

On the Political Economy of the Financial Crisis and Bailout of 2008¹

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Abstract: This paper provides an overview of the political and economic decisions that helped to create the financial crisis of 2008. It begins with an overview of U.S. efforts to promote home ownership and how those policies, along with banking regulatory decisions in the late 1990s and early 2000s, helped to create a highly leveraged and risky international portfolio of mortgage-based securities. Declines in the price of housing, consequently, had major effects on the balance sheets and portfolios of financial institutions throughout the world, because the risk of mortgage-backed securities was under priced. The effects of mortgage-backed securities effectively doubled the usual effect of the end of a housing bubble.

The political response to the “crisis” of 2008 has been rapid and large. The response has been partially accomplished through new legislation (TARP) and partly through standing agencies with authority to address credit and housing issues. In general, the differences in the effectiveness of policy responses shows the advantage of standing institutions at crisis management relative to innovative legislation. The paper concludes by discussing the relevance of public choice, constitutional political economy, and the theory of regulation for explaining the crisis management undertaken.

Key words: political economy, crisis management, regulatory failure, financial markets, credit markets, public choice

JEL categories: D72, D73, D8, K2

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I. Introduction: Housing Prices, Bubbles, and the Current Recession

Given that the median householder's wealth in the United States consists largely of his or her home, it is not surprising that all levels of governments within the United States adopt policies that tend to increase the value of existing homes. The most obvious of these policies is the deductibility of home mortgages, which tends to increase the demand for mortgages and has been part of the federal tax code since it was first adopted in 1913. Other long-standing policies include recorded deeds, zoning, and building codes, which tend to increase the value of existing housing by reducing various kinds of risk and somewhat discouraging new construction. Mortgages themselves are further encouraged through various regulations and other policies that increase the supply of mortgages. These policies, together with rising family incomes, have induced home prices to rise fairly steadily since the end of the Great Depression. The median value of a single family home rose from \$30,600 in 1940 to \$119,600 in 2000 (in 2000 dollars).² This more or less steady rise in home values continued into the twenty-first century and, indeed accelerated.³

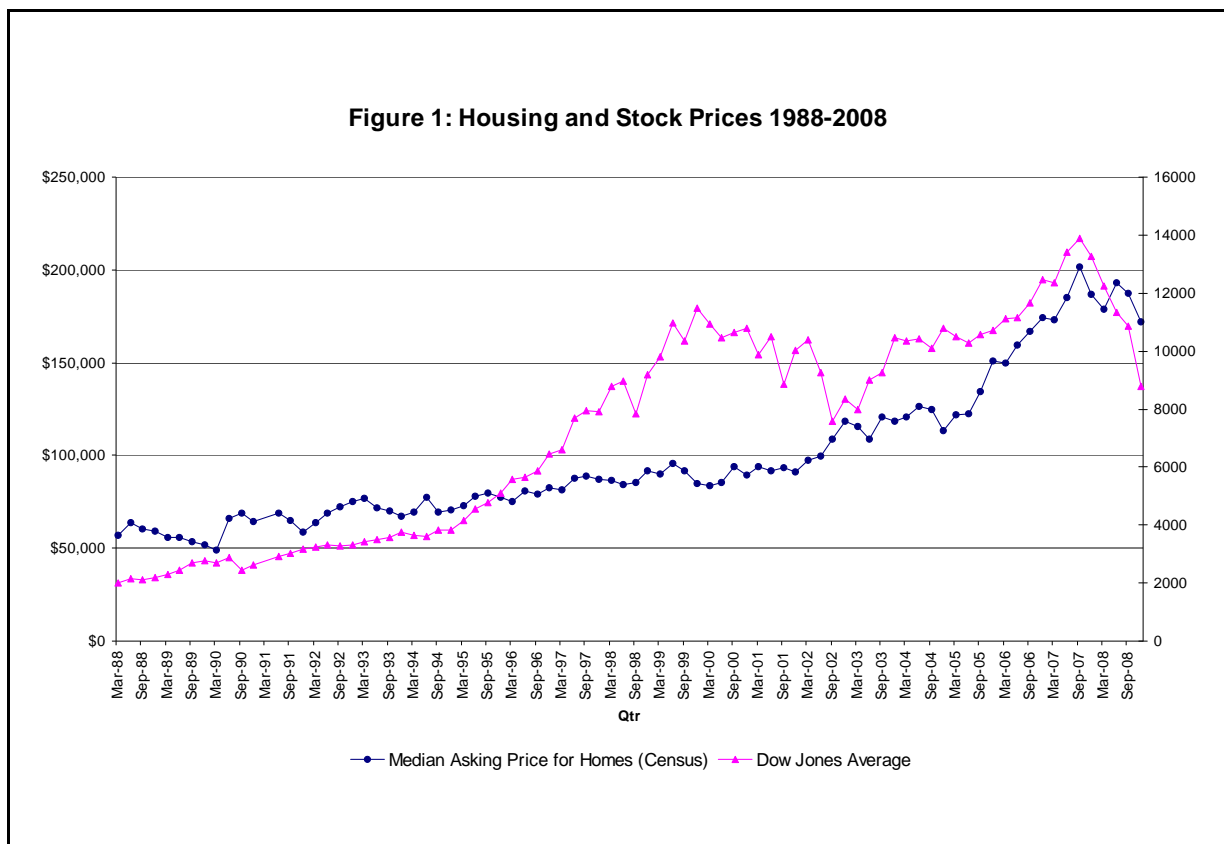
Home prices are economically important, because homes are by far the largest component of personal wealth for most households and a major component of national wealth. For example, in 2004 personal portfolios of private homes and stocks were worth \$19.1 and \$3.7 trillion (net), respectively, out of a total of \$50.2 trillion of assets held by households in the United States. About two-thirds of the net wealth owned by the lowest 95% of the distribution of wealth owners was equity in homes (Kennickell 2006, table 11a). Microeconomics implies that personal wealth is a major determinant of personal spending and investment. Macroeconomics implies that consumption and investments are major determinants of national income and economic growth.

Figure 1 plots time series for median home value and the Dow Jones Average from 1988 through 2008. The graphs suggest that both home prices and stock prices rose at an

² <http://www.census.gov/hhes/www/housing/census/historic/values.html>.

³ The census data report median house prices using prices listed for properties on the market, rather than sales prices. This introduces an upward bias in all the numbers. For the purposes of this paper, it is assumed that asking and sales prices have a stable relationship. The widely used Case-Shiller index uses sales prices, but from a narrower base of 20 metropolitan areas to estimate national house prices. It shows a similar acceleration of house prices. End-of-quarter values for the Dow Jones Average were downloaded from the Dow Jones website (<http://www.djaverages.com/>).

unusually brisk pace from early 2004 until 2007 and then fell at unusually brisk rates. Real median house prices rose 50% in value and the Dow Jones Average rose 34% in 2.5 years from the first quarter of 2004 through the third quarter of 2007, well above their average real growth rates (2.75%/year and 4.42%/year) from 1950 to 2000. The effect of several trillion dollars of new wealth generated by the rapid increase in housing values and stocks helped increase economic growth rates in that period by increasing consumer spending. The subsequent 17% fall in housing prices and 37% fall in stock prices through the end of 2008 has reduced personal wealth and increased uncertainty, which in turn, has produced a relatively deep recession, with estimated real gross domestic product (RGDP) at the end of 2008 of about a half percent below that of the third quarter of 2007 and nearly 1% below its quarterly peak earlier in 2008.⁴



⁴ Data on economic indicators are from data assembled at the St. Louis Federal Reserve's Alfred[®] data and Census data websites unless otherwise mentioned.

In microeconomic terms, a decrease in personal wealth caused consumers to reduce their expenditures on normal and superior goods, which reduced cash flow for firms selling such goods and services and suppliers of intermediate goods. Demand for inferior goods increased, but not as much as demand for superior and normal goods decreased. With reduced demand for inputs of all sorts, employees have been fired faster than they have been rehired elsewhere. Unemployment, consequently rose from 4.7 to 7.2% during 2007-08, which is the highest U.S. unemployment rate since January 1993. Most forecasters anticipate that unemployment rates in 2009 will continue to climb, because the wealth effects of punctured asset-price bubbles are being reinforced by tougher standards for credit.

It was the collapse of another less familiar asset market, however, that led Secretary of the Treasury Paulson to warn Congress in September of 2008 that another Great Depression might occur in 2009 unless extraordinary steps were immediately taken by the U.S. government. In the past few decades a new, very large, market for mortgage-backed securities had emerged. These and similar credit-backed securities are not directly held by many private investors, but they play important roles in the portfolios of banks, finance firms, insurance companies, pension funds, and sovereign wealth funds. Their values fell rapidly partly because of increased uncertainty about the future household income and housing prices that ultimately backs such securities, and partly because the risks associated with those assets were misjudged and mispriced. As a consequence, the balance sheets of a wide range of companies have lost much of their capital base.⁵ Whether Paulson's warning was disproportionate to the systemwide risks or not, it is clear that the "piercing" of the real estate, stock market, and mortgage backed securities "bubbles" had important effects on the real economy—even though the physical assets of the real economy (organizations, labor, land, and capital) remained in place. It is also clear that Paulson's warning has induced major changes in fiscal and monetary policy.

This paper investigates the role that government policies have played in the housing and financial bubbles of the early twenty-first century and their collapse. The analysis and

⁵ Most financial firms are required to meet capital requirements. Those firms whose capital bases mortgage-backed securities were in many cases smaller than allowed by law in 2007 and 2008. Indeed, many firms in the finance sector were now bankrupt, at least based on mark-to-market accounting rules. The market value of their assets and (net) cash flows were smaller than their debts.

historical narrative focus for the most part on the bubble in the housing market and extend as necessary to financial and bank regulations. The analysis concludes that the housing and stock bubble were mostly generated by market forces, rather than government policies, although government policies and institutions played a significant role. The risk of future financial crises can, therefore, be reduced through changes in those policies and institutions.

II. Government Provided Supply-Side Support for Mortgage Markets

In the “good old days,” mortgages were held by the banks that made loans; so, if there were any problems with mortgages, they tended to be concentrated in the banks located in regions with declining housing prices, unemployment, and net out-migration. This changed in 1932 and 1938, when Hoover founded the Federal Home Loan Banks (FHLBs) and Roosevelt founded the Federal National Mortgage Association (FNMA or “Fannie Mae”). Their purpose was to add liquidity to the home mortgage market to facilitate home sales. The FHLBs initially provided short-term loans to savings and loan (S&L) banks, whose liquidity was reduced by bank runs and mortgage defaults at the beginning of the Great Depression.⁶ Fannie Mae initially purchased and held mortgages from banks and also insured mortgages, which allowed banks to create more mortgages at lower prices because the risks associated with mortgage defaults were shifted to Fannie Mae. The Housing Act of 1949 authorized the Federal Housing Administration (FHA) to insure home mortgages and to construct 810,000 public housing units.⁷ Between the various housing policies of the Federal and state governments and the rising incomes associated with renewed economic

⁶ In effect, the FHLB was to function as the reserve bank for the savings and loan banks that were outside of the federal reserve system. It was capitalized by the Federal government, but was for the most part privately financed through services provided to member banks. As part of those services, the FHLB gradually assembled a large portfolio of mortgages and mortgage-backed securities, although a somewhat smaller one than the one assembled by Fannie Mae and by the Federal Home Loan Mortgage Corporation (FHLMC or Freddie Mac) (Mason 2004).

⁷ A variety of other federal government programs created during the early post-war period are discussed in Mason (2004: 153–62). Mason also discusses how savings and loan bank interest groups attempted to affect the extent of taxation, regulation, and support for housing for much of U.S. history. One striking example occurred in 1950 when S&Ls became subject to federal taxes for the first time, but only if their reserves rose to 12% of assets. In this manner, tax policy encouraged S&Ls to hold relatively small capital reserves, increasing their fragility during difficult times (p. 155).

growth after World War II, home ownership rates increased from 43.6% in 1940 to 61.9% in 1960.⁸

Evidently the 61.9% ownership rate of 1960 was not “enough,” and the federal government took additional steps to encourage further home ownership. In 1968 Fannie Mae was privatized, which meant that a new management company was created to manage the great portfolios of mortgages that Fannie Mae had already assembled. In 1970 the Federal Home Loan Mortgage Corporation (FHLMC or “Freddie Mac”) was established to make loans and loan guarantees and to create a market for mortgage-backed securities. Freddie Mac pooled the mortgages that it purchased and sold mortgage-backed securities to investors on the open market. This essentially created a new financial market in mortgage-backed securities, which further increased the supply of mortgages by introducing a new more indirect means of mortgage finance. The guarantees and pooling of mortgage done by Freddie reduced the risk associated with the purchase of mortgage-backed securities and induced more investors to hold them. Again, the purpose was to increase the demand for mortgages, which would encourage banks to make more loans for housing.⁹

After the initial periods of these government-sponsored enterprises (GSEs), none had formal backing from the U.S. Government, but most investors evidently believed that U.S. taxpayers would back up the GSEs after they were “privatized,” if need be. (And, of course, this proved to be correct in September 2008.) The implicit backing of taxpayers allowed the FHLB, Fannie Mae, and Freddie Mac to borrow money at lower rates than other banks (about 0.4% less, according to Congressional Budget Office estimates). These three government-sponsored enterprises, also faced somewhat different regulatory constraints

⁸ Home ownership rates fell from 47.8% to 43.6% during the decade of the Great Depression. Prior to the Great Depression, home ownership had fluctuated between 45% and 48%, rising somewhat during the Roaring Twenties. Home ownership varied significantly among the states during the first years of the twentieth century. For example, in 1900, 80% of the residents in North Dakota and 71.2% in South Dakota lived in their own homes, whereas only 28% in Rhode Island and 30.6% in South Carolina did so. The variance among the states generally declined during the twentieth century, while the average increased. Minnesota at 74.6%, had the most and Hawaii at 56.5% had the least (<http://www.census.gov/hhes/www/housing/census/historic/owner.html>).

⁹ The Congressional Budget Office estimated that in 2000, about 22.7% of fixed-rate single-family mortgages were held by Fannie Mae and Freddie Mac, but had issued about 71% of all mortgage-backed securities (Crippen 2001: 5).

than ordinary investment banks. They were, for example, exempt from most state taxes and regulations, which also provided an implicit subsidy of approximately a billion dollars.¹⁰ These implicit subsidies to housing (the implicit insurance risk) were not on the Federal government's balance sheets, and consequently no fees were charged for this insurance and no insurance reserves were accumulated.

The loans purchased and resold by Fanny Mae and Freddie Mac had to meet more or less ordinary standards and had a maximum size, although both constraints were relaxed during the past two decades.¹¹ The mortgage-backed securities created by Fanny and Freddie are normally "insured" by them, which "guarantees" to purchasers that both principal and interest will be paid regardless of whether the persons who financed their house purchase continued their mortgage payments or not.

After 1992 Fannie Mae and Freddie Mac were encouraged to purchase "affordable" mortgages from banks, which essentially meant mortgages that did not pass the usual credit-worthiness requirement for loans. In terms of the Federal Housing Enterprises Financial Safety and Soundness Act of 1992:

(7) The Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation *have an affirmative obligation to facilitate the financing of affordable housing for low- and moderate-income families* in a manner consistent with their overall public purposes, while maintaining a strong financial condition and a reasonable economic return.

With "affordable housing" in mind, the U.S. Department of Housing and Urban Development (HUD) established annual targets for extending loans to "underserved areas" and for "low- and moderate-income housing." These goals for Fannie Mae and Freddie Mac

¹⁰ The Congressional Budget Office has estimated that the present value of the implicit subsidies 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 insurance (and therefore higher prices) for the GSE issues of mortgage-backed securities (Crippen 2001: Table 1).

¹¹ For example, the maximum mortgage on a single-family home that Fannie Mae would purchase in 1980 was \$140,625. This upper bound rose every year until it reached \$625,500 in 2009, although the Economic Stimulus Act of 2008 allows Fannie Mae to purchase loans 125% larger than that limit: \$729,750 in high-cost areas. (See www.fanniemae.com/aboutfm/pdf/historicalloanlimits.pdf).

were gradually increased, from 30% in 1993 to 55% in 2007.¹² Both Fannie Mae and Freddie Mac normally met or exceeded their targets, and so the affordable housing targets helped to create a new market in “sub-prime” (e.g., sub-standard) mortgages and mortgage-backed securities. Encouragement to extend such “sub-prime” loans continued to be received from HUD administrators under Presidents Clinton and Bush, in part because this allowed housing to be subsidized without the need for additional Congressional approval or funds. The same 1992 act assigned regulatory responsibility for the GSEs to an agency of HUD.¹³

It bears noting that bundling and insuring mortgages can be highly profitable, especially when home prices are rising. For example, suppose that a 100% mortgage is issued on a \$250,000 house. Annual payments on a 30-year mortgage at 6% interest are a bit more than \$18,000/year. The 6% interest rate includes a risk premium of 1%–2%, because some borrowers will ultimately default and the house will have to be reclaimed through court proceedings, during which no income is earned on the loan. Suppose that a bundler-insurer can lower the risk premium by just 1%. The “discount rate” is now 5%, rather than 6%, and the cash flow of the mortgage is now worth more than the house, a bit more than \$275,000. The greater the reduction in risk premium achieved by the “bundler-insurer,” the greater is the “profit” (as long as one does not have to actually pay much out on the insurance provided). For example, if the risk premium falls by 2%, the discount rate becomes 4% and the value of the mortgage’s cash flow becomes a bit more than \$310,000, more than 25% greater than the value of the house standing behind the mortgage. Because of this risk-premium effect, bundling sub-prime mortgages can be much more profitable than bundling prime mortgages—as long as default levels are below average and/or risks can be reduced through diversification.

¹² See *Fannie Mae 2007 Annual Report* (pp. 4–8 and 14–15), *New York Times* (October 5, 1992), and *Washington Post* (June 10 2008).

¹³ The Federal Housing Enterprises Financial Safety and Soundness Act of 1992 created the Office of Federal Housing Enterprise Oversight (OFHEO) as a department of HUD. It was given the responsibility of overseeing financial aspects of Fannie Mae, Freddie Mac, and the Federal Home Loan Bank Finance Corporation overseeing capital levels, financial disclosure and internal controls. A proposal to make OFHEO an independent agency was made in 2005, but the legislation was not adopted. OFHEO is funded through fees collected from Fannie Mae and Freddie Mac.

A variety of sophisticated methods were used to reduce the risk associated with relatively risky mortgages. For example, sub-prime mortgages could be pooled, and several securities could be created from that pool. To see how this can be done, suppose that the promised payments of the sub-prime mortgage payers will produce \$10 million a year of income if everyone in the pool pays their mortgages on time. A first security might be backed with the first \$5 million of income from the pool and the second security with the remainder. The first security has almost no risk associated with it, because it is unlikely (at least before 2007) that 50% of a pool of sub-prime mortgage payers would default. The second subordinate security would be much riskier. A safer third security could be created by pooling subordinate claims from other similar mortgage pools. The mortgage payments into that subordinate pool could be further divided to create securities with more or less senior claims on expected revenues and so forth. In this manner, composite securities (derivatives) can be created from pools of risky assets that were themselves, at least statistically, of relatively low risk. Risks can be further reduced through insurance of various kinds.¹⁴

Of course, the value added by this process entirely depended on the estimated probability of default and the reliability of the insurance assumed by those who assess the “quality” of the new assets.

Default rates on mortgages had been low for many years, because the increasing value of homes allowed mortgages to be refinanced to solve cash-flow problems that naturally occur for a subset of home buyers each year (especially those taking out sub-prime mortgages). The rapid rise in real estate prices, consequently, induced speculators to join the market as purchasers of houses, alternative mortgage bundlers, and purchasers of sub-prime loans. As long as the trend in home values continued there was money to be made. As long as delinquency rates were below their long-run average, reserves could also be below prudent levels, further increases possibilities for profits and bonuses. The demand for safe assets was high and rising during much of this period, as the baby-boom generation saved for retirement via 401k accounts and holders of dollars generated by high and rising U.S. trade

¹⁴ See Rosner and Mason (2007) for an overview of the structure of mortgage-backed securities and other collateralized debt obligations.

deficits sought profitable places to invest their dollars. Competition in both the mortgage origination and bundling markets intensified.

Fannie Mae and Freddie Mac had essentially initiated the market in mortgages and mortgage-backed securities and remained major players in those markets, even as private firms of various kinds entered the market. The implicit backing of the U.S. government made Fannie Mae's and Freddie Mac's insurance promises less risky than those of other private competitors and so allowed greater profits for shareholders. Together Fannie Mae and Freddie Mac issued more than 70% of mortgage-backed securities in 2000 and 60% of mortgage-backed securities in 2002.¹⁵ Indeed, mortgage-backed securities (MSBs) created by Fannie Mae and Freddie Mac were used to purchase mortgages from banks, which held them as capital, instead of their mortgages themselves, because MSBs had lower (pooled and insured) risks associated with them.¹⁶ The pool of mortgages and mortgage-backed securities, thus, increased rapidly and became significant elements in investment portfolios and capital reserves of investors and firms worldwide.

Indeed, in 2008, the newly created Federal Housing Finance Agency reported that “as of June 2008, the combined debt and (MBS) obligations of these GSEs totaled \$6.6 trillion, exceeding the total publicly held debt of the U. S. [government] by \$1.3 trillion. The GSEs also purchased or guaranteed 84% of new mortgages.”

Clearly Fannie and Freddie had remained major players in the mortgage market even as they approached bankruptcy.¹⁷

The supply of funds for credit in general and mortgage-backed securities in particular was also increased by the large trade deficits that the United States had run for many years

¹⁵ See OMB (2001) or *The Economist* (July 18, 2002) (http://www.economist.com/finance/displaystory.cfm?story_id=E1_TNPVJRV)

¹⁶ See, for example, *Fannie Mae 2007 Annual Report* (p. 5), which describes the typical issue of mortgage-backed securities to banks in exchange for mortgages. The mortgages that are held in trusts to support the MSBs are sometimes accounted for as MSBs, rather than mortgages in some data sets on mortgage holdings.

¹⁷ These totals includes smaller loan portfolios of the Federal Home Loan Banks, as well as Fannie Mae and Freddie Mac. The Federal Housing Finance Agency is a new regulatory agency for Fannie Mae, Freddie Mac, and the FHLBs. It was created on July 30, 2008 from the combined the staffs of the Office of Federal Housing Enterprise, the Federal Housing Finance Board, and the GSE mission office at HUD. See <http://www.fhfa.gov/Default.aspx?Page=4>.

and by a series of banking regulatory reforms that allowed the emergence of large national and international banking-insurance conglomerates. For example, the Riegle-Neal Interstate Banking Act of 1994 allowed bank holding companies to own banks in several states and allowed the merger of banks from different states. The Gramm-Leach-Bliley Act of 1999 effectively repealed the Glass Steagall Act of 1935 by allowing bank-holding companies to hold insurance and security companies as well as banks.¹⁸ In 2004 a special ruling of the U.S. Securities and Exchange Commission (SEC) allowed the five largest investment banks in the United States to reduce their capital reserves. This SEC ruling allowed these already less regulated banks to become far more highly leveraged enterprises, which allowed them to increase the pool of assets under their control. Within a few years, they jointly controlled \$4 trillion in financial assets, but with relatively little net equity.¹⁹

III. Voters, Interest Groups, Regulators, and the Risk of Mortgage Default

The politics of government interventions in the mortgage market differs from interventions in many other markets, because of the size of the market and its relative importance to ordinary voters and investors throughout the world. The President of the United States selects about a third of Fannie Mae's and Freddie Mac's boards of directors (five of 17 and five of 18, respectively); the rest are elected by stockholders.²⁰ Its size and importance have produced an unusual amount of political and news attention. The archives of *The New York Times* include nearly 10,000 pieces reporting on the regulation of Fannie

¹⁸ Summaries of major changes in bank regulations are available at the Federal Deposit Insurance Corporation's (FDIC's) website: www.fdic.gov/regulations/laws/important/index.html.

¹⁹ *The New York Times* (Labaton, October 2, 2008) reports that a change in the capital requirements (the net capital rule) for the five largest investment banks allowed leverage ratios far greater than in the past. This rule change increased potential profits, but also made them into more fragile enterprises. As noted in Labaton's article: "Bear Stearns faced imminent collapse in early March [of 2008], Christopher Cox [chairman of the SEC] was told by his staff that Bear Stearns had \$17 billion in cash and other assets—more than enough to weather the storm. Drained of most of its cash three days later, Bear Stearns was forced into a hastily arranged marriage with J.P. Morgan Chase—backed by a \$29 billion taxpayer dowry. Within six months, other lions of Wall Street would also either disappear or transform themselves to survive the financial maelstrom—Merrill Lynch sold itself to Bank of America, Lehman Brothers filed for bankruptcy protection, and Goldman Sachs and Morgan Stanley converted to commercial banks."

²⁰ *Fannie Mae 2007 Annual Report* (p. 40) mentions that the terms of the five presidential appointments had expired in 2004, but no replacements had been appointed through 2007.

Mae. Indeed, *The Financial Times* (of London) includes more than 500 articles on similar topics in the past five years. Nonetheless, government intervention in the supply side of the mortgage market has never risen to the point of being a central issue in national election campaigns; so, the details of that intervention are normally worked out within Congress and HUD, with the assistance of various lobbying groups.

Among the most prominent lobbyists are the GSEs themselves and organizations representing commercial banks and realtor groups, which have roughly opposing interests in the extent to which these GSEs should be subject to more or less regulation and/or receive more or less implicit support from taxpayer guarantees.²¹

Before the housing bubble burst in 2006–07, it could be argued that the various housing policies of the federal government had broadly advanced the interests of the median voter (who is a home owner) at the same time that it balanced the interests of a broad assortment of economic interest groups. The mortgage resale market had become more complex, as more and more sophisticated methods were devised to pool revenues from mortgages and mortgage-backed securities. Many experts believed that the new securities markets increased liquidity and reduced, rather than increased, systemwide risks, although this was of no more concern for the typical voter than the manner in which steel is produced and fabricated for automobiles.²² Median house prices rose steadily, with only minor downturns, during the entire postwar period. And, after 2000, median house prices rose at

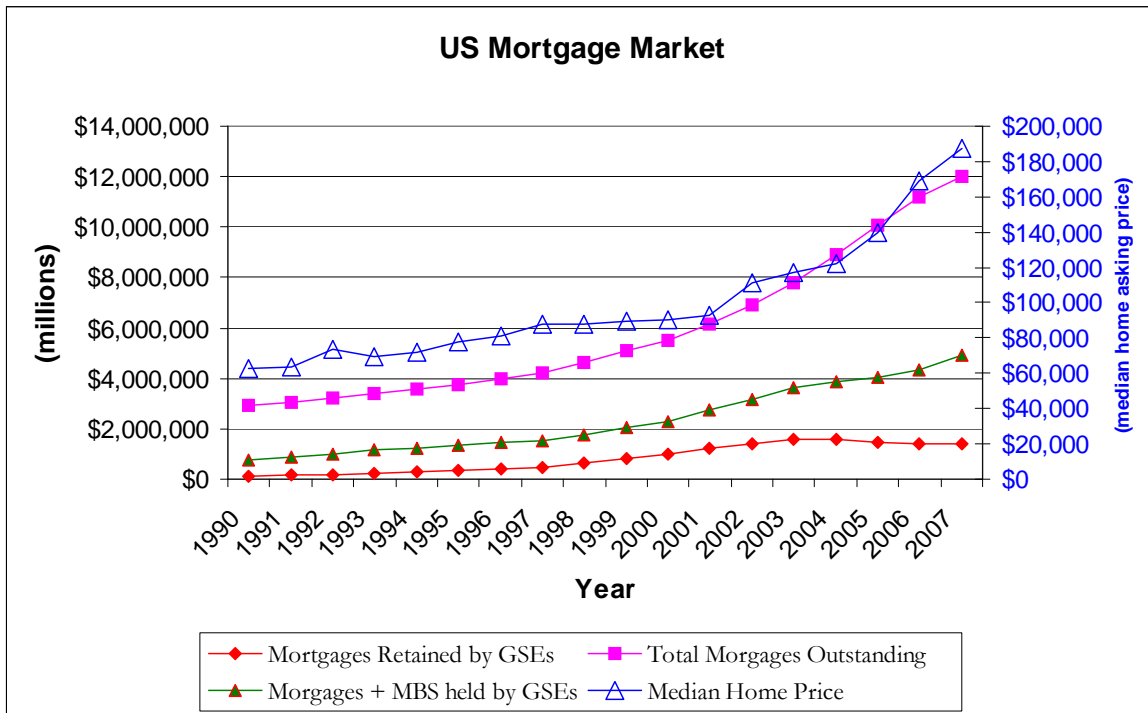
²¹ For example, the National Association of Realtors' website includes the statement, "We support the federal government's actions and authorization to help ensure the ability of Fannie Mae and Freddie Mac to promote the availability of home mortgage credit during a period of stress in the financial markets. Fannie and Freddie play a central role in our housing finance system, and we agree that they must continue to do so as we work through the current housing correction" (July 14, 2008 news release.

[http://www.realtor.org/press_room/news_releases/2008/07/nar_statement_on_importance_of_fannie_and_freddie.](http://www.realtor.org/press_room/news_releases/2008/07/nar_statement_on_importance_of_fannie_and_freddie)

²² For example, in a 2003 speech then Chairman of the Federal Reserve Alan Greenspan argued that derivatives had insulated the financial system from the stock market crash of 2000 (the dot.com bubble) and the associated economic downturn. He did, however, express reservations about the concentration of the derivative market in the hands of a few investment bankers (*The New York Times*, May 9, 2003).

(<http://query.nytimes.com/gst/fullpage.html?res=9A07E1DD173FF93AA35756C0A9659C8B63&fta=y&scp=2&sq=greenspan%20derivatives&st=cse>)

an even much faster rate than usual: nearly 10% a year. In 2004, home ownership rates peaked at 69.2%. As long as “it works,” why should voters worry about the details?



A. Warnings About the Market in Mortgage-Backed Securities and Responses

There were, however, increasing concerns expressed by experts inside and outside government, who feared that the now-global system of mortgage finance had become overextended, in part, because housing prices were rising at unsustainable rates and it appeared that the risks associated with mortgage-backed securities and their derivatives were underpriced.²³ A variety of congressional hearings were held regarding sub-prime mortgages and regulations designed to limit their terms were adopted by Congress, although many believed that they had not gone far enough (Gramlich 2000). Concerns were expressed about the viability and oversight of Fannie Mae and Freddie Mac. Several proposals were

²³ The underpricing of risks was evidently compounded by incentives facing the various asset rating services of Standard and Poor’s and Moody’s. Much of their revenues came from their rating services and security issuers could shop among the top firms for the best ratings. AAA ratings were consequently achieved for many asset bundles that were only of low risk as long as housing prices continued to rise or at least did not decline very much (Jenkinson 2008).

made to strengthen and depoliticize the standing regulator (OFHEO) and to increase capital requirements, but none were able to secure majorities in Congress, in part, because of successful lobbying efforts by Fannie Mae and Freddie Mac and, in part, because promoting home ownership was a popular cause.

Such pressure, however, induced Fannie Mae and Freddie Mac to register (voluntarily) with the SEC in 2003, which required them to file the same quarterly and annual financial reports as other stockholder-owned firms. (Fannie Mae and Freddie Mac were exempt from the 1933 Securities Act as GSEs). This required Fannie and Freddie to meet conventional accounting standards in their annual reports, which they had not done previously. At about this time and for much the same reason, the Office of Federal Housing Enterprise Oversight (OFHEO) conducted a thorough investigation of Fannie Mae and filed a 200-page report, in which it stated, for example, that:

“We have determined that Fannie Mae, in developing policies and practices in these critical areas, has misapplied Generally Accepted Accounting Procedures (GAAP), specifically Accounting for Nonrefundable Fees and Costs Associated with Originating or Acquiring Loans and Initial Direct Costs of Leases (“SFAS 91”) and Accounting for Derivative Instruments and Hedging Activities (“SFAS 133”).”

The misapplications of GAAP are **not limited occurrences**, but are pervasive and are reinforced by management. The matters detailed in this report are serious and **raise concerns regarding the validity of previously reported financial results, the adequacy of regulatory capital, the quality of management supervision**, and the overall safety and soundness of the Enterprise. (Emphasis is in the original report, p. 6; C.H. Dikerson, chief compliance examiner, “Report of Findings to Date, Special Examination of Fannie Mae,” OFHEO, 2004, Washington D.C.)

Of course, similar accounting irregularities that overstated profits may have been present in other large commercial enterprises, which can shop around for pro-management accounting and rating firms. Those filings, however, had long been reviewed by the SEC and were subject to the GAAP standards. Private firms also faced somewhat higher and more binding rules for capital requirements. Fannie Mae and Freddie Mac are, in principle, monitored by

both stockholders and voters (through their agents) as well as HUD. Monitoring failures are, however, evident throughout the OFHEO report.²⁴

In February of 2004, Federal Reserve Chairman Alan Greenspan urged Congress to address the financial basis and possible bankruptcy of Fannie Mae and Freddie Mac.

In sum, the Congress needs to create a GSE regulator with authority on a par with that of banking regulators, with a free hand to set appropriate capital standards, and with a clear process sanctioned by the Congress for placing a GSE in receivership, that of banking regulators, with a free hand to set appropriate capital standards, and with a clear process sanctioned by the Congress for placing a GSE in receivership.

However, if the Congress takes only these actions, it runs the risk of solidifying investors' perceptions that the GSEs are instruments of the government and that their debt is equivalent to government debt. The GSEs will have increased incentives to continue to grow faster than the overall home mortgage market. Because they already purchase most conforming mortgages, they, like all effective profit-maximizing organizations, will be seeking new avenues to expand the scope of their operations, assisted by a subsidy that their existing or potential competitors do not enjoy. Thus, GSEs need to be limited in the issuance of GSE debt and in the purchase of assets, both mortgages and nonmortgages, that they hold.

Indeed, by 2006 even the *Annual Report of Fannie Mae* discusses increased risks in the housing finance market. For example, regarding its own portfolio of sub-prime mortgages, the 2006 report notes that:

The proportion of higher risk mortgage loans that were originated in the market between 2003 and mid-2006 increased significantly. **As a result, our purchase and securitization of loans that pose a higher credit risk**, such as negative-amortizing adjustable-rate mortgages...interest-only loans, and sub-prime mortgage loans, also increased, although to a lesser degree than many other institutions. In addition, we increased the proportion of reduced documentation loans that we purchased to hold or to back our Fannie Mae MBS (page 23). [emphasis added]

That housing prices were at relatively high levels and that the mortgage market portfolios included many risky mortgages was not a surprise. There were warnings about a

²⁴ Several very well-paid top officials of Fannie Mae, including its CEO, were “encouraged” to resign as a consequence of the OFHEO report and other investigations undertaken by the SEC. The SEC and OFHEO subsequently fined Fannie Mae \$400 million in 2006 for manipulating its accounts to enrich its senior management from 1998–2002 (*Washington Post*, May 24 2006).

bubble in home prices from a broad cross-section of newspapers and economists, as with Case and Shiller (2004) and Yeller (2005), although there was not complete agreement (Himmelberg, Mayer, and Sinai 2005).²⁵

Congressional hearings had been held, however, and financial columns in newspapers and news magazines had analyzed the risks associated with the portfolios assembled and supported by Fannie Mae and Freddie Mac and also raised concerns about mortgage-backed securities generally in a long series of articles throughout the past decade. It bears noting, however, that there was a tradeoff between Fannie's and Freddie's legal responsibility to support orderly mortgage markets and to support home ownership among those who lacked the means to obtain ordinary (prime) mortgages. HUD, with support of Congress and two presidents, pressed for the latter, because it appeared to be a cost-effective (and was an off-budget) method of subsidizing housing. The HUD requirements to purchase more and more loans from low- and middle-income groups, together with competition from other unregulated mortgage purchasers, induced the GSEs to purchase mortgages from less and less creditworthy persons (and mortgage originators).

There was, however, far less analysis of the global markets for mortgage-backed securities, which were widely presumed to be efficient in the sense of stock markets, although those markets lacked equivalent regulation and transparency.²⁶ The problems in the mortgage-backed securities market that emerged in 2007–08, were, thus, more of a surprise than the end of the housing bubble. Prior to the meltdown, only a small minority of economists recognized its associated systemwide financial risk.

²⁵ It is interesting to note that Himmelberg worked for Goldman Sachs, a leading investment bank, at the time that the Himmelberg, Mayer, and Sinai (2005) report on housing prices was written for the Federal Reserve Board.

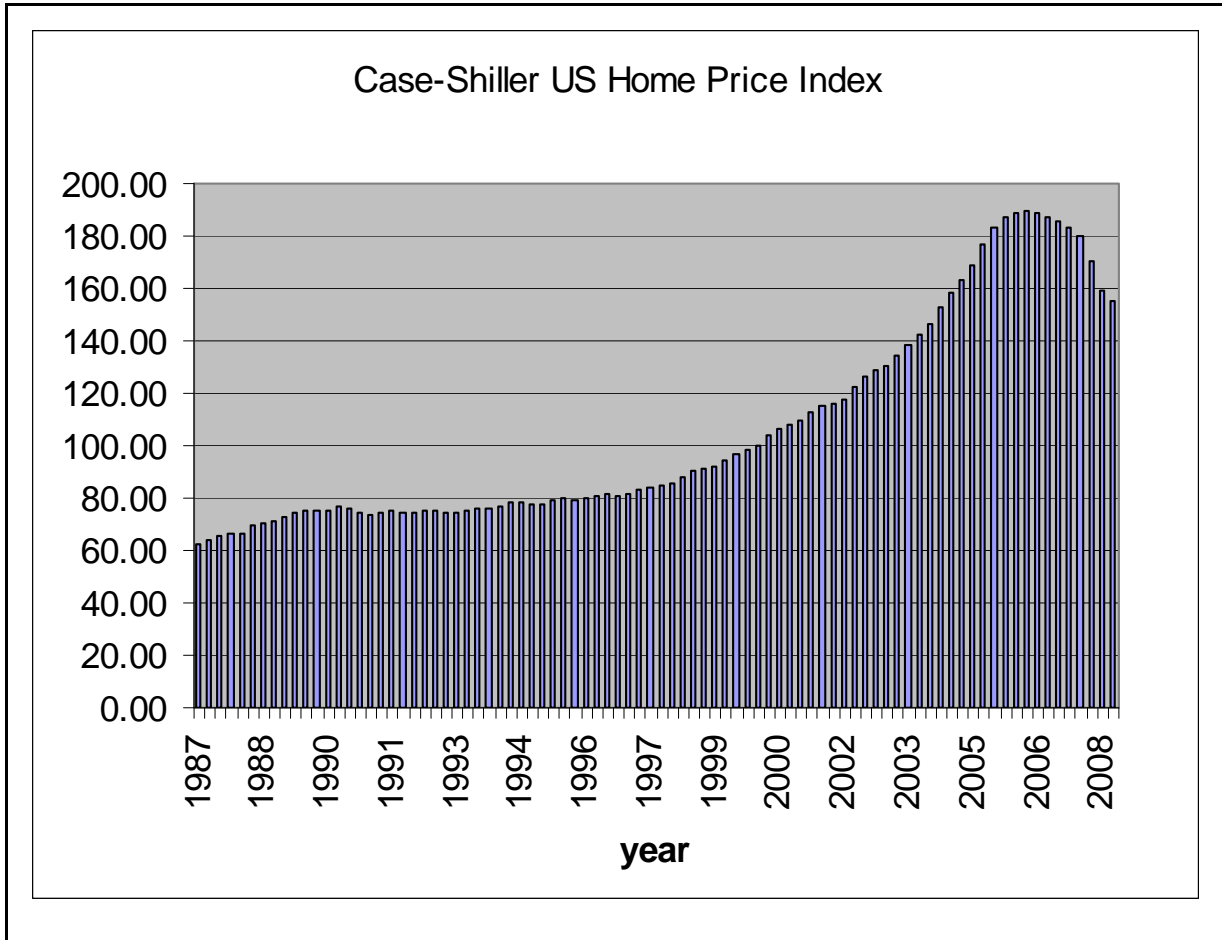
²⁶ See for example, the speech by C. S. Spatt, chief economist at the SEC, given at the conference on “Derivatives-Based Investments” conference on December 8, 2005. That speech mentions a variety of factors that led to the growth of derivative trading, but does not list bubbles or irrational exuberance among the possibilities. It does however discuss some informational problems that can exist in some circumstances and difficulties of properly pricing assets that are triggered by somewhat unlikely events (<http://www.sec.gov/news/speech/spch120805css.htm>). Mason and Rosner (2007) discusses risks associated with mortgage backed securities, but not systemwide risk.

B. The End of the Housing Bubble

As long as housing prices rose, the asset values of the houses supporting the sub-prime mortgages were sufficient (indeed more than sufficient) to support such relatively risky loans, which together with easy refinancing allowed relatively high profits for mortgage bundler-insurers like Fannie Mae and Freddie Mac and also for home-owner speculators. The bubble warnings finally proved correct in 2006–07, and housing prices began to fall for the first time in more than a decade. This was the first significant U.S.-wide housing price fall since the recession in 1992, and the fall was much greater and faster than in recent recessions. According to the Case-Shiller index, average U.S. home prices peaked in 2006 and fell by about 18% in the next two years. The U.S. Census series on median home prices peaked in 2007 and show a similar broad decline in home prices during 2007-08. Diversifying across regions of the country could not reduce this risk, as 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 note that the estimated effect 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 18% decline in U.S. home values between 2006 and 2008 reduced homeowner equity by more than \$3 trillion.²⁷

²⁷ According to the Kennickell (2006, table 11a) the (net) value of equity in personal homes in 2006 was \$19.1 trillion.

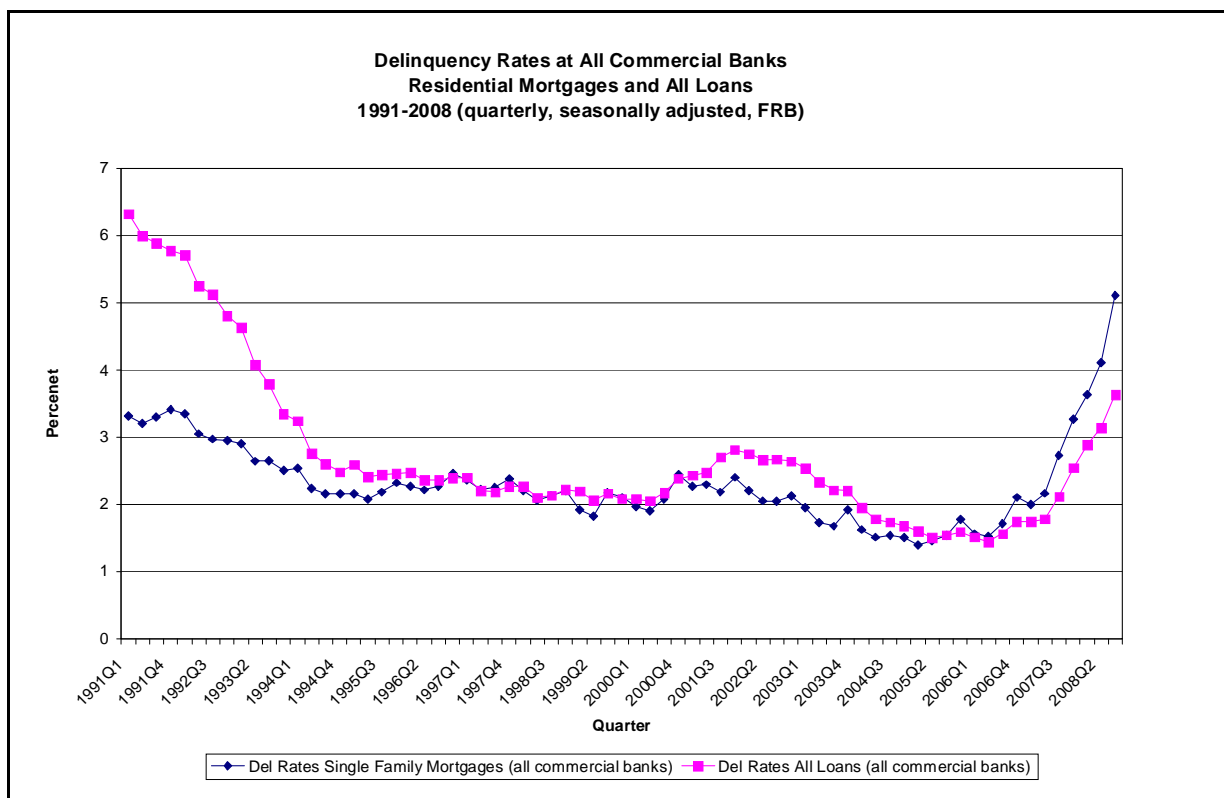


C. The End of “Risk-Free” Mortgage-Backed Securities

Delinquencies on residential mortgages were moderate in the period after the 1992 recession and, if anything, exhibited a slight downward trend through 2005. The end of the housing bubble had direct wealth effects on private consumption and together with modest increases in unemployment increased defaults in much of the United States. The reduction in house values and reduced economic growth after 2006-07, thus, made both sub-prime and prime mortgages riskier than in previous years, because the asset value of the house supporting the mortgage was in many cases less than the value of the outstanding mortgage, which implied that refinancing to ease borrower cash flow problems was no longer possible. Delinquencies predictably began to rise, and sub-prime mortgages were disproportionately represented among delinquencies. Delinquencies on residential real estate loans had more

than doubled by the beginning of 2008 and continued to climb. Nearly 25% of sub-prime mortgages were 90 days delinquent or in foreclosure in 2008 (Bernanke 2008).²⁸

Delinquency rates on residential real estate were exacerbated by the almost fraudulent lending practices of many loan originators, house price assessors, and some builders and evidently by the assumption that residential mortgages were safer than most other loans, as they had been for more than a decade.²⁹ However, most purchasers of “negative equity” and “no docs” mortgages must have realized that these were relatively risky “promises” to pay for. (As noted above, for example, Fannie Mae acknowledged such risks.)



²⁸ Bernanke’s (2008) figures 1 and 2 demonstrate that delinquency rates vary widely across the country from 0.6% in the lowest quintile to more than 2.5% in the highest quintile in 2004, which was a relatively good year. 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.

²⁹ Monthly payments on “negative equity loans” are initially below those required by the interest on their loan; the implicit loan made during the “negative equity period” is subsequently capitalized into the principle, after which much higher monthly payments are required. “No docs” loans are mortgages for which no proof of income (or ability to repay) is required by the borrower. Many variable-rate mortgages have initial periods in which the interest due is well below the rates paid after a year or two. (It is interesting to note that many academic papers on the pricing of mortgage-backed securities focus entirely on the “prepayment” risk and neglect the risk of default. See for example Stanton [1995].)

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, as noted above.

Although residential mortgage delinquency rates began to climb in 2005, most mortgages and mortgage-backed securities remained relatively “low-risk” assets, because most were insured by Fannie Mae, Freddie Mac, and other mortgage and mortgage-backed security insurers. About half of all mortgages and, therefore, mortgage-backed securities were insured by Fannie Mae and Freddie Mac. Many others were insured by other private organizations. The risks for a broad range of mortgage-backed securities were assessed by companies, such as Standard and Poor’s and Moody’s with that insurance in mind, and AAA (low risk) ratings could be obtained for nearly every combination of the new financial assets by adding a bit of insurance to the mix, which was often arranged through other complex securities.³⁰

As delinquency rates began to exceed the normal range of the post-1992 period in 2007, insurance claims began to increase.³¹ As a consequence of increasing delinquencies, mortgage and mortgage-backed securities insurers had to pay their insurance claims (make the interest payments that delinquent borrowers were not making). 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

³⁰ To make obtaining a AAA rating a bit easier for the security issuers, the rating companies had released their metrics for risk assessments. This led to the creation of many complex securities that only just met AAA standards, because this would maximize the profits that could be squeezed from a given pool of mortgages. This “optimization” implied that even small changes in risk would change the credit ratings of most mortgage-backed securities, if the rating agencies decided to update their ratings of past issues.

³¹ 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.

national trends between 1995 and 2005 were the new market norm. As the risk of default by insurers rose, the risk associated with asset-backed securities increased and their value fell rapidly as potential buyers demanded higher and higher risk premiums.

Moreover, in difficult times, insurance is only as good as the insurance company's net cash flow, portfolio of reserves, and line of credit. As housing prices began to fall even more rapidly than they had been rising and economic growth diminished, delinquencies and foreclosures increased (especially among sub-prime mortgages) and the mortgage insurers began to pay out more than they were taking in fees and interest. Unfortunately, reserves that had been more than adequate during the housing boom turned out *not* to be sufficient during the ensuing unusually rapid decline. 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. The insurers of mortgage-backed securities began to empty their reserves and their lines of credit dried up. This was not simply a cash flow problem that could be solved with a bit of temporary borrowing.

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. At the same time, Freddie Mac, Fannie Mae, and other insurers saw their credit ratings rapidly decline as the credit-rating agencies revised their estimates of future insurance losses. Insurers could no longer borrow to pay claims in the short run. Losses accumulated as payments to those insured exceeded payments from those holding the mortgages, and several major insurers went bankrupt, as their insurance obligations exceeded their assets (Bear Stearns, Fannie Mae, Freddie Mac, etc.). 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 safest mortgage insurance companies. 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.

Ex post, it is 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 purchased). The bubble in MBSs was also magnified by a variety of mistakes made by credit rating agencies (Jenkinson 2008).

Indeed, there appears to have been a bubble in mortgage-backed securities built on top of the bubble in housing prices, as investors around the world were encouraged to hold these relatively “safe” assets, rather than government securities.³² Some newspaper accounts place the total loss of market value of mortgage-backed securities at 70%–80%, which if true, implies that something on the order of \$5 trillion of financial wealth disappeared from the world’s financial system from this 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 one very important sector of the economy, rather than spread out among households. That concentration increased its economic and political consequences, in part for Olsonian (1965) reasons.

D. Pecuniary Externalities from the Decline in Real Estate Prices

The decline in residential real estate values and the (effective) end of mortgage and mortgage-backed security insurance had two broad effects on the U.S. and world economy. First, the reduced value of these real estate and mortgage-backed securities reduced 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

³² 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>).

cut back on their investment. Many financial firms were effectively bankrupt, with debts greater than assets, because their capital base had evaporated as risks were reassessed. Second, those managing portfolios of various kinds at investment banks, insurance companies, pension funds, sovereign wealth funds, etc. all attempted to manage their portfolio's overall risk. In the new (under- or un-insured) circumstances, most owners of mortgage-backed securities had far too many risky assets in their portfolios and tried to sell those securities in the usual way.

The portfolio rebalancing generated additional declines in wealth for those holding relatively risky assets in their portfolio, as other portfolio managers 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 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).³³ 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 U.S. and world markets.

The more than ten trillion dollar loss in wealth reduced consumption and investment expenditures and reduced demand for all inputs. Economic growth fell, unemployment increased, and oil prices fell. There were bankruptcies of unusually large financial firms.

It bears noting, however, that the financial firms that failed in 2007-08 were unusually large, because of changes in 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. In the U.S. housing crisis of the late 1980s,

³³ It bears noting, however, that most mortgage-backed securities are still very safe and even sub-prime mortgages and their derivatives are reasonably secure (in the medium run), because most borrowers continue to make their mortgage payments and their mortgages are backed by the value of the houses against which loans were taken. House prices have fallen and are often now below those of the loans that they support, but they have, on average, fallen by 20%, rather than 80% of their peak value. The asset value of the house, however, is only the final guarantee of mortgage-backed securities without insurance.

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). 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.³⁴

IV. Political Responses to the “Financial Meltdown” and the Threat of Recession

There are a variety of standing government procedures for reducing the downside risks of mortgages and recessions in the United States. Some of these, such as mortgage and unemployment insurance, are automatic and require no new policy decisions by government officials. Others require a variety of more or less routine decisions within standing government agencies. The FDIC and Federal Reserve, for example, have responsibility for looking after the solvency of banks, the extent of the money supply, and the extent of bank credit. Other responses require new legislation to be adopted. For example, Keynesian responses to recessions beyond those provided by social insurance require acts of Congress with respect to budgetary and/or tax legislation. Similarly, addressing an unusually large wave of bankruptcies outside the banking sector would require new legislation. There is no equivalent to the FDIC for most non-bank financial institutions, beyond the usual civil laws that govern bankruptcy.

Relatively little political pressure is required to cause the standing institutions to respond to changes in banking markets or recessionary pressures; so, the FDIC arranged for mergers of failing banks with stronger banks, and the Federal Reserve Bank stepped in to provide liquidity, at first with more or less routine adjustments to the Federal funds rate, which were quietly augmented by a variety of policy innovations in 2007-08 to reach financial firms (and divisions) that were normally beyond the Fed’s regulatory turf.³⁵ Target

³⁴ See the General Accounting Office’s (GAO’s) audit of the Resolution Trust Corporation (www.gao.gov/archive/1996/ai96123.pdf).

³⁵ The St. Louis Fed’s “The Financial Crisis, A Timeline of Events and Policy Actions” 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.

Federal funds rates were gradually reduced from 5.25% in early 2007 to 0.25% in late 2008. The range of assets purchased in open market operations and used to secure loans were expanded to include relatively safe corporate bonds and mortgage-backed securities, which allowed a wide range of monetary base–expanding purchases of securities to take place.

A. Great Depression Warnings Are Sounded

Responses from the Treasury, however, required new legislation, which required significant lobbying of Congress by top officials from the executive and from large financial firms. The terms “financial crisis” and “credit meltdown” 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, credit expanded throughout 2007 and most of 2008 and unemployment remained at relatively low levels, although many financial firms were in dire straights, because their asset base had collapsed.³⁶

In response to those pressures, as well as macroeconomic concerns, legislation was adopted to reduce recessionary pressures, beginning with a Keynesian stimulus program of tax rebates adopted on February 13, 2008. The government’s implicit guarantees for Fannie Mae and Freddie Mac were made more explicit, with new lines of credit from the Treasury and the Federal Reserve in late July. The *Housing and Economic Recovery Act of 2008* authorized the Treasury to purchase GSE obligations and merged the various GSE regulators in HUD to form a new Federal Housing Finance Agency. On September 7, 2008 both Fannie Mae

³⁶ Research at the Minnesota Federal Reserve demonstrates that credit of all kinds continued to expand through mid-October 2008. Indeed credit demand (and supply) outside the financial sector increased during 2008 and very rapidly, both because of the recession (and associated cash flow problems) and because of fears that credit might eventually dry up given all of the talk in the mass media about a credit crisis (Chari, Christiano, and Kehoe 2008).

The lack of a major collapse of credit is evidently partly because the Federal Reserve system has 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.

and Freddie Mac were placed under conservatorship, as both privately held GSEs were in effect nationalized.

By doing so, the foundations of a large part of the finance market dealing with mortgage-backed securities was now formally guaranteed by taxpayers in that Fannie Mae and Freddie Mac's insurance directly or indirectly guaranteed a significant part of the market for mortgage-backed securities. However, the mortgage-backed securities issued by other firms were not yet supported, although an \$85 billion loan was provided to American International Group (AIG) on September 16; AIG remains a major private insurer of mortgage-backed securities.

Later in September, Treasury Secretary Paulson made a strong case (with threats of a looming Great Depression) to persuade Congress to provide \$700 billion to purchase other mortgage-backed securities (the so-called "toxic" or "distressed" assets). Because these 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 Federal Reserve policies).

A good deal of the initial talk of "crisis" was induced by the financial sector, in which many firms and employees were in a state of crisis and who also stood to profit if they could induce a major response from the Federal government. Additional crisis talk was induced by the natural proclivity of the news media to use the term "crisis" to attract audience.³⁷ 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 had noted that the *financial shock* was the worst *since* the Great Depression, a significantly milder claim. That significant transfers to finance firms took place as a result of TARP has recently been affirmed in Congressional testimony.³⁸

³⁷ 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.

³⁸ See Elizabeth Warren's testimony on February 5, 2009. Elizabeth Warren, chairman of the

The strong “Great Depression” arguments used, naturally 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 these were addressing public goods problems or providing transfers to senior managers of finance companies (and perhaps shareholders) depends on one’s macroeconomic perspective. As usual, the most persuasive public arguments for private transfers are 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).

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. Given the size of his proposal and the urgency of the case presented, it was not surprising that it attracted enormous press attention, while the major steps already taken by the Federal Reserve and FDIC faded into the background.

V. Public Choice Lessons from the Fiscal Crisis

The process of passing the bailout bill in early October and the kinds of arguments used to secure passage both shed a good deal of light on the incentives that individual Congressmen and Senators work under. Public support for the bailout was never strong, but public opinion can shift rapidly, and an election was to take place in November. An enormous “all-or-nothing” offer of the Niskanen (1971) variety was presented to Congress, in which there was a strong presumption that the Secretary of the Treasury and the Chairman of the Federal Reserve knew more than the general public, Congress, or outside experts (as in Breton and Wintrobe 1975). They presumably had access to data that no one else did and strongly argued that the world economy was about to collapse. (This in spite of the fact that such a collapse had not happened since the first years of the Great Depression.)

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).

A. An All-or-Nothing Offer

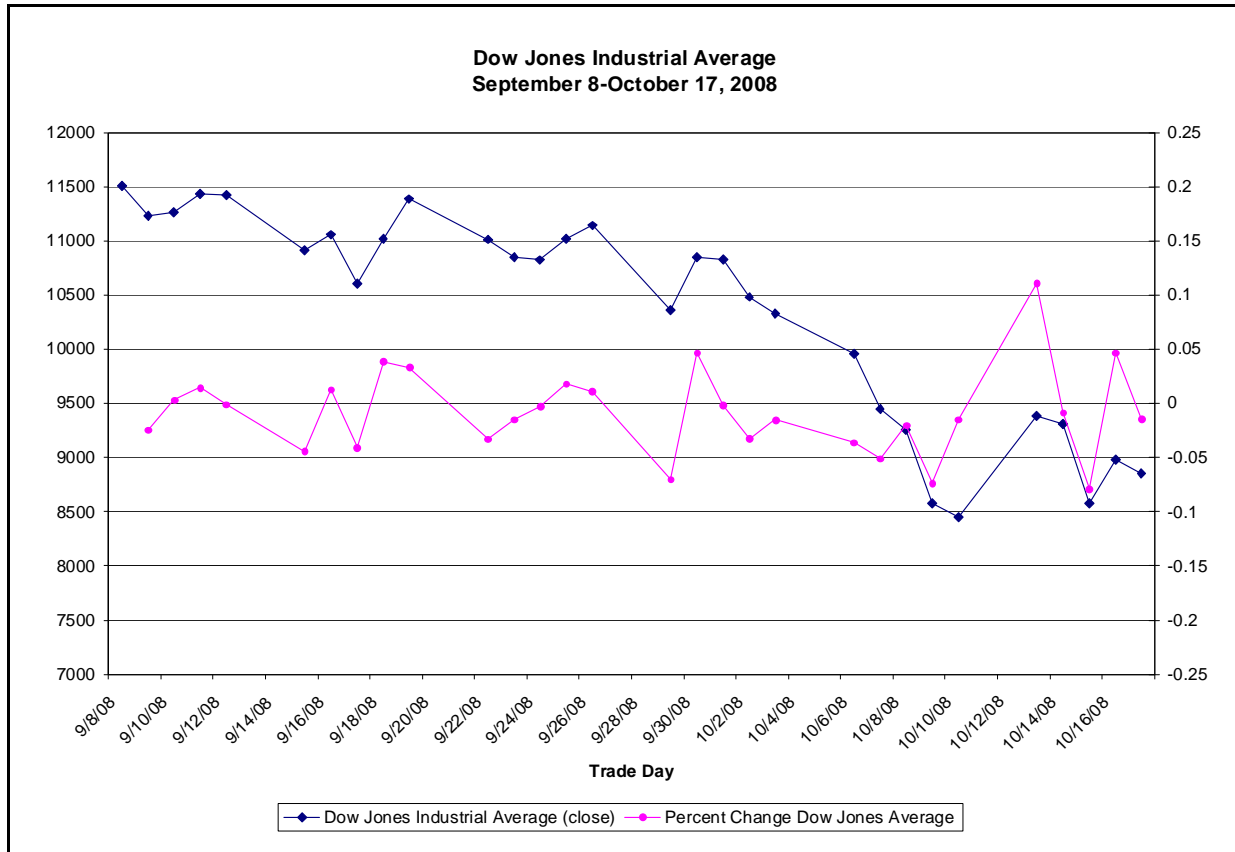
The original Paulson proposal of September 20 was a “back of the envelope” idea, only three pages long, that requested a \$700 billion line of credit for Treasury to use as it saw fit to purchase “troubled securities.” No other number was seriously discussed as Paulson used his authority to focus attention on a single, large Troubled Asset Relief Program (TARP), 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). The amount proposed was 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, so the amount was large enough to make a difference in a very large financial submarket.

The proposal, however, required a 25% increase in the Federal budget and a significant increase in debt ceilings. The U.S. national debt in 2008 was approximately \$10 trillion, so the Paulson plan required about a 7% increase in the total debt of the United States. This would require an extraordinary issue of new Treasury bonds. The deficit in 2007 was about \$240 billion (down from >\$400 billion a few years earlier).

Naturally, the Congress was initially skeptical of the proposal, although after 10 days of testimony and a decline in the stock market, both chambers of Congress deferred to Treasury’s expertise on the matter.³⁹ The House of Representatives added a variety of oversight provisions, reduced by half the initial resources available to the Treasury, added a new insurance program, and also provided for a temporary increase in the accounts eligible for FDIC insurance (from \$100,000 to \$250,000). The bill also added 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. The new 110-page document, however, failed to secure a majority in the House on September 29 (2008).

³⁹ 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.

to 228). The stock market fell 6.98% on the day a majority in the House disapproved of their version of the Paulson plan. The news media widely attributed the loss to the House vote, although the stock market rebounded 4.7% the following day.



The Senate took up the (unpassed) House version of the TARP bill and added a variety of provisions unrelated to the stated purpose of the bill, including extension of environmental and other tax credits, and minor tax reforms. About two-thirds of the now 450-page-long bill had nothing to do with the financial crisis, but the “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 plurality in favor of the bailout.⁴⁰

⁴⁰ 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.

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%).

B. 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 capital in a subset of finance institutions, using authority added by Congress without much public discussion.

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. This shift in policy has never been explained.

Whether this simply reflects the usual informational problems of crisis management or agency problems is not clear. 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 26.⁴¹ 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 repurchased from the

⁴¹ The press release states that "By October 26th we had \$115 billion out the door to eight large institutions."

Treasury.⁴² Although the announcement explicitly states that capital purchases will be made at “healthy institutions,” few of the first recipients could be regarded as healthy.

The largest recipients of TARP funds were clearly not healthy firms. Among the nine large financial institutions listed on the November transaction reports were two investment banks, Morgan Stanley and Goldman Sachs, who received some \$10 billion of capital each (through purchase of preferred shares). The latter was the firm formerly headed by Treasury Secretary Paulson.⁴³ 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 more than merger. Citibank soon authorized for 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 the Bank of America.⁴⁴ Purchases of preferred shares from AIG (\$40 billion) were authorized on November 10, although it is 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” against the stocks of several of bailout recipients was profitable throughout 2008. TARP funds have also been used to support nearly-bankrupt auto companies through purchases of shares in their credit divisions. For example, the Treasury announced \$5 billion in purchases in General Motors Acceptance Corporation (GMAC)—which also invests in

⁴² 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.

⁴³ 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.

⁴⁴ 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).

mortgages—on December 29, and a loan of \$1.5 billion to Chrysler Financial on January 16, 2009.⁴⁵ The automobile companies themselves were on the verge of bankruptcy with major cash flow problems. Perhaps surprisingly, many of these capital purchases were not listed on the Treasury’s TARP transactions reports released in December and January.⁴⁶

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 appear to be consistent with Stigler’s (1971) model of regulatory capture, because they appear to benefit the recipient firms far more than taxpayers. Weak banks are unlikely to use their new capital for loans, because doing so would violate their capital reserve requirements. About 3.6 billion dollars of bonuses were paid to Merrill-Lynch employees, even though the company had losses of 27 billion dollars and was in line to receive 10 billion dollars of TARP funds.⁴⁷

C. On the Cost-Effectiveness of the Bailout Plan

Both the cost and the cost-effectiveness of the purchase of preferred stocks in major financial firms depends on the viability of the specific firms in which shares were purchased, which partly depends on the length and depth of the associated recession.⁴⁸ If all the firms survive and repurchase their preferred shares, the cost of the preferred stock portion of the

⁴⁵ 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.

⁴⁶ The initial terms of some “capital injections” have been subsequently modified, as with AIG, who 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).

⁴⁷ New 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>

⁴⁸ The preferred share purchase program appears to be modeled after Gordon Brown’s plan for bailing out banks in the United Kingdom.

bailout program to taxpayers will be relatively small. Congressional testimony on February 5, 2009, however, suggests that only about two-thirds of the subsidized banks (weighted by assets) are likely to survive.⁴⁹ The cost-effectiveness of the preferred share purchase program depends, however, on the overall effect of the program on financial markets and the macro economy, in addition to the direct rate of returns from the purchase of preferred shares. Its depends on its effectiveness compared with alternative uses of the TARP funds.

The preferred share purchase plan improves the capital accounts of firms, but does not really address the fundamental source of the balance sheet problems. The troubled financial firms evidently hold billions of dollars of formerly “safe” MBSs on their capital accounts. If these and similar assets were marked down to reflect their present market value, many would be bankrupt, and many others would have capital below their required reserves and be required to reduce their debts (e.g. to “deleverage”). Shoring up bankrupt firms only helps if their portfolios are temporarily underpriced by today’s market as they were over priced not long ago. In that case, the costs of reorganizing the firms and portfolios of very large banks and finance companies are avoided by such temporary additions of capital. It also benefits other companies such as insurance companies and pension funds, who also hold large portfolios of financial assets that are insured or created by the firms obtaining additional capital from taxpayers. On the other hand, if the value of mortgage backed securities does not recover, this simply postpones the adjustments that will eventually have to be made.

The fundamental problem of weak markets for complex mortgage-backed securities would have been addressed by the original asset purchase plan or by the asset insurance program placed in the House and Senate bill by the Republicans. Targeted support for particular firms does not otherwise provide much help for the large number of nonrecipient firms.

⁴⁹ Elizabeth Warren, chairwoman 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). The difference between the price paid and the expected value received suggests that the probability of recovering principal, itself, is about 0.70. Given the promised dividend payments, the Warren assement implies that the probability that the supported banks survive is somewhat less than 70%.

At the same time that fundamental problems are not addressed, new risks are being introduced. (1) The preferred shares are functionally very similar to “negative equity” loans on which the interest rates jump after a few years leaving borrowers with much higher payments to make in financial circumstances that are not likely to be radically better. This could reinforce risks in the finance sector at the time that the higher payments begin unless the firms return to financial health by then. The housing bubble, however, is not likely to reinflate, nor are the associated bubbles in mortgage-backed or other similar credit-backed securities or stocks. (2) Such preferred share purchases reduce the rewards reaped by more prudent firms in the finance industry, while creating a major moral hazard problem that will have to be addressed through future more stringent regulations.

(3) Additional systemwide and macroeconomic risks are being introduced by selling so many bonds in a year or two, the bailout plan(s) and stimulus plan(s) both encourage flight from U.S. financial assets and may eventually increase interest rates on government debt, both of which would exacerbate rather than help the problem. Borrowing \$1.7 trillion (\$250 billion deficit + \$700 billion bailout + \$800 billion stimulus) requires by far the largest one-year issue of government debt ever, and proportionally the largest since World War II. The previous record debt issue was \$412 billion in 2004. This large sale of treasury debt could in the next few years have interest rate effects that make borrowing more costly for the private sector and put downward pressure on the dollar in world currency markets. The sale of so many government bonds will also allow investors to flee the stock, bond, and real estate sectors more easily in the short run, which may also exacerbate the credit crisis being addressed.⁵⁰

In spite of all these problems with use of the first \$350 billion of the bailout bill, President Bush requested the second half of the TARP funds (at President-elect Obama’s

⁵⁰ This paper focuses on the microeconomic issues, but if Ricardian equivalency is taken seriously, taxpayers may also realize that their future tax obligations have been increased as a consequence of the debt issue, and will reduce their current consumption to put money aside for their future tax increases (Barro 1974). Many macroeconomists believe that increases in government debt (e. g., deficits) have little or no short-run effects on economic growth and a negative one in the long run.

request) on January 12, 2009. Congress did not block the release of those funds, and so \$350 billion of additional funds became available to Treasury 15 days later.⁵¹

D. Lessons for Constitutional Political Economy: On the Value and Limitations of Standing Policies (and Revisions during Crises)

At the same time that the responses of the Congress and Department of Treasury illustrated the difficulty of crisis management, other agencies used their standing authority to address the various financial and regulatory problems associated with the increase in perceived risks in the market for mortgage-backed securities. The results to date highlight both the costs and advantages of standing institutions and rules for dealing with business cycles and for constraining financial market risk taking. On the one hand, the problems were partly caused by long-standing quasi-government institutions and policies that attempted to subsidize housing for the middle class and poor, although the proximate cause was largely produced by agency problems between and within private firms.⁵² On the other hand, the most ambitious efforts to address the financial problems associated with a 20% decline in national wealth were undertaken by the Federal Reserve System. The Federal Reserve Bank has used its discretion to establish a variety of policies, well beyond its conventional control of the Federal funds rate, to provide liquidity to the financial system. For example, it has accepted a variety of AAA-backed securities as collateral for loans (of dollars) and has initiated its own TARP-like program for mortgage-backed securities at the New York

⁵¹ It is a somewhat new Treasury team that will determine the second allocation of TARP moneys, but it is not clear how new the second phase of the TARP program will be. A preliminary outline of a “new” TARP plan was released on February 10, 2009, which seems to be a larger version of the Paulson plan. It does, however, explicitly mention the large role that the Federal Reserve can (and has) played in providing liquidity by creating markets for “troubled” securities. For an overview of Federal Reserve actions, see Bernanke’s testimony before the House Committee on Financial Services, February 10, 2009.

<http://federalreserve.gov/newsevents/testimony/bernanke20090210a.htm>

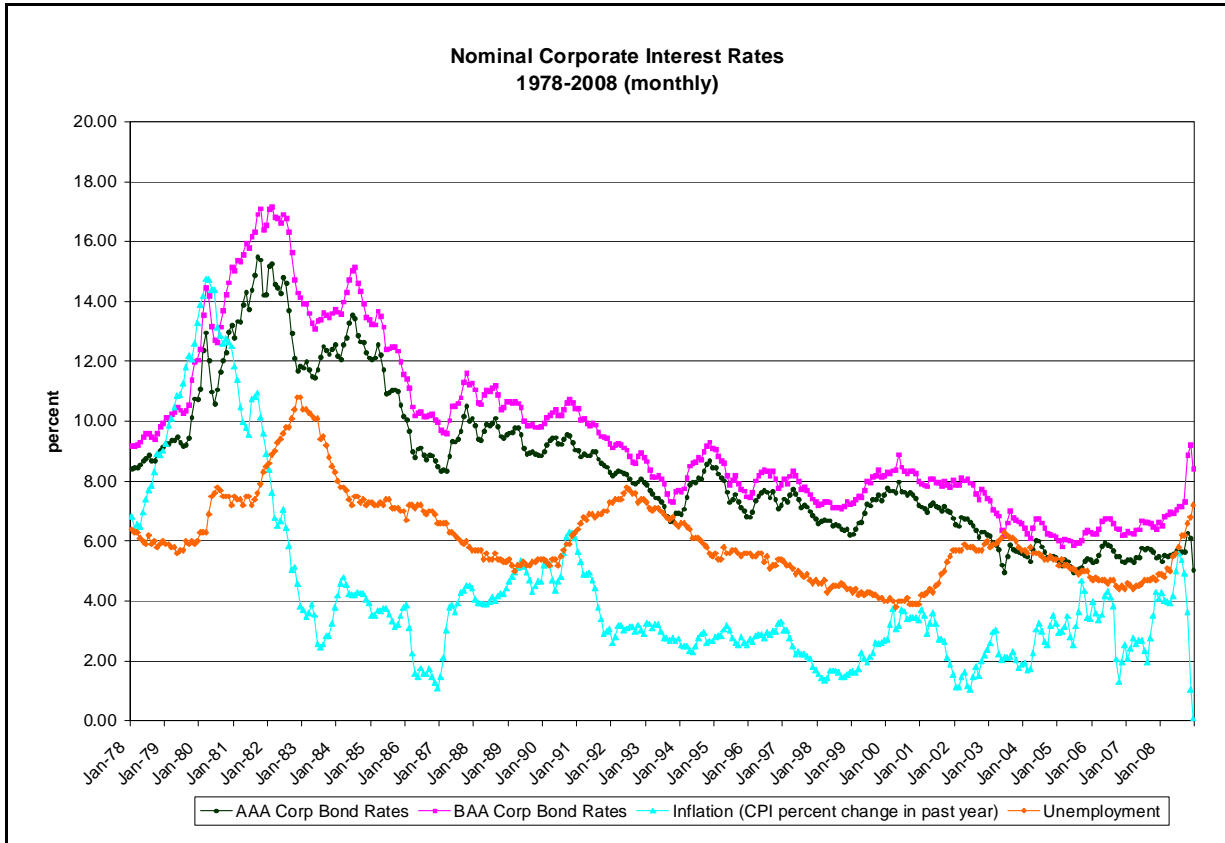
⁵² Congressional testimony suggests that many mortgage originators exaggerated the quality of their mortgages, that the private rating companies underestimated those risks and subsequent risks of mortgage-backed securities, and that too many trusted other persons in the market to do the risk assessment(s) for them. These resulting overassessments of the value of the mortgage-backed securities generated the great “meltdown” of portfolios grounded in those securities as housing prices fell. Jenkinson (2008) argues that the lack of transparency in the risk assessments as well as some of the techniques used made it difficult for others to double check their assessments and reduced the accuracy of risk appraisals in a manner that was difficult for outsiders to know.

Federal Reserve Bank on January 5, when it began purchasing mortgage-backed-securities guaranteed by Fannie Mae and Freddie Mac.⁵³ During the second half of 2008 the Federal Reserve has tripled its reserves by acquiring approximately 1.4 trillion dollars of additional financial assets through open market operations and through acceptance of new forms of collateral for short term loans (see *Domestic Open Market Operations During 2008*, FRB-NY, chart 2).

As a consequence of these and related actions, the monetary base has effectively doubled from November 2008 through January 2009 and the credit crisis has been far milder in the banking sector than in the non-banking finance sector, although substantial new support was also provided for latter. Commercial credit by all commercial banks rose from 9.2 trillion to 9.9 trillion through 2008, with only a minor decline in the last two months of 2008. Interest rates on AAA commercial bonds remained in their historically low range 5%–6% range for 2008 (except in November). Interest rates on BAA bonds, however, rose by about 2% during 2008 (from 6.5% to 8.4%), which suggests that credit risks are being more stringently priced, but the new rates are not higher than in past decades.

⁵³ Relatively safe mortgage-backed securities are evidently being bought as open market operations, and a relatively high price has been paid for the first purchases of insured mortgages (FRB-NY FAQ, December 3, 2008). As of February 4, 2009, the New York Federal Reserve Bank held \$29.9 billion (par) of Fannie Mae, Freddie Mac, and FHLB mortgage-backed securities (See the Federal Reserve Bank of New York's *System Open Market Account Holdings*).

Government support for GSE securities is indicated in the Treasury's press release of November 12, 2008, which states that: "Eight weeks ago, Treasury took responsibility for supporting the agency debt securities and the agency MBS through a preferred stock purchase agreement that guarantees a positive net worth in each enterprise—effectively, a guarantee on GSE debt and agency MBS. We also established a credit facility to provide the GSEs the strongest possible liquidity backstop. As the enterprises go through this difficult housing correction we will, as needed and promised, purchase preferred shares under the terms of that agreement. The U.S. government honors its commitments, and investors can bank on it."



VI. Political and Economic Conclusions and Suggestions

Given a perceived crisis, the government responds rapidly with policies that are largely consistent with public choice predictions. Voter concerns (and expected concerns) induce Congress and Presidential action. The bureaucracy, in turn, makes use of its bargaining power to secure discretion over resources, while addressing (at least somewhat) the perceived problems of the day. Crisis management, however, remains as problematic as ever, because decisions must be made quickly in poorly informed circumstances.

The policy response to the recession of 2008 and the end of an asset bubble in two important subclasses of financial assets suggests that the term “crisis” remains as overused as ever, although it remains as effective at inducing rapid responses from government. Crises by their nature are unexpected unique events that require rapid adjustment. A good deal of the economics behind the present recession has been a straightforward response by consumers to reduced wealth and by firms to reduced expected

sales. Much of the policy response has also been fairly typical. The federal reserve reduced interest rates and Congress extended benefits for programs for the unemployed and passed legislation that tends to increase government spending and deficits. Bank failures were addressed by the FDIC through mergers, some of which were subsidized with FDIC reserves.

The crisis in the non-banking portion of the finance industry was unexpected, because risks associated with mortgage-backed securities were under estimated and underpriced. The decline in the market for mortgage-backed securities, thus, introduced new unexpected problems. Those problems could be regarded as a crisis, because they undermined the balance sheets of a broad range of financial firms, threatening many with bankruptcy, and reduced flows of credit through non-bank channels. Credit flows have, however, continued to increase in the banking sector, although these more conventional channels have not (yet) perfectly substituted for non-bank credit flows.

Reducing the likelihood of such future “credit crises” requires regulatory and risk assessment regimes that (1) take greater account of the internationalization of financial markets and its greater speed and interconnectness, and (2) produce greater transparency about the nature of the assets in various derivatives, about the size of these markets, and their capitalization. Markets cannot do their information aggregating magic, unless at least accurate information is widely available about risks and returns for all the assets in the market. Even honest “insiders” cannot do it all.

The crisis in mortgage-backed securities and other similar assets also implies that some more aggressive application of antitrust law in the financial sector might also be contemplated for the future. When a few firms with poor management or mistaken theories can cause the world’s entire financial system to become dysfunctional, it becomes prudent to diversify “our” portfolio of managers by shrinking the average size and increasing the number of financial firms. (Many investment firms also evidently need better internal regulation and incentive structures. Both high rollers and the winner’s curse can ruin great financial firms.) More, rather than less, stringent capital requirements would also help mitigate this problem.

In addition, there are economic theory improvements that seem necessary if we are to fully understand how the new securities markets operate. For example, many macroeconomists tend to think of credit as a monetary phenomena, because our financial system has been until recently grounded in “money-like” assets. However, the securitization of mortgages provided a new real estate base for credit, which has outstripped the money-based banking system for the past 10 or 20 years. The fall in real estate prices here and in several other places around the world has reduced the real estate equivalent of the monetary base and induced a great reduction in the supply of credit anchored on real estate. The Fed can effectively deal with the money-based pool of credit, whose base has been expanding enormously. Whether it can do so enough to offset the credit multiplier effects in the real estate-based credit pool and of a 20% reduction in the financial wealth portfolio of Americans is not obvious.⁵⁴

The experience of 2008 also demonstrates both the merits of standing institutions and their limits. Much of the positive response (risk and recession reducing) policies emerged from standing institutions (Federal Reserve Bank, FDIC, and SEC), while the least effective policies have emerged from crisis management (e.g., the first stimulus package and the bailout program). However, standing policies also played a role in framing the market processes that generated the risks and crisis. The creation and use of large players in the mortgage markets to subsidize low-income housing clearly increased the fragility of the market for mortgage-backed securities by inducing more and more risky mortgages to be underwritten and implicitly insured by taxpayers, while providing implicit off-budget guarantees for Fannie and Freddie commitments without much oversight or review. The regulatory agencies that assure a good deal of transparency in “old fashioned” financial markets were not “upgraded” to assure equivalent transparency in the new financial markets that emerged in the 1990s. This allowed a good deal of financial innovation to take place, but with too many “trust” transactions taking place, without sufficient independent

⁵⁴ The lower capital requirements of the less regulated sector that relies on those instruments implies a larger credit-multiplier effect, which seems evident in the greatly reduced prices for mortgage-backed and other credit-backed securities.

verifications of the associated risks (Jenkinson 2008). The result of failures in these long-standing policies is likely to cost taxpayers more than a trillion dollars.

Shifting government promises “off budget” increases fiscal illusion by making such implicit insurance costs more difficult to assess and so reduces analysis of those programs by persons inside and outside government. Unfortunately, this seems to be the purpose of providing so many government guarantees off-budget. Most of us would be better off if there were a standing, systematic method of accounting for and reporting off-budget obligations, as has proven to be the case for firms in private markets (after Enron). Such long-term accounting responsibilities could be added to the General Accounting Office’s and Congressional Budget Office’s lists of responsibilities. Some institutionalized method of formally reviewing long-term policies that expose us to major risks would also be useful, so that policies can be revised in the light of day without facing a crisis.

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