The Government's Role in the Housing Finance System:

Where Do We Go from Here?

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Introduction

It is time to commit to a future housing finance system for the United States as the current uncertainty surrounding this issue is likely deterring the recovery of the housing market and the broader economy. Returning to the system in place before the financial crisis is not a suitable option, as the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac created significant problems that contributed to the financial crisis. The GSEs' pre-crisis activities also left the taxpayers with an enormous burden: As of early 2011, more than $100 billion had been put toward rescuing the GSEs and estimates suggest the total cost may be up to several times that when all is said and done.

In this paper, we discuss the weaknesses of the pre-crisis GSE model and lay out the broad outlines of a new housing finance model that attempts to address these problems. The new system includes a limited government role of providing credit guarantees for qualifying mortgage securities in normal times that becomes more expansive in times of mortgage market distress. It also attempts to reduce the incentives for excessive risk-taking embedded in the old system. This feature is essential to creating a stable and robust mortgage finance system, which, over the long run, can help foster economic growth.

The Housing Market and the Timing of Housing Finance Reform

The timing of GSE reform must take account of the weakness of the housing market recovery to date. As shown in Figure 1, after dropping 32 percent from their peak value in April 2006 to their trough value in May 2009, housing prices stabilized and even recovered a bit (rising 5 percent relative to the trough) by June 2010. However, this firming of housing prices

was in large part due to an enormous amount of government intervention in the housing market. The federal government supported demand for housing through an $8,000 housing tax credit for first-time homebuyers (a program that ran from January 1, 2009 to September 30, 2010) and a $6,500 housing tax credit for repeat homebuyers (which ran from November 7, 2009 to September 30, 2010). Demand was also supported by the reduction in mortgage rates spurred by the Federal Reserve's purchase of $1.25 trillion of mortgage-related securities in 2009 and early 2010. Home prices were also likely bolstered by factors restricting the supply of homes coming to market, such as government efforts to forestall lender sales of distressed homes through various foreclosure prevention programs, including, most notably, the Home Affordable Modification Program (HAMP).

The underlying weakness in the housing market has fundamentally stemmed from an oversupply of homes that arose as a result of excessive housing construction during the housing boom in the early to mid-2000s and the softness in household formation that has prevailed since the recession began (see Shulyatyeva, 2010). Figure 2 shows the vacancy rate for both owner-occupied and rental housing. When housing prices peaked in the second quarter of 2006, the rental vacancy rate was 9.6 percent and the owner-occupied vacancy rate was 2.2 percent—close to their averages since 2000. Vacancies proceeded to climb considerably, with the rental vacancy rate reaching 11.1 percent in the third quarter of 2009 and the owner-occupied vacancy rate reaching 2.9 in the first quarter of 2008 and again in the fourth quarter of 2008. (The differential timing of the increase in vacancy rates for rentals versus owner-occupied housing could be due to the homebuyer tax credit, which incentivized renters to become buyers.)

After the various government programs either expired or played out, housing prices resumed a downward trend. Since June, home prices have experienced five consecutive

monthly declines, receding three percent. The evidence thus suggests that the various interventions have not remedied the fundamental problem of an excess supply of homes. The rental vacancy rate currently stands at 9.4 percent, and the owner-occupied rate is at 2.7 percent; the latter remains noticeably elevated compared with its average since 2000 of 2.1 percent.

The extremely low level of construction represents further evidence that the housing market is still working off excess supply. Single-family housing starts, shown in Figure 3, peaked at an annual rate of approximately 1.8 million in January 2006 before dropping precipitously—and nearly continuously—over the next 36 months, reaching a low of 360,000 in January 2009. The subsequent pattern was similar to that of housing prices, with housing starts increasing modestly over the next 15 months before leveling off and beginning to decline anew. At an annual rate of 417,000 in December 2010, the rate of housing starts was noticeably above its trough but still only a fraction of the monthly average since 2000 of 1.16 million units (annual rate).

The protracted adjustment of the housing market is contributing to the softness of the recovery in the broader economy. Figure 4 shows the percentage point contribution of residential investment to annualized real GDP growth. The weakness in residential investment has been both persistent and severe. Since the beginning of the recession in the fourth quarter of 2007, declines in residential investment subtracted from real GDP growth for seven consecutive quarters. For comparison, the average number of quarters of negative contribution of residential investment to GDP growth across all recessions between 1947 and 2001 is three quarters. In terms of levels, residential investment declined by nearly 40 percent from its level when the recession started. For comparison, the average cumulative drop in residential investment across all recessions between 1947 and 2001 was approximately eight percent (Hamilton, 2010).

The drop in house prices also contributed to the depth of the recession and the weakness of the recovery through its impact on housing wealth. According to the Flow of Funds Accounts, the value of residential assets held by the household sector dropped from $22.7 trillion in the fourth quarter of 2006 to $16.5 trillion in the first quarter of 2009 before recovering to $17.2 trillion more recently. Historically, declines in wealth have dampened consumer spending, with a $1 decline in wealth associated with a reduction in the level of spending on the order of 3 to 5 cents (see Gramlich, 2002). Historical relationships thus imply that the $6 trillion net decline in housing wealth since its peak should have led to a decline in consumer spending of $180 to $300 billion. This calculation implies that wealth effects should have trimmed 2 to 3 percent off of the pre-recession level of nominal consumption.

A key policy question is whether the precarious state of the housing market—and the threat it poses to a robust and sustained economic recovery—suggests that reform of the GSEs should happen quickly or slowly. As can be seen from Figure 5, the federal government's credit guarantees, provided in large part through the GSEs, are currently lending enormous support to the mortgage market. Over the first three quarters of 2010, GSE-backed mortgages comprised 62 percent of mortgage originations. FHA- and VA- insured mortgages comprised an additional 26 percent of mortgage originations. This 88 percent share of the market for originations is down slightly from 95 percent in 2009, but is approximately double the share that prevailed from 2000 through 2007. While this substantial degree of support may be inhibiting the recovery of the private mortgage market, an excessively quick and disorderly transition could lead to a pullback in the supply of mortgage credit that could further weaken the demand for housing.

The GSEs are also currently playing a role in the government's foreclosure policy efforts. For example, they are facilitating modifications of GSE-guaranteed loans under the HAMP

program workouts and allowing high-loan-to-value GSE-guaranteed loans to be refinanced under the Home Affordable Refinance Program (HARP). Again, policymakers face a trade-off. On the one hand, because it takes time to evaluate mortgages for these programs, the efforts may be slowing down the necessary transition of distressed mortgages that are fundamentally unsustainable over the long run. On the other hand, the programs are preventing at least some unnecessary foreclosures, so an abrupt cessation of GSE activities in this area would increase mortgage distress and exacerbate the supply problems in the housing market.

All told, these considerations argue for a steady transition to a new U.S. system of housing finance. The specific timing depends on the feature under consideration. Ideally, activities directly related to the supply of mortgage credit should be accomplished relatively soon—perhaps within a year—especially given the desirability of expeditiously returning the demand side of the housing market to normal conditions. But, a longer time frame, perhaps several years, should be allowed for the complete unwinding of all of activities of the GSEs, both because of the GSEs' role in foreclosure mitigation and because dealing with their existing assets and obligations will be complicated and is not a critical factor for the housing market outlook. [1]

The issue of the appropriate speed of transition is separate from the question of the appropriate timeline for developing and committing to a new housing finance system. The question of what the new system will look like is one source of uncertainty that is likely deterring the recovery by inhibiting the ability of businesses and households to plan and move forward. For example, anecdotal reports suggest that mortgage lending has been held back by a lack of information about what rules and regulations will apply to the new mortgages. Thus,

[1] Broadly speaking, the government could either retain these obligations and allow them to run off over time, or they can sell them off—perhaps through an auction—to a private entity. Either approach would induce taxpayer losses.

while a gradual transition to the new housing finance system may be desirable, there are reasons to lay out a clearly defined future for mortgage finance as soon as possible.

Activities of the GSEs

Prior to being taken into conservatorship in September 2008, Fannie Mae and Freddie Mac were owned by private shareholders. They also had Congressional charters that both granted them certain privileges and assigned them a public mission to "provide liquidity, stability, and affordability" to the housing market. As part of this mission, 1992 legislation established "affordable housing goals" that specified what fractions of each enterprises's mortgage acquisitions should finance housing units occupied by low- and moderate-income families, by very-low income families, and by families living in underserved areas.

The GSEs have traditionally pursued two main lines of activity. The first line of activity is pooling certain types of mortgages into guaranteed mortgage-backed securities (MBS). Often these securities are created as part of a swap arrangement with the financial institutions that had originated the loans: the originating institution essentially trades a group of loans for a security that pays regular dividends corresponding to the mortgage payments associated with the underlying loans. The guarantee assures payment even if the borrowers default; however, it does not protect holders from risks to the value of the security stemming from market interest rates changing and (relatedly) from borrowers refinancing and prepaying their loans. In exchange for the credit guarantee, the originating financial institution in a swap arrangement typically pays guarantee fees in the form of an upfront payment as well as regular ongoing payments over the life of the security. The GSEs also purchase mortgages directly from financial institutions for

the purpose of producing guaranteed MBS; in these cases, the guarantee fee shows up implicitly as part of the price paid for the loans.

By charter, the GSEs are restricted to purchasing so-called "conforming loans." The loans must be below a certain limit at origination; loans above this value are known as "jumbo loans." The conforming loan limit increased annually with average home prices, reaching $417,000 for one-unit loans in 2008, at which point new legislation increased it temporarily to up to $729,750 in certain high-cost areas. Traditionally, conforming loans had to have loan-to-value ratios no higher than 80 percent or else carry mortgage insurance that effectively reduced the risk to that of a similar loan with an 80 percent loan-to-value ratio.

The GSE guarantee fees are negotiated privately with loan originators. They vary by type of mortgage, originator, and over time. Many factors influence the guarantee fees charged, including the expected cost of providing the guarantee, administrative expenses, competitive conditions in the market for bearing mortgage risk, and the GSEs' target return on capital. In the years leading up to the crisis, guarantee fees averaged around 21 basis points at both GSEs. Analysis by the GSEs' current regulator has found that guarantee fees have provided a cross-subsidization from lower-risk loans to higher-risk loans (see Federal Housing Finance Agency, 2010a).

Freddie Mac began to securitize conforming loans in the early 1970s and Fannie Mae followed suit around 1980. GSE mortgage-backed securities held by investors about doubled during the 1990s, reaching $1.3 trillion by 2000, and then increased more than three-fold over the subsequent decade to close to $4 trillion in 2009 (see Figure 6). As a share of GDP, outstanding GSE MBS climbed from 13 percent in 2000 to 28 percent in 2009. Notwithstanding

the growth in GSE MBS during the mortgage boom of the early 2000s, the GSEs accounted for only about half of mortgage originations prior to the financial crisis, with the flourishing private secondary mortgage market providing financing to an enormous amount of nonconforming loans.

A second important activity pursued by the GSEs in the years leading up to the financial crisis was to hold large portfolios of assets that generated income for the agencies and their shareholders. By charter, the GSEs were restricted to holding assets that had some link to their mission of supporting the conforming mortgage market. However, this left a fairly wide range of permissible assets, including whole mortgage loans, their own mortgage-backed securities, and private-label MBS backed by various types of nonconforming loan products, including subprime and near-prime mortgages.[2]

For many years, the GSE portfolios generated high returns. A key factor contributing to their profitability was their ability to finance their portfolios on relatively inexpensive terms because investors perceived GSE obligations to have an "implicit" federal guarantee. While rates on GSE debt never fell as low as rates on comparable-maturity Treasury debt, the GSEs were able to borrow at rates 20 to 45 basis points lower than large bank holding companies (Bernanke, 2007).

Although U.S. Code specified that the agencies "[do] not carry the full faith and credit of the Federal Government," the perception of an implicit guarantee was fed by their public mission as well as by certain charter-granted advantages that suggested they had a special relationship

[2] The charters were not specific about exactly what types of private-label securities could be held but did offer some general restrictions on quality. For example, Fannie Mae's charter stated "…the operations of the corporation under this section shall be confined, so far as practicable, to mortgages which are deemed by the corporation to be of such quality, type, and class as to meet, generally, the purchase standards imposed by private institutional mortgage investors."

with the government. For example, the agencies had $2.25 billion lines of credit with the U.S. Treasury, and they were exempt from state and local taxes. Their obligations were classified as "government securities," which, among other things, meant that they were eligible for unlimited investment by FDIC-insured financial institutions and that they were exempt from the registration and reporting requirements of the Securities and Exchange Commission. In addition, until the summer of 2008, there was no resolution process defined to address an insolvent GSE.

The GSEs' ability to borrow cheaply fostered growth in their portfolios. As shown in Figure 7, the combined portfolios of the GSEs rose from $0.1 trillion (equivalent to 2 percent of GDP) in 1990 to $1 trillion (equivalent to 10 percent of GDP) in 2000. They continued to grow over the first half of the last decade, topping out at $1.6 billion (equivalent to 13 percent of GDP) in 2004 before receding a bit in more recent years. This growth, in turn, reinforced the perceived implicit guarantee, as the agencies became increasingly viewed as too big to fail without creating systemic risk to the financial system.

The risk associated with the GSEs' portfolios depends not only on the amount of assets held, but, of course, on what type of assets were held. To the degree that the GSEs were holding their own MBS or conforming whole loans that they would otherwise securitize and guarantee, they were not taking on additional credit risk. The return on these assets did vary with other factors: any increase in market interest rates would decrease the value of the mortgage assets that the GSEs held on their balance sheets, and, relatedly, a decrease in mortgage interest rates would spur demand for refinancing, leading to prepayment of the mortgage assets on their balance sheets. Even though the GSEs engaged in substantial hedging of these risks, many critics of the GSEs in the early 2000s pointed to these risks as the most likely source of a potential systemic problem (see, for example, Frame and White, 2005). The riskiness of the

GSEs' portfolios also depended importantly on the amounts of private-label mortgage-backed securities held (particularly those backed by nonprime loans), for which the GSEs were taking on credit risk in addition to the other types of risk.

Information about the composition of the GSEs' portfolios is somewhat limited, particularly prior to the last few years. However, the available evidence suggests that the portfolios of both GSEs shifted toward riskier assets in the early 2000s. As shown in the top panel of Table 1, Fannie Mae's holdings of private-label MBS about tripled between 2000 and 2004 (the year in which such holdings peaked) with essentially all of the growth accounted for by a rise in holdings of subprime and alt-A MBS. Private-label MBS accounted for about one-quarter of the growth in Fannie Mae's overall portfolio and reached a peak share of around 11 percent of total assets in the middle of the decade. Most of the remainder of the growth in Fannie Mae's portfolio over this period was attributable to an expansion of holdings of whole loans. Detailed information about these loans is not available, but the fact that the rise was concentrated in fixed-rate non-FHA/VA single-family loans suggests that it was not importantly driven by higher holdings of nonprime loans, as most nonprime loans had adjustable rates.

As shown in the bottom panel of Table 1, Freddie Mac's portfolio moved more aggressively toward higher-risk loans in the early 2000s. Its holdings of private-label MBS increased nearly six-fold between 2000 and 2005 (the year in which these holdings peaked). This expansion accounted for almost two-thirds of the growth in the overall portfolio over this period and, at the peak, the private-label MBS holdings represented about one-third of total assets. Most of the remainder of the growth in Freddie Mac's portfolio in the early 2000s was accounted for by growth in holdings of its own MBS.

The lower cost of borrowing associated with the GSEs' implicit guarantee was not the only factor incentivizing the GSEs to amass these portfolios. For example, assets associated with riskier loan products were desirable not only for their high returns but also because they frequently counted toward the GSEs' affordable housing goals. The incentive to take risk was also reinforced by the weakness of their pre-crisis regulator, the Office of Federal Housing Enterprise Oversight (OFHEO). OFHEO had limited control over the GSEs' capital standards, as 1992 legislation had largely defined how these standards should be set. OFHEO was widely viewed as understaffed and underfunded, perhaps in part because its budget was determined by an annual appropriations process. Although there were members of Congress who introduced legislation aimed at increasing oversight and reducing the perception of an implicit guarantee, the overall appetite among policymakers for strengthening OFHEO was tempered by support for the GSEs' public mission as well as the agencies' extensive lobbying efforts.

A lack of market discipline also promoted excess risk-taking by the GSEs. Market discipline was low in part because of the widespread perception among investors that the federal government stood behind the GSEs' obligations. However, even in the absence of the implicit guarantee, market participants would have had trouble determining how much risk was being taken on because of the limited financial reporting requirements imposed on the agencies.

In sum, both the guarantee business and the portfolio business posed risks to the GSEs, and, to the degree that the agencies became "too big to fail," the activities posed risks to the taxpayers. The fees charged to provide the credit guarantees included with GSE MBS, in principle, could cover the potential costs associated with the guarantees but only if they were set correctly. Returns on the portfolio depended on both the costs of financing the portfolio and the risks associated with the assets held. As to the degree to which these activities were providing

social benefits that offset the potential costs, the evidence suggests that the benefits to borrowers historically have been limited. Most studies suggest that the reduced borrowing rates available to the GSEs to finance their portfolios translated into only modestly lower mortgage interest rates for borrowers (see Government Accountability Office, 1996, Naranjo and Toevs, 2002, and González-Rivera, 2001, Passmore, Sherlund, and Burgess 2005, and Lehnert, Passmore, and Sherlund, 2008). Lehnert, Passmore, and Sherlund (2008) also concluded that GSE portfolio purchases did not have a meaningful stabilizing effect on the supply of mortgage credit. Further, as discussed below, there is scant evidence that GSE activities significantly contributed to the supply of affordable housing for low- and moderate-income households.

MBS Credit Risk and Portfolio Systemic Risk

GSE losses in recent years largely stemmed from credit losses, not from interest rate risk or prepayment risk associated with their portfolio holdings. Figure 8 shows the delinquency rate for mortgages backed by Fannie Mae and Freddie Mac. The initial decline in home prices in late 2006 through 2007 primarily led to distress among nonprime loans. By early 2008, however, the 90-plus day delinquency rate for GSEs began increasing, reaching a peak of 5.59 percent of Fannie loans and 4.20 percent of Freddie loans in February 2010. These delinquencies ultimately led to defaults and credit-related losses. As shown in the top panel of Figure 9, Fannie Mae saw persistent credit-related losses from the first quarter of 2007 through the most recent quarter. These losses were severe, with quarterly losses of $21 billion, $19 billion, and $22 billion, in the first, second, and third quarters of 2009. As shown in the bottom panel of Figure 9, Freddie Mac also saw persistent and severe credit losses. Quarterly credit-related losses for

Freddie Mac started the second quarter of 2006 and have continued ever since. The credit-related losses peaked at about $9 billion in the first quarter of 2009.

The GSEs also incurred losses related to their portfolio holdings of private-label mortgage-backed securities, which, as discussed earlier, were heavily concentrated among nonprime mortgages. These losses have been large—a total of $150 billion for Fannie and $90 billion for Freddie since the beginning of 2007. The available data does not allow for a precise comparison of how such losses compare with those related to the credit guarantees when all is said and done, but it is worth noting that the outstanding value of GSE-guaranteed mortgages was at least 10 times as large as GSE holdings of private-label MBS in years leading up to the mortgage crisis. For the losses to be comparable, the net loss rate on these holdings would have to be 10 times as high as that on the GSE-guaranteed mortgages.

In a direct sense, though, the failure of the GSEs stemmed from a different aspect of the portfolios. The portfolios were largely financed through short-term borrowing (at reduced rates due to the implicit subsidy) by the GSEs. This reliance on short-term borrowing to finance long-term assets set up the conditions for a classic bank run. The persistent and severe credit losses of the GSEs ate into their capital, which, coupled with expected enormous future losses, led to a mounting loss in confidence by the GSE debt holders in mid-2008, increasing the cost at which the GSEs were able to borrow. Left unchecked, this loss of confidence could ultimately have resulted in a run on GSE debt and an inability for the GSEs to finance their operations. Legislation establishing a stronger regulator (the Federal Housing Finance Agency or FHFA) and effectively granting the U.S. Treasury the ability to bail out the GSEs was enacted on July 30, 2008, with the goal of providing reassurance to investors. However, investor confidence continued to deteriorate in subsequent weeks as evidenced by further declines in share prices

and, amid strong evidence that the agencies were in fact insolvent, the federal government decided to forestall any possibility of a run by placing the GSEs into conservatorship.[3,4]

GSE Reform

Fundamental Problems with the Existing GSE Structure

Any effort to lay out the contours of a new housing finance system needs to take into account the underlying weaknesses of the old system. First and foremost among the problems is that the conflation of the GSEs' private and public roles is financially and fundamentally unsound. The implicit government backstop incentivized the GSEs to take on excessive risk. Because their debt was perceived as backed by the federal government, they were able to engage in a massive amount of arbitrage by borrowing at low rates and purchasing mortgage products with higher yields for their portfolios. By July 2008, their retained portfolios amounted to $1.6 trillion. While the source of the GSEs systemic risk was their retained portfolios, their guaranteeing of securities exposed them to an enormous amount of credit risk, amounting to a notional liability of $3.7 trillion by July 2008. Thus, the future structure of mortgage finance should prevent the conflation of public goals and private goals within any one entity. Any public goals for mortgage finance should be explicitly provided by the federal government.

Another problem with the pre-crisis GSE model arose from how the two different primary public goals of the agencies interacted with each other. The GSEs were to provide liquidity in mortgage markets by purchasing and securitizing mortgages and then selling them

[3] For further discussion of this episode, see Swagel (2009) and Hancock and Passmore (2010).
[4] Debt yields did not spike further over this period, suggesting that the market expected the government to ultimately step in (at some cost to shareholders).

with a credit guarantee attached. And they were to help promote affordable housing by subsidizing mortgages for low- and moderate-income families. As it turned out, the pairing of these two goals was a key factor behind the GSEs substantial credit losses.

On some levels, these goals are consistent. The GSEs provide liquidity in the mortgage market by providing credit guarantees for MBS. Mortgage-backed securities are thus made safer and easier to value for investors. This enhanced liquidity passes through in (small) part to borrowers through lower mortgage interest rates. Lower borrowing costs for homebuyers can promote affordable housing goals, to the extent that low- and moderate-income families qualify for GSE mortgages.

However, the pricing of the guarantee is critical to whether the government is simply resolving a market failure through the GSEs or providing an out-and-out subsidy to investors (and borrowers, to the extent there is a pass through to lower rates). In principle, a lack of liquidity in the secondary mortgage market can be addressed by charging an actuarially fair premium for the credit guarantee. The standard economic argument for insurance markets is that risk averse individuals will want to fully insure against a possible loss of income if offered the actuarially fair premium. Indeed, as risk aversion increases, so does the willingness to pay an amount above the actuarially fair premium. The economic justification for a government role in providing insurance is that private insurers will fail to pool risk appropriately when the risk of default is not independent across the insured people, as is the case when housing markets are subject to price shocks that drive aggregate waves of default. The government role here is to pool the credit risk through a nationwide guarantee, thus providing the liquidity to – and limiting the volatility of – the secondary mortgage market, but to do so while charging at least the

actuarially fair premium (which accounts not only for the expected defaults in normal times but also for the tail risk of widespread and severe credit defaults).

However, the co-existence of a public goal of providing liquidity to mortgage markets and a public goal of promoting affordable housing leads to pressures to subsidize the guarantees by charging premiums that are less than actuarially fair. Charging less than the actuarially fair premium amounts to a subsidy to investors primarily and to homebuyers secondarily. Even if society desires to subsidize the purchase of homes, there are more direct and explicit ways to do so than under-pricing the government guarantee of credit risk, such as through a tax credit for purchasing a house, direct housing vouchers, a tax credit that promotes saving for a down-payment on a house, or even a direct and explicit government subsidy to reduce the mortgage interest rate for qualified borrowers. Moreover, these alternatives are less risky. The GSEs became insolvent largely because they increased their risk exposure by guaranteeing securities with lower credit scores and higher loan-to-value ratios during the mortgage credit boom, without charging commensurately higher guarantee fees (Federal Housing Finance Agency, 2010b). The degree to which the GSEs' decisions to pursue this business strategy reflected direct pressure to subsidize housing as opposed to a desire to maintain market share and profitability so as to meet obligations to shareholders is unclear. However, even under the latter motivation, it was a combination of lax regulation, the perception of an implicit guarantee, and a lack of market discipline—all fostered in part by a public interest in subsidizing home ownership—that allowed the GSEs to pursue this strategy.

As for the benefits of assigning the GSEs an affordable housing mission, the available evidence suggests that the GSEs—despite meeting their affordable housing goals—had only limited effects on the supply of affordable housing (Congressional Budget Office, 2010). In a

case study of underserved markets in the Cleveland area, Freeman, Galster, and Malega (2006) found little relationship between the degree of GSE secondary-market purchases of mortgages and home price appreciation. Gabriel and Rosenthal (2005) presented evidence suggesting that almost all of the sizable increase in homeownership in the 1990s can be attributed to household characteristics rather than policies to lift credit barriers. Bostic and Gabriel (2006) studied the effects of GSE activities on homeownership rates, vacancy rates, and median house values in California, and found only limited evidence of improved housing market performance. Other studies suggesting that the GSEs have not had a significant or sizable impact on homeownership among low-income and other underserved families include Feldman (2002) and Ambrose and Thibodeau (2004).

Separating Out the Affordable Housing Mission

A nimble policy would accurately price the credit guarantee and then explicitly cross-subsidize from low-risk (or high-income) families to high-risk (or low-income) families. But, the experience of recent years demonstrated that such a policy is difficult—if not impossible—to achieve within a single (or two single) entities, as the inherent difficulties and opaqueness of accurately pricing risk, combined with the political pressures that favor implicit cross-subsidizing lead to mispricing the guarantee (thus leading to credit losses), while also failing to achieve housing support for low and middle-income families. The goal of supporting affordable housing should therefore be detached from whatever entity is providing the credit guarantee and instead pursued through the tax code, or the Department of Housing and Urban Development, whether by expanding Federal Housing Administration programs or by providing direct, explicitly funded assistance to targeted borrowers.

Restrictions on Portfolio Holdings

The reform of the housing finance system should also address whether the entities that replace the securitization and guarantee activities of the GSEs should be allowed to hold portfolios. One consideration is whether such portfolios would serve a public purpose. Without the affordable housing goals, the entities succeeding the GSEs would not need to rely on portfolios in order to hold difficult-to-securitize multifamily mortgages or private securities backed by nonprime mortgages. In addition, as discussed earlier, analysis of primary and secondary market spreads suggests that the portfolios did not buffer mortgage originators from financial market shocks (Lehnert, Passmore, and Sherlund, 2008).

The next consideration would be whether portfolios, even if they did not provide benefits, would present risks to the taxpayers. The key issue here is whether the portfolios would come to represent a systemic risk as they did under the pre-crisis GSE model. The likelihood of this happening depends on the degree to which perceptions of an implicit guarantee on the debt of the new entities (i.e., the means through which their portfolios would be financed) can be contained. These perceptions, in turn, hinge on whether the new structure includes features that suggest the new entities, like the GSEs, have special privileges (including lower capital standards), a special relationship with the federal government otherwise, and whether the new entities (either by design or because of economies of scale) have the potential to become so large that they were viewed as "too big to fail." All told, then, the degree that the portfolios are restricted in size (or composition) should depend on the degree to which the entities replacing the GSEs' guarantee and securitization activities will be able to borrow at sub-market rates. As we discuss below, our proposal calls for a more competitive market structure (subject to a narrowly defined guarantee),

in which financial institutions—subject to capital requirements—can supply government-guaranteed securities, which thus should require fewer limits on portfolios.

Pricing the Credit Guarantee

Under our proposal, the government provides credit guarantees on mortgage-backed securities, funded by a premium that is at least actuarially fair. Unlike the implicit government guarantee on the GSEs obligations, this would be an explicit government guarantee, recorded in the federal budget.

We note, though, that the existence of an economic justification for a government role in guaranteeing credit risk does not necessarily make it good policy. As the recent experience of the GSEs makes clear, while the borrowing they did to maintain their portfolio holdings ultimately triggered the government takeover, the main source of their losses was credit-related. Advocates of fully privatizing the housing finance system are in effect arguing that the cost of government failure—in the form of political pressure to under-price the credit guarantee—trumps the benefits from addressing the market failure of the illiquidity stemming from the inability to pool the dependent credit risk.

Some argue that the benefits of addressing the market failure are small. Indeed, as noted earlier, the available evidence suggests that GSE guarantees have resulted in only modestly lower mortgage interest rates (and only for qualified mortgages) under normal mortgage market conditions. However, a key point is that the most important benefits from making credit guarantees available accrue during times of extreme market stress. In such times, the price demanded by investors to take on credit risk might soar, leading mortgage credit to become

prohibitively expensive and, in turn, hurting prospects for economic activity and leading to yet more market distress.

Of course, the recent episode has painfully illustrated that the costs of government failure can be immense. However, even if the lesson were that the risk of repeating such failure trumps all other considerations, it is not clear that policymakers can in practice eliminate the notion that they will stand behind at least some portion of the mortgage market going forward. Given the massive amount of government intervention in financial markets over the past three years, and especially given the efforts by Treasury, FHA, and the Federal Reserve to provide a government backstop for mortgages, investors are highly likely to assume an ongoing implicit—and possibly expansive—guarantee. And while the Dodd-Frank legislation aimed to address the problem of too-big-to-fail, recent history suggests that an implicit guarantee could still extend to the largest financial institutions, which would encourage them further to take on mortgage credit risk.

With this inevitable moral hazard in place, the best outcome, then, is to make the guarantee explicit and limited, so as to minimize the risk of government failure. An essential feature of such a model is pricing the guarantee correctly. Having just experienced a financial crisis that revealed a widespread inability to accurately price sophisticated financial instruments, we recognize the difficulty of this task. However, we offer two possible approaches. One strategy would be to set a fixed price ex ante that more than covers the expected losses (including those associated with tail risk of widespread defaults). By design, this price should be high enough such that take-up is limited to a fairly small share of the market under normal conditions. In periods of market stress, the guarantees would become more attractive to investors and market share would increase. Thus, the relatively high price would both protect

taxpayers and prevent sharp contractions in the supply of mortgage credit that have the potential to turn episodes of market stress into a wholesale financial crisis.

A second, and related, option would be for the government to explicitly choose the target share of mortgage credit that is guaranteed under normal conditions ex ante and to allow the price to be determined by auctioning the fixed number of guarantees. The government would also simultaneously establish an above-market price (known as a "safety valve"), in which more guarantees can be purchased from the government. The safety valve price would not bind during times of normal market conditions, but it would mitigate the chances of disruption in the mortgage finance market. If conditions deteriorate in the private mortgage market, the safety valve price increasingly binds, and thus the take-up for the government guarantee will increase. Similarly, as credit conditions again improve, the take-up for the government guarantee will decrease, as the safety valve price will be seen as too expensive to most market participants. Once the safety valve price is no longer binding, the share of government-backed mortgage credit would again return to the fairly small market share target.[5]

Under either approach, an essential feature of our proposal is to limit the government guarantee to easily priced "plain vanilla" high-quality mortgages. In light of the events of the past few years, we should have great skepticism about the ability of the government or the private sector to price accurately the risk of heterogeneous mortgages and mortgage-backed securities. We thus propose that eligible mortgages be restricted to those meeting simple

[5] The potential for government guarantees to serve as a backstop is also discussed by Scharfstein and Sunderam (2011) and by the Department of the Treasury and the Department of Housing and Urban Development (2011). The backstop feature of our proposal differs from the one in these papers because we advocate for a pre-established market mechanism for the backstop, rather than relying on regulatory determination of when to increase or decrease the government's market share. By pre-establishing a quantity and a safety valve price, we aim to remove the political influences that can lead to government subsidized guarantees during normal credit conditions and to persistent crowding out of the private sector post-credit crisis.

parameters, such as a maximum cumulative loan-to-value ratio, fully documented income statements, and a minimum credit score.[6] Given the difficulty of monitoring underwriting and accurately pricing heterogeneous mortgage products, such a restriction is needed in order to limit the risk exposure to taxpayers. Under the approach where the government sets a price for credit guarantees ex ante, restricting the guarantee to a relatively homogenous pool of securities is needed to mitigate the risk of mis-pricing the guarantee. Under the auction approach, the restrictions mitigate the potential for adverse selection where imperfect information allows investors to purchase the guarantee only for what they know to be riskier mortgages.

Our proposal for a government guarantee of only plain vanilla mortgages is grounded in the behavioral economics approach to regulation. Whereas others have promoted simple, default mortgages to protect borrowers from harming themselves due to their inability to distinguish among complex loan products (see, for example, Barr, Mullainathan, and Shafir, 2009), our plan would protect taxpayers from regulators' inability to properly price the credit risk associated with a government guarantee fee.

More thought is needed to determine the optimal share of mortgages covered by government guarantees under normal market conditions. Too small a share might restrict the ability of the entities providing the guarantee to ramp up their operations under times of market distress. That said, we advocate a share that is small enough such that the private mortgage finance market is able to re-develop and flourish (certainly the guarantees should account for less than a quarter of the market under normal conditions).[7]

[6] Importantly, in light of the problems engendered by the GSEs relaxing their underwriting standards during the mortgage boom, such parameters should not be able to change with market conditions.

[7] Advocates of more widespread guarantees often argue that the 30-year fixed-rate mortgage would not exist in the absence of government guarantees and that such mortgages are integral to the financial security of many American

Providing the government guarantee to only a narrow range of mortgage products would admittedly limit the number of borrowers who benefit. For example, a maximum cumulative loan-to-value ratio is akin to requiring a downpayment, which would be a challenge for many lower-income households. Bucks, Kennickell, Mach, and Moore (2009) found that the median net worth of families in the lowest fifth of the income distribution was $8,100 in 2007—not close to being enough for a 10 percent down-payment on the median home in 2007 (the value of which was around $247,900).

As we discuss above, the GSEs' efforts to support affordable housing appear to have had limited impact (Congressional Budget Office, 2010), and we believe that more effective and efficient support in this area could be delivered through the Department of Housing and Urban Development, either by expanding the Federal Housing Administration programs or by providing direct, explicitly funded assistance to targeted borrowers. With regard to the question of down-payments in particular, although low or no equity loans have the potential to provide important benefits to low-income households, the mortgage crisis has demonstrated that they also have the potential to impose tremendous costs on these households if housing prices depreciate. Thus, government support would be better targeted at helping low-income households save for down-payments through tax credits or matched-savings programs (like individual development accounts) than at providing loans that require no down-payments.

For qualifying mortgages, the guarantee would lower mortgage interest rates relative to a system with no guarantee because it enhances the liquidity of the associated MBS. However, having actuarially fair pricing is likely to raise mortgage interest rates relative to what they

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families. While it is true that 30-year fixed-rate mortgages are not prevalent in other countries (which also lacked entities like GSEs), it is unclear that their existences hinges on government guarantees, as the pre-crisis private market was able to provide jumbo 30-year fixed rate mortgages without government guarantees.

would be under the pre-crisis model. Together with the restrictions on scope, this higher pricing would reduce the market share of these loans, particularly during a credit boom. We view this as an upside not a downside of our proposal. It means that the government's role in the housing finance system does not exacerbate booms and their associated risks, like it did under the GSE model. It also means that the government will have more available resources to help should a boom lead to a crisis where credit markets seize up.[8]

In sum, our proposal provides some liquidity that increases the supply of mortgage credit in normal times, but the main purpose of the guarantees are to avert and mitigate a credit crisis.

Market Structure

The limits on eligibility for the government guarantee helps address the separate issue of market structure—how many and which entities would be able to offer the guarantee. A public utility model would allow only a few, highly-regulated, private entities (for example, reconstituted Fannie and Freddie) to securitize and sell MBS with the federal guarantee. A more competitive model would allow many private financial institutions—subject to their capital requirements—to securitize and sell MBS with the federal guarantee.[9] A competitive model with numerous firms would mitigate the too-big-to-fail risk that presented with Fannie and Freddie. One drawback of the more competitive model involves the potential difficulty of monitoring underwriting and pricing the MBS credit risk. This could expose the government to higher risk. The existence of many securitizers might also limit the amount of liquidity

[8] Of course, an important complement to the reforms suggested here is to regulate non-qualifying mortgages more tightly so as to limit credit booms.
[9] See Congressional Budget Office (2010) for descriptions of the different market structure models.

associated with the guaranteed MBS market to the extent that the MBS of different institutions were not viewed as interchangeable.[10]

The tradeoffs between public and private production of a public good are fairly well established within the economics literature (see, for example, Hart, Shleifer, and Vishny, 1997). The balance typically hinges on whether it is possible to address the quality concerns with private production through a complete and enforceable contract. For some public goods, it is nearly impossible to specify in advance every possible contingency. As Hart, Shleifer, and Vishny (1997) write, a "government would not contract out the conduct of its foreign policy because unforeseen contingencies are a key part of foreign policy, and a private contractor would have enormous power to maximize its own wealth … without violating the letter of the contract" (p. 3). On the other hand, for relatively routine activities (such as snow removal), incomplete contracts are not a serious impediment to private production.

Thus, a key consideration for the question of how many entities should replace the GSE securitization activities, as well as the degree to which these entities are allowed to compete privately versus being subject to greater government restrictions, depends on the scope of the guarantee. Given that our proposal restricts the availability of the government guarantee to only MBS that contain plain vanilla, high-quality mortgages, it is consistent with many institutions being allowed to participate in the market. The restriction mitigates concerns about the limited ability of both the government and investors to monitor individual firms; relatedly, it enhances

[10] Hall and Woodward (2009) argue that seemingly small differences in the amount of information provided by Fannie Mae and Freddie Mac about their MBS led to a small but noticeable difference in their pricing. Moreover, Freddie's MBS, for which investors had more information, had the higher price, because the information effectively made those securities less homogenous from the perspective of investors.

the liquidity benefit of the guarantees because the resulting securities are more likely to be viewed as homogenous.[11]

Conclusion

This paper calls for a significant overhaul of the U.S. housing finance system. We propose that the government have a limited role of providing credit guarantees on mortgages, which provides some benefit to the mortgage market under normal conditions and, more importantly, reduces the likelihood of periods of market strain evolving into a credit crisis. A key feature of the plan is that the guarantees are limited to high-quality mortgages that meet certain simple parameters specifying a maximum cumulative loan-to-value ratio, a minimum credit score, and a minimum degree of income documentation. Restricting the guarantee to "plain vanilla" mortgages enhances the odds that the guarantee can be priced in an actuarially fair way so as to limit the risk to taxpayers. The guarantee is designed to apply to a small market share during times of normal credit conditions, but provide for a ramping up of government involvement in the secondary market as credit conditions deteriorate. The affordable housing mission of the GSEs is transferred to other parts of the government, increasing transparency and removing pressures and incentives to under-price the guarantee. Relative to the pre-crisis system (all else equal) mortgage interest rates on loans covered by the guarantee will be somewhat higher and the market share of these loans will be smaller. But, unlike the pre-crisis system, this role for government will be less likely to exacerbate credit booms and their costs.

[11] Our proposal to rely on a competitive market to provide the government guarantee is similar to what Marron and Swagel (2010) propose. We differ from them in not requiring financial institutions to take a first-loss position on any MBS credit losses. Our requirement that the guarantee be limited to plain vanilla mortgages, and our above-market, safety valve pricing structure would presumably both be consistent with their plan, although they do not specifically support (or reject) these components

In terms of market structure, we propose that private financial institutions be allowed to issue mortgage-backed securities with the government guarantees. Because the guarantees are restricted to mortgages that meet simple criteria, the costs of monitoring are not large, implying that many firms can participate in the activity in a relative competitive environment (that is, you would not need the heavy regulation associated with a public utility model of housing finance). The well-defined restrictions on qualified mortgages also mean that the resulting MBS are more likely to be viewed as interchangeable so that market liquidity is enhanced.

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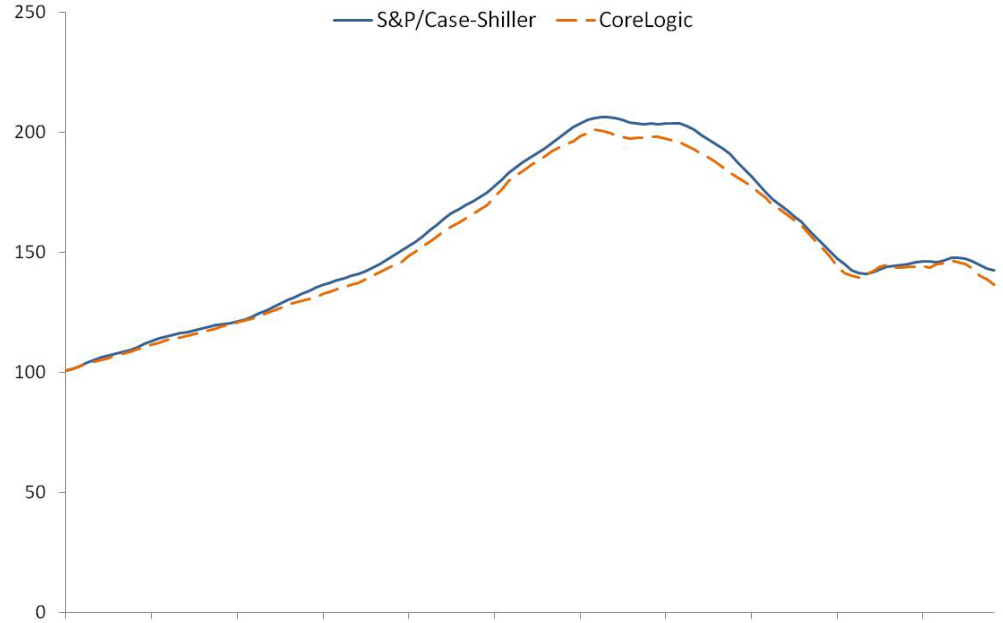
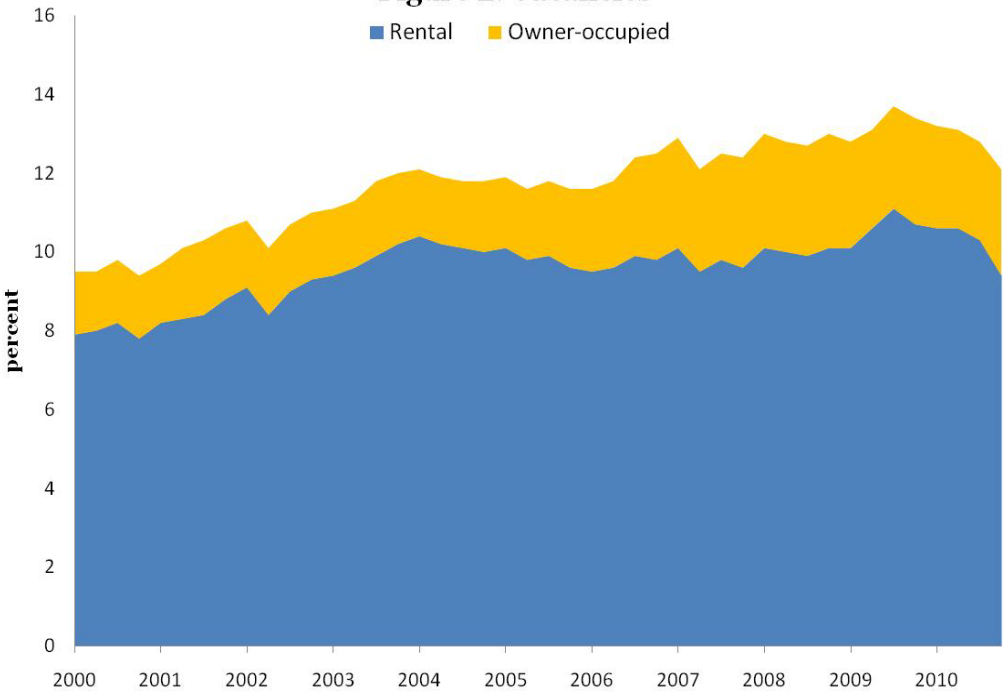
Figure 1: Home Prices



SA, Jan 2000=100

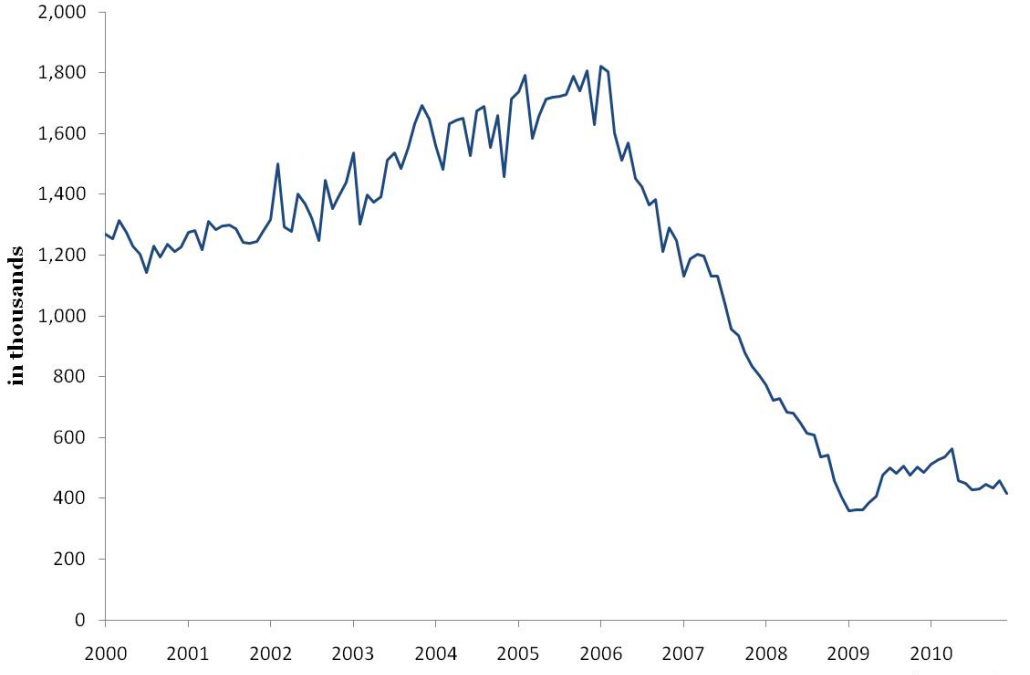
Source: S&P and CoreLogic/Haver Analytics

Figure 2: Vacancies



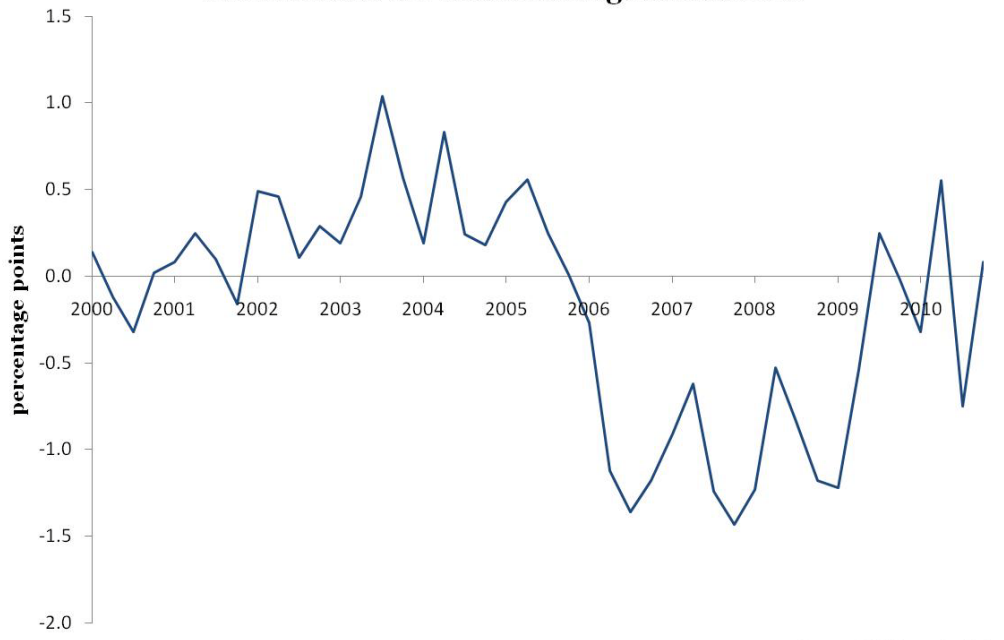
Source: Census Bureau/Haver Analytics

Figure 3: Single-Family Housing Starts



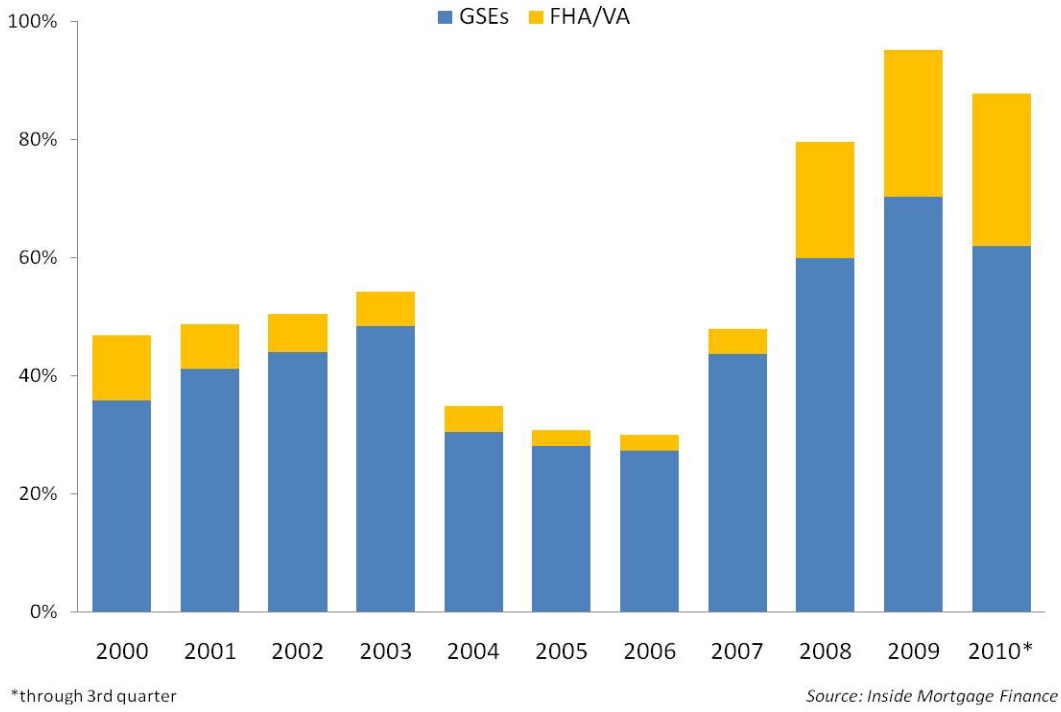
Source: Census Bureau/Haver Analytics

Figure 4: Private Residential Investment Contribution to Percent Change in Real GDP



Source: BEA/Haver Analytics

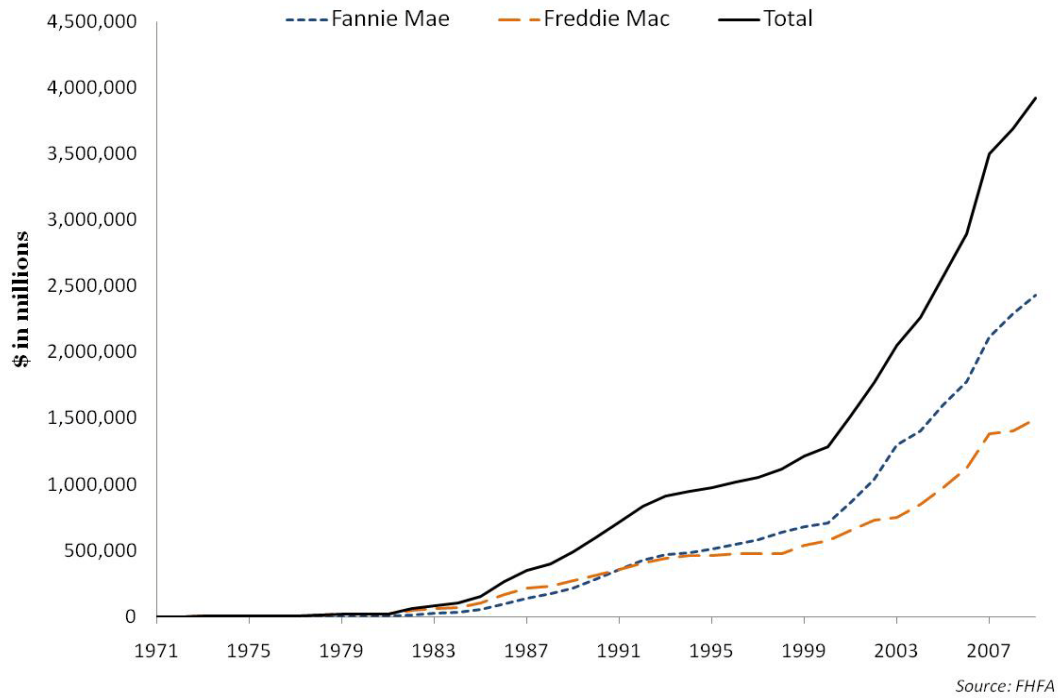
Figure 5: Share of Originations



*through 3rd quarter

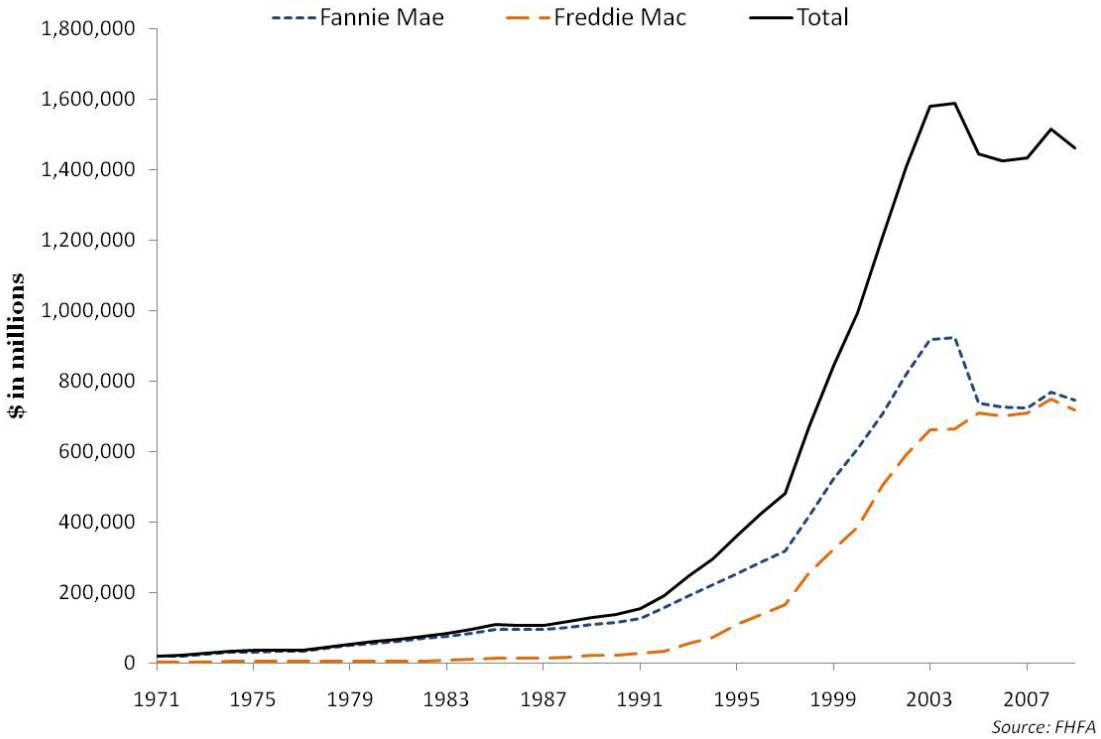
Source: Inside Mortgage Finance

Figure 6: MBS Outstanding



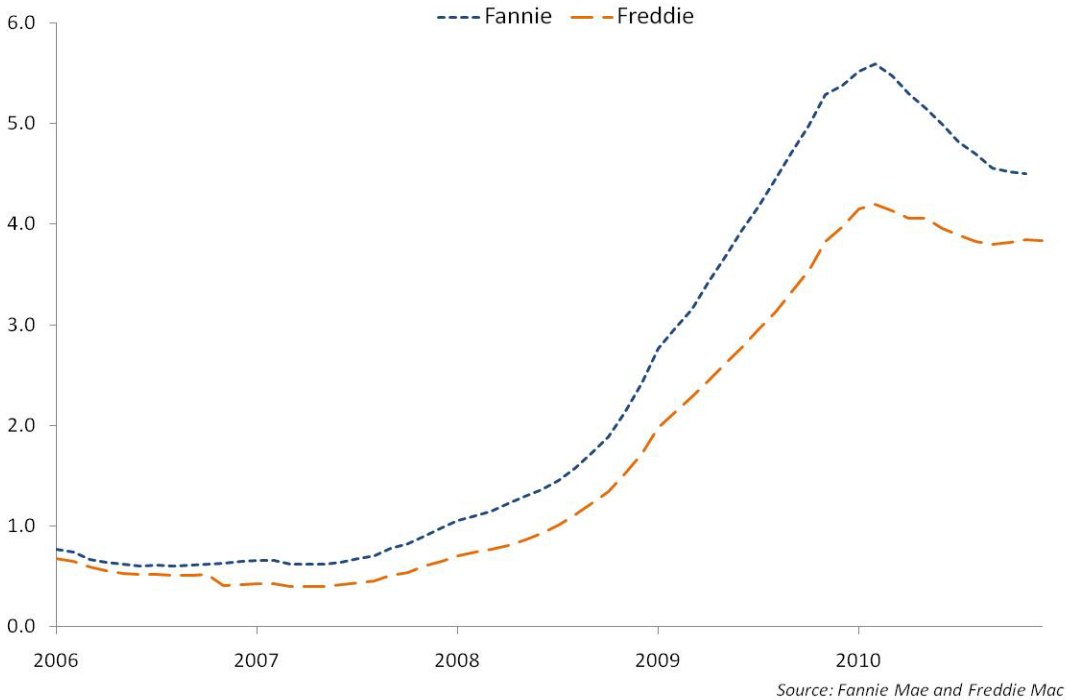
Source: FHFA

Figure 7: Total Retained Mortgage Portfolio



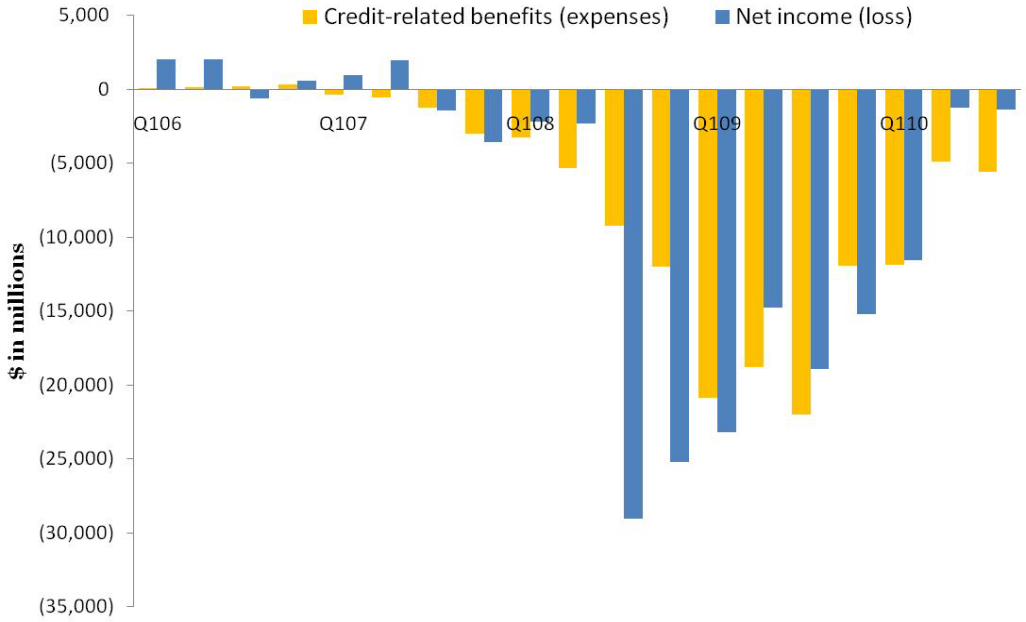
Source: FHFA

Figure 8: Delinquency Rates

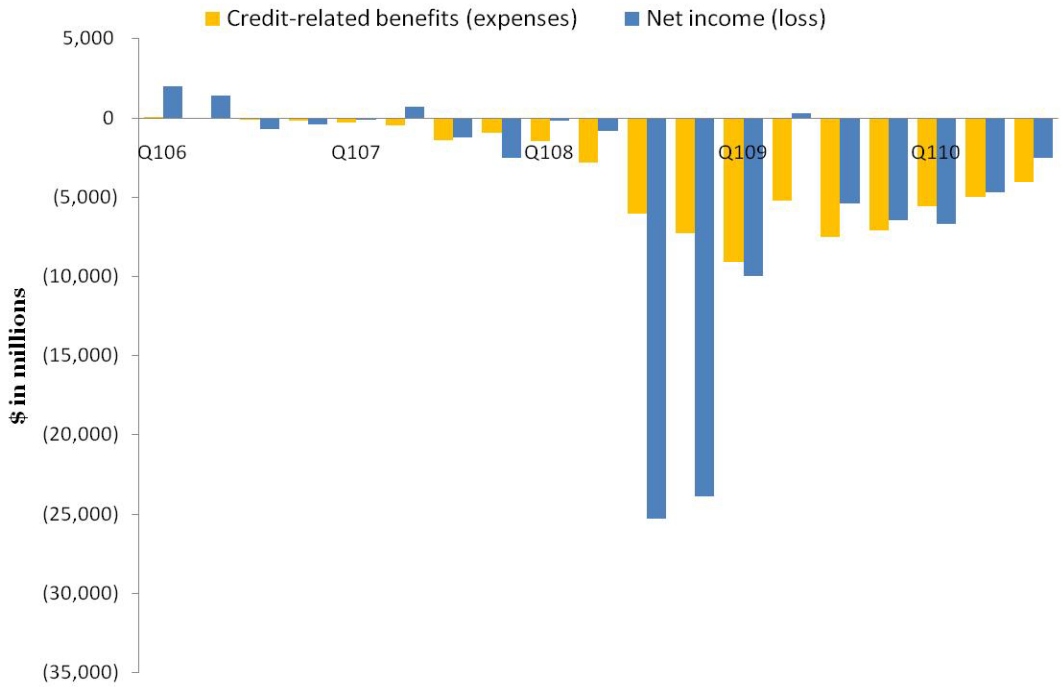


Source: Fannie Mae and Freddie Mac

Figure 9: GSE Losses
Fannie Mae



Freddie Mac



Source: Fannie Mae and Freddie Mac

Table 1: Retained Mortgage Portfolio Detail ($ in millions)

Fannie Mae

	Total Retained Mortgage Portfolio	Whole loans						MBS						Other[3]
		Single-Family				Multi-family	Total	Private-Label				Fannie Mae	Freddie Mac & Ginnie Mae	
		Conventional			Total FHA/ VA/RD			Sub-prime[1]	Alt-A[1]	Other[1,2]	Total			
		Fixed-Rate	Adj. Rate	Seconds										
2000	607,731	125,786	13,244	480	4,763	8,361	152,634				34,266	351,066	57,058	12,707
2001	706,347	140,454	10,427	917	5,069	10,538	167,405				29,175	431,776	61,718	16,273
2002	820,627	282,899	12,142	416	6,404	21,383	323,244	9,404	3,925	14,828	28,157	380,383	48,345	40,498
2003	919,589	335,812	19,155	233	7,284	35,149	397,633	29,175	8,812	8,992	46,979	405,922	37,975	31,080
2004	925,194	307,048	38,350	177	10,112	44,470	400,157	74,657	25,610	8,542	108,809	344,404	41,763	30,061
2005	736,803	261,214	38,331	220	15,036	51,879	366,680	47,110	33,051	6,754	86,915	234,451	31,041	17,716
2006	726,434	255,490	46,820	287	20,106	60,342	383,045	46,876	35,124	15,281	97,281	199,644	32,038	14,426
2007	723,620	240,090	43,278	261	28,202	91,746	403,577	32,040	32,475	30,295	94,810	180,163	33,038	12,032
2008	767,989	223,881	44,157	215	43,799	117,441	429,493	24,551	27,858	30,997	83,406	228,950	34,900	-8,760
2009	745,271	208,915	34,602	213	52,399	120,414	416,543	20,527	24,505	30,312	75,344	220,245	42,667	-9,528

Freddie Mac

	Total Retained Mortgage Portfolio	Whole loans						MBS						Other[3]
		Single-Family				Multi-family	Total	Private-Label				Freddie Mac	Fannie Mae & Ginnie Mae	
		Conventional			Total FHA/ VA/RD			Sub-prime[4]	Alt-A[4]	Other[2,5]	Total			
		Fixed-Rate	Adj. Rate	Seconds										
2000	385,451	39,537	2,125	9	1,200	16,369	59,240				35,997	246,209	37,294	6,711
2001	503,769	38,267	1,073	5	964	22,483	62,792				42,336	308,427	76,827	13,387
2002	589,899	33,821	1,321	3	705	28,036	63,886				70,752	341,287	83,707	30,267
2003	660,531	25,889	871	1	513	32,996	60,270				107,301	393,135	77,289	22,536
2004	664,582	22,055	990	0	344	37,971	61,360			166,411	166,411	356,698	59,715	20,398
2005	709,503	19,238	903	0	255	41,085	61,481			231,594	231,594	361,324	44,626	10,478
2006	700,002	19,211	1,233	0	196	45,207	65,847	122,099	35,369	67,163	224,631	354,262	45,385	9,877
2007	710,042	21,578	2,700	0	311	57,569	82,158	101,325	30,063	87,526	218,914	356,970	47,836	4,164
2008	748,747	36,071	2,136	0	548	72,721	111,476	74,851	25,067	85,123	185,041	424,524	70,852	-43,146
2009	716,974	50,980	2,310	0	1,588	83,938	138,816	61,574	21,439	80,803	163,816	374,615	66,171	-26,444

Source: FHFA.

1. Not available before 2002.
2. Includes other single-family securities, including manufactured housing, and multifamily securities.
3. Includes unamortized premiums, discounts, deferred adjustments, & fair-value adjustments on securities and loans and mortgage revenu
4. Not available before 2006.
5. Not available before 2004.