



EPI BRIEFING PAPER

ECONOMIC POLICY INSTITUTE • MAY 1, 2009 • BRIEFING PAPER #231

REBUILDING THE FRAMEWORK FOR FINANCIAL REGULATION

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Introduction: The context for reform

The immense scale of intervention by the Federal Reserve and Treasury to shore up a collapsing financial system is unprecedented in U.S. history. The actions taken pointed up the nature of the problems with which they were dealing: the interconnectedness of institutions and markets around the world; the overall lack of transparency in institutions, markets, financial activities and assets; the incredible leverage that had pushed up the exposures of financial institutions in relation to their capital; and the innovations that, without analysis of their effects, transformed the financial system in ways that made it much more profitable and added much more risk.

Deregulation has been blamed as the cause of many of these problems and clearly played a large role in creating the conflicts of interest and lack of transparency that followed from exempting mortgage-backed securities (MBS) from registration and disclosure, the repeal of the Glass-Steagall Act, and the authorization for multipurpose financial holding companies. On the other hand, banks developed successful strategies to evade capital and reserve requirements by securitizing loans, moving investments and derivative contracts off their balance sheets, and relying more heavily on borrowed funds than deposits to expand their activities—developments that contributed to an immense expansion in debt for both financial institutions and their customers.¹

The collapse of the Madoff ponzi scheme dealt the final blow to confidence in the U.S. Securities and Exchange Commission in particular and the effectiveness of U.S. regulatory authorities in general. But the other, equally substantial problem that became apparent as institutions failed and markets froze was the evasion of oversight responsibility by the Federal Reserve. Before March 2008, the Fed had not moved to acquire informa-

TABLE OF CONTENTS

Introduction: The context for reform	1
Identifying problems and proposing solutions	3
Reforming the regulatory framework	12
Reviving monetary control	15
Conclusion	17

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tion about the interconnectedness and cross-exposure to risk among counterparties in the enormous markets for credit default obligations (CDO), credit default swaps (CDS), and other complex over-the-counter (OTC) derivatives (Sorkin 2008). That, in turn, underscores their larger failure: the complacent conduct of business-as-usual based on old assumptions about the effectiveness of regulatory and monetary strategies—despite glaring evidence of a paradigm shift in the structure of financial markets. As Hyman Minsky warned in the 1980s:

The Federal Reserve has to be concerned with the effect of the changing structure of financial relations...[It] must guide the evolution of financial institutions favoring stability enhancing and discouraging instability augmenting institutions and practices...[and] needs to recognize its responsibility for the normal behavior of all finance. (Minsky 1986, 349 and 359)

The structure of the U.S. financial system began to change as early as the 1970s with a gradual shift from a bank-based to a market-based system. Banks ceased to be the dominant holders of credit market assets as household savings moved from banks to pension and mutual funds.² Securitization—inaugurated by Fannie and Freddie—took off in the 1980s after the exemption of privately-originated pools of mortgages from registration and disclosure.³ The next stage of securitization—the growth in asset-based securities that bundled car loans and other consumer receivables—succeeded in moving a rising share of household debt as well as savings to the capital markets and making a larger share of outstanding credit subject to regulatory strategies applicable to market-based institutions.

In its 2002 *Annual Report*, the Bank for International Settlements (BIS) began to warn that market-based systems are inherently procyclical. The full meaning of that warning became abundantly clear when the collapse of Bear Stearns was followed six months later by the bankruptcy of Lehman Brothers and the bail-out of AIG, followed in turn by massive infusions of aid and asset guarantees for Citigroup and Bank of America. These developments were the result of the Fed's failure to recognize that the potential for a systemic crisis had been intensified by the web of interconnections among financial institutions and

sectors and that all institutions—including banks—were now subject to the procyclical rules of the market system to which Bear, Lehman, and AIG were subjected.

The collapse of AIG illustrates how the rules of the market system affected—and still affect—the larger institutions in the global financial system. The tipping point for AIG was its role as a major counterparty in derivatives markets—the various trillion-dollar non-public, non-transparent markets in which the more important institutions in all sectors have become interdependent through the process of buying and selling various forms of financial insurance to one another. Having been allowed to develop outside the framework of exchange or clearinghouse structures, over-the-counter derivatives contracts pose a systemic risk because they were not designed to be traded. Existing positions must be hedged by buying or selling even more contracts, pushing up the nominal value of outstandings to many multiples of the value of the underlying assets, and increasing interdependence (and the potential domino effect) within the global system.

When the Fed turned down its request for a loan the week before it had to be bailed out, AIG warned that if Lehman—one of the 10 largest parties in the \$62 trillion market for CDS—went down, it, too, would be vulnerable. The systemic effects that threatened AIG were due to its sizable share of outstanding CDS contracts and resulted from the downward pressure imposed by the decline in prices for the assets backing the contracts. As prices fell, additional collateral had to be posted followed by a write-down in asset values that required charges against capital. The decline in capital triggered a drop in credit ratings, raised the cost of what little credit AIG could obtain, and sank its stock price, making it difficult to raise the capital it needed to remain viable. Once into such a downward spiral, there is little hope of recovery and the bail-out was needed to prevent (or slow) the fall of the next domino.

The U.S. experience with crisis management to date underscores the need to approach the issue of regulatory reform on a comprehensive basis. The problems spawned by particular financial activities, products, and institutional structures must be addressed using functional rather than sectoral criteria. New rules must be applied evenly to all institutions engaged in a given activity. Proposals must

have a countercyclical thrust to overcome the procyclical bias of the regulatory framework for the market-based system and prevent a recurrence of the boom/bust financial cycle that led to the current crisis.

The first section of this paper describes some of the problems widely viewed as having contributed to the financial crisis and evaluates proposals to address them using two criteria: comprehensiveness and countercyclicality. The second section analyzes proposals for reforming the architecture of the U.S. financial system and discusses issues such as the role of state regulators and financial guaranties that are also seen as needing consideration. The final section of the paper argues that re-forging the link between monetary policy and the real economy will require expanding the central bank's influence to the system as a whole and describes the quantitative tools needed to rebuild countercyclical monetary capacity to ensure that the Fed can effectively fulfill its stability mandate.

Identifying problems and proposing solutions

The list of regulatory, institutional, product, and market developments that have contributed to the current financial crisis probably stretches well beyond what we now know. Nevertheless, the present task is to identify what we do know and try to fix the problems we see as future threats to the system. The following builds on recent discussions of some of the major developments and proposals that should be examined and evaluated in the process of designing a credible reform package.

Securitization

Securitization is arguably the most important financial innovation in terms of moving the process of supplying credit from portfolio lending to issuing securities in the capital markets. Fannie Mae and Freddie Mac—the government-sponsored agencies (GSEs)—initiated it in the early 1970s. By the end of 1983, mortgage-backed securities (MBS) issued by these agencies totaled \$243 billion or 20% of outstanding residential mortgages. In 1984, total trading in mortgage-related assets reached \$1.6 trillion—more than the dollar value of trading on world stock exchanges—and expanded further as the decade progressed (D'Arista 1993a).

In 1984, the Secondary Mortgage Market Enhancement Act was introduced to facilitate the expansion of the private market for MBS. Pressure for this legislation emerged after the Monetary Control Act of 1980 removed interest rate ceilings for depository institutions. Enacted in the 1930s, these ceilings had set higher rates for savings and loan institutions (S&Ls) than for banks and, together with provisions that restricted lending by S&Ls to housing, had created an institutional framework for mortgage finance based on portfolio lending. After 1980, competition for funding at market rates of interest meant that S&Ls could only survive by issuing adjustable rate mortgages (ARMs). Banks joined thrifts in supporting the bill because the “originate and distribute” model removed the uncertainty of portfolio lending in the new interest rate environment and was seen as a way to free-up capital. Investment banks were already earning large fees for packaging and selling securities against pools of mortgages and they, too, strongly supported the legislation. Thus, the channel for mortgage finance shifted from an institutional to a market framework that linked a growing number of financial sectors.

While the House and Senate Banking Committees approved the 1984 legislation with little objection, the securities subcommittee of the House Energy and Commerce Committee⁴ had reservations. Members objected to exempting private issues of MBS from registration and disclosure, arguing that relying on the assessments of a few nationally recognized rating agencies was an inadequate substitute. Proponents argued that the exemption was needed to allow private issues to compete with the exemption given to Fannie and Freddie because of their status as GSEs. Two of the witnesses before the subcommittee—Preston Martin, then vice-chairman of the Federal Reserve Board, and Henry Kaufman, the prominent Wall Street economist—also opposed the exemption. In addition, they warned that loosening the link between creditors and borrowers would encourage inadequate loan evaluation. Kaufman characterized securitization as permitting a drift “toward a financial system in which credit has no guardian” (D'Arista 1993a, 275).

After passage of the 1984 legislation, the MBS market expanded rapidly as less-regulated, non-depository lenders such as mortgage brokers and finance companies

were drawn into the process of originating and selling mortgages. Banks and thrifts also stepped up their involvement, encouraged by the fact that the first Basel Accord on capital adequacy (1988) lacked rules covering capital for securitization exposures. By the end of the 1980s, every financial sector in the U.S. system had begun to buy, hold, and trade MBS. The privileged position of the MBS markets—both private and public—facilitated the build-up of the housing bubble. As MBS filtered into every nook and cranny of the system, the impact of the rising price of housing on these securities gave a substantial boost—and posed a major threat—to the savings of American households. When the bubble burst, households' net worth fell because of the drop in the prices of homes, and then fell further as the value of MBS held in their pension and mutual funds declined.

By 2004, the regulatory concerns raised 20 years earlier appeared to have been validated. The absence of capital restrictions on banks' securitization exposures and the unregulated status of many mortgage originators resulted in an undercapitalization of what had become the largest U.S. credit market. As the market developed, most MBS carried high ratings and continued to do so even as the volume of sub-prime mortgages increased. Credit rating agencies, issuers, and investors appear to have believed that securitization could actually diminish the risk of sub-prime mortgages when pooled (Pollin 2009). However, as the crisis unfolded, the absence of disclosure about the pools of mortgages backing these securities contributed to the severe disruption in confidence within the financial system that has exacerbated the credit crunch and made efforts to negotiate loan work-outs far more difficult than in the past (Crotty and Epstein 2008; Stiglitz 2008).

Managing the crisis has focused heavily on the problems generated by MBS and the derivatives markets they spawned and has required unprecedented levels of government intervention including the conservatorship of Fannie and Freddie. Going forward, however, it is difficult to believe that securitizing mortgages as well as car loans and other forms of consumer credit will not continue. Reform proposals will, therefore, need to address the concerns that have been raised by this innovative financial technique.

For example, drawing up adequate rules for the capital needed to cover securitized positions has also been identified as a priority issue. While concern about adequate capital for banks' exposures has been addressed in Basel II (Cornford 2008), ratios may not be high enough in the light of current developments. More important, rules for other financial institutions have not been proposed. In the wake of widespread losses on MBS and related derivatives throughout the financial system and the growing relevance of arguments favoring the adoption of comprehensive regulatory strategies, applying a single standard to all intermediaries that have securitization exposures seems a valid proposal.

The Financial Stability Forum (FSF)⁵ joins those who now favor disclosure at each stage of the securitization process and call for stronger accounting rules (FSF 2008). Crotty and Epstein (2008) stress the need for issuers to evaluate the risk of each underlying mortgage and identify their ownership. The report on Financial Reform of the Steering Committee of the Group of Thirty (2009) proposes that regulators require institutions to retain a meaningful share of the credit risk they are packaging into securitized and other structured products. Stiglitz (2008) also proposes improved incentives for evaluating loans by originators and that the share of the loan held by the originator match the amount put down by the borrower—no less than 20% for each unless the government guarantees the mortgage. This 40% minimum would, in effect, provide a form of insurance for the pooled loan that would insulate it from a decline in the price of the home. If prices fell, both the lender's and borrower's equity might be wiped out but a loan work-out could reduce that share of the principle without altering the amount of the mortgage held in the pool. Obviously, the larger the down payment and the share of the loan retained by the lender, the greater the protection for the securitized asset. Given the amount of MBS held throughout the financial system, their impact on the values of pensions and household savings, and thus their influence on changes in spending, addressing the need to protect these securities is also a high priority for reform.

Another issue that must be addressed is the role of privileged assets such as MBS in credit allocation. How-

ever worthy the objectives that have supported the institutions and strategies that favored financing for housing, the rapid build-up in credit to any one sector of the economy is unsustainable. While regulatory strategies such as disclosure, loan-to-value ratios, and due diligence are an important part of a tool-kit that would prevent excessive lending, appropriate quantitative monetary tools (discussed below) are also needed in a financial reform package to ensure an even distribution of credit across the economy. Equally important, reform proposals must include a new system for monitoring securitization. An obvious solution is to require that all asset-backed securities be issued and traded on public markets that provide real-time information on prices and the volume of trading and improve the potential for regulatory oversight.

Increasing the transparency of financial markets

Financial innovation—whatever its benefits—has contributed to the growth of institutions, markets, and activities that have greatly undermined the amount and quality of information needed to maintain confidence and promote liquidity in the U.S. financial system. The threat to asset values has been exacerbated by three factors: the spread and growth of non-transparent, over-the-counter (OTC) markets for securitized assets and derivatives that fail to provide participants with the real-time information on price and trading volume that a market system needs to function efficiently; by the growth of underreported and undercapitalized off-balance sheet positions; and by the increasingly important role now played by highly leveraged, non-transparent institutions such as hedge funds and private equity funds in credit and derivatives markets. The following sections discuss these three developments and their contribution to the erosion of transparency in the U.S. financial system and describe some of the proposals that have been offered to deal with the problems they pose.

OTC markets. Americans hear daily—even hourly—about developments in the stock markets, but most have never heard of the much larger markets for asset-backed securities (including MBS) or for contracts that derive their value from changes in foreign exchange, interest rates, and the prices of equities, commodities, and credit

obligations. In the market for credit default swaps (CDS), for example, outstanding contracts on underlying assets are valued at over \$62 trillion—more than the total value of all the actual financial assets in the world.⁶ Information on these markets is based on reports on outstanding contracts at a specific time and is collected with a lag. Information on the volume of trading is particularly difficult to assess, but recent reports (for 2002) estimate that the average large dealer entered into 1,900 transactions and made over 22,000 settlements on a *weekly* basis (Cornford 2008).

As the subprime crisis unfolded, the absence of information on declining values undermined the process of price discovery in many of these markets and led to a halt in trading. Lack of information on trading volume increased uncertainty and amplified suspicions about the exposure of counterparties. As noted, it was the CDS market that proved to be the tipping point for Bear Stearns, Lehman Brothers, and AIG.⁷ Questions about the size of their holdings and the value of the collateral behind them drove down their stock prices and made counterparties unwilling to provide the credit they needed to survive.

The Group of Thirty (2009) argues that regulators should determine what information should be disseminated to investors and require disclosure of that information. But, as reiterated by the FSF in its April 2008 report, there are also longstanding concerns about the operational and settlement infrastructure for derivatives markets. Proposals for reform include requiring that all derivatives be registered and traded on exchanges (Crotty and Epstein 2008; PERI/SCEPA 2009) or establishing a central clearing house for settlements that would obtain information on clearing house members' capital and the value of collateral backing contracts. Arguments against the proposal to require exchange trading focus on the limitations of standardized contracts (dates and amounts in particular) as compared to the advantages of bilateral deals that can be tailored to the specific needs of the customer.⁸ It is because of these advantages that OTC contracts are so attractive and also why they cannot be traded. As discussed, the seller of a contract can only hedge the position by buying another contract from another dealer who must then buy a contract to hedge her position—a chain that results in extraordinary growth in the aggregate

nominal value of outstanding derivatives contracts that is far greater than the total value of the underlying financial assets on which these contracts are based.

The structure of OTC derivatives markets increases their contribution to the potential—and, as we have seen, the actuality—of systemic risk. The inability to trade these bilateral contracts tends to concentrate the market in the hands of relatively few dealers. Although the value at risk—based on estimates of the changes in price likely to occur between the dates contracts are sold and settled—is much smaller, it is nevertheless a very large share of the capital of the largest parties in OTC markets. Moreover, these markets' susceptibility to a halt in trading and the requirement that collateral against contracts be marked-to-market can abruptly multiply exposure in a crisis. Failure to restructure these markets is not an option.

Off-balance-sheet positions. Tailoring derivatives contracts to the particular needs of individual customers is based on concepts derived from portfolio lending and, in fact, these markets were developed by the primary portfolio lenders: commercial banks. But as their holdings of derivatives grew, banks were not able to keep them in portfolio and moved them and other contingency commitments off balance sheet where the insufficiency of the capital needed to cover such large exposures could be ignored.

Contingency contracts such as letters of credit have long been a standard part of banks' menu of services to customers. But a wider variety of financial insurance came into play in the early 1970s when banks began to offer guaranties for commercial paper to shore-up the market for funding for their own holding companies' activities as well as to earn fees from finance and non-financial companies.⁹ By the early 1990s, banks backed over \$100 billion of the commercial paper issued by the 15 largest nonbank finance companies, and the role of the largest banks in insuring financial assets expanded further as the decade progressed.

In the 1990s, the entire panoply of bank guaranties became something of a parallel or shadow banking system—an immense volume of contingency liabilities rivaling the actual volume of loans on the books of the largest banks, with estimates of total commitments and contingent liabilities issued by domestic institutions as high as \$5.6 trillion as early as 1991 (D'Arista and Schlesinger 1993). As the shadow system developed,

additional off-balance-sheet products and entities—credit default obligations (CDO) and structured investment vehicles (SIVs), for example—were created to expand the range of guaranties for financial assets, and so off-balance-sheet holdings exploded. Although this system purported to substitute private guaranties for public support, it created an explicit channel through which buyers of these contacts could—and did—gain access to the public sector lender-of-last resort and (under the Treasury's plan to shore up the system, adopted by the Congress October 3, 2008) to the taxpayer as well.

The way in which banks' off-balance-sheet holdings contributed to the crisis was described by Federal Reserve Bank of New York President Timothy F. Geithner on April 3, 2008 in testimony before the U.S. Senate Banking Committee: the pull-back of many of the traditional providers of the asset-based commercial paper that banks used to fund off-balance-sheet positions forced banks to provide other financing for these positions or take them onto their balance sheets. As banks' cost of raising unsecured funding shot up and maturities shortened, their scramble for funding helped spread the crisis to other financial institutions and markets with particularly adverse effects on the commercial paper market and the holdings of money market mutual funds (MMMFs). What ensued, as Geithner noted, was the classic pattern in financial crises: margin calls, sales of assets to meet the calls, further downward pressure on asset prices, and additional margin calls and falling prices that reinforced the downward spiral.

While the Basel II capital accord, the Financial Stability Forum, and the Group of Thirty do not call for outlawing off-balance-sheet holdings, others have (Crotty and Epstein 2008; Lewitt 2008; PERI/SCEPA 2009). Advocates of the proposal for placing all assets on balance sheets argue that requiring the same capital backing for these products would remove one of the incentives for large financial institutions to maintain their excessive focus on providing credit insurance rather than on extending the credit needed to support economic growth. Others point out that the Spanish authorities allowed banks to have SIVs but required them to have the same capital requirements as other assets rather than the slightly lower requirements permitted by Basel II (Cornford 2008).

Moving these positions onto balance sheets where they would be subject to reporting requirements would greatly increase the transparency of the financial system, while subjecting them to the same capital requirements as other assets would help ameliorate the extreme undercapitalization of derivatives markets. Reform proposals must both address the concerns these positions raise and also consider the larger concern: that extending financial guarantees to other financial institutions is inherently hazardous to creating and spreading systemic crises.

Hedge funds and private equity firms. Despite calls for regulating hedge funds after the collapse of Long Term Capital Management (LTCM) in 1998, they continued to operate without registration and reporting requirements even as their share in trading and investment grew significantly larger. Hedge funds are viewed as potentially destabilizing because so little is known about the overall nature and scale of their activities, how leveraged they are, and how concentrated their holdings may be.

Recent proposals for regulating hedge funds and/or private equity firms include the recommendations of the Fisher II working group that hedge funds report market, liquidity, and credit risk (Griffith-Jones et al. 2007) and, from the Group of Thirty (2009), that regulators establish appropriate standards for capital, liquidity, and risk management for all systemically significant private pools of capital that employ substantial borrowed funds.¹⁰ In a series of recommendations dating back to 2006, a committee of the European Parliament requested in April 2008 that the Parliament's Commission on hedge funds and private equity submit legislation by November 30 that would regulate these entities to ensure appropriate capital requirements, require registration and authorization of funds' managers, and impose limits on leverage (European Parliament 2008).

While the EU Committee joins others in calling for more information about these entities, it also argues that "new and better regulation of hedge funds and private equity cannot be isolated from the need for better regulation of other financial actors;" that the increased interdependence of all financial firms "requires a coherent and consistent approach to regulation..." (European Parliament 2008, 16). Their proposals are consistent with the view that all firms should be subject to the same regulatory framework

applicable to other financial firms involved in the same activities including, in the case of hedge funds, collateral and margin requirements as well as capital requirements and limits on leverage.

Restricting leverage

It is now widely acknowledged that excessive leverage drove up the volume of trading and prices of MBS and credit derivatives in the financial boom that flourished around the housing bubble and that the forced de-leveraging that has occurred since the bubble burst is driving down asset prices to levels that are threatening the capital of the financial system. While the role of capital is discussed below, the failure to impose equivalent capital requirements on all intermediaries and on all activities of institutions already covered provided incentives for the build-up of what has proved to be an unsustainable level of leverage in the global system.

One major incentive for the build-up in leverage was the relaxation of restrictions on capital requirements for investment banks in 2004 which led to debt-to-equity ratios that no one questioned until Bear Stearns collapsed in March 2008 with, in common with their competitors, a ratio of 30 to 1.¹¹ Meanwhile, as revealed by the collapse of LTCM a decade ago, hedge funds probably have ratios much higher than those of investment banks and their leverage can have major effects on asset prices around the globe if it takes only a dollar of capital to place bets on \$100 of assets. With ratios of 10 to 1, the larger banks seemed to be much less leveraged than other institutions but, as discussed, those ratios applied only to on-balance-sheet holdings and not to off-balance-sheet conduits and positions.

In the aftermath of the collapse of Lehman Brothers and sale of Merrill Lynch, the investment banking model has been abandoned by the last two large free-standing firms, Goldman Sachs and Morgan Stanley. Their willingness to accept the capital and other requirements imposed on banks and their holding companies suggests that limits on institutional leverage will be adopted in reform legislation. But there are still financial activities and markets that require attention. Proprietary trading by commercial banks as well as investment banks and affiliates of insurance and finance companies is one area

that should be more closely scrutinized and brought within limits.

Proprietary trading and carry trades. Proprietary trading provides the platform for the immense volume of carry trades that channel capital flows through the global economy, creating winners and losers of credit availability based on interest rate differentials in national or regional markets. The profitability of these transactions depends on leverage—on borrowing low-yielding short-term liabilities and investing in higher-yielding long-term assets. In the case of cross-border trades, expectations about appreciation and depreciation are also factors in choosing the currencies for borrowing and investing.

No regulatory limits have been placed on how much can be borrowed to buy the assets acquired in carry trade transactions and institutions have not been required to report information on their positions. But the flight to quality triggered by Russia's default on its government bonds in August 1998 and the ensuing collapse of LTCM gave some indication of the scale of carry trade transactions as abrupt changes in prices drove institutions to unwind positions abruptly and take substantial losses.¹²

The original Basel Capital Accord did not subject commercial banks' proprietary trading positions to capital requirements because it was assumed that these transactions were short term and bore little risk. Now, however, recognizing that risk, the Group of Thirty (2009) recommends that proprietary trading activities of important banking institutions be limited by strict capital and liquidity requirements. Meanwhile, as the institutional risk of excessive borrowing was ignored, so were the feast and famine effects of leveraged carry trades for developing countries. Also ignored was the damage caused by unrestricted borrowing for private equity buyouts that push debt up to unsustainable levels for the companies involved and lead to their collapse. It is hoped that these and other broader economic consequences of highly leveraged transactions will be considered in reform programs undertaken by the advanced economies that are now wracked by the crises that leverage helped generate.

Margin and collateral requirements. Tools that prevent excessive leverage involving individual financial assets and products also need to be considered. Extending margin requirements to all financial assets in addition to

stocks—credit instruments, derivatives, and commodities contracts, for example—could assist in curbing a future build-up in leverage involving particular instruments and markets. Margin requirements are a particularly effective tool for curbing leverage in that they apply to both financial and nonfinancial borrowers. Collateral requirements, too, are an effective curb on leverage but while collateral requirements, usually set by creditors, are effective in protecting against risk in normal times, they are not a sufficient cushion when falling asset prices prompt margin calls. Margin requirements, set by regulators, have the advantage of being adjustable. Like margin requirements on stocks in the 1960s and 1970s, they can function as a countercyclical regulatory tool by being increased when prices are rising and relaxed when they fall—a quantitative tool that can moderate excessive swings in borrowing and lending and serve as a critical prophylactic for a robust financial system.

Addressing the procyclical effects of capital requirements

As discussed, capital requirements help curb excessive leverage, and the failure to require adequate coverage for various activities and institutional sectors contributed to the build-up in borrowing that undermined the viability of many systemically important firms. It is not surprising that reform proposals put forward by national and international regulatory authorities call for banks and other financial institutions to raise more capital to offset losses and write-downs on assets that have fallen in value (FSF 2008). In these discussions, capital is viewed as the principal cushion for financial institutions and their shrinking capital base is viewed as a threat to systemic solvency. The ongoing pressure on capital is also seen as one reason institutions have hoarded the liquidity provided by central banks. As a result, ongoing infusions of central bank liquidity have failed to revive credit flows to either financial or nonfinancial borrowers—a failure that implies that capital requirements have become a procyclical factor perpetuating the crisis.

Assessments of the role capital plays in guarding the soundness of the financial system have tended to focus on the balance sheets of depository institutions and have evaluated its effectiveness in the context of a bank-based

system in which assets are held at book value rather than marked-to-market. In such a system, banks were expected to add reserves against non-performing loans and write down losses against capital. The pressure on capital tended to occur with a lag and, as in the case of the threat that the debt of less-developed countries (LDCs) posed to the capital of the largest U.S. banks in the 1980s, gave time for these institutions to expand their lending into more profitable areas and reduce non-performing loans as a share of assets and capital.

The rules of the game in a market-based system are less forgiving. As described in the discussion of the collapse of AIG, assets must be marked-to-market with “haircuts” taken against capital when prices fall. Good assets must be sold to restore required capital ratios and meet calls for more collateral to back debt.¹³ Once the downward spiral begins, it moves very quickly, triggering downgrades in credit ratings and a loss in confidence that raises the cost of funding and pushes down the firm’s stock price. At that point, it is almost impossible for an institution to raise additional capital and regain its robust standing. As so many prominent institutions succumbed to these pressures, the benefits of continuing to require mark-to-market accounting came into question and strategies for government assistance in supplying both capital and liquidity were required.

In U.S. credit markets today, MBS and derivatives based on MBS are held by institutions throughout the financial system. As a result, the majority of financial institutions—including banks—are now affected by the inexorable downward pressures that govern the inherently procyclical market-based system—pressures that increased the potential for the credit crunch to deteriorate into a solvency crisis more rapidly than in earlier periods and affect a wider group of institutions. Thus, one of the greatest challenges in reforming the regulatory system will be to design new methods for protecting capital.

There is support for the concept of introducing countercyclical capital standards for banks that would raise requirements when economic activity is strong and reduce them when it is weak (Crotty and Epstein 2008; Stiglitz 2008; Group of Thirty 2009; PERI/SCEPA 2009). Recognizing the inherent procyclicality of capital requirements, Basel II attempted to address the problem

by requiring banks to set capital on the basis of data averaging variations in credit-worthiness over the business cycle. The Financial Stability Forum, however, acknowledges that this may prove inadequate (FSF 2008; Cornford 2008). The process of generating and evaluating such data obviously would be difficult and would, once again, rely on banks themselves to develop the criteria for capital requirements.

One specific proposal would link capital requirements to changes in the *value* of assets, requiring an automatic increase in capital as holdings rise in value and facilitating an automatic decline as they fall (Goodhart and Persaud 2008). The problem with this proposal is that it would require banks to use models to value illiquid assets and leaves open the possibility that the valuation process would undermine the objective. Another proposal is to require banks to increase provisions against future losses based on expectations of an eventual downturn in the business cycle while reassigning capital to the more limited role of covering unexpected losses—a strategy that has been used in Spain and Portugal in recent years (Cornford 2008; Crotty and Epstein 2008; PERI/SCEPA 2009).

All these proposals are promising and should be explored further. But all deal exclusively with bank capital. Threats to the solvency of systemically important non-depository institutions make clear that the focus on bank capital is incomplete. Nevertheless, most recommendations maintain the outmoded assumption that systemically important institutions remain embedded in an essentially bank-based system. They acknowledge that banks’ “portfolios” now contain a mixture of tradable and non-tradable instruments but several analyses—Papadimitriou and Wray (2008) and the Group of Thirty (2009), for example—make recommendations regarding fair value accounting that attempt to modify the rules applicable to trading and investment in a market-based system to fit the requirements of portfolio lenders.¹⁴

Designing an appropriate role for capital in a mixed bank- and market-based system is a critical concern that must be addressed in proposals for reforming the regulatory framework. Reform proposals that deal with capital requirements must take into account their failure to deter the excessive credit expansion that led to the current crisis

and their role in impeding efforts to revive credit flows as the crisis unfolded. It could be argued that the failure to recognize that capital requirements have been a conduit to collapse rather than a cushion is at the root of the failure of the crisis management strategies that have been tried.

Conflicts of interest

Conflicts of interest undermine market efficiency by introducing incentives for transactions not based on unbiased, arms-length economic assessments. They erode the fiduciary responsibility of lenders and other providers of services and distort the financial sector's role in allocating credit to the real economy.

Examples of conflicts of interest include loans that are made because the lender expects the borrower to reward the firm by buying additional services. The lender may even structure—or tie—credit to another product or service. Incentives for conflicts of interest also arise when institutions' own activities—proprietary trading by affiliates within banks and other financial holding companies, for example—provide opportunities to use information about their customers in making their own investment or trading decisions, or take actions that conflict with the interests of their customers.¹⁶ The unbundling of services in the 1999 legislation that dismantled the Glass-Steagall Act created new opportunities for tying services and, while authorities called for more effective Chinese walls to prevent these and other conflicts of interest, monitoring breaches of firms' fiduciary responsibility has not been a high priority for regulators.

Some reform proposals call, once again, for stronger Chinese walls to protect customers. As noted, the Group of Thirty (2009) recommends restricting proprietary activities that present particularly serious conflicts of interest. Another proposal would prohibit the use of in-house providers of services in connection with loans or investment transactions and would design penalties for infractions of the rule. For example, an institution that has a financial interest in a firm that appraises property values would not be permitted to buy insurance for its mortgage bonds from a company in which it has a stake (Stiglitz 2008).

Meanwhile, there is widespread recognition that conflicts of interest are embedded in the fee structure of credit

rating agencies (CRAs). Because fees are paid by the issuers of securities and structured credit products, there is a strong incentive for CRAs to assign high ratings to issues to avoid losing a customer to a competitor who may be willing to raise the rate. While Basel II offers different options for setting risk-based capital levels for banks' securitization exposures, most of them give a role to credit agency ratings and continue to extend CRAs' influence throughout the global financial system.

The Financial Stability Forum (FSF) acknowledges that official recognition of CRAs by regulators may have encouraged over-reliance on these agencies.¹⁷ Meanwhile, the FSF and others also acknowledge that an important trigger for the turmoil in March 2008 was the sharp decline in confidence in the ratings of structured credit products such as CDS. Having given phenomenally high ratings that contributed to the growth of subprime lending, the agencies suddenly announced a number of multi-notched downgrades to these instruments. The FSF faults the agencies' models for wrongly assessing the level of risk and faults their performance in conducting due diligence to evaluate the credit quality of assets backing structured credit products (FSF 2008; Cornford 2008).

The FSF's recommendations include lowering reliance on CRAs by strengthening internal processes for producing rates within financial institutions and adding more supervisory capacity and more information exchange and cross-border cooperation among regulators.¹⁸ The FSF proposal is flawed because it would rely primarily on models and due diligence provided by the largest financial institutions and could create new conflicts of interest. Others believe rating agencies themselves need more government oversight (Stiglitz 2008) and some, including a Committee of the European Parliament, propose the establishment of a public credit rating agency (European Parliament 2008; Crotty and Epstein 2008; Pollin 2009; PERI/SCEPA 2009).

Concentration

Many have noted that the problem in the current financial crisis is not that institutions are too big to fail but that they are too interrelated to allow the more systemically important firms to fail. Nevertheless, it is hard to dismiss the idea that the size of institutions does not increase interrelatedness or that interrelatedness itself is a product

of concentrations in the assets and liabilities on and off the balance sheets of these important firms and in the size of their transactions with key counterparties. All these elements—institutional size plus asset and counterparty concentrations—contributed to forcing the bailout of AIG and, given AIG's size, increasing its cost.

The size of Fannie and Freddie has also been a focus of the debate over the need for government intervention and the form it should take. There have been constant reminders in the financial press that these two agencies together hold or insure half of all outstanding mortgages. The conservatorship arrangement was undertaken in part because a direct takeover would have added \$5 trillion to the government's debt. But another factor in the "too big to fail" status of these institutions was that foreign central banks and other foreign investors owned almost one-fifth of their debt.

In the period after the conservatorship solution was put in place, other issues have taken precedence over discussions about the future of Fannie and Freddie, but it is clear that restructuring these agencies and/or their mission will be an important part of reform proposals. Some of the concerns that have already been raised will need to be addressed. One commentator argues that Fannie and Freddie be phased-out over the next five-to-10 years or be completely privatized (Poole 2008). A group of progressives favors nationalization (PERI/SCEPA 2009), while another commentator questions whether or not the government should be in the mortgage business given that it already gives a tax break to homeowners (Surowiecki 2008). The Group of Thirty (2009) recommends avoiding structures based on hybrids of private ownership with government sponsorship.

Some analysts and members of Congress are likely to argue that Fannie and Freddie should remain in the business of supporting a secondary market for home mortgages. In a market structure in which interest rate ceilings on deposits cannot be used as a policy tool, securitization—the so-called originate and distribute model—is an obvious alternative to portfolio lending for long-term assets. Others are likely to urge that the mission of the agencies be redefined and limited to support for affordable housing. Even so, their size, the amount of capital they should be required to hold and their status as public

or private institutions will continue to be critical issues in making those decisions.

Meanwhile, one of the important elements in current and past crisis management strategies has been to encourage or permit the take-over of fragile institutions or their assets by supposedly stronger acquirers. While this option may be necessary in some cases in the short-term, it is one that intensifies the potential for systemic risk in the future (Kregel 2008b). Many of these mergers should be unwound when the turmoil subsides. The Group of Thirty (2009) recommends that nationwide limits on deposit concentrations be considered. But Congress will also need to consider new strategies to limit the size of all financial institutions—banks, investment banks, insurance, and finance companies—and their holding companies to smooth out the bulge involving systemically important conglomerates that has emerged over the last three decades. In addition, Congress must deal with asset and counterparty concentrations by enacting quantitative measures such as margin requirements on all financial transactions and limits on transactions with individual financial counterparties in all markets.

Compensation

One analyst asserts that too much capital has been taken out of investment banks in the form of annual compensation (Lewitt 2008)—a complaint that could be made about other financial (and non-financial) sectors as well. When bail-outs occurred, that loss of capital to exorbitant levels of compensation was replenished by government funding. Concerned about the inequity of that outcome, Congressional reactions to proposals for more funding have insisted on limiting the paychecks of managers whose firms receive government support.

But concerns about compensation are not limited to the U.S. Congress. The Financial Stability Forum says that compensation arrangements have tended to encourage excessive risk-taking without sufficient regard for the build-up of long-term risks and recommends that firms align their compensation models with long-term, firm-lating pay structures also recommend that they be based on more than one year's performance. It is suggested that reserve or escrow accounts be used to hold bonuses with clawbacks from those accounts when performance falters

(Crotty and Epstein 2008; Lewitt 2008; Stiglitz 2008; PERI/SCEPA 2009). Given the link between larger levels of remuneration and firms that are more highly leveraged, it also seems reasonable to suggest that setting ceilings for compensation levels and requiring that amounts over those levels be retained in the form of equity capital until the age of retirement would be a useful component of soundness regulation.

Reforming the regulatory framework

The conceptual basis for the blueprint for regulatory reorganization issued by the President's Working Group on Financial Markets in March 2008 emphasized the need for comprehensive regulation under rules that would be applicable to financial functions or activities rather than institutional labels.¹⁹ It also proposed rationalizing the regulatory framework under three headings: overall market stability, prudential regulation of firms, and business conduct in relation to consumer protection (U.S. Treasury 2008). The broad outlines of the proposal were echoed in the testimony of the New York Fed's president before Congress in April (Geithner 2008) and are consistent with ideas that have also been broached by other analysts (Cornford 2008; Silvers 2008).

Some stress the need for a new focus on consumer protection including advocates for a single agency to oversee regulations protecting financial products and services for consumers including credit cards, home mortgages, consumer loans (including pay-day loans) and money wiring (Silvers 2008; Warren 2008). Others stress the need to evaluate products in terms of their objectives, risk characteristics, and transparency, giving regulators the authority to ban products from the balance sheets of regulated entities (Crotty and Epstein 2008; PERI/SCEPA 2009) and take a role in designing new products to address risks not currently well-handled for groups without access to credit (Stiglitz 2008). In addition, Silvers proposes extending protections involving transparency, fiduciary duties, and suitability requirements for investors to cover all securities, derivatives, and futures contracts. He also advocates applying the same protections to all investment vehicles including hedge, private equity, and sovereign wealth funds, and

imposing stronger, asset-based capital requirements on all institutions (Silvers 2008).

Stiglitz (2008) addresses the issue of market stability by proposing a commission that would look at the whole system, not just individual institutions. The job of the commission would include, for example, determining the appropriate level for leverage on a *systemic* basis. It would also look at regulations from a countercyclical perspective by addressing the need to increase collateral and margin requirements and down-payments on mortgages, and monitor credit data to see if a rapid expansion of lending into new markets requires scrutiny.

The Treasury blueprint gave the Fed a larger role in supervising financial stability and the U.K. government, too, has offered a controversial proposal that would move the Bank of England beyond its current, limited focus on monetary policy by establishing a committee to oversee financial stability (Cornford 2008). Stiglitz' proposal for a new commission to oversee systemic risk is indicative of the objections that have been raised by others. William Greider (2008), for example, wants to remove the Fed's regulatory role altogether and create a new public agency that is more visible and politically accountable. But others argue that it would be irresponsible to sever the link between monetary policy and the surveillance of systemic stability. The fact that rapid credit expansion and increased use of leverage may lead to financial crises makes it necessary for central banks to accept a role in promoting and maintaining financial stability (Group of Thirty 2009).

The Fed's failure to prevent the crisis supports the view that the central bank itself needs to be reformed. Pollin (2009) and others (PERI/SCEPA 2009) offer proposals to democratize the Fed and make it more politically accountable—another and no less important job for Congress. It is Congress that has the constitutional authority to maintain monetary stability and the Fed is the agency to which it has delegated that authority. A reexamination of the Fed's responsibilities in exercising its stability mandate is long overdue.

The role of the states in financial regulation

Moving to a system of comprehensive regulation will revive debates on the appropriate role of the states in financial regulation. Currently the individual states

charter and oversee a broad range of financial firms including banks and other depository institutions, securities and mortgage brokers, and finance and insurance companies. States have, in fact, exclusive jurisdiction over insurers and, in the wake of the AIG collapse, long-standing proposals for making a federal agency their primary regulator are likely to gain additional support. But even with that shift in regulatory coverage and a larger federal role in overseeing systemic stability and consumer protection, arguments in favor of retaining the states' input into the regulatory structure have merit.

Throughout U.S. history the states have served as laboratories for both strengthening and reducing regulation and have addressed concerns about particular problems at the local and regional level before they became a focus of national attention. Some have made a contribution in areas such as consumer protection while others have fallen behind in meeting their responsibilities in this and other areas. Nevertheless, all have a stake in financial regulation because they and their taxpayers are responsible for the soundness of the sizable pension funds that cover their government workers. Unless a new system is adopted for protecting the savings held in these and other pools and conduits, states' role in financial regulation should be continued.

Financial guaranty programs

The proliferation of products such as derivatives that provide financial insurance to financial institutions suggests that the financial sector itself believes that structural changes created the need for new methods of protection. Although deposit insurance is still in place in the United States and many other countries, the shift in personal savings from banks to pension and retirement funds has eroded the protection they once gave households. As the International Monetary Fund noted, households have become the shock absorbers in financial markets (IMF 2005). Clearly a new means for protecting households must be considered since losses in the value of funded pension plans and mutual funds have—and will continue to have—important implications for changes in aggregate demand and economic growth.

One way to provide more effective coverage for personal savings would be to replace existing financial guaranty

programs with a system that protects individuals rather than institutions. Identified by their Social Security numbers, personal accounts in one or more federally regulated financial institutions would be covered up to a certain amount and records of individuals' or households' aggregate savings would be maintained by the insurance fund.²⁰ Premiums would be collected from the interest or gains on covered assets, offset by a full tax deduction, and paid directly to the insurance fund by the institutions in which they are held.¹² Insurance reserves would be invested in government securities and the system would be compulsory to ensure that all savers are covered, that reserves are adequate, and that liability for losses is fairly distributed.

This basic framework could be elaborated or modified in a number of respects. For example, it could better reflect the needs of savers by increasing the amount of coverage for accounts held in more than one name or for heads of households based on the number of dependents. Small savers could be given additional advantages such as a waiver of premium payments on aggregate accounts under a given amount or a sliding scale for premiums based on gross income. To emphasize the protection of pension and retirement funds, the ceiling for coverage of assets held in such plans could be raised for individuals as they approach retirement age.

While some might object that moral hazard is inherent in any financial guaranty scheme (Davis 2001), the proposal to insure individual savers is one that confronts the moral hazard involved in insuring institutions: it can accommodate failure. For example, if an institution does not take the necessary steps to improve the quality of assets or address other problems and appears unlikely to do so, it will no longer be permitted to advertise that the individual accounts it holds are insured and will be required to notify customers that accounts held there will not be covered after a certain date. While this will certainly create runs on individual institutions and result in failures, savings will move to other institutions before losses occur. Thus a generalized loss of confidence in the financial system will be avoided by an explicit assurance that institutions that are permitted to accept insured accounts are considered sound.

Meanwhile, the extension of guaranties to money market mutual funds during the current crisis raises im-

portant questions about the amount of coverage of transactions accounts needed to protect the payments system and who should be covered. Clearly, the current limitation on the amount of coverage is too little to protect deposits that pay salaries of local hospitals or school systems or retail establishments, let alone those of major corporations. A major element of reform must include legislation providing full coverage to all transactions balances held in federally regulated depository institutions. But, as the Group of Thirty (2009) has recommended, money market funds that wish to continue to offer transaction account services should be required to reorganize as special-purpose banks with appropriate regulation and access to central bank lender-of-last resort facilities.

Improving the governance of private pension plans

The current structural framework governing private pension funds presents pressing problems about how plan sponsors and money managers meet their fiduciary responsibilities to beneficiaries. For example, the employer-sponsor of defined-benefit plans pools funds that include both the delayed compensation of employees and beneficiaries and also its own contributions. It is entitled to assume fiduciary responsibility for making decisions as to how the funds will be invested and by whom, how much will be paid for management fees, and who is to make corporate governance decisions about voting shares held by the plan. Under current U.S. law, the status of beneficiaries is the same as that of 19th century widow and orphans—that is, their rights as owners are subordinate to the decisions made by the fiduciary. The decisions taken by the fiduciary are assumed to be the same as those a “prudent man” would take in making decisions about his own affairs.

While labor unions play a role in administering some pension plans, most defined-contribution plans are administered by employers. Defined-contribution plans convey more explicit ownership rights to beneficiaries than do defined-benefit plans. The account is held directly in the beneficiary’s name, and she has some choices as to the types of assets in which to invest as well as some ability to move or withdraw funds. However, since most defined-contribution plans are pooled to increase portfolio

diversification, the individual beneficiary must accept the employer’s choice of managers and foregoes the right to engage in managing the pool or actively participate in corporate governance decisions. Holders of IRAs and Keogh plans do make individual choices about the financial institutions in which they pool their funds to ensure diversification of assets but, having selected an institution, they, too, become subordinate to the investment and corporate governance decisions of that institution’s management.

In short, the majority of private pension and retirement plans are funneled into an institutional mix of money managers where the rights of owners of pension assets are shifted without any clearly defined, across-the-board rules governing the conduct of those managers (Blackburn 2003). In this environment, managers feel free to charge exorbitant fees without regard to performance (Baker 2003) and—as ably documented by the many analysts of Enron, WorldCom, and other frauds and collapses—their investment and corporate governance decisions are frequently distorted by conflicts of interest.

Given these and other abuses, it is time for Congress to reform the framework for private pension funds. One improvement would be to allow owners of defined-contribution plans and IRAs to organize their own investment pools, select their own directors and managers, set fees and investment policies, and determine strategies for the exercise of corporate governance. There is precedence for pooling beneficiary-owned defined-contribution funds in the mutual structure of TIAA-CREF, the fund that covers teachers and employees of non-profit organizations. But these new funds need not be related to the workplace. They might, instead, be organized around geographic areas or specific investment goals or, as in the case of TIAA-CREF, particular types of work or professions. Nevertheless, they should still be subject to oversight by the Department of Labor and the Internal Revenue Service as ERISA plans are now. Moreover, if individual accounts were federally insured as proposed above, the insurance agency also would have an oversight role.

The primary objective of the proposed mutual structure for defined-contribution plans is to increase pension asset owners’ control over investment and corporate governance decisions and to set appropriate fees for services, including the salaries of managers and analysts.

But it is a structure that would also eliminate the fundamental and ineradicable flaw inherent in the current system: the conflicts of interest that arise when institutional investors manage more than one defined-benefit or defined-contribution plan and risk losing a plan sponsor as a client if they sell holdings of that company's stocks or bonds to protect beneficiaries of other plans. Of course, the problem would not be solved in cases where money managers continue to manage the assets of more than one defined-benefit plan and that problem, too, should be addressed.

Another problem that must be addressed is the issue of market domination by either very large funds or managers entrusted with large numbers of funds. In both cases, the outcome of these forms of concentration has been wider price swings and one-way markets. Increasing the number of decision-makers in the market should be viewed as another important macroprudential aspect of pension fund reform. Creating a mutual structure for beneficiaries to manage defined-contribution and IRA pension assets would help begin that process.

Reviving monetary control

Over the two decades before the sub-prime mortgage crisis erupted in the summer of 2007, the Federal Reserve's monetary influence weakened as it gave priority to deregulation and innovation and abandoned credit flows to the procyclical pressures of market forces. Committed to ideology, the monetary authority overlooked developments that would, in time, cause market disruption and systemic fragility and, equally troublesome, ignored evidence that monetary policy itself had lost its ability to stabilize financial markets and the economy. It paid no attention to the way foreign capital drove up the supply of credit and failed to notice the explosion of debt that unchecked credit expansion produced. And, as debt soared, the Fed ignored the asset bubbles it fueled.

Fed officials also ignored critical changes in the structure of financial markets that eroded the ability of regulatory authorities to monitor systemic activity and supervise individual institutions and their increasingly diverse activities. Meanwhile, structural change also undermined the effectiveness of monetary tools used to transmit policy initiatives to the real economy and

the Fed's ability to conduct countercyclical operations. It was only when the need to bail out Bear Stearns became clear in March 2008 that the Fed recognized it was facing a systemic crisis and would have to struggle and improvise to act systemically. Its passivity in responding to the major changes in financial structure contributed to the problems discussed earlier in this paper and exacerbated its inability to deal with the loss of confidence within the financial sector that dried up funding and prolonged the pervasive reach of the credit crunch.

Meanwhile, ignoring warnings from the Bank for International Settlements (BIS 2004), monetary policy itself contributed directly to the systemic breakdown. The Fed and other central banks in advanced economies were complicit in creating the conditions that led to a crisis that could not have occurred absent the excessive liquidity they generated. While the unprecedented escalation in leverage that increased the vulnerability of the financial system to a halt in funding was made possible by deregulation and innovation, it could not have occurred without the fuel supplied by loose monetary policy.

A more extensive evaluation of the monetary factors that contributed to systemic weakness and crisis supports the argument that financial reforms must include a reassessment of the relationship between the central bank, the financial system, and the economy (D'Arista 2009; D'Arista and Griffith-Jones 2008). In the recent, heady era of booms based on financial engineering, the impact of imbalances in credit flows to the real economy tended to be overlooked. In the process, central banks and financial institutions seem to have forgotten that finance must serve real economic activity if the soundness and stability of the system itself is to be preserved. Moreover, their failure not only to prevent the crisis but also to end the ongoing credit crunch has led to a widespread belief that central banks have already done all they can do by lowering interest rates (Wray 2008); that a large stimulus package is the only viable option for restoring economic stability.

The missing monetary cushion

Designing a countercyclical regulatory system will require reexamining the role and effectiveness of liquidity requirements and other quantitative measures for individual institutions and sectors,²² as well as the channels the central

bank uses to provide liquidity. Because capital is a scarce resource and one that is automatically depleted when losses are written off, liquidity requirements were used by central banks and regulators as a critical tool to protect capital in the period before deregulation made such quantitative measures suspect. In August 2008, the Fed's call for investment banks to shore up their balance sheets with more liquid assets underscored the belated recognition that capital alone is an insufficient cushion against the threat of insolvency (Guerrera and van Duyn 2008).

The shift from a bank-based to a market-based system has obscured the fact that, in the United States before the 1980s, the systemic cushion for the financial sector was bank reserves. Requiring banks to hold reserves equal to a given percentage of deposits with their regional reserve banks was one of the major reforms of the Federal Reserve Act of 1913. As the Federal Reserve System grew and evolved during the 1920s and 1930s, the Fed was able to create and extinguish those reserves on its own initiative by undertaking open market operations. Changes in reserves became the primary tool that allowed the Fed—as former Chairman William McChesney Martin phrased it—to take away the punch bowl when the party got rowdy and bring it back when spirits were flagging. In other words, the overreaching objective that had evolved within the Federal Reserve System itself was a commitment to countercyclical monetary policy using bank reserves and open market operations as the tools for implementing that policy.

In 1951, when U.S. banks held 65% of financial sector assets and liabilities, their reserve balances with the Fed accounted for 11.3% of bank deposits and constituted a remarkably comfortable cushion for a segmented financial system in which banks loaned to other financial sectors with which they were not then in competition. Fifty years later, however, the shift in credit flows away from banks and banks' use of borrowed funds and strategies such as sweep accounts to reduce holdings of deposits subject to reserve requirements had virtually wiped out that cushion. By the end of 2001, banks' reserve balances had shrunk to 0.2% of their deposits and their holdings of credit market assets had fallen to less than half the share they held 50 years before (Federal Reserve, *Factors Affecting Reserve Balances; Flow of Funds*)

In the current crisis, the missing monetary cushion exacerbated the weakness of individual financial institutions by making them more vulnerable to stops in external funding. Borrowing and lending among financial institutions through repurchase agreements (repos)—another of the rapidly expanding markets developed as new trading systems evolved—ceased to be an efficient channel for distributing liquidity as institutions' confidence in the solvency of their financial counterparties eroded. But the missing monetary cushion has also impeded the Fed's ability to provide liquidity to the system as a whole. The Fed's attempts to address the collapse of liquidity in funding markets by swapping treasuries for riskier securities, extending its emergency lending program to investment banks, and providing term loans to banks were not effective in restoring the confidence needed to restart intra-system credit flows. And without a stable funding channel for the financial sector, credit to the real economy also began to freeze up.

Managing liquidity in a market-based system

A cushion of reserve balances owned by financial institutions but held by the Fed would be a far more effective way to alleviate the ongoing credit crunch than the various ad hoc strategies used so far. If, in the current crisis, the Fed had bought MBS directly from institutions (rather than through the discount window) and had created reserves of equivalent value to be held in its regional reserve banks that could be transferred to other private financial institutions to make payments, it would have played a significant role in setting the price for those securities and thus, indirectly, the price of the derivatives contracts based on their value. The soundness of intra-system payments made by transferring reserve balances would not be questioned. Moreover, reserve balances would retain their face value despite the erosion of asset prices.²³ Thus an established pool of financial sector reserves held with the central bank would act as a more effective liquidity buffer than the Fed's current lending facilities or the Treasury's capital injections because it would open the channels for private funding.²⁴

But recreating a cushion of reserves would serve other important purposes as well. The objective of the Fed's

current strategies for providing liquidity support is to moderate the pressure for asset sales, stem the decline in their prices, and thus protect institutional capital. While capital is and will remain a critical tool of soundness regulation as a cushion against insolvency for individual institutions, capital alone cannot protect the financial sector as a whole in the event of a systemic crisis.²⁵

The Fed's struggle to ensure a systemic reach for its efforts suggests that, in the future, central banks should attempt to build a source of systemic funding within the monetary system that, like reserves, is renewable and will be immediately available to all financial sectors in a downturn. A new monetary regime is needed that will take into account the reduced role of the traditional banking conduit for policy implementation and the increased integration of institutions and markets. Such a regime would require imposing reserve requirements on all financial institutions and authorizing the Fed to increase and reduce liquidity by supplying and withdrawing reserves held on the liability side of institutions' balance sheets. This would restore the Fed's ability to implement countercyclical policy by controlling the liquidity needed to mitigate the procyclical impact of the rise and fall in financial capital.

Conclusion

This discussion of proposed reforms exemplifies the proverbial closing of the barn door after the horses are out. But since they are out, there is no doubt that the flawed framework through which they galloped must be dealt with. As noted, we are not sure as yet that we know where

all the gaps are and, taking that into account, the main thrust of this paper has been to raise issues about the underlying objectives for reform efforts. Developments before and after the crisis suggest that there have been major changes in the structure of the financial system and that those changes have altered the relationship between financial institutions and both regulatory and monetary authorities and between finance and the real economy.

To deal with those changes in ways that will restore financial stability, this paper argues that regulations must be clarified and strengthened, must apply to all institutions engaged in a given function, and must be structured to overcome the procyclical bias imposed by the rules and practices of a market-based system. In addition, it supports the view that there must be a new focus on systemic stability in addition to institutional soundness, and a new emphasis on consumer protection. To better protect consumers of financial services, it proposes an overhaul of existing financial guarantees, ending government insurance for institutions in favor of insuring the aggregate savings of individuals held in any regulated institution.

Finally, the paper outlines a new reserve management regime that would recreate the missing monetary cushion for the financial system and restore the effectiveness of countercyclical monetary strategies—a reform that is no less important than the regulatory reforms it must accompany.

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Endnotes

1. Outstanding debt in U.S. credit markets reached 352.6% of gross domestic product at year-end 2007, up from 255.3% in 1997. Over the same decade, household debt rose from 66.1 to 99.9 percent of GDP while debt of the financial sector climbed even higher—from 63.8 to 113.8% of GDP (Federal Reserve, Flow of Funds).
2. Between 1977 and the end of 2007, the assets of all depository institutions plummeted from 56.3% to 23.7% of total financial sector assets while the assets of pension funds and mutual funds rose from 21.0% to 37.8%. Other sectors that gained shares of credit market assets over this period were GSEs and federally related mortgage pools (from 5.3 to 13.2%) asset-backed securities issuers (from 0.0 to 7.3%) and security brokers and dealers (from 1.0 to 5.3%) (Federal Reserve, Flow of Funds).
3. The Secondary Mortgage Market Enhancement Act of 1984.
4. The Subcommittee on Telecommunications, Consumer Protection, and Finance. The subcommittee report on the secondary mortgage market bill also warned that MBS were crowding out corporate borrowers: that they had already exceeded gross issuance of corporate bonds by 60% in 1983, and that the capital markets would continue to be dominated by MBS (D'Arista 1993a).
5. The Financial Stability Forum consists of representatives of the Ministries of Finance, central banks and financial regulators of 12 economies (Australia, Canada, France, Germany, Hong Kong, Italy, Japan, Netherlands, Singapore, Switzerland, United Kingdom and United States), of multilateral institutions (International Monetary Fund, World Bank, Bank for International Settlements and Organization for Economic Cooperation and Development), of some more specialized international bodies (Basel Committee on Banking Supervision, International Association of Insurance Supervisors, International Organization of Securities Commissions, Committee on Payment and Settlement Systems and Committee on the Global Financial System), and of the European Central Bank (see FSF website).
6. Total outstanding derivatives contracts stood at \$596 trillion at year-end 2007 (BIS 2008).
7. AIG's holdings of CDS amounted to about \$500 billion in mid-2007 and had generated \$250 million a year in premiums up to that point. By the end of September 2007, however, it recognized a \$352 million unrealized loss on its CDS portfolio and by the end of June 2008, the total losses on its derivatives operations reached \$25 billion (Morgenson 2008).
8. The International Swap Dealers Association (ISDA) has succeeded in developing standardized documentation for OTC derivatives contracts—an important reform of defusing legal risks—but the amounts and terms of OTC contracts are not standardized.
9. These companies included General Motors Acceptance Corp. (GMAC), GE Capital Corp., Ford Motor Credit Company, Household Financial Corp., American Express Credit Corp., and others (D'Arista and Schlesinger 1993).
10. The Group of Thirty also recommends that large, systemically important banking institutions be prohibited from sponsoring or managing hedge funds or private equity funds in which the banking institutions own capital is commingled with client funds.
11. The background events that led to this relaxation are discussed in two *New York Times* articles outlining the flaws in oversight that the S.E.C now concedes fueled the collapse (Labaton 2008a, 2008b).
12. An indication of the size of the yen-dollar carry trade transactions in place at that time was the abrupt one-day drop in the value of the dollar against the yen on October 10, 1998 and the 17% appreciation of the yen over the last quarter of the year.
13. Selling assets to raise funds to meet calls for additional collateral is another, powerful channel for the spread of contagion. During the Long Term Capital Management crisis in 1998, for example, a large share of the good assets that were sold were Brazilian bonds with the result that Brazil suffered a crisis unrelated to developments in its own economy and financial markets.
14. The Group of Thirty recommends that the tension between the business purpose of institutions that intermediate credit and liquidity risk and the interests of investors and creditors be resolved by developing principles-based standards that better reflect the business model of the institutions while requiring rigorous evaluation and improved disclosure and transparency. Papadimitriou and Wray (2008) suggest that banks be allowed to value assets at the original price paid.
15. The section “Reviving monetary control” (p. TK) argues that improving the central bank's ability to supply liquidity more effectively to the financial system as a whole will be critical in resolving the procyclicality of capital requirements.
16. “Front running,” for example, occurs when a broker uses information on trading orders by customers to make trades for its own account before the execution of these orders results in price changes.
17. As discussed above, that encouragement was set in place in the 1984 Secondary Mortgage Market Enhancement Act which gave all responsibility for due diligence and rating securitized credit to CRAs.
18. The suggestion that fees be paid by investors is seen as a non-starter since investors would have less incentive to pay for the information than issuers.
19. Others who advocate comprehensive functional regulation include D'Arista and Griffith-Jones (2008) and Williams (2008).
20. This would require modifying the reporting system to include all principal amounts in addition to current reports on interest income and the fair market value of IRA accounts that are already reported to the IRS based on Social Security numbers.
21. Under the above proposal, individuals would pay a premium amounting to 10% of annual earnings on assets (about 50 cents for every \$5 dollars of earnings) until the fund reached the desired level. Thereafter, a premium of 1% of earnings would probably be more than adequate in a system covering all savers and their retirement plans. This would introduce an automatic countercyclical element into the guaranty program since premiums would rise and fall with the value of returns on an individual's holdings. For a more complete discussion of this proposal, see D'Arista (1993b).
22. For a discussion of and support for reintroducing quantitative measures, see White (2007).
23. The advantages of reserve creation in the current context include the fact that central banks are not subject to mark-to-market ac-

counting rules on their assets, so book-value—the price they pay for assets—remains constant as does the value of the reserves they create. Concerns about the inflationary effects of reserve creation in a crisis are not warranted. To the extent that recreating a public sector intra-industry payments system reduces the excess liquidity inherent in funding strategies using inter-bank and repo markets, a run-up in the Fed's balance sheet would tend to moderate the deflationary potential posed by the current crisis rather than introduce an inflationary threat. As for potential losses, the Fed could hold these assets until its earnings on other assets grew sufficiently large to permit sales at less than the purchase price.

24. A similar argument has been made by Jan Kregel (2008a). He proposes that the Fed play the same role as the exchange clearinghouse in the interbank market, holding banks' deposits to build liquidity. With the Fed as counterparty, the counterparty risk in interbank lending would be eliminated and the Fed's guarantee would take the place of the Treasury's \$700 billion bailout.
25. For a more detailed description of the reserve-management regime proposed here, see D'Arista (2002) and (2009). Sources for other proposals to extend reserve requirements to all financial institutions include Thurow (1972); Pollin (1993); D'Arista and Schlesinger (1993); D'Arista and Griffith-Jones (2008), and Palley (2000) and (2003).

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