

CRISIS AND REGULATION

Avoiding Another Meltdown

James Crotty and Gerald Epstein

The authors argue that the current financial crisis, the worst since the Great Depression, can be seen as the latest phase in the evolution of financial markets under a radical financial deregulation process that began in the late 1970s. Deregulation accompanied by rapid financial innovation stimulated powerful booms that ended in crises. But governments responded to the crises with new bailouts that allowed new expansions to begin. As a result, financial markets have become ever larger, and the crises have become more threatening to society, which forces governments to enact ever larger bailouts. The authors provide a comprehensive set of regulatory solutions they believe will sharply reduce financial instability.

IN OCTOBER 2008, Congress passed and George W. Bush signed into law a \$700 billion bank “bailout” bill, bringing the total taxpayer funds committed to the financial rescue operation to over \$1 trillion. The bailout bill was severely flawed and may not achieve its stated aim of stabilizing financial markets. Lawmakers were stampeded into supporting the bill without insisting on proper safeguards over how the money would be spent and, even more important, without even

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attempting to gain commitments from financial institutions that they would accept serious regulation to prevent such a catastrophe from occurring again.

Still, this is not the end of the story. As we write this, in November, we believe the government may be coming back for more money soon if the recession continues to deepen and the bailout funds prove inadequate. Moreover, as Barney Frank, House Financial Services chairman, promised: “We will be back next year to do some serious surgery.” The *Wall Street Journal* elaborates: “Mr. Frank wants legislation to rewrite housing finance—including the roles of mortgage giants Fannie Mae and Freddie Mac—and overhaul regulation of financial services” (Hitt and Soloman 2008).

What kind of “surgery” should the government implement? Below we present a nine-point program to “overhaul the regulation” of financial services. To explain the rationale for the plan, we first present a very brief description of key flaws in the financial structure that helped cause the current crisis, taken from the detailed analysis of these structural flaws written by one of the authors (Crotty 2008). In our discussion we use the term “New Financial Architecture” (NFA) to represent the basic institutions and practices of the modestly regulated financial system that led to the current crises.

Key Structural Flaws of the New Financial Architecture

First, the NFA is based on light regulation of commercial banks, even lighter regulation of investment banks, and little if any regulation of the “shadow banking system”—hedge funds and private equity funds and the bank-created special investment vehicles (SIVs) discussed below that contributed significantly to the creation of the crisis. Support for lax regulation embedded in the NFA was founded on the central claim of neoclassical financial economics that capital markets price securities correctly with respect to their risk and return. Given the accurate risk-return information provided by capital markets, buyers and sellers of financial securities can make optimal decisions that

lead to risk being held only by those capable of managing it. The celebratory narrative associated with the NFA states that relatively free financial markets minimize the possibility of financial crises and the need for government bailouts. (See Volcker 2008 for a summary of this narrative.) But this theoretical cornerstone of the NFA is based on patently unrealistic assumptions and has no convincing empirical support (Crotty 2008). Thus, the “scientific” foundation of the NFA is shockingly weak, and its celebratory narrative is a fairy tale.

Second, the current financial system is riddled with perverse incentives that induce key personnel in virtually all important financial institutions—including commercial and investment banks, hedge and private equity funds, insurance companies and mutual and pension funds—to take excessive risk when financial markets are buoyant. For example, banks get large fees to originate, service, and securitize mortgages, and they distribute these mortgage-backed securities to capital markets—whether the mortgages later default or not. Total fees from home sales and mortgage securitization from 2003 to 2008 have been estimated at \$2 trillion (Gapper 2008). Top investment bank traders and executives receive giant bonuses in years in which risk-taking behavior generates high profits. Of course, profits and bonuses are maximized in the boom by maximizing leverage, which in turn maximizes risk. In 2006, Goldman Sachs’s bonus pool totaled \$16 billion—an average bonus of \$650,000 unequally distributed across Goldman’s 25,000 employees. Wall Street’s top traders received bonuses up to \$50 million that year. In this environment, it is rational for Wall Street “rainmakers” to take excessive risk in the bubble even if they understand that a crash is likely to take place in the intermediate future. Since they do not have to return their bubble-year bonuses when the inevitable crisis brought on by their excessive risk-taking occurs, they have a powerful incentive to continue the high-risk, high-leverage strategies that enriched them over the course of the boom.

Or consider credit-rating agencies. They are paid by the investment banks whose products they rate. Their profits therefore depend on whether they keep these banks happy. In 2005, more than 40 percent of Moody’s revenue came from rating securitized debt such

as mortgage-backed securities (MBSs) and collateralized debt obligations (CDOs). If one agency were to give realistic assessments of the high risk associated with mortgage-backed securities while others did not, that firm would see its profit plummet. Thus, it made sense for investment banks to shop their MBSs around, looking for the agency that would give them the highest ratings, and it made sense for agencies to provide excessively optimistic ratings. The NFA operated with an incentive system virtually guaranteed to generate rapid financial growth fueled by excessive risk-taking and dangerous levels of lever-

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age. Note that under the operative regulations of the NFA, bank capital requirements depended on the riskiness of their assets, and risk could be determined by the ratings given by ratings agencies. This made the perverse incentives of the ratings agencies a formal component of the regulatory system.

Third, financial innovation has proceeded to the point where important structured financial products such as mortgage-backed securities and collateralized debt obligations are so complex and so opaque that they are inherently nontransparent. They cannot be priced correctly, are not sold on markets, and are inherently illiquid. Eighty percent of the world's \$600 trillion of derivatives are sold over-the-counter (OTC) in deals negotiated between an investment bank and one or more customers. Indeed, the value of securities not sold on markets may exceed the value of securities that are. Thus, the claim that competitive capital markets price risk optimally, which is the foundation of the NFA, does not apply *even in principle* to these securities.

A mortgage-backed CDO is a complex security that converts the cash flows from the mortgages in its domain into tranches or slices that have different risk characteristics. Banks sell the tranches to investors.

Several thousand mortgages may go into a single MBS, and as many as 150 MBSs can be packaged into a single CDO. The relation between the value of a CDO and the value of its mortgages is complex and nonlinear. Significant changes in the value of underlying mortgages induce large and unpredictable movements in CDO values. Ratings agencies and the investment banks that create these securities rely on extremely complex simulation models to price CDOs. It can take a powerful computer several days to determine the price of a CDO. These models are unreliable and easily manipulated. Given the ubiquity of

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perverse incentives, it is not surprising that market insiders refer to the process through which investment banks and ratings agencies price or mark CDOs as marking to “magic” or to “myth.”

Since products such as CDOs are nontransparent, they are liquid only during bubbles. Buyers were plentiful in the boom because they could borrow money cheaply to buy these products, returns were high, and the products carried top ratings that seriously underestimated their risk. But when the housing boom ended and defaults increased, the fact that no one knew what these securities were worth caused demand to evaporate and prices to plummet. This in turn caused a collapse in the value of the assets and in the capital of financial institutions.

Fourth, the conventional view was that banks were not risky, because in contrast to the previous era when they held the loans they made, they now sold these mortgages to capital markets through securitization. In the NFA, banks were said to operate under a new “originate and distribute” model. Moreover, it was believed that banks hedged whatever risk remained through credit default swaps. Both these propositions turned out to be myths.

Banks kept risky products such as MBSs and CDOs for five reasons,

none of which were considered in the NFA narrative. First, to convince potential investors that these securities were safe, banks often retained the riskiest part—the “toxic waste.” Second, given banks’ incentive to generate high profits and bonuses through high risk, they purposely kept shares of the riskiest products they created to maximize bankers’ compensation by maximizing short-term profits. Third, the rate of flow of these securities through banks was so great and the time lapse between the bank’s receipt of a mortgage and the sale of the MBS or CDO of which it was a part was sufficiently long that at every point in time, banks held or “warehoused” substantial quantities of these securities. When demand for MBSs and CDOs literally collapsed in the crisis, banks were left holding huge amounts of mortgages and mortgage-backed products they could not sell. Collapsing prices for these products are the main source of bank losses. Fourth, when banks found the safest or “super senior” tranches of mortgage-backed securities hard to sell because their yield was low, they kept them themselves so they could sustain the high rate of CDO sales that kept bonuses rising. In a comment that reflects the power of perverse incentives, Citigroup CEO Charles Prince said in July 2007: “When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you’ve got to get up and dance. We’re still dancing” (Nakamoto and Wighton 2007). Fifth, CDOs were especially attractive since they could be held off-balance-sheet with no capital reserve requirements.

In 2007, the Bank of England noted that rather than slimming down as the originate-and-distribute model suggested, banks’ on-balance-sheet assets had exploded—from \$10 trillion in 2000 to \$23 trillion in 2006. The main cause of this asset growth was the incredible rise in bank holdings of mortgage-backed securities and collateralized debt obligations. These were the kinds of securities that banks were supposed to sell rather than hold in the NFA. The International Monetary Fund (IMF) estimated that as of September 2008, global bank losses on loans and securities had reached \$760 billion.

Claims that banks hedged most risk through credit default swaps were equally shaky. Credit default swaps are derivatives that allow one party to insure against loss from loan defaults by paying insurance

fees to another party. However, since the value of credit default swaps hit \$62 trillion in December 2007 while the maximum value of debt that might conceivably be insured through these derivatives was \$5 trillion, it is evident that massive speculation by banks and others, not just hedging, was taking place. This interpretation is supported by Fitch Ratings, which reported that 58 percent of banks that buy and sell credit derivatives acknowledged that “trading” or gambling is their “dominant” motivation for operating in this market, while less than 30 percent said “hedging/credit risk management” was their primary motive. This result “confirms the transition of credit derivatives from a hedging vehicle to primarily another trading asset class” (Fitch Ratings 2007, 9). By 2007 the credit default swap market had turned into a gambling casino that helped destroy insurance giant AIG and investment bank Bear Stearns, and caused widespread panic when Lehman Brothers was allowed to fail. Lehman was one of the world’s largest insurers in the credit default swap market.

Fifth, it was claimed that in the capital-market-based NFA, complex derivatives would allow the risk associated with any class of securities to be divided into its component parts. Investors could buy only the risk segments they felt comfortable holding. The global integration of financial markets allowed risk segments to be distributed around the world to whichever investors were best suited to deal with them. Rather than concentrate in banks as in the “Golden Age” financial system of the 1950s and 1960s, it was argued, risk would be lightly sprinkled on agents across the globe. Since markets priced risk correctly, no one would be fooled into holding excessive risk, so systemic risk would be minimized.¹

There are major flaws in this argument. Derivatives can be used to speculate as well as hedge, and aggressive risk-taking during financial expansions is hard-wired into the NFA. In the boom, hedging via derivatives is relatively inexpensive, but financial institutions guided by perverse incentives do not want to accept the deductions from profit that full hedging entails. Conversely, after serious troubles hit financial markets, agents would like to hedge their risk, but the cost becomes prohibitively expensive. For example, to insure \$10 million

of Citigroup debt against default for five years through credit market swaps cost about \$15,000 a year in May 2007 but \$190,000 in February 2008. To purchase credit-default insurance on \$10 million of shaky Countrywide debt in January 2008, investors had to pay \$3 million up front and \$500,000 annually.

The NFA narrative applauded globalization of financial markets because it created channels of risk dispersion. But securitization and funding via tightly integrated global capital markets simultaneously created channels of contagion in which a crisis that originated in one product in one location (U.S. subprime mortgages) quickly spread to other products (U.S. prime mortgages, MBSs, CDOs, home equity loans, loans to residential construction companies, credit cards, auto loans, monoline insurance, and auction rate securities) and throughout the world. The networks of contagion that linked markets together were a necessary condition for the outbreak of the current global systemic crisis.

The NFA created and widely distributed extraordinary levels of risk, while structured financial instruments like CDOs re-concentrated risk segments in astoundingly complex ways. The inherent nontransparency of complex securities and the lack of serious monitoring of large financial institutions made it impossible for anyone to tell where these risks were located. This seriously complicated government attempts to stop the global financial crisis, while it caused financial institutions to refuse to lend to one another.

Sixth, in the NFA, banks were allowed to hold risky securities off their balance sheets in special investment vehicles (SIVs) and conduits with no capital required to support them. Since capital had to be held against on-balance-sheet assets, the regulatory system induced banks to move as much of their assets off-balance-sheet as possible. These were supposed to be free-standing enterprises to which the originating banks had no obligations or commitments. SIVs borrowed short-term in the commercial paper market. To enable this commercial paper to receive AAA ratings and thus low interest rates, the originating banks had to make commitments to provide their SIVs with guaranteed lines of credit, which made them vulnerable to problems experienced by their SIVs.

The SIVs invested this short-term money in long-term, illiquid, but

highly profitable securities such as CDOs—a dangerous game. When problems in the housing market triggered a wave of subprime defaults, the value of MBSs and CDOs collapsed, revealing to everyone the house of cards on which the SIVs were built. This naturally triggered a mass exodus from the asset-backed commercial paper market. US asset-backed commercial paper outstanding fell from \$1.2 trillion in July 2007 to \$840 billion by year's end. With the disappearance of their major source of funding, banks were forced to move these damaged assets to their balance sheets. In late July 2008 analysts at Citigroup forecast that up to \$5 trillion worth of SIV assets might end up back on bank balance sheets. The combination of bank write-downs on assets

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held on-balance-sheet combined with SIV assets that had to be moved back onto balance sheets seriously eroded bank capital. This in turn forced banks to try to lower their risk by reducing lending and raising interest rates, both to other financial institutions and to households and nonfinancial businesses. The resulting credit squeeze exacerbated the fall in home prices and rise in defaults, causing additional bank losses. These forced more capital write-downs and spread panic.

Seventh, deregulation allowed giant financial conglomerates to become so large and complex that neither insiders nor outsiders could accurately evaluate their risk. Conceding that outsider regulators could not do the job, the Bank for International Settlement allowed banks to evaluate their own risk—and thus set their own capital requirements—through a statistical exercise based on historical data called Value at Risk (VAR). Government officials thus ceded to banks, as they had to ratings agencies, crucial aspects of regulatory power.

VAR is an estimate of the highest possible loss in the value of a portfolio of financial assets and liabilities over a fixed time interval with

a specific statistical confidence level. The standard exercise calculates VAR under negative conditions likely to occur only 5 percent of the time. This mode of risk assessment has several fundamental flaws. One is that there is no time period in which historical data can generate a reliable estimate of current risk. If firms use data from the past year, as is commonplace, then during boom periods like 2003 to mid-2007 a VAR exercise will conclude that risk is minimal because defaults and capital losses on securities are low. This means that banks will need to set aside only a small amount of capital as insurance against estimated risk. Given the high maximum asset-to-capital ratio that the underestimation of risk permitted, banks aggressively expanded leverage, which left them vulnerable when the crisis appeared. On the other hand, if data from many years or even decades in the past are used in the VAR calculation, the existence of past crises will raise estimated risk, but financial markets will have undergone such fundamental change over the long period that these estimates are unlikely to be good predictors of current risk.

Another flaw is that VAR models assume that financial security prices are generated by a normal distribution in which the likelihood that an observation several standard deviations beyond a 95 percent confidence interval will occur is infinitesimal. In fact, security prices follow a distribution in which the preponderance of observations are “normal,” but upon occasion observations far from the mean appear—the well-known “fat tail” phenomenon. Tail events—such as the precipitous drop in stock prices that took place in August 1987 or the global crisis brought on by the collapse of the giant hedge fund Long Term Capital Management or the recent global stock market crash—inevitably occur from time to time. Given a normal distribution, such events would be unlikely in the life span of the universe. This perception means that banks evaluate risk on the assumption that no events that can trigger large losses can possibly take place, which leaves banks vulnerable each time a crisis episode erupts.

Finally, the asset-price correlation matrix is a key determinant of measured VAR. The lower the correlation among security prices, the lower the portfolio’s risk. VAR models assume that future asset price

correlations will be similar to those of the recent past. However, in crises the historical correlation matrix loses all relation to actual asset-price dynamics. Most prices fall together as investors run for liquidity and safety, which creates a positive risk-augmenting correlation unaccounted for in VAR calculations. Again, actual risk is much higher than risk estimates from VAR exercises.

By allowing banks run by people with perverse incentives to assess their own risk and set their own capital requirement through VAR, regulators created a system in which banks severely underestimated risk in the boom. This allowed them to take excessive risks using dangerous levels of leverage. Reliance on VAR helped create the current crisis and left banks with woefully inadequate capital reserves when it broke out. This is just one of many examples of totally ineffective regulatory processes within the NFA. Financial markets were not just lightly regulated; such regulation as did exist was often “phantom” regulation ineffective by design.

Eighth, as noted, the structural flaws in the NFA created dangerous leverage throughout the financial system. The leverage problem was made evident with the 1998 collapse of Long Term Capital Management, a hedge fund that had managed to control \$125 trillion in derivative products on a capital base of less than \$5 billion. Regulators said they had to rescue LTCM to avoid a global financial meltdown. Yet the lesson of the 1998 crisis that high leverage is dangerous seemed to be quickly forgotten. Borrowing by U.S. financial institutions rose from 62 percent of GDP in 1997 to 114 percent of GDP at the end of 2007. Just prior to the crisis, large investment banks had asset-to-equity ratios of 30 or more. In 2007 Goldman Sachs used only about \$40 billion of equity as the foundation for \$1.1 trillion of assets. At Merrill Lynch, \$1 trillion of assets was backed by a paltry \$30 billion of equity. Moreover, at least half of their borrowing was in the form of overnight repos, money that could flee at the first hint of trouble. Half of the spectacular rise in investment banks’ return on equity in the four years leading up to the crisis was generated by higher leverage rather than smarter investing or efficient innovation. Commercial banks appeared to be adequately capitalized, but only because a high

percentage of their assets was hidden off-balance-sheet. In fact, they were excessively leveraged, as the crisis revealed.

Rising leverage in the recent boom was facilitated in part by the easy-money policies of the Fed. To avoid a deep financial crisis following the collapse of the late-1990s stock market and Internet booms, the Fed began to cut short-term interest rates in late 2000 and continued to hold them at record lows through mid-2004. Financial firms were thus able to borrow cheaply, which, under different circumstances, might have fueled a boom in productive capital investment. However, given the structural flaws in financial markets and a sluggish real economy, the additional funds were used instead for speculative financial investment that fed the high financial-sector profits of the boom. By 2007 the global financial system had become, to use Hyman Minsky's famous phrase, "financially fragile." Any serious deterioration in the cash flows required to sustain security prices would trigger a dangerous de-leveraging process.

Falling housing prices and rising defaults provided that trigger. As the value of mortgage-backed securities fell, lenders demanded increased collateral for the loans used to purchase them. This forced borrowers to sell these securities, which accelerated their price decline, and to sell other securities, which spread the crisis across markets. A panic ensued that no one has been able to stop. The de-leveraging process froze credit markets. Since the modern nonfinancial business and household sectors run on credit, the shrinking availability and rising cost of borrowing contributed to a slowdown in economic growth that worsened the financial crisis.

The past quarter-century of deregulation combined with the rapid pace of financial innovation and the moral hazard caused by past government bailouts created the conditions that spawned the recent financial boom that led to this devastating crisis. Central banks and other regulatory bodies will be forced to take whatever interventions are required to stop the financial collapse—no matter how high the cost. The dynamic of deregulation rolls on—leading to financial booms that eventuate in crises that lead to bailouts and thus to yet larger booms. After every

“rescue,” financial markets become larger, more complex, more opaque, and more highly leveraged. The value of all financial assets in the United States grew from four times GDP in 1980 to ten times GDP in 2007. The share of corporate profits generated in the financial sector rose from 10 percent in the early 1980s to 40 percent in 2006.

It is time to break this vicious cycle. We cannot permit the growth trajectory of financial markets in recent decades to continue. It is not possible for the value of financial assets to remain so large relative to the real economy, because the real economy cannot consistently generate the cash flows required to sustain such inflated financial claims. It is not economically efficient to have such large proportions of income and resources captured by the financial sector. Financial markets must shrink to a size relative to nonfinancial sectors that will allow them to perform their basic productive services for the real economy, but will also reduce, if not eliminate, exotic gambling casino activities. These activities generated the current crisis, contributed dramatically to the rapid rise in inequality in this era, and threaten to severely damage the global economic system.

We need an aggressive system of financial regulation that will be as effective as the one used in the United States and other Western countries in the 1950s and 1960s. There can be no simple return to the past: the suggested agenda of reform that follows is tailored to current conditions. Keep in mind that this program does not exhaust the list of regulatory changes that may be required to tame out-of-control financial markets.

A Nine-Point Program for Financial Regulation

1. Restrict or eliminate off-balance-sheet vehicles

Force all risky investments onto bank balance sheets and require adequate capital to support them. Capital requirements should be sufficient to protect bank solvency even during the liquidity crises that occur from time to time. As an illustration of the potential effectiveness of this proposal, consider that several years ago a group of Spanish banks approached the Spanish Central Bank asking permission to set

up a network of special investment vehicles that would allow them to profit from off-balance-sheet holdings of mortgage-backed collateralized debt obligations without setting aside capital to support them. The Spanish Central Bank demanded that these banks post an 8 percent capital charge against SIV assets, just as they would have to do if they were on-balance-sheet. This stopped the innovation in its tracks (Tett 2008a). The *Economist* observed that “with no reason to set up the SIVs, the Spanish banks did not bother. Other countries could have saved themselves a lot of trouble by taking a similarly rigorous view of consolidation” (“Spanish Steps” 2008, 20). This sensible decision did not prevent Spain from enduring a housing-related financial crisis, because its housing boom was so extreme, but it did eliminate one key element of the meltdown in the United States and elsewhere (Tett 2008b).

2. Require due diligence by creators of complex structured financial products

Require the investment banks that create mortgage-backed securities, CDOs, and other opaque mortgage-backed financial assets to perform “due diligence” on the individual securities embodied in these products. “Due diligence” would obligate the issuer to evaluate the risk of each underlying mortgage, then use this information to evaluate the risk of the asset-backed security under varying conditions that might affect the value of the underlying mortgages. This task would be difficult and costly if done properly; it could make the most complex securities unprofitable. If this could not be done to regulators’ satisfaction, sale of these securities should be prohibited. A related requirement should be that the underlying mortgages in a complex security must be identifiable, and ultimate ownership of these mortgages must be clear. Where this is not the case, securities cannot be “unwound” in a crisis, and the terms of the mortgage cannot easily be adjusted to stop the spread of defaults. Imposition of this requirement would probably close the market for CDOs and more complex securities based on CDOs.²

A “due diligence” requirement would also reduce the deleterious role played by ratings agencies in the NFA.³

3. Prohibit the sale of financial securities that are too complex to be sold on exchanges

Eighty percent of all derivative products and 100 percent of the complex CDOs, credit default swaps, and other exotic financial instruments implicated in the current crisis are traded off markets or over-the-counter. If regulators insisted that all derivative securities be exchange traded, those OTC securities that could be simplified and commodified would shift to exchanges where they would be transparent, involve less counter-party risk, and be cheaper sources of finance. “Simpler products impose lower costs of credit analysis on end users, which in turn makes them less expensive sources of funding” (“Ruptured Credit” 2008). The most complex products, including CDOs, probably cannot be sufficiently simplified and would disappear from the market (see Dizard [2008] for one such proposal). Of course, investment banks and hedge fund traders would not meekly accept such a proposal since writing and trading complex derivatives OTC is a source of huge profits (“Clearing the Fog” 2008). A general ban on OTC derivative trading has one key advantage over attempts to prohibit specific products such as CDOs. Investment banks can evade regulations banning specific products or services by creating alternative products that are not identical but perform the same functions. Prohibiting OTC products would eliminate this form of regulatory evasion. NFA supporters would argue that this reform would inhibit useful innovation, but it is now clear that the societal costs of such innovation—in terms of financial crises that cause or exacerbate real-sector problems and require government bailouts—far exceed their questionable social benefits.

4. Transform financial firm incentive structures that induce excessive risk-taking

Perverse incentives for top decision makers in important financial firms are a major cause of the current crisis. This asymmetric pay structure has greatly exacerbated the inherent pro-cyclical behavior of financial markets. Without solving this key problem, it might not be

possible to create an effective regulatory regime. One mechanism to make the payoff structure more symmetrical, and thus reduce incentives for risk-seeking, would be to implement “clawbacks” through which excessive salaries and bonuses paid during the upturn would have to be repaid in the downturn.⁴ Such clawbacks could be required in compensation contracts or could be implemented via the tax system through a series of escrow funds and limitations on deductions from losses. Of course, there would be strong incentives to engage in tax or restriction avoidance, as is always the case. The appropriate response is not to stop trying to use appropriate taxes but to enforce the tax laws more vigorously.

Incentives to ratings agencies also need to change. If they were paid by institutional investors or associations of security buyers rather than the investment banks that sell complex products, the incentive to give excessively optimistic ratings would be eliminated. Alternatively, the government could create independent public ratings agencies that might function in a manner similar to the Government Accountability Office.

5. Extend regulatory oversight to the “shadow banking system”

The “shadow banking system” of hedge and private equity funds and bank-created SIVs had become increasingly powerful. Though humbled by the current crisis, it is nonetheless still very much alive, waiting in the wings to revive if and when the crisis is over. The shadow banking system played a key role in creating the conditions that led to the global crisis. It must be brought under adequate regulatory control.

Investment banks also played a crucial role in the NFA and bear substantial responsibility for creating the current crisis. Though the Fed does not regulate them, it was forced to bail them out. Dangerous risk-taking caused the big five independent investment banks to disappear in the crisis; two went bankrupt, one was taken over by a commercial bank, and two converted themselves from investment banks to financial conglomerates. The SEC was responsible for regulating investment banks, but it required only voluntary compliance

with its rules and never even read the compliance reports submitted by the banks—yet another example of “phantom” regulation. Investment banks, whether they are part of financial conglomerates or are free-standing, need tight regulation.

6. Implement a financial precautionary principle

Once the financial regulatory structure is extended to all important financial institutions, it would be possible to implement a regulatory precautionary principle with respect to new products and processes created by financial innovation. It would be similar in principle to the one used by the U.S. Food and Drug Administration to determine whether new drugs should be allowed on the market. Destructive innovations were at the center of crisis creation. Proposal 1 mentioned that Spanish banks had to ask permission from the Bank of Spain to create off-balance-sheet SIVs. This principle could be extended to all financial institutions and all important proposed financial innovations. Regulators would determine whether these innovations were likely to increase systemic fragility. Typically, the regulatory authority would do as the Spanish authorities did, tell the financial institution that as long as they could raise sufficient capital to ensure that the risk to that institution was minimal, they could implement it. Regulators would be empowered to monitor the evolution of the innovation to make sure that it did not threaten systemic stability. However, there would be cases in which the regulatory authority would prohibit the innovation on the grounds that even with more capital, it would have serious negative externalities for the system.

China’s system of regulation includes a strict policy of “anything not specifically permitted is prohibited.” When asked what other countries could learn from China’s regulatory system, Liao Min, director-general and acting head of the general office of the China Banking Regulatory Commission, replied, “Chinese financial institutions needed CBRC approval to launch individual product types, making it nearly impossible for exotic financial instruments, such as the ones blamed for the subprime crisis, to exist in China.” As a result

of this practice, “Chinese banks have emerged relatively unscathed from the global credit crisis” (Anderlini 2008). Until South Korea accelerated the liberalization of its financial system in the mid-1990s, its government maintained a list of acceptable banking practices. Financial institutions had to get regulators’ permission to do anything not on the list. We suggest careful consideration of the “anything not specifically permitted is prohibited” principle.

7. Restrict the growth of financial assets through countercyclical capital requirements

A number of the previous suggestions might help restrict the excessive growth of financial assets in the boom. But they may not, by themselves, eliminate the excessive growth of financial assets. As a number of observers have noted, asset creation is extremely pro-cyclical. (See, for example, Wray 2007.) As asset prices rise, bank capital rises as well, so banks can increase loans until they hit regulatory capital constraints. This lending leads to a rising demand for securities and thus higher security prices, which increases the value of bank assets and allows the process of expansion to continue. This process is as dangerous in the downturn as it is in the expansion. To ensure control of the rate of expansion of financial assets, regulators should impose *countercyclical* capital-asset ratios (see Adrian and Shin 2008). Spain experimented with such a policy. “Since 2002 the Bank of Spain has had something called a ‘dynamic provisioning’ regime, where bank provisions go up when lending is growing quickly. . . . Over the cycle the effect is neutral, but the timing of provisioning should make the troughs less deep and the peaks less vertiginous” (“Spanish Steps” 2008, 20). Though Spanish regulators did not impose this policy with sufficient vigor, its experience is suggestive.

8. Implement lender-of-last-resort actions with a sting

Institutions might be too big to fail, but no CEO should be. The CEOs of the seven largest investment banks received a total of \$3.6

billion from 2004 to 2007, yet the market capitalization of their firms declined by \$364 billion from their peak values, an average fall of 49 percent. As long as there is financial capitalism, there will be a need for some lender-of-last-resort bailouts, even if all of these proposed policies are implemented. But a key distinction must be made between the financial institution itself and the agents who made the decisions to take risks and benefited from these decisions—top management, key traders, and other richly rewarded operators. These rainmakers must be made to pay significantly when their firms are bailed out. As things currently stand, the perverse incentives embodied in financial firms' asymmetric reward structure are underwritten by the central bank, which creates extreme moral hazard.

9. Create a bailout fund financed by Wall Street

When the FDIC rescues failing commercial and savings banks, it uses insurance funds paid for by the banks themselves, not by the taxpayer. A similar insurance scheme should be created to finance bailouts for other kinds of financial institutions. The government should impose a small transactions tax on all security sales. (See Pollin 2005 for a general discussion of the transaction tax.) The tax rate might be calibrated to generate about \$100 billion in annual tax revenue. The fund would typically accumulate hundreds of billions of dollars in normal and boom times prior to the outbreak of a financial downturn. If effective regulations are put in place to prevent a really dangerous risk buildup in the expansion phase of the financial cycle, the fund should have more than enough money to rescue those institutions that fail in the downturn.

Conclusion

We conclude with the important and obvious caveat that none of these proposals, nor any alternative effective proposed regulations, will be implemented unless there is a dramatic change in the political economy of regulation. Over recent decades, top officials at the Federal Reserve, the Securities and Exchange Commission, the Treasury, and elsewhere

either believed in the theory of efficient capital markets and the celebratory narrative of the New Financial Architecture or at least acted as if they did. Alan Greenspan was until recently the most important financial market regulator in the world, as well as a disciple of free-market ideologue Ayn Rand. According to the *Wall Street Journal*, “Mr. Greenspan says he didn’t get heavily involved in regulatory matters in part because his laissez-faire philosophy was often at odds with the goals of the laws Congress had tasked the Fed with enforcing” (Ip 2007).

Moreover, regulators move to and from Wall Street in a kind of revolving door relationship. Henry Paulson, the current U.S. secretary of the Treasury, was CEO at Goldman Sachs, and Robert E. Rubin, the current chairman of the Executive Committee at Citigroup, had served as co-chairman of Citigroup prior to becoming treasury secretary. It is never clear—perhaps even to them—whether they represent Wall Street or the American people when they make important decisions. For example, the original bailout bill presented to Congress by Secretary Paulson and vigorously supported by Fed chairman Bernanke was a clear attempt to deliver \$700 billion to Wall Street without any effective protection of the public interest.

We will not be able to enact adequate reforms until two fundamental changes take place. First, the mainstream theory of efficient financial markets that is the foundation of support for the NFA must be replaced by the realistic financial market theories associated with John Maynard Keynes and Hyman Minsky. Recent events should convince any rational economist that the theory of efficient capital markets should be rejected once and for all, though it is far from clear that this ideologically grounded vision will in fact disappear.

Second, there must be a broad political mandate in support of serious financial regulatory reform. For too long, the Lords of Finance have corrupted the political process. Congress and the president have acted in recent decades as if they were paid employees of financial market interests, which many of them were. Perhaps anger over the \$700 billion and the recession can galvanize the needed political support for change. The key is to channel the anger into pressure for a new “New Deal” in government regulation of financial markets.

Until we have regulatory institutions empowered by law to control financial markets and force them to act in the public interest, and we populate them with well-trained and well-paid officials who believe in serious regulation, we will continue down the disastrous path we have been following for the past three decades.

Notes

1. "In theory, derivatives, securitization and a choice of financing should spread risk, increase the financial sector's resilience and reduce the economic damage from a shock ("When Fortune Frowned" 2008).

2. We are grateful to Rob Parenteau for suggesting this point about the need to be able to unwind mortgage-backed securities in a crisis.

3. Originating investment banks could also be required to retain ownership of a minimum percent of the securities they create sufficient to reduce their propensity to sell excessively risky products that come with overly optimistic risk ratings. This minimum would have to be quite large unless the perverse compensation incentives discussed in note 4 below are reduced substantially.

4. The \$700 billion bail-out program does not contain such provisions. It has only weak language suggesting that new "golden parachutes" for executives leaving the firm might be in jeopardy. Existing golden parachutes would remain in place.

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