

# **Mortgage Market Players and Products**

by

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\* The views expressed are neither necessarily those of Freddie Mac, its Board of Directors, or the FHFA, nor of Charles River Associates or its Board of Directors.

## **I. The Players and the Products**

The landscape for mortgage lending has been dramatically altered in the past twelve months. The traditional roles of depositories, non-depository mortgage lenders, the secondary market, and investment banks have been threatened, changed, and made subject to new regulations. While the restructuring made apparent in the last year is dramatic, the entire financial landscape had been changing, albeit at a slower pace, for the past 30 years. It is worth briefly reviewing these changes, before discussing more recent events.

Three changes in the financial landscape that impacted mortgage lending are particularly notable, and all have arguably encouraged or allowed financial institutions to seek economies of scale or scope in the provision of lending services to communities. First, important legislative changes affected who could participate in mortgage markets, where they could serve borrowers, and what types of products could be offered. Second, the development of national credit repositories meant that lenders could receive detailed information that helped them assess the credit risk of any potential borrower, not just those with whom they might have had a prior banking relationship. Third, the secondary market grew to provide much of the liquidity available for the funding of mortgages, reducing the reliance on bank deposits to fund mortgages.

The legislative changes that freed commercial banks and savings associations from regulatory constraints determined the terms of the activities in which they could participate and the geographies in which they could operate. The first major phase of deregulation took place from 1979 through 1982. These years saw a rapid increase in interest rates, driven primarily by a change in monetary policy that attempted to reduce inflation by targeting bank reserves rather than interest rates. This caused savings and loan associations (S&Ls) to face negative interest rate spreads in the funding of their long-term mortgage assets. Further, Regulation Q usury ceilings on savings deposits meant that S&Ls faced disintermediation as households withdrew their deposits and placed them into higher-paying mutual fund accounts. In an effort to improve the competitiveness of the S&Ls, the Depository Institution Deregulation and Monetary Control Act of 1980 was passed to allow S&Ls and credit unions to offer checkable deposits and compete directly with the commercial banks for these deposits. It also phased out Regulation Q ceilings on savings deposits (over six years) and allowed payment of interest on S&L demand deposits. Next, the passage of the 1982 Garn-St. Germain Depository Institutions Act allowed savings associations to offer money market deposit accounts and super negotiable order of withdrawal accounts with limited checking features and allowed federally chartered savings associations to make consumer and commercial loans and offer floating and adjustable-rate mortgages. While the market for mortgages became more competitive and ARMs made their way into product offerings of lenders, single family mortgage markets were still largely dominated by primary market lenders operating in local and regional, rather than national, markets until the 1990s.

This local and state based banking changed with the passage of the Reigle-Neal Interstate Banking and Branching Efficiency Act of 1994 which permitted mergers and acquisitions of financial institutions across state lines. Reigle-Neal was passed not only as a response to the S&L crisis of the 1980s, but also to recognize that asset size is a factor in the financial health of banks and that healthy banks improve the stability of the banking system. [At no time is that more obvious than in today's financial crisis. While some larger banks required infusions of capital, nearly 200 smaller banks failed completely. The passage of these banking Acts enabled financial institutions to grow in both scale and scope and the U.S. mortgage market became dominated by some very large, nationally based lenders. The largest lenders had considerable market share by the beginning of 2000 and, arguably, increased their market share by providing more innovative products that reached more borrowers and potential homeowners.

Mortgage markets also benefited from the emergence of national credit repositories, and the subsequent development of statistically based credit models has led to the rapid growth of automated underwriting systems for all types of lending. This allowed lenders to be less reliant on local knowledge of their customer bases and provided economies of scale in both underwriting and the assessment of credit. Both of these further encouraged industry concentration. Automated underwriting tools were also developed at Fannie Mae and Freddie Mac (the GSEs) and these contributed to the growth of a national secondary market for mortgages and other assets.

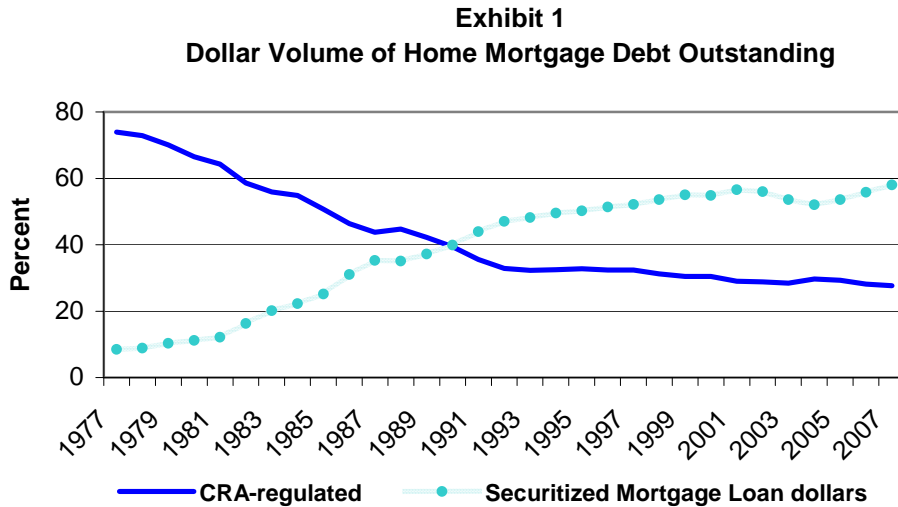
The rapid growth of secondary markets had two key effects.<sup>1</sup> First, because of secondary market funding, financial institutions were given more alternatives for obtaining capital and many have been able to obtain their funding at lower cost than was possible through deposit growth. Instead of relying primarily on a (local) deposit base for raising funds, institutions can rely on warehouse lenders and brokers for short-term capital, using securitization and a broad base of investors for long-term funding. Second, the secondary market allows lenders to pool loans from anywhere in the country and sell these securities through the secondary market. This increases the liquidity of lenders' assets, dramatically reduces localized variations in lending rates and the availability of credit, and reduces credit risks through geographic diversification. The growth of the secondary market, therefore, encouraged economies of scale, as well as the growth of non-depository institutions.

Overall, these changes have led to significant alterations in the financial landscape. Households saw expanded savings/investment and borrowing options both in terms of products and in the types of institutions offering them. Although depository institutions continued to play a dominant role in financial markets, many new, non-depository lenders entered the marketplace. Exhibit 1 uses the Federal Reserve Board's Flow of Funds, Table b.100e to provide information on the share over time of the amount of home

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<sup>1</sup> The securitization of mortgages had, arguably, the largest impact on the growth of nonbank financial entities, but growth in other asset-backed securities also meant that deposit taking was not essential for lending.

mortgage dollars provided by CRA-regulated (depository) institutions compared to funding from the secondary market.

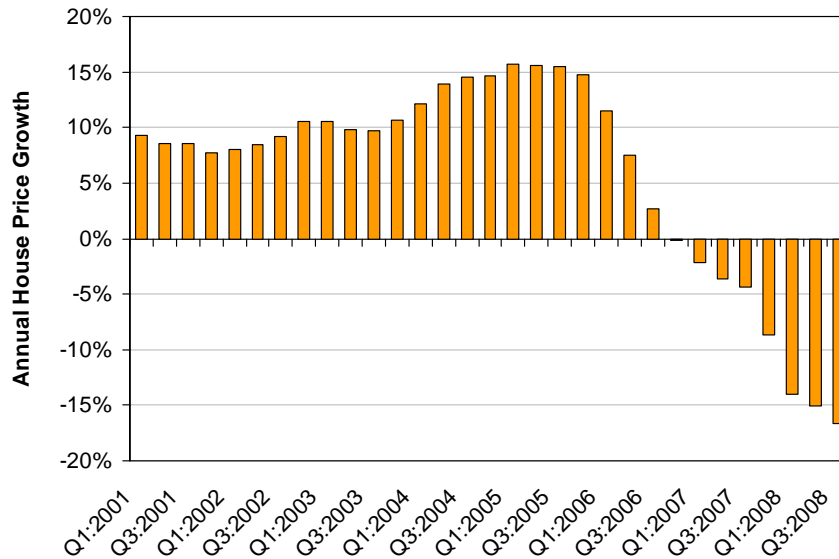


Historically, the range of products available to consumers did not expand significantly through the 1990s. Once ARM mortgages were approved, many lenders offered those. Partly as a result of legislation for the secondary market, in particular of the government sponsored entities (GSEs), loans with higher loan-to-value (LTV) ratios could be offered by lenders and sold to the GSEs as long as they had a credit enhancement, generally provided in the form of private mortgage insurance. The government mortgage market, which offered FHA and VA loans, also permitted high LTV ratios on mortgage products. However, it was not until roughly 2000 that the share of more complex ‘exotic’ products grew rapidly, at least in the prime market.

## II. The Benign Environment

Until the middle of this decade, the economic environment was (increasingly) favorable from a credit risk perspective. House prices were steadily increasing. Mortgage delinquency rates were declining. Mortgage credit spreads were tightening. Exhibit 2 provides information on house prices using the Case-Shiller U.S. National House Price Index. Annual house price increases continued through 2005, with the first appreciable decline occurring at the end of that year. House prices had been rising for a considerable period of time and potential and current homeowners had come to expect this increase to continue. Lenders, too, seemed to anticipate that increases in the value of homes would make mortgage payments over time easier to afford.

## Exhibit 2 House Price Growth Rates

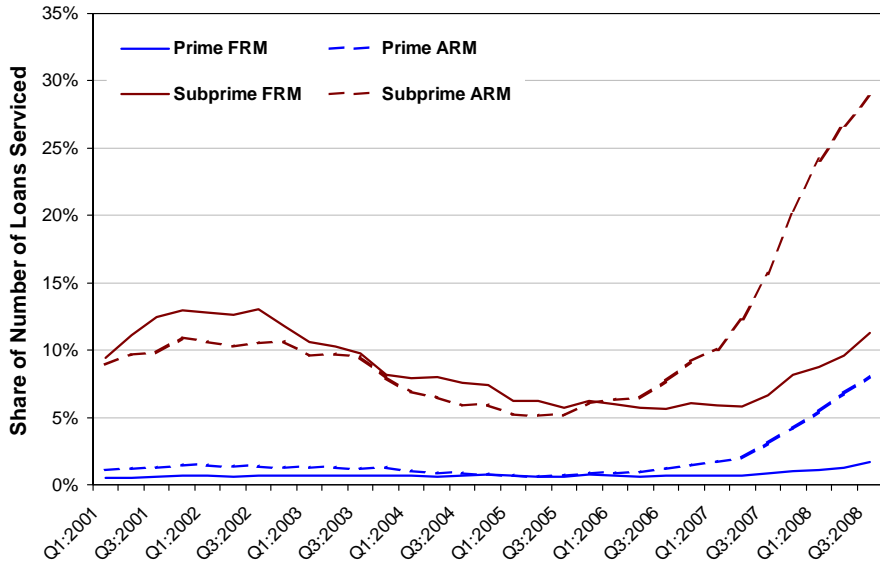


Source: Standard & Poor's, Year-over-Year Change in the S&P/Case-Shiller U.S. National House Price Index

There was no evidence in the early part of the decade that the world had changed. The increased reliance on the use of credit bureau data, in the form of easily interpretable credit scores, meant that lenders could (partially) assess credit risk from just summary information provided to them from the credit bureaus. Delinquencies did not appear to be a serious problem in the early part of this decade, and as a consequence lenders appeared more concerned with market share and increasing originations than with the potential risk of default.

Exhibit 3 provides delinquency rate information for this decade. Total delinquencies remained low through 2005, and from 2000 – 2003 there was some evidence of declining delinquency rates for subprime loans. Up until that point, lenders arguably were still of the belief that the loans they originated in both prime and subprime markets would perform relatively well. Coinciding with the decline in house prices on many homes secured with very high loan-to-value mortgages, the situation reversed in late 2006, with delinquency rates increasing in both the prime and subprime markets, and particularly for ARM products.

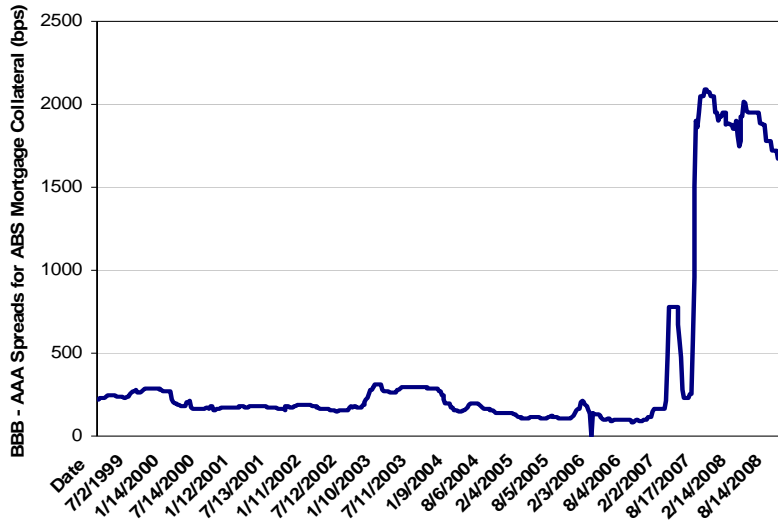
**Exhibit 3**  
**Serious Delinquency Rates<sup>1</sup> by Market Segment**



<sup>1</sup>The share of loans that are 90 or more days past due or in the process of foreclosure as of the end of each quarter. Source: Mortgage Bankers Association, *National Delinquency Survey (Q1:2008)*

As further evidence of the favorable environment, the market’s assessment of the cost of holding mortgage default risk declined (or remained low) until late 2006. This can be observed in Exhibit 4, which uses the spread between BBB 5 year and AAA three-year rates for asset backed securities (ABS) with mortgage collateral as a measure of the market-perceived cost of holding mortgage default (credit) risk. The spreads widened significantly in February 2007 and rose considerably higher in August 2007, when markets faced a profound liquidity shock due, in part, to the collapse of the Bear Stearns hedge funds.

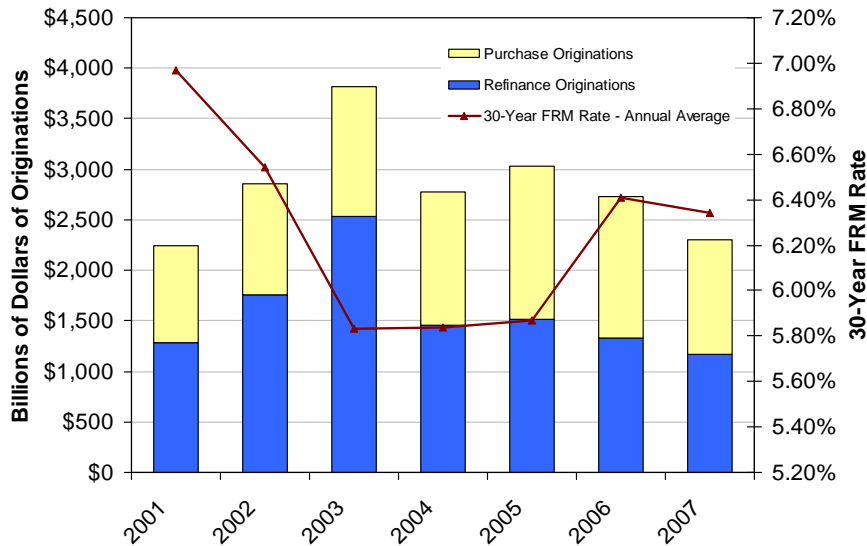
### Exhibit 4 ABS Spreads



Source: Lehman Live—Barclays Capital Indices

Mortgage markets responded to the benign environment by rapidly expanding credit. As mortgage rates fell, originations increased, with the share of refinance loans increasing even more than purchase money loans from 2001 through 2003 (see Exhibit 5). Mortgage rates reached a low in 2003, stayed relatively low, and then increased in 2006, and refinance share responded accordingly.

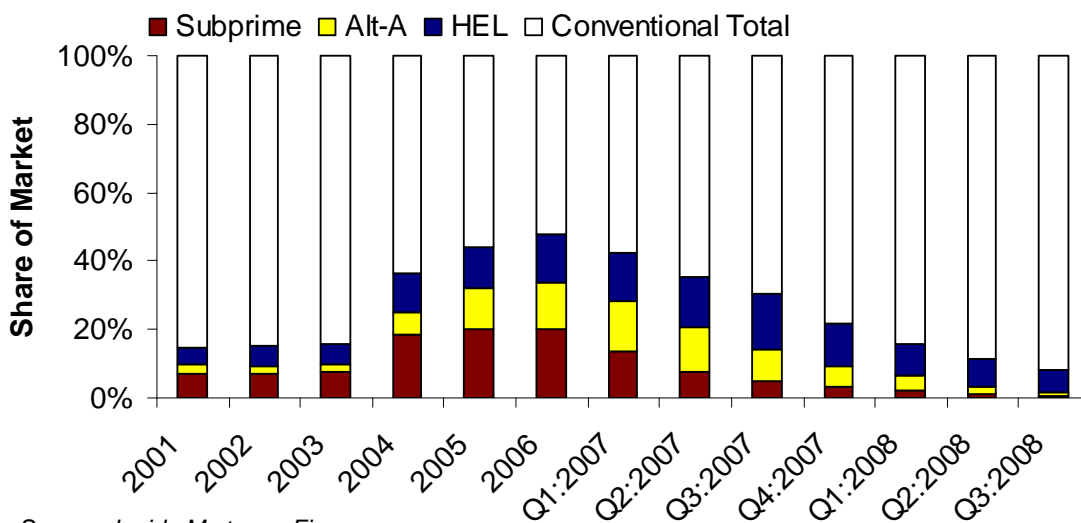
**Exhibit 5**  
**Single-Family Mortgage Originations and**  
**Annual Average Level of the 30-Year Fixed-Rate Mortgage Rate**



Source: Mortgage Bankers Association, *Mortgage Origination Estimates*; Freddie Mac, *Primary Mortgage Market Survey*

High origination volumes were also accompanied by changes in who originated mortgages. As demonstrated in Exhibit 6, the share of the market originations (measured in terms of the dollar volume of loan amounts) began to move steadily away from conventional, conforming loans and toward more alternative loan products. The share of subprime, the share of Alt-A (primarily low- or no-documentation loans) and the share of home equity line of credit (HELOC) loans all increased markedly after 2003, reaching their combined peak in 2006. Since that time, the shares have been steadily falling, with subprime dropping first, followed by reductions in Alt-A and HEL (home equity lending) shares.

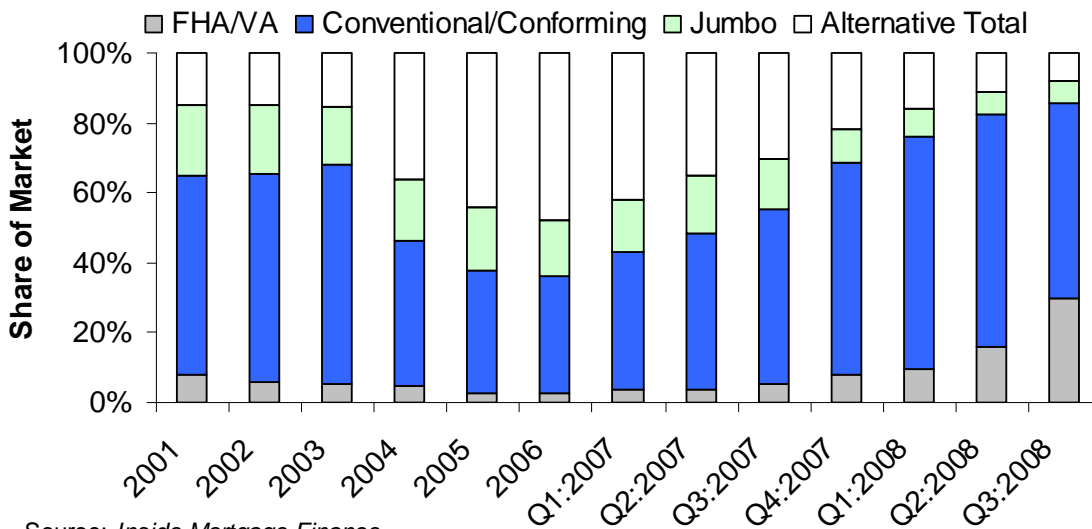
**Exhibit 6**  
**Dollar Volume of SF Mortgage Originations**



Source: Inside Mortgage Finance

Traditional single-family originations also changed over this time (see Exhibit 7). The share of government lending, already small by 2001, dropped to a negligible level by 2006. The share of jumbo loans hovered between 16 and 20 percent over the entire period from 2001 to 2006.

**Exhibit 7**  
**Dollar Volume of SF Mortgage Originations**

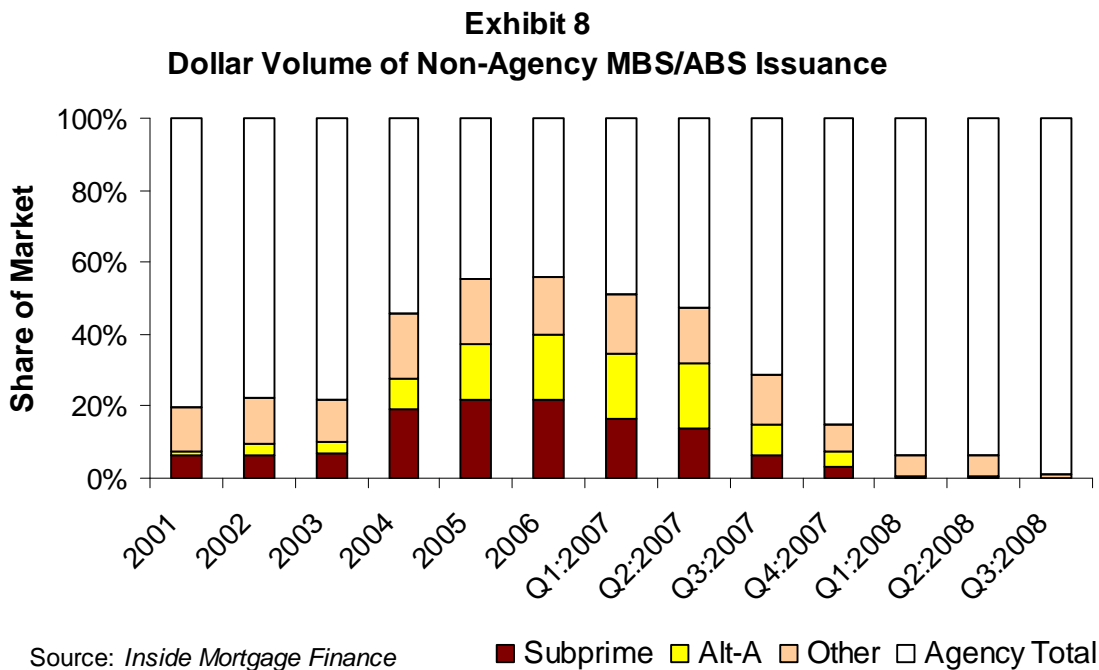


Source: Inside Mortgage Finance

### III. The Collapse of the Subprime and Alternative Loan Markets

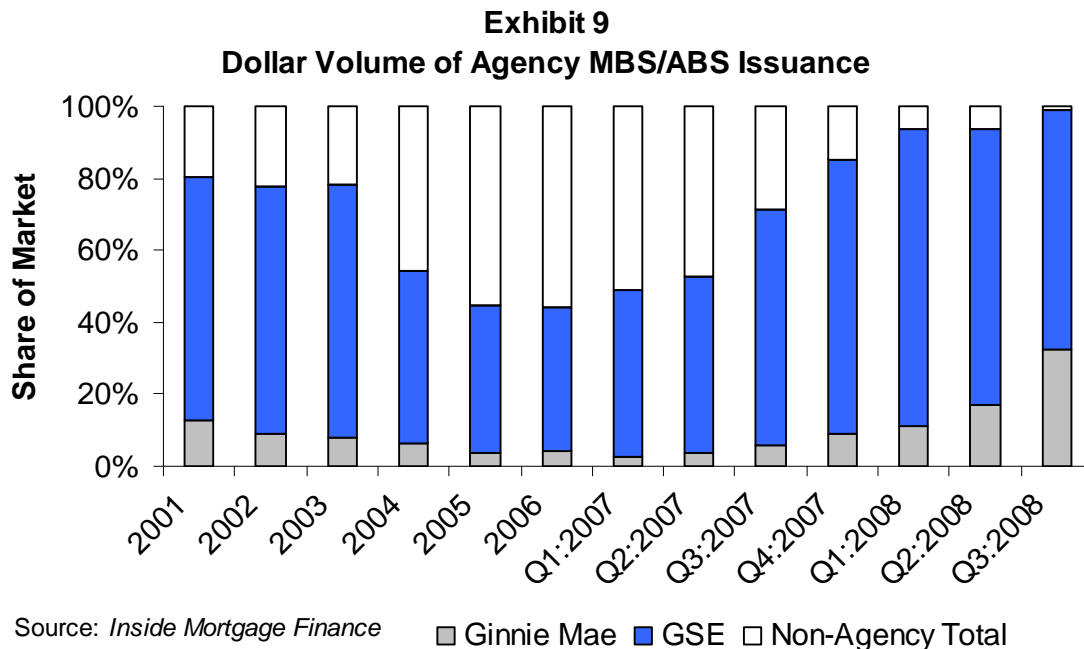
However, markets did not remain benign as the decade marched on. By 2006, as shown in Exhibit 3 above, delinquencies on subprime ARM mortgages began to soar. The reasons offered for this performance are many, but one of the most oft cited is that borrowers (homeowners and investors) found that their mortgages exceeded the current value of their properties, and they no longer had an incentive to make payments on loans that were “under water.” Initial concern was also raised about future payment shocks brought on by interest rate adjustments accompanying teasers, 2/28s and 3/27s but as interest rates fell that mattered less over time. As markets paid more attention to the risks inherent in subprime loans, the secondary market became less willing to securitize those loans, and non-depository lenders found it difficult to originate loans they could not sell. This quickly led to serious problems at some of the largest subprime lenders. New Century, Aegis, Fremont, Impac, Option One and scores of other lenders that had specialized in subprime loans (a total of 169 in 2007 alone) left the market.

The changes in securitization over this period are presented in Exhibits 8 and 9. Non-agency (private label) ABS went from a market share of less than 20 percent in 2001 to a share near 50 percent of the total MBS/ABS market by 2006. As the market adjusted to the increasing delinquencies and heightened concerns about credit risk, issuance of private label securities fell commensurately, to a nearly non-existent level by the third quarter of 2008.



At the same time that private label issuance was growing in the early part of the decade, the agency securities market was declining in market share. As a response to the near

absence of FHA/VA originations, the Ginnie Mae securities market share all but disappeared by 2006, dropping to 4 percent of the market. The GSE share dropped from 68 percent of the market in 2001 to a share of only 40 percent by 2006. The non-agency total stood at 56 percent of the market at its peak in 2006.



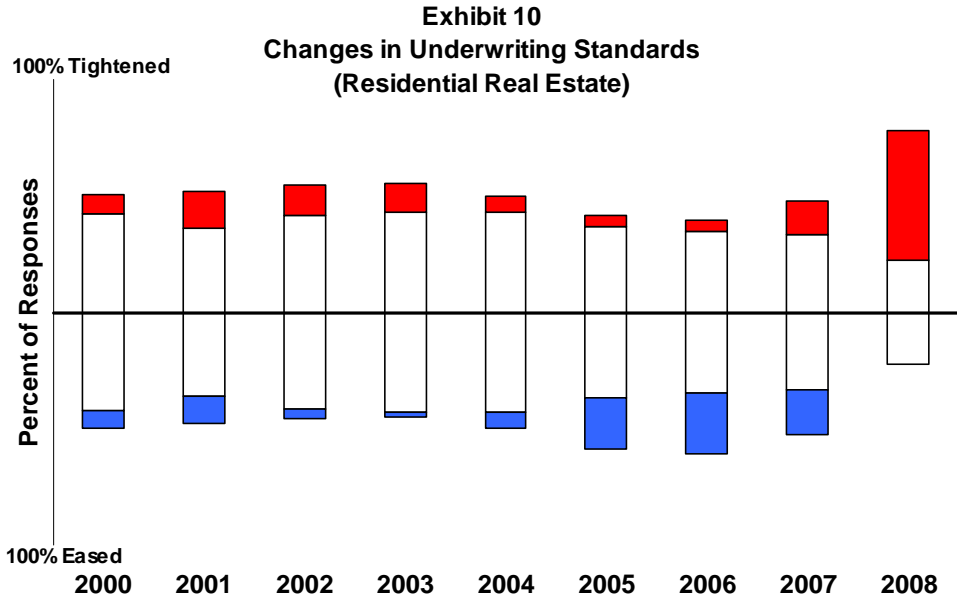
#### IV. Tightened Standards

Once delinquency rates and foreclosure rates began to rise, lenders began to tighten standards for underwriting. Not only did the market see a large number of subprime lenders leave the market completely, but those lenders remaining in the market (both prime and subprime) tightened their lending standards for residential real estate, high LTV home equity lending, affordable lending and conventional home equity lending.

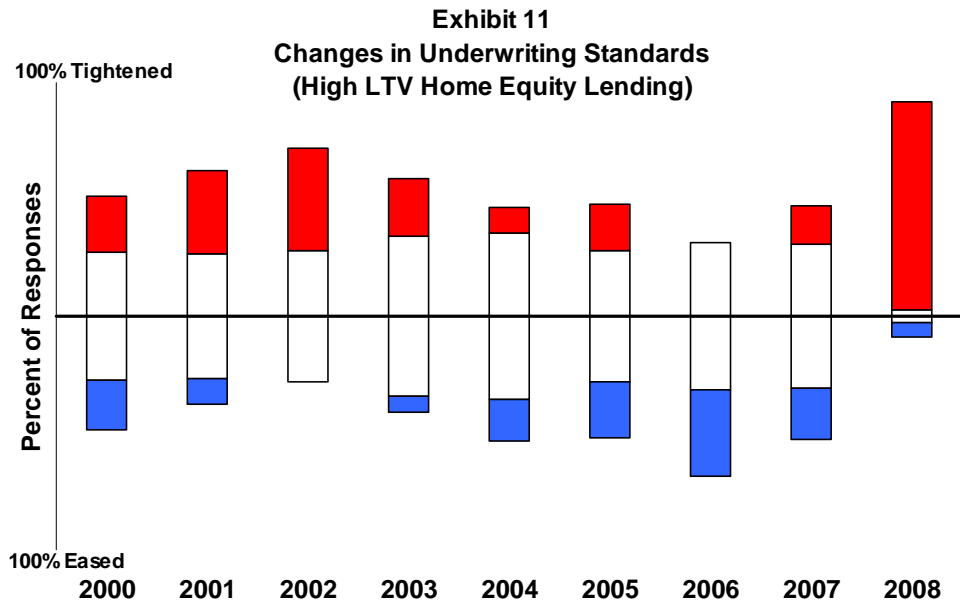
The Office of the Comptroller of the Currency (OCC) surveys examiners about the underwriting standards of the national banks it regulates, and the results of these surveys for the past 9 years are illustrated in Exhibits 10 through 13. Examiners gave three responses, underwriting ‘tightened,’ underwriting ‘eased,’ or there was ‘no change.’ We center the percent responding no change on the horizontal axis, show the percent responding tightened in red above the horizontal axis, and the percent responding eased in blue below the horizontal axis. The bar for each year therefore ‘sums’ to 100 percent, and bars with larger red sections and positioned higher up show a tendency to tighten underwriting, while bars with larger blue bars and positioned lower down show a tendency to ease underwriting.

Exhibit 10 shows the trends for residential real estate, Exhibit 11 for high LTV home equity lending, Exhibit 12 for conventional home equity lending, and Exhibit 13 for affordable lending. The trends in Exhibits 10 through 12 are clear and relatively

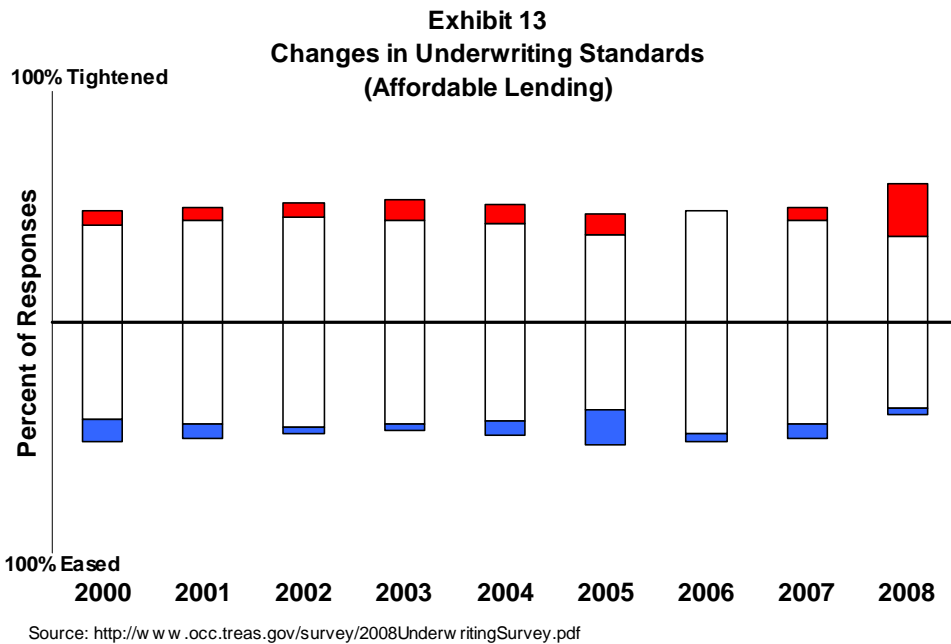
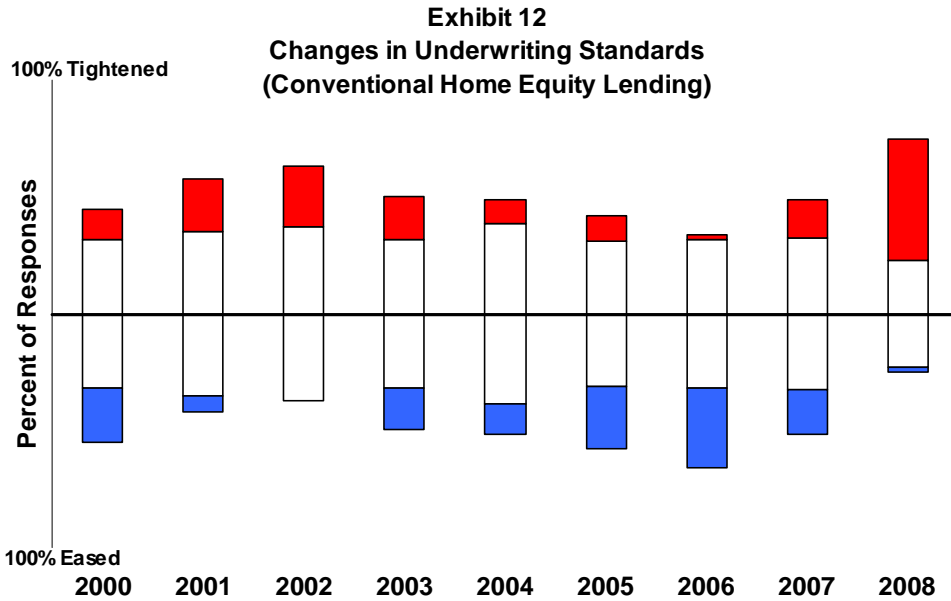
dramatic—examiners find that underwriting eased considerably in 2005 and 2006, and by 2007 there was movement toward tightening standards that completely dominated in 2008.



Source: <http://www.occ.treas.gov/survey/2008UnderwritingSurvey.pdf>



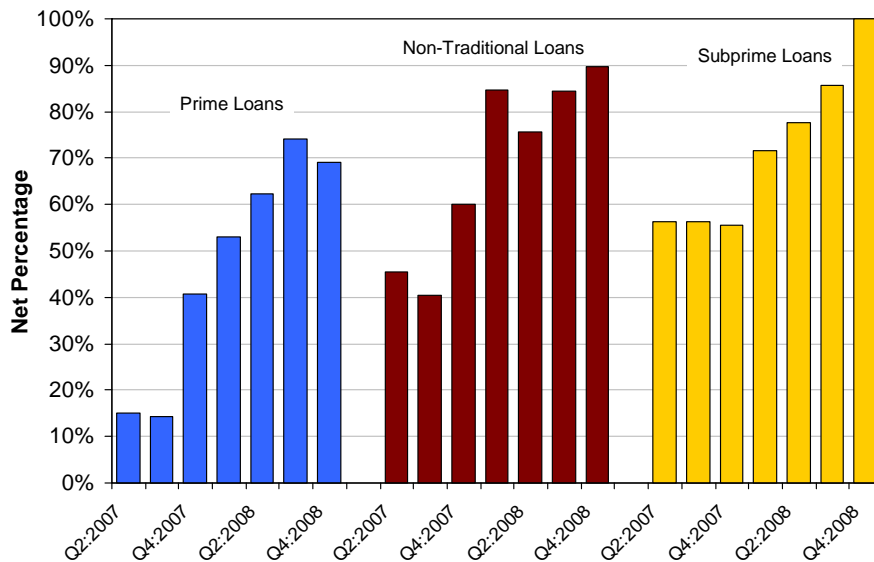
Source: <http://www.occ.treas.gov/survey/2008UnderwritingSurvey.pdf>



Interestingly, there is no such dramatic trend for affordable lending (see Exhibit 13), the branded programs that (primarily prime) lenders explicitly develop to provide first-time homeownership opportunities for low- and moderate-income households. These programs were not, generally, subprime. Here lenders did not seem to dramatically ease their standards in the 2005 and 2006, perhaps explaining why these programs, along with FHA, so lost share to subprime lenders during this period. Nor did they reverse direction dramatically in 2007 and 2008.

The national banks were not the only ones tightening credit and underwriting standards. The banks regulated by the Federal Reserve Board also exhibited tightening. Those changes in standards are supplied in Exhibit 14. In early 2007 only 15 percent of responding senior loan officers said they are tightening underwriting standards on prime loans. By fourth quarter 2008, however, over 70 percent of the lenders for all types of loans had reported a tightening, with 90 percent of non-traditional and nearly 100 percent of subprime lenders tightening standards (consistent with Exhibit 11).

**Exhibit 14**  
**Net Percentage of Domestic Respondents Tightening Standards**  
**for Residential Mortgage Loans**

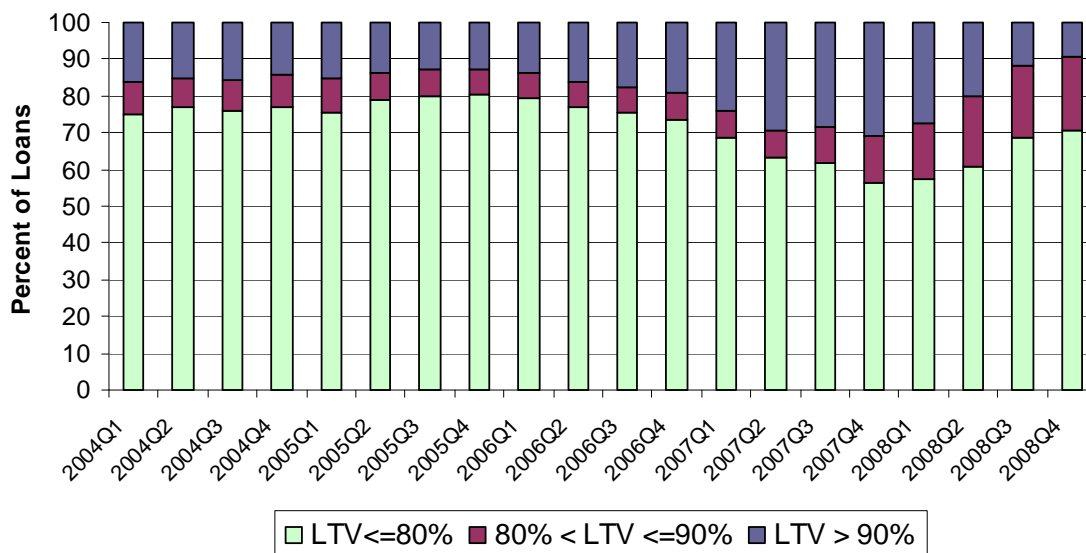


Source: Federal Reserve Board, Senior Loan Officer Survey on Bank Lending Practices

One of the most obvious ways in which standards changed was in the decline of high LTV loans. Accurately tracking LTV ratios in the market is made difficult by the use of piggyback loans, which substitute an 80 percent LTV first-lien loan and a ‘piggybacked’ second for single above-80 percent LTV first lien loan. Data are available primarily on first-lien loans, which because of the popularity of piggybacks during the early and middle portions of this decade significantly understate the overall LTV levels of mortgage lending in this period. This bias has declined recently, however, because of the near elimination of piggyback lending.

Exhibit 15 uses the Mortgage Interest Rate Survey data to illustrate the share of below 80 percent LTV, between 80 and 90 percent LTV and over 90 percent LTV first-lien lending from 2004 through 2008. As noted above, these data likely significantly understate the share of high-LTV lending in the early period. Importantly, however, they likely accurately reflect the declining share of high-LTV lending in 2007 and 2008.

**Exhibit 15**  
**The Share of High LTV Lending**

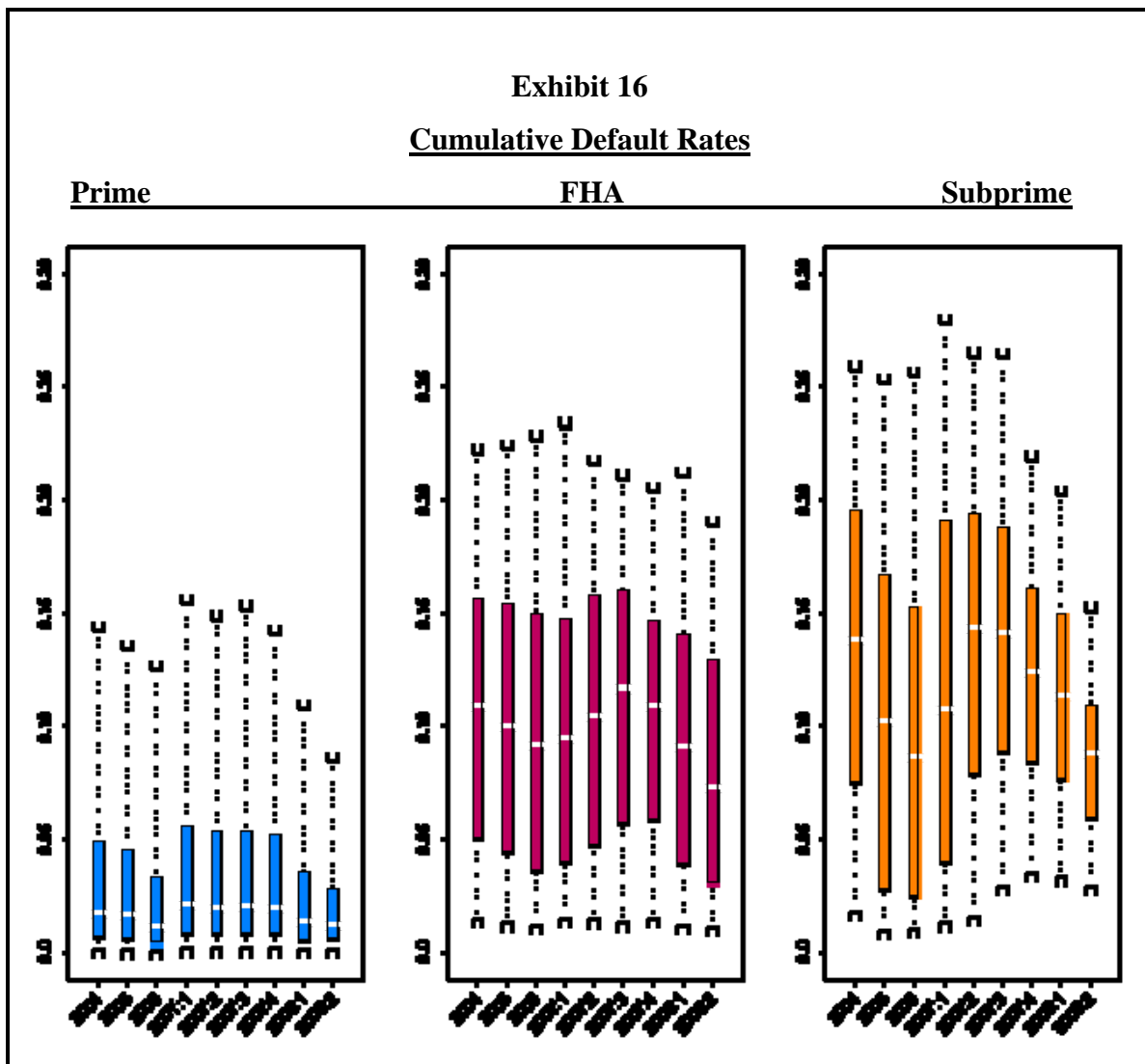


**V. Implications of Tightened Standards**

Mortgage markets have been altered dramatically in the past few years and these changes will certainly impact market performance in future years. In an attempt to predict, broadly, what might be expected, we use some loan level and lender specific data from a sample of both prime and subprime lenders, along with a simplified and proprietary model to provide estimates of cumulative default rates over time for prime loans, FHA loans, and subprime loans. The data we use are for specific lenders for the entire period from 2004 to Q2 2008 and the data contain key variables that allow us to predict (broadly) default.

Exhibit 16 uses box-and-whiskers plots to show cumulative default rate (“CDR”) distributions, defined as the probability that a loan will become “real estate owned” or go into foreclosure over the lifetime of the mortgage. The box indicates the interquartile range (the 25<sup>th</sup> through 75<sup>th</sup> percentiles) and the whiskers extend down to the 5<sup>th</sup> percentile and up to the 95<sup>th</sup> percentile. The top of the whiskers (i.e., the 95<sup>th</sup> percentile) is an empirical approximation of where underwriters are cutting off credit. Exhibit 19 clearly illustrates that the bulk of the prime loans had CDRs well below the bulk of either

FHA or subprime loans. Moreover, prime, FHA and subprime credit guidelines appear to be quite different, at least through 2007. Specifically, during this period the prime credit cutoff appears to be around 15 percent CDR, the FHA credit cutoff appears to be around 23 percent CDR, and the subprime credit cutoff appears to be around 27 percent. Since that time credit guidelines appear to have tightened significantly for both prime and subprime, but have declined only slightly for FHA. Moreover, the interquartile range for prime and subprime contracted dramatically in the last two quarters, suggesting more credit-risk homogeneous population of recent originations, while there was no such trend for FHA. This suggests, to us at least, that FHA likely will experience significant credit costs issues from its most recent books of originations.



## **VI. The World Today and Expectations about the Future**

Observing from the perspective of early 2009, we see a market in continuing change. In the primary market, lenders are focused on prime, conforming lending, and are not making loans with any 'subprime' features. Low documentation and no documentation loans are not available. Credit score thresholds have been increased in an attempt to ration loans to a more credit worthy population. Piggyback loans are nearly non-existent. Those lenders (the few that remain) that used to offer substantial subprime originations are now primarily offering FHA loans instead. The loans available to first time homebuyers with limited means and imperfect credit are nearly all in the high-LTV FHA market.

In the secondary market, as demonstrated, private label securitizations have nearly disappeared. This means that mortgages not funded through deposits, or through FHA or GSE securitization, are not generally available and this includes much of the subprime and Alt-A market originations. Private mortgage insurers have dramatically increased their rates and cut back significantly on the maximum level of LTV and the types and locations of properties they will insure. This has made it very difficult for the GSEs to obtain the credit enhancements needed to securitize higher-LTV loans. Higher-LTV borrowers who had originally obtained loans in the non-prime market and find they have payment difficulties have few options to turn to in order to refinance mortgages. Those that have good credit scores may nonetheless find that their equity in the house has declined or disappeared, creating underwriting difficulties. Products are now quite conservative, as are borrowers and lenders. It is in some ways remarkable that lenders still offer thirty-year fixed rate mortgages.

We expect mortgage shares to continue to grow at depositories as compared to non-depository lenders, and that liquidity in the market will rely primarily on the support of securitization through Fannie Mae, Freddie Mac, or Ginnie Mae. We expect nation-wide house prices will not begin to show positive growth until early 2011. Lower-income neighborhoods will be especially impacted by concentrated foreclosures, and house prices likely will take longer to recover in these areas.

Over the next few years we expect to see a market firmly entrenched in lending at terms found in the late 1980s and early 1990s – 20 percent down payments, full documentation, verified employment and income, and credit scores above 680. Those borrowers who do not qualify under these terms likely will find mortgages primarily in the FHA market. Its insurance fund, however, will be tested by rising delinquencies in the FHA market and the constraint that FHA not risk-base price. Congress, therefore, will likely have to choose between balancing FHA's books and severely restricting credit, which could exacerbate the cyclicity of the current environment and may have significant implications for the availability of affordable lending to first-time and lower-income households.

We also expect future underwriting standards to be consistent with the recommendations issued by the Federal Reserve Board in July 2008 under the Truth-in-Lending and Home Ownership Equity Protection Acts.<sup>2</sup> These had four key provisions including that:

- (a) lenders must take into account future, predictable changes in payments on adjustable rate loans when assessing the borrower's ability to repay the loan;
- (b) lenders must verify income and assets used to qualify borrowers for the loan
- (c) prepayment penalties cannot be assessed if loan payments adjust in the first four years
- (d) property taxes and insurance must be escrowed (although borrowers can opt out after a year)

Three other guidelines might also be open for consideration. The first is encouragement for lenders to have increased discussions of credit reports with borrowers. This could provide several advantages. It would allow verification of the accuracy of the credit reports used to qualify borrowers. It would also allow the lender to assess whether the borrower understood the consequences of past credit performance and, finally, it could be used to assess the need for further pre-purchase financial counseling.

Second, down payment requirements might be set up to vary with fluctuations in house price indices. For example, just as the conforming loan limits are set based on previous year-over-year house price changes, so too could down payment requirements be set – if house prices have increased by a given percentage over the previous two years, then down payment requirements might be set higher in order to prevent the excessive demands generated in over-heated markets. Had a fixed cap of 90 percent LTV, for example, been established in early 2004, fewer borrowers would have rushed into housing with no down payments or refinanced their homes with large cash out payments. In tighter or declining markets, down payments could be relaxed in order to encourage borrowers back into markets (with a cap at 97 percent LTV ratios). Obviously there are issues of credit risk that would need to be managed, but adjusting down payment in this manner would be appropriately counter-cyclical.

Third, the area of “responsible” lending might be appropriately addressed by promulgating national regulator-directed guidance on maximum cumulative default rates for mortgage originations. Arguably CDRs are a sufficient statistic for responsible lending policy. For example, policy makers might decree that loans with an expected rate of “failure” (i.e., CDR) above 15 percent are “irresponsible.” Regulators could sanction, or provide, programs for calculating CDRs so that national policy could reasonably consistently address all origination paths. With this tool regulators could have their ‘hand on the throttle’ with respect to overall underwriting guidelines, and arguably could have prevented the excesses of 2005 and 2006, and, if desired, help stimulate lending in 2008 and 2009.

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<sup>2</sup> See the excellent testimony of Sandra Braunstein at: [www.federalreserve.gov/newsevents/testimony/braunstein20090311a.htm](http://www.federalreserve.gov/newsevents/testimony/braunstein20090311a.htm)