

Financial Crisis Inquiry Commission

*Preliminary Staff Report*

THE MORTGAGE CRISIS

APRIL 7, 2010

This preliminary staff report is submitted to the Financial Crisis Inquiry Commission (FCIC) and the public for information, review, and comment. Comments can be submitted through the FCIC's website, [www.fcic.gov](http://www.fcic.gov).

This document has not been approved by the Commission.

The report provides background factual information to the Commission on subject matters that are the focus of the FCIC's public hearings on April 7, 8, and 9, 2010. In particular, this report provides information on the mortgage market. Staff will provide investigative findings as well as additional information on these subject matters to the Commission over the course of the FCIC's tenure.

Deadline for Comment: May 15, 2010

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## The Mortgage Crisis

The purpose of this preliminary staff report is to describe the recent mortgage crisis, which entailed a dramatic drop in home prices beginning in 2006 and a sharp rise in mortgage defaults beginning in 2007. Section I describes the origination of mortgages over the two decades leading up to the crisis. Section II documents some evidence on the expansion in subprime and alt-A lending in the 2000s. Section III describes the increase in home ownership over this period. Section IV describes the unprecedented run-up in home prices from 1998 to 2006 and their subsequent steep decline. Section V describes the increase in mortgage defaults from 2007 to 2009. Section VI briefly discusses evidence on the reasons for this increase in mortgage defaults.

### I. MORTGAGE ORIGINATIONS

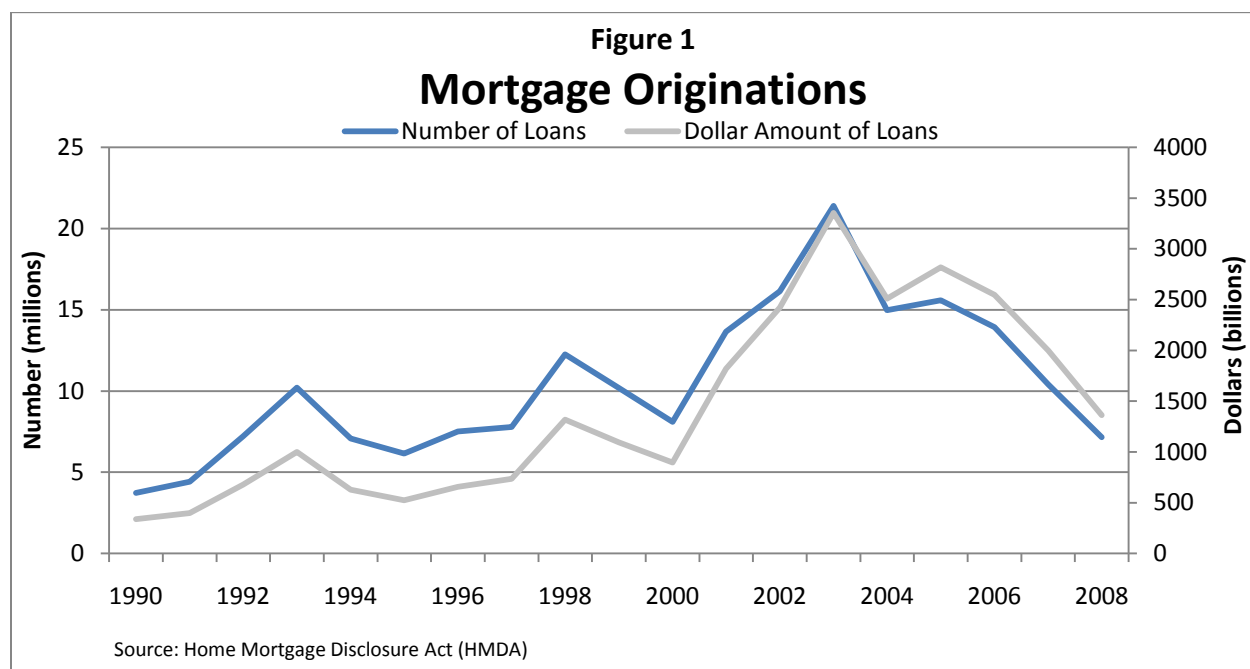


Figure 1 depicts the number and dollar amount of residential mortgage originations---the lending of money secured by homes---in the US from 1990 to 2008 according to data from HMDA. During the 1990s, mortgage origination grew moderately. Over that period, there was an average of 7.6 million annual loan originations with average annual dollar value of roughly \$736 billion. From 2000 to the peak of originations in 2003, mortgage activity increased rapidly, and it continued at an elevated pace through 2006 and into 2007. By 2008, originations had fallen back to historical levels.

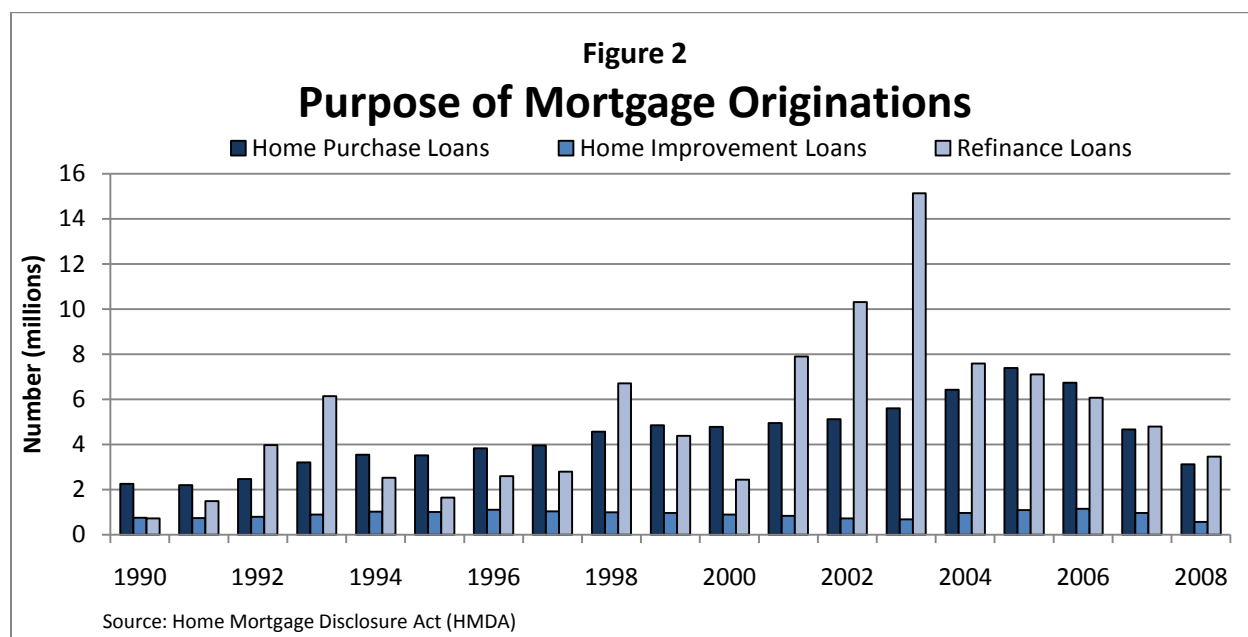


Figure 2 breaks down this activity into three categories of loans: home purchase loans, refinance loans, and home improvement loans. Home purchase activity rose steadily at a compounded annual growth rate of nearly 8 percent from 1995 until it peaked in 2005.

In response to low interest rates and house price appreciation, refinance activity peaked first in 1993, then again in 1998, and dramatically in 2003<sup>1</sup>. In 2003, over 15 million refinance loans were originated; compared to an estimated 50 to 55 million outstanding mortgages, that corresponds to nearly one in three US homes being refinanced in that year alone.<sup>2</sup>

## II. THE EXPANSION OF SUBPRIME AND ALT-A MORTGAGE-BACKED SECURITIES

The period leading up to the mortgage crisis saw a large increase in originations of *subprime* and *alt-A* mortgage-backed securities (defined below), which have higher default risk than mortgages labeled prime.

### A. DEFINITION OF SUBPRIME AND ALT-A MORTGAGES

In general, the term *subprime* refers to mortgage loans made to borrowers with relatively poor credit histories. These loans are therefore riskier than *prime* loans, which are made to borrowers with stronger credit. As a result, the marketing, underwriting, and servicing of

<sup>1</sup> The 30-year mortgage rate hit near-term lows of 6.83 percent in October 1993, 6.71 percent in October 1998 and 5.23 percent in June 2003. Mortgage rates were generally higher than their June 2003 level until government policies to push down mortgage rates were instituted in late 2008 (Federal Reserve Board H.15 Series).

<sup>2</sup> Mortgages may have been refinanced more than once in that year.

subprime loans is different than that of prime loans. However, the mortgage industry lacks a consistent definition of the subprime mortgage market. Subprime loans are typically identified in one of three ways: 1) as loans with interest rates above a given threshold; 2) as loans from lenders that have been classified as specializing in subprime loans; or 3) as mortgages that back mortgage-backed securities (MBS)---discussed below---that are marketed as subprime.<sup>3</sup>

The term alt-A refers to loans generally made to borrowers with strong credit scores but which have other characteristics that make the loans riskier than prime loans. For example, the loan may have no or limited documentation of the borrower's income, a high loan-to-value ratio (LTV), or may be for an investor-owned property. Typically, loans are identified as being alt-A by virtue of being in an MBS that is marketed as alt-A.

Since subprime and alt-A loans are often labeled as such based upon their associated MBS, we provide here a brief overview of the MBS market. MBS are securities that give the holders the right to receive the principal and interest payments from borrowers on a particular pool of mortgage loans. The market for MBS was pioneered by Fannie Mae and Freddie Mac, the government-sponsored enterprises (GSEs), which were created by the federal government to develop this secondary mortgage market. The GSEs purchase mortgages to hold in portfolio and to securitize into MBS that they guarantee against default.

Ginnie Mae plays a similar role in the secondary market for mortgages insured by the Federal Housing Administration (FHA) and the Department of Veterans Affairs (VA). FHA loans are made by private lenders and insured by the FHA. They are usually made to low- and moderate-income borrowers, often with weaker credit histories, and have smaller downpayments. Historically, the size limits on these loans were low. VA loans are offered to military personnel and are guaranteed by the Department of Veteran Affairs. These too require little or no downpayment.

MBS issued by the GSEs or Ginnie Mae are referred to as *agency MBS*. Other financial institutions also create MBS, referred to as *non-agency MBS*, which have a structure similar to agency MBS but typically have no guarantee against default risk. Much more detail on the securitization process is given in the Preliminary Staff Report titled "Securitization and the Mortgage Crisis," released on April 8, 2010.

When financial institutions sell MBS to investors, the MBS is given a label, such as prime, subprime, or alt-A, that represents characteristics of the underlying borrowers and mortgage loans that determine how risky the mortgage loans are.

An alternative to these definitions of subprime and alt-A loans is to use a definition that identifies loans with higher default risk based strictly on the characteristics of the borrower

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<sup>3</sup> Mayer and Pence (2008) offer a more detailed discussion of the advantages and disadvantages of these different approaches.

and the loan. For example, loans could be categorized as “high risk” or “subprime/alt-A” based on borrowers’ credit scores and loans’ LTV ratios. A comparison of these approaches is presented later in this report.

## B. THE CHANGING MORTGAGE MARKET

Figure 3 shows mortgage originations by dollar volume for three groups of loans from 1990 through 2008 based on data from Inside Mortgage Finance (IMF).<sup>4</sup> The first category, *IMF:Alt-A/subprime/FHA*, includes loans labeled alt-A or subprime by the lenders in the IMF survey and loans that are insured by the FHA or VA. We refer to all other loans with loan amounts at or below the GSEs’ conforming size limit as *GSE/other* loans.<sup>5</sup> While some of these loans are held in banks’ portfolios, the great majority of them are purchased by the GSEs.<sup>6</sup> The remaining loans with amounts above the GSEs’ conforming size limit are referred to as *jumbo* loans.

Beginning in 2003, the amount of GSE/other originations dropped sharply from nearly \$2.5 trillion (over 60 percent of all originations) to roughly \$1.2 trillion (35 percent of originations) in 2006. In that period, loans in the IMF:Alt-A/subprime/FHA category gained substantial market share.

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<sup>4</sup>The figures from IMF are based upon classification of the loans by reporting lenders or by the MBS in which the loan resides. HELOC loans from IMF are omitted. There is high correlation between the aggregate figures reported in HMDA and those reported in IMF. In general, institutions are required to file under HMDA if they have a presence in a Metropolitan Statistical area (MSA) and have made at least one home purchase or refinance loan in the given year. Data in HMDA is estimated to cover 80-85% of the US mortgage market in any given year.

<sup>5</sup> IMF refers to these loans as Conventional/Conforming.

<sup>6</sup> For example, according to the IMF data, in 2003, 62% of originations were GSE/other. Data from the Federal Housing Finance Authority, the GSEs’ regulator, shows that in 2003, 57% of originations were GSE mortgages, suggesting that in 2003 GSE mortgages were the great majority of GSE/other. A similar relationship exists in other years. The IMF data is used here, instead of the Federal Housing Finance Agency data, because the IMF data also report on non-GSE mortgages.

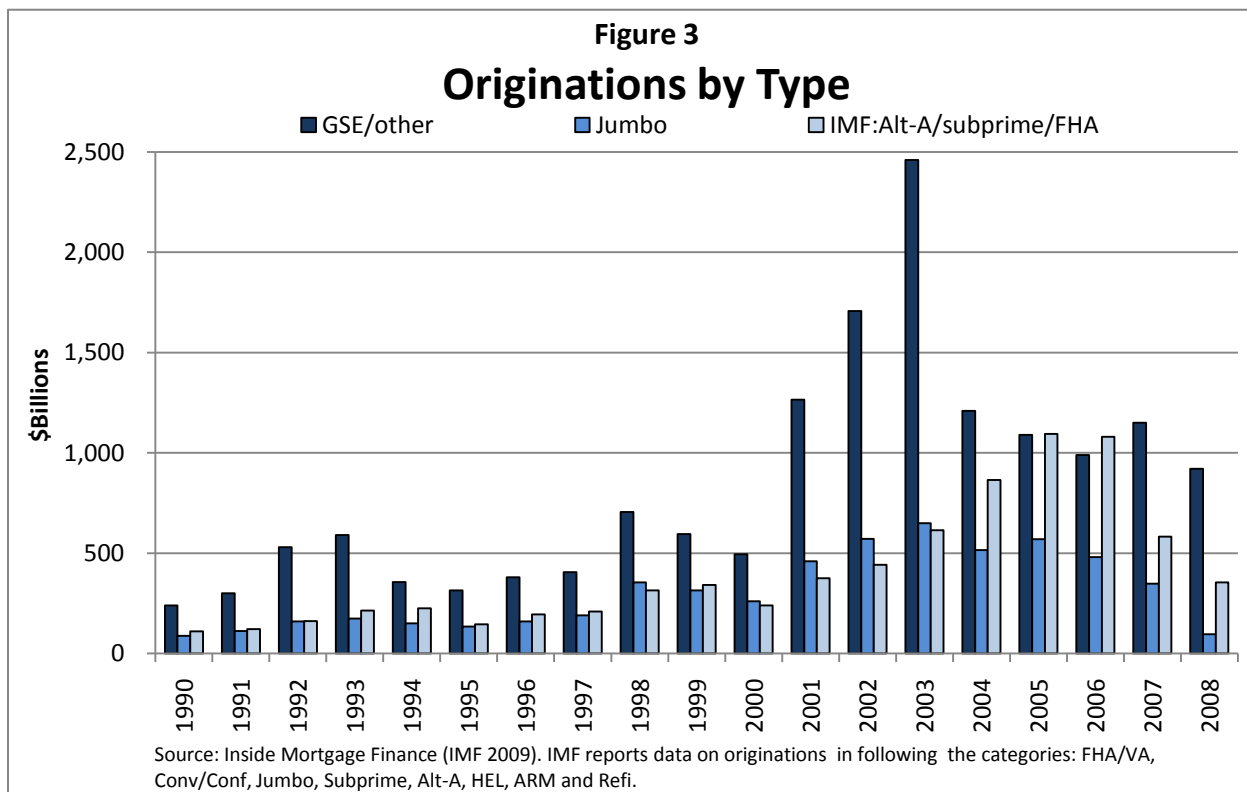
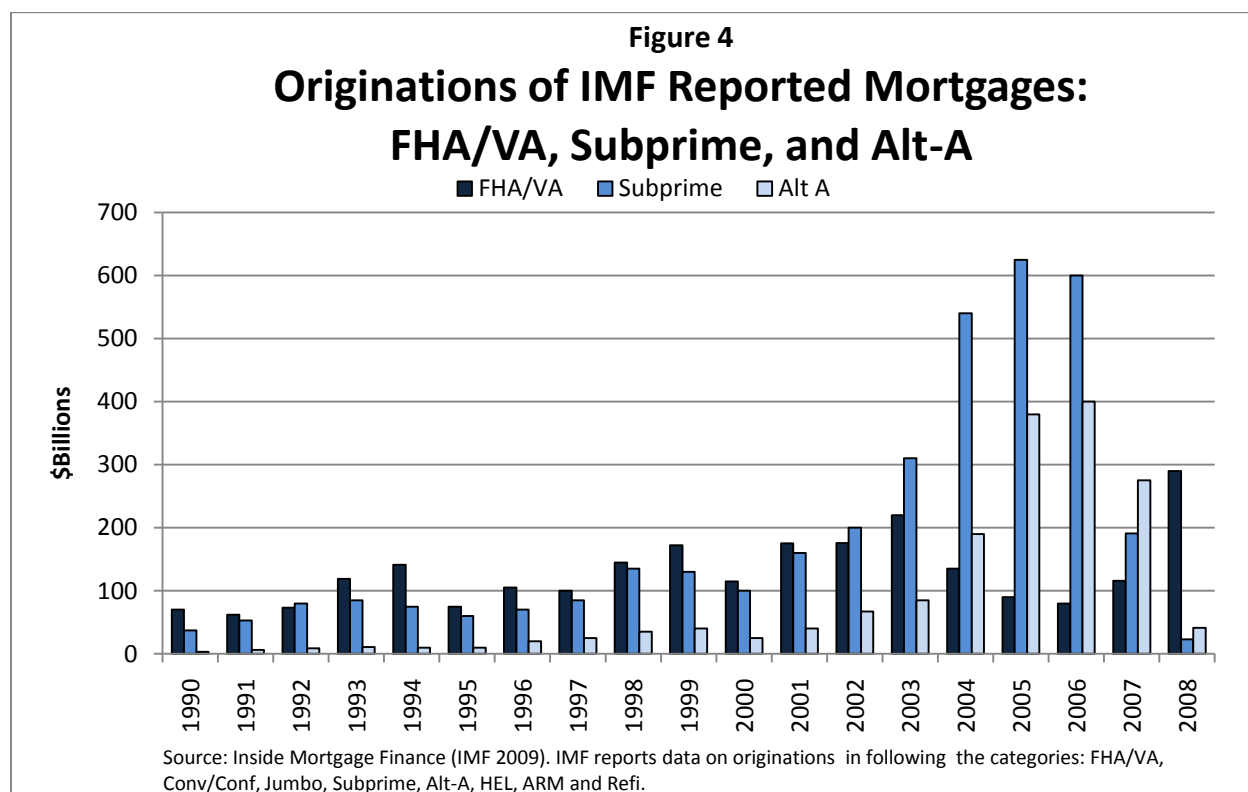


Figure 4 breaks down the IMF:Alt-A/subprime/FHA category into the subprime, alt-A and FHA/VA components as reported by IMF. In 1990, subprime loans as reported by IMF totaled \$37 billion or 9 percent of originations. At the peak in 2005, these loans totaled \$625 billion, or roughly 25 percent of total mortgage originations in that year (total originations is shown in Figure 3). Alt-A loans as reported by IMF were most prevalent between 2004 and 2007; in fact, the IMF alt-A volume doubled between 2003 and 2004 and again between 2004 and 2005. In 2006, volumes totaled nearly \$400 billion and comprised over 15 percent of all originations; alt-A and subprime originations reported by IMF together comprised nearly 40 percent of all origination activity.



Comparing these values to the earlier chart suggests that much of the refinance boom in 2002 and 2003 was due to borrowers not in the IMF:Alt-A/subprime/FHA category. A much greater proportion of the purchase and refinance activity from 2004 through 2007 involved loans labeled subprime and alt-A by IMF.

### C. FHA AND VA MORTGAGES

As a share of total mortgage originations, FHA and VA loans peaked in 1994 at \$141 billion, nearly 20 percent of all originations. From then to 2006, the market share for these loans slowly eroded, hitting its bottom at just around 3 percent. As the subprime market grew, offering higher LTV loans, the FHA alternatives became less attractive.<sup>7</sup> Indeed, as shown in Figure 4, the level of FHA and VA loans showed outright declines from 2003 to 2006. After the collapse of the mortgage market, FHA became a major source of support for the housing. The level of FHA and VA loans rose dramatically in 2007 and 2008. In 2008, over 20 percent of mortgage originations were guaranteed by the FHA or VA.

<sup>7</sup> See Jaffee and Quigley (2008) for a thorough discussion of the history of FHA and VA mortgages.

#### D. NON-TRADITIONAL MORTGAGE PRODUCTS

The 2000s also saw a shift in the contractual form of mortgage loans originated. One common type of mortgage is a 30-year *fixed rate mortgage* (FRM), in which the interest rate is fixed for the entire term of the loan and the borrower is required to make a series of equal monthly payments until the loan is paid off. The fixed payment amount that results in the loan being fully paid off at the end of the term is called the *fully amortizing* payment amount. In contrast, an *adjustable rate mortgage* (ARM) has an interest rate that is specified in terms of a margin above some interest rate index. For example, “Prime + 3%” means that the borrower is charged interest based on an interest rate equal to the prime rate plus 3 percentage points. The interest rate on an ARM adjusts at regular intervals. Other mortgages are *hybrids* of FRMs and ARMs in which the interest rate is fixed for some introductory period and then adjusts at regular periods according to some interest rate index. Both 2/28 and 3/27 ARMs, 30-year loans with a fixed rate for two or three years, respectively, were common forms of hybrid loans before the crisis.

Other types of mortgages entail the borrower paying less than the fully amortizing amount each month. For example, a *balloon mortgage* is one in which the borrower pays less than the fully amortizing payment amount and must then pay some relatively large fixed sum at the end of the term---called a balloon payment---to pay off the mortgage. *Interest-only mortgages* allow the borrower to pay only the interest accrued each month and make no payments toward principal for some period. *Option ARMs*, also called *negative amortization ARMs*, allow the borrower to pay *less* than the interest charged for some period so that the balance on the loan grows over time before the required payment amount resets to the fully amortizing rate.

Table 1 shows the fraction of mortgages originated that were interest-only mortgages, option ARMs, balloon mortgages, or “traditional” mortgages (defined as all other types of mortgages) from 2004 to 2008. Interest-only mortgages grew from only 2 percent in 2004 to 20 percent by 2007. Option ARMs and balloon mortgages also grew in this period.

**Table 1: Market share of non-traditional mortgage products by year**

	Interest Only	Option ARM	Balloon	Traditional
<b>2004</b>	2%	5%	0%	93%
<b>2005</b>	15%	8%	0%	77%
<b>2006</b>	18%	9%	3%	71%
<b>2007</b>	20%	5%	2%	74%
<b>2008</b>	6%	1%	0%	93%

Source: Inside Mortgage Finance (IMF 2009)

## E. MORTGAGE ORIGINATION

Mortgages are originated by a variety of financial institutions. *Depository institutions*, which accept deposits from the public and lend that money to households and businesses, are one type of originator. Depository institutions include commercial banks as well as credit unions, savings and loan associations, and mutual savings banks. Depository institutions are regulated by a set of federal and/or state agencies charged with ensuring the safety and soundness of these institutions.

Non-depository institutions, called *mortgage companies* or *mortgage banks*, also originate mortgages. Mortgage companies borrow money from banks (or by issuing bonds) and lend that money to consumers in the form of mortgage loans. They typically then sell those loans to other financial institutions and use that money to originate additional mortgages.

Mortgage lenders are sometimes owned by holding companies or other financial institutions. Some mortgage companies are owned by depository institutions, and are therefore *subsidiaries* of a depository. Others are owned by holding companies that also own a depository institution and are therefore an *affiliate* of a depository. Mortgage companies that are not a subsidiary or affiliate of a depository institution are called *independent mortgage companies*.

Table 2 shows the percentage of mortgages originated by independent mortgage companies and by depositories or their subsidiaries or affiliates from 2004 to 2007. Panel A provides this breakdown for all residential mortgages and shows that depository institutions and their subsidiaries accounted for about 60 percent of all mortgage originations from 2004 to 2006, with affiliates of depositories accounting for 10 percent and independent mortgage companies accounting for about 30 percent. In 2007, the market share of depositories grew to 73 percent, while the market share of independent mortgage companies dropped to 19 percent.

Panel B shows that independent mortgage companies play a greater role in the market for *higher-priced* mortgages, which are disproportionately subprime mortgages,<sup>8</sup> accounting for about half of such mortgages from 2004 to 2006, before their market share dropped to 21 percent in 2007.

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<sup>8</sup> Higher-priced mortgages are mortgages with annual percentage rate (APR) spreads above the reporting threshold. The APR spread is the difference between the APR on the loan and the yield on a comparable-maturity Treasury security. The reporting threshold for first-lien loans is a spread of 3 percentage points; for junior-lien loans, it is a spread of 5 percentage points. Higher-priced loans are generally made to subprime or Alt-A borrowers, since these borrowers pose greater risk of default and risk of prepaying loans early (prepayment risk). See Avery, et al (forthcoming) for more detail.

**Table 2: Percentage of Mortgage Originations by Year of Origination and Originator Type**

	<b>Independent mortgage company</b>	<b>Depository or subsidiary</b>	<b>Affiliate of depository</b>
<i>Panel A: All mortgages</i>			
<b>2004</b>	28	63	9
<b>2005</b>	31	60	10
<b>2006</b>	31	60	10
<b>2007</b>	19	73	8
<i>Panel B: Higher-priced mortgages</i>			
<b>2004</b>	51	37	12
<b>2005</b>	52	36	12
<b>2006</b>	46	41	13
<b>2007</b>	21	62	18

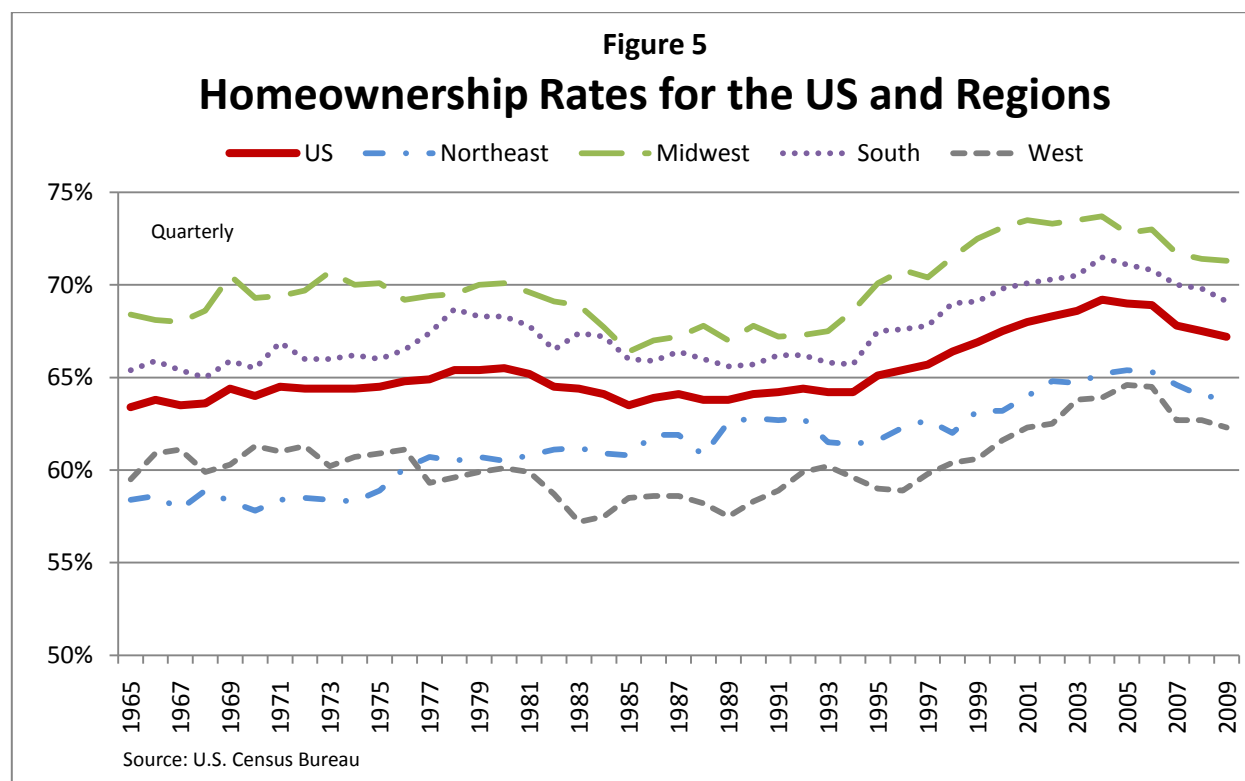
Source: Home Mortgage Disclosure Act data (HMDA)

Notes: Higher-priced mortgages are mortgages with APR spreads above the reporting thresholds defined by HMDA. See footnote 7 for more detail.

### **III. HOME OWNERSHIP**

Figure 5 shows the home ownership rate for the US and for four regions in the US from 1965 to 2009. Between 1965 and 1995, home ownership rates varied between about 63 and 65 percent. From the mid-1990s through 2004, the rate of home ownership in the United States rose steadily peaking at 69 percent in late 2004. It then declined to 67 percent in 2009, still somewhat above its historical levels.

While there are substantial differences in the level of home ownership in the various regions of the country, the increase during this period occurred across the country. The Midwest peaked a bit earlier than the national average and the West a bit later.



#### IV. HOME PRICES

An important feature of the mortgage crisis was a dramatic increase in home prices followed by a national decline in home prices beginning in 2006.

##### A. NATIONAL HOME PRICE INDEXES

Figure 6 shows the inflation-adjusted home price series, developed by Robert Shiller, from 1920 to the present.<sup>9</sup> There are several noteworthy features of these data. First, before World War II home prices were relatively steady, but just after the war home prices rose to a new, fairly steady level. Second, at both the end of the 1970s and at the end of the 1980s, housing prices rose modestly before declining again.

Finally, and most importantly, the dramatic increase in real housing prices beginning in the late 1990s and subsequent fall from 2006 is striking and unprecedented. The size of the increase from 1998 to the peak in 2006 is substantially greater than any previous increase.

<sup>9</sup> Shiller(2006). Data from <http://www.econ.yale.edu/~shiller/data>

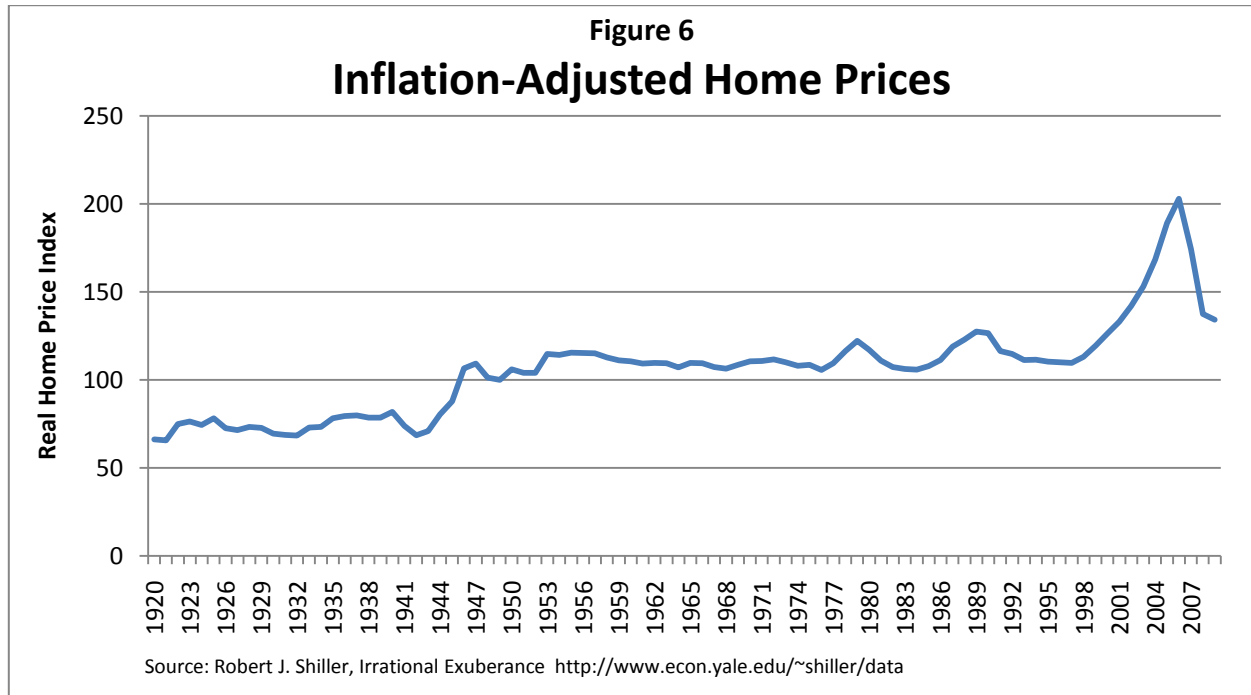
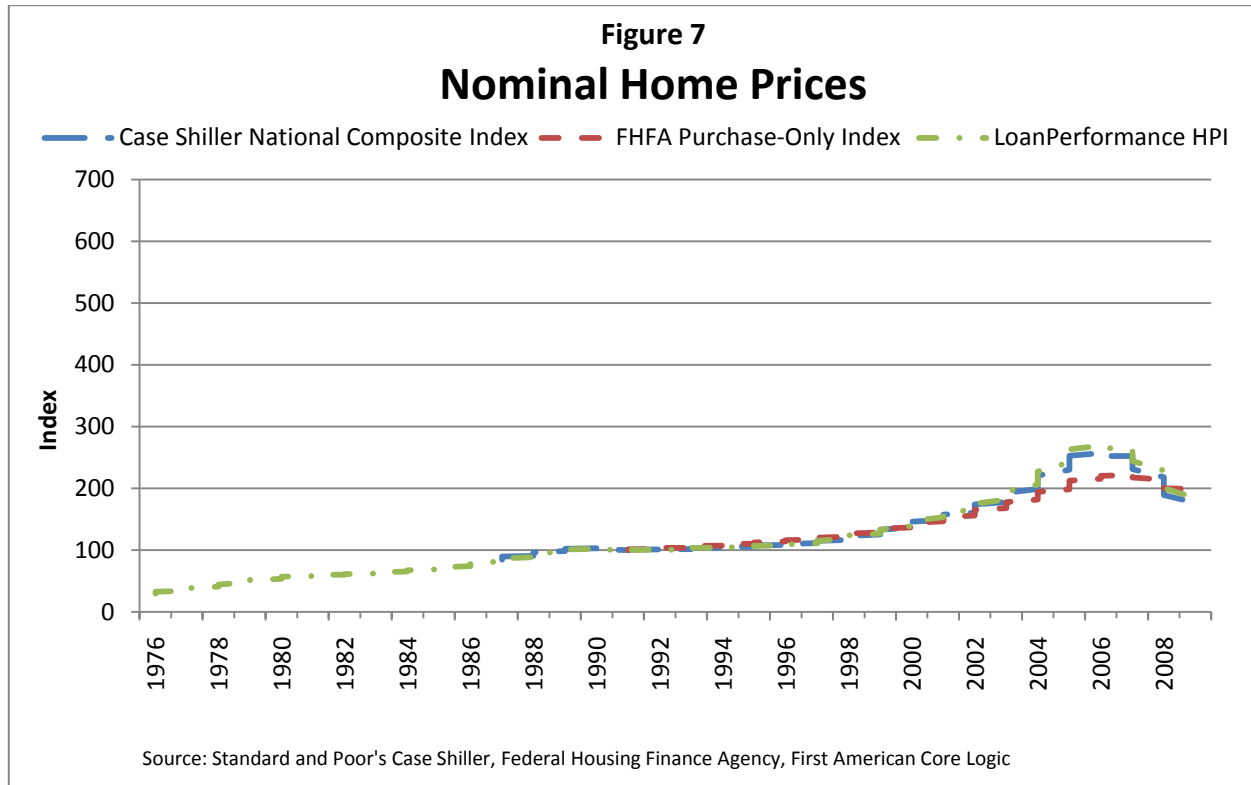


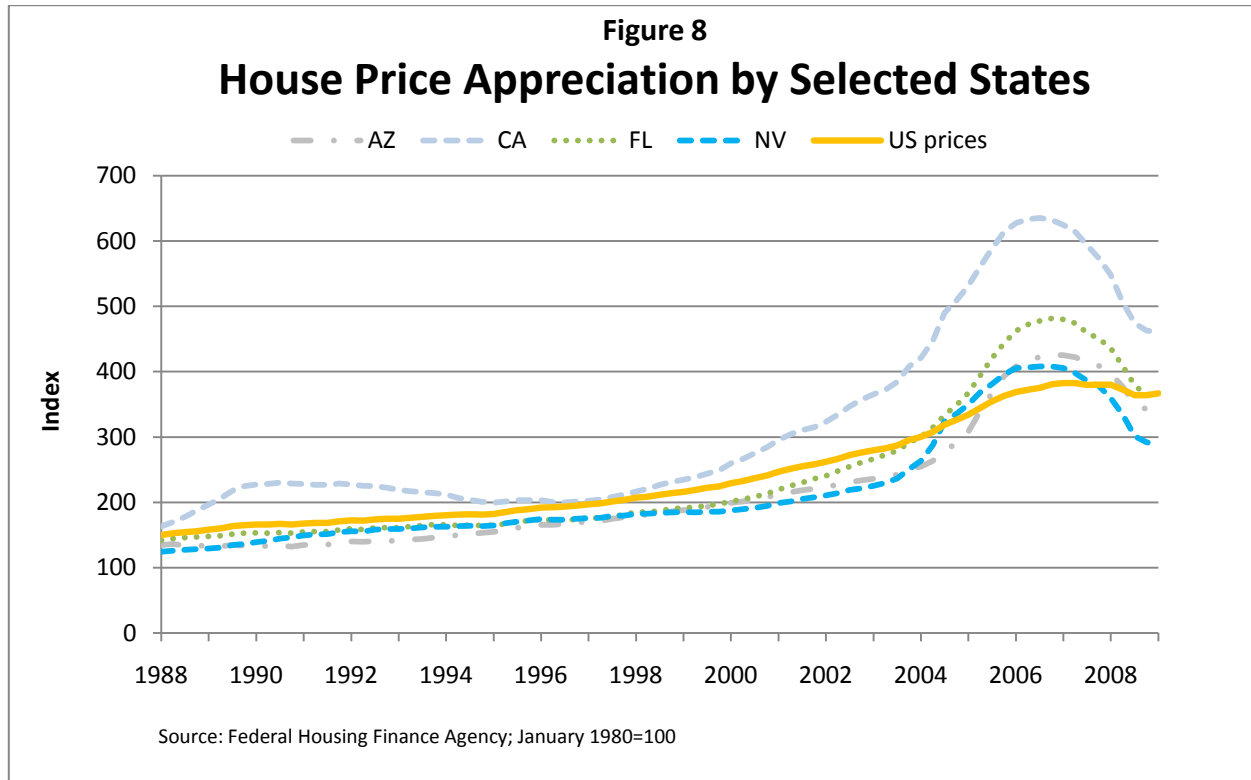
Figure 7 shows *nominal* home prices (i.e., not adjusted for inflation) from 1976 to 2009 using three national indexes.<sup>10</sup> After a long period of steady and moderate increases, home price growth began to accelerate in the late 1990s. All of the series peak during 2006 and then show a marked decline.

<sup>10</sup> A thorough comparison of the Case Shiller and FHFA series can be found in Leventis (2008).



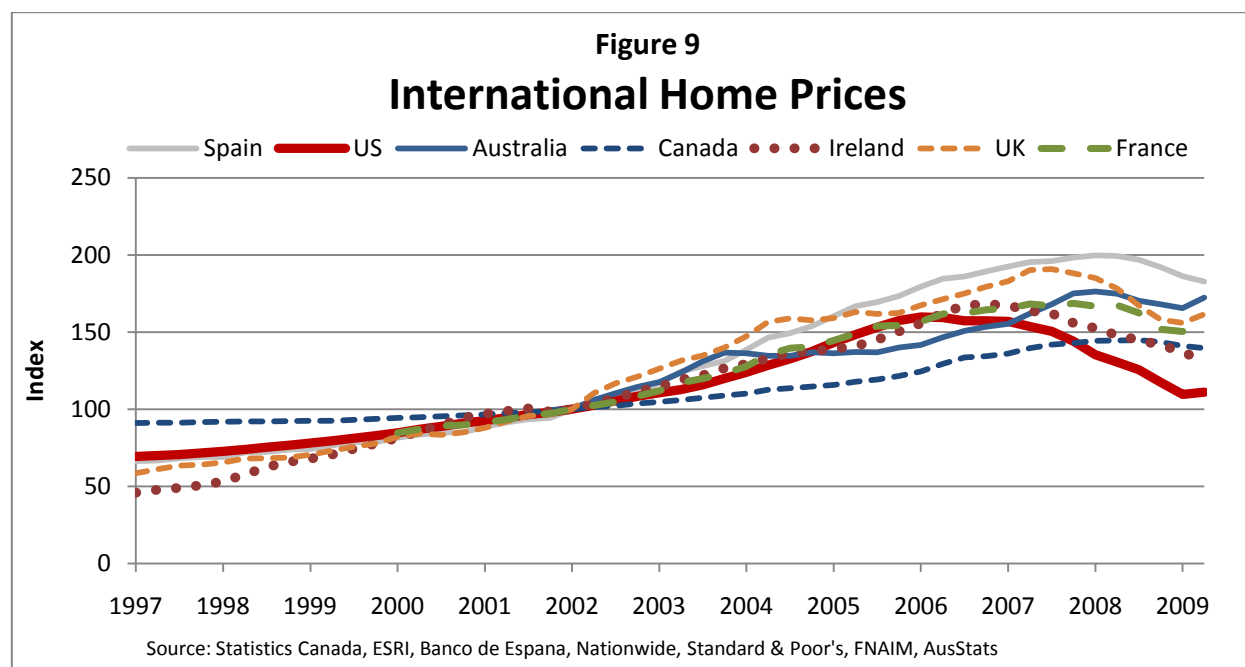
**B. REGIONAL VARIATION IN HOME PRICES**

These national indexes mask substantial variation in home price patterns across the country. Figure 8 shows the FHFA house price indexes for the “sand states” (namely California, Arizona, Nevada and Florida) and for the US as a whole. The sand states, and especially California, had dramatically larger spikes and subsequent declines in housing prices than did the US as a whole. Looking at a finer level of detail, such as the MSA or county, would show even greater variation in the pattern of house prices over this period.



### C. INTERNATIONAL HOME PRICES

Figure 9 shows that the housing bubble was not limited to the United States. The UK and Ireland, in particular, experienced a dramatic increase in home prices from 1997 to 2007, followed by large declines. Some other countries, however, did not experience a bubble. Canada, for example, experienced steady but moderate increases over the period with housing prices flattening and then only slightly declining in 2009. The fact that other countries experienced a housing bubble suggests that the US housing bubble cannot be explained exclusively by idiosyncratic features of the US housing market but rather was in part due to broader trends and practices.



#### D. THE EMERGENCE OF THE BUBBLE

During the run-up in housing prices from 1998 to 2006, there was considerable debate about whether this increase in home prices was based on fundamental economic changes---for example, a change in income and demographics---or whether the increase in house prices represented an asset bubble. An *asset bubble* exists “if the reason that the price is high today is only because investors believe that the selling price is high tomorrow---when ‘fundamental’ factors do not seem to justify such a price.”<sup>11</sup> In housing, a bubble might exist when homebuyers are willing to pay inflated prices for houses today because they expect housing prices to appreciate in the future.<sup>12</sup> Such asset bubbles are unsustainable---if expectations about the future change, then housing prices can decline rapidly.<sup>13</sup>

Economists writing in 2005 in the *Journal of Economic Perspectives* concluded that “[a]s of the end of 2004, our analysis reveals little evidence of a housing bubble.”<sup>14</sup> In contrast, other analysts such as Shiller and Paul Krugman argued that the increase in housing prices did represent a housing bubble.<sup>15</sup>

<sup>11</sup> Stiglitz (1990).

<sup>12</sup> Himmelberg, Mayer, and Sinai (2005).

<sup>13</sup> Shiller (2006, 2009)

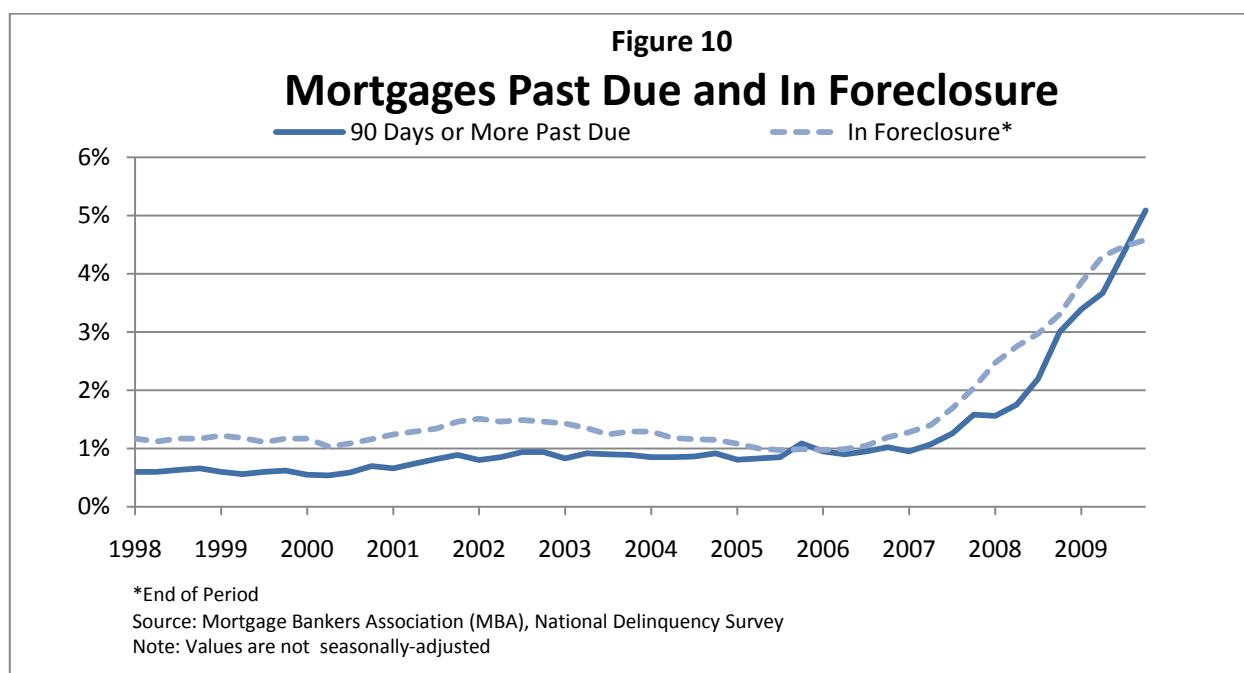
<sup>14</sup> Himmelberg, Mayer, and Sinai (2005, p. 68).

<sup>15</sup> See, e.g., Robert Shiller, “The Bubble’s New Home,” *Barron’s*, June 20, 2005 and Paul R. Krugman, “That Hissing Sound,” *The New York Times*, August 8, 2005.

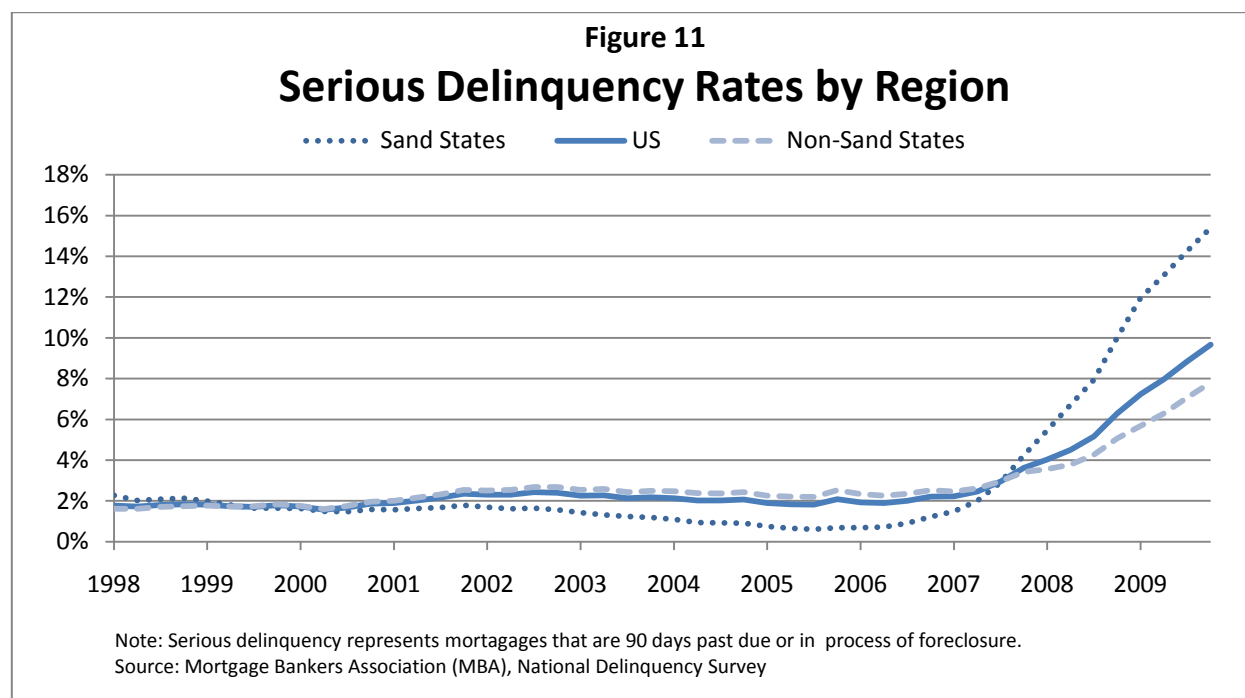
## V. DELINQUENCY AND DEFAULT

### A. SERIOUS DELINQUENCY IN THE UNITED STATES

Soon after the peak of house prices in early 2006, delinquencies and foreclosures began to rise. As shown in Figure 10, both the percentage of loans 90 or more days delinquent and the percentage of loans in the foreclosure process hovered around 1 percent up until 2006. Late in that year and early in 2007, early payment defaults from mortgages originated in 2006 began to appear. After that point, both indicators show a sharp increase as the default and foreclosure crisis emerged.



As with house prices, the rate of serious delinquency, which includes loans 90 or more days past due and those in the foreclosure process, also varies widely across the country. Figure 11, based on analysis by the Mortgage Bankers Association, shows the rate of serious delinquency for the “sand states” (California, Arizona, Nevada and Florida), for the remaining states, and for the entire nation. In the sand states, serious delinquency is nearly 16 percent, double the rate in other areas of the country. For the years immediately preceding the crisis, these states had lower rates of delinquency, likely due to the fact that house price appreciation enabled borrowers to sell their homes rather than default on their mortgages.



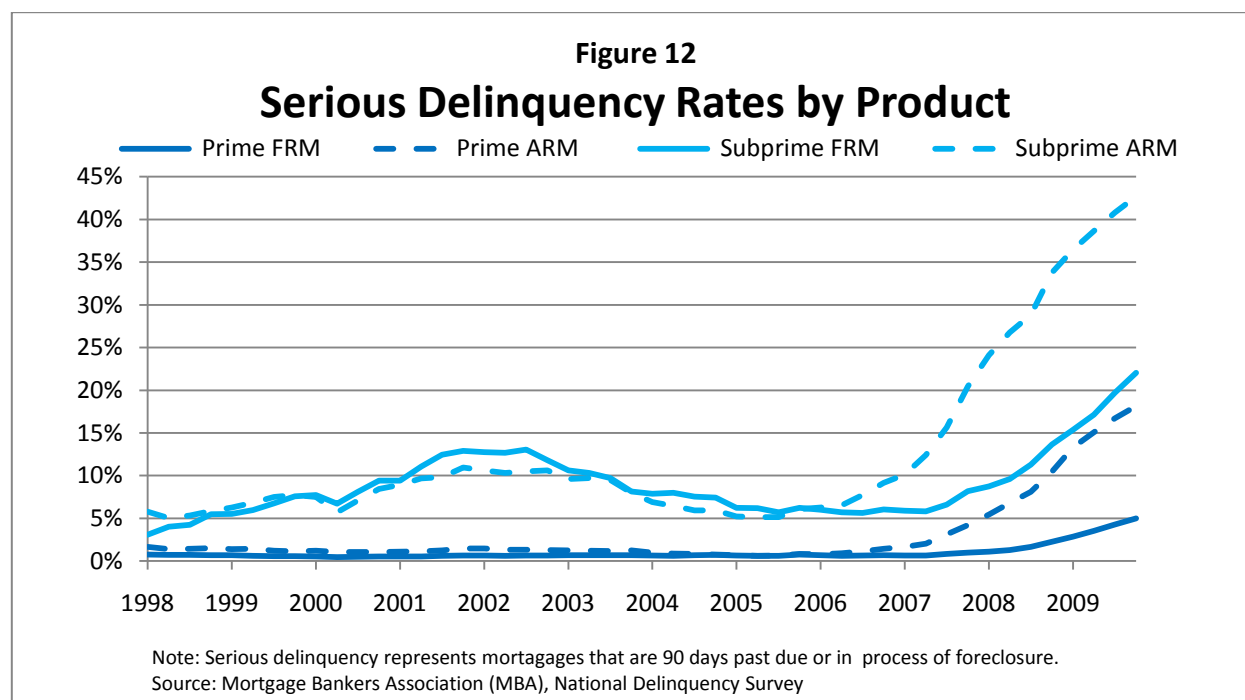
## B. SERIOUS DELINQUENCY BY PRODUCT AND CHARACTERISTICS

Figure 12 shows the percentage of loans seriously delinquent for four product categories as reported by the Mortgage Bankers' Association: prime fixed rate mortgages (FRMs), prime adjustable rate mortgages (ARMs), subprime FRMs, and subprime ARMs. In this dataset, subprime loans are identified as such by the loan servicers.

First, note that in the last recession, in 2001, subprime loans performed poorly but prime loans were largely unaffected by the downturn. Serious delinquency on both subprime ARMs and FRMs rose above 10 percent from 2001 to 2003.<sup>16</sup>

Second, delinquency rates during the recent mortgage crisis are much higher than those during the 2001 recession, with even prime loans' delinquency rates increasing substantially. Subprime loans performed much worse than prime loans, and for both categories, ARMs performed worse than FRMs. Subprime ARMs were the worst performing category, with serious delinquency rates over 40 percent by the third quarter of 2009. They are followed by subprime FRMs at over 20 percent delinquent, prime ARMs at 18 percent delinquent, and prime FRMs at about 5 percent delinquent, all as of the third quarter of 2009.

<sup>16</sup> It is important to note that the data regarding subprime mortgage performance before 2003 is sparser, and of somewhat lesser quality, than in later years.

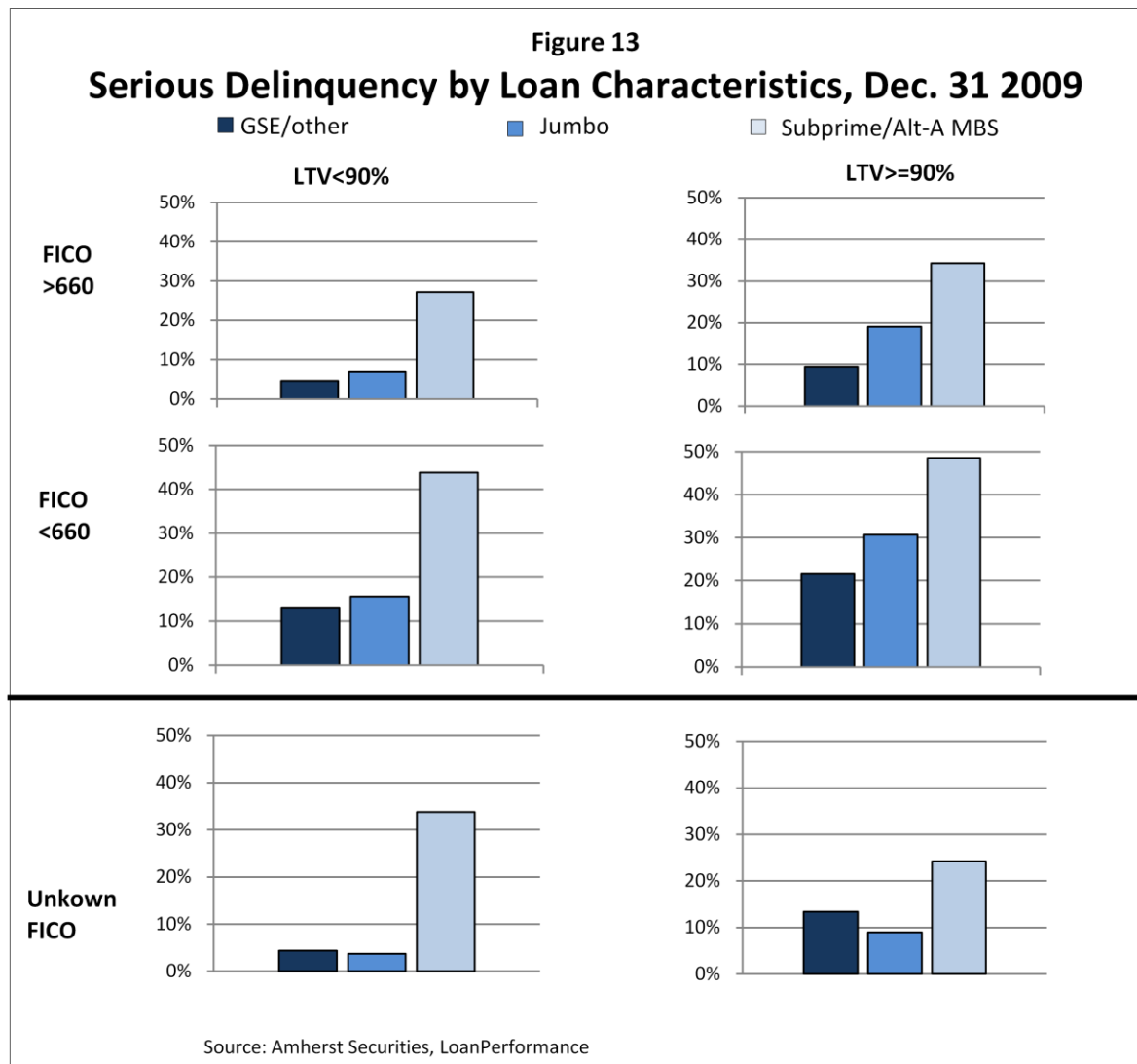


Deterioration in these categories of loans started at different times. Subprime ARMs began to show increases in serious delinquency in early 2006 just as house prices were peaking. In contrast, prime ARMs begin to show weakness more than a year later, at about the same time as subprime FRMs. Prime FRMs (again, as reported by the Mortgage Bankers' Association) show a slow and steady increase in serious delinquency that coincides with the increasing severity of the recession and the increase in unemployment in 2008.

As discussed above, the definition of a subprime loan, or an alt-A loan, is not very precise. Some have suggested that a more definitive, and arguably objective, measure based on the characteristics of the loan be used to identify high risk mortgage loans.<sup>17</sup> For example, loans could be categorized as "high risk" or "subprime/alt-A" based on borrowers' FICO credit scores and the loans' LTV ratios.<sup>18</sup>

<sup>17</sup> See e.g. the recent work by Ed Pinto (<http://www.aei.org/docLib/Pinto-Sizing-Total-Exposure.pdf>). In his analysis, all loans with a FICO score below 660 are described as subprime by characteristic and of the remaining loans, those with LTV above 90%, or with certain features such as negative amortization or IO provisions, are described as Alt-A by characteristic.

<sup>18</sup> Credit scores are numerical values meant to represent the credit risk posed by a prospective or current borrower. FICO credit scores are based upon the proprietary formulas developed and used by Fair Isaac Corporation.



The chart above shows risk characteristics for three categories of mortgages: GSE/other and jumbo and loans in subprime and alt-A MBS.<sup>19</sup> Alt-A/subprime MBS are loans that are held in MBS that were labeled alt-A or subprime MBS. All other loans are classified as GSE/other if they were for amounts below the GSEs’ conforming loan limits, and jumbo if not. The great majority of loans in the GSE/other category are held by the GSEs or in GSE MBS.

The chart shows the percentage of various loan-risk groups based on FICO and LTV that were seriously delinquent as of year-end 2009. With two thresholds, there are naturally

<sup>19</sup> For this graph, FHA and VA loans are omitted from the Alt-A/subprime MBS category since the data were not available when this report was produced. Revised versions of this preliminary staff report submitted to the Commission will reflect analysis using a more comprehensive and detailed dataset on the mortgage market.

four risk groupings, displayed in the top four panels. The least risky group, those with low LTV and high FICO scores is displayed in the upper left panel. The lower right panel displays the information for the riskiest group, those with high LTV and low FICO scores. The other two panels in this group of four have low FICO and low LTV in one panel (in the bottom left) and high FICO and high LTV in the other panel (upper right).

There are two other groups containing loans where the FICO score is unavailable, displayed at the bottom of the figure. For each risk group, the colored bars represent the rates of serious delinquencies for the three categories: GSE/other, jumbo and alt-A/subprime MBS.<sup>20</sup>

**Table 3: Percentage of Portfolios**

		LTV<90%	LTV>=90%
<b>FICO &gt;660</b>	<i>GSE/other</i>	66.1%	7.5%
	<i>Jumbo</i>	86.2	3.2
	<i>Alt-A/subprime MBS</i>	46.3	6.8
<b>FICO &lt;660</b>	<i>GSE/other</i>	11.8	3.7
	<i>Jumbo</i>	6.2	0.6
	<i>Alt-A/subprime MBS</i>	35.6	10.6
<b>Unknown FICO</b>	<i>GSE/other</i>	9.2	1.6
	<i>Jumbo</i>	3.6	0.2
	<i>Alt-A/subprime MBS</i>	0.1	0.5

As shown in Table 3 above, most GSE/other loans and jumbo loans are in the greater than 660 FICO and below 90 percent LTV group (the upper left group of Figure 13 and in the table). Nonetheless, roughly 25% of GSE/other loans in this dataset have a FICO below 660 or an LTV greater than or equal to 90 percent. Similarly, while most of the alt-A/subprime MBS loans have one of these two loans characteristics (FICO below 660 or an LTV greater than or equal to 90 percent), 46 percent of these loans are in the group with FICO above 660 and LTV at or below 90 percent.

For each of the four risk groups, the delinquency rate is substantially less for loans in the GSE/other group compared to the alt-A/subprime MBS group. In both the low FICO-low LTV group and the high FICO-high LTV group, the rate of serious delinquency for the GSE/other loans (13 percent and 9 percent, respectively), is less than one-third the rate for alt-A/subprime MBS loans with the same characteristics (43 percent and 34 percent,

<sup>20</sup> The GSE/other portfolio is very similar in composition to the yearend 2009 portfolio in the Fannie Mae single family guarantee book as described in the Fannie Mae Credit Supplement. Using a slightly different tabulation (breakpoint at FICO=620) that better aligns with information provided in that report shows that the distribution of loans in the four buckets is very similar for these two portfolios. Serious delinquency at Fannie Mae, on average, was 5.4 percent compared to 6.1 percent in this portfolio.

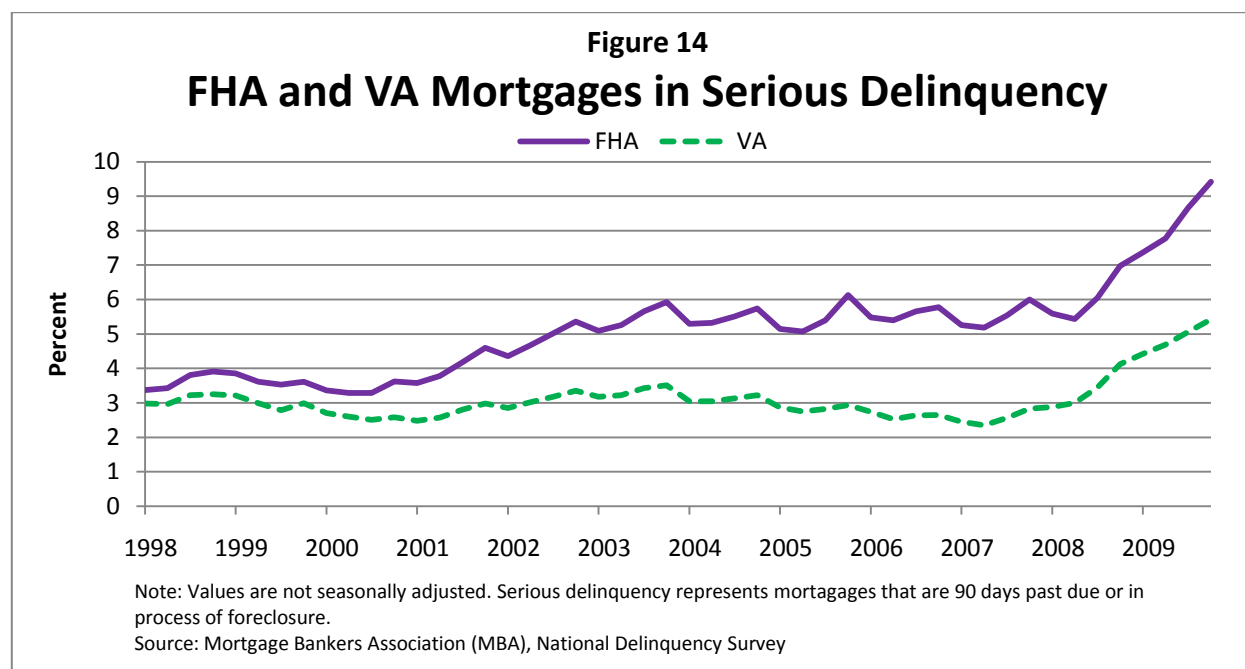
respectively). In both of these groupings, the rate of serious delinquency for GSE/other loans is near the national average of roughly 10 percent.

For the riskiest group, those loans with high LTVs made to borrowers with low FICO scores, the rate of serious delinquency is just over 20 percent for the GSE/other loans, compared to nearly 50 percent for the loans in alt-A/subprime MBS. For the least risky loans, the difference is most pronounced; serious delinquency is roughly 5 percent for the GSE/other loans compared to nearly 30 percent for the alt-A/subprime MBS. Overall, the roughly 20 percent rate of serious delinquency within the worst performing group of GSE/other loans is still less than the roughly 28 percent rate of serious delinquency in the best performing group of loans in alt-A/subprime MBS.

Loan characteristics such as LTV and borrower characteristics such as FICO are clearly related to performance. As discussed below, evidence suggests that the increased number of loans with high LTVs was one of the reasons for the high default rates. The market's classification of the loans is also important: loans in subprime and alt-A MBS performed much worse than those the market labeled prime, even when they were in the same grouping of FICO and LTV.

### C. DELINQUENCY OF FHA AND VA MORTGAGES

Figure 14 shows the progression of serious delinquency rates in loans guaranteed by the Federal Housing Administration (FHA) and the Department of Veterans Affairs (VA). A mortgage is considered to be in serious delinquency when payments are 90 or more days past due. From the second quarter of 2008 to the fourth quarter of 2009, FHA-backed mortgages in serious delinquency rose from 5.4 percent to 9.4 percent.



#### D. DELINQUENCY BY VINTAGE

Mortgages originated during various years have performed differently during the crisis. Analysis by Yuliya Demyanyk and Otto Van Hemert (2009) shows that subprime mortgages originated in later years have higher rates of serious delinquency than those originated earlier. This pattern may be driven by several factors, including:

- First, the characteristics of the mortgages originated in each year could be changing so that, for example, the distribution of FICO scores and LTV ratios for the loans originated in 2006 was substantially different than for loans originated in earlier years.
- Second, even with the same observable characteristics, mortgages written in the later years could be somehow “riskier” in ways that are not readily apparent.
- Third, the differences in default may be driven by the fact that the different vintages of loans experienced different house price appreciation. The value of the homes secured by loans originated in 2001 experienced large increases in their value over the first 60 months after the loans were originated. In contrast, the homes securing loans originated in 2006 lost value quickly. Because falling home prices result in increases in mortgage defaults, these two vintages can be expected to have very different default rates over any given period since origination.

Either of the first two factors could be described as a “decrease in underwriting standards” and are often cited as explanations for the foreclosure crisis. In contrast, the third explanation relies on home price declines as a major factor. The next section describes some of the research done to date that attempts to measure these effects.

## **VI. LITERATURE ON HIGH DEFAULT RATES DURING THE MORTGAGE CRISIS**

As described above, mortgage delinquencies and foreclosures rose dramatically beginning in 2006. This section discusses some of the current research that examines the reasons for these increases.

### **A. DOUBLE-TRIGGER MODEL OF MORTGAGE DEFAULT**

A standard model of mortgage default is known as the *double-trigger* model: borrowers typically default on a mortgage only if they have both *negative equity*---i.e., they owe more on the house than it is worth---and they experience some sort of *income shock*, such as job loss, that makes it difficult to continue making payments on the mortgage.<sup>21</sup>

The reason negative equity is thought to be a necessary condition for mortgage default is that, if a borrower has positive equity he can sell the house and pay off the loan, keeping any equity left after selling costs. This is better for the borrower than simply walking away from the house and defaulting because the borrower’s credit score is preserved and he gets his equity back (minus selling costs).

Some sort of income shock is also thought to be an important contributing factor for most defaults for several reasons. First, borrowers have economic incentives to continue paying even if their house is “underwater,” (i.e., they have negative equity) because defaulting on a mortgage can have a negative impact on their credit score. Moreover, borrowers may hope that housing prices will rise, resulting in their equity turning positive. Finally, some borrowers may feel a moral obligation to continue paying on their mortgage debt so long as they are able.

### **B. EVIDENCE ON THE REASONS FOR THE INCREASE IN MORTGAGE DEFAULTS**

Mayer, Pence, and Sherlund (2009) examine the reasons for the increase in mortgage defaults in 2007 and conclude that “[s]lackened underwriting standards ... combined with stagnant to falling house prices in many parts of the country appear to be the most immediate contributors to the rise in mortgage defaults.”<sup>22</sup> This conclusion is consistent with the double-trigger model discussed above. The sharp drop in housing prices beginning in 2006 left many borrowers with negative equity. Furthermore, borrowers with high initial LTV ratios, which became more prevalent as underwriting standards

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<sup>21</sup>FN: Vandell (1995) and Foote, et al (2008) discuss the double-trigger theory.

<sup>22</sup> Mayer, Pence, and Sherlund (2009, p. 47-48).

slackened, are more sensitive to housing price declines because they have a smaller equity buffer before their mortgage is underwater. Moreover, borrowers with low FICO scores may be more at risk of income shocks due to job loss and other reductions in earnings. As a result, these borrowers are more likely to experience income shocks at the same time that they are underwater – thus experiencing the “double-trigger” that leads to default.

1. *Underwriting standards.*

Table 4 shows some of the attributes of the mortgages underlying subprime and alt-A MBS issued from 2003 to 2007. There are two important trends. First, from 2003 to 2006, median combined LTV, which is the ratio of total debt outstanding on the house and the value of the home (times 100), rose from 90 to 100 for subprime mortgages and from 90 to 95 for alt-A mortgages. A borrower with combined LTV of 100 has no equity in his house.

Second, from 2003 to 2006 the percentage of borrowers who offered the originator low or no documentation of their income and assets rose from 32 to 38 percent for subprime mortgages and from 63 to 80 percent for alt-A mortgages. Generally, when borrowers apply for a mortgage, they must provide the lender documentation of their income and assets, for example by providing income tax statements and bank statements. For these low and no documentation loans the borrower provided less than the standard set of documents, and such loans have higher default risk than full documentation loans. Finally, note that median FICO scores, which measure how strong the borrower’s credit history is, show little change over the period.

**Table 4: Characteristics of Home Purchase Mortgage Loans in Subprime and Alt-A MBS**

	<i>Mortgage type</i>	2003	2004	2005	2006	2007 (Jan-June)
Median Combined LTV	Subprime MBS	90	95	100	100	100
	Alt-A MBS	90	90	90	95	95
Median FICO score	Subprime MBS	615	615	618	616	613
	Alt-A MBS	710	706	708	701	707
% with low or no documentation	Subprime MBS	32	34	36	38	34
	Alt-A MBS	63	62	69	80	81

Source: Mayer, Pence and Sherlund (2009) analysis of First American LoanPerformance data.

Mayer, Pence, and Sherlund (2009) conclude that the increase in combined LTV and in low or no documentation loans were substantial contributors to the poor performance of loans during the mortgage crisis.

## 2. *Housing prices*

Mayer, Pence, and Sherlund (2009) cite housing prices as a second major contributor to the increase in defaults during the mortgage crisis. As documented above, housing prices experienced a dramatic run-up from 1998 to 2006, but then fell at an average annual rate of 10 percent from mid-2006 to mid-2008.<sup>23</sup> Mayer, Pence, and Sherlund (2009) observe that states with particularly large rises and falls in house prices---namely, California, Florida, Arizona, and Nevada---experienced default rates of roughly twice the national average.

## 3. *Income shocks and unemployment*

Another contributor to the increase in mortgage defaults was a rise in unemployment. Even in normal times, households may face unexpected reductions in income, perhaps from job loss, or an unexpected increase in expenses, such as medical bills. When housing prices go down, some of those who lose their job will be underwater on their mortgage and consequently at high risk of default. As the unemployment rates goes up, the frequency with which this occurs will naturally increase. As Mayer, Pence, and Sherlund (2009) note, some of the earliest defaults were in the industrial Midwest, where difficult economic conditions had led to increased unemployment for several years. This spread to other parts of the country as the financial crisis and ensuing recession took hold.

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Financial Crisis Inquiry Commission

*Preliminary Staff Report*

GOVERNMENT SPONSORED ENTERPRISES AND THE FINANCIAL CRISIS

APRIL 7, 2010

This preliminary staff report is submitted to the Financial Crisis Inquiry Commission (FCIC) and the public for information, review, and comment. Comments can be submitted through the FCIC's website, [www.fcic.gov](http://www.fcic.gov).

This document has not been approved by the Commission.

The report provides background factual information to the Commission on subject matters that are the focus of the FCIC's public hearings on April 7, 8, and 9, 2010. In particular, this report provides information on the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). Staff will provide investigative findings as well as additional information on these subject matters to the Commission over the course of the FCIC's tenure.

Deadline for Comment: May 15, 2010

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## **Government Sponsored Enterprises and the Financial Crisis**

This preliminary staff report provides information on the Federal National Mortgage Association (FNMA or Fannie Mae) and the Federal Home Loan Mortgage Corporation (FHLMC or Freddie Mac), the companies' attributes as government-sponsored enterprises (GSEs), and their linkages to the larger financial system. As losses at the two companies mounted, the government placed Fannie Mae and Freddie Mac into conservatorship on September 6, 2008. At that point the two GSEs together held in portfolio or guaranteed through mortgage-backed securities (MBS) some \$5.2 trillion of mortgages,<sup>1</sup> or over 40 percent of the \$12 trillion residential mortgage market.

### **I. HISTORICAL BACKGROUND: FANNIE MAE AND FREDDIE MAC**

The Federal National Mortgage Association (FNMA or Fannie Mae) began as a wholly owned government corporation, a federal agency, chartered by the Reconstruction Finance Corporation in 1938 to purchase loans insured by the Federal Housing Administration (FHA) and thereby provide liquidity to lenders in the mortgage market. In 1968, at the behest of the Johnson Administration, Fannie Mae was chartered by Congress as a GSE, a publicly-traded private corporation; under this charter, Fannie Mae operations were removed from the federal budget. Fannie Mae continued to purchase federally insured mortgages that nondepository lenders originated. A wholly owned government corporation, now the Government National Mortgage Association (Ginnie Mae), remained in the Department of Housing and Urban Development (HUD) to provide special assistance and manage government loan portfolios.<sup>2</sup>

In 1970, at the request of the savings and loan industry, the Congress chartered a second GSE, Freddie Mac, to be a part of the system of organizations that served thrift institutions. The 1970 legislation also authorized Fannie Mae and Freddie Mac to expand its purchases to conventional (non-federally insured) mortgages up to a specified mortgage size (the so-called "conforming loan limit").<sup>3</sup> As Fannie Mae and Freddie Mac turned to the conventional mortgage market, Ginnie Mae became the leading secondary market<sup>4</sup> organization that facilitated funding of federally insured FHA and VA mortgages. It guaranteed MBS backed by

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<sup>1</sup> Federal Housing Finance Agency, *2008 Annual Report to Congress*, revised edition, Historical Data Tables, tables 4, 4a, 13, and 13a (figures are for 3Q 2008).

<sup>2</sup> 12USC Sec. 1716(b) and (c).

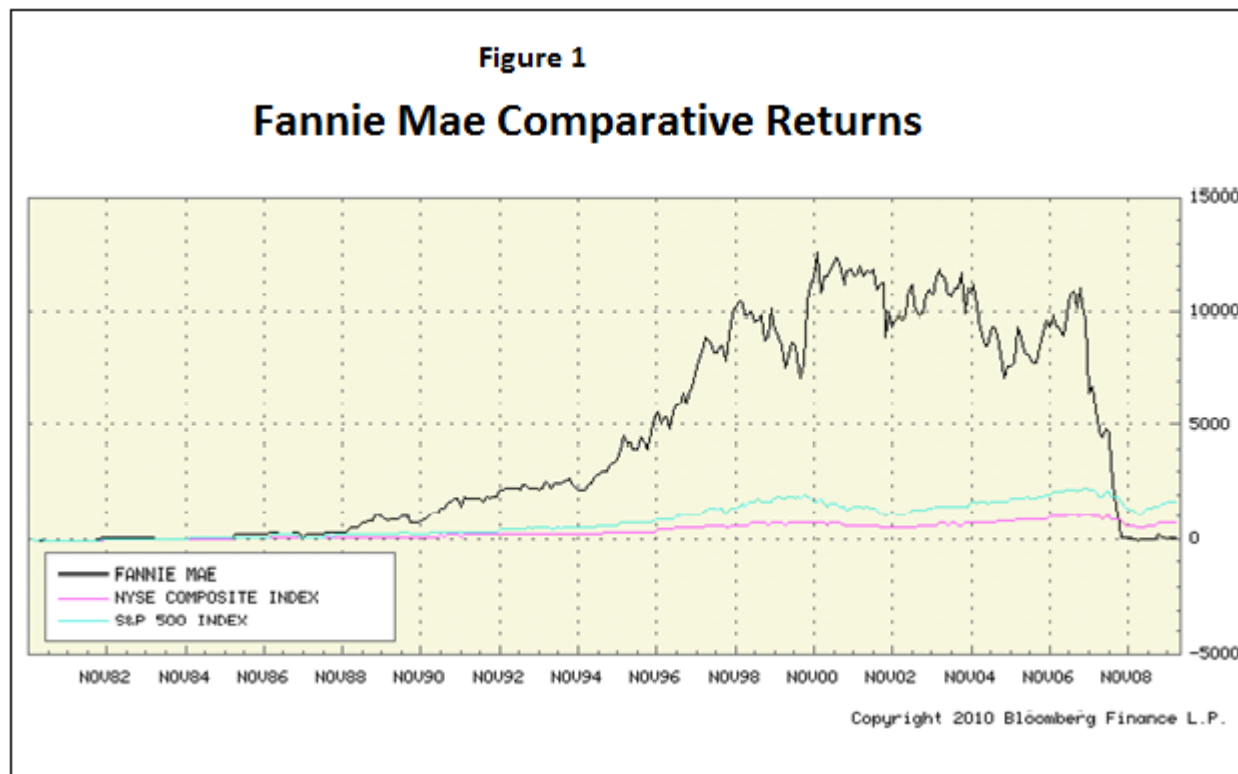
<sup>3</sup> Bartke, 1972.

<sup>4</sup> The primary mortgage market consists of firms that originate mortgages. The secondary market, by contrast, consists of firms that purchase or securitize mortgages but do not originate them.

pools of federally insured mortgages that third parties assembled. Ginnie Mae was not authorized to deal in conventional mortgages or to hold a portfolio.<sup>5</sup>

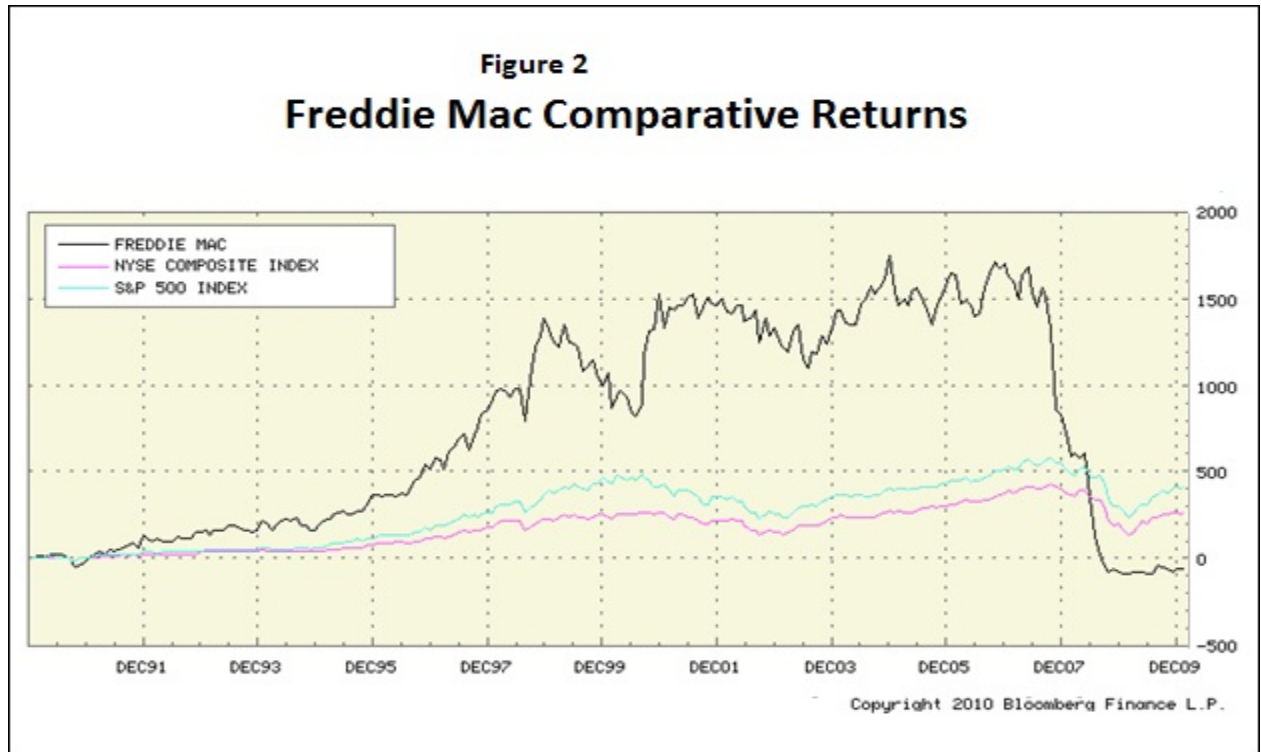
Soon after its creation, Freddie Mac began to securitize the bulk of mortgages that it purchased. By contrast, Fannie Mae purchased mortgages only for its portfolio until 1981, when it began to issue MBS as well.

Shares of Fannie Mae and Freddie Mac trade on the New York Stock Exchange. The figure below shows market returns for Fannie Mae from 1980 compared to two general stock indices.<sup>6</sup> Fannie Mae has the ticker symbol FNM; Freddie Mac is FRE. The next figure shows Freddie Mac returns.

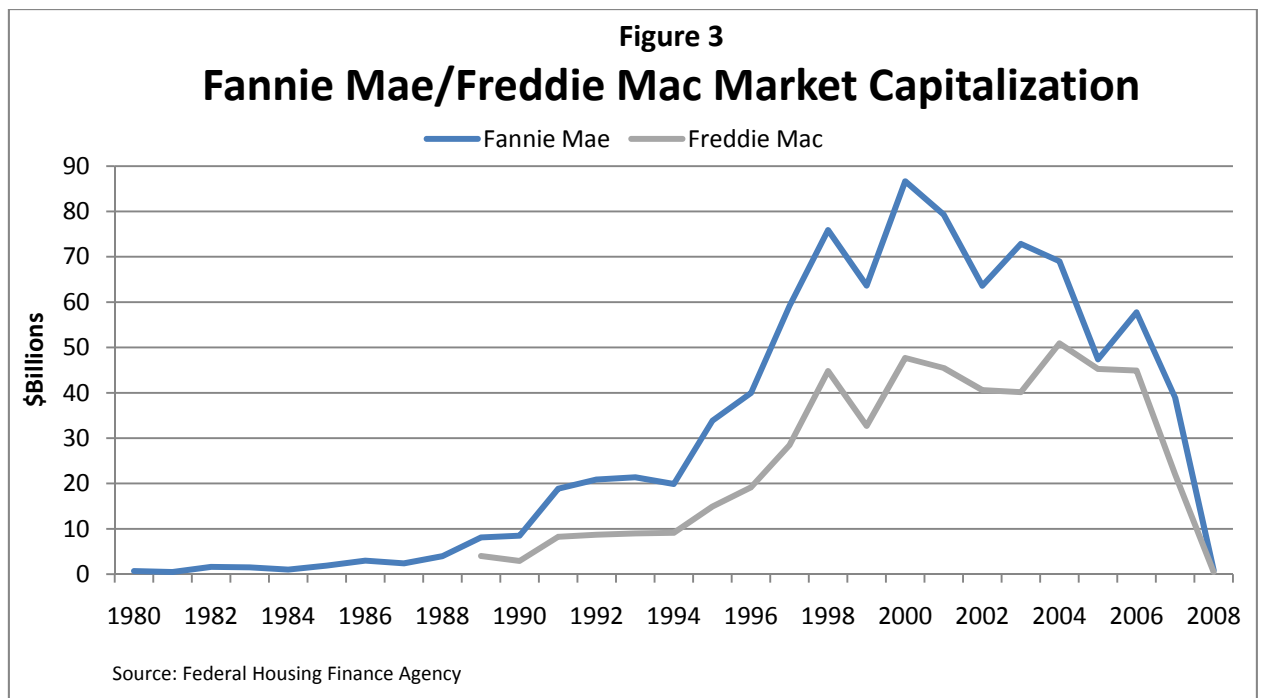


<sup>5</sup> Ginnie Mae creates MBS by guaranteeing timely payment of principal and interest on pools of mortgages that others assemble. By contrast, Fannie Mae and Freddie Mac technically purchase mortgages before they securitize them, although the purchase and securitization transactions may occur simultaneously.

<sup>6</sup> Source: Bloomberg



Another measure of GSE shareholder value is market capitalization, shown below.



Like banks and thrift institutions, and in contrast to usual corporations, GSEs are special-purpose companies that may carry out only those business activities authorized by their enabling legislation. Fannie Mae and Freddie Mac operate under Congressional charters similar in function to a government agency's authorizing legislation. A GSE may engage only in those activities that are expressly authorized by law or that are incidental to those activities.

Among the requirements imposed by the GSEs' charters were requirements to serve the market for low- and moderate-income people and underserved markets. When Fannie Mae became a GSE in 1968 its charter authorized HUD to set affordable housing requirements as a portion of the company's mortgage purchases, "but with reasonable economic return to the corporation."<sup>7</sup> The 1992 Federal Housing Enterprises Financial Safety and Soundness Act authorized the HUD Secretary to set affordable housing goals for Fannie Mae and Freddie Mac "involving a reasonable economic return that may be less than the return earned on other activities."<sup>8</sup> Both Freddie Mac and especially Fannie Mae publicly promoted policies to increase the homeownership rate in the United States.<sup>9</sup>

The 1992 Act established three housing goals,

- (1) The Low- and Moderate-Income Housing Goal: loans to borrowers with incomes at or below the median income for the market area in which they live;
- (2) The Special Affordable Goal: loans to very low-income borrowers (those with incomes at or below 60 percent of the area median income), or to low-income borrowers living in low-income areas (borrowers with incomes at or below 80 percent of the area median income, living in census tracts in which the median income of households is at or below 80 percent of the area median income);
- (3) The Underserved Areas Goal: loans to borrowers living in low-income census tracts (tracts in which the median income of residents is at or below 90 percent of the area median income) or high-minority tracts (tracts in which minorities comprise at least 30 percent of residents, and the median income of residents in the tract does not exceed 120 percent of the area median income).<sup>10</sup>

Acting under authority of the 1992 Act, HUD issued an affordable housing goal regulation in 2004 that for the first time added subgoals and required that a fraction of each goal be met with home-purchase mortgages, as distinguished from refinancings. The 1992 Act calls on HUD to consider a number of factors in setting the goals, including "the need to maintain the

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<sup>7</sup> 12 U.S.C. 1723a(h) (amended 1992)

<sup>8</sup> 12 USC Section 1716 (4), available at

[http://www.law.cornell.edu/uscode/html/uscode12/usc\\_sec\\_12\\_00001716----000-.html](http://www.law.cornell.edu/uscode/html/uscode12/usc_sec_12_00001716----000-.html).

<sup>9</sup> Johnson, 1996.

<sup>10</sup> See the 1992 Act, sections 1331-1338. The act was amended in 2008. This summary is taken from John C. Weicher, "Civil Rights Issues Emerging from the Mortgage Crisis," presented to the U.S. Commission on Civil Rights, March 20, 2009

sound financial condition of the enterprises."<sup>11</sup> The following table, compiled by John Weicher, former Federal Housing Commissioner, shows how the goals increased from 1993 to 2008.<sup>12</sup> With exceptions, the GSEs met or exceeded their affordable housing goals until 2008, when Fannie Mae met the underserved areas housing goal and both met their special affordable multifamily subgoals.<sup>13</sup>

**Table 1: GSE Affordable Housing Goals Since 1993** (*Share of mortgage purchases*)

	1993- 1995	1996	1997- 2000	2001- 2004	2005	2006	2007	2008
<i>Low- and Moderate-Income Goal</i>	30%	40%	42%	50%	52%	53%	55%	56%
<i>Special Affordable Goal</i>	NA*	12	14	20	22	23	25	27
<i>Underserved Areas Goal</i>	30	21	24	31	37	38	38	39

Source: Federal Housing Finance Agency

\*NA – Not Applicable: goals set in dollar amounts for each GSE rather than percentages. Underserved Areas goal determined on basis of 1990 Census tract geography from 1993 through 2004, and on basis of 2000 Census tract geography from 2005-2008.

Table 1 shows application of the low and moderate-income goal to Fannie Mae and Freddie Mac since 1995.<sup>14</sup> As FHFA explains in a recent report, HUD first determined the fraction of the market associated with mortgage originations, both single-family and multifamily, that would be available to low and moderate-income families. Then HUD deducted the part of that market that consisted of B and C grade mortgages on grounds that these would be too risky for the GSEs to purchase. For years 2000-2004, HUD set the goals at a level so that the GSEs would meet the lower end of that market; for 2005-2008 HUD raised its estimate of market share and also required the GSEs to lead the market. HUD made similar calculations for both of the other goals and, for the regulatory cycle 2005-8, also set a home-purchase subgoal for each of the goals.<sup>15</sup>

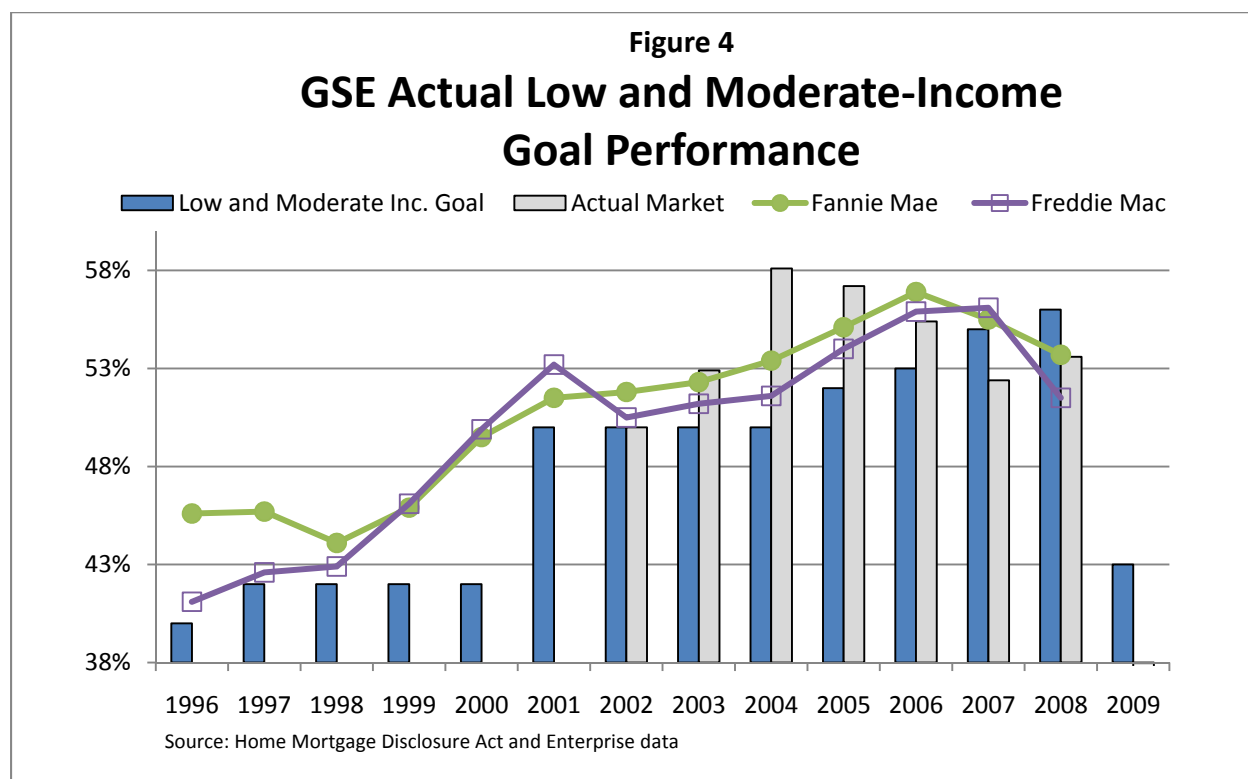
<sup>11</sup> See, e.g., 12 USC 4562(b), amended by HERA in 2008.

<sup>12</sup> Weicher, fn. 9.

<sup>13</sup> Federal Housing Finance Agency, "The Housing Goals of Fannie Mae and Freddie Mac in the Context of the Mortgage Market: 1996 – 2009," Mortgage Market Note 10-2, February 1, 2010. Fannie Mae missed the center cities goal in 1993 and Freddie Mac missed the center cities goal in 1993, 1994, and 1995. The center cities goal was later changed to "underserved areas." There is still debate whether Freddie Mac missed the underserved areas goal in 2002 and in 2005 Fannie Mae missed the low-mod home purchase subgoal, but met the goals per se. In 2008 both GSEs missed their housing goals except that FNMA made the underserved areas goal and both companies met their multifamily subgoals.

<sup>14</sup> Ibid, p. 6.

<sup>15</sup> Ibid., pp. 4-11.



Until the enactment of the Housing and Economic Recovery Act of 2008 (HERA), HUD possessed few sanctions to enforce the goals. The major sanction was that the HUD Secretary could require a GSE to provide a housing plan that the GSE would apply to ensure that it could meet each goal in the future.<sup>16</sup> However, the GSEs did have reputational risk at stake if they missed achieving a housing goal or subgoal, as they sometimes did. In addition, HUD maintained a dialogue with the GSEs regarding these goals and at times used its authority to modify the application of goals requirements.<sup>17</sup>

The GSEs' statutory charters provide certain advantages (e.g., preferential treatment under tax laws, favorable capital requirements, constraints on the regulator's mandate and authority vs. other institutions' regulators, and protection against other competitors obtaining a comparable charter), and prescribe statutory obligations or limitations (e.g., affordable housing goals, or limits on the size of mortgages that the GSEs may purchase).

<sup>16</sup> See the 1992 Act, section 1336. HERA strengthened the ability of HUD to enforce compliance with the goals.

<sup>17</sup>For example, "In April 2008 HUD determined that the Low- and Moderate-Income Home Purchase Subgoal for 2007 (47 percent) and the Special Affordable Home Purchase Subgoal for 2007 (18 percent) were not feasible, and the Department notified Fannie Mae and Freddie Mac of its determination in letters dated April 24, 2008." Paul Manchester, Federal Housing Finance Agency, "Overview of the GSEs' Housing Goal Performance, 2000-2007."

While GSEs lacked a full-faith-and-credit government guarantee, their obligations generally traded at narrow spreads above Treasuries and below the level of AAA-rated securities. The government had reinforced a perception of an implicit federal guarantee when it acted to support another GSE, the Farm Credit System, when this GSE declared in 1985 that it could not meet its obligations. The federal government stepped in and provided funding through an organization called the Farm Credit System Financial Assistance Corporation. Similarly, the government arranged for support of the Financing Corporation, an organization that issued obligations with the attributes of GSE obligations, when its viability was in doubt in 1996.<sup>18</sup>

GSEs possess an unusual organizational structure, with both private ownership and public purposes. Dan Mudd, Fannie Mae's CEO in September 2008, testified in December 2008 that, "Events have shown how difficult it is to balance financial, capital, market, housing, shareholder, bondholder, homeowner, private, and public interests in a crisis of these proportions."<sup>19</sup> Freddie Mac's CEO, Richard Syron, spoke in August 2008 about the difficulty of trying to balance the company's obligations to shareholders with its public mission. Syron said that the tension made his job almost impossible.<sup>20</sup>

## **II. THE ROLE OF FANNIE MAE AND FREDDIE MAC IN THE MORTGAGE MARKET**

Under their charters, Fannie Mae and Freddie Mac were limited to purchasing mortgages up to a specified size that would adjust each year according to an index of house prices. This size limit was known as the "conforming loan limit."<sup>21</sup> Mortgages eligible for purchase by Fannie Mae and Freddie Mac were known as "conforming mortgages." Because institutions frequently sought to sell their mortgages to Fannie Mae and Freddie Mac, for many years the GSEs influenced credit standards by specifying the characteristics of loans that they would purchase. In the mid-1990s, both Fannie Mae and Freddie Mac adopted automated underwriting systems to ensure that they dealt in mortgages that met Fannie Mae's and Freddie Mac's criteria, including credit criteria. Underwriting is important as a way for a lender to assess the risk of particular loans that it funds and to set prices for funding those loans. These criteria include, but are not limited to, the borrower's FICO score, loan-to-value

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<sup>18</sup> The government created the Financing Corporation in 1987 to provide off-budget financial assistance to the Federal Savings and Loan Insurance Corporation. See 12 USC Sec 1441. Initially, the Financing Corporation was funded by assessments on the Federal Home Loan Banks. The Deposit Insurance Funds Act of 1996 (DIFA) authorized the Financing Corporation to obtain funds from the private sector by assessing federally insured deposits. See, Federal Deposit Insurance Corporation, "FICO Assessments," available at <http://www.fdic.gov/deposit/insurance/risk/assesrte.html>

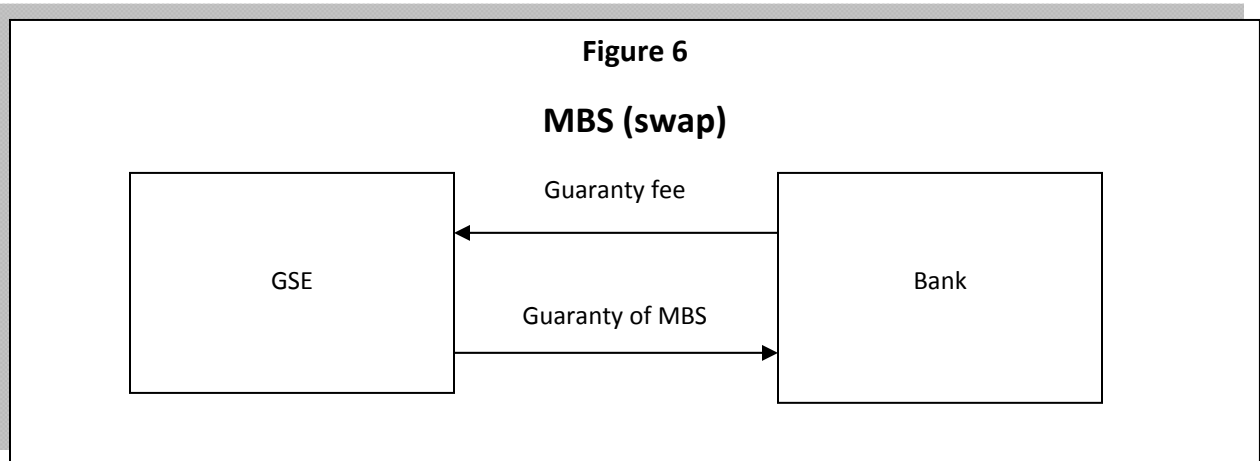
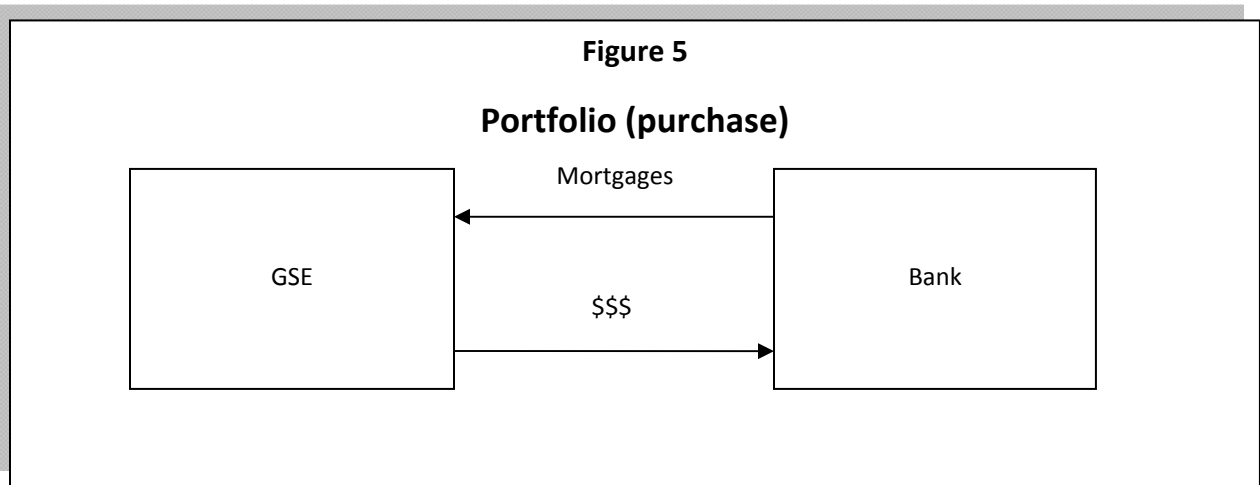
<sup>19</sup> Daniel H. Mudd, "The Role of Fannie Mae and Freddie Mac in the Financial Crisis," Statement before the House Committee on Oversight and Government Reform Hearing, December 9, 2008.

<sup>20</sup> Jeffrey H. Birnbaum and David S. Hilzenrath, "Freddie CEO Feels Strain of Firm's Twin Missions," Washington Post, August 6, 2008, p. D01.

<sup>21</sup> In the year 2000 the conforming loan limit was \$252,700 for a one-unit single-family home. By 2007 the limit had grown to \$417,000. For 2009 the limit was raised to \$729,750 for high-cost area. Federal Housing Finance Agency, *2008 Annual Report to Congress*, revised edition, p. 144.

ratio of the property, the borrower's debt-to-income ratio, appraised value of the property, and type of mortgage.

As can be seen in the two figures below, the two GSEs would either hold mortgages in portfolio or securitize them into mortgage-backed securities (MBS). When GSEs purchased mortgages for portfolio, they held them on their balance sheets as investments and funded these purchases by issuing debt. In general, when a company holds mortgages or other assets in portfolio it bears the credit risk, interest rate risk, and management and operations risk of holding those assets. In return, a company can earn money from the spread between its funding costs and returns on the assets that it holds.



The GSEs did a large part of their business securitizing mortgages into MBS and guaranteeing these mortgages against default risk. These transactions were usually "swap" transactions, where the mortgages were never held on the GSEs' balance sheets. When a GSE issues and guarantees MBS, the GSE bears the credit risk (and the associated management and operations risk) but shifts the interest rate risk, and the associated returns, to investors in the MBS. An MBS represents an undivided interest in a pool of mortgage loans.<sup>22</sup>

A lender that held a portfolio of mortgages would obtain a GSE guarantee for the mortgages and thus convert them to MBS. The GSE guarantee assumed the credit risk of that pool of mortgages, which increased the market value of the pool. As a result of the GSE guarantee, the institution holding the MBS faced lower capital requirements.<sup>23</sup> In addition, the MBS, with perceived high credit quality, is more liquid than the underlying mortgages. The GSE charge a fee for the securitization, called a guaranty fee (or "g-fee" in industry parlance). The GSE would set the g-fee based on a variety of factors including the volume of mortgages that a particular lender would provide to the GSE and the underlying risk of the pool of mortgages. The g-fee averaged 22 basis points in 2007 and rose to 25 basis points in 2008.<sup>24</sup> As can be seen in the figures below, in the third quarter of 2008, both Fannie Mae and Freddie Mac securitized many more mortgages than they funded on their balance sheets.

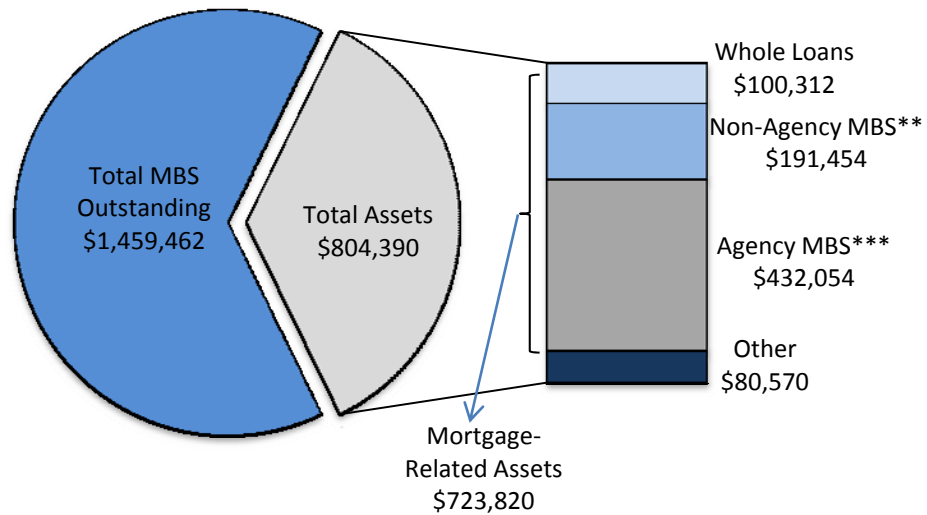
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<sup>22</sup> The GSEs also could create MBS from loans they held in portfolio.

<sup>23</sup> For example, under Basel I total capital required for an agency MBS was 1.6%, versus 4% on whole loans.

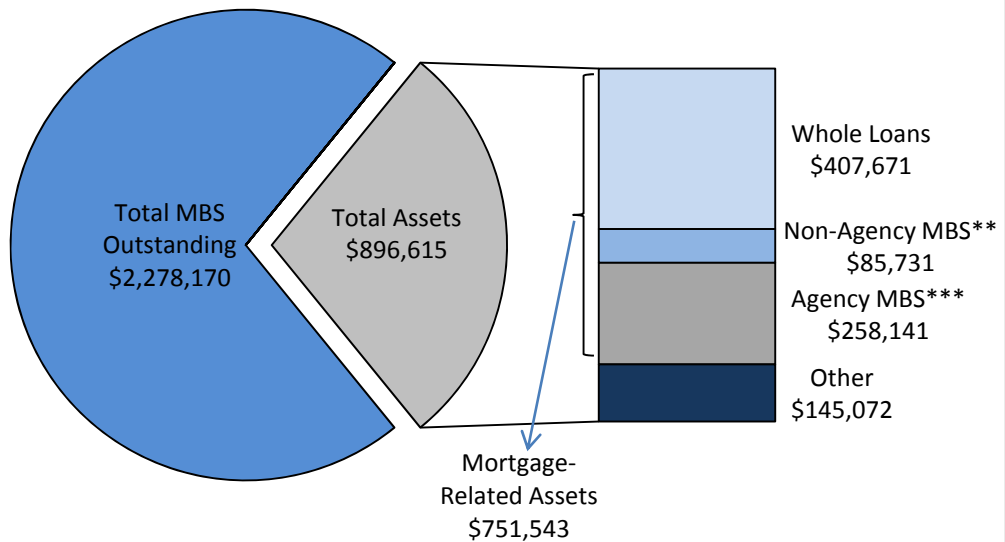
<sup>24</sup> A basis point is one one-hundredth of a percentage point. The GSEs assessed both an up-front g-fee and a g-fee that the holder paid for the life of the MBS.

**Figure 8**  
**Assets and Mortgage Backed Securities:**  
**Freddie Mac\***



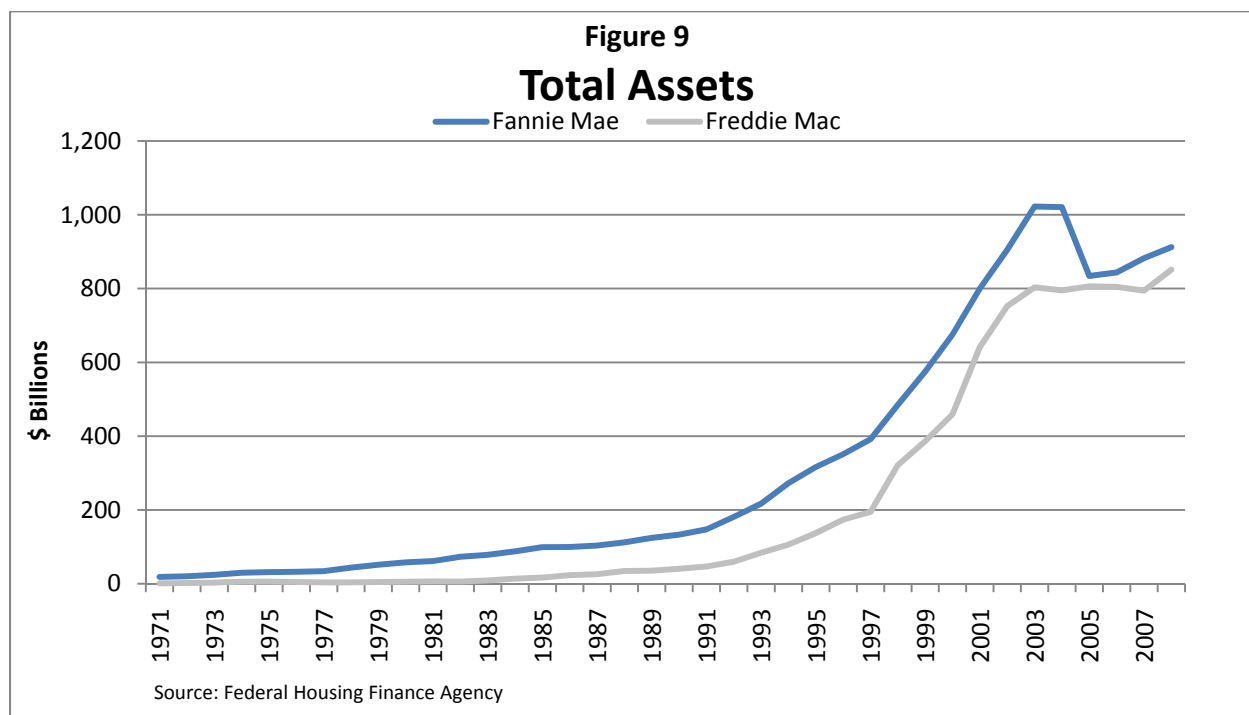
\* Figures are for Q3 2008, in millions. \*\*Represents private-label securities. \*\*\*Includes: Fannie Mae, Freddie Mac and Ginnie Mae.  
 Source: Federal Housing Finance Agency

**Figure 7**  
**Assets and Mortgage Backed Securities:**  
**Fannie Mae\***



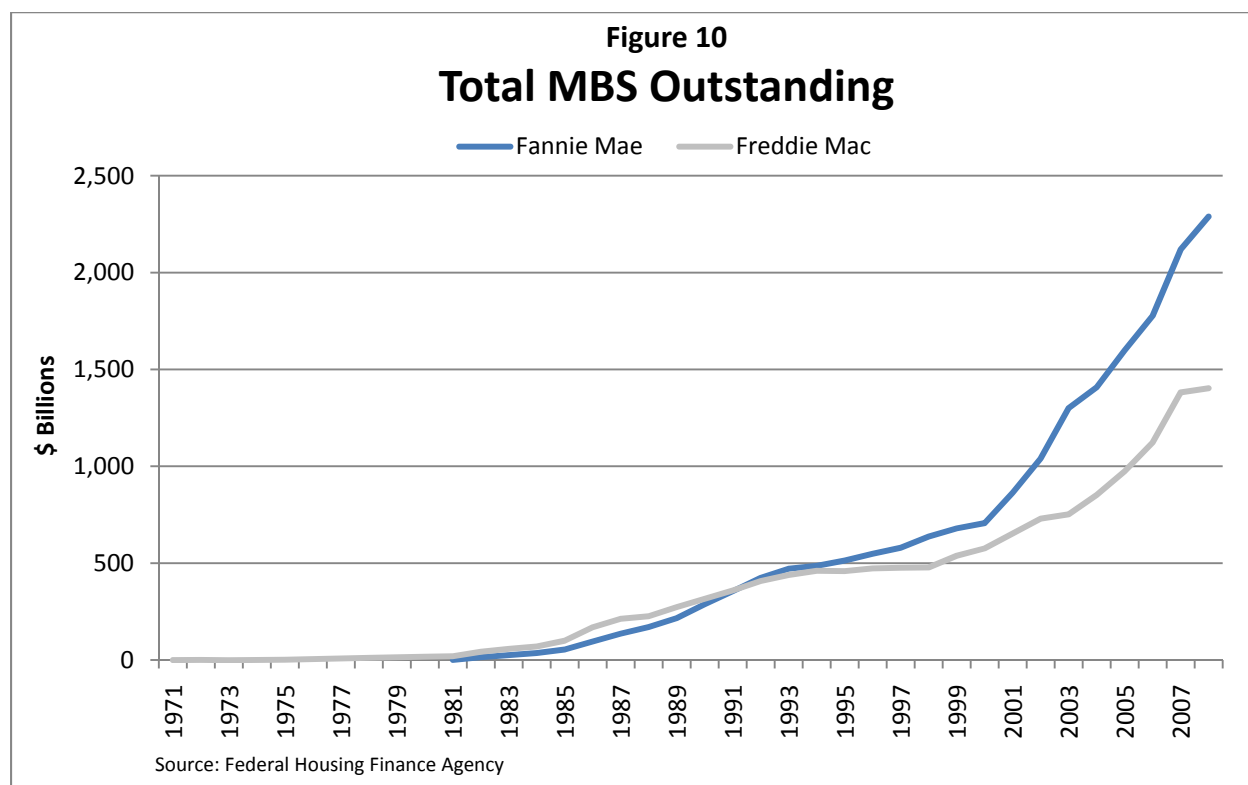
\* Figures are for Q3 2008, in millions. \*\*Represents private-label securities. \*\*\*Includes: Fannie Mae, Freddie Mac and Ginnie Mae.  
 Source: Federal Housing Finance Agency

Fannie Mae and Freddie Mac grew rapidly from 1970 through the boom in mortgage refinancing in 2003. Figure 9 shows the two companies’ assets held in portfolio, which are funded by issuing debt.



The GSE portfolios stopped growing in 2004 in part as a result of consent agreements with their regulator, the Office of Federal Housing Enterprise Oversight (OFHEO) that were imposed after accounting irregularities (discussed below) came to light.

Figure 10 shows the growth of the two companies in terms of the total volume of guaranteed MBS that were held outside of the GSEs’ own portfolio. These MBS are referred to as “MBS outstanding”. The consent agreements with OFHEO did not cap the companies’ MBS business.

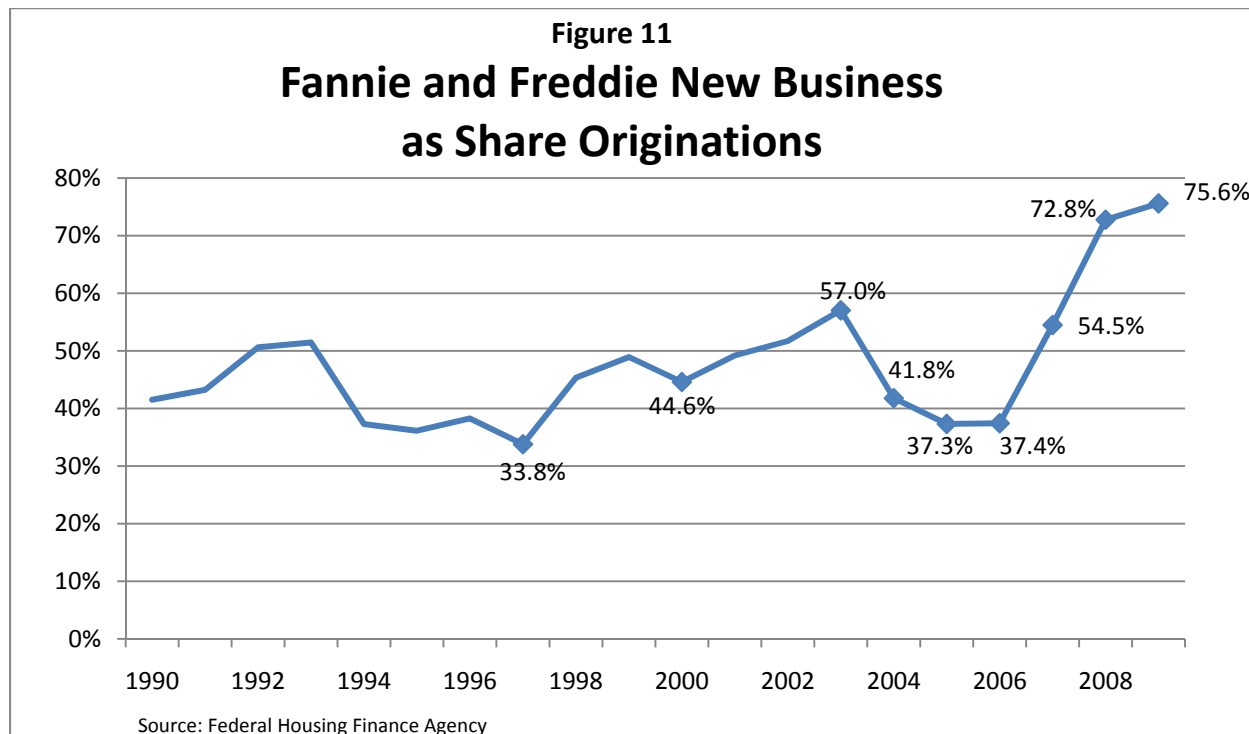


Fannie Mae is the largest of the GSEs. At the end of September 2008 the company had outstanding \$831 billion of debt obligations and \$2.28 trillion of MBS. By comparison, Freddie Mac, the second-largest GSE, had \$784 billion of debt obligations and \$1.46 trillion of MBS outstanding.<sup>25</sup>

The figure below shows the GSEs' market share in terms of new business as share of originations.<sup>26</sup> Market share (percentage numbers in the figure) grew until 2003, then fell, and then began growing in 2006. High market share increased the liquidity of GSE-related assets by making it easier for the private sector to trade in the secondary market. As a result, high market share lowered the GSEs' funding costs and raised the value of GSE MBS.

<sup>25</sup> Figures on MBS outstanding come from the Federal Housing Finance Agency *2008 Annual Report to Congress*, revised edition; figures on debt outstanding come from FNMA 10-Q for 3Q 2008, p. 142 and FHLMC 10-Q for 3Q 2008, p. 112.

<sup>26</sup> This figure uses data from the Federal Housing Finance Agency (FHFA). A similar figure appears in James B. Lockhart, "FHFA's First Anniversary and the Challenges Ahead," FHFA, July 30, 2009.



The Fannie Mae and Freddie Mac charter acts specify that, when the GSEs purchase loans with a loan-to-value (LTV) ratio above 80 percent, the mortgage must have private mortgage insurance or otherwise provide protection against default. Generally, the GSEs set limits for the maximum LTV on loans that they would deal in. Over the years, the GSEs relaxed their underwriting standards. For example, Fannie Mae purchased some home purchase mortgages (i.e., excluding mortgages from refinancing) with a loan-to-value (LTV) ratio of above 95 percent. These purchases increased from 3.3 percent of Fannie Mae's total purchases of home purchase loans in 1997 to 4.4 percent in 2000 to 14.1 percent in 2004 and 26.0 percent in 2007. For Freddie Mac the comparable figures are 1.1 percent in 1997, 6.1 percent in 2000, 6.4 percent in 2004, and 19.3 percent in 2007.<sup>27</sup>

As discussed in preliminary staff report titled "The Mortgage Crisis," loans with risk characteristics such as higher LTVs and lower credit scores default more often than otherwise similar loans with lower LTVs and higher credit scores. For example, nearly 50 percent of loans were delinquent in subprime and alt-A MBS as of December 2009 that have LTVs equal to or greater than 90 percent and credit scores below 660. To compare, about 35 percent of loans were delinquent in subprime and alt-A MBS that have LTVs equal to or greater than 90 percent and credit scores *above* 660. Similarly, using a dataset on mortgages

<sup>27</sup> HUD Office of Policy Development and Research, "Profiles of GSE Mortgage Purchases In 1999 And 2000," April 2002; "The GSEs' Funding Of Affordable Loans: A 2000 Update," April 2002; "Profiles Of GSE Mortgage Purchases in 2001 – 2004," April 2008; "Profiles Of GSE Mortgage Purchases in 2005 – 2007," September 2008.

that greatly overlaps with GSE mortgages (but is somewhat riskier and performs somewhat worse) referred to GSE/other, about 20 percent of these GSE/other loans were delinquent that have LTVs equal to or greater than 90 percent and credit scores below 660. To compare, about 10 percent of these GSE/other loans were delinquent that have LTVs equal to or greater than 90 percent and credit scores *above* 660. Nearly 25 percent of the loans in GSE/other have LTVs greater than or equal to 90 percent or credit scores less than 660.

Fannie Mae and Freddie Mac increased their purchase of higher-risk mortgages after 2005. For example, Fannie Mae's 2007 10 K filing states:

“[w]e are experiencing high serious delinquency rates and credit losses across our conventional single-family mortgage credit book of business, especially for loans to borrowers with low credit scores and loans with high loan-to-value (“LTV”) ratios. In addition, in 2007 we experienced particularly rapid increases in serious delinquency rates and credit losses in some higher risk loan categories, such as alt-A loans, adjustable-rate loans, interest-only loans, negative amortization loans, loans made for the purchase of condominiums and loans with second liens. Many of these higher risk loans were originated in 2006 and the first half of 2007.”<sup>28</sup>

In 2007, Freddie Mac similarly reported:

“[t]he proportion of higher risk mortgage loans that were originated in the market during the last four years increased significantly. We have increased our securitization volume of non-traditional mortgage products, such as interest-only loans and loans originated with less documentation in the last two years in response to the prevalence of these products within the origination market. Total non-traditional mortgage products, including those designated as alt-A and interest-only loans, made up approximately 30 percent and 24 percent of our single-family mortgage purchase volume in the years ended December 31, 2007 and 2006, respectively.”<sup>29</sup>

When purchasing some higher risk loans, the GSEs also might purchase or require credit enhancements, such as mortgage insurance, pool insurance, or lender recourse, to provide added credit protection.

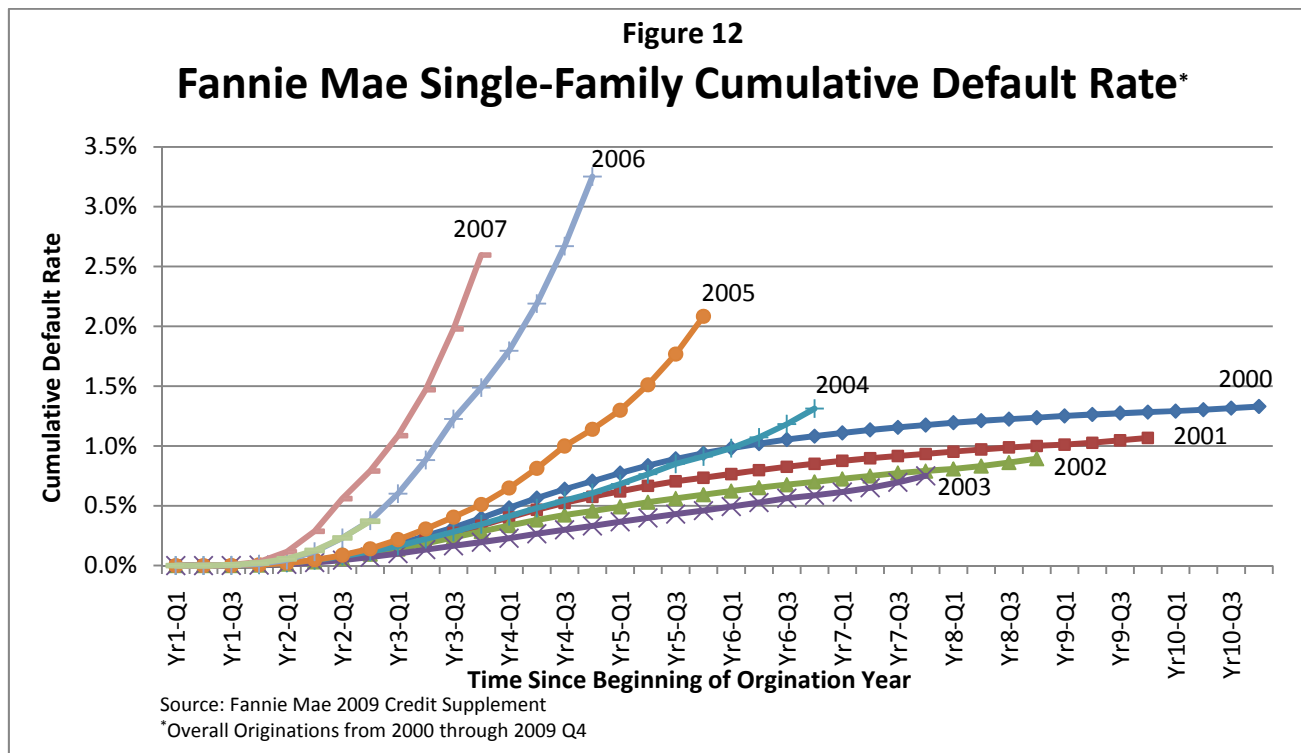
The GSEs took much higher losses on put into their guarantee book of business in 2005, 2006, and 2007, compared to earlier years. This is seen in the figure below from the Fannie Mae 2009 Credit Supplement, issued February 26, 2010. The figure shows cumulative default rates by mortgage origination year. Data in the figure below include loan

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<sup>28</sup> Fannie Mae, 2007 Annual Report, p. 24.

<sup>29</sup> Freddie Mac Information Statement and Annual Report for 2007, p. 13.

foreclosures, preforeclosure sales, and deeds in lieu of foreclosure by year of origination.<sup>30</sup> Note that losses from earlier years, especially 2000-2004, are masked by the appreciation in home prices which often allowed homeowners to sell their homes or refinance rather than default on their mortgages. While home prices were rising homeowners had an opportunity to sell their homes rather than default on their mortgages; as home prices began to decline, a sale frequently became impractical because the home came to be worth less than the value of the outstanding mortgage.



The table below shows detailed data on Fannie Mae’s credit guarantee book of business, mortgages it places in portfolio and mortgages guaranteed in MBS from 2004 to 2008.

<sup>30</sup> Overall, 1.07% of Fannie Mae loans in portfolio or in MBS were in the process of default in 2009. Across all Fannie Mae mortgages at the end of 2009, 5.38% of mortgages were at least 90 days delinquent. Of these, 57% were over 180 days past due.

FINANCIAL CRISIS INQUIRY COMMISSION

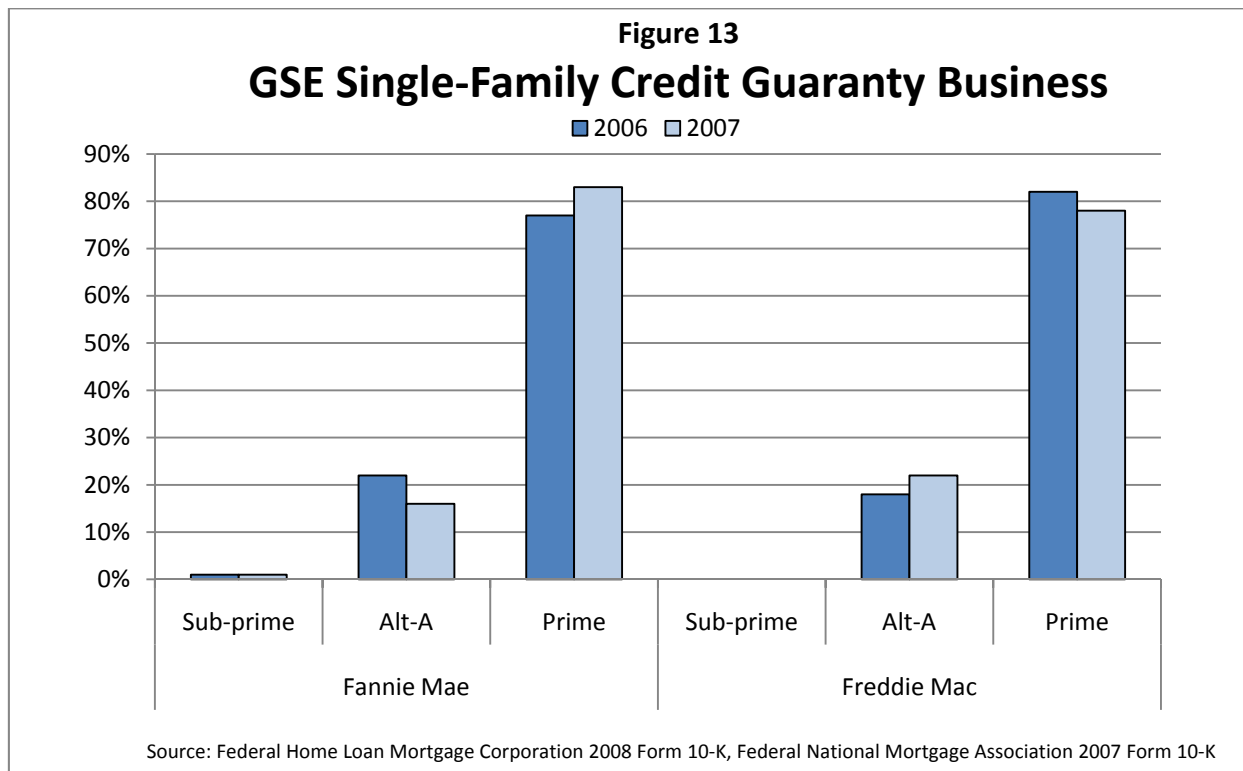
PRELIMINARY STAFF REPORT – GSEs AND THE FINANCIAL CRISIS

**Table 2: Fannie Mae Purchases of Non-Traditional Single Family Mortgages**

Fannie Mae		2004				2005				
SF Book Trends \$(B)	\$ Acquired	% of Total	SF Book \$	% SF Book	% Tot Cap	\$ Acquired	% of Total	SF Book \$	% SF Book	% Tot Cap
<i>Total</i>	\$568.8	100%	\$1,951.3	100%		\$524.2	100%	\$2,016.6	100%	
ALT-A	\$67.6	11.9%	\$147.2	8%	418%	\$84.7	16.2%	\$181.1	9%	452%
CLTV > 95%	\$30.9	5.4%	\$60.8	3%	173%	\$39.0	7.4%	\$81.0	4%	202%
DTI > 50%	\$85.9	15.1%	\$234.2	12%	665%	\$77.6	14.8%	\$250.1	12%	624%
FICO < 660	\$97.3	17.1%	\$303.5	16%	862%	\$84.0	16.0%	\$296.5	15%	740%
Interest Only (IO)	\$28.5	5.0%	\$35.9	2%	102%	\$52.7	10.1%	\$74.7	4%	186%
Non-Full Doc	\$101.2	17.8%	\$232.9	12%	662%	\$110.2	21.0%	\$278.8	14%	695%
Total Capital	\$35.2					\$40.1				
Fannie Mae		2006				2007				
SF Book Trends \$(B)	\$ Acquired	% of Total	SF Book \$	% SF Book	% Tot Cap	\$ Acquired	% of Total	SF Book \$	% SF Book	% Tot Cap
<i>Total</i>	\$515.8	100%	\$2,189.1	100%		\$643.8	100%	\$2,512.5	100%	
ALT-A	\$112.8	21.9%	\$249.0	11%	583%	\$107.6	16.7%	\$313.5	12%	644%
CLTV > 95%	\$64.8	12.6%	\$129.2	6%	303%	\$97.1	15.1%	\$206.3	8%	424%
DTI > 50%	\$80.5	15.6%	\$286.8	13%	672%	\$117.2	18.2%	\$359.3	14%	738%
FICO < 660	\$89.9	17.4%	\$320.5	15%	751%	\$115.6	18.0%	\$377.2	15%	775%
Interest Only (IO)	\$78.2	15.2%	\$133.5	6%	313%	\$97.6	15.2%	\$207.3	8%	426%
Non-Full Doc	\$143.9	27.9%	\$365.3	17%	856%	\$199.3	31.0%	\$503.4	20%	1035%
Total Capital	\$42.7					\$48.6				
Fannie Mae		2008								
SF Book Trends \$(B)	\$ Acquired	% of Total	SF Book \$	% SF Book	% Tot Cap					
<i>Total</i>	\$557.2	100%	\$2,713.5	100%						
ALT-A	\$17.4	3.1%	\$291.2	11%	868%					
CLTV > 95%	\$23.3	4.2%	\$206.3	8%	615%					
DTI > 50%	\$99.7	17.9%	\$412.5	15%	1229%					
FICO < 660	\$47.3	8.5%	\$377.3	14%	1125%					
Interest Only (IO)	\$31.4	5.6%	\$211.6	8%	631%					
Non-Full Doc	\$87.1	15.6%	\$523.2	19%	1559%					
Total Capital	\$33.6									

Source: Fannie Mae 2009 Credit Supplement

The figure below shows the GSEs’ single-family guarantee book of business broken down by prime, subprime, and alt-A loans, as defined by the GSEs.<sup>31</sup> While the GSEs historically had not characterized this book of business as either prime or subprime, in recent years they began characterizing these loans as prime, subprime, and alt-A. There is no consistent definition in the mortgage industry of the terms 'subprime' and 'alt-A.' Figure 13 is based on definitions that Fannie Mae and Freddie Mac use in their public disclosures.



NOTE: The two companies define subprime and alt-A as these were reported by originators, according to whether the originator specializes in subprime lending, or according to other criteria.

**III. GOVERNMENT OVERSIGHT OF FANNIE MAE AND FREDDIE MAC**

The Housing and Economic Recovery Act of 2008 (HERA), which became law on July 30, 2008, shortly before Fannie Mae and Freddie Mac went into government conservatorship, created a new regulator, the Federal Housing Finance Agency (FHFA). Until then the supervision of Fannie Mae and Freddie Mac was divided between the Office of Federal Housing Enterprise Oversight (OFHEO), a financial soundness regulator, and the Department of Housing and Urban Development, which supervised the GSEs' achievement of affordable housing goals and compliance with fair housing laws. In 1992, OFHEO had been created as a

<sup>31</sup> Fannie Mae and Freddie Mac define their Credit Guaranty Business as including the credit risk that they take on the mortgages that they purchase for portfolio plus the mortgages that they securitize into MBS.

regulator with a lesser mandate and much weaker legal authority than the Federal Reserve, Office of the Comptroller of the Currency, and FDIC possess vis-à-vis banks that they regulate or the Office of Thrift Supervision (OTS) vis-à-vis thrift institutions.<sup>32</sup>

As one example of weakness, OFHEO was limited in the discretion that it could exercise to increase capital requirements for Fannie Mae and Freddie Mac. The minimum capital standards were set by law at 2.5 percent of on-balance sheet assets and 0.45 percent of off-balance sheet guarantees.<sup>33</sup> The law also prescribed parameters for the GSEs' risk-based capital.<sup>34</sup> These specified the parameters under which credit risk and interest rate risk could be used to calculate the level of risk-based capital required for the two GSEs. The risk-based capital test generated values below the statutory minimums, which became the binding capital requirements on the two enterprises. As a result of the statutory prescriptions, the two GSEs operated with significant leverage: For Fannie Mae, the ratio of core capital to total assets plus MBS outstanding amounted to around 1.5 percent for year-end 2007; for Freddie Mac it was around 1.7 percent.<sup>35</sup> By contrast, a commercial bank or thrift institution would be subject to capital requirements at least twice as high.

Having lower capital standards allows a firm to maintain a lower cost structure than would be possible with greater capital. Also, because profits are spread across a smaller volume of shares, returns to shareholders are potentially much greater than would be possible with greater capital. Both companies enjoyed high returns on equity. From 1990 to 2007 each company reported a return on equity of over 20 percent in 13 years. Fannie Mae's return reached a peak of 39.8 percent in 2001; Freddie Mac's peaked at 47.2 percent in 2002.

OFHEO also lacked statutory authority in other areas. It did not possess the range of enforcement authority available to bank and thrift regulators and had no authority to place a GSE into receivership, which would close down the company. Unlike bank and thrift regulators, OFHEO was funded through the appropriations process.<sup>36</sup> OFHEO had about 60 people at its inception in 1992<sup>37</sup> and roughly 250 people in 2008<sup>38</sup> to supervise two

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<sup>32</sup> See, e.g., Kenneth H. Bacon, "Privileged Position: Fannie Mae Expected to Escape Attempt at Tighter Regulation," *Wall Street Journal*, June 19, 1992, p. A1.

<sup>33</sup> The law prescribed that Fannie Mae and Freddie Mac should hold minimum capital of 2.5 percent of on-balance sheet assets and 0.45 percent of off-balance sheet guarantees. 12 USC Sec. 4612(a) available at [http://www.law.cornell.edu/uscode/html/uscode12/usc\\_sec\\_12\\_00004612----000-.html](http://www.law.cornell.edu/uscode/html/uscode12/usc_sec_12_00004612----000-.html)

<sup>34</sup> 1992 Federal Housing Enterprises Financial Safety and Soundness Act, Sec. 1361

<sup>35</sup> FHFA 2008 report to Congress, pp. 121 and 138 (Tables 9 and 18, "Capital"), second column from right.

<sup>36</sup> Among other documented occasions, OFHEO reported that Fannie Mae attempted to use the appropriations process to force a change in OFHEO leadership and interfere with OFHEO's special examination of Fannie Mae. Office of Federal Housing Enterprise Oversight, *Report of the Special Examination of Fannie Mae*, May 2006, p. 276. Available at <http://www.fhfa.gov/webfiles/747/FNMSPECIALEXAM.pdf>

<sup>37</sup> Source: FHFA oral information. The OFHEO 1997 annual report, available at

<http://www.fhfa.gov/webfiles/1270/ar1997.pdf>,

States (p. 39) that the agency had 72 employees; earlier reports are not easily available.

<sup>38</sup> Source: FHFA oral information.

companies that, by 2008, together funded over \$5 trillion of mortgages. Proportionate to its size in the marketplace, this was a far smaller workforce than was possessed by the federal bank regulators to oversee major financial institutions.

#### ACCOUNTING PROBLEMS AT THE GSEs

Freddie Mac revealed in 2003 that the company had improperly managed earnings.<sup>39</sup> In 2004 OFHEO conducted an investigation and found that Fannie Mae had overstated its earnings by billions of dollars.<sup>40</sup> OFHEO's examinations of both companies found deficiencies such as staff shortages in key parts of the company and that senior officials lacked requisite experience. Freddie Mac's outside auditor stated that Freddie Mac's CFO, "had little knowledge of GAAP, financial accounting, or disclosure rules, and that he was deeply involved in the transactions that have given rise to the restatement."<sup>41</sup> Fannie Mae's board commissioned former Senator Warren Rudman and his law firm to investigate. Among their findings was that the head of internal audit had no experience or formal training as an auditor and the company's controller was not a certified public accountant.<sup>42</sup>

Both companies had to engage in an expensive multi-year effort to restate their books and rebuild their internal controls. Top management at both GSEs, including CEOs, CFOs, and many other top officers, changed after the internal control failures came to light. OFHEO negotiated consent agreements with both companies that imposed temporary increases in capital requirements and imposed portfolio limits.<sup>43</sup>

#### IV. FANNIE MAE AND FREDDIE MAC AND THE FINANCIAL SYSTEM

A review of linkages, between Fannie Mae and Freddie Mac on the one hand and the larger financial system on the other, should begin with the companies' scale and their market shares. Together, the two companies purchased \$1.2 trillion of mortgages and \$300 billion of mortgage-related securities in 2007 alone.<sup>44</sup> That year, Fannie Mae issued \$630 billion of

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<sup>39</sup> Office of Federal Housing Enterprise Oversight, *Report of the Special Examination of Freddie Mac*, 2003. The report uses the term "improper management of earnings." OFHEO found that, "By 1999 Freddie Mac had established a practice of engaging in transactions for the express purpose of managing its reported earnings and other measures of financial performance included in the financial statements of the Enterprise. Freddie Mac used several strategies to shift earnings into future reporting periods, reflecting the proclivity of management to increase operations risk in the quest for more stable earnings." Ibid. p. ii. Freddie Mac revealed the issue to OFHEO, which then conducted its own investigation."

<sup>40</sup> Office of Federal Housing Enterprise Oversight, *Report of Findings to Date: Special Examination of Fannie Mae, September 17, 2004*, available at <http://www.fhfa.gov/webfiles/748/FNMfindingstodate17sept04.pdf>

<sup>41</sup> OFHEO, *Report of the Special Examination of Freddie Mac*, 2003, p. 91.

<sup>42</sup> Paul, Weiss, Rifkind, Wharton & Garrison LLP, "Report to the Special Review Committee of the Board of Directors of Fannie Mae, 2006, pp. 464, 506.

<sup>43</sup> OFHEO 2006 Annual report, p. 5; <http://www.fhfa.gov/webfiles/1221/annualreport2006.pdf>

<sup>44</sup> FHFA 2008 Annual Report (rev) tables 1 and 10.

mortgage-backed securities and \$1.7 trillion in short-term and long-term debt obligations.<sup>45</sup> Freddie Mac issued \$471 billion of MBS and \$790 billion of debt.<sup>46</sup>

Linkages relate to the unusual attributes of GSE securities that allow them to be eligible for investment similar to investments in Treasuries or other securities backed by the full-faith-and-credit of the government. Among other attributes, their securities are deemed government securities for purposes of the Securities Exchange Act of 1934 and eligible for unlimited investment by federally insured banks and other depository institutions.<sup>47</sup> In 2004, the FDIC issued a report that noted that holdings of GSE securities by FDIC-insured institutions exceeded 11 percent of assets and constituted much more than the average capitalization of those institutions. The report added:

“Large concentrations at FDIC-insured institutions in investments that are directly issued or guaranteed by the GSEs have led some observers to view the banking industry as particularly vulnerable to erosion in the benefits of GSE status. Insured institutions hold almost \$300 billion, or roughly 17 percent, of the \$1.8 trillion Fannie Mae and Freddie Mac direct obligations outstanding and nearly \$770 billion, or about 40 percent, of the \$1.9 trillion Fannie Mae and Freddie Mac mortgage pools outstanding.”<sup>48</sup>

The government provided an effective guarantee of GSE debt and MBS after September 7, 2008, discussed below. This guarantee extended to outstanding subordinated debt. However, the government let preferred stockholders, including community banks and others, take losses. In addition, the government took warrants to purchase 79.9 percent of common stock, which greatly reduces the value of currently outstanding common stock.

## **V. THE INSOLVENCY OF FANNIE MAE AND FREDDIE MAC**

The financial soundness of the GSEs has been the subject of debate between many prominent critics and the GSEs themselves for years. In the 1980s and 1990s, some observers worried that exposure to interest rate movements might make the GSEs insolvent. The GSEs

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<sup>45</sup> Fannie Mae Form 10-K for the Year 2007, p. 95.

<sup>46</sup> Freddie Mac, "Debt Issuance by Trade Date," available at <http://www.freddiemac.com/debt/data/cgi-bin/debtissuance.cgi?order=TD>.

<sup>47</sup> Thus, in reviewing the failure of a national bank in 2009 primarily because of its investments in GSE preferred stock, the Treasury Department's Office of Inspector General stated that, "All things considered, we believe that [the bank] acted in good faith when it invested in the GSE securities. Additionally, we have no reason to fault OCC's supervision of the institution as it relates to [the bank's] investment practices. Current law and regulatory standards permit banks to purchase GSE securities without limitation." Office of Inspector General, Department of the Treasury, "Safety and Soundness: Material Loss Review of National Bank of Commerce," OIG-09-042, August 6, 2009, p. 2.

<sup>48</sup> Federal Deposit Insurance Corporation, "Assessing the Banking Industry's Exposure to an Implicit Government Guarantee of GSEs," (footnotes omitted), March 1, 2004 (revised April 14, 2004), available at <http://www.fdic.gov/bank/analytical/fyi/2004/030104fyi.html>.

borrowed shorter term than the term of the mortgages they funded, making them vulnerable to changes in the relative interest rates of short-term versus long-term assets. Indeed, such interest rate risk had been a major factor in the failure of hundreds of savings and loan associations. Similarly, in 1981 movements in short versus long-term interest rates resulted in Fannie Mae having a negative net worth on a market-value basis. In response, Fannie Mae's regulator at the time, HUD, liberalized the GSE's capital requirements.

Credit risk turned out to be the most significant factor for both GSEs. As noted above, Fannie Mae's 2007 Form 10-K Annual Report stated that the company was taking significant credit losses on its mortgage business, and especially on loans with higher risk characteristics.<sup>49</sup> Freddie Mac similarly reported that:

"We expect that our realized credit losses will continue to increase, which will adversely affect the profitability of our Single-family Guarantee segment. We expect the increase will be largely driven by the credit characteristics of loans originated in 2006 and 2007, which are generally of lower credit quality than loans underlying our issuances in prior years. In addition, the average management and guaranty fees on our 2007 issuances did not keep pace with the increase in expected default costs on the underlying loans."<sup>50</sup>

Fannie Mae and Freddie Mac also had purchased increasing volumes of private-label mortgage securities (PLS). PLS are securities issued by private companies other than the GSEs backed by pools of mortgages. While Fannie Mae's holdings of PLS before 2004 had never exceeded \$50 billion at any one time, that year PLS holdings increased to over \$100 billion, and amounted to \$86 billion at the end of the third quarter 2008, 2.8 percent of their book of business. Freddie Mac held \$166 billion of PLS in 2004 and \$191 billion at the end of the third quarter 2008, 8.9 percent of their book of business.<sup>51</sup>

In some years, the increase in the dollar value of subprime PLS held by the GSEs was significant compared to the overall increase in subprime PLS outstanding in the market. Former Chairman of the Federal Reserve Alan Greenspan estimates that in 2002 the GSEs' increase in holdings of subprime PLS accounted for only 7.6 percent of \$75 billion in net new subprime PLS outstanding. This amount grew to 41.0 percent in 2003 and 39.0 percent in 2004 before declining to 12.8 percent in 2005. In 2006, total subprime PLS outstanding grew by \$161 billion, while the amount of subprime PLS held by the GSEs *shrank* by \$10 billion.<sup>[2]</sup>

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<sup>49</sup> Fannie Mae, 2007 Form 10-K, p. 24.

<sup>50</sup> Freddie Mac 2007 Information Statement and Annual Report to Stockholders, p. 33.

<sup>51</sup> Federal Housing Finance Agency, *2008 Annual Report to Congress*, revised edition, pp. 116 and 132.

<sup>[2]</sup> Alan Greenspan, "The Crisis," second draft, Exhibit 5, March 9, 2010.

As subprime delinquencies increased, both GSEs took significant losses on their PLS holdings. The GSEs' total capital was small compared to these losses, which had a large impact on the GSEs' net worth.<sup>52</sup>

In March 2008, OFHEO liberalized capital constraints on Fannie Mae and Freddie Mac. In return for agreements by both GSEs to raise capital, OFHEO slightly reduced the amount of the temporary increase in capital requirements from 30 percent over the initial requirement to 20 percent. As a result, OFHEO estimated, the GSEs could purchase up to an additional \$200 billion of mortgages from the troubled mortgage market.<sup>53</sup> Fannie Mae raised capital in response to the agreement, but Freddie Mac did not.

The insolvency of Fannie Mae and Freddie Mac followed the failure of mortgage lenders, including Countrywide Financial Corporation and IndyMac Bank, which the market had earlier considered to be successful. As loan losses grew among mortgage lenders, market participants raised questions about the soundness of Fannie Mae and Freddie Mac. One reflection of market concerns was a fall in stock prices. Fannie Mae common shares fell from a high of \$70.57 in the third quarter 2007 to \$7.04, the closing price on Friday, September 5, 2008. Between the end of 2007 and the third quarter of 2008, Fannie Mae stock dropped from \$39 billion in market capitalization to \$1.6 billion. For Freddie Mac the drop was from \$22 billion to \$1.1 billion.<sup>54</sup>

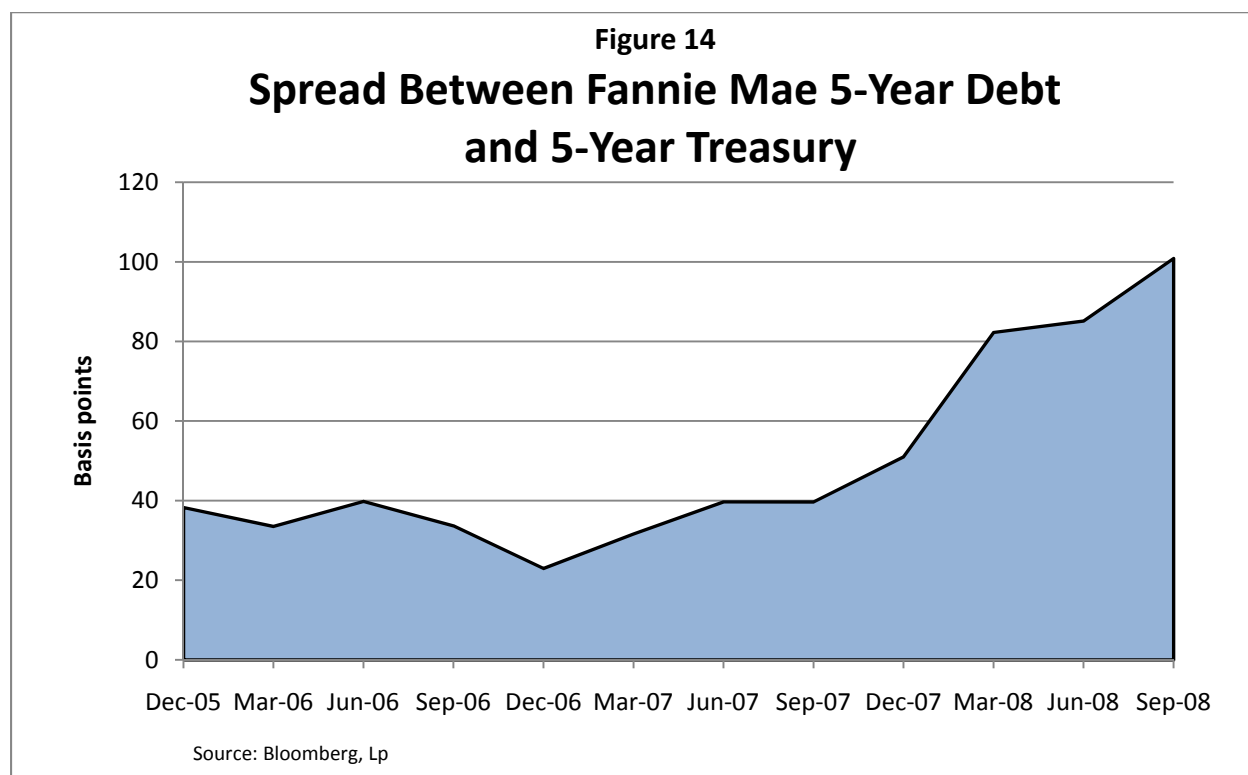
GSE borrowing costs, i.e., yields on their debt, also rose significantly, despite the long-standing perception that the federal government stood behind the debt obligations of the GSEs – the so called implicit guarantee. This was manifested in widening credit spreads on Fannie Mae 5-year benchmark debt over the 5-year Treasury curve beginning in the December 2007 quarter. As the following figure shows, spreads widened to a maximum of 101 basis points in September 2008 compared to 40 basis points in the prior year. The result of this increase in spreads was to reduce the value of the GSE debt that was so widely held.

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<sup>52</sup> Fannie Mae had \$56 billion of total capital in mid-2008; Freddie Mac had \$43 billion. Ibid. pp. 121 and 138.

<sup>53</sup> OFHEO news release, "OFHEO, Fannie Mae and Freddie Mac Announce Initiative to Increase Mortgage Market Liquidity," March 19, 2008.

<sup>54</sup> Federal Housing Finance Agency, *2008 Annual Report to Congress*, revised edition, pp. 121 and 138.



The cost of five-year protection on Fannie Mae debt was also negatively affected; credit default swap (CDS) prices on Fannie Mae 5-year debt rose from a low of 6.30 basis points on December 13, 2006, to a high of 87.58 basis points on March 11, 2008<sup>55</sup>. All things equal, rising cost of protection in the CDS market signifies growing investor concern about credit risk and possible default by the issuer.

Starting in the second half of 2008, there was a significant shortening of maturities of debt that the two companies could issue to fund their immense mortgage portfolios.<sup>56</sup> As Freddie Mac explained:

"There were many factors contributing to the reduced demand for our debt securities in the capital markets, including continued severe market disruptions, market concern about our capital position and the future of our business (including its future profitability, future structure, regulatory actions, and agency status) and the extent of U.S. government support for our debt securities..."<sup>57</sup>

<sup>55</sup> Data on Fannie Mae credit spreads and CDS prices are taken from Bloomberg.

<sup>56</sup> Fannie Mae Form 10-K for the year 2008, p. 150; Freddie Mac Form 10-K for the year 2008, pp. 1-2.

<sup>57</sup> Freddie Mac, *Ibid.* p. 1.

## Conservatorship

The FHFA had authority to place Fannie Mae and Freddie Mac into conservatorship. In announcing that FHFA was placing the two companies into conservatorship, FHFA Director James Lockhart pointed to safety and soundness issues, including current capitalization, current market conditions, the financial performance and condition of each company, the inability of the companies to fund themselves according to normal practices and prices, and the critical importance of each company in supporting the residential mortgage market.<sup>58</sup>

In concert with the Treasury Department and Federal Reserve, FHFA replaced the CEOs of each company and appointed itself the conservator. The powers of the company's directors, officers, and shareholders legally transferred to the designated conservator. As conservator, the agency's obligation was "to establish control and oversight of a Company to put it in a sound and solvent condition."<sup>59</sup>

The Treasury Department committed to provide support to ensure that holders of Fannie Mae's and Freddie Mac's debt and MBS would be paid as the obligations became due. In return, Treasury entered into a Senior Preferred Stock Purchase Agreement and obtained warrants to purchase 79.9 percent of each company's outstanding common stock. Initially, Treasury's commitment was capped at \$100 billion for each company. Treasury increased its commitment to \$200 billion per company on February 18, 2009,<sup>60</sup> and on December 24, 2009, the Treasury made the commitment open-ended through the end of 2012. By the end of 2009, Fannie Mae and Freddie Mac had drawn down \$111 billion under the terms of the plan announced initially on September 7, 2008.<sup>61</sup>

The government also provided other support as well. As of the end of 2009, Treasury had purchased a total of \$220.8 billion of Fannie Mae and Freddie Mac MBS and the Federal Reserve had purchased another \$1.1 trillion of their MBS plus \$132 billion of their debt.<sup>62</sup>

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<sup>58</sup> Statement of FHFA Director James Lockhart, September 7, 2008, available at

[http://www.treas.gov/press/releases/reports/fhfa\\_statement\\_090708hp1128.pdf](http://www.treas.gov/press/releases/reports/fhfa_statement_090708hp1128.pdf).

<sup>59</sup> FHFA, "Questions and Answers on Conservatorship," September 7, 2008, available at

[http://www.treas.gov/press/releases/reports/fhfa\\_consrv\\_faq\\_090708hp1128.pdf](http://www.treas.gov/press/releases/reports/fhfa_consrv_faq_090708hp1128.pdf).

<sup>60</sup> Statement by Secretary Tim Geithner on Treasury's Commitment to Fannie Mae and Freddie Mac, February 18, 2009, available at <http://www.financialstability.gov/latest/tg32.html>.

<sup>61</sup> "Data as of February 25, 2010 on Treasury and Federal Reserve Purchase Programs for GSE and Mortgage-Related Securities," available at <http://ofheo.gov/webfiles/15460/TreasFED02252010.pdf>.

<sup>62</sup> Federal Housing Finance Agency, "U.S. Treasury Support for Fannie Mae and Freddie Mac," Mortgage Market Note 10-1, January 20, 2010, available at [http://www.fhfa.gov/webfiles/15362/MMNote\\_10-1\\_revision\\_of\\_MMN\\_09-1A\\_01192010.pdf](http://www.fhfa.gov/webfiles/15362/MMNote_10-1_revision_of_MMN_09-1A_01192010.pdf).

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**Table of Acronyms and Abbreviations**

1992 Act	Federal Housing Enterprises Financial Safety and Soundness Act of 1992
CDS	credit default swap
CEO	chief executive officer
CFO	chief financial officer
FDIC	Federal Deposit Insurance Corporation
FHA	Federal Housing Administration
FHFA	Federal Housing Finance Agency
FHLMC	Federal Home Loan Mortgage Corporation (Freddie Mac)
FNMA	Federal National Mortgage Association (Fannie Mae)
GAAP	Generally Accepted Accounting Principles
GNMA	Government National Mortgage Association (Ginnie Mae)
GSE	government sponsored enterprise
HERA	Housing and Economic Recovery Act of 2008
HUD	U.S. Department of Housing and Urban Development
LTV	loan-to-value ratio
MBS	mortgage-backed security
OCC	Office of the Comptroller of the Currency
OFHEO	Office of Federal Housing Enterprises Oversight
PLS	private-label mortgage securities

Financial Crisis Inquiry Commission

*Preliminary Staff Report*

THE COMMUNITY REINVESTMENT ACT AND THE MORTGAGE CRISIS

APRIL 7, 2010

This preliminary staff report is submitted to the Financial Crisis Inquiry Commission (FCIC) and the public for information, review, and comment. Comments can be submitted through the FCIC's website, [www.fcic.gov](http://www.fcic.gov).

This document has not been approved by the Commission.

The report provides background factual information to the Commission on subject matters that are the focus of the FCIC's public hearings on April 7, 8, and 9, 2010. In particular, this report provides information on the Community Reinvestment Act. Staff will provide investigative findings as well as additional information on these subject matters to the Commission over the course of the FCIC's tenure.

Deadline for Comment: May 15, 2010

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## **The Community Reinvestment Act and the Mortgage Crisis**

The purpose of this preliminary staff report is to provide background on the Community Reinvestment Act (CRA). Section I provides background on the CRA. Section II discusses the evidence on CRA's contribution to an increase in the number of risky mortgages originated.

### **I. BACKGROUND ON THE COMMUNITY REINVESTMENT ACT**

The CRA<sup>1</sup> was enacted in 1977 to encourage depository institutions (or "banks") to lend to their local communities. Chairman Ben Bernanke of the Federal Reserve Board said in a 2007 speech:

Public and congressional concerns about the deteriorating condition of America's cities, particularly lower-income and minority neighborhoods, led to the enactment of the Community Reinvestment Act. In the view of many, urban decay was partly a consequence of limited credit availability, which encouraged urban flight and inhibited the rehabilitation of declining neighborhoods. Some critics pinned the blame for the lack of credit availability on mainstream financial institutions, which they characterized as willing to accept deposits from households and small businesses in lower-income neighborhoods but unwilling to lend or invest in those same neighborhoods despite the presence of creditworthy borrowers.

Since enactment, the CRA has been amended several times, often in tandem with other changes in housing policy. These changes included: in 1989, agencies were required to issue CRA ratings publicly along with written empirical performance evaluations; in 1994, the Riegle-Neal Interstate Banking and Branching Efficiency Act repealed restrictions on interstate banking and listed CRA ratings received by the out-of-state bank as a consideration in evaluating banks' applications to create interstate branches; and in 1995, the CRA was revised with the intent of systematizing its enforcement and reducing its regulatory burden.

Under the CRA, banks are periodically examined to evaluate the extent to which they are adequately serving their communities. Based on the examination, regulators assign each bank one of four CRA performance ratings: outstanding, satisfactory, needs to improve, or substantial noncompliance. CRA ratings are used by banking regulators when considering applications by banks for approval of mergers and acquisitions or other types of applications. Regulators can deny applications based on an applicant's poor CRA rating.<sup>2</sup>

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<sup>1</sup> 12 U.S.C. §§ 2901–2908 (2000).

<sup>2</sup> For example, in 1989 the Federal Reserve Board denied an application by the Continental Bank of Chicago to acquire Grand Canyon State Bank based on Continental Bank's poor record of CRA compliance. Michael Quint, "Fed Blocks Continental Bid to Acquire Bank in Arizona," *New York Times*, Feb. 16, 1989.

For purposes of CRA examinations, each bank defines a geographic “assessment area,” in which its practices are evaluated.<sup>3</sup> For retail banking institutions, the assessment area includes the geographic areas in which it takes deposits or originates loans. Regulators use three tests to evaluate each bank’s performance of its CRA obligations: an investment test, a service test, and a lending test. The investment test evaluates the bank’s investments that have a community development purpose. The service test considers the bank’s provision of retail banking services, for example through branches and ATMs, in the assessment area. The lending test, which is the most relevant test for the mortgage market, considers the geographic distribution of the institution’s borrowers, as well as the distribution of lending across different types of borrowers.

For residential mortgage loans, regulators consider in particular (a) the proportion of the bank’s loans in its assessment area; (b) the geographic dispersion of the bank’s loans within the assessment area; (c) the amount of lending done in low-, moderate-, middle-, and high-income geographies in the assessment area; (d) the amount of lending to low-, moderate-, middle-, and upper-income borrowers; and (e) the bank’s use of innovative or flexible lending practices in a safe and sound manner to address the credit needs of low- or moderate-income individuals or geographies.<sup>4</sup> Both originations and purchases of loans count towards a bank’s CRA obligations.<sup>5</sup> Importantly, CRA ratings are based on the actual historical performance of the institution and generally may not rely on plans or commitments for future action.<sup>6</sup> The CRA does not require banks to make loans that are inconsistent with safe and sound operations. Institutions “are permitted and encouraged to develop and apply flexible underwriting standards for loans that benefit low- or moderate-income geographies or individuals, only if consistent with safe and sound operations.”<sup>7</sup>

## II. THE CRA AND THE MORTGAGE CRISIS

In the wake of the foreclosure crisis, when default rates on subprime loans increased sharply, some argued that the CRA contributed to the crisis by encouraging lenders to originate riskier loans.

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<sup>3</sup> 12 CFR 25.41.

<sup>4</sup> 12 CFR 25.22. Low and moderate-income census tracts are tracts with median family income less than 80 percent of the metro area’s median family income.

<sup>5</sup> 12 CFR 25.22(a)(2).

<sup>6</sup> See, e.g., Federal Reserve Board Order approving the merger of NationsBank and BankAmerica (1998, p. 63), at <http://www.federalreserve.gov/boarddocs/press/BHC/1998/19980817/default.pdf>; Federal Reserve Board Order approving the merger of Bank of America and FleetBoston (2004, pp. 51-52), at <http://www.federalreserve.gov/boarddocs/press/orders/2004/20040308/attachment.pdf>. CRA regulations do allow banks to establish an optional strategic plan for meeting the credit needs of its assessment area and to be assessed for CRA compliance based on its performance meeting the goals of an approved strategic plan. See 12 CFR 25.27. Only two banks currently have approved strategic plans for CRA. See <http://www.federalreserve.gov/dcca/cra/stratpln.htm>.

<sup>7</sup> 12 CFR 25.21(d).

One challenge in evaluating the CRA's role in encouraging the origination of risky loans is determining which loans were made because of the CRA and would not have been made in the absence of the CRA. The first step in such an analysis is to quantify the flow of loans that helped the originator meet its CRA obligations. Glenn Canner and Neil Bhutta, economists at the Board of Governors of the Federal Reserve System, have collected data that help to answer this question. They estimate the fraction of subprime originations that would have helped the originating bank earn a good CRA rating using the 2006 Home Mortgage Disclosure Act (HMDA) data.<sup>8</sup> Among all mortgages originated in 2006, 28 percent were originated by banks subject to the CRA within their CRA assessment areas. The remaining 72 percent were made by banks outside of their assessment area or were made by mortgage lenders not subject to the CRA. Of all mortgage originations, 10 percent were originated by banking institutions and affiliates subject to the CRA within their CRA assessment areas to low- and moderate-income borrowers or in low- or moderate-income neighborhoods.

This category of mortgages for which banks could have received CRA credit (i.e., mortgages that were made in assessment areas to low-income borrowers or in low-income neighborhoods) includes relatively low-risk loans.<sup>9</sup> To estimate the fraction of *subprime* mortgages that were CRA-related, Canner and Bhutta (2008) use whether the mortgage was "higher-priced" according to the HMDA data as an indicator for whether it was a subprime loan. While this is of course an imperfect measure of whether a loan is subprime, among higher-priced mortgages, only 6 percent of all higher-priced loans were made to low- or moderate income borrowers or in low- or moderate-income neighborhoods by CRA-covered lenders in their assessment areas.

An important caveat to the analysis of Canner and Bhutta (2008) is that it does not include purchases of mortgages by depositories for which they can receive CRA credit. For example, some mortgages originated by independent mortgage companies may be purchased by depository institutions whose assessment area includes the borrower. The HMDA data unfortunately lack sufficient detail to identify such purchases. The HMDA data do report whether each originated loan is sold to a depository institution within the reporting period. In 2006, of the 14 million mortgages originated, 664,204, or 4.8 percent, were sold to a depository institution. Of these 4.8 percent, only a fraction were within the assessment area of the purchaser.<sup>10</sup>

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<sup>8</sup> Canner and Bhutta (2008).

<sup>9</sup> A 2009 report by authors from the Center for Community Lending and Center for Responsible Lending discusses borrower characteristics from a national program in part designed to help lenders covered by CRA meet their CRA obligations. The report states, "3.21 percent of our sample of community lending borrowers were 90-days' delinquent or in foreclosure process in the second quarter of 2008. This was slightly higher than the 2.35 percent delinquency rate on prime loans but well below the 17.8 percent on subprime loans nationwide." <http://www.ccc.unc.edu/documents/Risky.Disaggreg.11.09.Final.pdf>

<sup>10</sup> See 2006 HMDA National Aggregate Table 3-2, at [http://www.ffiec.gov/HMDA/online\\_rpts.htm](http://www.ffiec.gov/HMDA/online_rpts.htm)

In addition, many large mortgage lenders made public commitments to lend to low- and moderate-income and minority households.<sup>11</sup> (This category may include loans that do not meet CRA specifications. For example, CRA exams require that a bank had made qualifying loans to borrowers with prescribed income characteristics within its assessment area. In addition, CRA exams are unrelated to a borrower's race.) In a recent paper, Edward Pinto, a consultant to the mortgage-finance industry, compiled figures on reported lending pursuant to such commitments from five large originators' press releases.<sup>12</sup> He estimates a total of \$2.127 trillion in such originations from 2001 to 2008. To calculate the total stock of such mortgages still outstanding in 2008, one needs to know what fraction of each year's originations were paid off by the borrower or defaulted prior to 2008. Using estimates of the prepayment rate of mortgages from Anthony Pennington-Cross and Giang Ho (2006), which focuses on subprime lending,<sup>13</sup> we estimate that approximately \$931 billion of these mortgages would still be outstanding as of 2008. About \$11 trillion in total mortgage debt was outstanding in 2008, so the originations made pursuant to these commitments from these five lenders amount to about 8.5 percent of the stock of outstanding mortgages in 2008.<sup>14</sup> As a reference point, mortgages to low- and moderate-income and minority households comprise 36 percent of all mortgage originations in 2008.

These summary statistics provide a sense for the scale of CRA-related lending, as well as the scale of lending done to low- and moderate-income and minority households pursuant to public commitments. However, it is possible that much of this lending would have been done even in the absence of the CRA. Stuart Gabriel, an economist at UCLA, and Stuart Rosenthal, an economist at Syracuse University, in a 2009 paper and, separately, Bhutta (2010) attempt to estimate whether CRA caused additional lending. Both papers find little increase in bank mortgage originations due to the CRA. Gabriel and Rosenthal conclude that "on balance, the lack of more compelling evidence of ... CRA effects on mortgage lending ... among targeted underserved [census] tracts is striking..." Bhutta similarly concludes that "[o]n average, the CRA appears to have had little impact, including during the mid 2000's when lending to lower-income areas soared."<sup>15</sup>

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<sup>11</sup> These commitments do not contribute to CRA performance ratings as examinations focus only on actual originations. While comments and feedback received from community groups and the public do have some weight in a bank's CRA exam, these comments and feedback are only considered in regard to a bank's CRA lending, which is a subset of the bank activity potentially described in a press release related to commitments.

<sup>12</sup> Pinto (2010, pp. 12-15). The originators included in Pinto's estimates are Bank of America, JP Morgan Chase, Citibank, Washington Mutual, Countrywide, and affiliates thereof.

<sup>13</sup> Specifically, based on data from Pennington-Cross and Ho (2006) that estimates propensity for subprime loans to prepay or default, we assume that 90 percent are outstanding after 1 year, 63 percent after 2, 42 percent after 3, 24 percent after 4, 17 percent after 5, 10 percent after 6, and 3 percent after 7.

<sup>14</sup> To the extent that other large institutions fulfilled commitments to make loans to low- and moderate-income and minority borrowers, 8.5 percent understates the amount of commitment-related mortgages outstanding in mid-2008.

<sup>15</sup> Bhutta (2010, Abstract).

Another study has examined the relative performance of CRA loans. Elizabeth Laderman and Carolina Reid (2009) compare the performance of loans made by CRA-regulated lenders in their assessment areas to those made by independent mortgage companies, which are not subject to the CRA. To be sure, loans made by CRA-regulated lenders to low and moderate-income borrowers in their assessment areas default at a higher rate than loans made to the typical borrower by these same lenders. However, they find that the foreclosure rate of mortgages originated by independent mortgage companies was about twice the foreclosure rate of mortgages originated by CRA-regulated lenders. Moreover, after accounting for the effect of other characteristics of the loans and the borrowers, such as income and credit score, they find that loans made by CRA-regulated lenders in their assessment areas are *less* likely to default than similar loans made by independent mortgage companies.

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Financial Crisis Inquiry Commission

*Preliminary Staff Report*

THE ROLE OF THE FEDERAL RESERVE IN BANKING SUPERVISION AND  
REGULATION

APRIL 7, 2010

This preliminary staff report is submitted to the Financial Crisis Inquiry Commission (FCIC) and the public for information, review, and comment. Comments can be submitted through the FCIC's website, [www.fcic.gov](http://www.fcic.gov).

This document has not been approved by the Commission.

The report provides background factual information to the Commission on subject matters that are the focus of the FCIC's public hearings on April 7, 8, and 9, 2010. In particular, this report provides information on the Federal Reserve and its regulation of the financial system, including its regulation of mortgage markets. Staff will provide investigative findings as well as additional information on these subject matters to the Commission over the course of the FCIC's tenure.

Deadline for Comment: May 15, 2010

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## The Role of the Federal Reserve in Banking Supervision and Regulation

The purpose of this preliminary staff report is to provide a brief overview of the role of the Federal Reserve in banking supervision and regulation. The first section describes the structure of the Federal Reserve and the extent of the Federal Reserve’s supervisory role as it stood at the beginning of the financial crisis. Section II describes the history of banking supervision and regulation in the United States, with a focus on the deregulatory environment that prevailed in the 1990s and early 2000s. Section III describes the Federal Reserve’s approach to systemic risk in the recent period. Section IV discusses Federal Reserve supervision of mortgage lending activity.

### I. FEDERAL RESERVE STRUCTURE AND REGULATORY PURVIEW

The Federal Reserve has played an important role in supervising financial institutions since its creation in 1913.<sup>1</sup> The Federal Reserve has supervisory authority over state-chartered member banks and bank holding companies. In its supervisory capacity, the Fed is responsible for ensuring the safety and soundness of the firms it regulates, as well as compliance with consumer protection laws and regulations.

The Federal Reserve supervises 5,030 bank holding companies (BHCs), which are companies that own commercial banks (Table 1). That figure includes the 602 BHCs (557 domestic, 45 foreign-owned) that have qualified and elected to become “financial holding companies” and are thereby eligible to engage in a wider range of activities, such as securities underwriting and dealing or merchant banking, than other bank holding companies.

The Federal Reserve is the primary federal supervisor for 862 “state member banks,” which are commercial banks that are both chartered at the state level and are members of their

**Table 1: Federal Banking Supervisors as of 12/31/2009**

	<i>Institutions Supervised</i>	<i>Total assets (\$ trillion)</i>
<u>Holding companies</u>		
Federal Reserve*	5,030	15.1
OTS	452	5.5
<u>Banks/thrifts**</u>		
OCC	1,565	8.3
FDIC*	5,116	2.3
Federal Reserve*	862	1.9
OTS	780	1.1

\* Figures for FDIC and Fed are year-end 2008.

\*\* OTS supervises both thrifts and their holding companies. The Fed supervises commercial bank holding companies, including those that own banks supervised by the OCC, FDIC, and Fed.

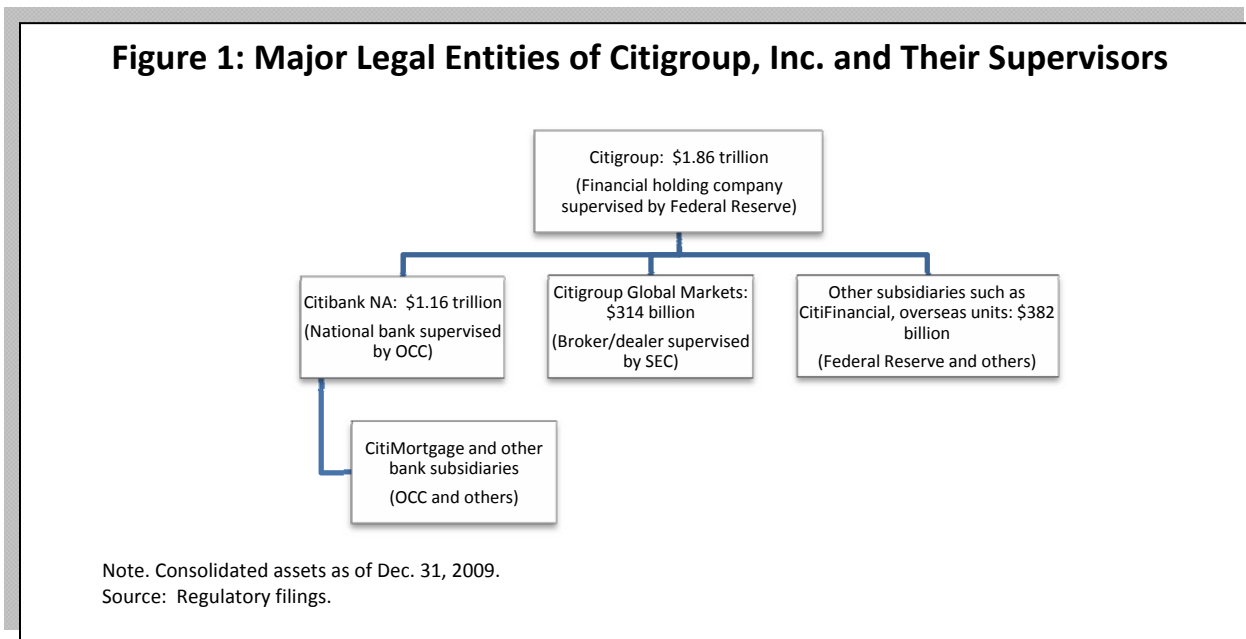
Source: OCC and OTS 2009 annual reports; Federal Reserve and FDIC 2008 annual reports; [www.fdic.gov](http://www.fdic.gov)

<sup>1</sup>The original act described its purpose as “to provide for the establishment of Federal Reserve Banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes.” 12 USC Ch. 3.

regional Federal Reserve Bank. It also supervises the US operations of foreign banks with branches or other banking activities in the United States, as well as branches of foreign banks.<sup>2</sup>

Commercial banks in this country can pick their federal regulator. If they apply for a national bank charter, the Office of the Comptroller of the Currency (OCC) will supervise them. If they apply for a state banking charter, they will be supervised by their state banking supervisors and by either the Federal Reserve for banks choosing to be members of the Federal Reserve System or the Federal Deposit Insurance Corporation (FDIC) for non-members.

For commercial banks, the Federal Reserve is the supervisor of their holding company.<sup>3</sup> As a result, the Federal Reserve shares supervisory and regulatory responsibilities with the OCC and with state banking supervisors. Because the largest commercial banks owned by bank holding companies are national banks, the Federal Reserve and the OCC must work closely together to supervise these organizations.<sup>4</sup> For illustration, Figure 1 charts Citigroup’s major legal entities and their supervisors; this chart is simplified, as Citigroup also has entities supervised by the Office of Thrift Supervision (OTS), state insurance regulators, and overseas banking, insurance, and securities authorities.

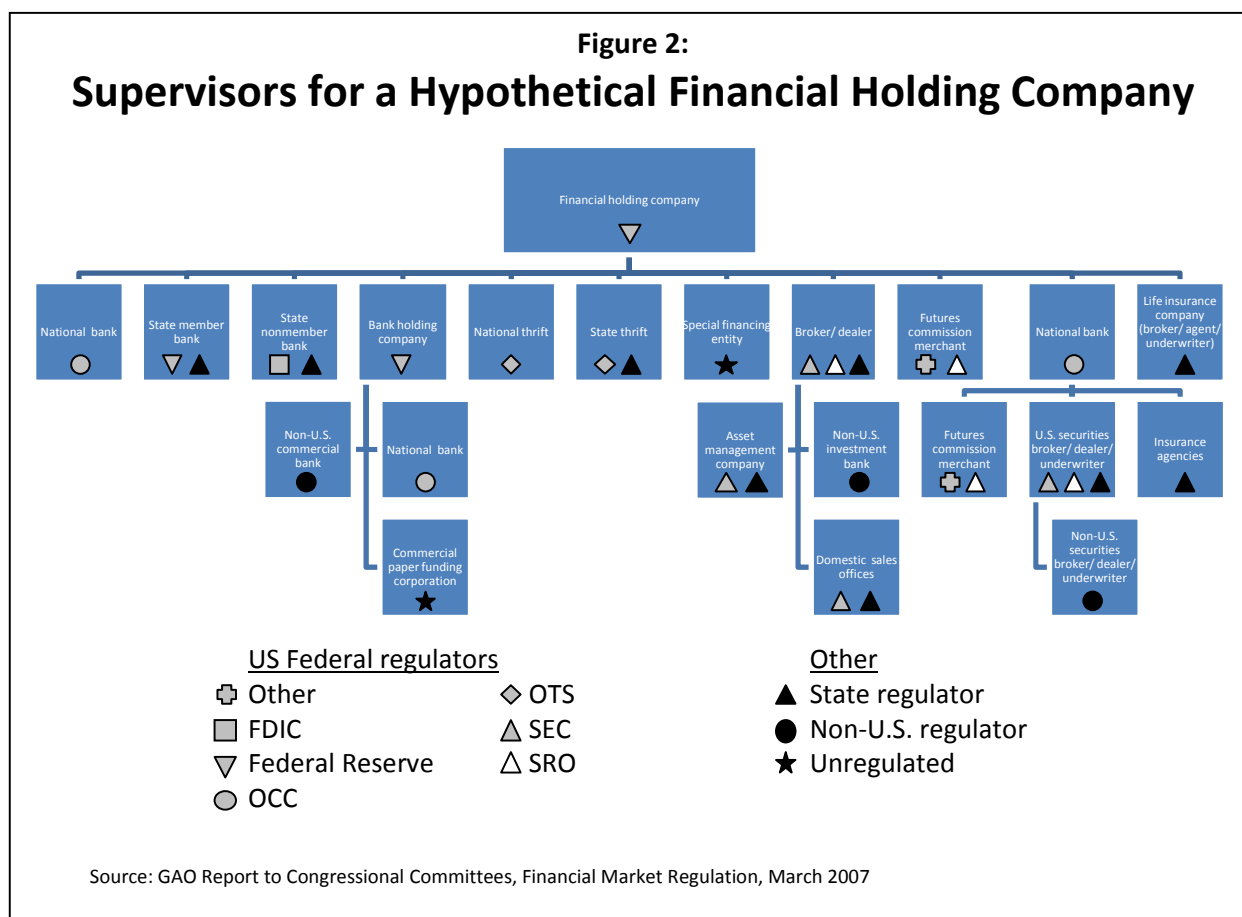


<sup>2</sup> In addition, the Federal Reserve is responsible for supervising overseas branches and investments of state member banks, Edge Act and agreement corporations, and bank holding companies. Edge Act and agreement corporations are chartered specifically to provide domestic corporations with a means to finance international business, especially exports.

<sup>3</sup> Industrial loan company holding companies, described in Section IID, are an exception.

<sup>4</sup> National banks are automatically Federal Reserve members.

The complexity of the supervisory system in the United States has been criticized because: (1) the diversity of chartering authorities creates opportunities for banks to shop for the most lenient regulator, and (2) the presence of more than one supervisor at an organization creates the potential for both gaps in coverage and unnecessary overlap. Others have argued that this complexity can be helpful: (1) two sets of eyes, particularly on the largest, most complex institutions, may make the surfacing of important issues more likely, and (2) the choice of charters allows supervisors to specialize in certain types of institutions. Figure 2 diagrams the various supervisory entities and relationships involved in regulating a hypothetical financial holding company.



**A. PRUDENTIAL SUPERVISION AND CONSUMER PROTECTION**

The Federal Reserve, similar to other state and federal bank regulators, has a dual mandate in the supervision of financial institutions: it seeks to promote their safe and sound operation through so-called “prudential” supervision, and it seeks to ensure that they are in compliance with all relevant laws and regulations. These goals are broadly consistent.

Noncompliance with laws and regulation can threaten a firm's safety and soundness and can be an indicator of broader management weaknesses.

With respect to consumer protection laws, the two supervisory mandates tend to be closely aligned. Predatory lending – the practice of targeting under-served communities with products that they can't afford – is a supervisory concern from both a consumer protection and a prudential point of view. Supervisors also expect banks to have proper procedures and policies to detect fraud. More information on fraud in US mortgage markets is contained in Appendix 1. The Federal Reserve has also been tasked by Congress with the responsibility to write certain consumer protection regulations.

## B. GUIDANCE AND RULES

Banking supervisors, including the Federal Reserve, have broad powers to set binding rules limiting financial activities of the institutions they regulate and to issue guidance describing the standards they will consider in supervising and evaluating those firms. Rules, for example, set standards on the amount of capital that institutions must hold to engage in certain activities. Examples of guidance issued prior to the financial crisis include statements describing how examiners would evaluate firms' exposures to commercial real estate lending and nontraditional mortgage products.

The federal banking supervisors seek to work together and with state supervisors to introduce consistent rules or guidance where possible, either through informal channels or through the Federal Financial Institutions Examination Council, which was established for that purpose. However, where they cannot reach agreement, supervisors can and have introduced guidance independently to their respective institutions.

The Federal Reserve also works with foreign supervisors to develop consistent standards. For example, the Federal Reserve played a key role in the international development of the first Basel capital standards in 1988 (Basel I) and in the revised Basel Capital Accord in 2004 (Basel II).

## C. STRUCTURE OF THE FEDERAL RESERVE

The Federal Reserve System consists of the Federal Reserve Board of Governors and 12 regional Federal Reserve Banks. The Board of Governors is a federal agency located in Washington and consists of seven members, appointed by the President of the United States and confirmed by the United States Senate. The Federal Reserve sets monetary policy

through the Federal Open Market Committee, which consists of the seven Federal Reserve Governors and five Presidents of Federal Reserve Banks.<sup>5</sup>

While the Board is ultimately responsible for developing supervisory policy, it has delegated the function of implementing that policy to the 12 Reserve Banks. The Board's Division of Banking Supervision and Regulation, whose Director reports to the Board of Governors through a subcommittee, oversees the supervisory function at the Reserve Banks, develops guidance and rules that are issued by the Board, makes recommendations to the Board of Governors regarding specific actions that require decisions by the Board, and promotes resource-sharing and a sector-wide perspective in the conduct of supervision. There are approximately 250 staff in the Division of Banking Supervision and Regulation.

The Reserve Banks are not part of a government agency but are separately chartered corporations. They operate as the eyes and ears of the Federal Reserve System when it comes to supervising financial institutions. The examiners who actually inspect the records of bank holding companies and other Federal Reserve-supervised institutions are employed by the Reserve Banks. In 2005, there were roughly 2,500 people employed in the supervision departments at the 12 Reserve Banks.

## **II. A BRIEF HISTORY OF BANKING REGULATION**

### **A. EVOLUTION OF THE GLASS-STEAGALL ACT**

The relationship between commercial banking and investment banking has been uneasy throughout US banking history. The Glass-Steagall Act (part of the Banking Act of 1933) mandated the separation of commercial banking from investment banking in order to address stock market speculation, self-dealing (using clients' funds for personal gain), and other abuses. The original act, as amended in 1935, did not disturb the power of banks to underwrite US government securities and trade these securities for clients; it did, however, provide that a bank could not itself underwrite or deal in most other securities, for example,

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<sup>5</sup> From [www.federalreserve.gov](http://www.federalreserve.gov): Each Federal Reserve Bank has a nine-member board of directors. The member banks elect the three Class A and three Class B directors, and the Board of Governors appoints the three directors in Class C. Class A directors of each Reserve Bank represent the member banks of the Federal Reserve District. Class B and Class C directors represent the public and are chosen with due, but not exclusive, consideration to the interests of agriculture, commerce, industry, services, labor, and consumers; Unlike Class A directors, Class B and Class C directors may not be officers, directors, or employees of any bank. The president of each Reserve Bank is selected and can be removed by its Board of Directors. Directors of Reserve Banks do not make decisions involving the supervision and examination of financial institutions. Reserve Bank presidents do make supervisory decisions, typically relying on their officers in charge of supervision.

commercial paper, equity securities, or municipal revenue bonds, or be affiliated with a company “principally engaged” in such activities.

Banks faced increasing competitive pressures in the 1980s from bank-like activities offered by money market mutual funds, the commercial paper market, finance companies, and credit unions, for example. At the same time, the securities market, led by investment banks, took over an increasing portion of the country’s financial intermediation activities through the expansion of corporate debt and equity markets and through burgeoning new markets such as non-agency mortgage securitizations.<sup>6</sup>

Bank regulators, supported by court decisions, responded by gradually expanding the scope of activities available to banks and their affiliates. In 1982, the FDIC determined that Glass-Steagall did not apply to affiliates of FDIC-supervised banks.<sup>7</sup> Beginning in 1987, the Federal Reserve found that the Glass-Steagall Act allowed bank holding companies to establish securities subsidiaries to underwrite and deal in mortgage-backed securities, commercial paper, and municipal revenue bonds. At first, the Federal Reserve set a 5 percent limit on the portion of the subsidiary’s total revenue that could come from such activities; it increased that limit to 10 percent in 1989 and 25 percent in 1997. The Federal Reserve attached limitations on transactions between the bank and other BHC affiliates in order to protect the bank (whose depositors were federally insured) from risks posed by these new activities and to prevent conflicts of interest from arising by virtue of the two different activities. The courts found these interpretations to be consistent with the Glass-Steagall Act.

During the same period, the OCC similarly expanded the eligible activities of national banks. In 1990, the US Court of Appeals for the Second Circuit held that mortgage securitization activities are within the “business of banking,” a decision that paved the way for national banks to underwrite non-agency mortgage-backed securities. In 1995, the US Supreme Court upheld the OCC’s determination that the definition of the “business of banking” necessarily includes some securities activities, and left it to the OCC to determine which activities are within that definition.<sup>8</sup> In response, the OCC took the position that operating subsidiaries of banks were not necessarily limited to activities permissible for a national bank; on that basis, it approved, on a case-by-case basis, operating subsidiaries of banks to

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<sup>6</sup> Non-agency mortgage securitizations are, in contrast to agency mortgage securitizations, not guaranteed by Fannie Mae, Freddie Mac, or the Federal Housing Administration.

<sup>7</sup> FDIC, *Statement of Policy on the Applicability of the Glass-Steagall Act to Securities Activities of Subsidiaries of Insured Nonmember Banks*, August 23, 1982: “It is the opinion of the Board of Directors of the FDIC that the Banking Act of 1933, popularly known as the Glass-Steagall Act and codified in various sections of title 12 of the United States Code, does not, by its terms, prohibit an insured nonmember bank from establishing an affiliate relationship with, or organizing or acquiring, a subsidiary corporation that engages in the business of issuing, underwriting, selling or distributing at wholesale or retail, or through syndicate participation, stocks, bonds, debentures, notes, or other securities.”

<sup>8</sup> *Securities Industry Association v. Clarke*, 885 F.2d 1034 (2d. Cir.), cert. denied, 493 U.S. 1070 (1990) and *Nationsbank of North Carolina v. Variable Annuity Life Insurance Co.*, 513 U.S. 2051 (1995).

engage in new activities such as underwriting corporate bonds and municipal revenue bonds.<sup>9</sup>

As a result of these changes, the distinction between the activities that could be conducted in the subsidiary of a bank and those that could be conducted in the subsidiary of a holding company was blurred before the Gramm-Leach-Bliley Act, which is discussed below. Critics have noted that the ability to engage in a particular activity through different types of entities creates the potential for a form of regulatory arbitrage, meaning that firms that are holding companies and have banks with subsidiaries can choose where to put certain activities or assets based on the expected regulatory and supervisory treatment.

## B. THE 1999 GRAMM-LEACH-BLILEY ACT

Years of discussion and gradual expansion of banking activities culminated in the passage of the Financial Services Modernization Act of 1999, also known as the Gramm-Leach-Bliley Act, or GLBA.<sup>10</sup> The act repealed the limitations on affiliations contained in the Glass-Steagall Act. It also confirmed the Federal Reserve as the consolidated supervisor of bank holding companies (BHCs) and introduced the concept of financial holding companies (FHCs). Bank holding companies that meet certain capital, managerial, and other requirements may elect to become financial holding companies and thereby engage in a wider range of financial activities than they could otherwise, including full-scope securities underwriting, merchant banking, and insurance underwriting and sales.

The Act also introduced limitations often referred to as “Fed-Lite.” These provisions limit the Federal Reserve’s authority to examine, impose capital requirements on, or obtain reports from the subsidiaries of FHCs that are regulated by the Securities and Exchange Commission or the state insurance regulators, collectively known as the “functional regulators.” The act also requires the Federal Reserve to rely “to the fullest extent possible” on the examinations and reports of other bank regulators for the depository institution subsidiaries of a BHC or FHC. To fulfill its responsibilities as consolidated supervisor subject to that constraint, the Federal Reserve has worked out information-sharing agreements with the other regulators; furthermore, in the supervision of large institutions, examiners from the Federal Reserve and other federal and state bank regulators often work together when examinations cross legal-entity lines.

The justification for Fed-Lite was to reduce regulatory burden on holding companies and their newly broadened group of affiliates and to focus the Federal Reserve’s bank holding company supervision on protecting the safety and soundness of the depository institution subsidiaries; thus, under GLBA, the Federal Reserve was expected to focus on whether the

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<sup>9</sup> OCC Conditional Approval #331, November 1999.

<sup>10</sup> Public Law 106-102.

activities of nonbank subsidiaries threatened the safety and soundness of depository subsidiaries.<sup>11</sup>

Following GLBA, the largest bank holding companies, including Citigroup, Bank of America, and JP Morgan Chase, became financial holding companies as defined by GLBA.<sup>12</sup> Each of these firms developed large and active securities underwriting affiliates that competed with established investment banks. However, contrary to the expectations of many observers, GLBA did not result in a significant change in the business models of the large investment banks. Four years later, Federal Reserve Vice Chairman Roger Ferguson noted “the slow pace of change since 1999... I suggest that the financial conglomerate, or the financial supermarket, or whatever you want to call it, is in fact much more difficult to implement than many may have thought. True, there were about 600 domestic FHCs of the end of 2002. But less than one-third reported actually engaging in any new activities authorized by Gramm-Leach-Bliley.”<sup>13</sup>

### C. FEDERAL RESERVE’S CONSOLIDATED SUPERVISION UNDER GLBA

While GLBA reinforced the leading role of the Federal Reserve as the consolidated supervisor of bank holding companies, the Federal Reserve was still expected to rely to the fullest extent possible on the work of subsidiaries’ supervisors to facilitate its understanding of banking and other regulated subsidiaries. GLBA does provide that the Federal Reserve may request information or examine such subsidiaries without going through their supervisors, under certain circumstances.<sup>14</sup> The GLBA imposed limits on the authority of the Federal Reserve to examine nonbank subsidiaries of bank holding companies for compliance with laws, authorizing the Federal Reserve to examine for compliance only with laws the Federal Reserve has specific jurisdiction to enforce against the company being examined.

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<sup>11</sup> In implementing Fed-Lite, GLBA was meant to clarify how supervision should work in increasingly complex institutions. Federal Reserve Governor Laurence Meyer said at the time: “[T]he new regulatory and supervisory regime is hardly a revolution. It’s more of an evolution, following naturally from the changes expected in the financial services industry. The Congress, in effect, decided to maintain the current supervisory structure for consolidated financial institutions that include a bank. But the Congress also made clear that it wanted the Federal Reserve to respect the authority of functional regulators and not impose a separate supervisory framework that involved excessive duplication or burden.” Meyer, *The Implications of Financial Modernization Legislation for Bank Supervision*, December 15, 1999.

<sup>12</sup> These firms continued to be supervised on a consolidated basis by the Federal Reserve. Under GLBA, the Federal Reserve continues to supervise BHCs and determines whether firms are eligible for FHC status.

<sup>13</sup> Ferguson, *The Future of Financial Services—Revisited*, October 8, 2003.

<sup>14</sup> Those circumstances are: “[O]nly if the Board has reasonable cause to believe that such subsidiary is engaged in activities that pose a material risk to an affiliated depository institution; the Board reasonably determines, after reviewing relevant reports, that examination of the subsidiary is necessary to adequately inform the Board of the [subsidiary’s risk management] systems,” or the Board “has reasonable cause to believe that a subsidiary is not in compliance with... any Federal law that the Board has specific jurisdiction to enforce.” Public Law 106-102.

During the 2000s, the Federal Reserve approach to “Fed-Lite” supervision of nonbank subsidiaries evolved. For example, in 2004, the Federal Reserve issued a Cease and Desist Order and levied a \$70 million civil money penalty against Citigroup Inc. in conjunction with the subprime lending program of CitiFinancial Credit Company, a nonbank affiliate. The order alleged violations of various consumer protection regulations and unsafe and unsound underwriting and lending practices in connection with subprime loans. The Federal Reserve conducted this review as part of its process of reviewing the proposal by Citigroup to acquire Associates Financial (the predecessor of CitiFinancial).

On October 16, 2008, in the midst of the crisis, the Federal Reserve issued guidance describing an “enhanced” approach to the consolidated supervision of bank holding companies. The approach emphasized the importance of financial firms having strong corporate governance, capital adequacy, and funding/liquidity management. It also noted that the Federal Reserve would take a more aggressive approach to the supervision of material nonbank subsidiaries of bank holding companies.<sup>15</sup>

Since the crisis, the Federal Reserve has emphasized weaknesses in the GLBA framework. Chairman Ben Bernanke recently observed that, “under the Gramm-Leach-Bliley Act of 1999, the Federal Reserve’s consolidated supervision of bank holding companies was both narrowly focused on the safety and soundness of their bank subsidiaries and heavily reliant on functional supervisors of the bank and regulated nonbank subsidiaries of these companies.”<sup>16</sup>

#### D. CHOICE OF CHARTER

GLBA did not stop charter-shopping by financial institutions. Financial institutions could choose the industrial loan company (ILC) or thrift charter, allowing them to take deposits and benefit from federal deposit insurance while avoiding supervision at the holding company level by the Federal Reserve.

First, several states allow depository institutions to organize as “industrial loan companies” or ILCs. While ILCs are supervised by their state bank

**Table 2: Largest ILCs as of 12/31/2007**

	Assets (\$bn)	Rank*
Merrill Lynch Bank USA	78.1	2
Morgan Stanley Bank	35.1	4
Discover Bank	30.7	5
GMAC Bank	28.4	6
American Express Centurion Bank	26.0	7
UBS Bank USA	25.0	8
Goldman Sachs Bank USA	19.1	9

\* Rank by assets among commercial banks supervised by the FDIC.  
Source: FDIC

<sup>15</sup> Federal Reserve Board, *SR 08-9/CA 08-12: Consolidated Supervision of Bank Holding Companies and the Combined U.S. Operations of Foreign Banking Organizations*, October 16, 2008.

<sup>16</sup> Bernanke, *The Federal Reserve’s role in bank supervision, Before the Committee on Financial Services, U.S. House of Representatives*, March 17, 2010, footnote 5.

regulator and by the FDIC, ILCs can be owned by financial or nonfinancial firms that are not supervised or regulated on a consolidated basis by the Federal Reserve.<sup>17</sup> Prior to the crisis, large institutions with ILCs included financial firms such as Merrill Lynch, Morgan Stanley, and Discover Financial Services, and nonfinancial firms such as General Motors and Target (see Table 2). These companies used their ILCs for access to the payments system or to provide limited deposit services to their customers. Since the financial crisis, most of the largest ILCs have converted to regular bank charters (including those owned by Morgan Stanley, Discover, GMAC, American Express, and Goldman Sachs) and are now being supervised by the Federal Reserve on a consolidated basis.

Second, large financial institutions may acquire thrifts, formerly known as savings and loans, whose main purpose originally was to extend residential mortgages. The OTS supervises thrifts and their holding companies on a consolidated basis. Major financial institutions that owned subsidiaries with thrift charters prior to the crisis included AIG, GE Capital, Merrill Lynch, Lehman Brothers, and Morgan Stanley.

In 2004, the European Union required that foreign financial institutions operating in Europe either be subject to consolidated supervision in their home country or establish a Europe-based holding company. The SEC responded by creating the Consolidated Supervised Entity (CSE) program, which introduced a new option under which investment banks could be supervised on a consolidated basis. The five major investment banks could then pick from among the Federal Reserve (by setting up a national bank or state member bank and becoming a BHC), the OTS (by setting up a thrift), or the SEC. All five chose to be supervised by the SEC under the new program, although some also continued to be supervised by the OTS because they owned a thrift. The CSE program was discontinued in 2008 after all five of the large investment banks that were not controlled by a BHC had closed, merged into other entities, or converted to FHCs to be supervised by the Federal Reserve.

The Federal Reserve has argued that the availability of the thrift and ILC charters for depository institutions allowed substantial financial activities to go unregulated or under-regulated during the 2000s. Chairman Bernanke recently said that the “lack of strong

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<sup>17</sup> There is regulatory precedent for the FDIC’s Board of Directors entering into and employing Parent Company Agreements and Capital and Liquidity Maintenance Agreements to require a parent company of an industrial loan company to, among other provisions, (1) consent to supervision, (2) disclose the nature of activities and operations, (3) serve as a source of strength for the insured institution, and (4) maintain the insured entity’s capital at such levels as the FDIC deems appropriate, and/or take such other actions as the FDIC deems appropriate to provide the insured entity with a resource for additional capital and liquidity. In examining any insured depository institution, the FDIC has the authority (under Section 10(b) of the FDI Act) to examine any affiliate of the institution, including the parent company, for purposes of determining (i) the relationship between the ILC and its parent and (ii) the effect of such a relationship on the ILC. See 12 U.S.C. Sec. 1820(b).

consolidated supervision of systemically critical firms not organized as bank holding companies proved to be the most serious regulatory gap” prior to the crisis.<sup>18</sup>

#### E. NONBANK SUBSIDIARIES DURING THE FINANCIAL CRISIS

During the financial crisis, several of the largest financial institutions posted significant losses or brought onto their balance sheet substantial assets arising out of their nontraditional banking activities. Some of these activities had been focused within the legal structure of the depository institution, which in most cases was supervised by the OCC, while others had been focused outside the depository institution, which was supervised by the SEC (for broker-dealer affiliates) or the Federal Reserve (for most other holding company subsidiaries).

Depository institutions and their holding companies provided extraordinary support to nonbank subsidiaries and off-balance sheet vehicles during the financial crisis. In 2007, Citigroup and Wachovia purchased assets from their Structured Investment Vehicles, which they had no contractual obligation to do. In early 2008, Wachovia and others purchased assets from their Auction Rate Securities (ARS) programs, following investor lawsuits. Later in 2008, Bank of America, US Bancorp, Bank of New York, SunTrust, Northern Trust, and Wachovia provided support to affiliated money market mutual funds by purchasing underlying assets to assist the funds in meeting redemption requests. To the extent that the support to ARS programs and mutual funds was provided by the bank subsidiaries of the relevant firm, it required Federal Reserve approval under Section 23A of the Federal Reserve Act, which governs transactions between depository subsidiaries and other holding company affiliates regardless of which agency regulates the institutions.

#### F. PRUDENTIAL SUPERVISION IN THE 2000s

Due to the growing complexity of large financial institutions in the 1990s, supervisors reconsidered the traditional examination process, which had been based on periodic examinations to evaluate the safety and soundness of financial institutions at a point in time. In the 1990s, the Federal Reserve, OCC, and other federal banking agencies introduced the “risk-focused” approach which “focuses more effectively on an organization’s principal risks and on its internal systems and processes for managing and controlling these risks.”<sup>19</sup> This approach relies extensively on banks’ internal risk-management systems. Chairman Greenspan said in 1999: “As internal systems improve, the basic thrust of the examination process should shift from largely duplicating many activities already conducted within the

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<sup>18</sup> Bernanke, *ibid.*

<sup>19</sup> Federal Reserve Board, *SR 97-24: Risk-Focused Framework for Supervision of Large Complex Institutions*, October 27, 1997.

bank to providing constructive feedback that the bank can use to enhance further the quality of its risk-management systems.”<sup>20</sup>

In 2005, the Federal Reserve reformed the rating system that examiners use for rating bank holding companies based on the risk-focused approach. Bank holding companies are rated by supervisors on a 5-point scale based on the quality of risk management, their financial condition, and the potential impact that nonbank subsidiaries could have on the depository subsidiary.

During the 2000s, the Federal Reserve also took an increasingly comparative approach to the supervision of large financial institutions. Supervisors conducted more cross-company or “horizontal” reviews of specific business lines and risk management processes, to become familiar with industry practices and to identify best practices. For example, horizontal reviews were conducted on financial institutions’ prime brokerage operations; use of derivatives in portfolio management; and stress-testing of capital adequacy.

### **III. APPROACH TO SYSTEMIC RISK**

Promoting financial stability is central to the Federal Reserve’s mission. During the 1990s and 2000s, the focus of financial stability concerns shifted in response to major events.

Following the 2001 terrorist attacks, banking supervisors intensified efforts to ensure that banks had sufficient business continuity plans in place, measured, for example, by the establishment of remote data backup facilities. In 2003, the Federal Reserve, SEC, and OCC issued an interagency paper providing guidance on business continuity planning and disaster recovery which focused on companies, particularly those involved in clearing and settlement activities, that could pose risks to the financial system during a crisis.<sup>21</sup>

Following the Enron and other accounting scandals in 2002, supervisory focus increased on compliance risk management. In 2003, the SEC disciplined Citigroup and JP Morgan Chase for their roles in facilitating Enron’s manipulations of its financial statements, and the two companies entered into formal enforcement actions with the Federal Reserve under which they committed to overhaul their approach to risk management in the structured products business.<sup>22</sup> In 2007, the federal banking agencies and the SEC issued a final statement

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<sup>20</sup> Greenspan, *The evolution of bank supervision*, October 11, 1999.

<sup>21</sup> Federal agencies, *Sound Practices to Strengthen the Resilience of the U.S. Financial System*, April 8, 2003.

<sup>22</sup> SEC, *SEC Settles Enforcement Proceedings against J.P. Morgan Chase and Citigroup*, July 28, 2003; Federal Reserve Board, *Written agreement with Citigroup, Inc.*, July 28, 2003, and *Written agreement with J.P. Morgan Chase & Co.*, July 28, 2003.

describing risk-management expectations for firms engaged in complex structured finance activities.<sup>23</sup>

In the early 2000s, Chairman Greenspan expressed increasing concerns about the systemic risks posed by government-sponsored enterprises (GSEs). “As always, concerns about systemic risk are appropriately focused on large, highly leveraged financial institutions such as the GSEs that play substantial roles in the functioning of financial markets.” Greenspan advocated stronger regulatory authority for the GSEs’ regulator, then the Office of Federal Housing Enterprise Oversight, and limits on the size of the GSE’s balance sheets.

The 1990s and 2000s were also a period of rapid change in the financial sector. The Federal Reserve generally took a benign view of that change, arguing that the growing use of derivatives and the securitization process would better distribute risks across financial institutions. On derivatives, Chairman Alan Greenspan said in a 1999 speech, “These instruments enhance the ability to differentiate risk and allocate it to those investors most able and willing to take it.”<sup>24</sup>

The Federal Reserve also drew attention to the novel risks posed by these developments, both publicly and in its communication with supervised institutions. Greenspan noted potential systemic risks posed by derivatives: (1) they may facilitate the growth in leveraged trading strategies, and (2) they may heighten exposures to counterparty credit risk. Nonetheless, his conclusion in that same 1999 speech was that OTC markets “function quite effectively” without regulation.<sup>25</sup>

Similarly, the Federal Reserve took a neutral stance over the years as the capital markets increasingly took over banks’ traditional role in credit intermediation. In a 2004 speech, Vice Chairman Roger Ferguson noted that commercial banks were recording record profits, partly due to their leading role in capital markets: “Indeed, banks’ development of sophisticated risk-management techniques helped to fuel the growth of new financial instruments. More generally, by providing lines of credit and assuming other off-balance-sheet exposures, banks support the advancement and ongoing operation of financial markets and lower the costs of market-based finance for many market participants.”<sup>26</sup>

Securitization in particular was seen by the Federal Reserve as beneficial because it allowed investors direct access to assets, such as home loan mortgages, which had not been available

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<sup>23</sup> Federal agencies, *Interagency Statement on Sound Practices Concerning Elevated Risk Complex Structured Finance Activities*, January 5, 2007.

<sup>24</sup> Greenspan, *Financial Derivatives*, March 19, 1999.

<sup>25</sup> Greenspan said a year later: “What I suspect gives particular comfort to those of us most involved with the heightened complexity of modern finance is the impressive role private market discipline plays in these markets.” *Banking evolution*, May 4, 2000.

<sup>26</sup> Ferguson, *The Role of Central Banks in Fostering Efficiency and Stability in the Global Financial System*, May 17, 2004.

for investment before, and because it had the potential to reduce costs to borrowers. In 2004, Chairman Greenspan said:

Credit supply is far more stable today than it was because it is now founded on a much broader base of potential sources of funds. The aspiring homeowner no longer depends on the willingness of the local commercial bank or savings and loan association to hold his or her mortgage. Similarly, the sources of credit available to purchasers of cars and users of credit cards have expanded widely beyond local credit institutions. Unbeknownst to such borrowers, their loans may ultimately be held by a pension fund, an insurance company, a university endowment, or another investor far removed from the local area.<sup>27</sup>

The Federal Reserve did highlight the potential systemic risks of an emerging financial system that was increasingly dominated by financial markets rather than commercial banks. In a 2004 speech, Federal Reserve Bank of New York President Timothy Geithner noted that these changes had the potential to create “a more competitive and more innovative financial system, one that is more flexible and resilient,” but also that there were serious systemic concerns and that “we do not know a lot about the underlying dynamics of financial crises in the context of the evolving financial system.”<sup>28</sup>

#### **IV. FEDERAL RESERVE REGULATION OF MORTGAGE ACTIVITY**

##### **A. HOME OWNERSHIP AND EQUITY PROTECTION ACT (HOEPA)**

Congress passed the Truth In Lending Act (TILA) of 1968 to protect consumers in connection with mortgage and other lending products. The Federal Reserve wrote Regulation Z in 1969 to implement TILA. Regulation Z applies to all lenders but is enforced by the Federal Reserve only for state member banks and their subsidiaries. Other regulators implement Regulation Z for institutions within their regulatory purview.<sup>29</sup>

In 1994, Congress enacted the Home Ownership and Equity Protection Act (HOEPA), which amended the Truth In Lending Act. HOEPA was passed in response to evidence of abusive lending practices in mortgage refinancing. In particular, Congress was concerned that certain communities were “being victimized ... by second mortgage lenders, home

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<sup>27</sup> Greenspan, *Government-sponsored enterprises*, Before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, February 24, 2004.

<sup>28</sup> Geithner, *Changes in the Structure of the U.S. Financial System and Implications for Systemic Risk*, October 1, 2004.

<sup>29</sup> Appendix I of Regulation Z describes which federal agency supervises particular classes of businesses.

improvement contractors, and finance companies who peddle high-rate, high-fee home equity loans to cash-poor homeowners.”<sup>30</sup>

HOEPA originally defined a category of loans with high interest rates or high up-front fees. Specifically, “HOEPA loans” were non-purchase, non-construction, closed-end loans with an interest rate exceeding the rate on comparable maturity Treasury securities by more than 10 percentage points or loans with incurred points and fees in excess of the greater of \$400 or 8 percent of the total loan amount. For these loans, the statute mandated special disclosures three days before consummation of the transaction; prohibited terms such as excessive balloon payments, negative amortization, prepayment penalties, and the extension of credit without consideration of the borrowers’ ability to repay; and provided for civil liability for failure to comply with these requirements.<sup>31</sup>

According to the Senate Committee report accompanying the legislation, the Committee was concerned that “the prohibitions are an imprecise tool of policy,” and that some of the provisions might affect products that on net are beneficial to borrowers.<sup>32</sup> For this reason, the statute also states that the Federal Reserve Board “may” exempt certain products from the statute’s prohibitions. It also states that Board “shall prohibit acts or practices in connection with mortgage loans that the Board finds to be unfair, deceptive or designed to evade the provisions of the [act].” Quoting from the report,

“[T]he Committee also realizes that new products and practices may emerge that facilitate reverse redlining.<sup>33</sup> For this reason, the legislation requires the Federal Reserve Board to prohibit acts or practices in connection with High Cost Mortgages that it finds to be unfair, deceptive, or designed to evade the provisions of this section. It is the Committee’s intention that the Federal Reserve will examine complaints and utilize this legislation to provide adequate protections for consumers under Truth in Lending.”<sup>34</sup>

### *2001 REVISIONS TO REGULATION Z UNDER HOEPA*

Following a series of hearings in 2000, the Federal Reserve Board expanded the protections under Federal Reserve Regulation Z, which implemented the Home Ownership and Equity Protection Act (HOEPA). Specifically, it lowered the interest rate trigger for first-lien loans from 10 percentage points above the comparable maturity treasury rate to 8 percentage points; included the costs of optional credit insurance products when computing the fee

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<sup>30</sup> S. REP. NO. 103-69, at 22-23 (1994), *reprinted in* 1994 U.S.C.C.A.N. 1881, 1993.

<sup>31</sup> Home Ownership Act of 1994, codified in 15 USC 1639.

<sup>32</sup> S. REP. NO. 103-69, at 22-23 (1994), *reprinted in* 1994 U.S.C.C.A.N. 1881, 1993.

<sup>33</sup> “Redlining” refers to the illegal discriminatory practice of refusing to extend credit to certain borrowers, for example based on race or ethnicity. “Reverse redlining” is another term for “predatory lending.”

<sup>34</sup> S. REP. NO. 103-69, at 22-23 (1994), *reprinted in* 1994 U.S.C.C.A.N. 1881, 1993

trigger; and, prohibited certain acts such as repeated refinancing for HOEPA loans and structuring a mortgage as open ended credit simply to evade HOEPA.<sup>35</sup>

At the time, Federal Reserve economists collected data that suggested the revised regulation would substantially expand the scope of Regulation Z by increasing the percent of subprime first-lien loans covered by HOEPA from 9 percent to 26 percent. The inclusion of the credit insurance product in the fee trigger would expand the percentage of subprime first-lien loans covered by HOEPA subprime loans to 38 percent.<sup>36</sup>

In discussing the new prohibitions, the Board stated that:

“[HOEPA] provides that the Board shall prohibit practices: (1) In connection with *all mortgage loans* if the Board finds the practice to be unfair, deceptive, or designed to evade HOEPA; and (2) in connection with *refinancings of mortgage loans* if the Board finds that the practice is associated with abusive lending practices or otherwise not in the interest of the borrower.”[italics in original]

It further explained its reasoning, stating that:

“The final rule is intended to curb unfair or abusive lending practices without unduly interfering with the flow of credit, creating unnecessary creditor burden, or narrowing consumers’ options in legitimate transactions.”

The Board issued the new rules prohibiting repeated refinancing and the restructuring of loans to avoid HOEPA under the first of the clauses above, which covers all mortgage loans. The revision in the regulation had a much smaller effect than the Federal Reserve’s projections. In the end, only about 1 percent of subprime loans were covered by HOEPA; the difference was likely due in part to lenders’ changing of mortgage terms in response to the revision in the regulation.<sup>37</sup>

#### *2008 REVISIONS TO REGULATION Z UNDER HOEPA*

The Fed did not promulgate any other regulations to prohibit mortgage lending practices it deemed to be unfair or deceptive (including with respect to subprime home purchase mortgages) until July 2008.<sup>38</sup> The rule promulgated in July 2008 created a new definition of “higher-priced mortgage loans,” intended to include virtually all subprime mortgage loans.

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<sup>35</sup> “Truth in Lending,” Board of Governors of the Federal Reserve, 66 Federal Register 245 (20 Dec 2001), pp. 65604.

<sup>36</sup> “Truth in Lending,” Board of Governors of the Federal Reserve, 66 Federal Register 245 (20 Dec 2001), pp. 65608.

<sup>37</sup> Gramlich, 2007.

<sup>38</sup> “Truth in Lending,” Board of Governors of the Federal Reserve, 73 Federal Register 147 (30 Jul 2007), pp. 44522-44614.

For these loans, both purchase loans and refinance loans, the regulation adds four key protections: it prohibits a lender from making a loan without regard to a borrower's ability to repay; it requires creditors to verify the income and assets they rely upon to determine a borrower's ability to repay; it bans any prepayment penalty if the payment can change in the initial four years; and it requires creditors to establish escrow accounts for property taxes and homeowner's insurance for all first-lien mortgage loans.<sup>39</sup>

## B. FAIR LENDING REGULATION

The Equal Credit Opportunity Act (ECOA) prohibits creditors from discriminating against credit applicants on the basis of race, color, religion, national origin, sex, marital status, age, or because an applicant receives income from a public assistance program or exercises rights protected under the Consumer Credit Protection Act.<sup>40</sup> Regulation B, issued by the Federal Reserve Board, provides the framework for fair lending enforcement under ECOA. Depending on the type of lending institution, various federal agencies are charged with monitoring compliance with ECOA. These agencies include bank regulators such as the Federal Reserve Banks, the OCC and the OTS as well as agencies that do not have regular bank surveillance duties such as the FTC. Should a pattern or practice of discrimination which violates ECOA be found, ECOA requires these agencies to refer matters to the Justice Department.

As the subprime market grew during the 2000s, many industry observers grew concerned about potential abuses and expressed concerns about fair lending violations. For example, industry observers noted evidence suggesting that minority populations were much more likely to obtain subprime mortgages than non-minorities.

## C. EXPANDED DISCLOSURE UNDER HMDA

Under the Home Mortgage Disclosure Act (HMDA), and the regulations issued by the Federal Reserve, most mortgage lenders in metropolitan areas are required to collect data about

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<sup>39</sup> For higher-priced loans and most other mortgage loans, the new rules prohibit lenders from paying mortgage brokers "yield spread premiums" that exceed the amount the consumer had agreed to in advance; the rules prohibit certain servicing practices, such as failing to credit a payment to a consumer's account when the servicer receives it, failing to provide a payoff statement within a reasonable period of time, and "pyramiding" late fees; the rules prohibit a creditor or broker from coercing or encouraging an appraiser to misrepresent the value of a home; and the rules prohibit seven misleading or deceptive advertising practices for closed-end loans, e.g. using the term "fixed" to describe a rate that is not truly fixed. It also requires that all applicable rates or payments be disclosed in advertisements as prominently as introductory or "teaser" rates.

<sup>40</sup> 15 U.S.C. 1691 et seq. A second act also governs fair lending. The Fair Housing Act, 42 USC 3601 et seq., prohibits discrimination in home mortgage loans, home improvement loans, and other residential credit transactions, on the basis of race, color, religion, national origin, sex, familial status or disability. The Department of Housing and Urban Development has issued regulations under the Fair Housing Act, including regulations addressing fair lending issues. 24 C.F.R. Part 100, Subpart C.

their housing-related lending activity, report the data annually, and make the data publicly available. In 2002, the Board made three changes to the HMDA rules motivated by the increases in subprime lending.<sup>41</sup> The Board added a requirement to report loan price information for certain higher priced loans, extended reporting responsibilities for independent state-regulated mortgage companies, and required that all HOEPA loans be flagged in HMDA reports.

#### D. SUPERVISORY ACTIONS RELATED TO MORTGAGE LENDING

Several supervisory actions taken by the Federal Reserve that are related to mortgage lending, both for safety and soundness and consumer protection reasons, are described below. A number of these actions are issuing guidance, which describes the standards that will be considered in supervision and evaluation of supervised firms. Issuing guidance is less restrictive than issuing rules, which set binding limits on financial activities of the supervised and other regulated institutions.

- In January 1998, formalizing a policy not to conduct routine consumer compliance examinations of nonbank subsidiaries of bank holding companies. Describing the change, the Board stated, “On January 12, 1998, the Board adopted a policy that the Federal Reserve will (1) not routinely conduct consumer compliance examinations of nonbank subsidiaries of bank holding companies, and (2) not investigate consumer complaints relating to these subsidiaries. This action formalizes a policy regarding examinations that has been System practice all along.”<sup>42</sup>
- In March 1999, issuing Interagency Guidance on Subprime Lending with the other federal bank regulators. Noting that many banks had “experienced losses attributable to ill-advised or poorly structured subprime lending programs,” the guidance emphasized that institutions should hold greater capital against subprime loans and described “essential components” of a sound risk-management program for subprime lending. The guidance also noted the liquidity risks in securitizing mortgage loans, as “investors can quickly lose their appetite for risk in an economic downturn or when financial markets become volatile.”<sup>43</sup>
- In January 2001, issuing Expanded Guidance for Subprime Lending Programs with the other federal bank regulators. This guidance provided for intensified supervisory scrutiny of companies whose subprime lending programs exceeded 25 percent of tier 1 capital. In particular, the guidance introduced the expectation that institutions

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<sup>41</sup> Testimony by Sandra Braunstein, Director Division of Consumer and Community Affairs, March 27, 2007.

<sup>42</sup> Board of Governors of the Federal Reserve System, Division of Consumer and Community Affairs, Letter CA 98-1, dated January 20, 1998.

<sup>43</sup> Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision, Interagency Guidance on Subprime Lending, March 1, 1999.

should hold capital against subprime loans portfolios “in an amount that is one and one half to three times greater than what is appropriate for non-subprime assets of a similar type.” The guidance also warned, “When a primary supervisor determines that an institution’s risk management practices are materially deficient, the primary supervisor may instruct the institution to discontinue its subprime lending programs.”<sup>44</sup>

- In March 2004, issuing Interagency Guidance on Unfair or Deceptive Acts or Practices by State-Chartered Banks with the FDIC. This guidance described steps that state-chartered banks should take to avoid engaging in unfair or deceptive acts or practices.<sup>45</sup> The guidance mirrored guidance that the OCC had articulated two years earlier in its supervision of nationally-chartered banks.<sup>46</sup>
- In September 2006, issuing Interagency Guidance on Nontraditional Mortgage Product Risks with the other federal bank regulators. The guidance focused on nontraditional mortgages such as “interest-only” and “payment option” adjustable-rate mortgages, which allow borrowers to defer payment of principal and, sometimes, interest. The guidance described acceptable risk-management practices for financial institutions issuing such mortgages, as well as certain consumer protection issues.<sup>47</sup>
- In June 2007, issuing an Interagency Statement on Subprime Mortgage Lending with the other federal bank regulators. The statement built on the September 2006 guidance to focus specifically on subprime borrowers and on so-called “payment shock” loans, which start with low fixed interest rates and then, usually after two years, adjust to a higher variable rate for the remaining life of the loan. The statement emphasized that lenders should verify a borrower’s ability to repay the loan at the higher interest rate.<sup>48</sup>

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<sup>44</sup> Expanded Guidance for Subprime Lending Programs, dated January 31, 2001, issued by the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, and the Office of Thrift Supervision.

<sup>45</sup> Unfair or Deceptive Acts or Practices by State-Chartered Banks, dated March 11, 2004, issued by the Board of Governors of the Federal Reserve System and the Federal Deposit Insurance Corporation.

<sup>46</sup> Office of the Comptroller, *Advisory Letter 2002-3, Guidance on Unfair or Deceptive Acts or Practices*, March 2002.

<sup>47</sup> Interagency Guidance on Nontraditional Mortgage Product Risks, dated September 29, 2006, issued by Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve system, the Federal Deposit Insurance Corporation, the Office of Thrift Supervision, and the National Credit Union Administration

<sup>48</sup> Statement on Subprime Mortgage Lending, dated June 28, 2007, issued by the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve system, the Federal Deposit Insurance Corporation, the Office of Thrift Supervision, and the National Credit Union Administration.

- In September 2009, following a two-year pilot project, the Federal Reserve announced that it would extend its regulatory oversight of bank holding companies for consumer compliance to include the supervision of nonbank subsidiaries such as subprime mortgage lenders. The pilot project involved the Board of Governors of the Federal Reserve System, the Office of Thrift Supervision, the Federal Trade Commission, and state agencies represented by the Conference of State Bank Supervisors and the American Association of Residential Mortgage Regulators.<sup>49</sup>

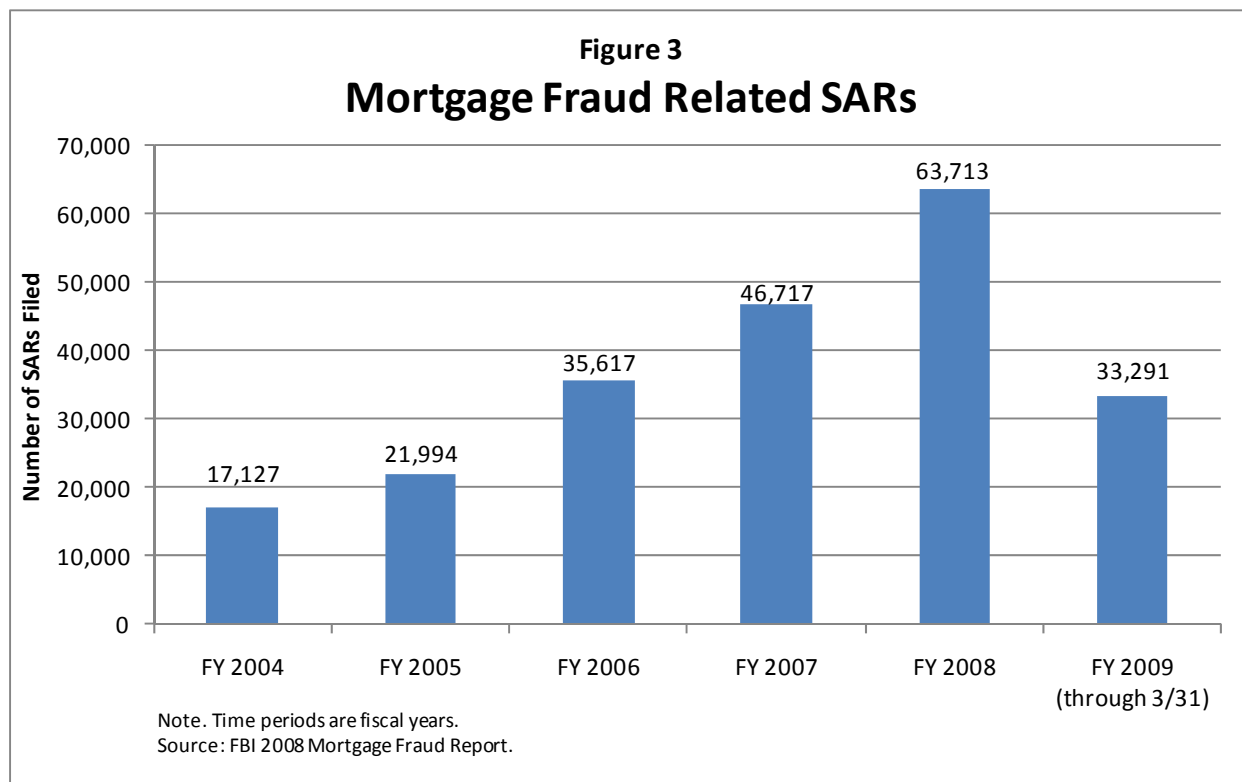
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<sup>49</sup> Board of Governors of the Federal Reserve System, Division of Consumer and Community Affairs, Letter CA 09-8, dated September 15, 2009. Also, see “Federal and State Agencies Announce Pilot Project to Improve Supervision of Subprime Mortgage Lenders,” dated July 17, 2007, press release issued by the Board of Governors of the Federal Reserve System, the Office of Thrift Supervision, the Federal Trade Commission, the Conference of State Bank Supervisors, and the American Association of Residential Mortgage Regulators.

**APPENDIX 1**

Mortgage fraud can roughly be defined as a material misrepresentation in the mortgage loan document(s) or orally in order to induce a lender to make a loan he or she might not otherwise make. *Fraud for housing* is perpetrated in an effort to live in the residence. In contrast, *fraud for profit* is just that, a scheme aimed to extract money in the transaction. Mortgage fraud is distinct from predatory lending: while mortgage fraud primarily harms lenders, or purchasers of the loans, predatory lending generally refers to practices that primarily harm borrowers.

As the subprime mortgage market grew, reports of mortgage fraud also increased. However, robust statistics on the number of fraud cases and the associated losses are not readily available. In its 2008 Mortgage Fraud Report, the FBI documents a steady increase in the number of Suspicious Activity Reports (SARs) reporting mortgage fraud. SARs are filed when a financial institution knows or suspects that a transaction facilitates illegal activity. As shown in figure 3, fiscal year 2008 shows a nearly-fourfold increase in reported mortgage-related SARs over fiscal year 2004.<sup>50</sup>



<sup>50</sup> FBI, 2009.

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Gramlich, Edward M., 2007, *Subprime Mortgages: America's Latest Bust and Boom*.

Financial Crisis Inquiry Commission

*Preliminary Staff Report*

SECURITIZATION AND THE MORTGAGE CRISIS

APRIL 7, 2010

This preliminary staff report is submitted to the Financial Crisis Inquiry Commission (FCIC) and the public for information, review, and comment. Comments can be submitted through the FCIC's website, [www.fcic.gov](http://www.fcic.gov).

This document has not been approved by the Commission.

The report provides background factual information to the Commission on subject matters that are the focus of the FCIC's public hearings on April 7, 8, and 9, 2010. In particular, this report provides information on mortgage securitization and the mortgage markets. Staff will provide investigative findings as well as additional information on these subject matters to the Commission over the course of the FCIC's tenure.

Deadline for Comment: May 15, 2010

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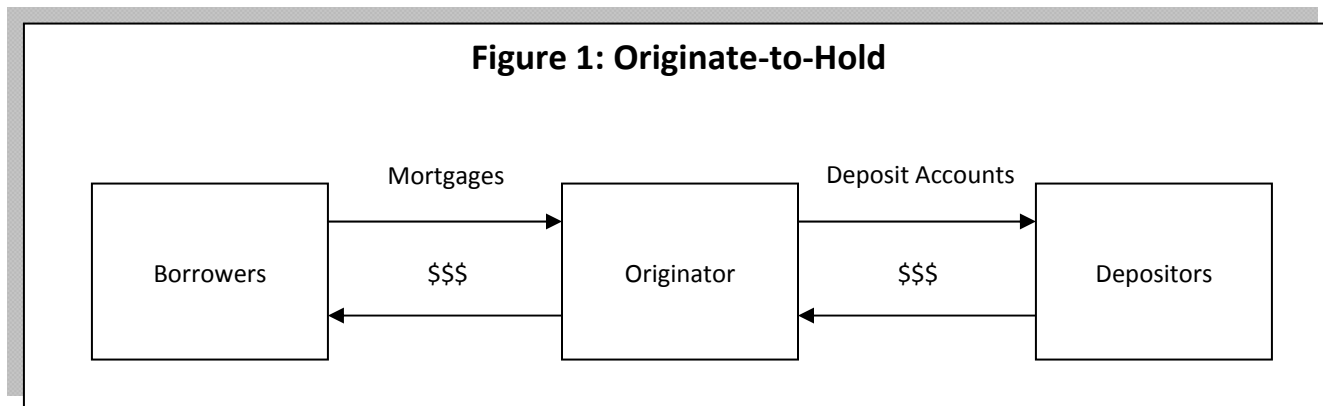
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## Securitization and the Mortgage Crisis

The purpose of this preliminary staff report is to provide an overview of mortgage securitization and its possible role in the sharp increase in mortgage defaults that precipitated the financial crisis. Section I describes the growth and basic mechanics of the mortgage securitization system. Section II discusses the way in which securitization could have contributed to the recent increase in mortgage defaults and foreclosures. Those researching the financial crisis disagree on the extent to which securitization resulted in an increase in defaults, and empirical research on this issue is ongoing.

### I. THE SECURITIZATION OF RESIDENTIAL MORTGAGES

In the decades leading up to the early 1970s, the housing finance system was relatively simple: banks and savings and loan associations made mortgage loans to households—an activity referred to as *origination*—and held them until they were repaid. Deposits provided the major source of funding for these lenders, as most were depository institutions. Figure 1 illustrates this traditional “originate-to-hold” model which, along with the fragmented nature of the banking sector, resulted in a highly localized mortgage market with regional variation in the availability of residential mortgage credit.



In the 1970s, the housing finance system began to shift from depository-based funding to capital markets-based funding. By 1998, 64 percent of originated mortgage loans were sold by originators to large financial institutions that package bundles of mortgages and sell the right to receive borrowers’ payments of principal and interest directly to investors.<sup>1</sup> These investors in the capital markets now provide the majority of funding for the housing finance system.

<sup>1</sup> See Figure 4, *infra*.

## A. THE ORIGINS OF MORTGAGE SECURITIZATION: THE GSEs

Key to this shift to capital markets-based funding of mortgage lending were Fannie Mae and Freddie Mac, the government sponsored enterprises (GSEs), which were created by the federal government to develop the secondary mortgage market. They did this in two ways: (1) by issuing debt to raise capital and using those funds to purchase mortgages to hold in their portfolios; and (2) by *securitizing* mortgages, that is, by selling to investors the rights to the principal and interest payments made by borrowers on pools of mortgages.

In the securitization process, Fannie Mae and Freddie Mac buy pools of mortgages from originators, which include both depository institutions and non-depository mortgage lenders. In order to be eligible to sell loans to Fannie Mae or Freddie Mac, the originator must agree to abide by the GSEs' underwriting guidelines, which specify types of loans each GSE will buy as well as processes for verifying the creditworthiness of borrowers. Fannie Mae and Freddie Mac then bundle together particular pools of mortgages and sell the cash flow rights of the pools to investors as mortgage backed securities (MBS). Holders of an MBS have the right to receive the principal and interest payments made by mortgage borrowers in the underlying pool, which is held by a trust on behalf of MBS investors. Ginnie Mae plays a similar role in the secondary market for mortgages insured by the Federal Housing Administration and the Department of Veterans Affairs, and MBS issued by the GSEs and Ginnie Mae are referred to as *agency MBS*.

Importantly, Fannie Mae and Freddie Mac provide a *guarantee* that investors in their MBS will receive timely payments of principal and interest. If the borrower for one of the underlying mortgages fails to make his payments, the GSE that issued the MBS will pay to the trust the scheduled principal and interest payments. In return for providing this guarantee, Fannie Mae and Freddie Mac deduct an ongoing *guarantee fee*, which is charged by setting the pass-through annual interest rate (i.e., the interest rate received by holders of the MBS) about 20 - 25 basis points (i.e., 0.20 - 0.25 percentage points) below the weighted average interest rate of the mortgages in the pool.<sup>2</sup> Because the GSEs were perceived to be implicitly backed by the federal government, their guarantee was perceived by investors to have essentially removed the credit risk from their MBS.<sup>3</sup>

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<sup>2</sup> The average annual guarantee fee or "g-fee" was 22 basis points in 2007 and was raised to 25 basis points in 2008. See FCIC Preliminary Staff Report, "Government Sponsored Enterprises and the Financial Crisis."

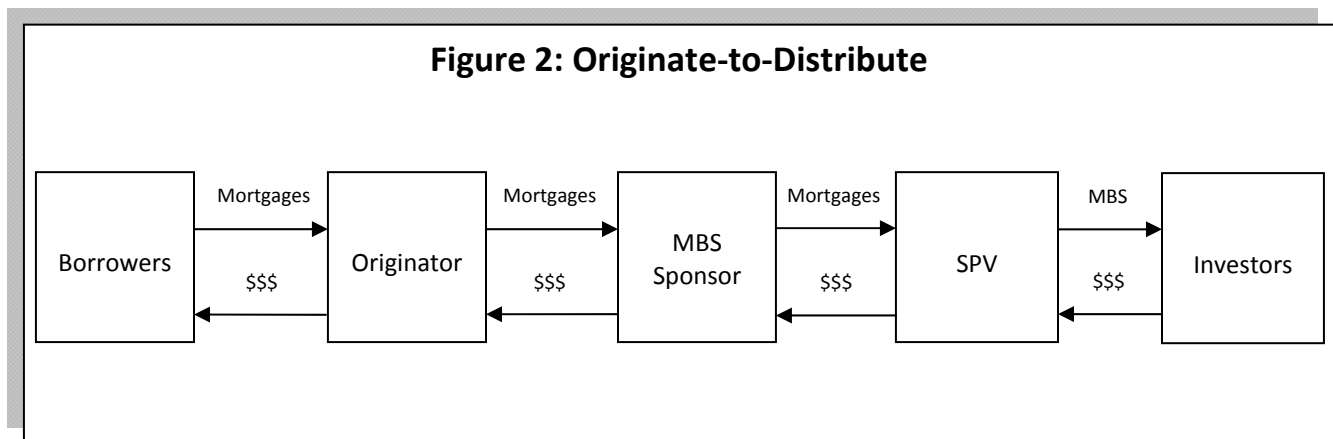
<sup>3</sup> Bhattacharya, et al (2006, p. 30).

## B. NON-AGENCY SECURITIZATION

Other financial institutions besides the GSEs would also buy mortgages, bundle them into pools, and issue MBS. These *non-agency* securitizations played a large role in the subprime, alt-A, and jumbo markets in the 2000s.<sup>4</sup>

### 1. *The mechanics of non-agency MBS securitization*

In a non-agency securitization, the *sponsor* of the securitization, which could be an investment bank, commercial bank, thrift, or mortgage bank, first acquired a set of mortgages, either by originating them or by buying them from an originator. It then would create a new entity, referred to as a *special purpose vehicle* (SPV), and transfer the mortgages to the SPV. Figure 2 illustrates this “originate-to-distribute” model of housing finance.



The principal and interest payments on the pool of mortgages would provide the underlying set of cash flows for the SPV. The SPV could then enter into contracts in order to manage the risk it faced. For example, to reduce interest rate-related risks, the SPV could enter into interest rate swap agreements that provided floating interest rate-based payments to the SPV in exchange for a fixed set of payments from the SPV.

The SPV then would issue various classes of mortgage-backed securities that gave investors who were holders of the securities rights to the cash flows available to the SPV. Each class of securities was referred to as a *tranche*. Unlike agency MBS, these securities were typically not explicitly guaranteed against credit loss. A crucial goal of the capital structure of the SPV was to create some tranches that were deemed low risk and could receive the highest

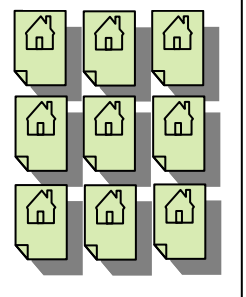
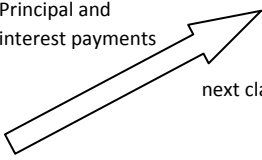
<sup>4</sup> As discussed in the FCIC Preliminary Staff Report, “The Mortgage Crisis,” subprime loans are loans that are made to borrowers with poor credit scores. Alt-A loans are made with higher loan-to-value ratios or less documentation than is required for loans that are not alt-A.

investment-grade ratings, such as AAA, from the rating agencies. This was done using a set of *credit enhancements*, ways of structuring the MBS so that some of its tranches received high credit ratings.

One key credit-enhancement tool was *subordination*. The classes of securities issued by the SPV were ordered according to their priority in receiving distributions from the SPV. The structure was set up to operate like a waterfall, with the holders of the more senior tranches being paid prior to the more junior (or subordinate) tranches. The most senior set of tranches—referred to simply as *senior securities*—represented the lowest risk and consequently paid the lowest interest rate. They were set up to be paid prior to any of the classes below and were typically rated AAA. Senior securities typically made up the majority of bonds issued by the SPV. The next most senior tranches were the *mezzanine* tranches. These carried higher risk and paid a correspondingly higher interest rate. The most junior tranche in the structure was called the *equity* or *residual* tranche and was set up to receive whatever cash flow was left over after all other tranches had been paid. These tranches, which were typically not rated, suffered the first losses on any defaults of mortgages in the pool.

Table 1 provides a notional balance sheet for a typical MBS SPV. The entity holds a pool of mortgages as assets. The payments of principal and interest by borrowers flow first to make the promised payments to the AAA senior bondholders, then down to pay the AA bonds, and so forth. If there is any money left over after all bondholders have been paid, it flows to the residual tranche of securities. The AAA senior bonds make up 92 percent of the principal amount of debt issued by the SPV, AA bonds account for 3 percent, mezzanine BBB bonds make up 4 percent, and the residual tranche amounts to 1 percent.

Zimmerman (2006, p.109) gives an example of a typical subprime MBS in which cumulative losses on mortgages in the SPV were expected to amount to 4 percent of the total principal amount. If the MBS does indeed experience such a 4 percent loss on its mortgage assets, then 4 percent of the total principal amount on its bonds would default. Because of the SPV's subordination structure, these losses would first be applied to the residual tranche. The residual tranche, which accounts for 1 percent of the principal amount of the SPV's bonds, would fully default, paying nothing. That leaves 3 percent more of the total principal amount in losses to apply to the next most junior tranche, the mezzanine BBB tranche. Since the mezzanine BBB tranche totals 4 percent of the deal, the 3 percent left in losses would reduce its actual payments to 1 percent, meaning that 75 percent of the BBB bonds' principal value would be lost. The AA and AAA bonds, however, would pay their holders in full. In our simple example, the junior tranches below the AA and AAA bonds are large enough to fully absorb the expected loss on the SPV's mortgages.

<b>Table 1: Balance Sheet of an MBS</b>	
<b>Assets</b>	<b>Liabilities</b>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p style="text-align: center;"><b>Mortgages</b></p>  </div> <p style="margin-left: 20px;">Principal and interest payments</p>  <p style="margin-left: 100px;">first claim...</p> <p style="margin-left: 100px;">next claim...</p> <p style="margin-left: 100px;">next claim...</p> <p style="margin-left: 100px;">last</p>	<p>AAA senior bonds 92%</p> <hr/> <p>AA bonds 3%</p> <hr/> <p>Mezzanine BBB bonds 4%</p> <hr/> <p>Residual tranche 1%</p>

Another credit enhancement technique was *over-collateralization*. The principal balance of the underlying mortgages would often exceed the principal balance on all of the debt securities issued by the SPV. Thus, some of the underlying mortgages could default, resulting in loss of principal on the mortgage, without any of the MBS bonds defaulting on their promised payments to investors.

Similarly, the weighted average coupon interest rate on the underlying mortgage pool would typically exceed the weighted average coupon interest rate paid on the SPV's debt securities by an amount sufficient to provide a further buffer before the debt tranches incur losses. In essence, the SPV received a higher interest rate from mortgage borrowers than it paid to investors in its bonds. The resulting *excess spread* gave the SPV extra cash flow to pay its bond holders, further insulating the MBS from credit risk in the underlying mortgages.

With both over-collateralization and excess spread, the total amount of cash that had been promised to be paid *to* the SPV by mortgage borrowers was greater than the total amount of cash that the SPV had promised to pay *out* to investors. This gave the SPV a cushion in case some of the mortgage borrowers defaulted on their promised payments.

The prospectus for an MBS would include a description of the mortgages held by the SPV, such as information about the distribution of borrowers' credit scores and loan-to-value ratios, and the geographic distribution of the homes that serve as collateral for the mortgages. The underwriting practices used by the originators usually would also be described. For example, Goldman Sachs disclosed the following about the underwriting

standards used by the originator—New Century Mortgage—of the mortgages it packaged in a 2006 MBS offering:<sup>5</sup>

The mortgage loans will have been originated in accordance with the underwriting guidelines established by New Century. On a case-by-case basis, exceptions to the New Century Underwriting Guidelines are made where compensating factors exist. It is expected that a substantial portion of the mortgage loans will represent these exceptions. ... All of the mortgage loans were also underwritten with a view toward the resale of the mortgage loans in the secondary mortgage market. ... As a result of New Century's underwriting criteria, changes in the values of [homes securing the mortgage loans] may have a greater effect on the delinquency, foreclosure and loss experience on the mortgage loans than these changes would be expected to have on mortgage loans that are originated in a more traditional manner.

The originators of the mortgages also generally made representations and warranties to the SPV, described in the prospectus, regarding the nature of the mortgages in the pool. For example, they typically represented that the mortgages had never been delinquent and that they complied with all national and state laws in their origination practices. Moreover, in the event that any of the representations and warranties were breached, or if any of the mortgages defaulted early (within some fixed period after being transferred to the SPV), the originator typically agreed to repurchase the mortgage from the SPV.

The SPV would contract with a firm to *service* the mortgages in the pool, i.e., to collect payments from borrowers. The mortgage servicer would also handle defaults in the mortgage pool, including negotiating modifications and settlements with the borrowers and initiating foreclosure proceedings. In exchange, the mortgage servicer would get an ongoing *servicing fee* from the flow of interest payments from borrowers of typically between 25 and 50 basis points, or 0.25 and 0.50 percentage points, at an annual rate. Servicers also typically would retain late fees charged to delinquent borrowers and would be reimbursed for expenses related to foreclosing on a loan. The borrowers would be informed by the originator or the new servicer when servicing rights to their mortgages were transferred so that they knew how to make payments to the new servicer.

## 2. *Credit ratings for MBS*

The sponsor of an MBS typically approached Fitch, Standard & Poor's, or Moody's to obtain credit ratings on the classes of debt securities issued in the deal. The credit rating agencies analyzed the probability distribution of cash flows associated with each tranche using proprietary models based on historical data and assigned a credit rating to each debt tranche. These ratings were intended to represent the riskiness of the securities and were used by investors to inform their decision whether to invest in the security. Sponsors of MBS typically structured them to produce as many bonds with the highest credit rating—

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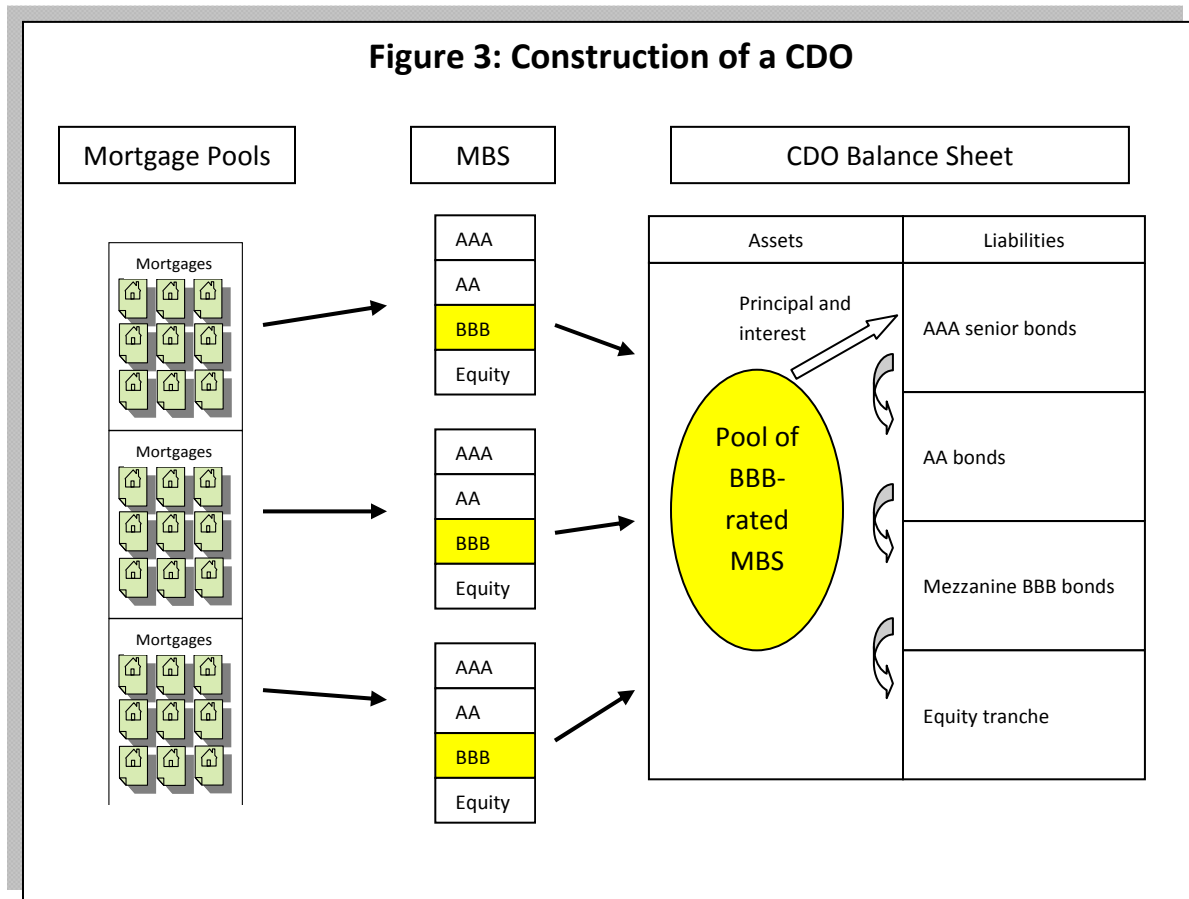
<sup>5</sup> Prospectus for Mortgage Pass-through Certificates, Series 2006-NC2, available at [http://www.sec.gov/Archives/edgar/data/1366182/000112528206003776/b413822\\_424b.txt](http://www.sec.gov/Archives/edgar/data/1366182/000112528206003776/b413822_424b.txt)

AAA, for example—while offering attractive yields. AAA-rated bonds were in demand by investors who required low-risk assets in their portfolio. The internal credit enhancements used in non-agency securitizations, discussed above, enabled the transformation of mortgages, including relatively risky mortgages to borrowers with low credit scores or with little equity, into bonds that were considered to be low risk but relatively high yield.

3. *Collateralized debt obligations and credit default swaps*

The junior tranches of an MBS typically received lower ratings from the rating agencies because they were more likely to default than the senior tranches. This is because, as discussed above, senior securities would be paid before the junior securities would be paid, so that the more junior a tranche would be, the more likely it would be to bear losses if the underlying mortgages defaulted.

The same credit-enhancement techniques that produced highly rated tranches out of a pool of mortgages were used to create highly rated securities out of pools of junior tranches of MBS. This was done using a product known as a *collateralized debt obligation* (CDO). Figure 3 depicts the construction of a CDO created from mortgages.

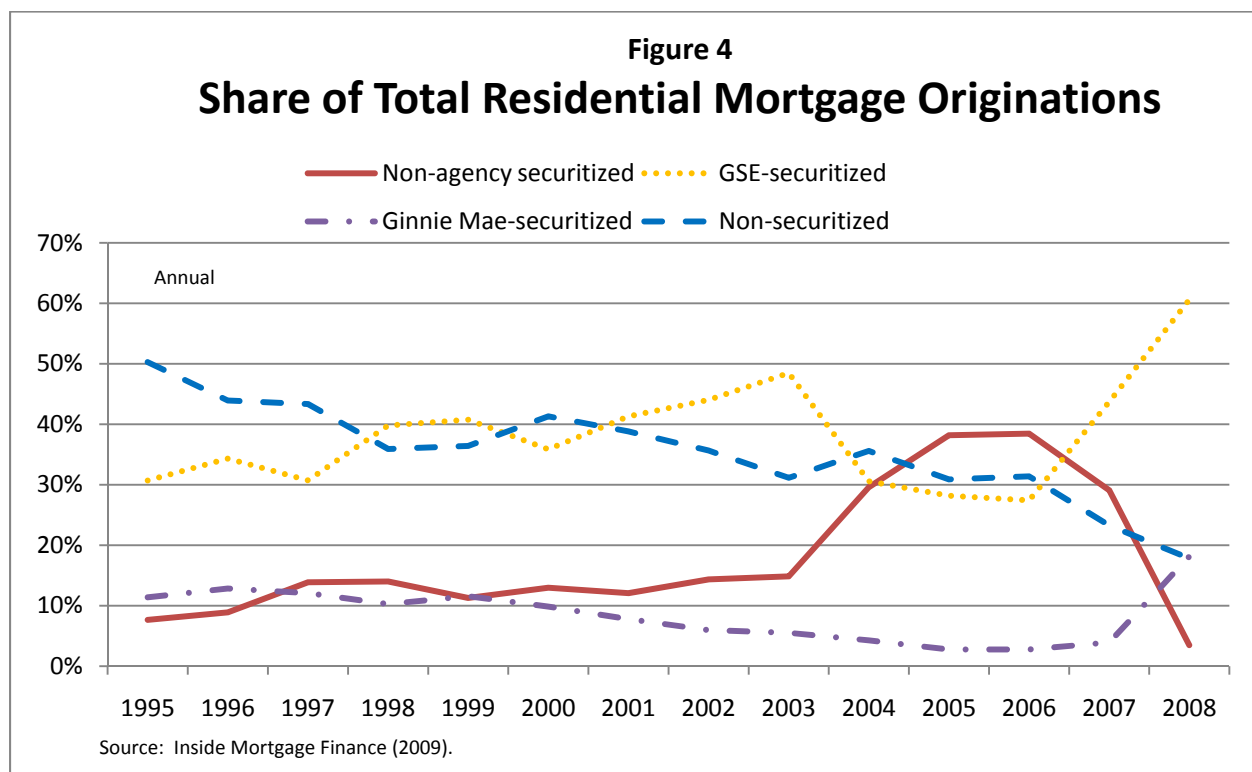


The sponsor of such a CDO assembled a pool of junior tranches from many different MBS, for example *mezzanine* tranches rated BBB, transferred them to an SPV, and using the same tools of subordination, over-collateralization, and excess spreads issued AAA-rated senior securities from that SPV, along with junior tranches and a first-loss residual tranche.

*Credit default swaps* (CDS) were used to protect against the risk of an MBS defaulting. In a CDS, the buyer would agree to pay the seller a fixed stream of payments. In return, the seller would agree to pay the buyer some fixed amount if the “reference entity” of the CDS experienced a “credit event,” which was typically some sort of default. For MBS- and CDO-based CDSs, the reference entity was the trust that issued a particular MBS or CDO security. CDS were used by holders of MBS and CDOs for the purpose of reducing their exposure to credit risk of MBS and CDOs.<sup>6</sup>

### C. RISE OF NON-AGENCY SECURITIZATION

The 2000s saw a large increase in the market share of non-agency securitization. Figure 4 shows the fraction of total residential mortgage originations in each year that were securitized into non-agency MBS, GSE MBS, and Ginnie Mae MBS, as well as the fraction non-securitized (i.e., held as whole loans by banks, thrifts, the GSEs, and other institutions).



<sup>6</sup> Moreover, CDSs were used to generate *synthetic CDOs*, which have similar cash flow properties as the *cash CDOs* described above without actually holding any MBS bonds. Gorton (2008, p. 42).

Four trends are notable. Non-securitized mortgage originations declined steadily from half the market in 1995 to under 20 percent in 2008. Non-agency MBS hovered between 8 and 12 percent until 2003; Non-agency MBS then more than trebled in market share to a peak of 38 percent in 2006. During the growth years for non-agency MBS, Ginnie Mae's market share dropped considerably. Finally, both GSEs and Ginnie Mae rapidly escalated their market share as non-agency securitization dropped in 2008.

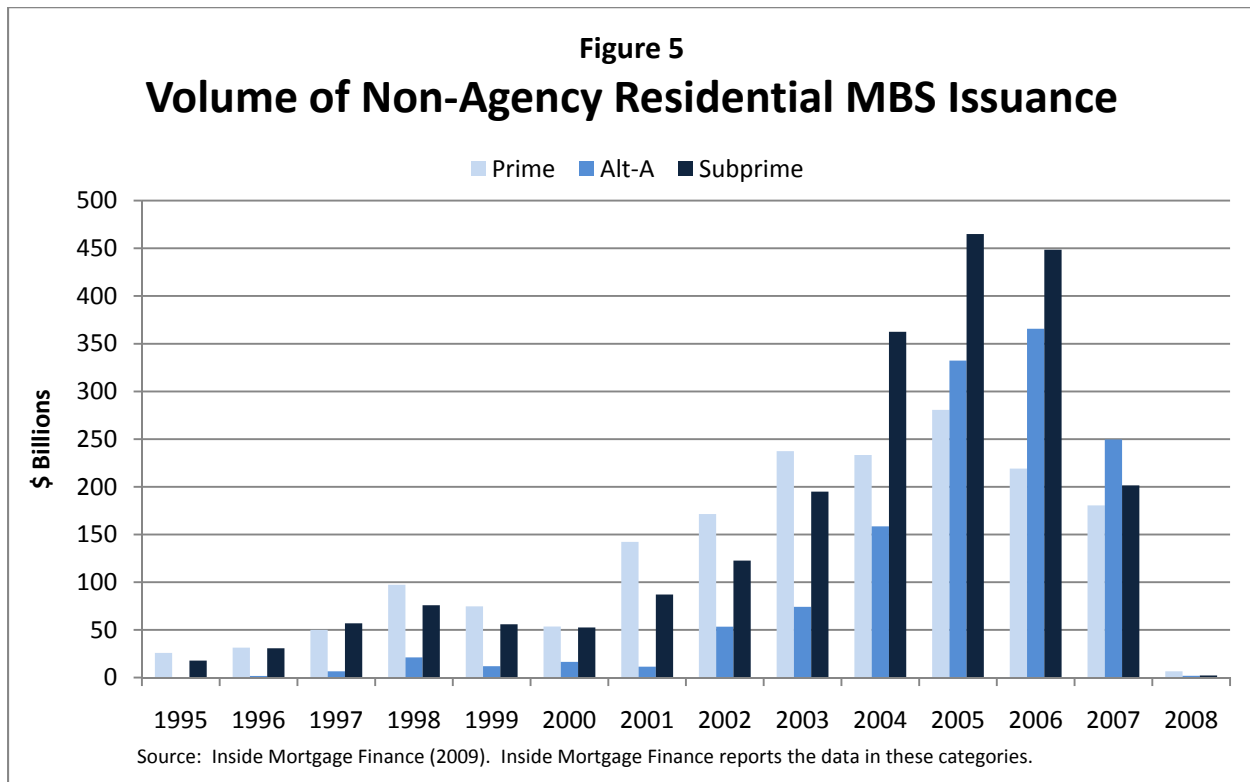
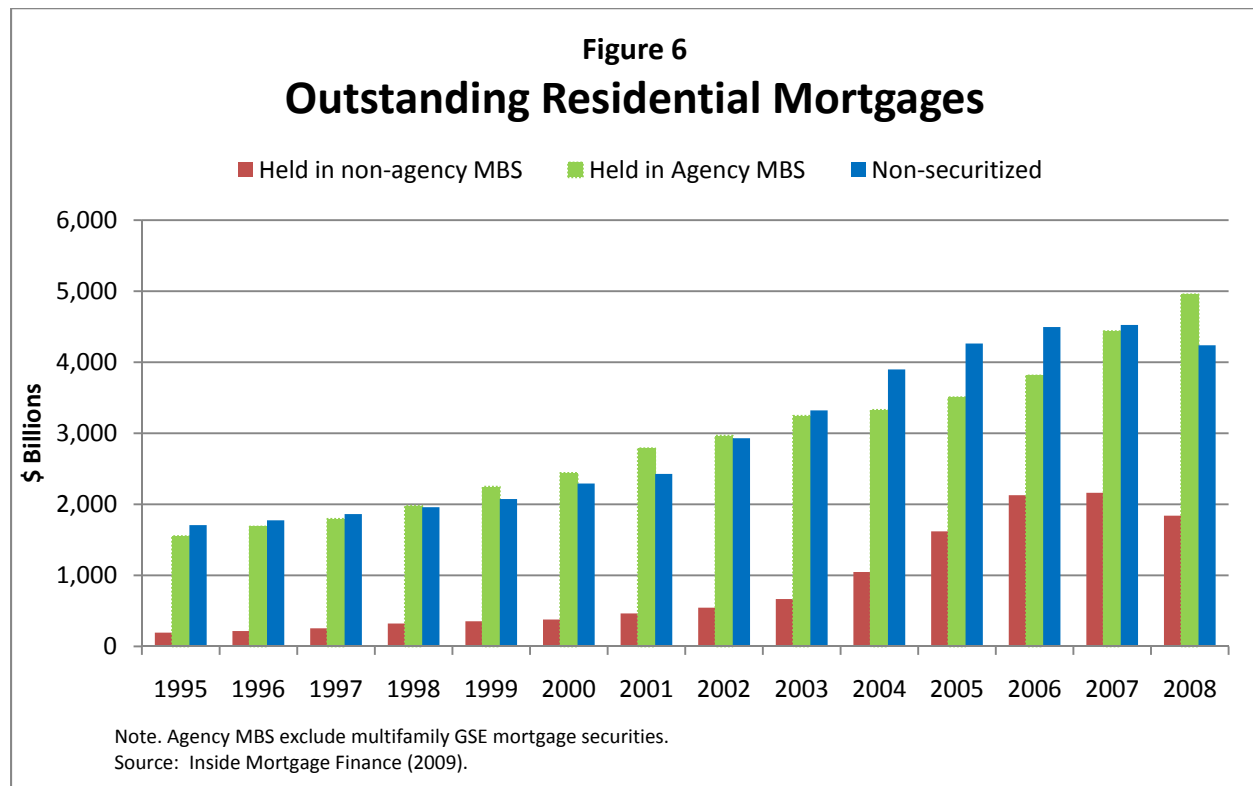


Figure 5 plots the volume of prime, subprime, and alt-A (self-identified as such by the sponsors) non-agency MBS issued from 1995-2008. Early in the period, the prime non-agency MBS, which contained largely jumbo mortgages, were the biggest of the three types of non-agency MBS. But, by 2006 the subprime and alt-A non-agency MBS had each surpassed prime non-agency MBS in volume. In particular, subprime non-agency MBS showed a dramatic increase from 2003 to 2005. Alt-A non-agency MBS saw its largest jump in volume in 2005. Notably, the non-agency MBS market was nearly nonexistent in 2008. The preliminary staff report titled “Government Sponsored Enterprises and the Financial Crisis,” released on April 9, 2010, shows details on the GSEs’ total book of business, including MBS and portfolio loans broken down by prime, subprime, and alt-A.



Another way to see the dramatic growth of securitization, and in particular the recent growth of the non-agency MBS market, is to examine the amount of outstanding mortgages held in MBS. Figure 6 shows the dollar amount of outstanding mortgages that are held in agency MBS and non-agency MBS, as well as the amount of non-securitized mortgages outstanding. The amount of all outstanding mortgages held in non-agency MBS rose notably from only \$670 billion 2004 to over \$2,000 billion in 2006. By 2008, the amount held in non-agency MBS began to decline. With current issuance of non-agency MBS well below pre-crisis levels, the amount of outstanding mortgages held in non-agency MBS will continue to decline as mortgages in these pools either pay off or go into default.

**Table 2: Top Non-Agency MBS Sponsors in 2007.**

1. Countrywide Financial\*
2. Lehman Brothers†
3. Wells Fargo & Co.
4. Washington Mutual†
5. Bear Stearns\*
6. JPMorgan Chase
7. Deutsche Bank
8. Residential Funding Corp.
9. Merrill Lynch\*
10. Morgan Stanley
11. IndyMac†
12. Goldman Sachs
13. Citigroup
14. Bank of America Corp.
15. RBS Greenwich Capital
16. Option One\*
17. Credit Suisse
18. Barclays
19. UBS Warburg
20. American Home Mortgage†
21. CIT Group†
22. Ameriquest Mortgage\*
23. HSBC
24. Thornburg Mortgage†
25. Nomura

## Notes:

\* denotes firms that have subsequently been acquired.

† denotes firms that have subsequently declared bankruptcy or been placed into conservatorship.

‡ denotes firms that have subsequently been shut down by parent company.

Source: Inside Mortgage Finance (2009).

Table 2 provides a list of the top 25 non-agency MBS sponsors in 2007. The top 10 sponsors alone accounted for 56 percent of non-agency MBS issuance.<sup>7</sup> Note that some sponsors principally used mortgages that they or an affiliate originated,<sup>8</sup> whereas other sponsors

<sup>7</sup> Inside Mortgage Finance (2009, Vol. II p. 19).

<sup>8</sup> See, e.g., Prospectus for Washington Mutual Mortgage Pass-Through Certificates, Series 2003-R1, at [http://www.sec.gov/Archives/edgar/data/826219/000112528203005824/b327705\\_424b5.txt](http://www.sec.gov/Archives/edgar/data/826219/000112528203005824/b327705_424b5.txt), in which Washington Mutual is both the sponsor and the originator.

purchased mortgages originated by different lenders.<sup>9</sup> In 2007, investment banks sponsored 41 percent of non-agency MBS, commercial banks and thrifts sponsored 28 percent, and mortgage banks sponsored 12 percent.<sup>10</sup> It is important to note that sponsor rankings reflect market shares that fluctuate as business conditions evolve. Consequently, a firm may occupy various rank positions throughout any particular year.

The ultimate destinations of MBS included depository institutions, pension funds, investment banks, and foreign investors. Figure 7 shows the holders of agency MBS according to the Federal Reserve Board's data. Unfortunately, the data only allow one to identify the amount of agency MBS held by savings institutions and U.S. commercial banks, not other types of institutions. By 2008, these depository institutions held over \$1 trillion of the approximately \$5 trillion in outstanding agency MBS.

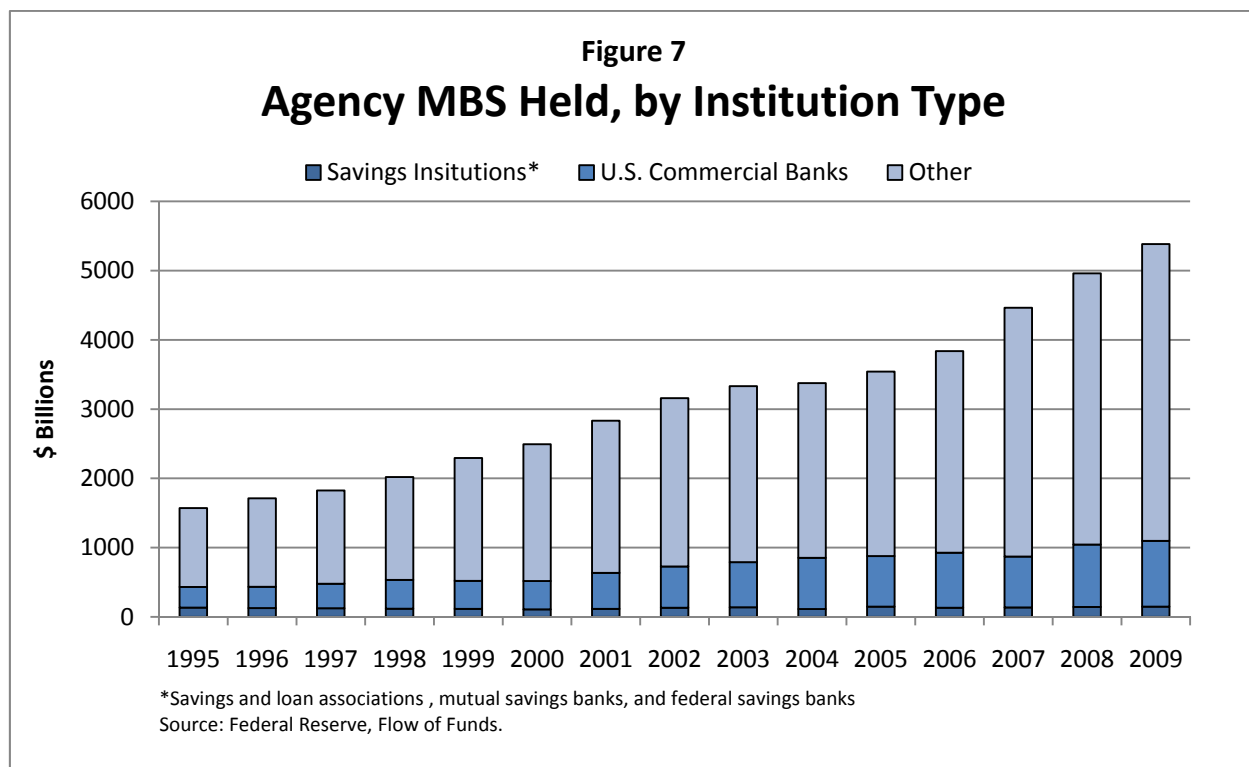
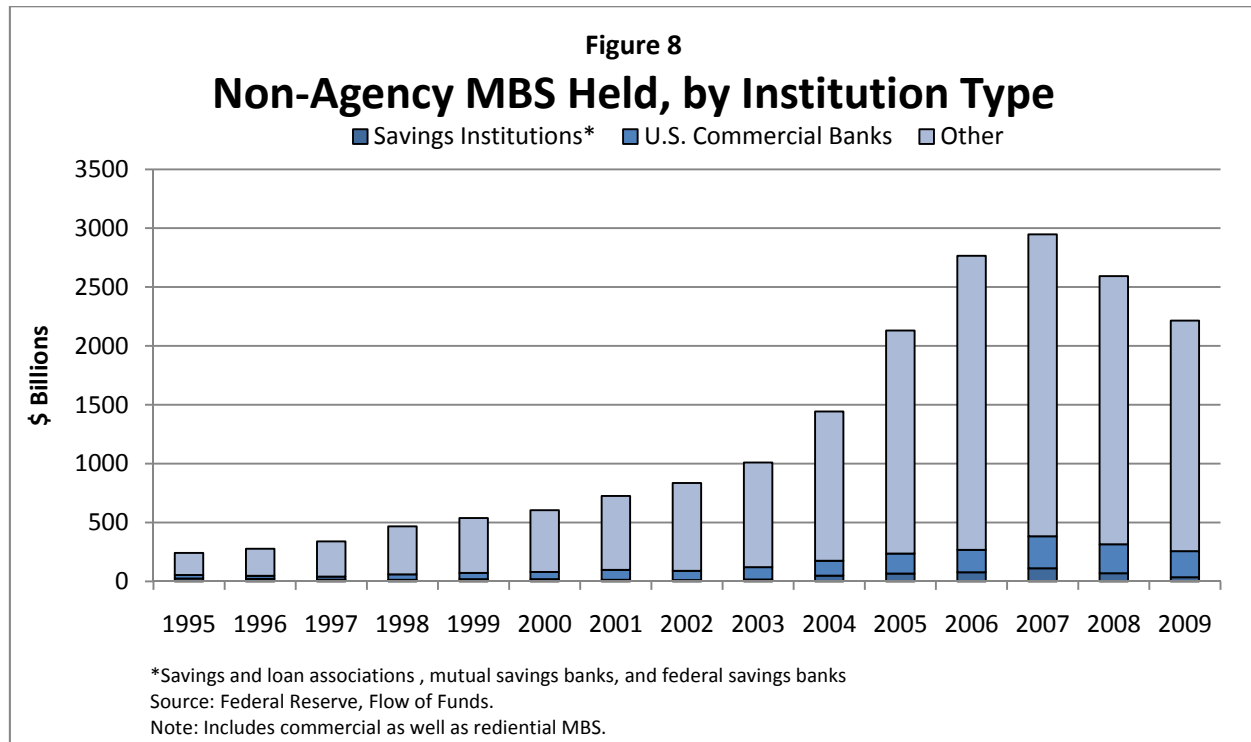


Figure 8 similarly shows the amount of non-agency MBS—including both residential MBS and MBS containing commercial mortgages (i.e., loans to businesses)—held by commercial banks, savings institutions, and other types of investors. Commercial banks and savings institutions hold a relatively small amount of non-agency MBS, much less than their holdings

<sup>9</sup> See, e.g., Prospectus for Mortgage Pass-through Certificates, Series 2006-NC2, available at [http://www.sec.gov/Archives/edgar/data/1366182/000112528206003776/b413822\\_424b.txt](http://www.sec.gov/Archives/edgar/data/1366182/000112528206003776/b413822_424b.txt), in which Goldman Sachs is the sponsor for an MBS backed by mortgages originated by New Century.

<sup>10</sup> Inside Mortgage Finance (2009, Vol II p. 14)

of whole mortgage loans. For example, in 2007 commercial banks held \$3.564 trillion in whole mortgages, compared to only \$272 billion in non-agency MBS.<sup>11</sup>



A Lehman Brothers research report provides further detail on who held non-agency residential MBS.<sup>12</sup> Of the \$1.8 trillion in non-agency residential MBS that Lehman estimates was outstanding as of June 2007, nearly \$1.5 trillion were AAA-rated senior securities. Figure 9 below provides a breakdown of which types of institutions held these AAA-rated securities. In addition to the nearly \$1.5 trillion in AAA-rated senior securities, Lehman estimates that \$240 billion in investment-grade junior MBS were then outstanding. The majority of this, \$180 billion, was held in CDOs. Those CDOs were in turn held by a range of financial institutions.

<sup>11</sup> Inside Mortgage Finance (2009).

<sup>12</sup> Lehman Brothers, Fixed Income U.S. Securitized Products Research, "Who Owns Residential Credit Risk," Sept. 7, 2007.

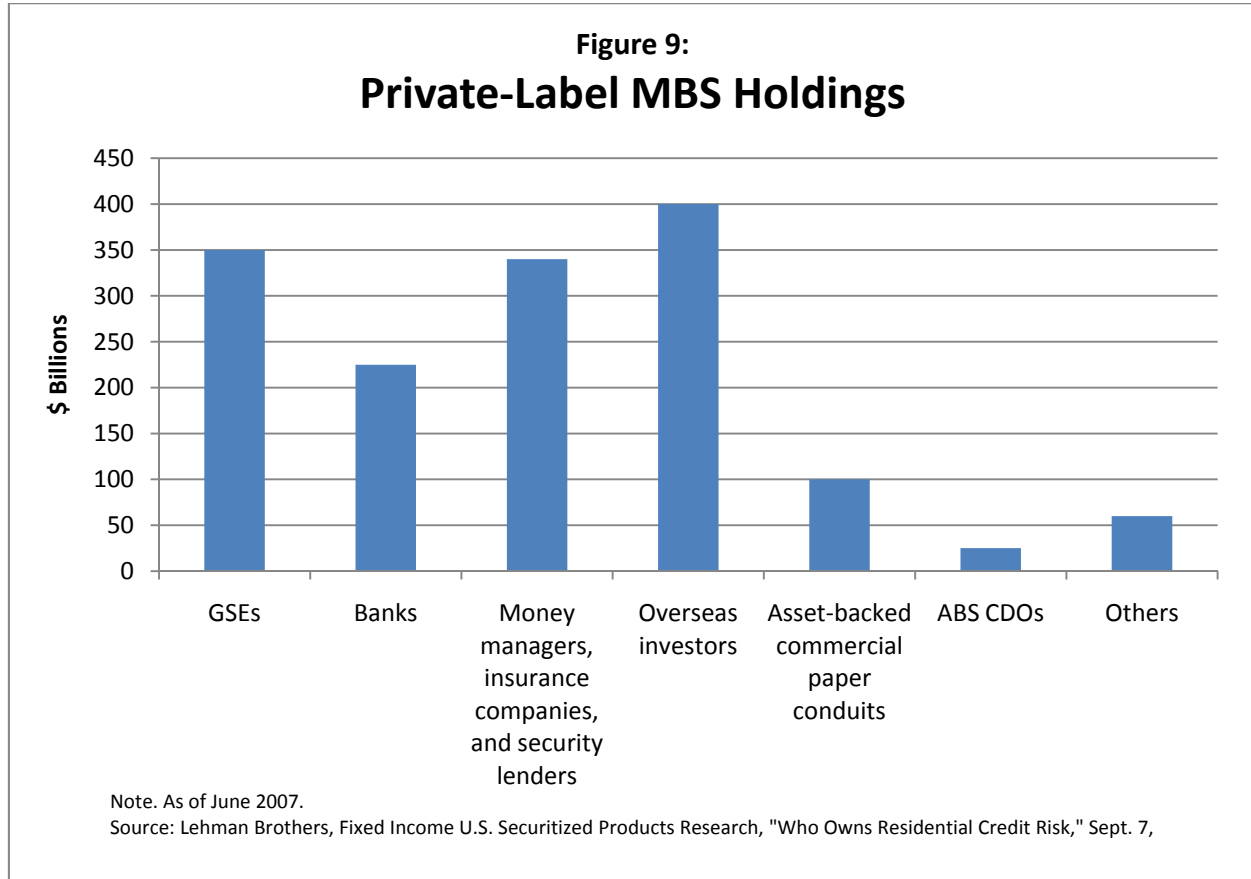


Table 3 below provides the top 25 GSE, bank, and thrift investors in non-agency MBS as of 2007. The bank and thrift institutions in the top 50 holders of non-agency MBS together held \$314 billion in non-agency MBS in 2007. In contrast, Fannie Mae and Freddie Mac together held \$345 billion in non-agency MBS in 2007.<sup>13</sup>

<sup>13</sup>Inside Mortgage Finance (2009).

**Table 3: Top GSE, Bank, and Thrift Holders of Non-Agency MBS as of 2007.**

1. Freddie Mac<sup>†</sup>
2. Fannie Mae<sup>†</sup>
3. Citigroup Inc.
4. ING Bank
5. Bank of New York Mellon Corp.
6. FHLBank San Francisco
7. Washington Mutual<sup>†</sup>
8. Bank of America Corp
9. Wachovia Corp.\*
10. Wells Fargo & Co.
11. FHLBank Atlanta
12. Countrywide Bank, FSB\*
13. State Street Corp.
14. FHLBank Pittsburgh
15. IndyMac Bank, FSB<sup>†</sup>
16. FHLBank Indianapolis
17. FHLBank Boston
18. Capital One Financial Corp.
19. FHLBank Seattle
20. Commerce Bancorp\*
21. FHLBank Chicago
22. U.S. Bancorp
23. Citizens Financial Group
24. M&T Bank Corp.
25. JPMorgan Chase

## Notes:

\* denotes firms that have subsequently been acquired.

† denotes firms that have subsequently declared bankruptcy or been placed into conservatorship.

Source: Inside Mortgage Finance (2009).

However, determining which institutions actually held the credit risk of non-agency MBS and CDOs is complicated because of the many complex contracts that these institutions hold related to these securities, including credit default swaps. Moreover, the CDOs which hold junior tranches of non-agency MBS offered further credit enhancements, resulting in an even more complicated chain of contracts and structures linking the credit risk of the underlying mortgages to the ultimate holders of that credit risk.

#### D. BENEFITS OF SECURITIZATION

A principal economic benefit of securitization was that it expanded the ways in which mortgages could be funded. With the active secondary market provided by securitization, originators could either hold a loan in portfolio, funding it with their standard sources of debt and equity capital, or sell it on to be securitized, so that it is funded directly by the capital markets as a bond. It may thereby have resulted in a lower cost of credit for mortgage financing, resulting in an expansion in mortgage lending. Moreover, banks held MBS in their portfolio, which had the advantage of being much more liquid than whole loans.<sup>14</sup> Securitization was also thought to have been beneficial by allowing the risks associated with mortgage lending to be more broadly dispersed and to be borne by investors best-equipped to bear it.<sup>15</sup>

In addition to these potential economic benefits, holding AAA-rated MBS instead of whole mortgages allowed depository institutions to lower their regulatory capital requirements. Depository institutions are required by regulators to hold a certain amount of equity capital as a cushion in case they suffer losses on their risky assets. If they hold riskier assets, they are required to hold more capital. Because capital accounting rules deemed AAA-rated MBS less risky than whole mortgages, depository institutions were able to lower the amount of capital they held by owning MBS rather than whole mortgages. This may have provided an important motivation for depository institutions to hold MBS instead of the mortgages they originated.

## II. SECURITIZATION AND THE MORTGAGE CRISIS

In the wake of the sharp increase in defaults that precipitated the financial crisis, policymakers and researchers have questioned whether agency and non-agency securitization and the originate-to-distribute model of mortgage lending led to riskier loans being originated. This section discusses how the increase in securitization may have been relevant to the increase in mortgage defaults and thereby contributed to the financial crisis.

In addition to increasing defaults, securitization may have played a role in the financial crisis by making the financial system more fragile and sensitive to an increase in mortgage defaults.<sup>16</sup> This and other potential roles of securitization in the financial crisis will be discussed in future staff reports.

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<sup>14</sup> For evidence on the economic benefits of securitization, see Kashyap and Stein (2000) and Loutskina and Strahan (2009).

<sup>15</sup> See, e.g., Alan Greenspan, Remarks Before the Council on Foreign Relations, Nov. 19, 2002, at <http://www.federalreserve.gov/BoardDocs/Speeches/2002/20021119/default.htm>.

<sup>16</sup> See, e.g., Gorton (2008) and Gorton and Metrick (2009).

## A. MORAL HAZARD

One way that securitization may have led to riskier mortgages is through incentive problems caused when originators sell loans. When originators sell off loans they originate, they may have weaker incentives to carefully screen mortgage borrowers. In the originate-to-hold model of mortgage lending, the originator bears the loss if it originates a mortgage that goes bad. This gives the originator strong incentives to gather information about the borrower's creditworthiness and the value of the home that serves as collateral. If instead the originator plans to sell the loan, it does not bear any loss if the borrower fails to repay. Hence the originator may have little incentive to scrutinize appraisals and the borrower's capacity to repay. This incentive problem is referred to as a *moral hazard* problem. A related incentive problem occurs when originators have better information than secondary market purchasers about the quality of the mortgages they have already originated and are considering selling. The originator may have an incentive to sell the worst loans in its portfolio, and retain the best loans with the lowest default risk. This is referred to as an *adverse selection* problem.

In markets in which such incentive problems result in lower quality assets for sale, purchasers may demand a lower price for the assets that reflects their lower quality. For example, in the used car market, the sellers of cars have better information about their car's quality than do the buyers. Because of this, buyers worry that the car being sold is of low quality—a "lemon"—and this concern about quality lowers the price they are willing to pay.

However, ultimate investors in MBS may not have fully understood these incentive problems. Thus the increased default risk of securitized mortgages may not have been priced in the market. Furthermore, credit rating agencies, whose ratings investors relied on, may not have fully understood these problems, and the rating agencies' models may well have failed to take into account the moral hazard and adverse selection problems.<sup>17</sup> If true, then securitization may have caused a deterioration of mortgage underwriting practices that resulted in more high-risk mortgages being originated, and consequently a greater number of defaults when the housing bubble burst.

However, there are indications that market participants understood the incentive problems posed by securitization and took steps to mitigate them. Fannie Mae and Freddie Mac, for example, both publish extensive underwriting guidelines that originators are required to follow. Prior to 1982, both employed staff underwriters to "re-underwrite" every mortgage they purchased to verify the originator's judgments about the borrower's creditworthiness and collateral. Since 1982, both have performed audits of a random sample of loans—called a *postfunding review*—to verify the originator's underwriting. The purpose of these practices is to ensure the credit quality of the loans they purchase.

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<sup>17</sup> See Coval, Jurek, and Stafford (2009) for an account of the credit rating agencies' mistakes in evaluating the default risk of MBS and MBS derivatives.

Similarly, MBS sponsors sometimes required originators to offer a *random* selection of loans on their books, which dampened their ability to adversely select higher risk loans to sell. Furthermore, MBS sponsors typically required originators to make representations and warranties as to their underwriting practices and to repurchase loans for which they breach those representations and warranties or that default soon after sale, and efforts were made routinely to enforce these provisions.

Moreover, originators could retain some credit risk by keeping whole loans or tranches of MBS on their balance sheets, which would help to maintain their incentives to screen. Indeed, originators as well as MBS sponsors have suffered billions of dollars in losses from the increase in mortgage defaults. Similarly, some originators retained servicing rights, which also helped to maintain a link between the originator's compensation and the performance of its loans.

Finally, there are a number of ways that investors could independently determine the risk profile of an MBS, which mitigated the moral hazard problem. The emergence of the use of credit scores in mortgage underwriting made default risk far more transparent to secondary market participants. If credit scores were not available for a non-agency MBS, many investors would not consider it. Other important predictors of default that are in principle verifiable by secondary market purchasers are loan-to-value ratios and the borrower's income.

Ultimately, the extent to which the originate-to-distribute model resulted in a moral hazard problem that led to riskier loans being originated is an open empirical question.

## B. EXPANSION OF CREDIT SUPPLY

Another means by which securitization could have resulted in lenders making loans to riskier borrowers was simply by generally expanding the supply of credit. When originators could securitize their loans, they had a new source of finance for loan origination. The result could have been a reduction in the cost of credit that led to a credit expansion. With lower borrowing costs, households will on average borrow more. Moreover, the lower cost of credit may have made lending to riskier borrowers profitable, resulting in more subprime lending.<sup>18</sup>

Furthermore, the expansion of credit brought about by securitization may have resulted in an increase in house prices. From 2002 to 2006, housing prices appreciated rapidly, and then in 2006 began to decline.<sup>19</sup> Many economists view this run-up in house prices as an asset bubble. The subsequent decline in housing prices beginning in 2006 resulted in a sharp increase in mortgage defaults. If the expansion of credit caused by securitization

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<sup>18</sup> Mian and Sufi (2009).

<sup>19</sup> The FCIC's Preliminary Staff Report, "The Mortgage Crisis," April 7, 2010, presents data on housing prices leading up to and during the mortgage crisis.

contributed to the bubble in the housing market, it may thereby have indirectly contributed to the sharp rise in defaults when that bubble burst.

### C. FRICTIONS IN MODIFYING DELINQUENT MORTGAGES

In addition to potentially resulting in riskier mortgage loans being originated, securitization may have increased the probability that a defaulting mortgage went into foreclosure. When an originator retains and services a mortgage and the borrower defaults, the originator can decide whether to foreclose and sell the home, which is costly and can depress the value of the home, or instead to negotiate a modification to the terms of the loan that results in the borrower beginning to once again pay on the mortgage. In contrast, when a loan is securitized, investors in the MBS hold the rights to most of the cash flows generated by the loan, and a separate entity—the servicer—is responsible for negotiating with the borrower if the loan is in default. The servicer may not have the same incentives to negotiate a loan modification as a portfolio lender would, and hence may foreclose on loans for which the efficient outcome is a modification. For example, servicers are typically reimbursed for their expenses in foreclosing on a mortgage, but are not reimbursed for the expenses entailed in modifying a mortgage. If securitization inhibited loan modifications in this way, then it may have exacerbated the financial crisis by increasing foreclosure rates, resulting in negative effects on housing prices and greater losses on delinquent loans. The existing empirical evidence on whether securitization led to frictions in loan renegotiation is mixed.<sup>20</sup>

Another reason why securitization may have inhibited the mortgage modification process is that holders of different tranches of MBS may have competing interests. The most senior tranche may prefer that the servicer foreclose on a mortgage instead of modifying the mortgage because the proceeds from the foreclosure sale will be sufficient to pay the senior tranche. Getting paid may be considered particularly beneficial for the senior tranche holder in an environment where investors place a high premium on having cash in hand today.

However, after the proceeds from the foreclosure sale pay off the senior tranches, no money may be left for the junior tranches. Consequently, the junior tranche holders may prefer that the servicer offer a modification in lieu of foreclosure, in hopes of getting some payment if the borrower starts to pay on the mortgage again. In the face of these conflicts, the contract that the SPV has with the servicer sometimes imposes rules dictating when the servicer is to foreclose on delinquent borrowers. These rules may fail to maximize the total value from the pool of mortgages.

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<sup>20</sup> Piskorski, Seru, and Vig (2009) find that, conditional on becoming seriously delinquent, loans held in portfolio have lower foreclosure rates than loans that are securitized. However, Adelino, Gerardi, and Willen (2009) show that servicers modify loans held in their portfolio at the same low rate as they modify securitized loans that they service.

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