Principles That Should Have Guided TARP

Statement of

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Before the Congressional Oversight Panel

November 19, 2009

I. Introduction

Government assistance programs in response to the recent financial crisis were bold and unprecedented. But were they wise and effective? In my judgment, TARP and other interventions were not designed properly, and consequently assistance programs have resulted in less benefit to the economy than they should have (in particular, have resulted in insufficient mitigation of the credit crunch) and they have cost more than they should have (in the form of excessive taxpayer bearing of current losses, and unnecessary moral-hazard incentive costs going forward). What is most disturbing to me is that these mistakes were foreseeable by anyone with knowledge of, or experience in, managing financial crises – and the past thirty years of world financial history have seen an unprecedented number of severe financial crises (see Calomiris, Klingebiel, and Laeven, 2005, for a review) – and yet the Fed, the Treasury, and Congress did not avail themselves of that experience in managing the crisis. Rather, they invented new, untested approaches to intervention that were inferior to successful approaches that had been used previously.

The problem was not a lack of action, per se. The number and boldness of policy actions has been striking. Policy was aggressive even prior to the three incarnations of TARP (the September 2008 campaign to implement the first, quickly abandoned comprehensive TARP plan for massive purchases of financial assets, the switch toward an equity investment strategy in November 2008, and the failed subsequent attempt to reinstitute the asset purchase program in 2009 using subsidized debt finance). From an early date, the terms of Fed lending, and collateral requirements were quite flexible. Primary dealers and Fannie and Freddie were granted access to the discount window, not just depository banks. A major Wall Street investment bank and the world's largest insurance company were bailed out by the combined efforts of the Fed and

Treasury. And Fannie Mae and Freddie Mac were rescued, as well, and then subsequently placed in conservatorship, as the initial effort to keep them afloat with verbal reassurances proved inadequate. Ultimately, assistance went even farther than TARP plus all of that, extending deposit insurance to larger accounts, guaranteeing other debts of banks and money market mutual funds, providing TALF assistance through Fed purchases of securitized debts, and offering new mortgage finance to high-risk borrowers through FHA, Fannie and Freddie.

Not surprisingly, many people find all this a bit worrying. Government loans, guarantees and investments in troubled financial institutions (which even include potential capital infusions into the GSEs), not to mention government purchases of assets (as originally contemplated under the TARP plan, and as executed under the TALF plan) have resulted in huge losses to taxpayers (Fannie and Freddie and FHA subprime lending will account for the lion's share of these losses, as *they alone will approach half a trillion dollars*) and remaining risks of future loss. They also have changed the risk-taking behavior of financial institutions going forward. If financial institutions know that the government is there to share losses, risk-taking becomes a one-sided bet, and so more risk is preferred to less. There is substantial evidence from financial history – including the behavior of troubled financial institutions during the current crisis itself – that this "moral-hazard" problem can give rise to hugely loss-making, high-risk investments that are both socially wasteful and an unfair burden on taxpayers (see Calomiris 2009a for a review).

The bearing of loss by taxpayers and the presence of moral-hazard cost does not necessarily mean that government assistance is ill-advised. If assistance were provided only when the systemic consequences of not providing assistance were truly large, then taxpayers (qua businesses and workers) could benefit on net from it, despite its costs. Furthermore, if assistance were only provided at times of truly high systemic risk, that will limit moral-hazard costs, since firms seeking assistance would not be able to depend on receiving it. Finally, if assistance were structured to encourage private sources of funds to accompany taxpayer assistance, and to require private sources of funding to bear risk of loss, those favorable design features would limit the financial costs to taxpayers, and limit the moral-hazard consequences of assistance.

The central questions, therefore, in evaluating government assistance programs are: (1) was assistance provided only to address truly systemic risks, and (2) was assistance designed properly to maximize the effectiveness and minimize its moral-hazard costs? Unfortunately, the answers to both questions are no.

In my testimony, I will first place the recent assistance decisions in context by briefly reviewing the academic literature on the role of the government assistance to financial institutions as it has evolved in recent years, including both theoretical contributions and empirical evidence from the history of interventions, and then contrast the ideal policy based on theory and experience with the interventions actually employed by the government in the recent crisis.

The proper purpose of government assistance programs for financial institutions is to overcome problems of systemic illiquidity crises associated with asymmetric information, which can lead to avoidable, "bad equilibria" (i.e., avoidable financial meltdowns). In my view, there is no question that the recent crisis qualified as a state of the world in which government assistance to financial institutions was warranted. As Schwarz [2009] shows, most of the declines in risky asset prices during the crisis reflected endogenous responses to market illiquidity risk, rather than exogenous changes in physical loss expectations. Much of the bad equilibrium was avoidable, if the scramble for liquidity, and the price declines and credit collapses it caused, could have been short-circuited by effective intervention.

But to be effective assistance must be designed properly. The design of proper assistance should not only (1) use government funds only at times of truly systemic risk (when normal market solutions to the scarcity of credit and bank equity capital are not feasible); but also (2) use funds only in ways that help to identify and support institutions that are worth preserving, while letting other institutions fail; and (3) ensure that *assistance programs employ contracting structures that place taxpayers in a senior position with respect to absorbing the risk of loss, and encourage a rational process of selectivity in the use of taxpayers' funds*.

Obviously, even a superficial examination of government assistance shows that these three criteria were not met. The bailout of GMAC, twice, shows that the presence of systemic risk was not a condition for doling out assistance; automobile industry-related assistance reflected political motivations that had nothing to do with mitigating the financial crisis. No one could argue with a straight face that GMAC was a systemically important institution. Furthermore, more generally, assistance was not selective in any rational sense. Bailouts of nonbank financial institutions were selective for hard-to-discern reasons (i.e., excluding Lehman but including AIG). Bailouts of large banks were not at all selective; Secretary Paulson twisted the arms of banks that did not desire assistance in the Fall of 2008 to participate in the TARP program, and permitted deeply insolvent institutions to participate in TARP, with the intent of avoiding differential treatment.

Section II reviews the theory and history that underlies the principles I advocate for assistance, and distinguishes what would have made sense from what was actually done. Section

III provides additional details on how I believe a more coherent and principled approach would have differed from the policies actually pursued. Section IV concludes.

II. Principles to Guide Government Assistance to Banks: Rarity, Selectivity, and Seniority

The central points of this review can be summarized in three sets of conclusions, which are elaborated in the discussion:

(1) Assistance should be offered only under *rare* circumstances. The purpose of assistance is not to prevent the failure of one or a few institutions, per se; assistance is only warranted when asymmetric information about the incidence of losses in the financial system leads to a general breakdown in financial market buying and selling, resulting in a liquidity crisis, which makes it impossible or excessively difficult for otherwise solvent borrowers to roll over their debts, or for banks to prove their solvency to the market in order to access needed capital to shore up their positions.

(2) The design of assistance is crucial to maximizing its effectiveness and minimizing its social costs; particularly the allocation of the risk of loss between the private sector and the government is crucial to the successful design of assistance. Assistance should be *selective*, targeted toward institutions worth saving, not basket cases. Government should take a *senior* position in loss sharing; in discount window lending that is ensured through collateralization of loans; in preferred stock purchases, seniority is ensured through the adequacy of common equity; in other assistance programs, it is achieved through the structure of guarantees (e.g., their out-of-the-moneyness).

(3) The assistance toolkit must be *diverse.* The proper structure of assistance depends on the severity of the systemic crisis being addressed; discount window lending may be sufficient

for dealing with liquidity crises that are not very severe, bank preferred stock purchases by the government may make sense for more severe shocks, and other mechanisms (organized rescues of failed institutions, or guarantees attached to liabilities or assets) may be the only effective tools to employ when the crisis is even more severe. No matter which of the tools is employed, the other principles (*rarity, selectivity, and seniority*) can and should be adhered to.

Is Assistance Ever Justified?

The debate about the potential benefits of assistance has revolved around the question of how important asymmetric information and adverse selection are during episodes of financial shocks. In the 1980s and early 1990s, several prominent economists argued that it might be desirable to abolish the discount window, on the theory that central banks should only manage the aggregate amount of liquidity in the system (via open market operations), and leave it to the financial system to (efficiently) determine the proper allocation of credit (see the reviews in Calomiris 1994 and 2009a). Proponents of abolishing the discount window recognized that in days of yore it served a purpose, but argued that in the modern era of an efficiently operating fed funds market, and other efficient private markets for lending among financial institutions, there was no point in Fed lending to banks.

Other economists challenged that view. Calomiris [1994] referred to the Fed's use of the discount window during the Penn Central crisis as an example of how asymmetric-information costs can cause erstwhile efficient markets to shut down, giving a role to the Fed in preserving market liquidity through specifically targeted assistance. During the Penn Central episode, which was in some ways similar to the recent turmoil, albeit on a much smaller scale, the market lost confidence in the screening apparatus of the rating agencies for determining access to the commercial paper market. That market essentially shut down, and many borrowers faced significantly increased liquidity risk as they were unable to roll over their outstanding commercial paper. By targeting assistance to commercial paper issuers, via pass-through discount window lending channeled through banks, the Fed targeted a temporarily dysfunctional part of the financial system for assistance, and prevented commercial paper borrowers from having to cut their investments and engage in a counterproductive scramble for liquidity.

As the recent turmoil illustrates, despite the ongoing technological improvements and sophistication of our financial system, asymmetric-information problems can disrupt the operation of normally efficient markets. Short-term debt instruments (like asset backed commercial paper and repos and interbank loans) may not roll over during a liquidity crisis, securitization conduits may be unable to find new funding, and banks that have suffered uncertain losses from their asset holdings may find it impossible or very costly to raise equity to restore their capital position, all of which result in a severe contraction of the supply of credit.

Bank losses per se should not motivate government assistance. If losses are large for some banks, but there is no confusion about their incidence in the market, then solvent banks can raise capital to replace the contraction of loan supply by insolvent ones; although the process may be a bit bumpy as borrowers adjust from one bank to another, these minor interruptions do not warrant rescuing failed banks, and doing so undermines market discipline of risk by creating moral hazard. As Allan Meltzer has put it, “capitalism without failure is like religion without sin.” But Meltzer also recognizes that when markets fail to function there is a role for government to prevent the bad equilibrium of a liquidity crisis from occurring.

Diversity, Selectivity, and Seniority

The discount window is one mechanism for providing assistance to banks, and it remains an important component of the Fed’s toolkit. But, as I will show, the discount window, by itself, is inadequate for dealing with the most severe crises produced by the most severe asymmetric-information shocks.

How should discount window assistance be structured? Specifically, on what terms (how long a maturity, and at what interest rate), and against what kind of collateral should discount window loans be made? Should nonbanks be permitted access to the window? When are discount window loans inadequate, and what sorts of other interventions are sometimes warranted? How should those interventions be designed?

Bagehot [1873] famously argued that the lender of last resort should lend freely at a high rate on good (but not riskless) collateral. But the devil is in the details. The lender of last resort should lend at a higher than normal rate to avoid abuse of access to the window, but the rate should not be too high, lest assistance be ineffectual. The term of the loan should be long enough to relieve pressure in the market; too short a term forces borrowers to bear imminent rollover risk, which does little to assuage the flight to liquidity. It makes little sense for the lender of last resort to exclude systemically important financial institutions from receiving assistance.

An effective lender of last resort should not be too picky about collateral when providing discount window loans. Lending against collateral assets that are of higher average quality (lower risk) than the borrower's overall asset portfolio may do harm rather than good. If a lender of last resort lends against very high-quality collateral, that effectively subordinates depositors of the bank, and thereby increases the risk of depositor loss, which could counterproductively prompt deposit withdrawals.

Indeed, Mason [2001] shows that this was precisely the problem with the first attempts of the Reconstruction Finance Corporation to provide assistance to banks during the Depression, and that this limitation underlay the switch to a preferred stock purchase program in 1933.

Indeed, that experience shows the limitations of using the discount window to deal with crises that are so severe that a large fraction of the banking system finds it difficult to offer enough collateral of reasonable quality when borrowing from a secured lending. Furthermore, when the entire banking system is suffering a severe cash flow squeeze, adding to banks' interest burdens with discount window loans can raise the probability of financial distress. The 1933 switch to preferred stock investments (which were junior claims relative to deposits, and which, as non-debt instruments, cannot trigger financial distress as the result of the failure to make coupon payments) made RFC assistance much more effective than discount window lending.

Calomiris and Mason [2004] also show, however, that preferred stock assistance is not always successful. It was successfully administered by the RFC in the US during the Depression, in contrast to Japanese preferred stock assistance in 1999, because it was allocated and designed carefully. The RFC identified worthwhile banks in which to invest (and avoided investing in deeply insolvent ones, which were allowed to shut down), and it required private investors to match preferred stock investments with the accumulation of common stock equity. In contrast, Japanese assistance was given to all banks, and the assistance allowed common stock dividend payments by banks receiving preferred stock.

After initially insisting that the government use asset purchases to provide assistance to banks, the Treasury switched to a preferred stock assistance program in November 2008. Unfortunately, it imitated the defects of the Japanese "convoy" model, permitted common stock dividends to be paid, and included other features (warrants) that discouraged banks receiving assistance from issuing common equity.

Preferred stock purchases made much more sense than government asset purchases in the Fall of 2008. Pricing subprime instruments for purchase would have been very challenging, to say the least, and fraught with potentially unfair and hard-to-defend judgments, and even risks of corruption. Furthermore, if the price were set too low, that could hurt selling institutions (by forcing extreme write-downs of assets sold, causing them to become undercapitalized for regulatory purposes); if it were set too high, that could harm taxpayers. Who would determine how much should be purchased from whom in order to achieve the desired systemic risk reduction?

In contrast, preferred stock assistance would leave asset valuation and liquidation decisions to the private sector, but would provide needed recapitalization assistance to banks in an incentive-compatible manner to facilitate banks' abilities to maintain and grow assets. If executed properly, it would limit taxpayers' loss exposure (and thus, limit the moral hazard of providing protection), and leave the tough decisions of managing assets, and deciding on how to allocate capital assistance, to the market.

In September 2008, I proposed a preferred stock purchase plan and argued that preferred stock assistance would work best if it were required to be matched by common stock issues underwritten by the private sector. Matching would ensure the proper targeting of assistance (if banks could not raise common stock even in the presence of a large subsidy from the government, they were likely deeply insolvent), and force private parties rather than taxpayers to bear first-tier losses (by creating a larger equity buffer junior to preferred stock). This arrangement protects taxpayers both by limiting who receives assistance, and by reducing the risk of taxpayer losses on banks receiving assistance (because preferred stock is senior to the old and new common stock).

I proposed heavily subsidized (low) coupons on the preferred stock. Initially, say for three years, there would be little or no dividend paid to the government on MPS. That subsidy would increase the net worth of the recipient and facilitate raising additional capital via matching common stock.

The government's preferred stock program operated with opposite incentives. No large banks were excluded on grounds of insolvency. Indeed, the government did not restrict itself to preferred stock purchases; preferred shares were converted to common, and other guarantees of assets and liabilities were added as needed. The government charged high interest on preferred stock and required no common stock matching. Common dividends were allowed. Further discouraging the accumulation of common equity, Congress insisted on attaching warrants to government purchases of preferred stock, which were dilutive to new stock issues, and thus discourage new stock issues, which was counterproductive both from the standpoint of ending the credit crunch and from the standpoint of reducing taxpayers' exposures to loss. Congress insisted on adding warrants to preferred stock purchases in the TARP legislation in an attempt to imitate private agreements (like Warren Buffett's with Goldman Sachs), but public policy serves different purposes than private contracts; the goal of assistance is to help recapitalize banks and thereby promote lending and growth, and it is penny wise and pound foolish to insist on making a profit on the government investments in the banks if doing so reduces the effectiveness of assistance.

Even properly designed preferred stock assistance is sometimes inadequate for dealing with severe system-wide banking crises, where the size of illiquidity-induced bank insolvency is sufficiently large. A preferred stock injection is not ideal for banks with very little remaining equity (e.g., those with a substantial probability of not being able to survive if losses on toxic loans turn out to be on the high end of reasonable forecasts). For such a bank, even a government purchase of a significant amount of low-coupon preferred stock would not restore adequate capital. Furthermore, under those circumstances, a preferred stock offering could encourage reckless risk taking by subordinating the claim of common stockholders to the new claim of preferred stock on the cash flows generated by the bank – a moral-hazard incentive problem formalized by Nobel Laureate Robert Merton and others in the 1970s.

Under those circumstances, it can be useful to employ a different approach. One option is a bailout. For example, in 1882, the Paris banks decided to bail out the Paris Bourse because they were so concerned about the ramifications of its failure for their own interests. Similarly, in 1890, the London clearing banks bailed out Barings, an investment bank, for the same reason. In both cases, the Bank of England and the Banque de France provided backstop protection to the consortia of banks that bailed out the nonbank financial institution.

Importantly, in these bailouts, the government took a senior position to the private market participants. Those participants, because of legitimate concerns about risks to themselves, were willing to take a first-tier loss position in the bailout. The central banks stood behind them (effectively, thereby ruling out the extreme bad equilibrium of a run on the one whole system). Both of these incentive-compatible rescues were successful, and without spending a dime of taxpayers' money. (For a discussion of the history of prior costly bailouts in England, through 1857, see Calomiris 2009c).

In a similar spirit, the Pew Trusts Task Force on Financial Reform, in which I am a member, will soon release its slate of proposals for regulatory reform. One of the those proposals is to create a hybrid bankruptcy reform/administrative resolution policy for nonbank financial institutions, where resolution policy, when invoked, applies haircuts to creditors (unlike the AIG bailout) and where resolution costs are borne by large institutions via an ex post assessment. In the US today, the FDICIA legislation of 1991 requires that any bailouts of uninsured depositors or bank creditors must be paid for by a special assessment on surviving banks, as a pro rata share of their deposits. The goal of ex post assessments is not just to insulate taxpayers from losses, but to limit moral hazard by creating strong incentives for private parties to lobby against unnecessary bailouts.

All the appropriate policy interventions described thus far (proper discount window lending, proper preferred stock purchases, and proper bailouts) share an important central principle: *taxpayers take a senior position to the private sector in the allocation of losses*. This time-honored principle of central banking could have been applied in the recent bailouts of financial institutions through the structuring of preferred stock assistance. It could have been applied, for example, to the decision whether to bail out Citigroup via the invocation of the FDICIA special assessment requirement, if the government had not stepped in to perform the bailout under a new ad hoc authority. And, in the future, it could be applied to nonbank financial institution bailouts, as proposed by the Pew Trusts (for details on how this could be done, see Calomiris 2009d).

But the government took a different approach during the crisis, one that did not place taxpayers in a senior loss position, and one that did not exclude or include banks from protection based on their relative strength. These were consistent errors of policy throughout the crisis.

Another policy proposal that was on the table as the crisis became more severe in early 2009 would have done a much better job in meeting these criteria than the ad hoc blanket guarantees and equity investments that were used. Many economists, including Benn Steil, Ricardo Caballero, and myself, advocated (in somewhat different forms) the use of the government sale of put options to banks, that would effectively allow them to sell portfolios of distressed assets to the government (at pre-specified strike prices that were very out-of-the-money relative to reasonable forecasts of future value) as a policy tool for dealing with the financial crisis. Secretary Geithner announced that this idea was under consideration by the Treasury, although ultimately he rejected it. In my view, this sort of structure would have been useful for many banks that were not appropriate candidates for preferred stock assistance.

My own version of this proposal focused on ways to craft it that would encourage private sector purchases of bank common stock, and that would also insulate taxpayers from exposure to loss, but that would succeed in eliminating the potential for extreme negative values of assets (a "bad equilibrium," financial-meltdown scenario). In my view, the offering of put options at deeply out-of-the-money strike prices would have immediately elevated risky asset prices throughout the economy, fostering solvency and reducing fear of asset price death spirals. And this approach could have met the criteria of selectivity (assistance could have been targeted to banks that were not basket cases, leaving the basket cases to be resolved by the FDIC), and seniority of taxpayer risk exposure, which all government assistance programs should meet.

According to my proposal, the government would have provided an explicit put option on some portfolios of subprime related securities and mortgages at very low (far out-of-the-money) value. Using this approach, the possibility of extreme loss from toxic assets can be almost eliminated without the government's having to actually price or buy toxic assets. For example, the government could offer to buy an existing pool for 30 cents on the dollar of face value for a period of three years. This limited government insurance protection against extreme downside loss on toxic assets bounds bank losses on toxic assets and would not require banks to actually transfer the toxic assets to the government. Indeed, there would be no advantage to transferring mortgages at this rock bottom price, since the government guarantee at 30% of face value would ensure that all mortgages have a market value of above 30 cents on the dollar.

Mortgage Foreclosure Mitigation

Thus far, I have focused on assistance programs to banks, but the same principles of rarity, selectivity, and seniority apply to foreclosure mitigation assistance. Long before the September 2008 crisis, it was apparent that an unprecedented wave of foreclosures was about to occur. In my view, some of these were unavoidable (many subprime borrowers had little hope of being able to stay in their homes under any reasonable adjustment of their mortgage principal and interest payments). Attempts to keep people in their homes who had no realistic long-term prospect of being able to keep their homes are counterproductive, as they lead to wasteful delays of the inevitable, with potentially large adverse effects on lenders, and misuse of scarce human resources that need to be deployed to arrange feasible renegotiations.

Many economists, including myself, proposed approaches for speedily identifying relatively good candidates for mitigation, and offering government subsidies targeted to encourage agreement between debtors and creditors (my proposal was inspired by the "Punto Final" program that was highly successful in Mexico in the 1990s). This would have helped to slow the decline of home prices. Even more, it would have boosted consumer sentiment and avoided hundreds of thousands of unnecessary foreclosures (Calomiris 2009b).

III. What We Did, and What We Should Have Done

As Meltzer [2003] shows, the Fed has never clearly articulated a policy rule for its lender-of-last-resort interventions. Neither has the Treasury articulated a framework guiding its assistance policies. They employ *ad hoc* interventions, justified as they go along, which are inconsistent with one another and follow no clear set of discernible principles. Because assistance programs did not flow from previously articulated guiding principles (like selectivity, diversity, and seniority), the rushed debates over TARP and other policies were undisciplined and prone to errors of logic (like the use of warrants in preferred stock assistance), and political manipulation (like the multiple bailouts of GMAC). As I showed in Section II, in theory, it is possible to justify within a consistent set of principles many of the kinds of assistance programs that were used, albeit in more carefully designed form, and as part of a more coherent sequence of policies (as the crisis worsened). Ironically, the vast experience with financial crisis around the world in the past three decades produced a treasure trove of examples of how to provide assistance badly or well. That experience, which confirmed lessons learned from many historical episodes, seems to have been either unknown or ignored by U.S. policy makers (Calomiris 2009c, Calomiris, Klingebiel, and Laeven 2005).

Our financial leaders and Congress owe us a detailed explanation of the various assistance packages that they have orchestrated, and more importantly, they must articulate a coherent set of principles to guide future policy, lest wasteful and risk-increasing rescues become a habit. Neither the Fed nor the Treasury under either the Bush or Obama Administrations has provided such a coherent vision in justifying their decisions regarding whether and how to assist Bear Stearns, Fannie Mae, Freddie Mac, Lehman, Citigroup, GMAC, or AIG, or their choices for structuring TARP (in its various incarnations), or TALF. What criteria did these firms meet to deserve assistance, and how will they exit from assistance? Neither the Fed nor the Treasury explained why the preferred stock TARP approach was appropriate after September 18, 2008, but not before, or why the subsequent, stillborn attempt to promote asset purchases in TARP (via subsidizing leverage for those asset purchases) would be effective or appropriate. Was intervention systemically necessary and pursued in a least-cost manner in head-spinning array of actions by the Fed and the Treasury?

Of course, one could respond to my criticisms by asking what I would have done differently. The remainder of this section is an attempt to answer that question in more detail.

In my view, the assistance provided to Bear Stearns was a tough call. It was defensible as an action to limit the risk of adverse systemic consequences of Bear Stearns' failure. Bear was a counterparty to many derivatives transactions, and a major repo issuer. A failure of Bear Stearns could have created substantial confusion regarding the net positions of derivatives market participants, and could have produced a major shock to the repo market and to money markets more generally. Assistance provided a means of orderly exit (the acquisition of Bear Stearns by JP Morgan Chase), and avoided what could have been substantial disruption in the repo market, derivative markets, and financial markets generally. Was the structure of assistance appropriate? In particular, was the $30 billion loss exposure accepted by the Fed and Treasury really necessary?

It is not clear (and hard to second-guess in retrospect) whether the Fed and the Treasury could have gotten a better deal in their negotiations with JP Morgan Chase. By all accounts, JP Morgan Chase enjoyed a windfall from the transaction, even after the renegotiation of the Bear Stearns stock price by Bear shareholders, which raised the acquisition price from $2 a share to $10, after the bailout. On the other hand, there were few if any alternative qualified bidders, so the Fed's (or Treasury's) ability to bargain was limited. Most importantly, Bear Stearns' stockholders suffered a huge loss (compared to their pre-acquisition stock price), and thus moral hazard was mitigated somewhat.

The promise of assistance to Fannie Mae and Freddie Mac that was given in July 2008 also seems defensible in the sense that their role in the mortgage market was too important to ignore, and their ability to continue accessing the bond market had become questionable. The market wanted to know whether the long-anticipated implicit government backstop would, in fact, be forthcoming. Upon the announcement of the Fed and Treasury plan, the GSEs' access to debt markets was initially restored, even before key aspects of the plan for assistance had been approved by Congress. After the July intervention, however, concerns about the GSEs mounted and ultimately creditors demanded concrete injection of resources by the government, which was undertaken by placing the GSEs into conservatorships in September 2008. The government now has pledged to support the GSEs through preferred stock injections, as needed, to maintain the f low of mortgage credit and to support GSE obligations.

These preferred stock injections may be desirable as a short-term measure, but there are several aspects of the approach to the GSEs that are problematic. First, GSE fragility reflected longstanding incentive problems and excessive risk taking in anticipation of safety net protection. The GSEs made moral hazard a cornerstone of their business plan for decades. Critics of the GSEs argued that the government's implicit protection warranted greater regulation, or privatization, or winding down, of GSE operations (Wallison and Calomiris 2009). The GSEs and their defenders responded that there was no implicit protection, and therefore, no need to prevent abuse. In the meantime, they built up subprime mortgage exposures of more than $1.6 trillion on a paper-thin capital base. The short-term assistance program for the GSEs, even if legitimately motivated by systemic concerns, *should have been accompanied by a clearly enunciated, long-term proposal to wind down the GSEs, or fully and credibly privatize them* (and make them subject to a clearly specified receivership or conservatorship regime). The July assistance legislation and the September creation of the conservatorships does neither, and simply leaves the long-term future of the GSEs open – a surefire method to maximize campaign contributions for influential members of Congress perhaps, but not a very helpful means of either stabilizing markets or providing a transition to proper market discipline.

What about the government's September 2008 decision not to intervene to rescue Lehman Brothers, and its opposite decision at the same time to rescue AIG? The decision not to rescue Lehman has been criticized as causing much of the late-September 2008 liquidity strains in the market. I think that criticism is overblown. The Lehman bankruptcy cannot be traced to any particular financial institution's failure. It no doubt contributed to risky asset declines, but there were many other things happening at the same time that also contributed to those declines, especially the specter of the Secretary of the Treasury and the Chairman of the Fed openly panicking in public. In any case, on a forward-looking basis, if appropriate reforms to bankruptcy and resolution policies toward nonbank financial institutions are introduced (Calomiris 2009d), *ad hoc* policy toward future Lehmans and AIGs can be avoided.

The bigger policy lesson with respect to Lehman is about what the Treasury did not do between March and September 2008. Lehman had been permitted to sit on its hands and not raise capital during that six-month period. It chose to do so because it believed that either its stock price would rise (making capital replacement cheaper in the future) or it would be bailed out. Letting Lehman get away with that behavior was perhaps the largest policy failure of the Treasury (and the SEC, who was Lehman's prudential regulator) in 2008.

As I have noted, the TARP legislation, and all the various incarnations of TARP, had significant shortcomings, which I have already argued were avoidable. What should have been done instead? As Senator Schumer proposed at the time, the better approach in September 2008 would have been combining an RFC-style bank preferred stock purchase program with a mortgage foreclosure mitigation initiative (to incentivize feasible renegotiations).

As I discussed in Section II, the preferred stock program could have been done in a way very similar to the 1933 RFC structure, which was also copied by the Finns in the early 1990s (Mason 2001, Englund and Vihriala 2003, Calomiris and Mason 2004b). The RFC was successful in limiting risk and political abuses of its preferred stock investments because it codified and followed clear practices specifically designed to limit those problems. Citigroup might not have qualified for assistance under a reasonable long-term valuation of its assets. If it had not, then an orderly transfer of the operations and assets of Citigroup into an FDIC-administered bank conservatorship and a bankruptcy for its non-bank affiliates would have occurred, while other banks were receiving massive injections of preferred stock, conditional on being able to match the preferred stock with new common stock, and tens of billions of dollars of assistance was being appropriated for efficient mortgage foreclosure mitigation.

I believe that if the measures I outlined here – capital raising by Lehman and other weak firms between March and September 2008, when $450 billion in capital was raised by other large financial institutions, selective and incentive-compatible preferred stock injections, foreclosure mitigation, and a clearer articulation of the future of the GSEs – had been implemented in 2008, the crisis would have been ended faster. If the crisis had continued to worsen, I would have then relied on selective use of out-of-the-money put options on risky assets to elevate asset prices and provide liquidity to the market.

IV. Conclusion

Government assistance programs during the recent financial crisis did not follow time-tested principles of effective policy, namely *rarity, selectivity, and seniority;* they were conceived in haste, poorly designed, sometimes transparently politically motivated (GMAC's recent assistance is an obvious case), mutually inconsistent, and entailed hundreds of billions of dollars of losses (so far) to US taxpayers. Their effects on incentives toward risk could also turn out to be very damaging unless policy makers are able to undertake a credible reform of government subsidies to financial institutions, by which I mean immediate action to change the status quo (particularly in mortgage subsidization via Fannie, Freddie, and FHA) , and to articulate a clear and coherent set of principles that will guide government interventions in the future.

The problem is an urgent one. The waste of resources at the FHA, Fannie and Freddie continue, and the new costs incurred as the result of *post-crisis* subsidization of mortgage risk in those entities could turn out to exceed hundreds of billions of dollars.

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