

# Anatomy of the Housing Market Boom and Correction

*Picking up the pieces after an  
unsustainable housing boom  
will not be easy.*

**KENNETH T. ROSEN**

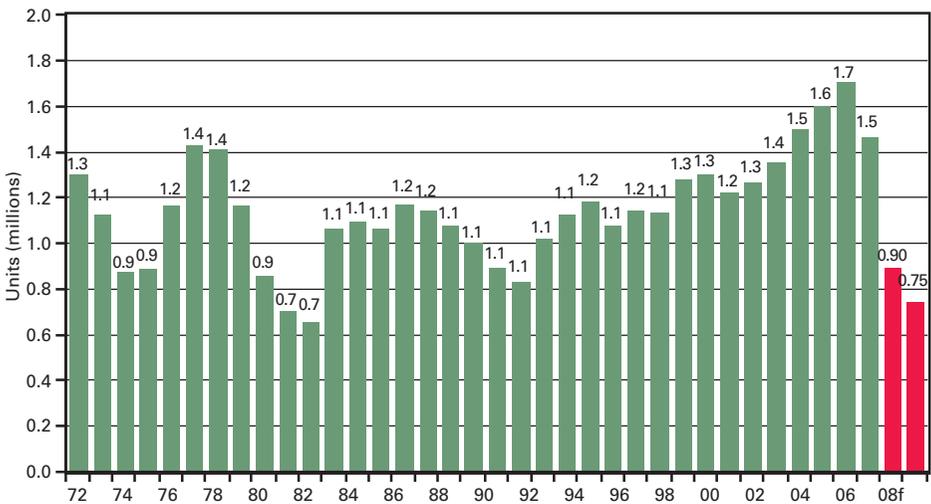
**THE HOUSING MARKET** in the past five years has experienced an unsustainable boom caused by the lowest interest rates and easiest credit conditions in fifty years. While initially the market produced desirable results by enabling many more households to afford homeownership, in the past three years in many locations it morphed into a speculative bubble. The for-sale housing market, including both the single-family and the condominium market, is especially vulnerable to speculative activity because of low or no down payment loans that allow investors to leverage up substantially. Stock market investments have margin requirements that limit leverage to 50 percent, but there

is no such limit on housing. In fact, investors or homebuyers can put up very little down payment and control delivery of the house or condominium for up to two years in the future. This creates a huge incentive to speculate, as the liability of the investor/buyer is limited to the initial deposit. The homebuilder claims and books a sale, and his sold-out project is financed by a financial institution that has really created a very risky loan. At present the market is seeing “cancellation” of sales from the previous years and the inventory of completed or partially completed homes and condominiums for sale is skyrocketing.

We estimate that 20 percent to 70 percent of all sales in some markets were driv-

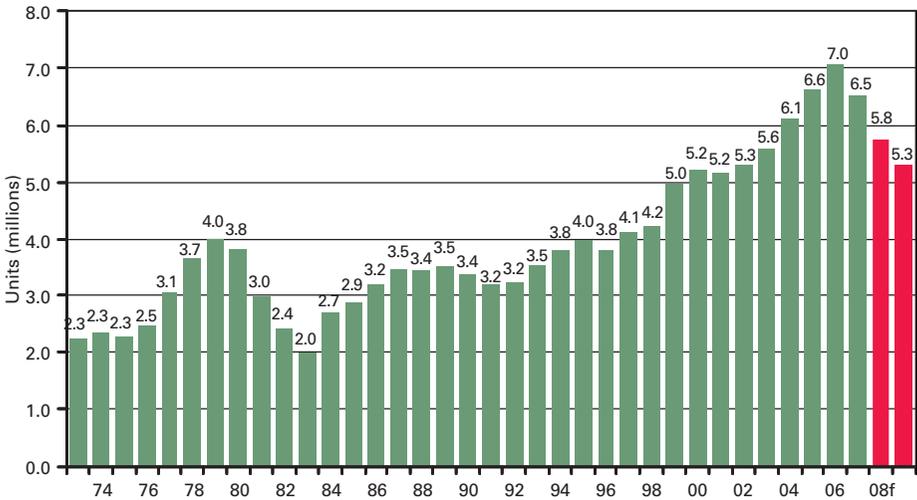
en by speculative activity that is now coming home to roost. The mistaken belief by policy makers, homebuilders, mortgage lenders, stock analysts, and academics that the housing boom was driven by virtuous demographic demand is now being exposed for its true nature—a speculative boom based on easy and cheap credit. An institutional structure that allowed speculators to have a cheap option contributed to this bubble. It is critical that all players understand the true dynamics of the past five years and the present condition so that appropriate policy and business responses will be taken. Macro policy makers should not loosen monetary policy and lower interest rates to protect the housing speculators. Business players should not count

**Figure 1: U.S. single-family housing starts**



Note: Seasonally adjusted annual rate  
 Source: US Census Bureau, RCG

**Figure 2: U.S. existing single-family home sales**



Note: Seasonally adjusted annual rate  
Source: National Association of Realtors

on a quick recovery of this speculative demand. We need to permanently change the housing finance system by changing regulatory and business practices to prevent excessive credit creation in this sector to fund speculative bubbles. Not only are the speculators hurt by the burst, but a large number of first-time homebuyers will also be casualties of the excessive house price appreciation. They paid and borrowed too much to catch the train that now will run them over.

For the past few years, policy makers and pundits have attributed the very strong level of for-sale housing activity to demographics and the intrinsic investment value of housing. Population growth, immigration, and the “fact” that

housing prices only go up have been extolled in the media as explanations for the housing boom. Even in early 2007, Federal Reserve chairman Bernanke and industry pundits talked about the orderly slowing of the housing market. It is our view that for-sale housing will show a sharp drop in sales and starts. We expect new single-family housing starts to drop from an annual rate of 1.7 million in 2005 to 750,000 units in 2008 (Figure 1). We expect existing home sales to drop from more than 7.0 million in 2005 to 5.3 million in 2008 (Figure 2). Housing prices, which have grown at double-digit rates the last two years, will drop in 2007 and 2008. In certain hot markets, house prices could decline 10

percent to 25 percent. This correction in the housing market will create a cascade of mortgage defaults and foreclosures in hot markets as the speculative excesses affect not only speculators but first-time homebuyers who stretched too far and got caught in the house price decline.

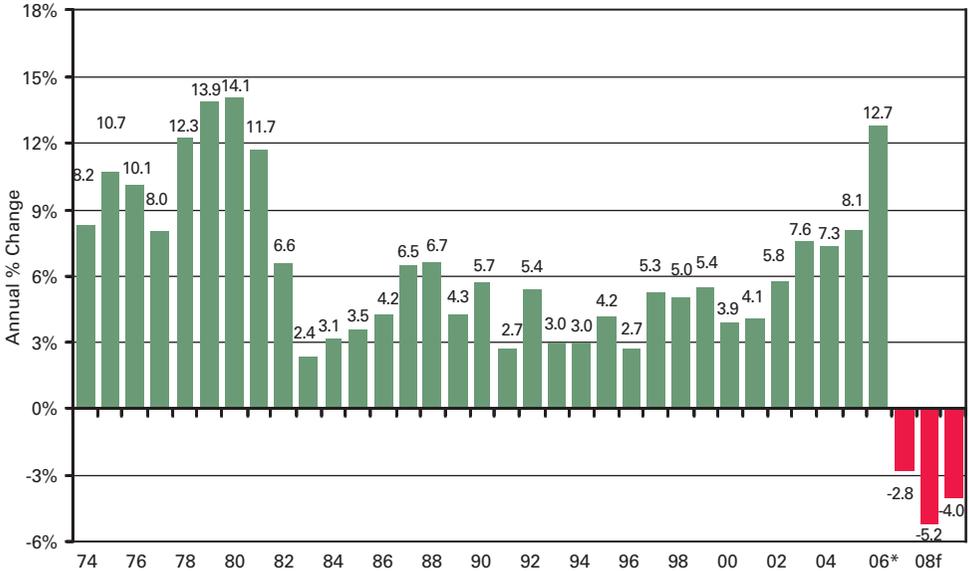
The excesses of the housing market should be allowed to play out. The excessively easy monetary policies of the early part of this decade, combined with institutional inadequacies of the mortgage finance system, and the excessive greed of speculators, will cause a hard landing in many markets. The sharply lower level of sales, starts, and prices will move the market to a more sustainable level over the course of two to four years. The hype that led policy officials, pundits, and homebuilders to believe that the level of activity of the last few years was the new sustainable level of activity will be proven wrong.

#### **SINGLE-FAMILY HOUSING**

The homebuilding industry has a long history of cyclical volatility. Figure 1 shows single-family housing starts for the past thirty-five years (1972 to 2007). The booms of the late 1970s, 1980s, 1990s, and mid-2000s were always followed by a large drop in new construction averaging -35 percent from peak to trough. These boom-bust cycles in new housing con-

struction have been well documented; in fact this author's first academic paper, "Cyclical Fluctuations in Residential Construction and the Housing Finance System," was on this very topic. These cycles in single-family housing construction are highly correlated with the overall economic cycle. Each boom in housing construction is accompanied by a very strong economy, while each bust in single-family home-buying is accompanied by a national recession. This is not an accidental correlation. Housing, counting its direct construction impacts and indirect contributions through related industries and the wealth effect on consumers, is a big part of the economy. Also, the same basic underlying forces of exceptionally easy monetary policy, followed by a strong economy and a burst of inflation, followed by a sharp tightening of monetary policy has been the main cause of this cyclical behavior. While the details of each cycle differ, the outcome is the same—a period of excess is followed by a period of sharp correction. Each time pundits during the boom talk about strong demographic demand or a changing industry structure, they end with "this time is different." Each time a recovery starts, the industry vows to avoid speculative building and the buying of too much land that got them in trouble in the downturn. The lenders that survive the downturn vow to use tougher lending standards and to

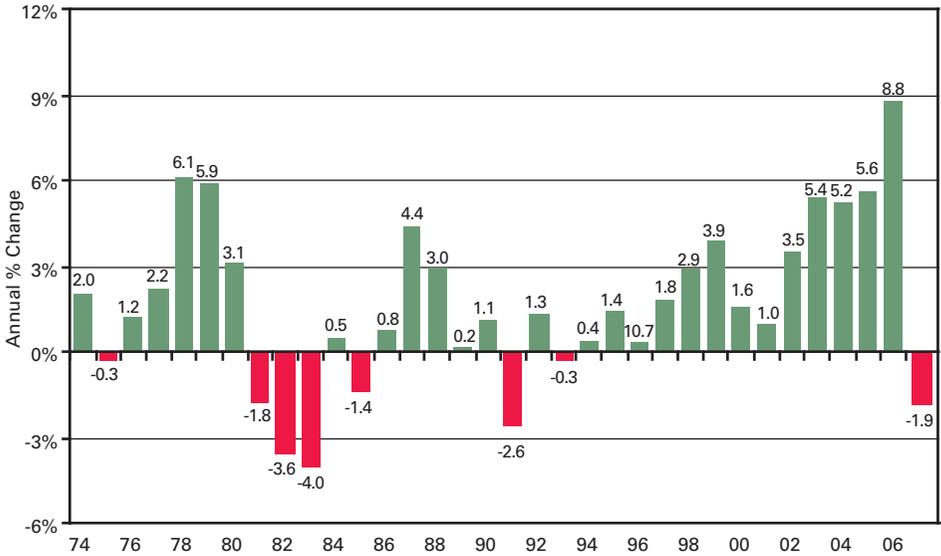
**Figure 3: Existing nominal median home price appreciation – United States**



\*4Q06 vs. 4Q05

Sources: National Association of Realtors, RCG

**Figure 4: Existing real median home price appreciation – United States**



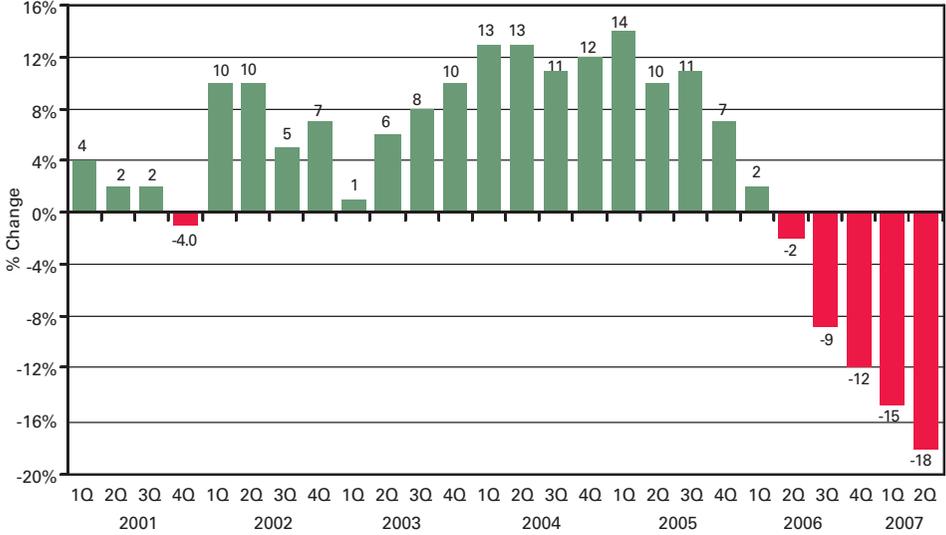
\*Change in annual median home price appreciation minus the annual change in CPI

Sources: National Association of Realtors, Bureau of Labor Statistics, RCG

avoid “risky” loans. As the recovery proceeds and a boom develops, the builders, lenders and consumers believe that hous-

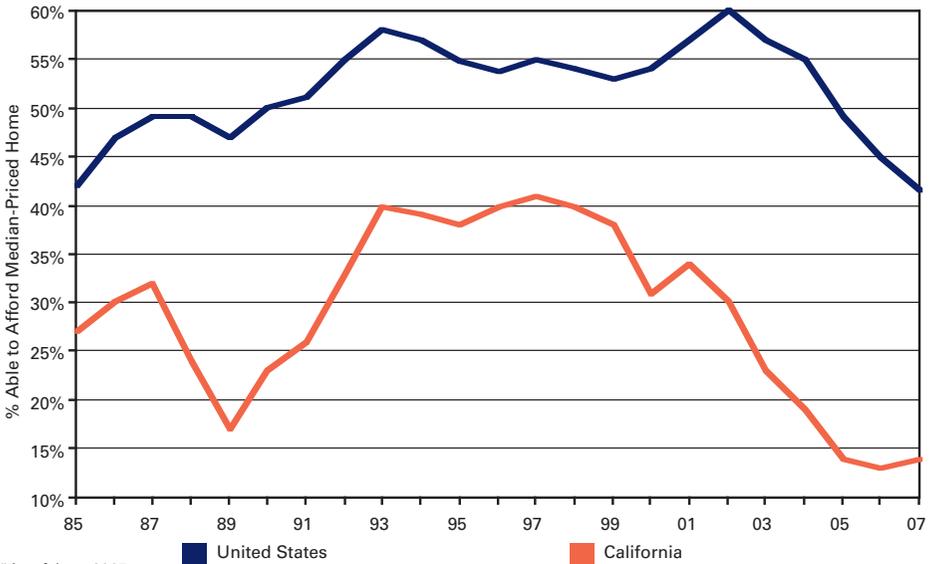
ing “only goes up” and the fundamentals are great, and then they make the same mistakes as the last cycle. The 2007 to

**Figure 5: Public builder change in new order price, 2001–2Q 2007**



Source: Company data, Credit Suisse, RCG

**Figure 6: Housing affordability, United States and California**



\*As of June 2007

Source: National Association of Realtors, California Association of Realtors

2008 housing correction is just the latest, though it may be the worst, cyclical downturn in the industry.

The booms in demand for and supply of housing often do not proceed in tandem. Because of the lags in land development, especially in markets on the East and West Coasts, house prices tend to rise sharply in times of booming demand. The supply inelasticity of new housing production is the main culprit. Figures 3 and 4 show the nominal and “real” median price increases for the overall U.S. market. The “real” price increase from 2002 to 2005 is unprecedented. Nominal prices showed a similar surge in the late 1970s; however, inflation rates were at 12 percent, so the 2002 to 2005 period with low economy-wide inflation appears highly unusual. As Figure 3 also shows, we expect to have a national house price decline of a cumulative 12 percent between 2006 and 2008. Many hot markets, such as Florida, Arizona, Las Vegas, and the Central Valley of California, will likely show cumulative declines of 15 percent to 25 percent. As Figure 5 shows, new-home sale prices have already declined 18 percent on a national basis.

One consequence of the rapid real house price increase is the dramatic erosion of affordability in “hot” housing markets. As Figure 6 shows, the percentage of median-income households able to afford a median-priced house has dropped to less

than 15 percent in California. The same trend has occurred in other markets with rapid house price inflation. Perhaps one-third of U.S. housing markets are affected by this affordability crisis.

#### RISKY AND FLEXIBLE MORTGAGE LENDING

The major cause of these housing market excesses was not demographics but easy and cheap credit. Underwriting was so lax in residential real estate that “anyone who could fog a mirror” could get a 100 percent home loan. The proliferation of risky mortgage instruments that were offered to high credit risk borrowers was an accident sure to happen. The “option ARM,” a negative amortization loan, and the proliferation of “stated-income” or “liar’s loans” (100 percent loan to value loans) helped boost house demand to unsustainable levels. In 2006, 40 percent of all loan originations were risky subprime or Alt-A loans (option ARMs or low-documentation loans). One-half of all new homebuyers in 2006 put down no down payment when buying a house. The vast majority of those loans were aggregated into mortgage-backed securities. These in turn were re-securitized into CDOs (collateralized debt obligations). The alchemy of financial technology turned highly risky loans into 90 percent AAA paper in the form of

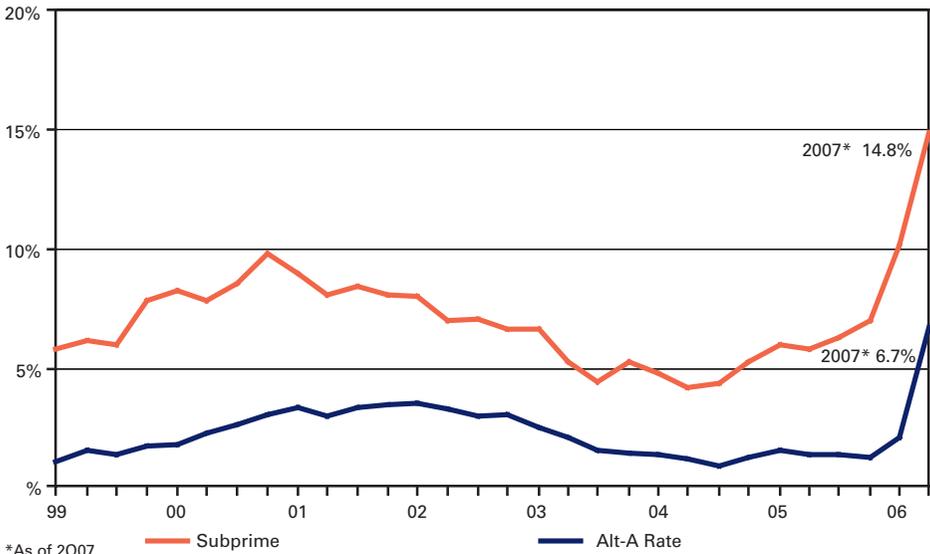
CDOs. Normally staid investors such as insurance companies, banks, pension funds, and endowments flocked to the higher yielding “safe” paper. Hedge funds rushed to buy the risky tranches of this paper and added leverage, provided by prime brokers and banks, to instruments that were already highly leveraged. All were assured by “rating agency” models and the false belief that housing prices could not decline on a national basis. (They had not since the Great Depression.)

This “Ponzi scheme” of credit attracted a large number of speculators and house “flippers” to the for-sale housing market. While homeownership rates did rise to record levels (69.2 percent of households in 2005), in hot markets such as Phoenix,

Florida, Las Vegas, and the Central Valley of California, speculators were 20 percent to 30 percent of all purchases, taking advantage of easy credit conditions. House prices doubled in four to five years in those markets, caused by both demographic demand moving forward in time (that is, potential future buyers using easy credit to buy without a down payment) and speculative activity.

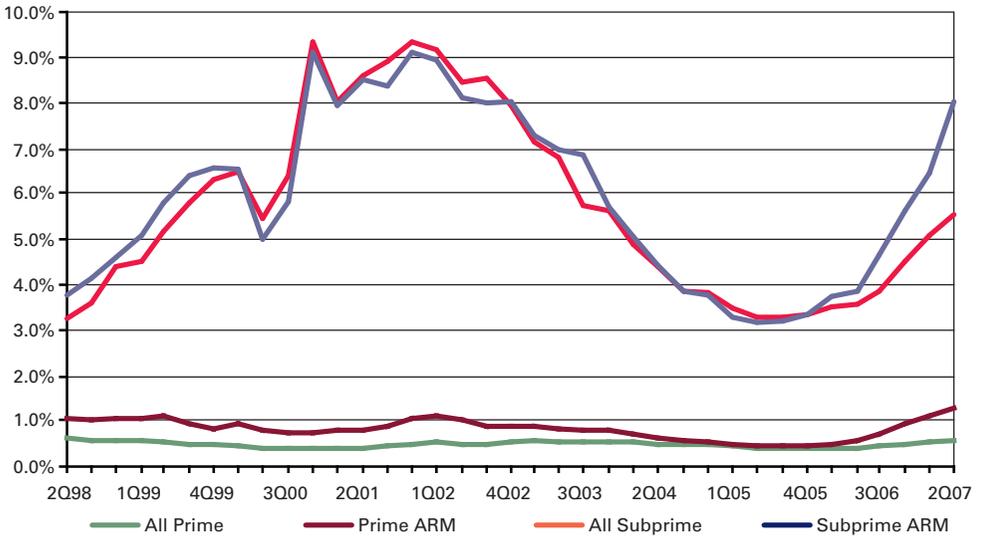
We correctly warned that this toxic brew of easy credit, risky mortgage instruments, massive speculation and a highly leveraged mortgage investor base would lead to a big correction in the housing and mortgage markets. In the first half of 2007 we have seen the consequences of this reckless behavior: rising delinquency rates

**Figure 7:** Loans delinquent over 60 days



\*As of 2Q07  
 Source: Mortgage Bankers Association, UBS, SF Chronicle

**Figure 8: Foreclosures in process by loan type**

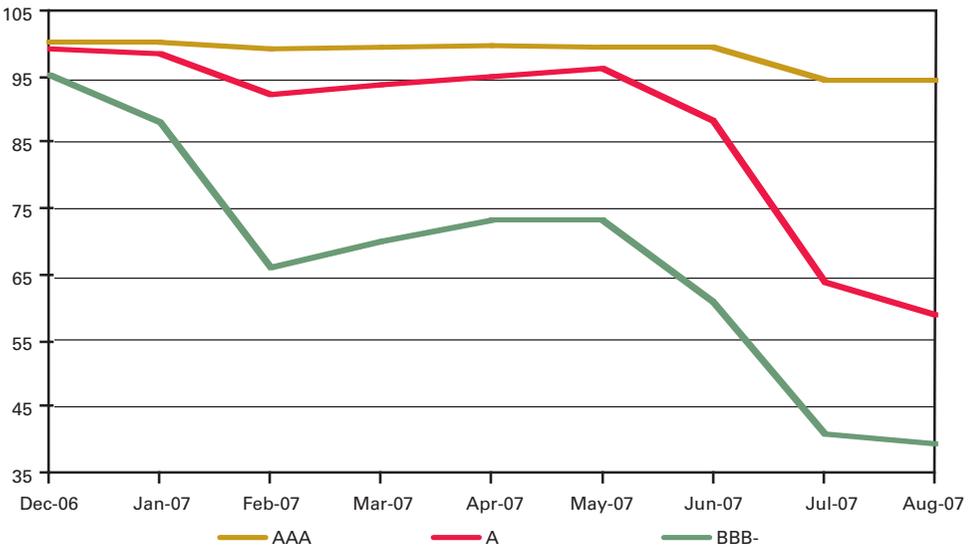


\*As of 1Q07

Note: As percent of total mortgages in individual pool

Source: Mortgage Bankers Association

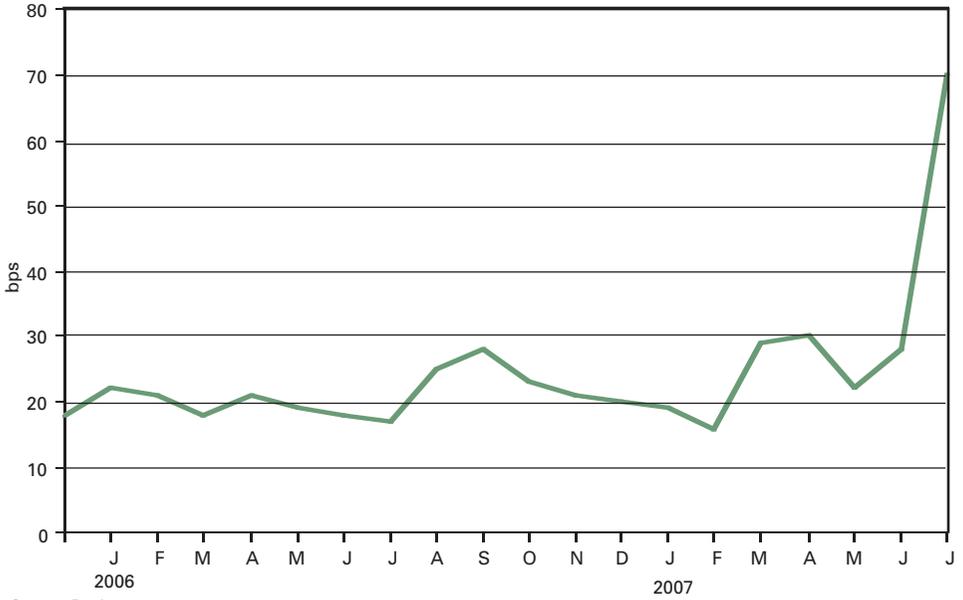
**Figure 9: ABX month-end price summary**



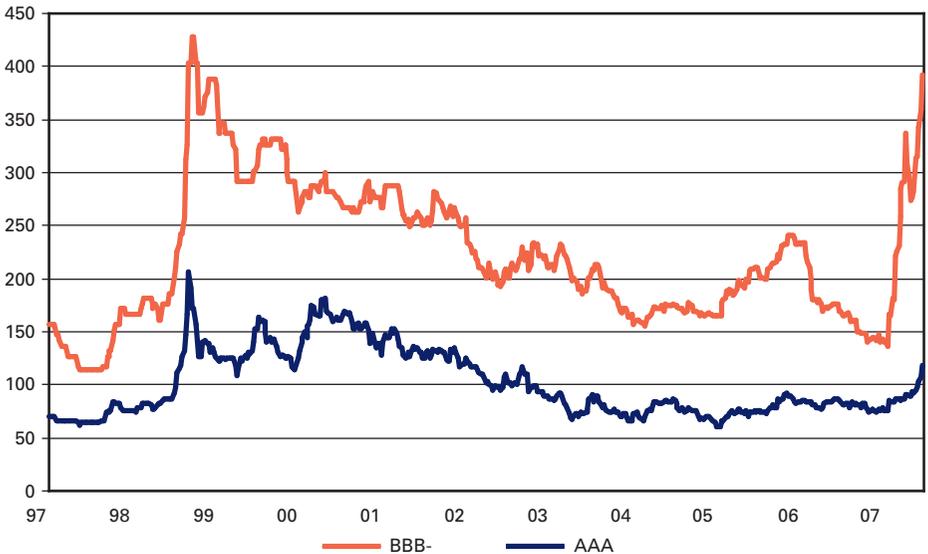
\*As of August 31, 2007

Source: Markit, UBS

**Figure 10:** Pricing spreads: Jumbos vs. FNMA



**Figure 11:** Pricing spreads: Commercial mortgage rate vs. 10-year T-bond



and foreclosures, plunging housing starts and sales, and declining house prices in a number of markets. In the past few months, we have seen some of the systematic risks emerge: hedge fund losses and the rush to get out of the paper that is just beginning to go bad. With the potential of \$2 trillion of risky loans going bad, the financial panic that appeared in mid-August 2007 is not surprising. However, the injection of liquidity into the banking system and the cut in the discount rate on August 17  2007, as well as the cut in the Federal funds rate in September may halt the panic but will not solve the problem of bad loans that need to be worked out.

In the summer of 2007, the liquidity of the residential mortgage market has been dramatically reduced as the market for privately backed mortgage securities has frozen up. Since 30 percent to 40 percent of all residential mortgages have in recent years been securitized privately (outside of FNMA and FHLMC), this withdrawal of capital has had a dramatic impact on the mortgage finance system, investors in mortgage loans such as hedge funds, pension funds and banks, homeowners and the homebuilding industry.

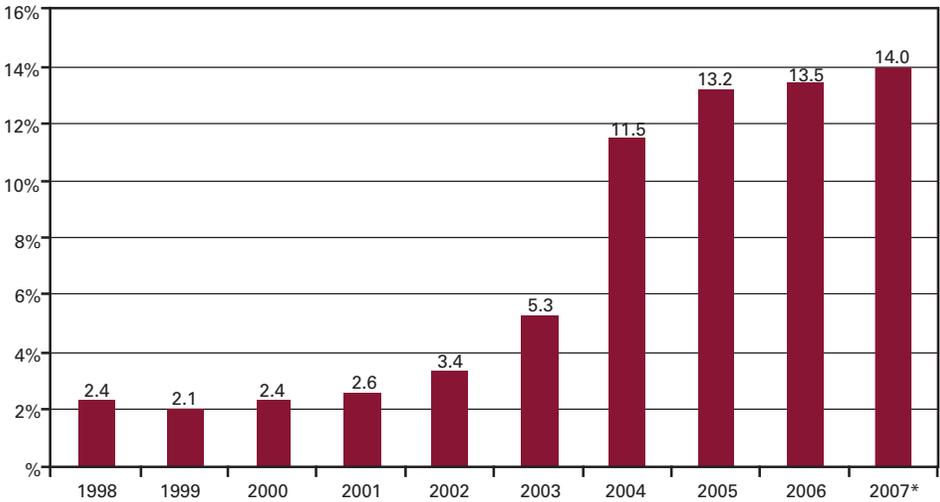
The fundamental problem facing the housing finance system is that \$2 trillion in risky loans have been made to risky borrowers in the last four years, and those loans are beginning to go bad. Figure 7 shows delinquency rates for the major cat-

egories of home loans. Figure 8 shows the foreclosure rates of these loans. It is the delinquency rates and the fear of much higher foreclosure rates in the future that have been the catalysts for the mortgage market liquidity crisis that has developed. The actual foreclosure rate is still small. It is the highly leveraged mortgage securities market that has magnified this relatively small foreclosure rate into a crisis. The vast majority of the risky mortgages made have been packaged into mortgage-backed securities (RMBS) and have been repackaged into collateralized debt securities (CDOs). The CDOs have typically taken the risky slice of RMBS, the BBB- piece, and put them in a CDO structure. As the foreclosures and predicted foreclosures rise, there has been a meltdown in the value of the CDO and RMBS securities held by mortgage companies, banks and other investors. Hedge funds in particular have often highly levered their investments, so are especially sensitive to a decline in security values. Figure 9 shows the decline in the BBB- tranche has been over 56 percent since January 2007. Even the value of the AAA tranche has declined 9 percent. Figures 10 and 11 show that this contagion has spread to the jumbo residential mortgage market and the commercial real estate mortgage market, neither of which have any significant credit issues—at least at this time. Other sectors of the financial market have also

seen smaller but serious signs of this contagion. As the value of these asset-based securities has declined, the leveraged investors have received margin calls and

have tried to sell these often illiquid investments, pushing the prices down further and creating a “vicious cycle” of illiquidity and price declines.

**Figure 12:** Subprime loans as share of total outstanding loans

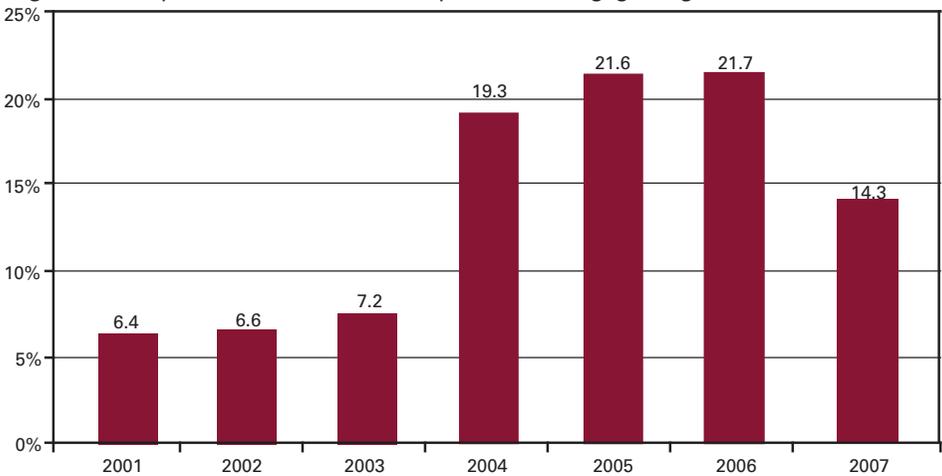


\*As of 2Q07

Source: Mortgage Bankers Association of America



**Figure 13:** Subprime share of securitized purchase mortgage Originations, 2001-2007

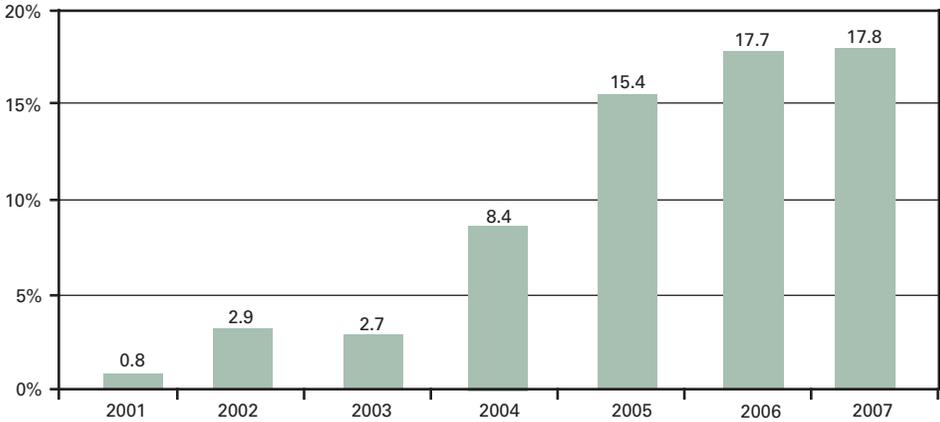


Source: Loan Performance, Credit Suisse U.S. Mortgage Strategy, RCG

How big is the problem? Figures 12, 13 and 14 show that this is a huge problem. Forty percent of new mortgages securitized

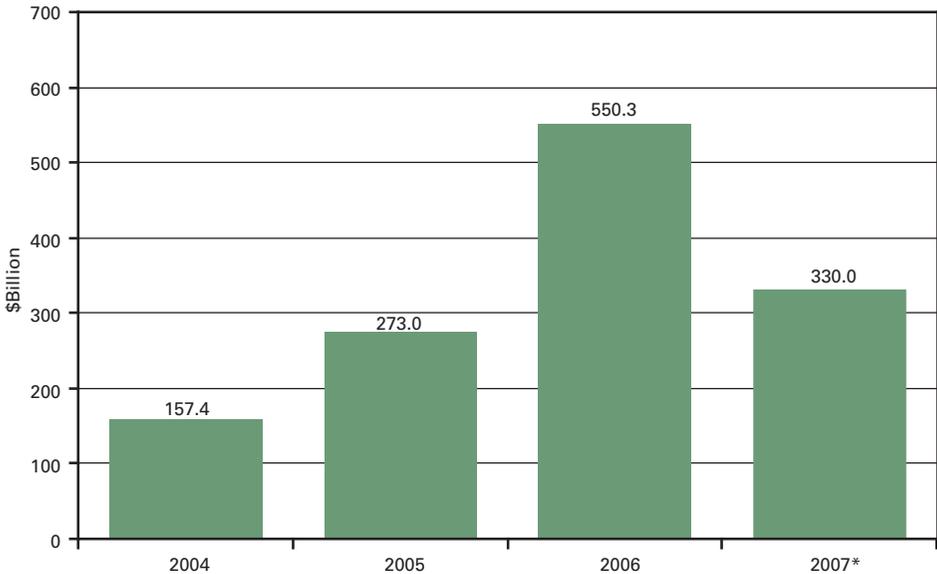
in 2006 were either subprime or Alt-A. Together they represent more than 20 percent of all mortgages outstanding. Many of

**Figure 14:** Alt-A share of securitized purchase mortgage originations, 2001-2007



Source: Loan Performance, Credit Suisse U.S. Mortgage Strategy, RCG

**Figure 15:** Global CDO issuance



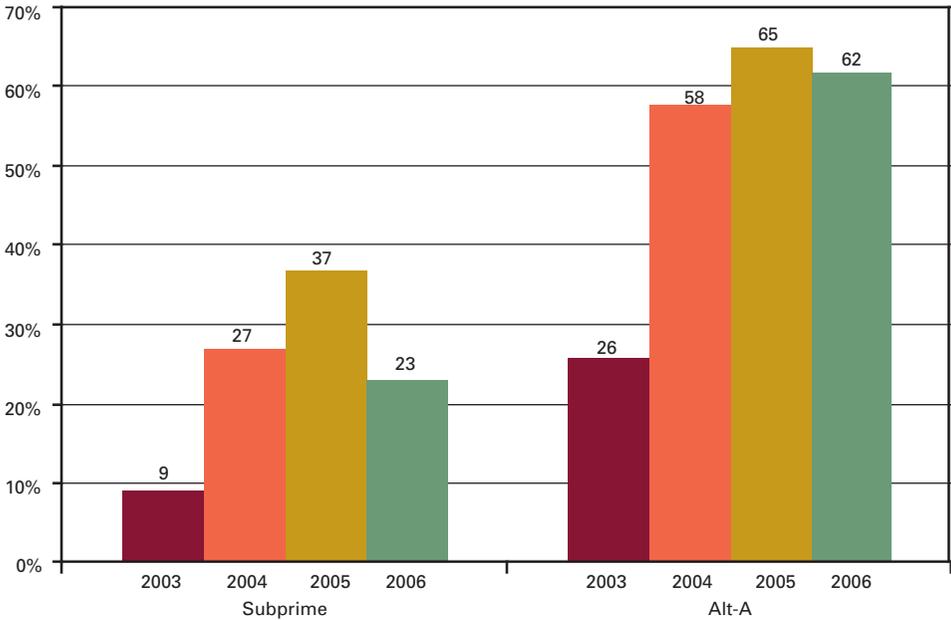
\*As of 2Q07  
Source: SIFMA

**Table I:** Erosion of lending standards

	Traditional	Subprime	Alt-A
Down payment	20%	6%	12%
Zero down payment	0%	30%	18%
Full income verification & documentation	64%	50%	19%
Fully amortized	100%	63%	35%

Source: RCG, Credit Suisse

**Figure 16:** Interest-only and negative amortization share of total purchase mortgage originations by loan type, 2003-2006

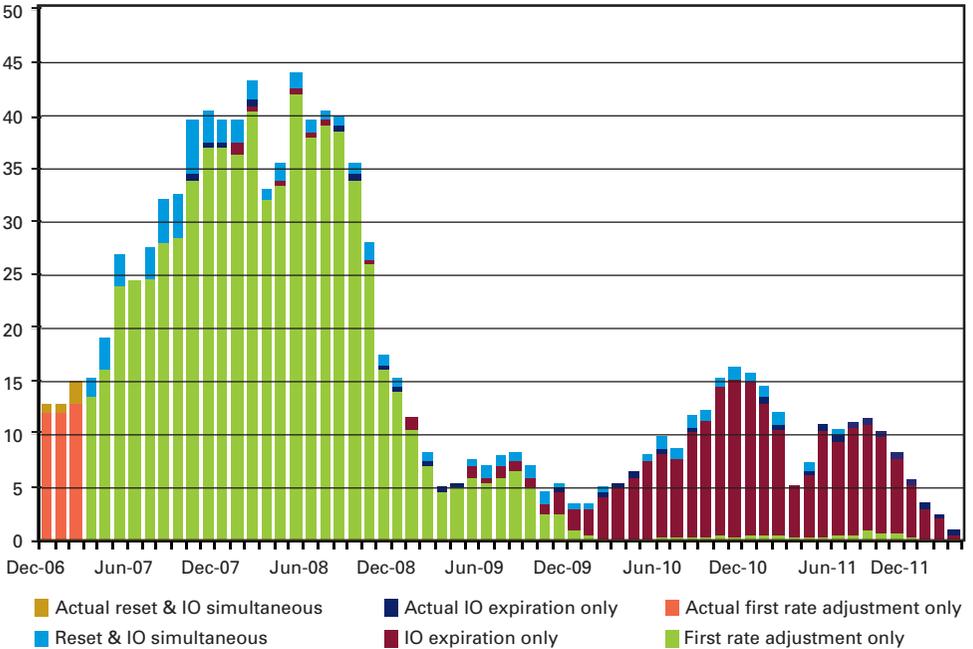


Source: Loan Performance, Credit Suisse, RCG

these RMBS were then repackaged and put into CDOs. The explosion of CDOs is shown in Figure 15. It is conservatively estimated that 20 percent of the collateral in those CDOs is BBB- residential RMBS paper. The erosion of lending standards of the underlying collateral is shown in Table I. A shockingly high portion of these loans have little or no down

payment, lack full income verification (liar loans) and are negative amortization or interest-only (Figure 16). Nearly 40 percent of subprime loans, and 65 percent of Alt-A loans appear to have large payment resets coming in the next 18 months (Figure 17). Anecdotal evidence suggests that many of the delinquencies and foreclosures seen in the

**Figure 17:** Subprime mortgage payment reset



Source: Deutsche Bank, LoanPerformance

past six months have been caused by payment shock rather than the usual suspects of job losses, medical and family issues. If the scheduled resets occur, the problems in the mortgage foreclosures in the next 18 months will be an order of magnitude greater than what we have seen already. Except for Ohio and Michigan, the unemployment rate is low and incomes and jobs are growing. Traditionally, the mortgage delinquency and foreclosure problem is caused primarily by a job loss or family issues. If the economy were to go into a recession in 2008, the mortgage credit problem

would be overwhelming and could create a deeper and longer downturn than we have seen in some time.

#### HOW TO MITIGATE THE PRESENT CYCLE

The key to controlling this crisis is preventing massive foreclosures that are likely to occur as payments are reset on subprime and Alt-A loans over the next two years. Resets should be phased in over time with annual payment increases capped at 7.5 percent. Additionally, tighter lending

standards, which are appropriate going forward, should not be applied to the \$2 trillion of risky loans in the system. We have to give consumers a chance if they are willing and able to make their existing payments, with perhaps a modest increase of 7.5 percent per year to stay in their home, or to refinance even if the loan to value is over 100 percent and their income is not fully verifiable. The essence of what we are proposing is a loan modification and forbearance plan that might forestall the foreclosure onslaught. Since most of these mortgages are held in RMBS and in CDO structures that usually restrict loan modifications, it will require some creative negotiating and path-breaking legal solutions. A meeting of the top mortgage servicers, securities packagers and rating agencies, and perhaps community groups—moderated by Washington—could come up with a solution in short order.

The goal would be to minimize damage to the real economy of the bursting of the mortgage credit and housing bubble. It would not be a bail-out of investors, lenders, and other industry actors who facilitated unsound lending. However, they may indirectly benefit from the mitigation of credit losses and return of liquidity to the market. We would not provide a bailout for the borrowers who participated in the bubble as speculators. We do not view loan modification by which borrowers may remain in their homes while pay-

ing a “fair” monthly payment as a subsidy or bailout.

We must restore liquidity to the mortgage and housing markets by allowing a transition period to tighter and more sound lending standards. Two trillion dollars of mortgage loans were created that would not meet the tighter underwriting standards that all would agree should be implemented. We have to have a way out for these borrowers or the collateral damage to the economy and the “innocents” (prime borrowers) will be substantial. We must allow FNMA and FHLMC to play their historic role in the market by temporarily lifting the cap on their growth and allowing them to buy jumbo mortgages up to \$617,000.

We need to realign the incentives in the securitized home finance system to reduce “moral hazard” in the process. Unlike a portfolio lender, the securitization process has a large number of players collecting fees who have no stake in the safety and soundness of the loan. The mortgage originator (banker, broker, etc.), the investment banker packager, the CDO originator and manager, and the rating agencies all collect fees based on the volume of the activity. Often the riskier the loan product, the higher the commissions and fees received. Fees in the process should be escrowed and paid out when the loan has successfully seasoned (say, three years) or is repaid.

We need to dramatically reduce the leverage in the home finance system. A borrower should have “skin in the game” and put a minimum 5 percent down payment, except for special limited first-time homeowner government or quasi-government-related programs. The vast majority of loans, home equity loans and refinances should have a maximum of 90 percent loan-to-value ratio. Recognizing the volatility of the underlying assets, mortgage securities should have margin requirements—say at 50 percent—much lower than the 20 times leverage available until recently. Loans to investors/speculators in single-family homes should have a maximum 70 percent loan-to-value ratio and those borrowers should not be allowed to abuse the mortgage financing system.

Finally, sensible lending standards should return on a going-forward basis. These include full income and employment verification, full physical appraisal of the property, and suitability of lending products so borrowers encumber no more than 40 percent of their income for mortgage payments on a fully-indexed and amortized basis. Also, borrowers’ payment increases should be limited to 7.5 percent on all ARMs. Option ARMs (negative amortization ARMs) should be limited to high-income, prime borrowers who put a minimum of a 20 percent down payment. Large losses in the system are inevitable, but an active loan modification and

forbearance program can prevent a substantial problem from mushrooming into a much more severe economy-wide recession.