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to Stabilize Fannie Mae and Freddie Mac

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Abstract: Fannie Mae and Freddie Mac are government-sponsored enterprises that play a central role in U.S. residential mortgage markets. In recent years, policymakers became increasingly concerned about the size and risk-taking incentives of these two institutions. In September 2008, the federal government intervened to stabilize Fannie Mae and Freddie Mac in an effort to ensure the reliability of residential mortgage finance in the wake of the subprime mortgage crisis. This paper describes the sources of financial distress at Fannie Mae and Freddie Mac, outlines the measures taken by the federal government, and presents some evidence about the effectiveness of these actions. Looking ahead, policymakers will need to consider the future of Fannie Mae and Freddie Mac as well as the appropriate scope of public sector activities in primary and secondary mortgage markets.

JEL classification: G21, G28

Key words: government-sponsored enterprises, mortgages, securitization, conservatorship

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The 2008 Federal Intervention to Stabilize Fannie Mae and Freddie Mac

1. Introduction

Fannie Mae and Freddie Mac are enormous government-sponsored enterprises, or GSEs, that play a central role in U.S. secondary mortgage markets.¹ Together, as of mid-year 2008, the two institutions held or guaranteed about \$5.5 trillion in U.S. residential mortgage debt – slightly more than the \$5.3 trillion in publicly held U.S. Treasury debt at that time.

Both Fannie Mae and Freddie Mac have been the subject of a great deal of attention and controversy in recent years. Each GSE has: faced accounting scandals; been criticized for not sufficiently targeting their activities toward low-and-moderate income communities and households; and had policymakers voice concerns that they posed a systemic risk to the global financial system.²

At the heart of these (and other) issues is the GSEs' incentive structure. Fannie Mae and Freddie Mac are publicly traded financial institutions that were created by Acts of Congress in order to fulfill a public mission. These charter Acts imbue the two GSEs with important competitive advantages (most notably, implied public-sector support for

¹ “Fannie Mae” and “Freddie Mac” are widely used nicknames for the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation, respectively.

² For a discussion of the accounting problems at Fannie Mae and Freddie Mac, see the results of special regulatory examination reports at: <<http://www.ofheo.gov/Regulations.aspx?Nav=199>>. For an analysis of the GSEs funding of mortgages for low-income borrowers and underserved areas earlier this decade see, for example, Brown (2001) and Bunce (2002). Former Federal Reserve Chairman Greenspan (2005), among others, described the systemic risks posed by the GSEs in testimony before the U.S. Congress.

their obligations) and define the scope of their permissible activities.³ Over time, Fannie Mae and Freddie Mac became exceptionally large, profitable, and politically powerful.

Recently, however, Fannie Mae's and Freddie Mac's singular exposure to U.S. residential mortgages – coupled with a thin capital base -- resulted in both of these GSEs facing financial distress. U.S. housing markets became increasingly stressed through 2007 and resulted in severe disruption to mortgage markets. Secondary market liquidity for mortgages not backed by Fannie Mae and Freddie Mac almost entirely dried-up; and GSE-backed mortgages saw liquidity pressure as evidenced by unusually wide yield spreads. These developments resulted in a significant reduction in the availability and cost of mortgage credit for homeowners.

As a result of these developments, the federal government was compelled to intervene to stabilize both GSEs and mortgage markets more generally. On September 7, 2008, Fannie Mae and Freddie Mac were placed into conservatorship by their federal regulator: the Federal Housing Finance Agency (FHFA). Concurrent with this action, the U.S. Treasury entered into “senior preferred stock agreements” with each institution obligating the federal government to inject up to as much as \$100 billion each in Fannie Mae and Freddie Mac. The Treasury also established a mortgage-backed securities purchase facility and a standing credit facility in order to support the residential mortgage market.

The actions of the FHFA and the Treasury last September stabilized Fannie Mae and Freddie Mac by effectively guaranteeing their debt and mortgage-backed

³ The charter acts may be found at 12 U.S.C. § 1716 et seq. (Fannie Mae) and 12 U.S.C. § 1451 et seq. (Freddie Mac).

obligations.⁴ A subsequent announcement by the Federal Reserve that it would purchase substantial quantities of Fannie Mae and Freddie Mac debt and mortgage-backed securities during 2009 has further acted to improve liquidity in those markets and bring yield spreads back to historical norms.⁵

The remainder of this paper will proceed as follows. Section II provides some background information about Fannie Mae and Freddie Mac and Section III describes the sources of financial distress facing these two GSEs. Section IV outlines the steps taken by the federal government to stabilize these systemically important institutions and also presents some evidence relating to the effectiveness of these and other recent federal interventions into secondary mortgage markets. Some concluding remarks are offered in Section V.

II. Who are Fannie Mae and Freddie Mac?

Fannie Mae's roots are in the Great Depression. The National Mortgage Association of Washington, as Fannie Mae was first known, was created within the federal government in 1938. Its business was to purchase mortgages insured by the Federal Housing Administration, or FHA, from financial institutions around the United

⁴ By law, the obligations of Fannie Mae and Freddie Mac must state that they are not guaranteed by the federal government. See 12 U.S.C. § 1719(b),(d)-(e) (Fannie Mae) and 12 U.S.C. § 1455(h)(1) (Freddie Mac). Nevertheless, as discussed further below, financial markets have long viewed the GSEs' obligations as carrying an "implicit" government guarantee. The federal government's recent actions were intended to send a strong signal to financial markets that the U.S. would protect the interests of holders of Fannie Mae and Freddie Mac obligations on an ongoing basis.

⁵ The maturities of new debt issues by Fannie Mae and Freddie Mac also increased as a result of these policy actions. Nevertheless, the GSE's access to long-term finance remains limited as it has been for all corporate borrowers.

States.⁶ Fannie Mae was subsequently spun-off in 1968 as a publicly traded company as a way to reduce the federal debt during the Vietnam War.⁷ By contrast, Congress in 1970 created Freddie Mac, which was owned by the 12 Federal Home Loan Banks and the savings and loans that were members of these Banks.⁸ Freddie Mac became publicly traded in 1989 as part of the thrift crisis resolution.⁹

Hence, today Fannie Mae and Freddie Mac are quasi-public/quasi-private financial institutions. On one hand, each GSE was created by an Act of Congress and is broadly charged with providing liquidity and stability to the secondary residential mortgage market; with a particular emphasis on housing for low- and moderate-income households and/or in areas viewed as historically underserved (central cities and rural areas).¹⁰ On the other hand, Fannie Mae and Freddie Mac have been funded with private capital and their shares are traded on the New York Stock Exchange. This unusual governance arrangement has resulted in two, sometimes opposing, corporate objectives:

⁶ According to Frame and White (2005), by issuing debt and purchasing and holding FHA-insured residential mortgages, Fannie Mae was able to expand the available pool of finance to support housing and also to provide a degree of unification to mortgage markets. During this time, mortgage markets were localized for technological reasons as well as for reasons rooted in laws that prohibited interstate banking and restricted intra-state bank branches in many states during most of the twentieth century.

⁷ Fannie Mae was replaced within the federal government by the Government National Mortgage Association, or “Ginnie Mae,” an agency within the Department of Housing and Urban Development, or HUD, that guarantees mortgage-backed securities that have as their underlying assets residential mortgages that are insured primarily by the FHA or by the Department of Veterans Affairs (formerly the Veterans Administration, or VA).

⁸ See Flannery and Frame (2006) for a history and overview of the Federal Home Loan Bank System, which those authors refer to as the “other” housing GSE.

⁹ According to Frame and White (2005), a major motivation for the conversion of Freddie Mac to a publicly traded company was the belief that a wider potential share-holding public would raise the price of the shares held by the then ailing S&L industry and thus improve the balance sheets of the latter.

¹⁰ Fannie Mae’s mission or “statement of purpose” can be found at 12 U.S.C. § 1716. A similar statement for Freddie Mac is located at 12 U.S.C. § 1451 [Note].

fulfilling certain social policy goals (and assisting related political constituencies) and maximizing shareholder value.

By law, Fannie Mae and Freddie Mac are limited to operating in the secondary conforming mortgage market and their activities take two broad forms.¹¹ The GSEs' "credit guarantee" businesses involve the creation and credit enhancement of mortgage-backed securities, or MBS. This is most often done through each institution's "swap programs," whereby mortgage originators present pools of qualifying mortgages and then exchange them for MBS that represent an interest in the same pool. The GSEs agree to ensure the timely payment of principal and interest on the MBS in exchange for a monthly premium known as a "guarantee fee". (This process is commonly referred to as "securitization" although the credit enhancement structure is much simpler than that typically used by investment banks for similar transformations of loan pools into tradable securities.) GSE-backed MBS are very liquid (relative to other asset-backed securities and loan pools) and this liquidity facilitates more efficient balance sheet management for financial institutions.

Fannie Mae's and Freddie Mac's second line of business is "portfolio investment." This involves the two GSEs holding MBS that they have purchased in the open market, whole mortgages (purchased from originators under their "cash programs"), and liquid fixed-income investment securities. Fannie Mae and Freddie Mac largely fund these assets with so-called "Federal Agency" debt. The two GSEs have historically been

¹¹ See 12 U.S.C. 1719 (Fannie Mae) and 12 U.S.C. 1454 (Freddie Mac). Conforming mortgages are those with balances below the legal limits on the size of residential mortgages that Fannie Mae and Freddie Mac can buy. For 2009, the conforming loan limit for single-family properties is \$417,000, but can be as high as \$625,500 in certain high-cost areas. See <<http://www.ofheo.gov/Regulations.aspx?Nav=128>>.

highly leveraged with total accounting (book) equity equal to less than four percent of total assets.¹²

While Fannie Mae's and Freddie Mac's federal charters limit the scope of their business activities to the secondary residential mortgage market, they also provide them with a number of advantages that result in lower operating and funding costs.¹³ First, both GSEs are exempt from state and local income taxes. Second, the Secretary of the Treasury has the authority to purchase up to \$2.25 billion of Fannie Mae's and Freddie Mac's securities, which is often referred to as their federal line-of-credit. Third, the GSEs' issue "government securities," as classified under the Securities Exchange Act of 1934, which in practice means that their securities are eligible for use as collateral for public deposits, for purchase by the Federal Reserve in open-market operations, and for unlimited investment by federally insured depository institutions.¹⁴ Fourth, Fannie Mae and Freddie Mac use the Federal Reserve as their fiscal agent, which means that their securities are issued and transferred using the same system as U.S. Treasury borrowings.

The features of Fannie Mae's and Freddie Mac's federal charters, coupled with some past government actions, has long served to create a perception in financial markets that the federal government "implicitly guarantees" the GSEs' financial obligations.¹⁵ This belief,

¹² By contrast, commercial banks (as a group) maintain a ratio of total equity to total assets of about ten percent.

¹³ See, for example, U.S. Congressional Budget Office (1996, 2001) for further discussion.

¹⁴ A further implication is that they are exempt from the provisions of many state investor protection laws and the registration and reporting requirements and fees of the Securities and Exchange Commission (SEC). Notably, Fannie Mae voluntarily registered its stock with the SEC in March 2003 and Freddie Mac did the same in July 2008.

¹⁵ This perception arises despite explicit language on each GSEs' securities that they are not obligations of the federal government. U.S. General Accounting Office (1990, 90–91) discusses two past episodes during which the federal government assisted troubled GSEs. First, during the late 1970s and early 1980s, Fannie Mae was insolvent on a market value basis and benefited from supervisory forbearance. Second, in the late

in turn, allows Fannie Mae and Freddie Mac to issue debt at interest rates that are far more favorable (better than AAA) than their stand-alone financial strength ratings would warrant.¹⁶ This borrowing advantage has been estimated empirically to be about 40 basis points; although such estimates vary depending upon the maturity and credit rating of the comparison bonds and the sample period studied.¹⁷ The perceived implied guarantee also affects the interest rates on MBS that Fannie Mae and Freddie Mac issue, although the advantage is difficult to estimate.¹⁸

The perception of an implied federal guarantee conveys a subsidy on Fannie Mae and Freddie Mac, part of which is translated into lower mortgage rates for consumers. In particular, Fannie Mae's and Freddie Mac's activities result in conforming mortgages' carrying lower interest rates than "jumbo mortgages" with principal amounts above the conforming loan limit. Several econometric studies estimated the effect of GSEs on conforming mortgage rates; typically finding the interest rate differential to be about 20-25 basis points with variation in the estimates depending on the empirical specification, data sample, and time period studied.¹⁹

1980s, the Farm Credit System (another GSE serving the agricultural sector) required a taxpayer bailout totaling \$4 billion.

¹⁶ Fannie Mae and Freddie Mac long received AA- ratings from Standard and Poor's in terms of their "risk to the government". However, these ratings incorporated whatever government support or intervention the entity typically enjoyed during the normal course of business. See Frame and Wall (2002) for a discussion.

¹⁷ See Ambrose and Warga (1996, 2002), Nothaft, Pearce, and Stevanovic (2002), and Passmore, Sherlund, and Burgess (2005).

¹⁸ U.S. Congressional Budget Office (1996, 2001) reported an MBS advantage of 30 basis points, but Passmore (2005, p. 9) critiques the approach that generates this estimate and alternatively argues that the advantage is in the range of 0-6 basis points. See also Heuson, Passmore, and Sparks (2001) and Passmore, Sparks, and Ingpen (2002) for theoretical analyses of the relationship between GSE securitization and mortgage interest rates.

¹⁹ For an introduction to this literature, see U.S. Congressional Budget Office (2001), McKenzie (2002), Passmore (2005), and Ambrose, LaCour-Little and Sanders (2004), and the references in these papers.

Fannie Mae and Freddie Mac have been largely free from market constraints on their size and risk because of the market perception of an implied federal guarantee of their obligations. The GSEs have become enormous financial institutions – both in absolute terms and relative to the mortgage market as a whole. As of June 30, 2008, Fannie Mae and Freddie Mac together held almost \$1.8 trillion in assets (almost entirely MBS and whole mortgages) and had another \$3.7 trillion in net credit guarantees outstanding – i.e., net of those held in their own portfolios. This \$5.5 trillion in obligations represented almost half of all residential mortgage debt outstanding at that time. The two GSEs have also grown much more rapidly than the residential mortgage market as a whole over the past three decades. For example, in 1980, Fannie Mae's and Freddie Mac's share of residential mortgage debt outstanding was only 7 percent (Frame and White, 2005).

The perceived implied federal guarantee also distorts the GSEs' risk-taking incentives in a way that may increase the probability of financial distress. (A similar situation is well-understood in the context of federally insured depository institutions.) The idea is that a federal guarantee induces debt holders to accept artificially low interest rates irrespective regardless of a GSE's true default risk. A GSE can then increase the riskiness of its activities – which promise high returns to equity holders if the risks turn out well – without needing to share those rewards with debt holders in the form of higher coupon rates on their debt. The GSEs' equity holders thus perceive a greater-than-normal benefit from risk-taking.

In order to maximize benefits to homebuyers and minimize taxpayer risk, the federal government imposes a two-part regulatory structure on Fannie Mae and Freddie

Mac. The U.S. Department of Housing and Urban Development, or HUD, long regulated the GSEs for compliance with their mission of enhancing the availability of mortgage credit by creating and maintaining a secondary market for residential mortgages. HUD was also responsible for establishing goals (and monitoring compliance with the goals) for Fannie Mae's and Freddie Mac's financing of housing for low- and moderate-income families, housing in central cities, and other "underserved areas". Congress formally established a safety-and-soundness regulatory and supervisory regime for Fannie Mae and Freddie Mac in 1992. The Office of Federal Housing Enterprise Oversight, or OFHEO, was authorized to set risk-based capital standards (subject to important statutory limitations), conduct examinations, and take enforcement actions if unsafe or unsound financial or management practices were identified.²⁰ Unfortunately, OFHEO's structure and authorities proved deficient in many respects.²¹

GSE regulatory reform was an active legislative item this decade following the accounting scandals at both Fannie Mae (2004) and Freddie Mac (2003). However, it was not until the GSEs came under serious financial strain that reform was passed as part of the Housing and Economic Recovery Act of 2008. The new law created the Federal Housing Finance Agency (FHFA), which consolidated the mission and safety and soundness oversight for Fannie Mae, Freddie Mac, and the Federal Home Loan Bank

²⁰ Prior to the Federal Housing Enterprises Financial Safety and Soundness Act of 1992, HUD maintained exclusive regulatory oversight responsibilities over Fannie Mae and (for 1989-1992) Freddie Mac. Prior to the passage of the Financial Institutions Reform, Recovery and Enforcement Act of 1989, Freddie Mac was the responsibility of the Federal Home Loan Bank Board.

²¹ As discussed in Eisenbeis, Frame, and Wall (2007), OFHEO supervised only two institutions making it prone to regulatory capture. The agency was also an independent arm of HUD, which is more focused on promoting housing than contending with GSE safety-and-soundness. OFHEO was also subject to Congress' annual appropriations process and sometimes fell victim to political meddling. With respect to supervisory tools, OFHEO lacked the authority both to adjust minimum capital standards and to resolve a failure of either Fannie Mae or Freddie Mac.

System.²² The establishment of the FHFA reflects an improvement in GSE safety-and-soundness supervision and regulation since the new regulator (among other things): (1) no longer requires Congressional approval for its budget, (2) has authority to set minimum leverage and risk-based capital requirements, and (3) has receivership powers.

III. Sources of Financial Distress

U.S. housing and mortgage markets became increasingly stressed during 2007 and 2008; largely as a result of house price declines in many parts of the country. Between 2007:Q2 and 2008:Q3 house prices declined 18.0 percent on a nationwide basis based on the S&P/Case-Shiller composite index. By contrast, over the same period, the OFHEO nationwide house price index fell 4.5 percent. While the magnitudes of decline in these repeat-sales indices differ – owing to coverage differences by geography, loan size, and loan quality – this national decline in house prices is unusual.²³

House price declines resulted in a large number of borrowers having mortgage balances that exceeded the value of their homes -- a condition often referred to as “negative equity”. Economic theory and evidence suggest that negative equity is a necessary condition for mortgage default.²⁴ Borrowers may face income disruptions that temporarily limit their ability to pay and have neither sufficient savings nor home equity to cover monthly living expenses. Other borrowers may default after finding themselves

²² By doing so, the FHFA succeeds the OFHEO, HUD’s GSE mission regulation, and the Federal Housing Finance Board.

²³ Information about the S&P/Case-Shiller house price index can be found at: <http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices_csmahp/0,0,0,0,0,0,0,0,1,1,0,0,0,0,0.html>. Information about the OFHEO house price index can be found at: <www.ofheo.gov>. See Leventis (2007) for an analysis of the differences between the two indices.

²⁴ See Foote, Gerardi, and Willen (2008) and references therein.

in a situation where their expectations of future house prices are such that they see little hope of attaining positive equity in the foreseeable future. In any event, the house price declines witnessed in 2007 and 2008 have resulted in a tremendous wave of mortgage defaults and foreclosures that, in turn, has imperiled financial institutions with significant credit exposure to U.S. residential real estate – particularly exposure to rapidly declining markets and/or to riskier subprime borrowers and investors. Fannie Mae and Freddie Mac certainly fit this bill, as did thrift institutions operating on a nationwide basis like Countrywide and Washington Mutual.

Fannie Mae and Freddie Mac were not only singularly exposed to U.S. residential mortgages, but also operated with a high degree of leverage, owing to a statutory minimum capital requirement of only 2.5 percent for on-balance-sheet assets and 0.45 percent for net off-balance sheet credit guarantees. Concerns about the GSEs' concentration of residential mortgage-related risk and leverage were a consistent theme raised by Federal Reserve officials throughout this decade (e.g., Greenspan 2005; Bernanke 2007).

As of mid-year 2007 (and prior to the beginning of the financial crisis), Fannie Mae and Freddie Mac maintained book equity values of \$39.7 billion and \$25.8 billion, respectively. This combined \$65.5 billion in equity stood against almost \$1.7 trillion in combined assets (3.9 percent capital-to-assets ratio) and another \$3.2 trillion in net off-balance sheet credit guarantees. One year later, the two GSEs had expanded to almost \$1.8 trillion in combined assets and \$3.7 trillion in combined net off-balance sheet credit guarantees; but their capital cushions had begun to erode. During those four intervening quarters, Fannie Mae posted \$9.5 billion in losses (although it did raise \$7.0 billion in

new equity) and Freddie Mac lost another \$4.7 billion. Moreover, mark-to-market accounting losses on ‘available-for-sale’ mortgage-backed securities substantially reduced equity through negative entries to ‘accumulated other comprehensive income’ on the GSE’s balance sheets. As of June 30, 2008, Fannie Mae and Freddie Mac reported book values of equity of \$41.2 billion and \$12.9 billion, respectively. Perhaps more telling was that the GSEs’ self-reported fair values of equity (i.e., the market value of assets less the market value of liabilities) as of the same date were \$12.5 billion (Fannie Mae) and -\$5.6 billion (Freddie Mac).²⁵

During 2008, significant problems emerged in both of Fannie Mae’s and Freddie Mac’s business lines – credit guarantees and portfolio investment. The credit guarantee businesses incurred rapidly increasing expenses, largely owing to loan loss provisions. During 2006, Fannie Mae and Freddie Mac together incurred about \$1.1 billion in credit-related expenses. These expenses rose to \$1.6 billion during the first half of 2007 alone; and then jumped markedly to \$6.5 billion during the second half of that year. For the first half of 2008, Fannie Mae and Freddie Mac again saw credit-related expenses almost double to \$12.8 billion; and for 2008:Q3 alone they totaled \$15.3 billion. Given that the ongoing decline in house prices, mounting foreclosures, and the weakening global economy, it is likely that the GSEs credit losses will remain elevated for some time.

Fannie Mae’s and Freddie Mac’s portfolio investment businesses also suffered from mark-to-market losses on mortgage-backed securities held either in trading accounts or as “available for sale”. (Under Generally Accepted Accounting Principles, or GAAP,

²⁵ According to Financial Accounting Statement (FAS) Number 157, “fair value” is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. For the GSEs’ fair value balance sheets, see: <http://www.fanniemae.com/media/pdf/newsreleases/q22008_release.pdf> (Page 17) and <http://www.freddiemac.com/investors/er/pdf/2008fin-tbls_080608.pdf> (Page 13).

securities classified as “hold-to-maturity” are not marked-to-market unless there is an “other than temporary impairment” to value.) This was caused by an unusual and unforeseen widening of the yield spread between Fannie Mae and Freddie Mac-guaranteed MBS and 10-year Treasuries. Figure 1 presents the current coupon spreads on 30-year fixed-rate mortgages (to 10-year Treasuries) for Fannie Mae and Freddie Mac between January 2007 and July 2008. The observed widening is believed to be primarily caused by the financial market turbulence, which led to a heightened demand for U.S. Treasury obligations that was reflected by lower Treasury yields. However, the aforementioned credit problems at Fannie Mae and Freddie Mac also likely played a role by pushing-up required yields on the GSEs’ MBS.

Mark-to-market losses also occurred in each GSEs’ holdings of “private-label” mortgage securities backed by subprime and Alt-A mortgages.²⁶ As of mid-year 2007, the two GSEs held \$252.7 billion in mortgage securities backed by subprime and Alt-A mortgages -- virtually all of which were rated AAA.²⁷ The GSEs’ holdings of such securities likely reflected at least two factors. One is the distorted risk-taking incentives faced by Fannie Mae and Freddie Mac because of the perceived implied federal guarantee of their obligations. Another factor was the HUD-regulated affordable housing goals that mandated a certain percent of each institution’s business devoted to affordable

²⁶ Private-label mortgage securities are those not guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae. Subprime mortgages refer to those loans made to borrowers with riskier credit characteristics, such as measured by credit scores, loan-to-value ratios, or debt-to-income ratios. Alt-A mortgages refer to loan made with little or no documentation.

²⁷ Data provided in U.S. Office of Federal Housing Enterprise Oversight (2008) indicate that, of this amount, Fannie Mae accounted for \$81.4 billion and Freddie Mac \$174.3 billion.

housing.²⁸ Private-label MBS held by Fannie Mae and Freddie Mac were typically backed by a greater concentration of affordable housing goal-eligible loans than their own MBS.

During the summer of 2008, investors became increasingly concerned about the financial condition of both Fannie Mae and Freddie Mac. Figure 2 illustrates how the GSEs' share prices fell during that time (and following an even more dramatic decline during the fall of 2007). Debt investors also sought clarity from the federal government about whether bondholders would be shielded from any losses that might ultimately arise. Figure 3 shows prices for credit default swaps on Fannie Mae and Freddie Mac senior and subordinated debt between January 2007 and July 2008. Of particular note are the spikes in March 2008 (just prior to the Bear Stearns rescue) and then again during June and July 2008. Holders of Fannie Mae and Freddie Mac senior debt (and MBS) appear to have only reacted modestly to the widespread perception of GSE financial distress. However, one especially significant and risk-averse investor constituency, foreign official institutions, began decreasing their holdings of Federal Agency obligations at that time. Figure 4 presents relevant weekly data based on holdings in custody accounts at the Federal Reserve Bank of New York.²⁹

²⁸ The GSEs' housing goals were established in the Federal Housing Enterprises Financial Safety and Soundness Act of 1992. The law required HUD to set annual housing goals for Fannie Mae and Freddie Mac and to monitor the GSEs' performance in meeting those goals. This responsibility was transferred to the FHFA as part of the Housing and Economic Recovery Act of 2008.

²⁹ Fannie Mae and Freddie Mac account for about 70 percent of all Federal Agency obligations outstanding. The other key issuer is the Federal Home Loan Bank System.

The data comes from a memorandum to the Federal Reserve's H.4.1 release: Factors Affecting Reserve Balances. Quarterly Flow of Funds data (Table L.107) corroborates the trend illustrated by showing that foreign official holdings of Federal Agency obligations peaked in 2008:Q2. Interestingly, the same data indicates that holdings in foreign private accounts peaked sooner – as of 2007:Q4.

In response to increasing concerns that Fannie Mae and Freddie Mac would be unable to rollover their debt, former U.S. Treasury Secretary Henry Paulson requested that the federal government be given broad authority to invest in the two GSEs. That provision was included in the Housing and Economic Recovery Act that passed in July 2008.

IV. Federal Intervention

According to former Treasury Secretary Henry Paulson (2009), immediately following the passage of the new housing legislation, the Treasury began a comprehensive financial review of Fannie Mae and Freddie Mac in conjunction with the FHFA, the Federal Reserve, and Morgan Stanley.³⁰ The GSEs believed in their solvency and thought that any capital deficiency below regulatory minimums could be rectified by significant asset sales. Given that U.S. mortgage markets had already been disrupted for almost one year at that time, the prospect of Fannie Mae and Freddie Mac retrenching was not an appealing policy option.

In early August 2008, both Fannie Mae and Freddie Mac released their second quarter earnings. As of June 30, 2008 both GSEs were both technically solvent insofar as the book value of their equity capital was positive. (At that time, Fannie Mae had \$41.2 billion in book equity and Freddie Mac \$12.9 billion.) However, there was a compelling case that -- on an economic basis -- both were actually insolvent. First, as mentioned previously, the GSEs' reported fair values of equity were much lower -- and in Freddie Mac's case fair value was actually negative. Second, both institutions were carrying

³⁰ Morgan Stanley was hired by the Treasury to provide market analysis and financial expertise in connection with its authorities to invest in Fannie Mae and Freddie Mac (e.g., Solomon and Paletta, 2008).

relatively large “tax deferred assets” to allow them to reduce future income taxes. These amounts were \$20.6 billion for Fannie Mae and \$18.4 billion for Freddie Mac. If Fannie Mae and Freddie Mac were subject to the bank regulatory standard for tax-deferred assets – and in light of their extremely weak near-term earnings prospects -- those assets would have been written-off and taken total book equity down to \$20.6 billion (Fannie Mae) and -\$5.5 billion (Freddie Mac).³¹

These facts, taken together with deteriorating mortgage market conditions and a view that the GSEs had been especially conservative in estimating expected future losses, made a compelling case for swift federal action.³² And on September 7, 2008, FHFA Director James Lockhart, Treasury Secretary Henry Paulson, and Federal Reserve Chairman Ben Bernanke outlined a plan to stabilize the residential mortgage finance market. This included: (1) placing both Fannie Mae and Freddie Mac into conservatorship; (2) having the Treasury enter into senior preferred stock agreements with both GSEs; and (3) establishing two new Treasury-operated liquidity facilities aimed at supporting the residential mortgage market -- a mortgage-backed securities purchase facility and a standing credit facility.

The reasoning for the imposition of the conservatorships was that both Fannie Mae and Freddie Mac were financially distressed and could not perform their public missions – that is, providing counter-cyclical support to mortgage markets and financing affordable housing. By becoming a conservator, the FHFA assumed the responsibilities

³¹ While acceptable under GAAP, bank regulators require institutions to write-off all but the lesser of: (1) the amount of tax deferred assets the institution expects to realize in the next 12 months; or (2) 10 percent of Tier 1 capital. For example, for state member banks, see: 12 C.F.R. 208 Appendix A, Section II(B)(4).

³² Morgenstern and Duhigg (2008) report that Morgan Stanley (working on behalf of the Treasury) concluded that both GSEs had overstated their financial condition by postponing various types of losses.

of the directors, officers, and shareholders of both Fannie Mae and Freddie Mac with the purpose of conserving each GSEs' assets and to rehabilitate them into safe-and-sound condition. New CEOs were named to act as agents of the conservator.

Concurrent with the conservatorships, the Treasury entered into a senior preferred stock agreement with each GSE.³³ The purpose of the agreements is to ensure that Fannie Mae and Freddie Mac maintain positive net worth going forward. If the regulator determines that either institution's liabilities exceed assets under GAAP, the Treasury will contribute cash capital equal to the difference in exchange for senior preferred stock. Each of these agreements is of an indefinite term and for up to \$100 billion. After its 2008:Q3 earnings release, Freddie Mac drew \$13.8 billion. Both GSEs are expected to require significant Treasury capital infusions after the announcement of their respective year-end 2008 financials. Preliminary figures suggest that Fannie Mae will require as much as \$16 billion and Freddie Mac as much as another \$35 billion (Kopecki 2009).

The senior preferred stock accrues dividends at 10 percent per year; a rate that steps up to 12 percent if in any quarter dividends are not paid in cash. Also, in exchange for the senior preferred stock agreements, the Treasury received from each Fannie Mae and Freddie Mac: (1) \$1 billion of senior preferred shares; (2) warrants for the purchase of common stock representing 79.9% of each institution on a fully diluted basis; and (3) a quarterly commitment fee (starting March 31, 2010) to be determined by the Treasury and the FHFA (as conservator) in consultation with the Federal Reserve.

The senior preferred stock agreements require each GSE to begin shrinking their retained investment portfolios in 2010 at a rate of 10 percent per year until they each fall below \$250 billion. This provision was intended to assuage policymaker concerns about

³³ See <http://ustreas.gov/press/releases/reports/pspa_factsheet_090708%20hp1128.pdf>.

the GSEs' investment portfolios, which had become widely viewed as posing a systemic risk to the financial system and providing little social welfare benefit.³⁴ The senior preferred stock agreements also included various covenants. Specifically, Treasury approval is required before: (1) purchasing, redeeming or issuing any capital stock or paying dividends; (2) terminating conservatorship other than in connection with receivership; (3) increasing debt to greater than 110 percent of that outstanding as of June 30, 2008; and (4) acquiring, consolidating, or merging into another entity.

The Treasury's GSE credit facility is for Fannie Mae, Freddie Mac, and the Federal Home Loan Bank System and is operated by the Federal Reserve Bank of New York.³⁵ As of year-end 2008, no credit had been extended through this program. The MBS purchase program, by contrast, had accumulated \$71.5 billion.³⁶ Consistent with the GSE investment provisions in the Housing and Economic Recovery Act of 2008, credit extensions and MBS purchases must be made by year-end 2009 (although previously purchased securities may be held beyond that time).

The intent of the senior preferred stock agreements and Treasury liquidity facilities was to provide comfort to Fannie Mae's and Freddie Mac's senior and subordinate creditors and holders of mortgage-backed securities.³⁷ By extension, these

³⁴ See Eisenbeis, Frame, and Wall (2007) for an overview of the policy concerns and the related literature.

³⁵ Credit must be collateralized, can be extended for one-to-four weeks, and is priced at LIBOR plus 50 basis points. Eligible collateral is limited to Fannie Mae and Freddie Mac mortgage-backed securities and Federal Home Loan Bank advances.

³⁶ See <<http://www.fms.treas.gov/mts/index.html>>.

³⁷ On September 11, 2008, the Treasury issued a press release intended to clarify the status of the senior preferred stock agreements. See <<http://www.ustreas.gov/press/releases/hp1131.htm>>. The Treasury affirmed that the agreements are permanent and that legislative efforts to abrogate them would give rise to government liability to parties suing to enforce their rights under the agreements. The senior preferred stock agreements may only be terminated by either: 1) full funding by the Treasury (\$100 billion); 2) GSE

actions were expected to lower and stabilize the cost of mortgage finance. Figures 5 and 6 illustrate the announcement effect for Fannie Mae and Freddie Mac 5-year debt spreads and current coupon MBS spreads, respectively. The tighter spreads on mortgage-backed securities, in turn, resulted in conforming mortgage rates falling by about 50 basis points.

Of course, the two agreements had significant negative consequences for the GSEs' common and preferred stockholders. Fannie Mae and Freddie Mac common shares quickly fell below \$1; down from \$60 just 12 months earlier. Indeed, as a result of trading at such low levels, the two GSEs now face delisting.³⁸ Preferred shares suffered a similar fate. Indeed, several community banks became financially distressed themselves as a result of having to write-down the value of their holdings of GSE preferred stock.³⁹

The positive bond market reaction, coupled with a relatively smooth operational transition, suggested that the imposition of conservatorships at Fannie Mae and Freddie Mac was, so far, a success. However, by November 1, 2008, mortgage rates and yields on Fannie Mae and Freddie Mac obligations had climbed back to pre-conservatorship levels because of worsening financial market conditions. Policymakers then searched for additional tools to lower and stabilize the cost of mortgage finance. In response, the Federal Reserve announced on November 25 that it was establishing new facilities to: 1) purchase up to \$500 billion in mortgage-backed securities guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae; and 2) purchase up to \$100 billion in debt obligations of

liquidation; or 3) GSE satisfaction of all liabilities. In some sense, the senior stock purchase agreements have become an appendage to the GSE charters.

³⁸ The NYSE Listing Manual (Part 802.01C) notes that a company will be deemed to be below compliance standards if the average closing price of a security is less than \$1.00 over a consecutive 30-day trading period. Once notified, a company has six months to bring its share price and average share price above the \$1.00 threshold. Both Fannie Mae and Freddie Mac were each notified in November 2008.

³⁹ See McGeer (2008) and Blackwell and Flitter (2008) for some discussion.

Fannie Mae, Freddie Mac, and the Federal Home Loan Bank System. Figures 5 and 6 also show a positive market response to these announcements.

V. Conclusions

Fannie Mae and Freddie Mac play a central role in the U.S. residential mortgage finance system. As real estate prices fell and mortgage defaults and foreclosures mounted, the two highly leveraged GSEs became financially distressed. In response, Fannie Mae's and Freddie Mac's federal regulator placed both institutions into conservatorship and the U.S. Treasury entered into senior stock purchase agreements with each GSE and introduced new liquidity facilities aimed at supporting the institutions and mortgage markets more generally.

The federal intervention into Fannie Mae and Freddie Mac has been successful insofar as it improved the confidence of creditors and stabilized residential mortgage markets. However, the current arrangement of government ownership and control over these two enormous financial institutions will likely be revisited by the Congress in the months ahead. Today's consensus appears to be that the previous public-private business model is inherently flawed and unstable.

Indeed it is unclear what role Fannie Mae and Freddie Mac will ultimately play in the U.S. housing finance system. And the reasons for this uncertainty do not solely rest with the two GSEs. The financial distress at Fannie Mae and Freddie Mac has occurred along with significant and well-publicized problems at a host of mortgage originators, private mortgage insurance companies, and monoline bond insurers. Hence, the federal government may need to redefine its role in supporting primary and secondary mortgage

markets. Federal Reserve Chairman Bernanke (2008) and former Treasury Secretary Paulson (2009) have offered some initial thoughts about various policy options. Nevertheless, additional research and policy analysis should commence quickly about the public-sector's role in mortgage markets, the efficacy of the GSE model of financial intermediation, and the future of Fannie Mae and Freddie Mac.

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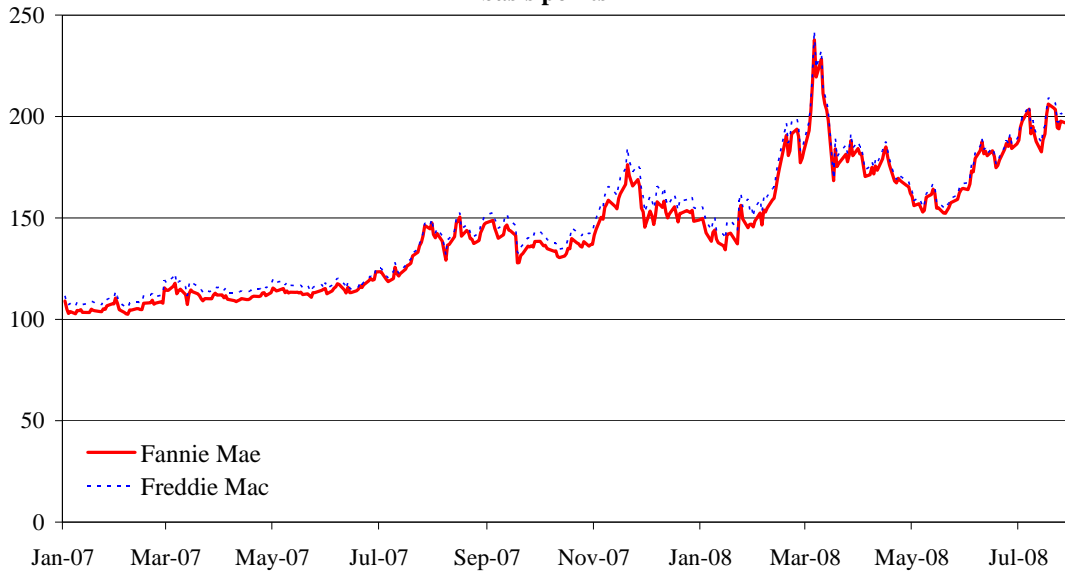
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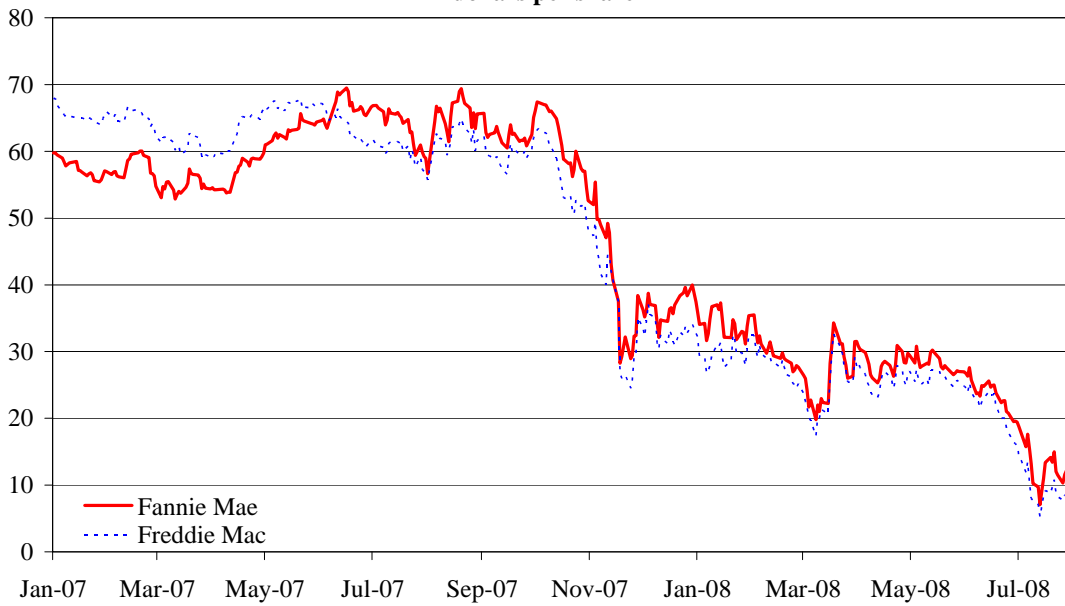
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Figure 1
Federal Agency 30-year Current Coupon MBS
Spread to 10-year Treasury
 basis points



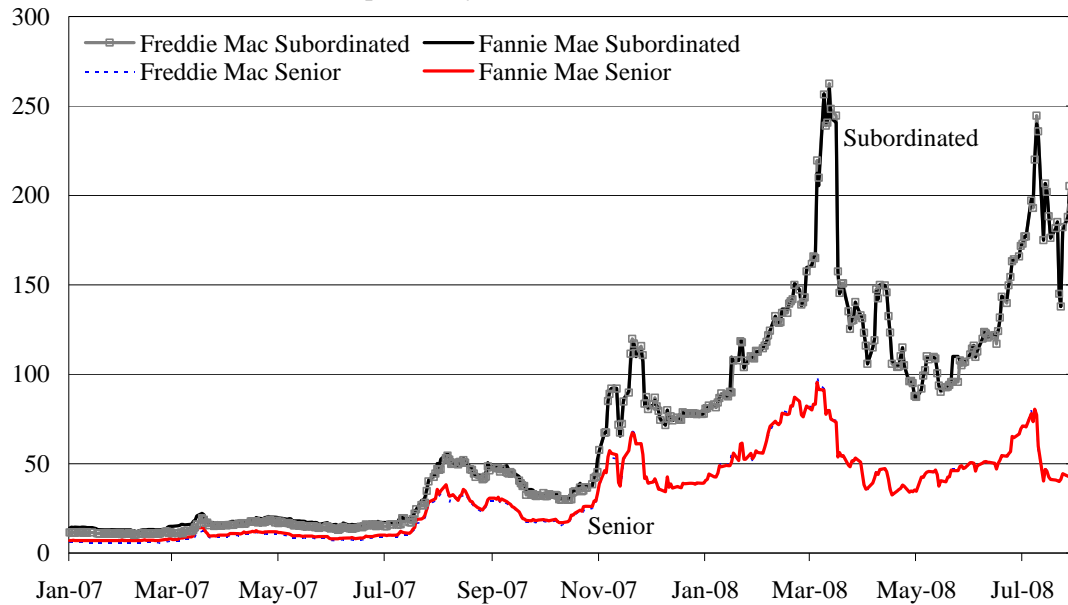
Source: Bloomberg

Figure 2
Fannie Mae & Freddie Mac Stock Prices
 dollars per share



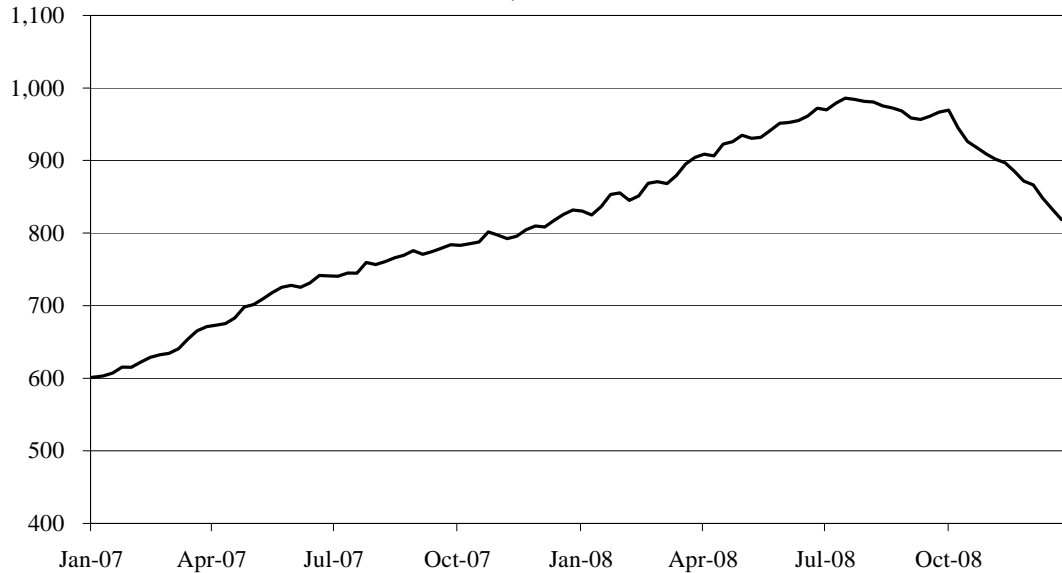
Source: Bloomberg

Figure 3
Fannie Mae & Freddie Mac Credit Default Swaps
 basis points, 5-year (senior & subordinated debt)



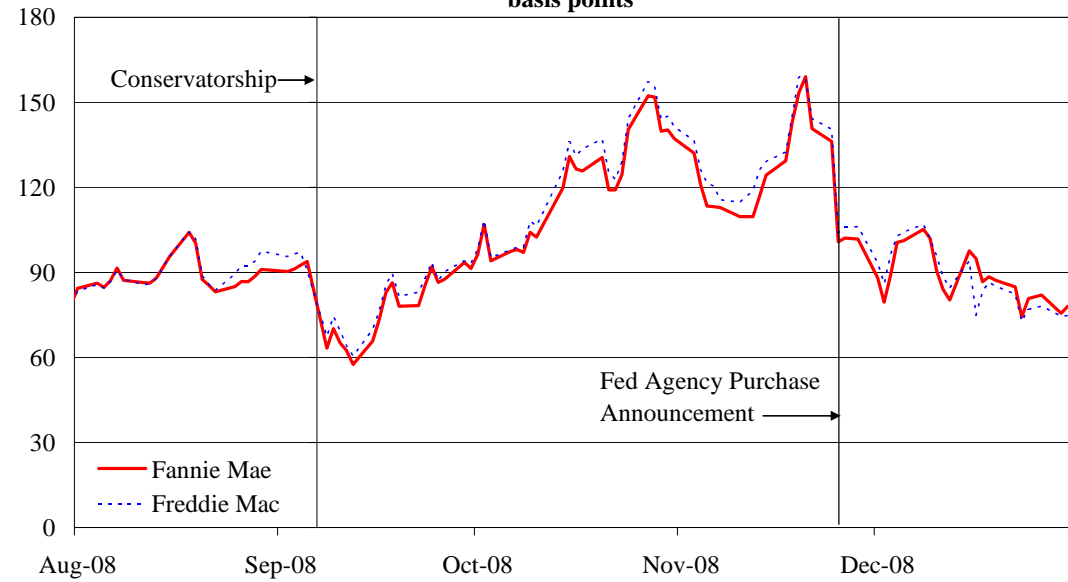
Source: Bloomberg

Figure 4
Marketable Federal Agency Securities
Held for Foreign Official & International Accounts
 \$ billions



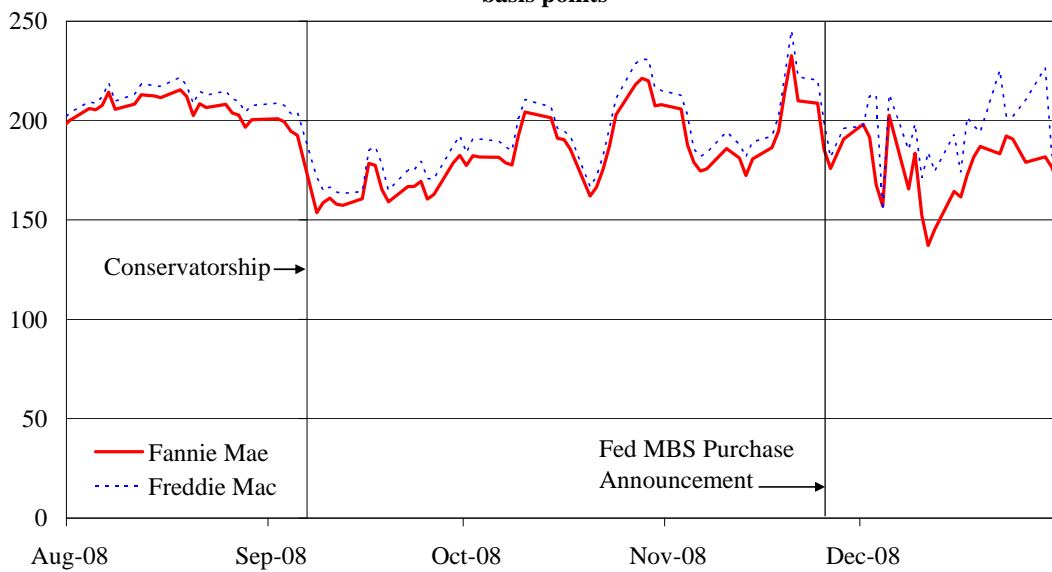
Source: Federal Reserve Board

Figure 5
Federal Agency 5-year Debt
Spread to 5-year Treasury
 basis points



Source: Bloomberg

Figure 6
Federal Agency 30-year Current Coupon MBS
Spread to 10-year Treasury
 basis points



Source: Bloomberg