

**More on the Bailouts of 2008-10:
The Politics, Effects, and Limits of Crisis Insurance**

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Abstract: This paper provides an overview of the unprecedented scope of the new safety net programs adopted in response to the financial crisis of 2008 and its associated recession. It uses the microeconomics of financial markets and a theory of the politics of crisis management to explain both the crises and the policy responses to those crises. The paper also discusses problems associated with the new “crisis insurance” programs and their economic limits, which we may well be approaching.

I. Introduction: Government Bailouts as Crisis Insurance

A crisis is nearly always a surprise, but that is not to say that a crisis is totally unexpected. As a crisis approaches, policy makers normally hear many warnings, but the warnings are often ignored. This is not because the men and women occupying positions of authority are careless or stupid, but because so many warnings are constantly being raised. Which warning to take seriously cannot be known without giving them some attention. Insofar as most warnings prove to be false alarms, policy makers are correct to neglect many, perhaps most, warnings. One’s scarce time and attention is better invested elsewhere. And of course, there is always the temptation to ignore warnings that suggest that one’s past policies were mistaken.

Nonetheless, some warnings are accurate and many crises could have been avoided or ameliorated by taking the warnings seriously. In some cases, future crises could have been eliminated by revising current policies, and in other cases, their effects could have been reduced by creating plans to deal with particular crises, should they occur.

The financial crisis of 2008 was a case in point. There were many warnings, most were ignored, and so a variety of microeconomic and macroeconomic steps that might have

headed off or reduced the impact of the financial crisis were not adopted, nor were plans for dealing with the crisis that emerged developed.

Once underway, a crisis requires, or at least seems to require, fast responses to unanticipated problems. Old plans need to be revised and new policies adopted, more or less immediately. As a surprise, at least to those addressing the problems, such steps have to be taken without careful analysis or review. As a consequence, mistakes are far more likely to be made during times of crisis than in the less demanding times between crises. The mistakes that get made are partly accidents, but a subset are consequences of “rent extraction.” As Rahm Emanuel famously said on February 9, 2009, “You never want a serious crisis to go to waste.” The necessity of quick response and lack of care, creates opportunities for all sorts of mischief in both the public and private sector, because there is not time to examine all options carefully.

Several types of mistakes are commonplace for crisis managers. Perhaps the most common mistake is to apply old solutions to new problems. The result may be better than ignoring the problem addressed, but better techniques could have been employed given more time for analysis and design. Such policies often reduce the impact of the immediate crisis, but may increase the likelihood of a future crisis. For example, most of us know that pouring water on all fires is not a good idea. Although water suppresses fires in many materials, in oil it often causes the fire to spread and in some cases to engulf those pouring water on the fire. In the present crisis, the widespread use of *ex post* crisis insurance may turn out to be an instance of pouring water on an oil fire. If risk was underpriced before the *ex post* insurance programs were adopted, it is likely to be even more underpriced if future bailouts are taken for granted by financial markets.

Another common mistake is to suddenly adopt strategies that might have headed off the crisis had they been imposed earlier, but which cause new problems after the crisis is under way. For example, monetarists often suggest that increasing the reserve requirements of banks after the various bank runs were under way in the 1930s, exacerbated rather than reduced liquidity problems and further weakened banks. Similar results may be associated with increases in capital standards (increases in required reserves and the quality of those reserves) to support loans in the present setting, at least in the short run. As the saying goes:

“don’t lock the barn door after the horse has run away.” (However, do lock the door after it returns.) Such mistakes often seem obvious in retrospect, but not at the time they were adopted.

Both types of strategies for addressing the present crisis were evident in 2008-10, but this paper focuses on the former rather than the latter: crisis insurance, otherwise known as “bailouts.”

The crisis that emerged in 2008 was generated by large reductions in net worth as risky assets were reappraised and their market values plummeted. The reduction in net worth reduced consumer and industry reserves, which reduced demands for a variety of consumer goods and inputs. The supply of credit used by a broad cross-section of firms to manage variations in cash flows also shrank and became more difficult to obtain. To deal with the former, a variety of “micro-policies” were adopted that attempted to reduce the decline in the prices of those risky assets. Many of these policies created new “safety nets” to hold prices above their new market clearing levels, partly to limit losses, and partly because it was believed that prices were temporarily below their long-run equilibrium values.

Many of the new safety nets had both macro- and microeconomic rationales. For example, both liquidity and credit worthiness were increased in the non-bank financial sector through the creation of new loan “facilities” for firms outside the banking sector. However, the principle rationale for these policies appeared to be microeconomics. Such policy responses provided new “options” or “insurance” for firms that held assets that were illiquid or suffered most from the contraction in credit from the non-bank financial sector. Many of these programs could be regarded as crisis insurance, ex post programs that reduced downside losses for a broad cross-section of major and minor participants in credit markets.

The next section of the paper provides a short overview of the microeconomics of the financial crisis, which is largely a condensed and slightly updated version of Congleton (2009). Sections III and IV provide overviews of the safety net programs adopted in response to that crisis and the recession induced by it, many of which were adopted as risks were reassessed for particular firms and markets. Relatively few of these programs have attracted much press attention. Section V analyzes the limits of a government’s ability to

provide ex-post social insurance, and suggests that the U.S. may be approaching those limits. It also suggests that current policies may be laying the foundations for a new “uninsurable” crisis by underpricing risk.

II. A Short Recapitulation of the Financial Crisis of 2008

Although there were a variety of factors that contributed to the financial crisis of 2008, the most important was the underpricing of risk and insurance in private markets. This allowed excessive leverage to become endemic. Consumers, firms, and governments, all over-borrowed and maintained reserves that were too small to cope with the year-to-year volatility of their income and/or cash flows. Such fully leveraged consumers and firms were able to borrow without paying large risk premiums, and moreover, their lenders and their lenders’ lenders often engaged in similar behavior. When cash flows were disrupted by unusually large economic shocks, the result was a great meltdown in financial markets and a great flight of what capital remained to safer assets.

Reserves by financial firms and others were adequate for “normal” variations in the relevant cash and credit flows, but not for larger than expected ones. The worldwide integration of capital markets in this case magnified, rather than dampened the problem, because so much “leverage” was used throughout financial markets to increase returns, and various downside risks were neglected or considered so unlikely as to be essentially irrelevant for contingency planning.

A. The End of the Housing Bubble

The proximate cause of the financial crisis was the end of a major U.S. housing bubble that had been magnified by various public policies and investor demand for “safe” assets in the decade before 2006 (Congleton 2009). As long as housing prices rose, the asset values of the houses supporting mortgages were sufficient (indeed more than sufficient) to support a variety of risky loans in the consumer, commerce, and finance sectors of the economy. The steady increase in house prices allowed highly leveraged house “owners” to easily refinance to address any short-term cash flow problems that emerged and also allowed relatively high

profits for home-owner speculators, loan originators, and mortgage bundler-insurers such as Fannie Mae and Freddie Mac.

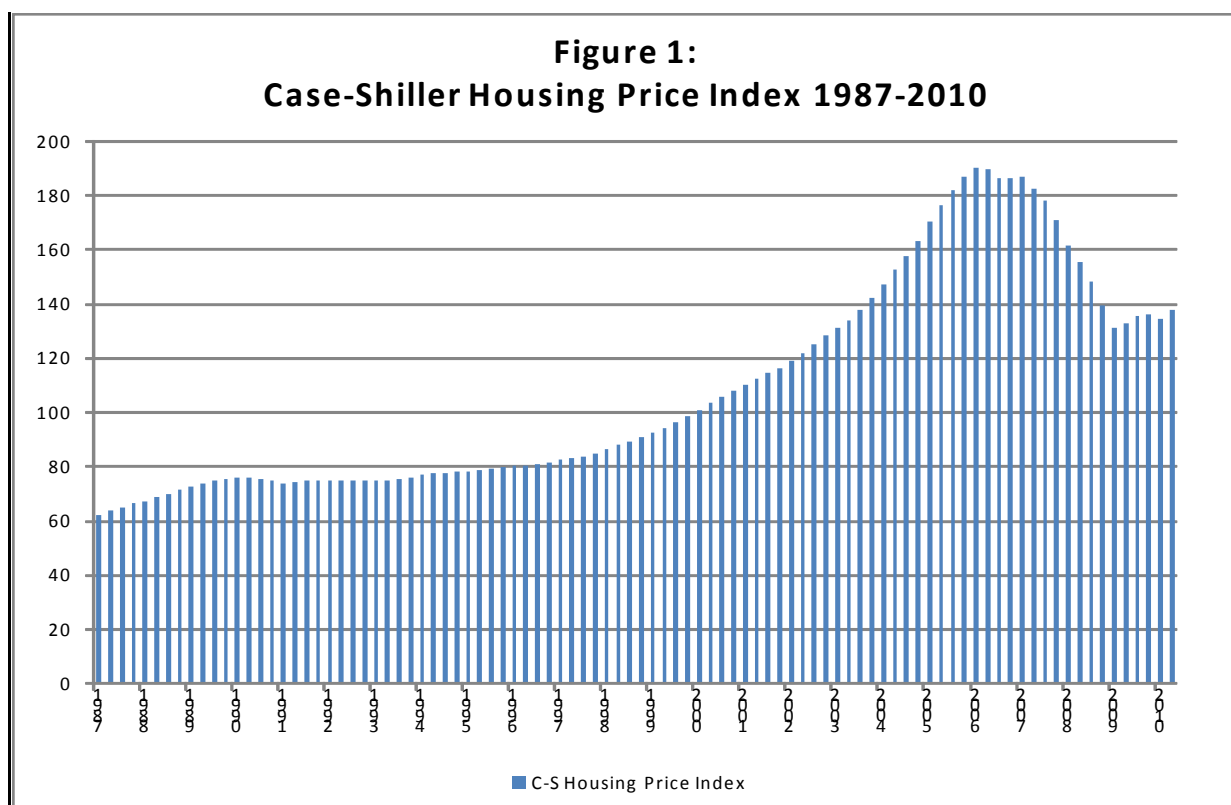
A vast new credit market in mortgage and other debt-backed securities emerged in the 1990s and early 2000s. Interest rates slowly declined during this period, which induced many firms to favor relatively short-term over long-term loans, a fraction of which would have to be rolled over each year.

In 2006 housing prices began to fall for the first time in more than a decade. The ensuing three-year decline was the first significant decline in house prices since the recession of 1992, and the decline was much greater and faster than in that relatively mild recession. According to the Case-Shiller index, house prices in the 1992 recession peaked in early 1990 (at 76.15) and fell by about 3 percent by the middle of 1991 (to 74). A year and a half later, at the end of 1993, average housing prices had returned to their peak level (to 76.18). In contrast, housing prices in the 2008-9 recession peaked in early 2006 (at 190.41) and fell by about 30% during the next three years (to 131.38 in early 2009). The U.S. Census series on median home prices peaked in 2007 and shows a similar broad decline in home prices during 2007-10.

Diversifying across regions of the country could not reduce this risk, because average house values fell throughout the United States. (Indeed, a few real estate bubbles also “burst” in other countries at about the same time.)

Although explanations for the existence and piercing of asset bubbles vary (Capozza and Seguin 1994; Lei, Noussair, and Plott 2004), there is little disagreement among economists that the end of major asset bubbles can have real effects on other markets. For example, Case, Quigley, and Shiller (2001) find that both stock market and real estate price fluctuations have significant effects on household consumption levels, and they report that the effects of housing price declines are larger than those from stocks. Cecchetti (2006) reports that housing booms worsen growth prospects, although equity booms have little impact on macroeconomic performance. The 31% decline in U.S. home values between 2006 and 2009 reduced homeowner equity by approximately 6 trillion dollars.¹

¹ According to the Kennickell (2006, table 11a) the (net) value of equity in personal homes in 2006 was \$19.1 trillion.



B. The End of “Risk-Free” Mortgage-Backed Securities

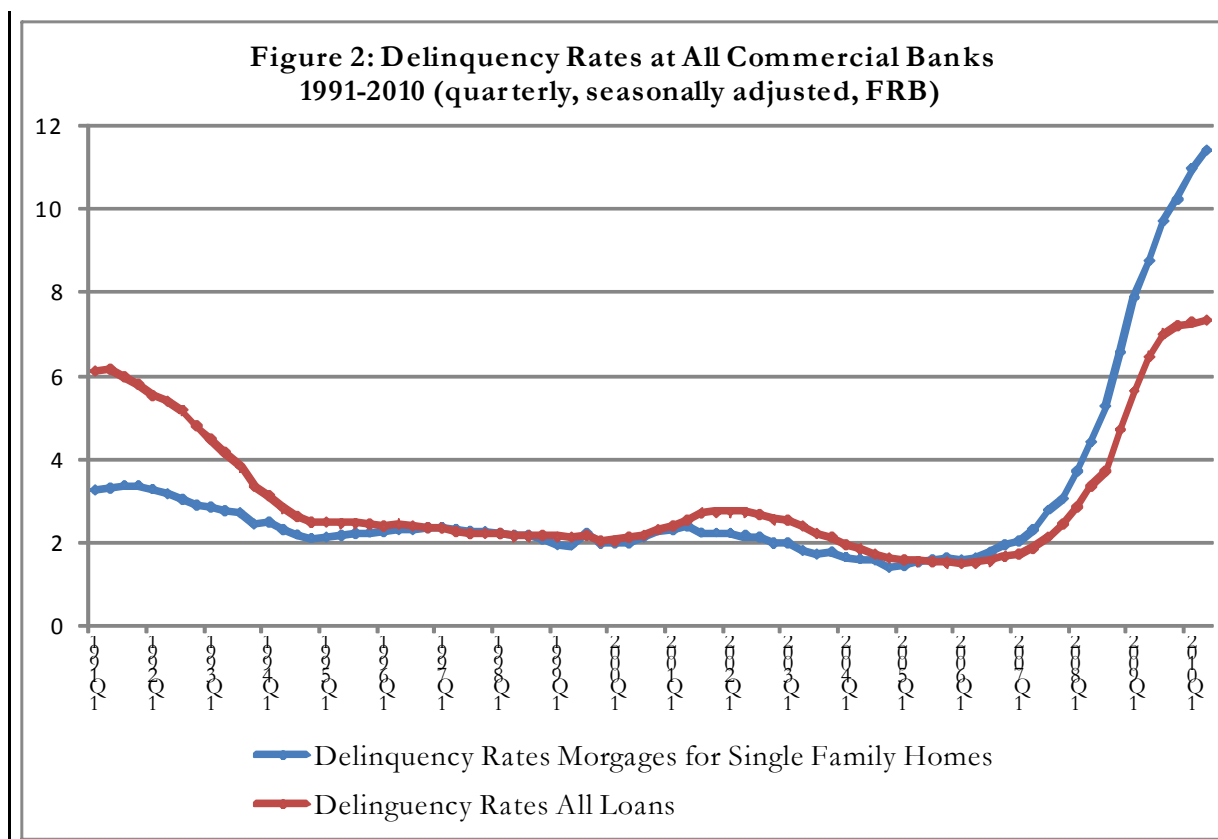
The decline in real estate prices was not a complete surprise, because a minority of analysts had been predicting such a collapse for years. However, for most analysts, portfolio managers, and policy makers, the rapid decline in real estate prices was completely unexpected. The unprecedented magnitude of the decline, together with increasing unemployment, had major effects on important financial markets world wide, because so many mortgages had been securitized during the previous two decades. Many real estate owners were completely leveraged and so were unable to refinance to meet their short-term cash-flow problems as housing prices fell and unemployment increased. Similar problems affected a variety of financial and commercial firms.

The decline in real estate prices also reduced the supply of credit through affects on the financial sector. Most purchasers of “negative equity” and “no docs” mortgages realized that these were relatively risky “promises” to pay for. Even Fannie Mae acknowledged such risks in its 2007 annual report, but as long as house prices rose, such risks were moderate and

could be neglected or insured against. Before 2006, mortgages and mortgage-backed securities were regarded to be low risk assets and played an important role in a broad range of portfolios. Delinquencies on residential mortgages had been moderate in the period after the 1992 recession and, if anything, exhibited a slight downward trend through 2005. Moreover, the purchasers of mortgage-backed securities had been assured that their mortgage-backed securities were both properly diversified and insured by the “independent” risk assessments of Fitch’s, Moody’s and Standard and Poors’.

Mortgage delinquencies began to rise in 2006, and sub-prime mortgages were disproportionately represented among delinquencies. Delinquencies on residential real estate loans more than doubled by the beginning of 2008. Real estate mortgage delinquencies doubled again in 2008 and continued to climb to rates not seen in the post World War II period. Nearly 25% of sub-prime mortgages were 90 days delinquent or in foreclosure at the end of 2008 (Bernanke 2009).²

² Bernanke’s (2008) figures 1 and 2 demonstrate that delinquency rates vary widely across the country. Prior to the crisis, in 2004, these ranged from 0.6% in the lowest quintile to more than 2.5% in the highest quintile. During 2004–07, delinquencies rose in many parts of the Southwest, Southeast, and Midwest, while relatively few delinquencies occurred in most parts of the Northwest.



Although residential mortgage delinquency rates began to climb in 2005, mortgages and mortgage-backed securities initially remained relatively “low-risk” assets, because most were insured by Fannie Mae, Freddie Mac, and other mortgage and mortgage-backed security insurers. However, as delinquency rates began to exceed the normal range of the post-1992 period in 2007, mortgage insurance claims began to increase, which required mortgage and mortgage-backed securities insurers to pay the interest payments that delinquent borrowers were not making.³

Unfortunately, but perhaps predictably, insufficient reserves had been maintained by those insuring mortgages and mortgage-backed securities, because they had evidently assumed that the benevolent national trends between 1995 and 2005 were the new market norm. In difficult times, insurance is only as good as the insurance company’s net cash flow,

³ The St. Louis Federal Reserve Bank’s “Financial Crisis Timeline” notes that in June 2007 Standard and Poor’s and Moody’s Investor Services downgraded more than 100 bonds backed by second lien sub-prime mortgages. A month later, more than 600 securities backed by sub-prime residential mortgages were placed on a credit watch (www.stlouisfed.org/timeline/timeline.cfm). See also Jenkinson (2008), who lists in somewhat greater detail the increase in downward revisions of “structured” securities by rating agencies in 2007 by more than one ratings category.

portfolio of reserves, and line of credit. As housing prices began to fall even more rapidly than they had been rising, mortgage insurers began to pay out more than they were taking in in fees and interest. Losses accumulated as payments to those insured exceeded payments from those holding the mortgages.

Reserves that had been more than adequate during the housing boom evaporated for several reasons. As housing prices fell rapidly in many parts of the country, reselling houses took longer (requiring insurers to make up more missing interest payments), and because the houses sold were less valuable than they had been in the recent past, it reduced the interest payments from the new loans taken out by successive home owners. As insurer losses accumulated, the stock prices of insurers naturally fell, which meant that they could not raise new money to make their “guaranteed payments” to mortgage-backed security holders by selling stock. As insurers of mortgage-backed securities began to empty their reserves and their stock values began to decline, their lines of credit naturally dried up. These market trends were reinforced by formal revisions in the credit ratings of Freddie Mac, Fannie Mae, and other insurers. The credit-rating agencies gradually increased their estimates of the riskiness of MSBs, expected insurance losses, and the survival risks of those insuring mortgage backed and other related securities.

Several large finance corporations filed for bankruptcy protection in 2007. Many of these were insurers of mortgage-backed securities. New Century Financial Corporation filed for bankruptcy in April, Countrywide Financial Corporation in July, and American Home Mortgage Investment Corporation in August. Several other major insurers approached bankruptcy, as their insurance obligations exceeded their reserves (Fannie Mae, Freddie Mac, AIG, etc.).

This was not simply a cash flow problem that could be solved with a bit of temporary borrowing or a Federal Reserve easing of credit. There were \$10.4 trillion of outstanding mortgages on one- to four-family homes in 2006, of which \$7 trillion worth were held in mortgage pools and trusts supporting mortgage-backed securities (*Statistical Supplement to the Federal Reserve Bulletin*, October 2008, p. 33). The value of the mortgage-backed securities supported by those mortgage pools would have initially exceeded the value of the mortgage

pools themselves, because of the lower risk premiums paid for securitized mortgages than for the mortgages themselves (Congleton 2009).

Ex post, it became clear that the insurers of mortgage-backed securities had assumed (or hoped) that housing prices would rise forever (or at least not fall very much), which essentially meant that they needed only sufficient reserves to carry properties through bankruptcy courts, after which the house would be resold and interest payments would be resumed (from new buyers, whose mortgages were also likely to be incorporated into mortgage-backed securities).

The rapid decline in prices for mortgage-backed securities was largely caused by reduced risk protection provided by mortgage insurance instruments. The standard asset-pricing models could no longer be used to assess the value of mortgage-backed securities, because house prices continued to fall at unusually high rates and bankruptcy risks rose to unusual levels for even the most robust mortgage insurance companies. Historical data could no longer be used to estimate the necessary probability functions.

Residential mortgages had long been safer than most other loans, but this optimistic presumption was replaced with one that appears to exaggerate their risks.⁴ The re-assessing of the risks of mortgage-backed securities implied that there was a bubble in mortgage-backed securities built on top of the bubble in housing prices. Investors around the world had been encouraged to hold these relatively “safe” assets, rather than government securities or mortgages.⁵ The bubble in mortgage-backed securities was further magnified by a variety of mistakes made by credit rating agencies (Jenkinson 2008).

Accounts from newspapers and many government agencies place the lost market value of mortgage-backed securities at 60%–80%, depending on the type of security, which if true,

⁴ For example, as default rates increased, Standard and Poor’s reassessed the value of some mortgage-backed securities. Under the default rates of that time, MBS prices had declined 13%. Under the assumption that default rates would double, the MBS had declined by 47% in value. The market, however, priced the MBS at 62% below its initial value, well below Standard and Poor’s worse case analysis (NYT, Feb 1, 2009).

⁵ Several Asian governments, for example, were encouraged to invest in mortgage-backed securities as an alternative to U.S. Government securities. Foreign holdings of mortgage-backed securities issued by U.S. GSEs rose from \$124.9 billion in 2002 to \$385 billion in 2006. (U.S. Treasury International Capital System Report on Foreign Portfolio Holdings of U.S. Securities, tabulated by HUD, May 2007, <http://www.hud.gov/content/releases/07-072table.pdf>).

implies that on the order of \$5 trillion of wealth disappeared from the world's financial system from that one market alone. These losses were about the same magnitude as the reduction in homeowner equity, but they had larger effects on the real economy, because they were concentrated in a very important sector of the economy, rather than spread out among households.

To put those numbers in perspective, the entire outstanding publicly held debt of the U. S. government was about 4.2 trillion dollars in 2007.⁶ A major source of credit used for both short- and long-term financing had essentially disappeared. These price adjustments in financial sector had major economic and political consequences—the latter, in part, for Olsonian (1965) reasons.

C. The Regulatory Bureaucracy Also Underestimated the Risks

That the financial failures of 2007 would become the financial tsunami of 2008 was recognized by a minority of persons with investments interests in mortgage-backed securities and also by a subset of persons with regulatory authority in the affected industries. By 2007 a subset of financial traders had begun to bet against mortgage-backed securities and financial firms with large holdings of MBS by selling short in as many ways as possible. This of course accelerated the collapse of the capital “reserves” of firms holding mortgage and other credit backed securities, because the stock value of companies is normally counted as part of their capital. Other firms, however, such as Bear Stearns and Lehman Brothers, continued to believe that MBS and other real estate securities were attractive investments.⁷ As with tsunamis, the wave of failures initially looked smaller than they would become. A few ripples became a great tidal wave of failures as mortgage-insurance firms failed and the risk of all grades of mortgaged backed securities were reassessed and balance sheets (capital reserves) of investment banks, pension funds, and many local governments collapsed.⁸

⁶ 2010 *Statistical Abstract of the United States*, Table 458, excluding holdings of the Federal Reserve System.

⁷ See, for example, Tibman (2009: 86, 120-36) and Greenberg (2010: 136-43).

⁸ The St. Louis Fed's “The Financial Crisis, A Timeline of Events and Policy Actions” provides a list of significant bankruptcies during 2007-08. It also includes a long list of policies adopted by the Federal Reserve in response to recessionary pressures and problems in the non-bank portion of the financial market.

Within the U. S. bureaucracies, many were oblivious to the financial tsunami that was coming, because their attention was focused elsewhere. For example, conventional bank credit continued to expand throughout 2008 (year to year and month to month), but credit from the new securitized debt markets were not tracked in their published statistics. Others charged with regulating various securities markets had world views that were grounded in efficient markets theory. They evidently believed that the “ripple on top,” was simply a slightly larger than normal adjustment to new asset information that would soon dissipate. The interaction of well-informed investors in competitive markets should, at least in theory, have made major price adjustments impossible.

One of the more famous quotes after the credit meltdown is from Alan Greenspan, “I made a mistake in presuming that the self-interests of organizations, specifically banks and others, were such as that they were best capable of protecting their own shareholders and their equity in the firms” (*NYT*, Oct. 23, 2010). A widely held belief was that the highly leveraged and intertwined nature of contemporary financial markets would dampen rather than amplify economic shocks—both small and large.

A subset of regulators with close connections to the financial world were aware that the financial problems were unusual and unusually large, because they knew more about the new financial products, the extent of leverage, and the lack of truly safe capital reserves. Indeed, in a few cases, government policy makers had, themselves, been major players in the new financial markets. However, as the new financial products were in largely unregulated sectors of the financial industry and often custom “one-off” transactions, there was little available public data about them. There was also little that informed policy makers could do to restrain the tidal wave they feared would be coming, beyond taking on the mantle of middlemen and encouraging mergers and spinoffs during 2007 and most of 2008 (Paulson 2010).

D. Pecuniary Externalities from the Decline in Real Estate Prices

It bears noting that the financial firms that failed in 2007-08 were unusually large, in part, because of changes in U.S. bank regulations during the past two decades. These changes allowed a great deal of inter- and intra-state mergers and consolidation to take place

and also facilitated the internationalization of finance. There were bankruptcies of unusually large financial firms. Economic growth fell throughout the world.

During the previous U.S. housing crisis in the late 1980s and early 1990s, there were many more bankruptcies, but of smaller firms. About 750 savings and loan banks failed during the late 1980s, with \$400 billion of “book” assets. The assets of the failed S&Ls were purchased by U.S. Government agencies (chiefly by the Resolution Trust Corporation, created for that purpose). As those assets were resold, the market value of the loans of the bankrupt S&Ls turned out to be about 25% less than their book value. In the end, taxpayers paid about \$90 billion more for those questionable mortgages than they recovered by selling them.⁹ The \$400 billion program to restore the S&L banking sector had been the largest “bailout” in U.S. history, although that distinction was soon to end.

Simply letting the S&L sector collapse in the early 1990s would have caused significant losses, but nothing like those associated with the simultaneous collapse of the real estate, mortgage-backed security, and stock markets in 2007-09. The affected financial sectors financed not only housing and business expansion, but also provided a good deal of day to day financing that allowed firms and consumers to use credit, rather than hold their own reserves, to address short-term cash-flow problems. Credit provided by the non-bank financial sectors also allowed short-term debt to be rolled over easily at relatively low interest rates.

It bears keeping in mind that “conservative” investors would have considered both real estate and mortgage-backed securities to be among their safest investments and so they accounted for a good deal of the financial reserves in the system. The crisis generated by the joint collapse of housing, mortgage-backed securities, stocks, and many other asset market undermined the solvency of a very broad cross-section of consumers, pension funds, financial firms, and governments worldwide, but especially in the United States.

The decline in residential real estate values and the (effective) end of private mortgage markets and mortgage-backed security insurance had four broad effects on the U.S. and world economy. (1) The reduced value of real estate and mortgage-backed securities reduced

⁹ See the General Accounting Office’s (GAO’s) audit of the Resolution Trust Corporation (www.gao.gov/archive/1996/ai96123.pdf).

the wealth of home owners and all organizations holding mortgage-backed securities. These wealth effects, naturally, caused consumers to cut back on their expenditures and firms to cut back on their investments. (2) Many financial firms were effectively bankrupt, with debts and collateral obligations that were greater than assets, because their capital base had evaporated as risks were reassessed. (3) Those managing portfolios of various kinds at investment banks, insurance companies, pension funds, sovereign wealth funds, etc. all attempted to reduce their portfolio's overall risk. (4) In the new circumstances, most owners of mortgage-backed securities found themselves with far too many risky assets in their portfolios and tried to sell those securities in the usual way. Mark-to-market accounting rules reinforced prudence in setting in which asset prices were falling.

As capital evaporated, firms needed to immediately increase their assets and reduce their debts, or face bankruptcy when creditor obligations could not be met.

The portfolio rebalancing generated additional declines in wealth for those holding relatively risky assets in their portfolios, as portfolio managers worldwide sold what they could (stocks and less-than-perfectly-safe corporate bonds) and replaced them with safer government securities. Stock market values fell to decade lows worldwide, while interest rates on government securities fell. The portfolio effect, thus, reinforced the wealth effect, because essentially everyone was trying to make the same portfolio adjustments at essentially the same time. There were many more sellers than buyers at the old prices, and prices for relatively risky securities fell, while those of nearly risk-free assets increased, as predicted by the elementary economics of supply and demand. The U.S. residential real estate, mortgage-backed securities, and stock markets are huge markets, so these unusually large adjustments had unusually large consequences for the U.S. and world economies.

The end of the housing and MBS bubbles had direct wealth effects on private consumption, which increased unemployment in much of the United States. The reduction in house values, increased unemployment, and reduced economic growth after 2006-07 made both sub-prime and prime mortgages far riskier than in previous years, because the asset value of the houses supporting the mortgages were in many cases less than the value of the outstanding mortgage. Refinancing to ease borrower cash flow problems was no longer possible. The more than 10 trillion dollar reduction in wealth reduced consumption and

investment expenditures worldwide, which reduced demand for all inputs. Unemployment continued to increase and oil prices fell.¹⁰

III. New Public Safety Net Programs for Purchasers of Mortgage-backed Securities and Other Financial Risk Takers

Textbook macroeconomic policies were adopted in 2008 and 2009. Expansive fiscal policies were adopted in the Spring of 2008 and Spring of 2009. The monetary base was expanded at unprecedented rates in late 2008, while the Federal Reserve's discount rate was lowered to zero (or perhaps below zero in real terms). However, both households and firms would have to "de-leverage" before they could return to normal consumption and investment rates, which required a good deal of saving that evidently blunted the effects of the extraordinary macro policies adopted.

The policies of greatest interest for the present paper were driven by microeconomic, rather than macroeconomic considerations. Section II provided microeconomic foundations for the crises that arose in the housing and financial sectors of the economy. Section III suggests that such microeconomic considerations had significant political effects. As in many other crisis situations, the main microeconomic policy response has been the adoption of a variety of new safety-net programs. What is unusual in the present case is the extraordinary size and scope of the various "bailouts" of 2008-10, only a small subset of which have received significant press attention.

In many cases, there were both microeconomic and macroeconomic rationales for the policies adopted, although the remainder of this paper focuses primarily on the microeconomic rationales for and consequences of the new safety net programs.

¹⁰ Unemployment rose from 4.4% in December of 2006 to 7.4% in December of 2008 and continued to rise, reaching 10.1% in October of 2009.

It bears noting that most macroeconomic models focus on income, investment, and monetary flows, rather than wealth, and so implicitly assume that wealth is not affected by business cycles. There were no obvious fiscal, monetary, or real shocks in this period. (Unemployment rates are from the *Alfred* data set, downloaded October 14, 2010.)

A. Lobbying for New Safety Net Programs Begins: Great Depression Warnings Are Sounded in Congress

Legislation is normally required for new social insurance programs to be created and funded. In the United State, this requires persuading a majority of the members of Congress that a new program would improve their reelection prospects and/or is necessary for the good of the country. Such persuasive campaigns (lobbying) may be done in public through ordinary channels or in private (secret) through “backdoor” channels. Both channels were clearly used during the crisis, and both were evidently successful at inducing Congress to adopt new programs.

A few standing safety-net programs can be expanded by independent regulators without new legislation. Such policy changes can be influenced by lobbying by both insiders and outsiders, and much of that lobbying is evidently done behind closed doors. Many of the new or expanded safety net programs were undertaken by independent agencies, such as the Federal Deposit Insurance Corporation and Federal Reserve System, which used new and/or expanded interpretations of their preexisting policy-making authority.

Lobbyists for the new financial safety-net programs included senior officials from the U.S. Treasury, the Securities and Exchange Commission, FDIC, and Federal Reserve Board, as well as representatives of large financial firms. Their public testimony at Congressional hearings was buttressed with many meetings behind closed doors, some of which included representatives of large financial firms.¹¹

Throughout 2008, the terms “financial crisis,” “credit meltdown,” and “great depression,” were frequently used by those advocating new legislation to address the unusually large number of bankruptcies (and potential bankruptcies) in the non-bank portion of the financial sector. At the time these terms were first invoked, there was no publicly available evidence of a broad credit “meltdown,” nor of unusual recessionary pressures. Indeed, bank credit expanded throughout 2007 and most of 2008, and

¹¹ Paulson (2010) includes numerous accounts of such lobbying.

unemployment remained at relatively low levels, although many financial firms were in dire straights, because their asset base had collapsed.¹²

A good deal of the initial talk of “crisis” was induced by the financial sector, because many of its firms (and employees) were in a state of crisis and they stood to profit if a major intervention by the Federal government could be induced. Additional “crisis chatter” was induced by the natural proclivity of the news media to use the term “crisis” to expand their audience.¹³ The available data suggest that the talk of “credit crisis” and “meltdown” was exaggerated during most of 2008, although the financial sector was experiencing unusual distress, because of the simultaneous declines in the value of mortgage-backed securities and stocks. The International Monetary Fund’s *World Economic Outlook* of April 2008 noted that the *financial shock* was the worst *since* the Great Depression, a significantly milder claim.

In response to a series of successful persuasive campaigns, several expensive pieces of legislation were adopted in 2008. The first was a Keynesian stimulus program of tax rebates adopted on February 13, 2008 that was supposed to head off the recession. (137 million families and individuals were sent tax rebates during May of 2008.) In addition, a variety of other tax reductions were extended to firms and loan limits for FHA loans were increased. The latter was evidently intended to help support housing values for upper middle-class

¹² Research at the Minnesota Federal Reserve demonstrates that credit of all kinds continued to expand through mid-October 2008. However, it should be kept in mind that commercial banks were only one of three major sources of credit. The bond market and the securitized debt market are the other two. Bank credit demand increased during 2008 and very rapidly, because of the recession (and associated cash flow problems), fears that commercial bank credit might dry up given all of the talk in the mass media about a credit crisis, and because of a decline in the credit available from the other two sources (Chari, Christiano, and Kehoe 2008).

The lack of a major collapse of bank credit is evidently partly because the Federal Reserve system provided a good deal of short-term credit to the banking system, which allowed banks to continue servicing credit cards, car loans, small business loans, and so forth, even if they held mortgage-backed securities on their balance sheets. The monetary base grew rapidly during this period. On the other hand, sources of credit from the securitized debt sector dried up as mortgage and other credit-backed securities and their various derivatives declined in value as risks were reappraised by investors.

¹³ The terms “financial” and “crisis” have appeared in nearly 6,000 articles in *The New York Times* alone since 2004 and more than 30,000 times since 1851. Nonetheless, throughout 2007, the term financial crisis was rarely applied to the U.S. financial system, except occasionally by persons speculating that a crisis might occur at some point in the future.

homes. President Bush's "stimulus" programs were expected to cost approximately 150 billion dollars according to the Congressional Budget Office's February 11, 2008 estimates.

The first major safety-net bill of 2008 created a new taxpayer-supported guarantee for the creditors of Fannie Mae and Freddie Mac. In late July, the *Housing and Economic Recovery Act of 2008* made the U.S. government's implicit guarantees for Fannie Mae and Freddie Mac more explicit.¹⁴ The legislation authorized the Treasury to purchase GSE obligations (e.g., loan Fannie and Freddie money). New lines of credit from the Treasury and the Federal Reserve would provide an additional safety net for persons and firms holding Fannie Mae and Freddie Mac securities in their portfolios. The safety net for creditors was strengthened by allowing the treasury to take over the obligations of these more or less private concerns, if bankruptcy threatened, which it did in the early Fall of 2008.

The housing and recovery act provided new protections for stock and especially debt holders of Fannie and Freddie, that had not been paid for and is unlikely to be fully recovered. The legislation also merged the various GSE regulators in HUD to form a new tougher regulatory authority, the Federal Housing Finance Agency. The subsequent increase in Fannie and Freddie's capital reserve standards were instances of closing the barn door after the horse had left, as the capital bases of both firms had already been hollowed out by purchases of very risky mortgages at the same time that their liabilities had been increased by insuring the MBSs based on them.

On September 7, 2008, both Fannie Mae and Freddie Mac were placed under conservatorship, as these privately held GSEs were in effect (re)nationalized.¹⁵ By doing so, a large part of the finance market dealing with mortgage-backed securities, including \$5 trillion of GSE debt, were now formally guaranteed (insured) by U.S. taxpayers.¹⁶ (It bears

¹⁴ Congressional Budget Office estimates of the present value of the implicit taxpayer guarantees to Fannie and Freddie between 1995 and 2000 varied from \$6.8 to \$15.6 billion. The interest savings alone varied from \$3.7 to \$10.2 billion, while the regulatory and tax advantages varied from \$0.7 to \$1.2 billion. The remainder of the implicit subsidy was through implicit (free) insurance for the GSE issues of mortgage-backed securities (Crippen 2001: Table 1).

¹⁵ Stock in Fannie and Freddie continued to trade on the New York Stock Exchange. However, their stocks were delisted from the NYSE in the summer of 2010. They continue to trade on over the counter markets at about 1 percent of their value in December of 2007.

¹⁶ Formally, these two GSEs have been private firms since the late 1960s, although a third of their boards of directors were appointed by the president. Their stocks continued to trade on the stock

noting that the total publicly held debt of the U. S. government was about twenty percent less than the Fannie and Freddie's debt in 2007, 4.2 trillion dollars). In the two years after the GSEs became eligible for support, Fannie and Freddie received approximately 150 billion dollars in direct support from U. S. taxpayers. The net cost of this new social insurance program will not be known for some time.¹⁷

Because Fannie Mae and Freddie Mac directly or indirectly insured more than half of the market for mortgage-backed securities, the mortgage insurance provided investors in those "safe" securities were now formally supported by the U. S. taxpayers. However, the mortgage-backed securities issued by other firms were not yet supported, although an \$85 billion loan was provided by the Federal Reserve to American International Group (AIG) on September 16. (AIG was the largest private insurer of mortgage-backed securities and other similar securitized-debt securities.)

Because mortgage-backed securities were held by virtually all financial institutions (including many banks) and had lost much of their value, many financial institutions were actually bankrupt, rather than illiquid (the latter problem being addressed by the Federal Reserve's macroeconomic policies).

B. The Power of All-or-Nothing Offers during Times of Crisis

On September 19, 2008, Treasury Secretary Paulson began an intense effort (with predictions of a looming Great Depression) to persuade Congress to provide \$700 billion to purchase other mortgage-backed securities (the so-called "troubled" or "toxic" asset relief plan [TARP]). Assets, of course, are inanimate objects and require no relief. It is their owners that were to be protected from their downside risks. Paulson proposed "restarting" the market for mortgage-backed securities and other similar assets by adding a new major purchaser for those securities, namely the federal government. The TARP program discussed in Congressional hearings was a new government safety net for investors in

exchange during the period of conservatorship, although with conservatorship, the U. S. government became their major shareholder with warrants for 79.9% of the shares. See the *CRS Report for Congress*, September 15, 2008.

¹⁷ See the Federal Housing Finance Agency's press release of October 21, 2010. http://www.fhfa.gov/webfiles/19409/Projections_102110.pdf. The report suggests that between 70 and 220 billion dollars of additional support is likely to be necessary in the next few years.

mortgage-backed securities. It would be a program analogous to farm price supports, under which the government would purchase mortgage-backed securities at above market prices and thereby limit the losses of those currently holding mortgage-backed securities and other securities directly or indirectly supported by them. He and his advisors believed that 700 billion dollars was the largest amount that could be obtained from Congress (Paulson 2010: 262-7).

The original Paulson proposal was sent to Congress at midnight on September 19. It was a “back of the envelop” idea, only three pages long, that requested a \$700 billion line of credit for Treasury to use as it saw fit to purchase “troubled securities.”

No other number was seriously discussed, because Paulson used his authority as Secretary of the Treasury and reputation as a financial genius at Goldman Sachs to focus attention on a single, large, rescue program, which would purchase mortgage-backed (and similar) securities, whose complexity, it was argued, had made them more difficult to price in the new riskier environment and had induced an unreasonable sell off (panic). That no other number was seriously entertained, was part of Paulson’s strategy for getting his proposal adopted quickly. In his words:

“...we needed to sell TARP hard. As Treasury staff negotiated with Congressional Democrats on the particulars, we felt we could not show any doubts about our approach or any openness to other ideas. Whenever anyone on the Hill asked the Treasury team if they had any other plans, the response was: “This is the plan.” (Paulson 2010: 280)

The magnitude of the proposed financial support program was equal to about 10% of the (pre-collapse) market for mortgage-backed securities and about 20% of that not already supported through the nationalization of Fannie Mae and Freddie Mac. The amount was large enough to make a difference in a very large financial submarket.

The proposal was a large one even for the U.S. government. It required a 25% increase in the Federal budget and a significant increase in national debt ceilings. The U.S. national debt ceiling in 2008 was approximately \$10 trillion, so the Paulson plan required about a 7% increase in the total debt of the United States, about half of which is held internally (mostly by the Social Security Administration’s trust funds). This would require an extraordinary

issue of new Treasury bonds. The deficit in the previous year (2007) was about \$240 billion, down from about \$400 billion a few years earlier.

Given the size of the proposal and the urgency of the case presented, it immediately attracted enormous press attention, while other major steps taken by the Federal Reserve, Treasury, and FDIC faded into the background. As usual, the most persuasive public arguments for private transfers were based on public goods arguments and emergency needs, and as usual a “crisis” can induce rapid policy changes without significant deliberation or analysis (Congleton 2005). Naturally, the Congress was initially skeptical of the proposal, although after 10 days of testimony, debate, a decline in the stock market, and the addition of a variety of amendments, both chambers of Congress deferred to Treasury’s expertise on the matter.¹⁸

During the first round of negotiations, the House of Representatives added a variety of oversight provisions, added a new self-financing mortgage insurance program (insisted on by a number of House Republicans), and provided for a temporary increase in the accounts eligible for FDIC insurance (from \$100,000 to \$250,000). The bill also reduced by half the resources initially available to the Treasury and included provisions for resources to be used to “keep persons in their houses,” where possible, and for the purchase of preferred shares—an option discussed only in passing in Congressional hearings. It also granted the SEC permission to suspend the market-to-market accounting rules that apply to financial firms. The now 110-page document, however, failed to secure a majority in the House on September 29 (205 to 228).

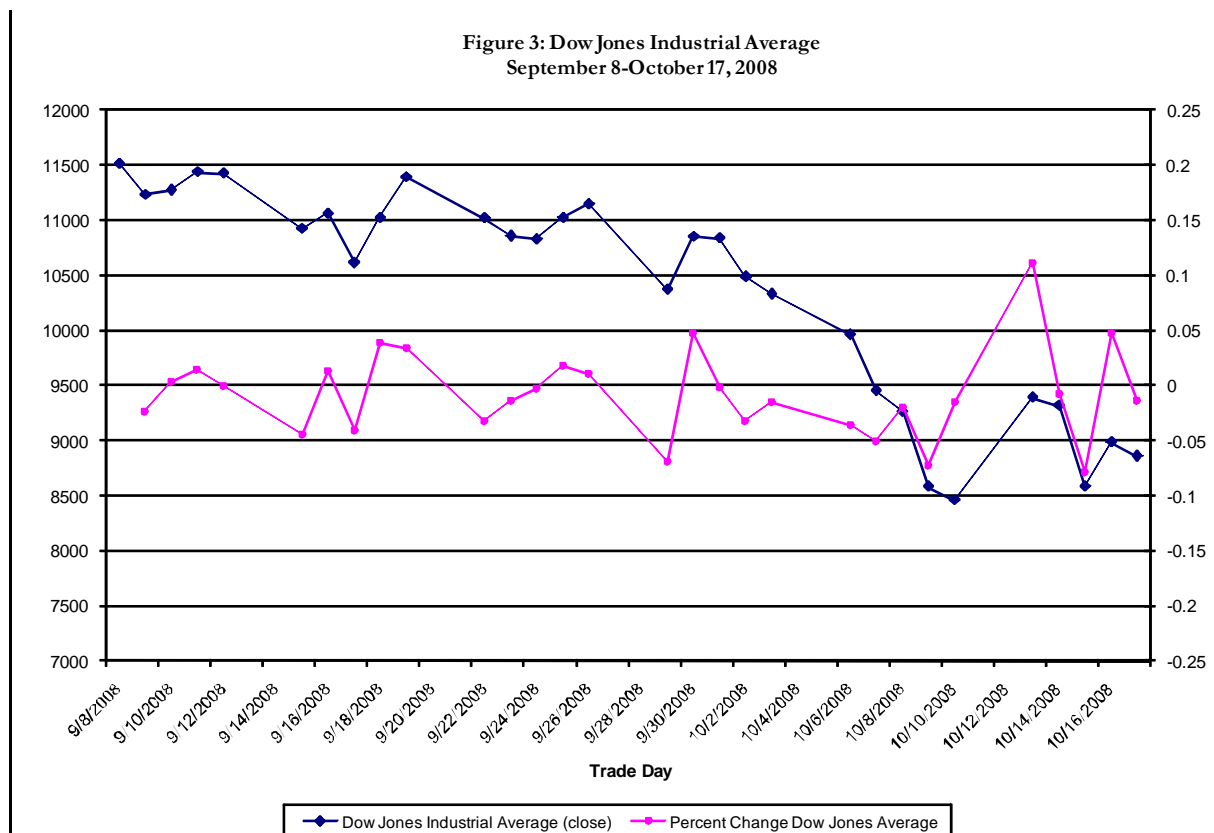
The stock market fell 6.98% on the day a majority in the House disapproved of the revised Paulson plan. The news media widely attributed the loss to the House vote, although the stock market rebounded 4.7% the following day.¹⁹ The Senate took up the (unpassed)

¹⁸ In the two weeks prior to the Paulson plan was announced, the stock market ranged between 11,500 and 10,600. The Dow Jones industrial average finished the day on September 19, 2008 at 11,388 on the Friday before the plan was announced. The Paulson plan was proposed over the weekend. The stock market generally declined during the negotiations. The Dow Jones average ended the day on the Monday after the bill was passed (October 6, 2008) at 9,955, a decline of 12.5% during the period of negotiations.

¹⁹ See the October 1 press release on “The Bad Rap on the Bailout Bill.” Perhaps, surprisingly, Congressmen facing close elections in November voted against the bill the first time it was voted on in the House.

House version of the TARP bill and added a variety of provisions unrelated to the stated purpose of the bill, including both major and minor legislation. The new TARP bill increased the threshold for the alternative minimum tax, extended environmental and other tax credits, and adopted other minor tax reforms and significant health insurance reforms. About two-thirds of the now 450-page-long bill had little to do with the financial crisis, but the additional “sweeteners” allowed the bill to secure overwhelming approval by the Senate (75 to 25). The House, chastened by the stock market decline of September 29 and evidently attracted by the Senate sweeteners, passed the Senate bill two days later (263 to 171), largely on the basis of Democratic support. President Bush signed the bill into law the same day, October 3, 2008. Polls in late September of 2008 showed a slight majority in favor of the bailout.

Funds for the TARP program were made available to the Department of Treasury in short order and monies were being disbursed less than two weeks after passage, which demonstrates that Congress and the Executive can rapidly respond to crises, even if they appear to be “grid-locked” on less urgent issues.



However, the stock market did not rebound as many television analysts had predicted, but rather continued to decline. Indeed, the largest percentage decline in the period immediately before and after the TARP deliberations occurred on October 15, some 12 days after the augmented TARP plan was adopted (-7.87%).

Evidently, the strong “great depression” arguments used to secure rapid adoption of the legislation persuaded many investors that things were worse than they had thought (the risks were higher); so, stock markets continued to decline, even as capital and liquidity was liberally added to financial markets. Whether the capital injections and loan programs were addressing public goods problems or providing transfers to senior managers of finance companies (and perhaps shareholders) depended on one’s macroeconomic and microeconomic perspectives.

In either case, both the name of the program and much of the debate in Congress implied that the new program could be regarded as a new social insurance program, insofar as it attempted to limit (insure against) the downside losses for persons holding the assets to be purchased in a manner analogous to farm price supports.²⁰ That significant government transfers to finance firms took place as a result of TARP funds has been affirmed in Congressional testimony, because the capital provided was not priced to account for differences in risk.²¹

C. Crisis Management and Agency Costs

Given the Congressional hearings and testimony by Treasury Secretary Paulson, one might have expected large-scale purchases of non-GSE issues of mortgage-backed securities to have begun immediately, with the Treasury paying well-above market prices. Instead, the U.S. Treasury announced on October 14 that the TARP funds would be used to purchase

²⁰ TARP was, of course, a much larger program in the short run than farm support programs. Farm programs cost on the order of \$60 billion per year. See the Congressional Research Service’s report R41195 (October 7, 2010).

²¹ See Elizabeth Warren’s testimony on February 5, 2009. Elizabeth Warren, chairman of the TARP oversight panel, testified on February 5, 2009 that \$250 billion were paid for \$176 billion of assets (the preferred shares); the latter was an estimated value of the preferred shares purchased (taking account of risk of bank failure).

preferred shares in a subset of finance institutions, using authority added to the TARP legislation by Congress without much public discussion. The press release stated that:

Companies participating in the [capital purchase] program must adopt the Treasury Department's standards for executive compensation and corporate governance, for the period during which Treasury holds equity issued under this program.

Nine large financial institutions already have agreed to participate in this program, moving quickly and collectively to signal the importance of the program for the system. *These healthy institutions* have voluntarily agreed to participate on the same terms that will be available to small- and medium-sized banks and thrifts across the nation. (Department of Treasury Press Release October 14, 2008).

On November 12, the Treasury announced that it would not use any of the TARP funds to buy troubled assets. These shifts in policy have never been fully explained.²²

According to the October 14 press release, the preferred shares were to qualify as “Tier 1 capital” and pay a dividend of 5% a year for the first five years, followed by a dividend of 9% a year until the shares are purchased from the Treasury.²³ The November 12 Treasury press release on the rescue package states that \$115 billion of TARP funds had been provided to the eight largest financial institutions by October 26.²⁴

Although the first announcement explicitly stated that capital “injections” were to go to “healthy institutions,” few of the first recipients could be regarded as healthy. Among the nine large financial institutions listed on the November transaction reports were two investment banks, Morgan Stanley and Goldman Sachs, which initially received some \$10 billion of capital each (through purchase of preferred shares). The latter was the firm

²² There is some evidence that the “great depression” rhetoric used to secure passage of the bailout bill exacerbated the credit problem and the recession. Individual investors and firms naturally assume that Treasury experts have the very best data, and the risk of a great depression was “new news” to many investors. For example, AAA - BAA corporate bond spreads increased after September's testimony, while RGDP growth plummeted and unemployment increased rapidly—in the absence of other obvious new shocks. (Here, one might contrast Paulson testimony before Congress with the understatement and care with which Greenspan spoke in public.)

²³ Tier 1 capital is defined by the Basel I and Basel II capital accords and is sometimes called the core capital. It is interesting to note that U.S. bank regulations had to be adjusted to allow this particular type of preferred share to count as Tier 1 capital.

²⁴ The press release states that “By October 26th we had \$115 billion out the door to eight large institutions.”

formerly headed by Treasury Secretary Paulson.²⁵ Merrill-Lynch was also in line for \$10 billion, but was in the process of being acquired by Bank of America, because Merrill-Lynch management evidently feared bankruptcy even more than merger. Citibank soon was authorized to receive an additional \$20 billion purchase of preferred stocks (on November 23) and obtained other government guarantees for some of its troubled assets. On January 15, similar new support was authorized for the Bank of America.²⁶ Purchases of preferred shares from AIG (\$40 billion) were authorized on November 10, although it was far from a healthy firm. Many of the investment banks and large commercial banks evidently had so many mortgage-backed securities on their capital accounts that they were formally bankrupt, and “shorting” the stocks of several of the bailout recipients was profitable throughout 2008.²⁷

TARP funds were also used to support nearly-bankrupt auto companies through purchases of shares in their credit divisions. For example, the Treasury initially announced \$5 billion in preferred share purchases in General Motors Acceptance Corporation (GMAC)—which also invests in mortgages—on December 29, and a loan of \$1.5 billion to Chrysler Financial on January 16, 2009.²⁸ Perhaps surprisingly, many of these capital

²⁵ The first recipients of government support under the TARP program were approved on October 28, 2008. They included the Bank of America (\$15 billion), Bank of New York-Mellon (\$3 Billion), Citigroup (\$25 billion), Goldman Sachs (\$10 billion), J.P. Morgan Chase (\$25 billion) Morgan Stanley (\$10 billion), State Street Corp. (\$2 billion), Wells Fargo (\$25 billion), and Merrill Lynch (\$10 billion). The Merrill Lynch transaction was authorized on October 28 along with the others, but included a footnote stating that funds were delayed pending merger. See the Treasury’s *Capital Purchase Program Transaction Report*, November 17, 2008.

²⁶ Joint Department of Treasury, Federal Reserve, FDIC Press Release on November 23, 2008. See also Washington Post, November 24, 2008 (www.washingtonpost.com/wp-dyn/content/article/2008/11/23/AR2008112301665.html), Department of Treasury press release January 16, 2009, and the *Associated Press*, January 15, 2009. (www.google.com/hostednews/ap/article/ALeqM5j_6zDvqJ7-3Wp6T3EMhF9SyXxGTQD95OGNP80).

²⁷ A few of the first TARP recipients were evidently less than happy with the strings attached to the money and agreed to create and sell preferred shares to the Treasury only after implicit threats were made by Secretary Paulson. (Interview of Sheila Bair, Chair FDIC, reported on Frontline’s website <http://www.pbs.org/wgbh/pages/frontline/meltdown/cron/>).

²⁸ GMAC was a subsidiary of General Motors until 2006, when it sold 51% of GMAC shares to a consortium including Cerberus Capital, Citigroup, and PNC. Cerberus is the investment group that purchased Chrysler and Chrysler Financial from Daimler (Mercedes Benz) in 2007.

purchases were not listed on the Treasury's TARP transactions reports released in December and January.²⁹ The automobile companies themselves were on the verge of bankruptcy with major cash flow problems. Two of the three latter entered bankruptcy and were able to rejoin the business world because of additional government loans, backed by stock warrants, which made the US government the dominant shareholder of both GM and Chrysler.

Whether these major shifts of policy simply reflected the usual informational problems of crisis management or is an instance of Stigler's (1971) capture theory of regulation is not clear. But, it does seem clear that the rescue of the S&Ls and many other more explicit cases in which the Federal Government acted as an "insurer of last resort" had indirectly produced standing routines that supported, rather than curtailed, the risk-taking behavior that had generated the crisis.

The extent to which such shifts of Treasury's policy and the lack of transparency were agile adaptations to rapidly changing circumstances or reflect agency costs and mistakes associated with the enormous discretion delegated to the Department of Treasury is not obvious. Many of Treasury's allocative decisions, however, appear to be consistent with regulatory capture theory, because they benefit the recipient firms and their employees far more than taxpayers. Weak banks are unlikely to use their new capital for loans, because doing so would violate their capital reserve requirements. Indeed, about 3.6 billion dollars of bonuses were paid to Merrill-Lynch employees at the end of 2008, even though the company had losses of 27 billion dollars and was in line to receive 10 billion dollars of TARP funds.³⁰

²⁹ The initial terms of some "capital injections" have been subsequently modified, as with AIG, which received an \$85 billion loan from the Federal Reserve on September 16. On November 10, AIG received \$40 billion of TARP money through Treasury purchases of preferred shares, of which \$25 billion was used to "pay down" the loan. The interest rates on that loan were reduced at the same time. In effect, a third of the original September 16 loan had been quietly transformed into preferred shares, which reduced government claims in the event of an AIG bankruptcy (Treasury press announcement on November 10, Federal Reserve press release November 10).

³⁰ News coverage of the Merrill Lynch bonuses has been extensive. See for example, Merced and Louise, *New York Times*, February 11, 2008). Similar bonuses were paid at other failing investment banks as well.
<http://www.nytimes.com/2009/02/12/business/12merrill.html?scp=2&sq=bonuses&st=cse>

Both the cost and the cost-effectiveness of the U. S. government's purchase of preferred stocks in major financial firms depended on the viability of the specific firms in which shares are purchased, which is partially determined by the length and depth of the associated recession.³¹ At this point in the Fall of 2010, it appears that essentially all the firms receiving government capital injections will survive and repurchase their preferred shares. Thus far, the direct cost of the preferred stock portion of this safety net program has been relatively small, because the TARP program has proven to be largely self-financing, as was true of the earlier Resolution Trust Corporation used to address the S&L crisis. Current estimates of the net outlays of the program (direct subsidy) are approximately 50 billion dollars (Geithner, October 8, 2010). TARP's long-run total costs may be somewhat greater; however, both because the TARP money is being recycled to other firms and because of moral hazard and other fiscal problems created by the program, as discussed toward the end of this paper.

TARP has attracted relatively large coverage in the media, within Congress, and on the web. As a consequence, Wikipedia includes a fairly thorough overview of the program. However, many of the other new and/or expanded safety net programs were just as large or larger, but have attracted much less attention.

IV. Beyond TARP: Other Major Government “Safety Nets” for Holders of Mortgage-Backed Securities, Financial Firms, and State Governments

A new president was elected in November 4, 2008 and took office on January 20, 2009. President Obama's new team continued the TARP program and immediately began to lobby for a (second) major stimulus package. President Obama and his new team continued to use the terms “crisis” and “Great Depression” in their speeches to the public and in lobbying the Congress for the second stimulus bill.

That we are **in the midst of crisis** is now well understood. Our nation is at war against a far-reaching network of violence and hatred. Our **economy is badly weakened**, a consequence of greed and irresponsibility on the part of some but also our collective failure to make hard choices and prepare the

³¹ The preferred share purchase program appears to be modeled after Gordon Brown's plan for bailing out banks in the United Kingdom.

nation for a new age. Homes have been lost, jobs shed, businesses shuttered. Our health care is too costly, our schools fail too many, and each day brings further evidence that the ways we use energy strengthen our adversaries and threaten our planet.

These are the **indicators of crisis, subject to data and statistics**. Less measurable, but no less profound, is a sapping of confidence across our land; a nagging fear that America's decline is inevitable, that the next generation must lower its sights. Today I say to you that the **challenges we face are real, they are serious and they are many**. (Presidential Obama's Inaugural Speech, January 20, 2009).

Lobbying for the second stimulus program was similar to Paulson's effort to obtain the TARP program, with warnings of a great depression again used to motivate quick action. (Such arguments were being used at the same time that many in the administration and in the Federal Reserve were predicting 3% growth in the fourth quarter of 2009.) The new Congress again responded quickly to warnings of a pending crisis and adopted the "American Recovery and Reinvestment Act" a few weeks later on February 13, 2009.

Together the TARP legislation and stimulus bill expanded government spending by approximately 50% over 2007 levels. Deficit finance increased to levels not seen since World War II, with a projected deficit of 1.8 trillion dollars for 2009.

A. The Congress Adopts New Safety Net Programs

The stimulus bill called for a variety of new programs and subsidies totaling approximately 787 billion dollars, which required another significant expansion of government debt ceilings and large offering of government bonds. From the Keynesian perspective, it doesn't matter very much how the money is spent, and much of the direct spending was targeted at programs that President Obama had promised to support during his successful campaign for office in 2008. Much of the rest was a combination of tax reductions (for those earning less than \$125,000 per year and for small businesses) and grants to state and local governments.

Many of the new programs could be regarded as new or expanded safety nets. For example, about \$200 billion of the stimulus package were grants to state governments of

one kind or another.³² This represented a very substantial increase in central government support for state governments. (Federal grants to states in 2008 totaled \$461 billion in 2008, and accounted for approximately 27% of state expenditures.) Most states faced balanced budget constraints that would have forced them to address revenue shortfalls, which would have normally been resolved with relatively large reductions in services and/or increases in state taxes. Providing new or extended debt-financed support for states, in effect, allowed states to circumvent their balanced budget constraints and also provided an implicit Federal “rainy day” fund for states funded by future federal tax collections.

In addition to the stimulus bill, the Congress adopted extended unemployment benefits and created new lines of credit. During normal times, the states fund approximately 26 weeks of unemployment benefit with funds raised by an ear-marked tax and kept in trust funds. During recessions, the Federal Government usually provides and funds extended benefits. In this case, additional support was extended for an extraordinarily long period, for an additional 73 weeks. In addition, Fannie and Freddie’s initial lines of credit were extended and the bounds essentially removed. As troubled banks multiplied, the FDIC’s reserves approached zero and the Congress extended it a new line of credit that provides up to \$500 billion for the FDIC.

B. The Fed’s New Safety Nets: Over the Counter Purchases of Mortgage-backed Securities and other Securities

Several other new safety nets programs were implemented during 2008-10 by the Federal Reserve Bank under Section 13(3) of the Federal Reserve Act which allows the reserve banks to extend credit to individuals, partnerships, and corporations during difficult times. Many of the new loan programs were consistent with its role as “lender of last resort,” but in most cases the new programs provided new safety nets for a broad cross section of non-bank financial corporations. Many of the firms that benefited from TARP

³² The Wall Street Journal published a fairly detailed estimate of expenditures by category. The \$200 billion estimate is calculated by adding up the grants that are either explicitly directed to states, as with \$40.6 billion for education budgets and \$90 billion for Medicaid spending. This total also includes a several programs that are very likely to be administered by states or substitute for state programs, as with \$29 billion for highway improvements.

also benefited from the various Fed programs, of which there were more than a dozen.³³ The extent of these investments are somewhat difficult to assess, because many of the safety net programs (loan facilities etc.) were intertwined and interdependent, as for example both the Fed and Treasury were involved in providing safety nets for Fannie Mae, Freddie Mac, AIG, and other major financial firms, and some of the terms were renegotiated through time.

The first such program began at about the same time as the Bush stimulus bill was being negotiated in Congress. In March 2008, the Fed created a major asset-swap program (TSLF), which loaned treasury securities to financial firms in exchange for less liquid assets held by those firms (plus a monthly interest charge). TSLF provided additional liquidity and improved the balance sheets of participating financial firms. Some 250 billion dollars of asset swaps were made in the first month of the program. More than 2 trillion dollars of short-term loans (asset swaps) were made under this program through July 2009. Among the firms taking advantage of this swap facility were BNP Paribas, Morgan Stanley, Merrill Lynch, Goldman Sachs, Deutsche Bank Securities, Bank of America, Countrywide, Lehman Brothers, Barclays, and Credit Suisse.

In September of 2008, the Fed began implicitly guaranteeing the liquidity of previously uninsured money market funds making short-term loans through its new AMLF facility. This program initially demanded relatively high interest rates (2.25%) and so initially attracted the interest of the least liquid firms (among which the Dreyfus money market funds are very evident).

The largest of the Fed's new programs was its mortgage-backed securities purchase program, which purchased and held securities previously issued by the GSEs. As noted above, the TARP program was not actually used to purchase the troubled assets most discussed during Congressional hearings (mortgage-backed securities). Instead most of the money was used to inject capital directly into banks and other financial firms. Shortly after the TARP funding was redirected, the Federal Reserve announced on November 25 that it

³³ A complete list of the various Federal Reserve programs with links to spreadsheets listing transactions is available at: http://www.federalreserve.gov/newsevents/reform_transaction.htm

would begin its own major TARP program, one that was about 50 percent larger than the plan first sent to Congress by Secretary Paulson.³⁴

During the first two days of the program in January 2009, the Fed purchased about 70 billion dollars of mortgage-backed securities from Morgan Stanley, Barclays, Merrill Lynch, Citigroup, Goldman Sachs, BNP Paribas, Credit Suisse, and Deutsche Bank, many of which were also receiving TARP provided capital and had previously participated in the TSLF program. Between January 5, 2009 and March 31, 2010, the Fed purchased \$1.25 trillion of mortgage-backed securities created by Fannie Mae, Freddie Mac, and other GSEs.³⁵

The Fed's purchases of mortgage-backed securities helped to modestly lift prices for those assets, which in effect provided additional insurance for holders of MBSs and other investors in derivatives based on them. Driving the prices of MBSs up improved the balance sheets of a wide variety of banks, investment banks, insurance companies, pension plans, and national governments, all of which had (and have) substantial holdings in mortgage-backed securities.³⁶

It bears noting that the Federal Reserve System is itself a self-financing GSE and that its decisions to hold various portfolios of financial instruments in its accounts are made with considerable prudence. The MBS portfolio of the Fed is as safe for the reserve banks as their usual holdings of Treasury bonds, because interest and principle payments are guaranteed by future U. S. tax payments, in much the same manner that interest payments for Treasury bonds are. The GSEs remain in conservatorship and have essentially unlimited lines of credit from the U. S. Treasury. By driving down mortgage rates, the program also

³⁴ The November 25, 2008 press release is available at: <http://www.federalreserve.gov/newsevents/press/monetary/20081125b.htm>. A detailed list of purchases and sales was released on December 1, 2010.

³⁵ See the FMOC's 2010 report on *Domestic Open Market Operations During 2009* and the Federal Reserve Bank of New York's *FAQ on the MBS Purchase Program* (August 20, 2010). Two hundred billion dollars of GSE debt were also purchased. Also, see the October 4, 2010 speech of Brian Sack, Executive Vice President of the Federal Reserve Bank of NY. <http://www.newyorkfed.org/newsevents/speeches/2010/sac101004.html>

³⁶ Revisions in the mark-to-market rules used to assess the balance sheets of financial institutions also increased the value of those assets during roughly the same period, so these balance sheet effects are not completely obvious.

tended to encourage mortgage refinancing by persons with significant equity in their homes.³⁷

In addition to the Federal Reserve Bank of New York's own TARP program, it also has provided collateralized loans to support Bears Sterns, JP Morgan, and AIG through its so-called Maiden Lane transactions, which provided approximately \$75 billion of financing to those firms at rates below those that would have been available through ordinary financial markets (if such loans could have been arranged at all).³⁸ The loans were used to “pay any amounts owed to derivative counter parties under the related derivative contracts,” and so were, in effect, an insurance fund for derivative counterparties at these three institutions.

Of course, ex-post safety net programs are often provided after a financial and/or fiscal disaster. 400 billion dollars was initially invested in the Resolution Trust Corporation created to address the S&L failures of the early 1990s. Such safety nets are often largely, although not entirely self financing. The net cost of the insurance is smaller than the loans extended or guarantees provided. The net cost (direct subsidy) of the S&L bailouts were on the order of \$80 billion, rather than \$400 billion.

The resources committed to new or extended safety nets were more than eight times as large as devoted to the S&L insurance package, totaling approximately \$3.3 trillion, and the implicit direct subsidies are also larger. Table 1 provides a somewhat conservative accounting of the amounts committed to the new and/or expanded safety net programs. (The actual amounts insured by some of the programs were much larger than those included in the table, as with the Fannie and Freddie obligations.)

To put these somewhat conservative numbers in perspective, recall that the entire federal budget was about \$2.7 trillion in 2007 and that the total publicly held debt of the federal government was \$4.2 trillion dollars before the crisis began.³⁹

³⁷ The Fed initially reduced its holding of treasury debt but repurchased and expanded its holdings during the course of the year. See the FMO's 2010 report on *Domestic Open Market Operations During 2009*, page 10.

³⁸ The Maiden Lane transactions are described at <http://www.ny.frb.org/markets/maidenlane.html>.

³⁹ Including debt held by the Federal Reserve, the 2007 debt was \$5.035 trillion. See the *Statistical Abstract of the United States 2010* tables 457 and 458. (The numbers are from the Office of

Table 1: Partial List of New or Extended Safety Net Programs 2008-10		
Date	Safety Net	Funds Committed or Cost (billions)
March 2008	Maiden Lane 1 (F)	\$28
March 2008	Asset-Swaps for Financial Firms (TSLF) (F)*	\$250
July 2008	New Lines of Credit for Fannie and Freddie (C)	\$150
September 2008	Support for Money Funds (AMLF) (F)*	\$170
October 2008	TARP (C)	\$700
November 2008	Federal Reserve Announces it's TARP (F)	\$500
November 2008	Maiden Lane 2 (F)	\$22
November 2008	Maiden Lane 3 (F)	\$30
February 2009	Second Stimulus Bill's Safety Nets (C)	\$200
March 2009	Federal Reserve Expands its Tarp Program (F)	\$725
May 2009	FDIC Receives Extended Line of Credit (C)	\$500
2008-10	Extended Unemployment Benefits (C)	\$100
	Total	\$3,375
	* Amount loaned during first month of program	

V. On the Limits and Cost of “Crisis Insurance”

The above history of the financial crisis and policy response to that crisis indirectly addresses a number of issues of interest to public economics, political economy, and macroeconomics. Overall, it is clear that many of the policy responses were motivated by microeconomic considerations, rather than macroeconomic ones. Individual firms were often targeted and when programs were expanded, they were for the most part restricted to specific industries. This is not to say that there were no macroeconomic policies. The monetary base has been increased by about a trillion dollars and about a trillion dollars of

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stimulus spending has been adopted by the Congress in 2008-10. Perhaps surprisingly, given the magnitude of the explicitly macroeconomic policies, the microeconomic responses were 50 percent or more larger than those policies.

Although ex-post social insurance (bailouts) have often been provided in response to past crises, the magnitude of the new safety-net programs is extraordinary. Indeed, they are large enough to remind public officials and scholars that the U.S. government faces a bounded intertemporal budget constraint, a constraint that is often neglected in economic courses and models. To put these somewhat conservative numbers in perspective, recall that the entire federal budget was about \$2.7 trillion in 2007 and that the total publicly held debt of the federal government was \$4.2 trillion dollars before the crisis began.⁴⁰

There is a limit on the revenues that are politically feasible to be raised from the U.S. tax base and therefore a limit on what can be borrowed on international capital markets, where both microeconomic and macroeconomic risks are taken account of. All of the resources committed by the Treasury were or were to be borrowed. The resources used by the Fed were largely purchased by printing money. The safety of many of the new assets in its portfolios (as with its MSB purchases) is guaranteed by U.S. taxpayers in a manner analogous to other crisis insurance policies. Although the direct subsidy provided for the new crisis insurance programs (their net cost) is far less than the amount of resource devoted to those programs, the programs themselves required huge investments.

A. The Crisis Was Evidently Real

In retrospect, it is clear that the crisis was not an imaginary one, as could have been argued during early 2008. Unemployment doubled between January 2008 and October 2009, rising from 5% to more than 10%. Congressional responses were sensible, given what was known. Although there were not obvious macroeconomic shocks, the re-pricing of financial and real estate assets significantly reduced household wealth, corporate reserves, and the supply of credit. These “nominal” events clearly had real consequences. Textbook

⁴⁰ Including debt held by the Federal Reserve, the 2007 debt was \$5.035 trillion. See the *Statistical Abstract of the United States 2010* tables 457 and 458. (The numbers are from the Office of Management and Budget.)

macroeconomic policies adopted before, during, and after the crisis evidently did not head off or obviously ameliorate the crisis.

Given the absence of traditional macroeconomic policy shocks, the new crisis insurance programs might have been expected to be more effective than the macroeconomic policies. The microeconomic measures were adopted to reduce the impact of the main drivers of the crisis and may have reduced the impact of the financial meltdown by substituting Federal Reserve credit for credit sources that had previously been obtained directly or indirectly through real-estate and mortgage-backed securities.

Given the importance of credit in modern commerce, the elimination of one of the three major sources of credit naturally caused many firms to have a difficult time refinancing short-term loans and addressing their cash flow volatility without the various new financial safety net programs. (The other major sources of credit are commercial banks and the corporate bond market.) If so, many of the U.S. government's new safety net programs (capital injections, loans, and guarantees) should have reduced the impact of the sudden downward shift in the supply of credit at a time when credit was needed by many borrowers.⁴¹

Nonetheless, the business cycle generated by the crisis has been the most severe since the Reagan recession, during which unemployment rose from 6.6% in January 1980 to 10.8% in December 1982 and did not return to 6.6% until December 1986. That recession, however, was purposely engineered to end a long period of high inflation in the United States.

However, even if we accept the finance-based case for the new financial safety nets, the large programs adopted this time may be difficult to repeat in the future and may be creating new risks that will have to be addressed in the relatively near future.

B. On Social Insurance and Its Limits

That new social-insurance programs are created during times of crisis is nothing new and not by itself troubling. Indeed, such responses can clearly help reduce the damages from

⁴¹ The usually cautious Fed chairman Bernanke recently stated that unemployment might have reached as high as 25% without these programs (*CBS 60 Minutes* interview, 12-05-10).

natural and economic fluctuations by pooling risks and smoothing income flows through time.

There are a variety of reasons why the government can sometimes provide insurance in a more cost-effective manner than private insurance companies. One of these rationales is especially relevant for the present crisis. Historically, unregulated insurance companies and other financial firms have often held reserves that were too small for the real-world flows of claims and business cycles (Meier 1988). In some cases, this is simply fraudulent behavior, as true of the famous Madoff investment scam of the late twentieth and early twenty-first centuries and the Ponzi schemes of the early twentieth century. Such schemes work as long as money flowing into “funds” exceeds that flowing out, regardless of the liabilities being created by the “funds.” In other cases, it represented a combination of optimism and the winner’s curse. Firms that are overly optimistic can offer terms that more prudent firms cannot, which in decade-long “good periods” may push prudent firms out of markets. It is partly for this reason that insurance companies have been regulated (at the state level) since the middle of the nineteenth century (Meier 1988: 53). It is also partly for this reason that Western governments began providing income security insurance in the late nineteenth and early twentieth centuries (Congleton 2007a).

Unfortunately, government-provided insurance tends to underprice risk for several reasons. This is partly because, as developed below, it is difficult to accumulate meaningful reserves for large programs. Voters, like shareholders, may also be inclined to reward optimistic politicians with their votes, because such politicians can offer fiscal packages that are, or at least appear to be, more attractive than their more prudent rivals. Such politicians, as also true of optimistic investment bankers, can actually “deliver the bacon” during favorable periods when insurance payouts are low. Moreover, the politics of collecting fees from the beneficiaries of crisis insurance tends to suffer from Olson’s dilemma. The interests advanced by those programs tend to be more intense and better organized than those taxed to provide the subsidy.

C. Rosy Scenarios and the Impossibility of Maintaining Large Reserves

The same informational asymmetries that allow insurance, bond, and stock salesmen to “sell” rosy scenarios to their customers also allow politicians to sell similar scenarios to voters. Indeed, the asymmetries tend to be worse, because voters have even less reason to be well informed on such issues than those managing investment firms, who are paid to do so. The lower the estimates of future liabilities, the smaller the reserves and other provisions to finance payouts (such as earmarked taxes) can be and the more popular those programs will be among voters. This rosy-scenario bias is limited by the subset of voters who are reasonably well informed, when they are sufficient in numbers to induce politicians to properly assess the risks (Congleton 2001, 2007b). Several public choice models suggest that informed voters are often decisive. In such cases, there will be significant political pressure to hold appropriate reserves to meet future insurance obligations.

Unfortunately, it is difficult to fully fund large crisis insurance programs. This partly because it is nearly impossible to hold very large reserves that really matter. Most assets that can be used for reserves are risky, and their values are often correlated with asset bubbles and business cycles. Recall that Freddie, Fannie, and AIG all had significant capital reserves before the meltdown occurred, but their reserves melted along with other assets, leaving them without liquid reserves when they needed them. Such problems can be avoided, of course, by holding only very safe assets such as Treasury bonds, although this tends to reduce the returns earned on one’s asset base. During times of stress, the demand for such safe assets normally increases, which increases both their value and liquidity.

However, when a government agency holds large reserves of government bonds, there is little, if any, difference between having a large reserve and selling it as needed, and having no reserves and issuing completely new bonds for sale in the world bond market as needed. To see this, consider the bonds held by the Social Security System’s trust funds. In the absence of those reserves, when cash-flow problems emerge, the government would have to raise taxes or increase borrowing to meet its promises to retired persons. With the reserves, the Social Security Administration simply takes its bonds to the U. S. Treasury, which then has to either raise taxes or increase borrowing to meet its debt obligations.

The fact that large reserves are accumulated or not by the Social Security Administration has no effect on the steps that need to be taken by Treasury, except insofar as debt ceilings may or may not have to be changed via new legislation. The same is also true of very large crisis insurance funds. It is actually impossible to fully fund large safety-net programs, whether they are standard income-security programs or large crisis insurance programs.

D. Earmarked Conditional Taxes as Ex Post Reserves

To reduce moral hazard and also reduce incentives to lobby for taxpayer-subsidized insurance, crisis insurance should be properly priced. The above analysis suggests that this cannot really be done by building reserves for large programs, because the reserves accumulated are not true reserves that can freely be used to meet future obligations. Similar arguments can be made about the Federal Reserve's safety net programs. These are largely self-funding at the level of the Fed's balance sheet, but the safety of the Fed's balance sheet is ultimately paid for by taxpayer guarantees for government bonds, GSE debt, and mortgage-backed securities. (Moreover, the Fed's "social insurance" programs tend to increase inflation risks, as well as risks associated with moral hazard and debt finance.)

Prudence implies that these risks should be charged to those industries that are most likely to benefit most directly from the insurance provided. Here one might imagine bonds that are issued to pay for crisis insurance that are to be redeemed via earmarked tax payments (ex post insurance fees) on the industries likely to benefit from them. Such taxes will, of course, be a fiscal drag on risk taking, but this is entirely appropriate. All insurance fees have this effect on risk takers, when insurance is properly priced.

The political bias in favor of underpriced crisis insurance can be limited to some extent by inducing the industries that benefit from insurance payouts to pay for them, after or while they are made. Although large reserves are difficult to assemble, it is relatively easy to assemble smaller reserves for pay-as-you-go programs.

Ex post earmarked taxes also reduce the temptation that politicians have for raiding (borrowing from) trust funds during budget negotiations, because only relatively small trust funds are created. Many of the new crisis insurance programs adopted in 2007-10 have been largely self-financing in this sense.

It bears noting that a self-funding program fails to price all the crises that might, but actually do not happen. In this sense, it may be said to underprice risk, relative to an actuarially fair program. However, self-financing crisis insurance programs so associates direct insurance costs with direct insurance benefits. This in the long run helps reduce moral hazard and some of the financial risks associated with freely provided, taxpayer-financed, crisis insurance. The FDIC fund has long used a similar ex post pay-as-you-go financing scheme for commercial banks.

E. On the Fiscal Limits of Debt-Financed Crisis Insurance

Nonetheless, the political difficulty of raising taxes in the United States and elsewhere shortly after a crisis implies that insurance payouts for large programs are likely to be at least partly subsidized by taxpayers as has been true of many of the new crisis-insurance programs adopted.

In the absence of a fully funded insurance reserve fund, the upper bound on crisis insurance programs in a large country is determined by its borrowing capacity, which is determined by the strength of its economy, its citizenry's willingness to pay taxes, and its macroeconomic policies (inflation rate). Fully exploiting that capacity tends to produce additional risks for reasons similar to those associated with private borrowing, even when most of the insurance is paid by subsequent taxes and other charges paid by beneficiaries. Here we may note the recent problems that Ireland confronted in attempting to provide crisis insurance for its banking sector. The Irish crisis insurance programs were similar to those provided by the United States and several other OECD countries. but investors feared that the new Irish debt would not be repaid.

Such limits also exist for other countries as well, including the United States. In the American case, a run on dollar-denominated debt would create both major international fiscal crises, far larger than that associated with Greece and Ireland. Borrowing \$500 billion in 2008, and an estimated \$1.8 trillion in 2009 and \$1.2 trillion in 2010 required the largest issues of government debt ever, and the largest as a fraction of GDP since World War II. (The largest [nominal] debt issue before 2008 was \$412 billion in 2004.) The sale of so many government bonds allows investors to flee the stock, bond, and real estate sectors more

easily in the short run, which may exacerbate the credit crisis being addressed by increasing flight from private securities. It also increases future tax burdens and budgetary uncertainty in the United States, because future interest rates are likely to rise as the world economy recovers and the higher rates will have to be paid as debt is rolled over.

It bears noting that the recent bond issues are very large both relative to past experience and relative to the world bond market. The amount of debt held by the public has more than doubled in the past three years from approximately \$4.2 trillion in 2007 to approximately \$9 trillion in 2010. Of that new total, more than \$4 trillion is held abroad, and much of that by foreign governments. (The three largest international holders of U.S. debt are China, Japan, and the United Kingdom, who jointly hold about \$2 trillion of Treasury securities.⁴²) Five trillion of new debt issues in the past three years represents about a 10% increase in world sovereign debt.⁴³

Keep in mind that foreign investors in sovereign debt instruments must be concerned not simply with taxpayer ability and willingness to service the debt, but also with international currency risks associated with future trade imbalances and inflation. As more and more crisis and other social insurance is explicitly or implicitly added to a government's core responsibilities without new tax financing, such governments move closer to their borrowing limits. International bond markets imply that there is a limit to the extent to which any government's taxpayers can serve as the "insurer of last resort."

If we accept that the crisis insurance programs adopted by the U.S. government in the last two years have helped return financial markets to normal in 2009 and/or reduced the depth of the recession of 2007-10, we cannot expect similar steps to be as easy or fruitful the next time around. Without other reforms, the next crisis is likely to be far worse than the present one, in part because crisis insurance will be more limited and more expensive, if it is available at all, and in part because it underprices risk for reasons discussed above.

⁴² See "Major Foreign Holders of Treasury Securities," Department of the Treasury/Federal Reserve Board (November 16, 2010). According to that report, China has been decreasing its holdings of treasury bills and bonds during the past year.

⁴³ The *CIA World Factbook* includes a listing of debt issues by all the governments in the world. Its tabulation, which are somewhat higher for the United States than the Treasury report used above, estimates that total world sovereign debt is approximately \$60 trillion. OECD countries top the list of government debt issuers.

It would be prudent to keep such limits and our various direct and indirect subsidies for crisis insurance in mind when thinking about alternative long-run strategies for addressing future financial crises, business cycles, and other long-term major social insurance obligations such as pension and medical insurance.

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