs.

At the same time, however, the GSEs and other policy makers should begin making plans for their liquidation after some reasonable period. Given the strong political pressures for using implicit government subsidies to support housing that will not go away, there is an unwelcome danger that, once this crisis subsides, either a public utility or a government owned or operated entity will take on greater risks and support the kind of excesses that led to the current situation. For this reason, we would support a sunset after 5 or 10 years for either public model for supporting mortgage markets, after which the liquidation plan would be implemented. Congress could avoid liquidation at that later date only by voting to continue the then existing arrangement or adopting a new one.

International Cooperation (Not Regulation)

The subprime mortgage crisis has provided a classic illustration of the financial "butterfly effect," demonstrating how problems originating in what was once thought to be a small corner of the U.S. financial system led to what is shaping up to be the greatest financial and economic crisis since the Depression, not just for the United States, but for economies throughout the world. Indeed, it was the global damage caused by the U.S. subprime mortgage crisis that prompted other countries to urge the United States to call the extraordinary post-election meeting in Washington where members of the G-20 agreed to develop a more detailed comprehensive, coordinated plan for responding to the crisis and improving financial regulation.

The global nature of finance presents a paradox, however. While nations now clearly have strong conceptual reasons to coordinate their responses and regulatory frameworks — since economic events in one country, especially in a large country like the United States, spill over into others — in practice, global financial regulation to date has been noticeably less than ideal.

Here, we refer primarily to the experience with coordinated bank capital regulation under the auspices of the Basel Committee on Banking Supervision since the late 1980s. Then, too, the governments of 12 industrialized countries (actually the "G-10") realized the global character of the banking system, and the threats posed to the soundness of that system by the inability of developed country borrowers to repay their bank loans. In response, the financial authorities of those governments, working through the Basel Committee, developed a system of "risk-based" capital standards to assure bank safety. The new system was modeled on a scheme developed earlier by central banks of the United States and the United Kingdom.

The principal idea behind the new Basel bank standards, which were first introduced in 1988, certainly was and still is appealing: that banking activities entail many different kinds of risk, some requiring more capital cushion than others. So, rather than simply requiring banks to maintain minimum capital ratios calculated as a simple fraction of their on-balance sheet assets, the Basel capital requirements are geared to the supposed risk of specific groups (or "buckets") of assets and off-balance sheet commitments or liabilities. In the late 1990s, at the initiation of the Federal Reserve, the Basel Committee began work on a comprehensive refinement of the standards to reflect finer risk distinctions. After nearly a decade of work and numerous drafts, these "Basel II" standards were slated to become effective in November, 2007, just as the subprime mortgage crisis also was beginning to unfold.

Quite clearly, the Basel standards never had a chance to prevent the current crisis. But even had they become effective at an earlier date, they would not have done so. If anything, they would have permitted many, if not most, of the largest banks that have turned out to have had the greatest financial difficulties to operate with even lower capital cushions, an outcome for which those banks were strongly pushing.

The Basel standards and the process that produced them have displayed further problems, which have been outlined by a number of academic scholars through the years, and most recently by Daniel Tarullo, nominated by President Obama to become a Governor of the Federal Reserve System.[37]

1. Quite obviously, the standards took far too long to develop. This was not an accident. The process of having multiple countries is inherently political and bureaucratic, and thus makes the Committee an unwieldy institution for setting detailed rules.

2. Speaking of detail, the pre-crisis version of the Basel II rules grew to more than 400 pages of complex criteria. Standards that are simple and clear, such as the simple leverage ratio (capital to assets), invite less gaming by regulated parties and are easier to enforce.

3. Despite all their detail, the standards nevertheless delegated the fine-tuning to credit rating agencies for setting the risk weights for assets held by most banks, and to selected banks themselves to set capital standards according to their "internal models." Events proved both these delegations to be misguided.

4. As already noted, the Basel II revisions missed altogether what events have revealed to be a hugely important factor relevant to the financial health of individual institutions, and even more so to the rest of the financial system: liquidity.

5. Due in large part to the politics of the standard-setting process, the Basel standards from their inception have given a preference to residential mortgages, which in the United States at least, contributed to housing bubble.

As the current crisis has unfolded, the Basel Committee has proceeded with plans to revise the standards yet again. But rather than simplify the prior draft, the Committee and its members seem mainly interested in further fine-tuning, while adding a liquidity component. There seems to be little or no interest in drastic simplification and/or replacing much of the text with a simple subordinated debt requirement, as we and others have suggested.

We recite the disappointing history of the Basel standards at modest length because it is highly relevant to how we believe U.S. policymakers should react to international pressure to harmonize our financial system reforms with those of other countries. While we see merit in gaining consensus on certain broad reform principles and even some recommendations, as the G-20 already has done, the Basel experience teaches that it would be a major mistake to write detailed rules in concert with policymakers from other countries. For one thing, there is no evidence that common rules for different financial systems and economic environments would be in our interest, or in the interest of the global financial system. But more importantly, the inherent political and bureaucratic delays that would be built into any international rule-writing effort make it ill-suited for not only fixing what went wrong most recently, but for adjusting the rules to accommodate continued financial innovation.

Accordingly, while we agree that in principle financial system safety is a matter for global and not just national concern, in practice we and other countries are far better off undertaking reform at the national level, albeit within the broad contours of objectives already set. The Basel Committee, meanwhile, should be retained not for the purpose of standardizing rules, but for serving as a forum for exchanging views about ongoing developments, about best regulatory practices and lessons, and acting as a clearinghouse for information about specific financial institutions during crises.

37. *Banking on Basel* (Washington, D.C.: Petersen Institute of International Economics, 2008).

Section IV: Conclusion

The United States has a history of enacting major legislation and adopting new rules in response to crises, and this time will be no exception. Given the magnitude of the subprime mortgage crisis and its aftermath, it is a certainty that comprehensive financial reform is coming.

The critical challenge is to ensure that reforms remedy the flaws in the current framework; that they are sufficiently flexible to adapt to changing circumstances and to head off future, avoidable crises, and, all the while, that they do not amount to overkill, by chilling the innovation and prudent risk-taking by financial institutions and their customers on which continued economic growth very much depends.

These objectives will most likely be met if policymakers have a suitable framework for guiding their reforms. We have tried to provide that framework here, one that harnesses the forces of market discipline that were ignored in the run-up to the current crisis and which we believe can and must be retained after the need for massive short-run government intervention has passed.

ABOUT THE AUTHORS

ROBERT E. LITAN is a Senior Fellow in Economics Studies at the Brookings Institution and Vice President for Research and Policy, The Kauffman Foundation.

MARTIN NEIL BAILY is a Senior Fellow in Economic Studies and Director, Initiative on Business and Public Policy at the Brookings Institution.

Initiative on
Business and Public Policy
at BROOKINGS

THE BROOKINGS INSTITUTION
1775 Massachusetts Ave., NW, Washington, DC 20036
(202) 797-6000

The Initiative on Business and Public Policy provides analytical research and constructive recommendations on public policy issues affecting the business sector in the United States and around the world.