The Role of the GSEs and Housing Policy in the Financial Crisis

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1. Introduction

U.S. housing policy has long promoted homeownership for American households. Major federal housing programs with this goal include:[1]

- Fannie Mae and Freddie Mac are government sponsored enterprises (GSEs) with a public mission to support the U.S. mortgage market and private incentives to maximize profits and shareholder value. The GSEs had outstanding obligations (debt and mortgage backed security (MBS) guarantees) of over $5.5 trillion at 9/30/2008, just after being placed in a government conservatorship. Their public mission also includes "housing goals" that provide motivation for the GSEs to support the mortgage market for lower income households and regions.
- The Federal Housing Administration (FHA), created in 1934, operates as an independent entity within the Housing and Urban Development (HUD) agency to insure home mortgages for lower income households. The FHA is normally self-supporting, setting its insurance fees to cover its expected losses. It has been highly successful over its history and has never required a government subsidy or bailout for its single-family mortgage insurance program. However, it is facing escalating losses in the aftermath of the mortgage crisis.
- The Community Reinvestment Act (CRA) was first passed in 1977 to provide incentives for banks and thrifts to provide loans and other financial support to lower-income households and regions. Although the CRA is not generally considered a "housing program" it does influence mortgage lending alongside the FHA and GSE lower-income programs.
- The HUD agency, in addition to the FHA, carries out a wide range of support and subsidy programs to meet housing needs. HUD's 2009 fiscal year budget was $38.5 billion.

[1] Quigley and Jaffee (2007) provides a recent review of U.S. housing programs. Quigley and Jaffee (2008) provides an updated summary, including insights regarding the evolving subprime mortgage crisis. Quigley and Jaffee (2010) is a forthcoming study that evaluates both the GSE and FHA mortgage credit programs.

- Tax expenditures support housing by allowing the deductibility of home mortgage interest while providing a tax exemption for a homeowner's implicit rental income and most home-sale capital gains. These tax expenditures cost $143 billion for the 2009 fiscal year.

In this paper, I evaluate the role that the housing programs and institutions played in the financial crisis as requested by the Financial Crisis Inquiry Commission. I do not, therefore, evaluate these programs in any more general sense, nor do I discuss any current proposals for regulatory reform.[2] I focus on the GSEs (including their housing goals), the FHA, and the CRA. I exclude the HUD programs (other than the FHA), the federal tax expenditures for home mortgages, and a miscellany of smaller federal and state housing programs. Of course, any program that promoted U.S. homeownership and housing investment must bear some responsibility for the crisis, since it participated in a housing finance system that provided inadequate controls for sound mortgage underwriting and housing investment. On the other hand, the HUD programs, tax expenditure policies, and other housing programs have long existed and I find no evidence that they were focused, or recently modified or expanded, in a manner that might have particularly encouraged high-risk mortgage lending. As a result, I cannot foresee empirical methodologies that could attribute any specific quantitative responsibility to them.

1.1 Executive Summary of Primary Conclusions

GSEs. I find the GSEs to have been a significant factor in expanding the mortgage crisis as a result of their large volume of high-risk mortgage purchases and guarantees. The GSE public/private hybrid structure created a strong and continuing incentive for such risk-taking, and a GSE collapse was inevitable. I find that the GSE housing goals for lending to lower-income households and in lower-income regions were secondary to profits as a factor motivating the

[2] In other work, Jaffee (2010) and Jaffee and Quigley, I evaluate alternative policies for regulatory reform.

GSE investments in high-risk mortgages. However, I recommend further research to determine which GSE high-risk mortgage features created the highest default propensities, and whether these features were also a common component of the GSEs' housing-goal-eligible mortgages.

FHA. I find that the FHA played a minor, and basically irrelevant, role in creating or expanding the mortgage crisis, as evidenced by its rapidly falling share of total mortgage lending during the housing bubble. The FHA effectively allowed private lenders and the GSEs to take away its market, a decision questioned at the time, but hard to fault in retrospect.

CRA. I find no evidence that CRA incentives played a significant role in expanding high-risk lending during the housing bubble. Of course, as already noted, any program that promotes mortgage lending to lower-income households will face possible "guilt by association". Thus I recommend further empirical tests to determine more precisely the role the CRA may have played in creating high-risk and undesirable mortgage lending.

Other crisis factors. The GSEs were certainly not alone in creating or expanding the financial crisis. In my judgment, factors other than housing policy played a more fundamental role in creating the crisis. These factors include the global savings glut, a monetary policy that accommodated a major housing bubble, highly leveraged, risky, and lightly regulated bank investment portfolios, and an unconstrained OTC market for credit default swaps.

1.2 Defining Subprime, Alt-A, and other High-Risk Mortgages

Before turning to the analysis, it is important to review the definitions of subprime, Alt-A, and other high-risk mortgages. The terms "subprime" and "Alt-A" mortgages are now commonly used in the press, but they are well defined only with respect to mortgage securitizations for which the disclosure materials explicitly labeled the mortgage pool as either "subprime" or "Alt-A". Securitized subprime mortgage pools were also sometimes described as B or C credits. The

term “Alt-A” originally stood for “alternative to agency”, meaning that the mortgages in the pool had some underwriting defect that made them ineligible for sale to the GSEs. Today, Alt-A mortgages are judged to exceed subprime in quality, but contain some underwriting defects.

Data for subprime and Alt-A securitized pools have been available from two key sources. First, the Inside Mortgage Finance publications tabulate the aggregate amount of securitized subprime and Alt-A mortgage pools. Second, the Loan Performance datasets provide detailed information on the individual loans that underlie most subprime and Alt-A securitization pools. If we were only interested in the subprime and Alt-A securitized loans pools, these two data sources would be adequate.

However, we are also interested in loans with high-risk characteristics that were directly held in the investment portfolios of the GSEs, banks, and other investors. For these loans, there are no standard subprime or Alt-A definitions or data sources. The GSEs illustrate the problem. Table 1 shows the subprime, Alt-A, and other high-risk mortgages and mortgage securities that are recognized in the GSEs’ official reports at 9/30/2009. For example, Fannie Mae’s “Guaranty Book” is reported to hold $8 billion of subprime mortgages, $259 billion of Alt-A mortgages, and $591 billion of other high-risk mortgages. The latter category covers loans that are not explicitly identified as subprime or Alt-A, but nevertheless contain such high-risk characteristics as low FICO scores, high loan to value ratios, and interest-only/option ARM features. It would clearly understate the riskiness of Fannie Mae’s guaranty book to focus only on the much smaller volume of explicitly identified subprime and Alt-A mortgages. Thus, wherever possible in this paper, I apply high-risk mortgage data that combine the subprime, Alt-A, and other high-risk categories. A data appendix also provides details on the data sources used for this paper.

We now turn to the analysis of the possible role of the GSEs in the financial crisis.

Table 1: GSE High-Risk and Total Mortgage Positions		
$ Billions of Single-Family Mortgages as of 9/30/2009		
Guaranty Book/Credit Portfolio	Fannie Mae	Freddie Mac
Subprime	$8	$0
Alt-A	259	156
Other High-Risk	591	407
Total High-Risk	857	563
Total Guaranty Book/Credit Portfolio	2796	1896
High-Risk/Total	31%	30%
Mortgage Investment Portfolio	Fannie Mae	Freddie Mac
Subprime	$22	$64
Alt-A	25	22
Other High-Risk	0	18
Total High-Risk	47	104
Total Investment Portfolio	766	784
High-Risk/Total	6%	13%
Source: 10Q and Credit Supplements, 2009 Q3, Fannie Mae and Freddie Mac.		

2. Fannie Mae and Freddie Mac (the GSEs) and the Financial Crisis

From the start of their government conservatorship on 9/07/2008 through the most recent financial reports (9/30/2009), the two GSEs have required capital infusions from the U.S. Treasury of $111 billion in order to bring their capital accounts back to zero; in other words, the two firms lost all of their initial capital plus $111 billion during this period. Their reports further indicate that most of these losses arise from defaults on the GSEs' high-risk mortgage positions. In addition to the direct governmental capital infusion, the U.S. Treasury and Federal Reserve have now purchased over $1.3 billion of GSE debt and MBS in support of the firms and their securities.[3] These losses and the data in Table 1 confirm that the GSEs participated actively, and disastrously, in purchasing and guaranteeing a wide range of high-risk mortgages.

[3] A convenient summary of the quantitative support provided by the Treasury and Federal Reserve for capital investments and market purchases of their debt and MBS are available from the Federal Housing Finance Agency (2009); see http://www.fhfa.gov/webfiles/15412/TreasFED02192010.pdf

I begin the GSE analysis with a brief review of the GSEs' role in the U.S. mortgage market before the advent of subprime lending.

2.1 The GSE Role in the U.S. Mortgage Market

For over three decades, the two GSEs increasingly dominated the U.S. mortgage market, reaching a major penetration by 2003 of over 50 percent of all U.S. single-family mortgages and close to 100 percent of all prime, conforming, mortgages. This left private market lenders to focus on jumbo mortgages (that exceeded the "conforming" limits that restricted the GSEs) and adjustable rate mortgages (and other more exotic mortgages that existed in small numbers), while the FHA and CRA-constrained banks provided loans to lower-income borrowers. This institutional division of labor expanded mortgage market access for both lower-income and middle-income borrowers. The efficiency of the U.S. mortgage market relies, as well, on tools and instruments that evolved over many years, including FICO scores and other automated tools for mortgage underwriting, securitization to facilitate the transfer of the mortgages from "Main Street" lenders to "Wall Street" investors, and private mortgage insurers that spread the risk on the higher-risk mortgages.

The traditional business model of the GSEs involves two distinguishable mortgage market activities. For the first, mortgage securitization, the GSEs purchase mortgages, securitize them, and then sell the resulting MBS to 3rd party investors. The GSEs provided value-added in the process because the MBS investors receive a 100% GSE guarantee against any loss of interest or principal resulting from mortgage borrower defaults. The investors further assumed that the U.S. Treasury would bail them out if the GSEs were to default on their guarantees; the GSE guarantees were thus transformed into an "implicit government guarantee".[4] The GSEs charged

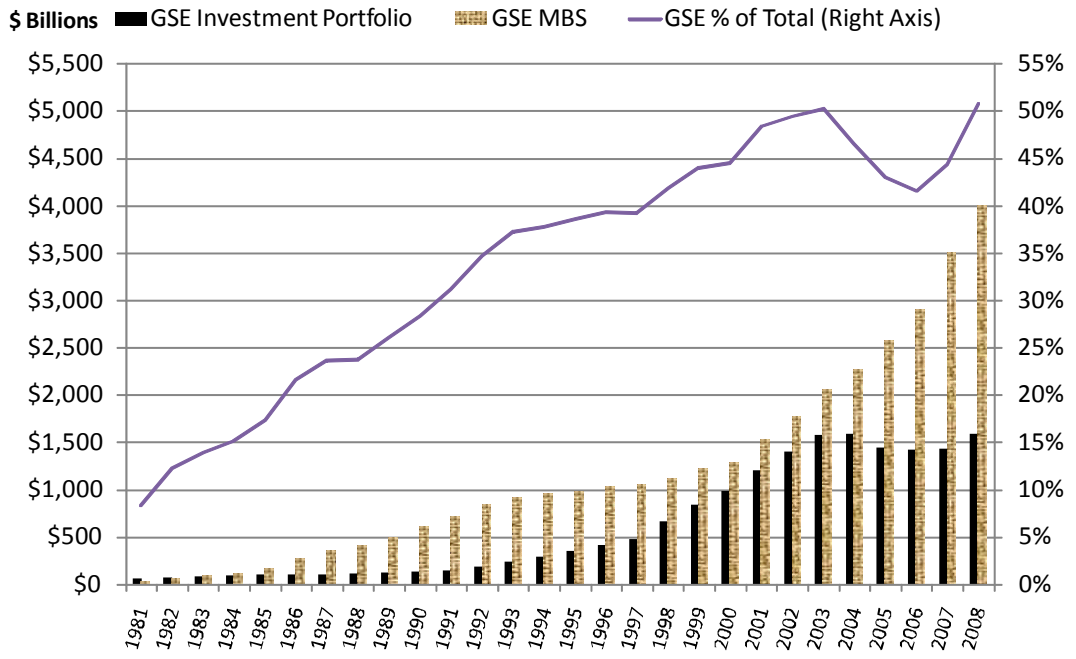
[4] The Treasury/Federal Reserve GSE bailout in September 2008 effectively transformed the "implicit" guarantee into an explicit one. In other words, the assumption of the GSE investors proved to be correct.

an annual “guarantee fee” ranging from 15 to 25 basis points as a percent of the outstanding volume of the guaranteed MBS. A small capital ratio of 45 basis points, less than one-half percent, was imposed on the GSEs as a percentage of their outstanding MBS principal balances.

Secondly, the GSEs maintain on-balance-sheet mortgage investment portfolios. Fannie Mae’s portfolio started long before the widespread use of securitization and both GSE portfolios have served various purposes historically, including to hold idiosyncratic mortgages that could not be readily securitized. Over time, the GSEs came to rely on these investment portfolios as their major profit center. The GSEs funded these portfolios by issuing “agency debt” with interest rate coupons only slightly above comparable U.S. Treasury bonds--investors believed these bonds were also protected by the implicit government guarantee. The GSEs earned interest rate spreads—mortgage yields minus funding costs--on these portfolio positions that commonly exceeded 100 basis points, making them far more profitable than the 15 to 25 basis point guarantee fees the GSEs earned on the MBS business line. The GSEs were required to maintain a 2.5 percent capital ratio on the mortgage investment portfolios. A range of expert observers voiced continuing concerns that these portfolios expanded the GSEs’ risk profile without providing any significant public benefits.

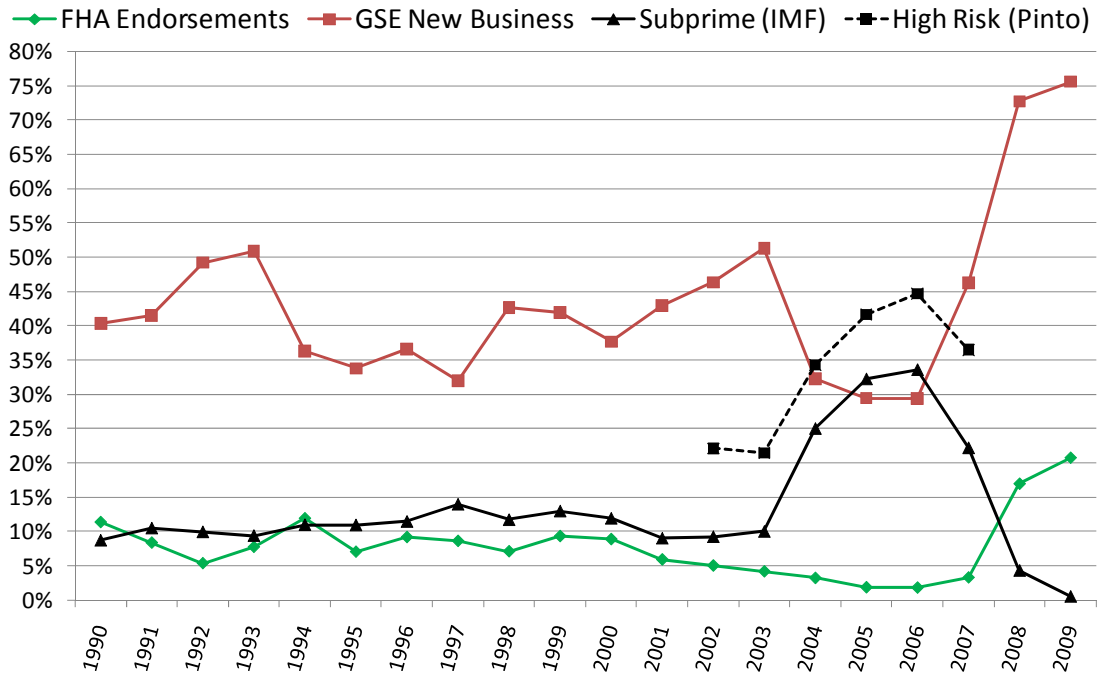
Figure 1 illustrates the growth of the two GSE business lines, and the GSEs’ evolving share of the total single-family mortgage market. The solid line (right axis) shows the steady growth in the GSE share of the U.S. mortgage market, reaching 50.3% of the total market in 2003. The GSE market share then fell, but began to recover in 2007 as the GSEs expanded their high-risk mortgage activity, with the GSEs’ total market share reaching its all-time high of 50.9% by the end of 2008. The two solid bars (left axis) show that the investment portfolio grew the most rapidly during the 1990s, whereas MBS outstanding grew most rapidly after 2000.

Figure 1: GSE Investment Portfolio and MBS ($ Billions, Left Axis), GSE % of Total Outstanding Single Family Mortgages (Right Axis)



Sources: Federal Reserve, Office of Federal Housing Enterprise Oversight (2008), and Fannie Mae and Freddie Monthly Reports.

Figure 2: GSE, FHA, Subprime, and High Risk New Mortgage Activity as Percentage of Total Single-Family Mortgage Originations



Sources: Fannie Mae, Freddie Mac, Federal Housing Finance Agency, Inside Mortgage Finance, Ed Pinto. For details see data appendix.

2.2 The GSEs During the Subprime Mortgage Boom

Figure 2 shows that from 2003 to the end of 2006, the GSEs lost approximately 20 percentage points of new business market share. The FHA market share fell as well over this period, to an almost negligible volume. In contrast, the figure shows an increase of 20-plus percentage points in the market share of subprime lending based on data from Inside Mortgage Finance (IMF) and in the market share of high-risk lending based on a special tabulation by Ed Pinto (currently available only from 2002 to 2007).[5] It thus appears that the subprime lending innovations over this period actively displaced GSE and FHA activity, leading to the declines in their market shares.[6] The major accounting scandals that both GSEs faced and admitted in 2003 and 2004 no doubt added to their inability to respond promptly to the new lending innovations.

At the same time the GSEs were facing a falling market share in the overall U.S. mortgage market, they were significantly expanding their presence in the market for high-risk mortgages. This is demonstrated in Table 2:[7]

- Column (1): the dollar amount of GSE high-risk activity generally rises from 2002 to 2007.
- Column (5): GSE high-risk activity exceeds 40 percent of total new GSI business after 2003.
- Column (6): GSE high-risk activity steadily exceeds 32 percent of total high-risk lending.
- Column (7): The GSEs' portfolio share of high-risk lending (column 5) steadily exceeds the same ratio for all lenders (column 7).

[5] The Pinto series is about 10 percentage points higher because it uses a broader definition of high-risk mortgages. See the data appendix for details on these alternative measures of high-risk mortgages.

[6] The high-risk components of the GSE and FHA activity in Figure 2 are also part of the total high-risk loan activity. The categories not shown in the figure are Veteran Administration loans and non-conforming private market loans.

[7] The GSE and aggregate measures of high-risk lending in Table 2 are based on the data from Ed Pinto. See also footnote 4 and the data appendix. Similar results would be obtained using only publicly released GSE data, such as already displayed in Table 1and the subprime and Alt-A aggregates available from Inside Mortgage Finance. For example, see Wallison and Calomiris (2008).

Table 2: GSE Activity and High-Risk Lending

$ Billions	GSE New Business		Aggregate Lending		GSE High-Risk/	GSE High-Risk/	Agg. High-Risk/
	High-Risk	Total	High-Risk	Total	GSE Total	Agg. High-Risk	Agg. Total
	(1)	(2)	(3)	(4)	(5) = (1)/(2)	(6) = (1)/(3)	(7) = (3)/(4)
2002	328	1337	638	2885	25%	51%	22%
2003	433	2023	846	3945	21%	51%	21%
2004	418	943	1002	2920	44%	42%	34%
2005	411	919	1299	3120	45%	32%	42%
2006	448	876	1331	2980	51%	34%	45%
2007	450	1125	887	2430	40%	51%	37%

Sources: Fannie Mae, Freddie Mac, Inside Mortgage Finance, Ed Pinto, available at: http://www.aei.org/docLib/Pinto-High-LTV-Subprime-Alt-A.pdf

Table 3: GSE High-Risk Loan Attributes by Year of Acquisition
By share of total annual GSE acquisitions

Fannie Mae	2007	2006	2005	2004/prior	
Original LTV > 90%	19%	11%	8%	7%	
FICO < 620	7%	6%	4%	5%	
Adjustable-Rate	9%	14%	17%	8%	
Interest Only	15%	17%	10%	2%	
Condominium	11%	12%	10%	7%	
Freddie Mac	2007	2006	2005	2004	2003/prior
CLTV > 100%	37%	36%	25%	11%	4%
FICO < 620	7%	5%	4%	4%	4%
Adjustable-Rate	13%	21%	17%	14%	4%
Interest Only	20%	19%	9%	2%	0%
Condominium	11%	11%	9%	8%	5%

Sources: Credit Supplements, Fannie Mae and Freddie Mac, 2009 Q3.

These conclusions are reinforced by the data in Table 3 that show the GSE high-risk investments growing as a share of their total mortgage activity for various forms of high-risk mortgages. For example, the share of Fannie Mae's total mortgage annual acquisitions with a loan to value ratio (LTV) greater than 90% grew from 7% in 2004 and earlier to 19% in 2007. For Freddie Mac, the share of its total acquisitions with a current loan to value ratio (CLTV) expanded from 4% in 2003 and earlier to 37% in 2007. In fact, for both GSEs and for almost all years and high-risk mortgage characteristics, rising shares are evident through to 2007.

The data in both Tables 2 and 3 thus confirm that the GSEs steadily added to their high-risk mortgage positions and that by 2006/2007 the GSEs' high-risk mortgage purchases are a significant share of both the GSEs' total mortgage acquisitions and the aggregate high-risk mortgage originations. Wallison and Calomiris (2008) come to a similar conclusion.

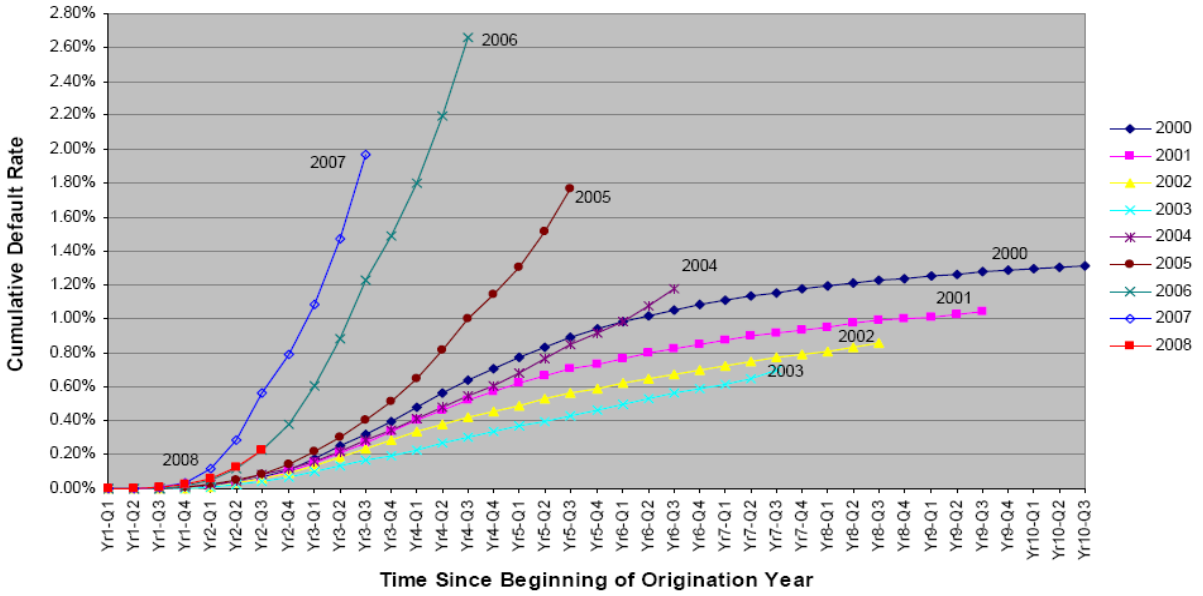
The cumulative default rates resulting from the GSEs' high-risk GSE mortgage activity are shown in Figures 3 and 4 for Fannie Mae and Freddie Mac respectively. Each curve represents a particular vintage (year of origination) of high-risk loans, and shows the accumulating default rate as a function of time since origination. For both GSEs, the 2007 vintage has the highest default pattern, followed by 2006, and then by 2005. The rising default patterns for vintages starting with 2005 is not unique for the GSEs. The same pattern is observed for all subprime mortgage portfolios and is consistent with a general decline in underwriting standards over this period.[8] It represents, however, particularly bad news for the GSEs, since they were steadily expanding their penetration of the high-risk market over this period, and actually acquired more than half of all the high-risk mortgages originated in 2007. The GSEs were also holding the single largest portfolio of high-risk mortgages by 2007.

2.3 The GSE Motivation for Acquiring High-Risk Mortgages

I now consider what motivated the GSEs to acquire large portfolios of high-risk mortgages. The managements of the GSEs at the time could, of course, provide an answer, and I recommend that the Commission acquire that information. For the present, I will make the case that GSE management would have believed that a high-risk mortgage portfolio was in the best interests of their shareholders while also satisfying their lower-income housing goals.

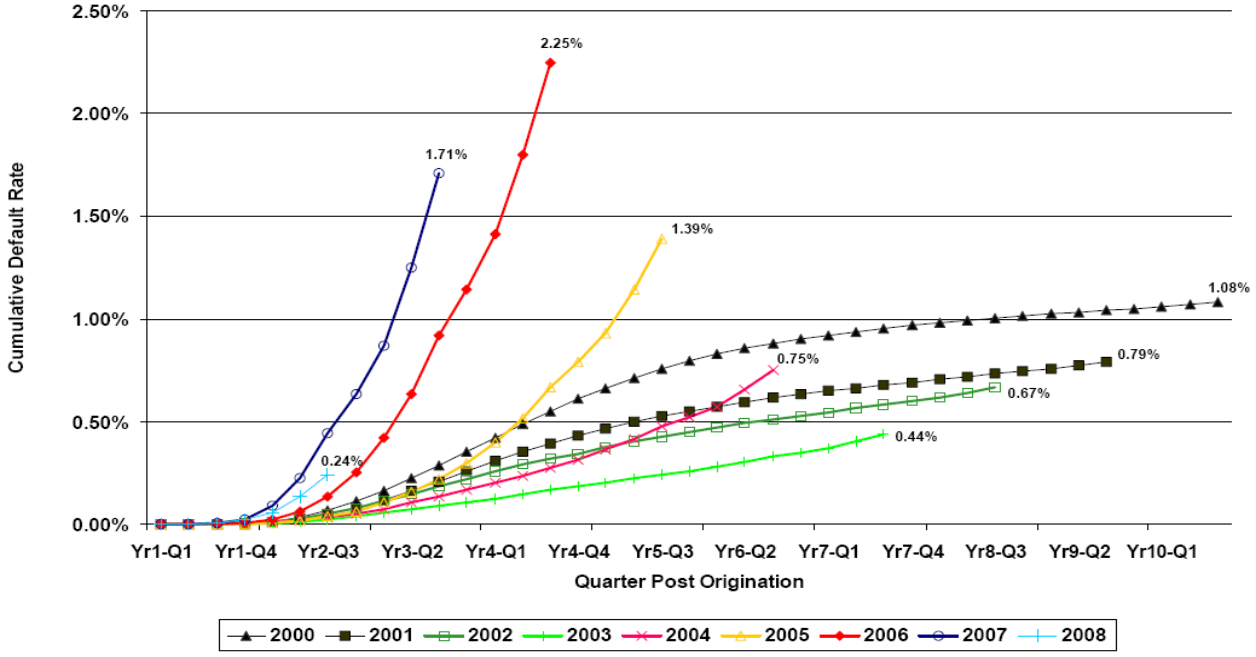
[8] See Mian and Sufi (2009) and Demyanyk and Van Hemert (2009) for detailed analyses of the observable patterns in subprime lending, including the concentrated locations of the properties and the observable factors associated with the highest default rates, including the year of origination.

Figure 3: Fannie Mae Cumulative Default Rates by Year of Origination
(Source: Fannie Mae 10Q, 2009 Q3)



Note: Defaults include loan liquidations other than through voluntary pay-off or repurchase by lenders and include loan foreclosures, preforeclosure sales, sales to third parties and deeds in lieu of foreclosure. Cumulative Default Rate is the total number of single-family conventional loans in the guaranty book of business originated in the identified year that have defaulted, divided by the total number of single-family conventional loans in the guaranty book of business originated in the identified year.

Figure 4: Freddie Mac Cumulative Default Rates by Year of Origination
(Source: Freddie Mac 10Q, 2009 Q3)



[1] Represents the cumulative transition rate of loans to a default event, and is calculated for each year of origination as the number of loans that have proceeded to foreclosure acquisition or other disposition events, excluding liquidations through voluntary pay-off, divided by the number of loans in our single-family mortgage portfolio. Excludes certain Structured Transactions

Figure 5: Mortgage Foreclosure Rates
(Source: Mortgage Bankers of America)

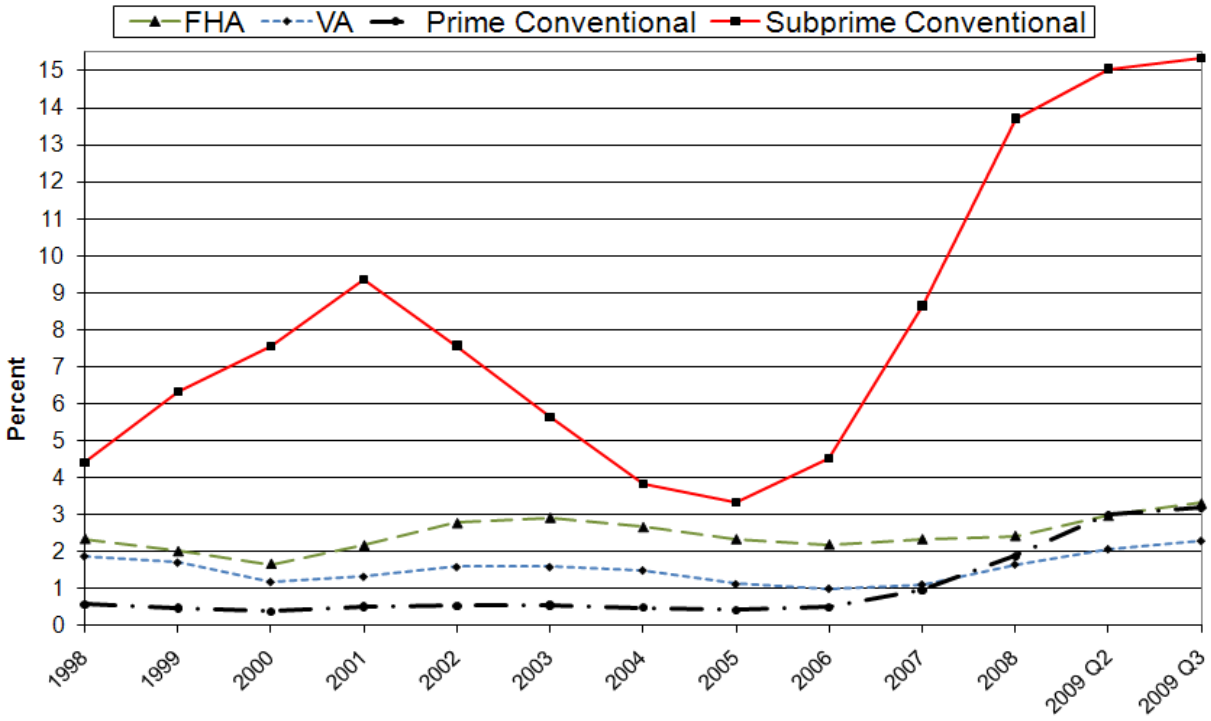
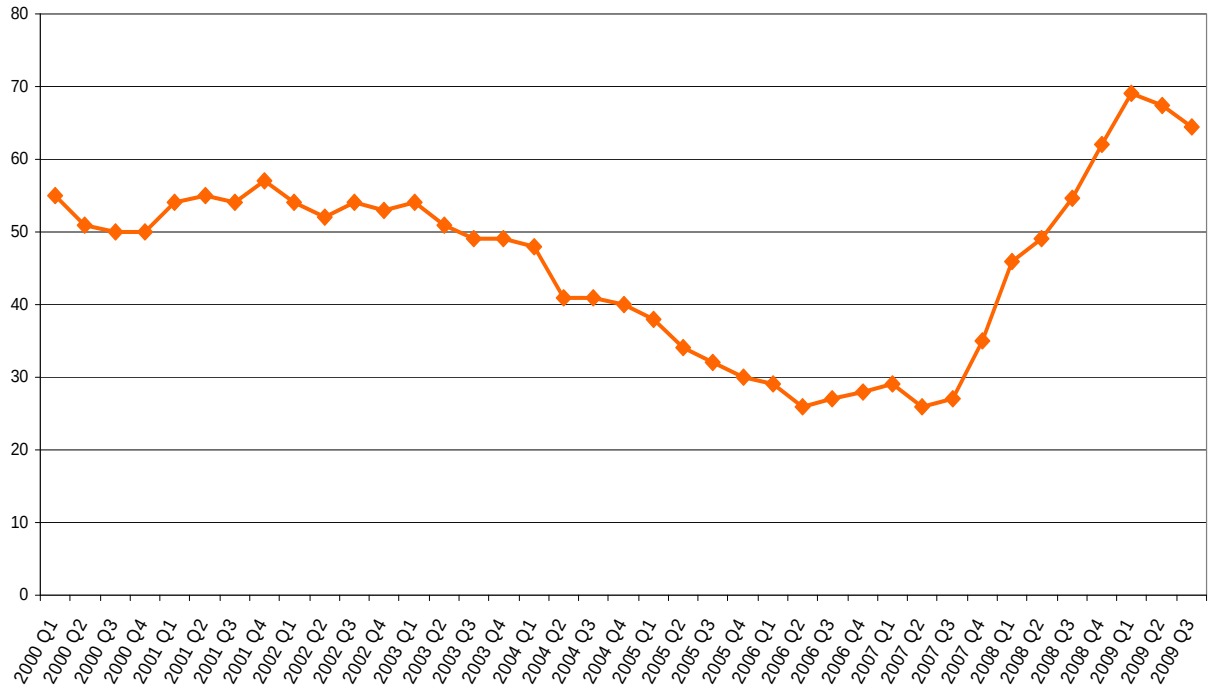


Figure 6: California Housing Affordability Index
(Source: California Association of Realtors)



I begin by noting two sets of information that the GSE managements would have had available as they expanded their portfolio of high-risk mortgages starting in, say, 2004. Figure 5 shows the foreclosure rates on different classes of mortgage loans as tabulated by the Mortgage Bankers of America. Standing in 2004, an informed observer would have been well aware of the serious wave of subprime mortgage foreclosures that peaked in 2001 at over 9%, a level reached by subprime mortgages again only in 2008. The 2001 peak in foreclosures was the result of the dot-com recession. The implication is that GSE management would have known by 2004 that loss rates on subprime and similar high-risk mortgages could be an order of magnitude higher than the default rates they normally faced on standard portfolios of prime conforming mortgages.

Figure 6 shows an index of affordability, measuring the percentage of homeowners, in this case, California homeowners, who could afford the median-priced house. A fifty percent index value is a benchmark value for a sustainable housing market, since it suggests that half of the households can afford the median-priced house. Even into 2004, California household incomes were high enough, and California house prices were low enough, to satisfy this condition. By 2005, however, under 30 percent of California households could afford the median house price. This information should have, and would have, reinforced the GSE management's recognition that these were particularly risky times to take on particularly risky mortgages.

Risk-taking had actually been a continuing GSE strategy for almost two decades. In Jaffee (2003), I document the large amount of interest rate and liquidity risk that the GSEs added as they rapidly expanded their on-balance sheet mortgage investment portfolios throughout the 1990s; see Figure 1. Any significant interest rate volatility would have created substantial losses for both firms. It was only the luck of stable interest rates that allowed the GSEs to pass two

decades without a major collapse from interest rate volatility.[9] Furthermore, since a large part of their debt was short-term, any significant capital market disruption would have created a liquidity crisis with the GSEs unable to rollover their maturing debt. Indeed, it was such a liquidity crisis that created the specific timing of the government's GSE bailout in 2008.

Risk-taking—whether interest rate risk or credit risk—can maximize the expected benefits for the GSEs' management and shareholders because they profit greatly when there are favorable outcomes, whereas the bondholders (if the GSEs were to become bankrupt), or the taxpayers (if they bailout the bondholders) suffer the major losses when there are unfavorable outcomes. Furthermore, the normal deterrence to risk-taking created by bondholder discipline was largely absent for the GSEs because their bondholders assumed—correctly—that they were protected by an implicit government guarantee. Finally, the GSE penetration of its primary market for conforming mortgages had effectively reached 100 percent, so only by expanding to riskier ventures could the firms had hoped to continue to report growing earnings.

The bottom line is that GSE managers long understood that they and their shareholders would benefit from risk-taking as long as the higher risks created higher expected returns. To understand the GSE motivation, of course, does not make it right. As noted above, the GSE losses have already cost U.S. taxpayers $111 billion, and the ultimate cost could very well be double or even quadruple that amount. In my view, the GSEs' high-risk mortgage investments reflect truly unacceptable decisions by the managers of large financial firms with a public mission to stabilize mortgage markets, with ***government*** in their status, and with almost unlimited access to low-cost funding based on an implicit guarantee of government support. While we might hope to receive much more responsible behavior from such managers, I fear this is the inevitable result of combining a public mission with private profit incentives.

[9] Fannie Mae had actually already faced serious financial losses in the early 1980s from volatile interest rates.

2.4 The Role of the GSEs' Lower-income Housing Goals

The fundamental GSE disposition toward risk-taking also sheds light on the convenient complementarity that might allow high-risk mortgages to satisfy both the GSEs' profit motives and their Congressional and regulator-imposed housing goals to acquire lower-income mortgages. Indeed, if the same loans literally satisfy both factors— profitable risk-taking and lower-income housing goals—then the two factors will be observationally equivalent: empirical observations will be unable to distinguish them.

That the GSE housing goals are consistent with high-risk mortgage activity, however, does not imply that the housing goals *caused* the GSEs' high-risk activity. Indeed, several factors lead me to the view that the housing goals were a distinctly secondary priority for GSE management compared to profits as a factor motivating their investments in high-risk mortgages:

- The GSEs failed to meet their housing goals at several points between 2005 and 2008, and without any significant repercussions from their regulators; see Federal Housing Finance Agency (2010).
- The computations carried out by regulators for setting the goals explicitly exclude the riskiest categories of subprime mortgages; see Federal Housing Finance Agency (2010).
- The consensus of the academic literature is that the affordable housing goals have not substantially increased homeownership among lower-income families. A key factor is that the GSEs appear to have "cherry-picked" only the highest quality qualifying loans, loans that would have been made by other lenders in any case. See Jaffee and Quigley (2007) for further discussion and citations to the academic literature.

In conclusion, I do not consider the GSE housing goals for lending to lower-income households and in lower-income regions to have been a primary factor motivating the GSE investments in high-risk mortgages. However, I recommend further research to determine which GSE high-risk mortgage features created the highest default propensities, and whether these features are also a common component of the GSEs' housing-goals-eligible mortgages.

3. The Federal Housing Administration (FHA) and the Financial Crisis[10]

The FHA was created under the National Housing Act of 1934 to enhance homeownership by providing mortgage insurance. It now provides mortgage insurance for five categories: single-family homes, multi-family homes, manufactured housing, health care facilities, and home improvements. In this section, I focus only on the insurance plan operated for single-family homes, known officially as the Mutual Mortgage Insurance (MMI) fund.

The response of the FHA during the housing boom/bubble leading to the financial crisis is just the opposite of that just described for the GSEs: while the GSEs significantly expanded their high-risk mortgage activity as the housing boom expanded, the FHA virtually ceased to operate at all. This is illustrated in Figure 2, which shows the FHA share of the overall mortgage market steadily declining from 2000 to 2006 and with only a small upward move in 2007. Specifically, in 2006 the FHA endorsed (insured) just $54 billion of new mortgages representing just 1.8% of the total mortgage originations in that year. Even in 2007, the FHA endorsed only $80 billion of new mortgages, representing 3.3% of total mortgage originations in that year. In contrast, in 2009, the FHA endorsed about 20% of the total mortgage originations, in line with its market shares in some earlier periods before the advent of subprime lending.

The dramatic decline of FHA activity over the same period that high-risk mortgages are dramatically expanding is a function of two fundamental factors. First, the FHA faced unprecedented competition from both private subprime lenders and from the GSEs. The terms and conditions on these private market and GSE high-risk mortgages appeared more favorable than the terms required on FHA mortgages, and borrowers made the sensible decision to go with the more favorable alternative. Of course, some of the subprime contracts were too good to be

[10] See Jaffee and Quigley (2007) for a general discussion of the FHA and Jaffee and Quigley (2010) for an updated discussion of its role in the subprime crisis. See also Weicher (2006) for further background on the FHA and FHA (2009) for the FHA's most recent annual report released in November 2009..

true—reflecting predatory lending[11]—but even when the contract terms were fairly disclosed, it appears the FHA contracts were often simply not competitive.

Second, the FHA proved both unable and unwilling to modify its standard contracts to compete in the marketplace against the newly available subprime and Alt-A contracts. The "unable" is the result of a complex administrative situation that requires the FHA to acquire Congressional agreement before it can introduce a new contract. The "unwilling" reflects a long-standing FHA disposition to respond slowly, if at all, to changing market conditions. Whether this reflects fiduciary respect for the taxpayers' money or bureaucratic inertia, the FHA is certainly slow to change.

My conclusion is that the FHA played a minor, and basically irrelevant, role in creating or expanding the mortgage crisis, as evidenced by its rapidly falling share of total mortgage lending during the housing bubble. The FHA effectively allowed private lenders and the GSEs to take away its market, a decision questioned at the time, but hard to fault in retrospect.

As a postscript to this conclusion, I note that in its annual report FHA (2009), the FHA confirms that it is currently in violation of its capital requirements as a result of the accumulating losses on mortgages that had been insured prior to 2009. This is not surprising since, as shown in Figure 6, the foreclosure rate on FHA mortgages has been rising. There is, fortunately, also good news. First, the FHA recently announced new higher insurance premiums and contract terms that reflect its resolve to maintain its long-term record of financial soundness; see Stevens (2010). Second, the FHA still maintains sufficient insurance reserves, in addition to its capital, to cover its expected losses, although, of course, these losses could escalate unexpectedly depending on the future course of housing prices and general economics conditions.

[11] I am hopeful the Federal Reserve's July 2008 Truth in Lending additions will eliminate any such future behavior.

4. The Community Reinvestment Act (CRA) and the Financial Crisis

A determination of the role of the CRA in the financial crisis is substantially more difficult than for the GSEs or the FHA. One problem is that the CRA is not associated with any specific enterprise (such as the GSEs) or agency (such as the FHA), with the result that no single data source is available to quantify its results. A second problem is that the CRA does not stipulate specific goals or targets for lending or investments. A third problem is that the incentives the CRA does create for mortgage lending are only one of numerous actions a bank may take to earn CRA credits. Thus, while CRA credit could in principle be the factor that induced a bank to invest in high-risk mortgages for lower-income borrowers, it is equally possible that little if any of its high-risk mortgage activity was so motivated.

Fortunately, empirical evidence is available that may allow a preliminary opinion. The key quantitative evidence is provided in a recent Federal Reserve study by Canner and Bhutta (2008) with the explicit goal to evaluate the evidence whether the CRA contributed in a substantive way to the financial crisis.[12] Their key findings are:

- The CRA requires banks to extend CRA loans within the norms of safe and sound operation.
- The CRA does not cover non-bank lenders, such as mortgage and finance companies, so their active participation in subprime lending occurred without any CRA incentives.
- Only 6 percent of identified subprime mortgages in 2006 were made to CRA-qualified borrowers or neighborhoods by CRA-covered institutions.
- For loans originated between January 2004 and April 2008, the observed 90-day delinquency rates are actually slightly lower in zip codes that are CRA-qualified than for zip codes with median incomes that are just sufficiently higher to make them CRA-unqualified.

Canner and Bhutta conclude, “Taken together, the available evidence to date does not lend support to the argument that the CRA is a root cause f the subprime crisis.” Randall Kroszner

[12] A study using a similar methodology and data by Traiger and Hinckley (2008) arrives at very similar results.

(2008), a member of the Board of Governors of the Federal Reserve, in a major speech also endorsed the Canner and Bhutta study and further noted that previous Federal Reserve reports to Congress have indicated that CRA loans to lower-income borrowers have been nearly as profitable and performed similarly to comparable loans by the same institution.[13]

A long-standing academic literature that studies the mortgage market influences of the CRA is also available. Gabriel and Rosenthal (2009) is the most recent example with ample references to the existing literature. They apply the same "over and under income" zip code methodology as just noted in Canner and Bhutta, but with the primary intent to determine the possible interactions between the GSE housing goals and the CRA incentives. They find little evidence of any impact of the GSE housing goals on eligible communities, and while they do find a CRA impact, it is only for loans larger than the GSE conforming limits, and it is to a smaller degree than they had anticipated. Gabriel and Rosenthal conclude:

> "…on balance, the lack of more compelling evidence of GSEA and CRA effects on mortgage lending and home ownership rates among targeted underserved tracts is striking …"

My conclusion is that the available evidence provides no indication that CRA incentives played a significant or unique role in expanding high-risk lending during the housing bubble. To be clear, I have not attempted to evaluate the costs and benefits of the CRA in any broader context. Furthermore, as already noted, any program that promotes mortgage lending to lower-income households will face at least claims of "guilt by association". Thus I endorse any further empirical tests that could determine more precisely any role the CRA may have played in creating or extending the recent rounds of high-risk and undesirable mortgage lending.

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[13] See Avery, Bostic, Calem and Canner (1996) and Laderman (2004)), as well the references they cite, for a discussion of the continuing Federal Reserve research that finds CRA loans have performed acceptably well.

5. Concluding Comments

This paper has evaluated the role that the GSEs, FHA, and CRA played in the financial crisis. It has not, however, attempted an overall evaluation of any or all U.S. housing policies, nor has it considered any policies for regulatory reform. The main conclusions are:[14]

- I find the GSEs to have been a significant factor in expanding the mortgage crisis as a result of their high volume of high-risk mortgage purchases and guarantees. Furthermore, I find that the GSE housing goals for lending to lower-income households and in lower-income regions were secondary to profits as a factor motivating the GSE investments in high-risk mortgages.
- I find that the FHA played a minor, and basically irrelevant, role in creating or expanding the mortgage crisis, as evidenced by its rapidly falling share of total mortgage lending during the housing bubble.
- I find no evidence that CRA incentives played a significant or unique role in expanding high-risk lending during the housing bubble. The CRA is open, however, to claims of "guilt by association", and thus I endorse any further empirical tests that could determine more precisely any role the CRA may have played in creating or extending the recent rounds of high-risk and undesirable mortgage lending.

It is important to recognize in concluding that factors other than housing policy likely played a more fundamental role in creating the financial crisis and might well be on par with the GSEs in expanding the crisis. These factors include the global savings glut, a monetary policy that accommodated a major housing bubble, highly leveraged, risky, and lightly regulated bank investment portfolios, and an unconstrained OTC market for credit default swaps.

[14] In other work, Jaffee (2010) and Jaffee and Quigley (2010), I evaluate alternative policies for regulatory reform.

Data Appendix

The following provides an annotated description of the data sources used in generating the tables and figures of the paper.

Table 1: The table shows the GSE mortgage positions based on both their guaranteed outstanding MBS and their on-balance sheet mortgage positions. The data come from the GSE 10Q and Credit Supplement reports for 2009, Q3.

Table 2: The table shows the flows of GSE new business activity and aggregated lending for both high-risk components and the total. The column sources are:
Column 1: GSE monthly volume reports
Column 2: Ed Pinto at http://www.aei.org/docLib/Pinto-High-LTV-Subprime-Alt-A.pdf
Column 3: Ed Pinto at http://www.aei.org/docLib/Pinto-High-LTV-Subprime-Alt-A.pdf
Column 4: Inside Mortgage Finance

Table 3: The table shows the GSE high-risk loan attributes by year of acquisition. The data come from the GSE Credit Supplement reports for 2009, Q3.

Figure 1: The figure shows the historical time series for the GSE investment portfolios, MBS outstanding, and the total as a percentage of all U.S. single-family mortgages outstanding. The GSE data through 2007 come from the OFHEO (2008) report. The GSE data for 2008 come from their monthly volume reports. The total U.S. single-family mortgages outstanding are from the Federal Reserve's flow of funds data.

Figure 2: The FHA endorsements and GSE new business volume are from Inside Mortgage Finance and the GSE monthly volume reports. Total single-family mortgage originations and the subprime lending volume (IMF) are from Inside Mortgage Finance. The high-risk (Pinto) mortgage volume is from Ed Pinto at http://www.aei.org/docLib/Pinto-High-LTV-Subprime-Alt-A.pdf

Figures 3 and 4: The graphs are copied from the GSE credit supplement reports for 2009, Q3.

Figure 5: The data come from the Mortgage Bankers of America, Delinquency and Foreclosure survey, with data through 2009, Q3.

Figure 6: The graph is created from the California Association of Realtors data at: http://www.car.org/marketdata/marketdata/ftbhai/

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