CBO TESTIMONY

Statement of
Peter R. Orszag
Director

Turbulence in Mortgage Markets: Implications for the Economy and Policy Options

before the
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CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515

Chairman Schumer, Vice-Chair Maloney, Senator Brownback, Congressman Saxton, and Members of the Committee, I appreciate the opportunity to testify on the current turmoil in the nation's mortgage markets and its implications for the broader macroeconomy.

Housing markets entered a period of sustained growth in the mid-1990s—the rate of home ownership expanded rapidly, and in the early 2000s, housing prices increased dramatically. Since 2005, however, the markets have softened substantially, and in many areas of the country, housing has now entered a deep slump. Sales of new and existing homes have dropped, and many forecasters expect further declines in coming months. The construction of new single-family homes has contracted sharply. The inventory of unsold existing homes has climbed to record levels. At today's sales rates, it will take about nine and a half months to clear the current inventory of existing homes on the market. Home prices have stopped climbing in many areas of the country and have begun to fall in some. Many forecasters now believe that the national average home price could decline significantly before housing markets stabilize.

Those developments have raised a number of important questions. What factors account for the recent slump in housing markets? How will developments in housing affect the rest of the economy? To what extent will consumers retrench in the face of declining home values, and to what extent will turmoil in certain parts of the mortgage markets spill over into other credit markets and affect the intermediation of funds between borrowers and lenders? And how should policymakers respond to the situation?

My testimony reviews issues raised by those questions and comes to the following conclusions:

- Innovations in mortgage markets, including the development of subprime mortgages, permitted many more people to become homeowners by reducing credit restraints. The home ownership rate had varied within a narrow range from the 1960s to the mid-1990s but then increased from about 65 percent in 1995 to about 69 percent in 2006.

- The boom in housing prices between 1995 and 2005 was caused by several factors, including low interest rates, buyers' expectations of price increases, and easier availability of credit, especially through subprime mortgages (which played a particularly prominent role over the past few years).

- Over the past two years, prices have softened, and problems in the subprime market in particular have become apparent. To date, the problems with subprime mortgages are disproportionately concentrated in California, Nevada, Arizona, and Florida. Other areas of the country, however, have also been significantly affected.

- The turbulence in housing markets could affect the broader macroeconomy through four channels: reduced investment in housing; a reduction in consumer spending because household wealth declines; contagion in financial markets, which can impede business investment and some household spending, especially for consumer durables; and a lessening of consumers' and businesses' confidence about the future, which can constrain economic activity.

    - The available data and evidence suggest that the first two channels (reduced investment in housing and reduced consumer spending because of a decline in wealth) will impose a significant drag but are unlikely, by themselves, to tip the economy into recession. The other two channels—contagion in financial markets and weakened confidence—are more difficult to predict but could pose serious economic risks.

    - The economic outlook is thus particularly uncertain right now. Analysts have lowered their economic forecasts as a consequence of this summer's turmoil in financial markets, and the risk of a recession is heightened. But the most likely scenario involves continued (albeit more sluggish) economic growth, and few analysts expect an outright recession next year. Even the average for the bottom 10 forecasts included in the *Blue Chip* survey (an average of about 50 private-sector forecasts) released in early September suggested 2.0 percent real growth in 2008, and not a single forecaster projected negative growth in 2008.

- Policy proposals for addressing the financial difficulties originating in the subprime market could be classified into three categories: sustaining the overall economy, helping homeowners facing foreclosures, and preventing future crises by protecting homeowners and reducing the chances of a recurrence of financial instability.

    - In evaluating policies to achieve those goals, it is important to recognize that although significant problems have arisen, not all current housing and credit policies are broken and that the seeds of future crises are often sown by the reaction to current crises.

    - Policy interventions need to reach an appropriate balance between assisting people at risk from events beyond their reasonable control and allowing people to assume responsibility for the consequences of their own decisions.

    - The challenge is to find ways of correcting the abuses and instability that are now becoming apparent while strengthening successful institutions and continuing the benefits of market innovation.

Background

The current contraction of housing markets comes after several years of extraordinary growth in the residential sector, and the recent slump in housing partly reflects an inevitable correction to more normal levels after that remarkable growth. By 2005, home sales had climbed to record levels. The residential construction industry boomed, and home prices soared in many areas of the country.

Many people who had previously been renters became homeowners. As a result, the rate of home ownership, which had varied within a narrow range from the 1960s to the mid-1990s, increased from about 65 percent in 1995 to about 69 percent in 2006 (see Figure 1). That rise meant that approximately 4-1/2 million more families that otherwise would have been renters owned their homes. Investors and second-home buyers also purchased a growing number of properties, accounting for more than one-sixth of all first-lien loans to purchase one-to-four-family site-built homes in 2005 and 2006.

The housing boom stemmed from many factors. Low interest rates, both short- and long-term, in the early 2000s spurred demand for houses. The Federal Reserve kept short-term rates low through mid-2004 in an effort to promote growth, as the growth of gross domestic product (GDP) was slow to recover from the recession of 2001 and as some analysts expressed concerns in 2003 about the possibility of deflation. The housing sector is generally more sensitive to interest rates than most other sectors, so the effect of monetary policy is often channeled to the economy through housing markets. Rates for 30-year conventional mortgages, which had averaged 7.6 percent from 1995 through 2000, dropped to 5.8 percent in 2003 and generally remained below 6 percent until the fourth quarter of 2005. The low rates increased the affordability of homes, increased demand, and ultimately caused housing prices to be bid up. More people decided to live in separate households than would have occurred in the absence of the housing boom; that phenomenon both reflects and partially caused that boom.

Homebuyers' expectations of continued and rapid home price inflation also appear to have played a central role in propelling prices upward. If people believe that prices will rise, demand for homes increases, which puts upward pressure on prices. Thus, the expectation of higher prices can become a self-fulfilling prophecy in the short run. But that temporary cycle may not be tied to underlying fundamentals (such as demographic forces, construction costs, and the growth of household income), and in the long run, prices will ultimately evolve back toward becoming aligned with those fundamentals. To the extent that the underlying fundamentals are reflected in rental prices, the ratio of housing prices to rents may provide insight into the degree to which prices are deviating from the fundamentals. The ratio tended to vary within a relatively narrow range between 1975 and 1995 before climbing steeply between 1995 and 2005 (see Figure 2). To be sure, homebuyers' expectations of home prices may deviate from long-term fundamentals for extended periods of time, as shown by evidence that Professor

Robert Shiller of Yale University and others have developed, and the prolonged rise in the ratio of house prices to rents between 1995 and 2005 is consistent with the possibility of such extended deviations of prices from underlying fundamentals.

Another major factor in the housing boom was the plentiful supply of credit, which manifested itself most dramatically in the expansion of the subprime mortgage industry. Subprime mortgages are extended to borrowers who for one reason or another—a low credit rating, insufficient documentation of income, or the capacity to make only a low down payment—do not qualify as prime borrowers. The share of subprime mortgages rose rapidly after 2002, and more than 20 percent of all home mortgage originations (in dollar terms) in the past two years were for subprime loans. By the end of 2006, the outstanding value of subprime mortgages totaled an estimated $1.2 trillion and accounted for about 13 percent of all home mortgages.

Subprime mortgages include fixed-rate mortgages, adjustable-rate mortgages (ARMs), and combinations of the two, such as the 2/28 mortgage, in which the interest rate is fixed for two years and then varies for the 28 years remaining on the life of the loan. Many adjustable-rate loans have so-called "teaser" rates, which offer lower-than-market rates during the loans' early years. Subprime mortgages may be interest-only loans and negative amortization loans, in which the principal can actually grow during the initial years of the loans. A common characteristic of many subprime loans is that they offer borrowers low monthly payments in the loans' early years but higher ones in later years. Prepayment penalties (which impose fees on borrowers who want to pay off the remaining balance on a mortgage early) are common on subprime mortgages that have teaser rates but relatively uncommon on prime mortgages.[1]

Subprime mortgages have provided significant benefits to many borrowers. The availability of subprime mortgages has expanded home ownership, especially in minority and low-income communities. Many borrowers in such communities have low income, have less than stellar credit histories, or can only make down payments that are smaller than prime lenders require. Subprime loans may be particularly appropriate for people whose income is expected to rise—for instance, if they are in the early stages of a career. The number of borrowers with first-lien subprime mortgages has climbed to about 7-1/2 million, and many of them would not have been eligible for a prime mortgage and might not become homeowners in the absence of subprime mortgages. Although the foreclosure rates on subprime mortgages have received a great deal of attention and are higher than those on prime mortgages, over 85 percent of the borrowers who currently hold subprime mortgages (including both fixed-rate and adjustable-rate ones) are still making their payments on time.

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1. John Farris and Christopher A. Richardson, "The Geography of Subprime Mortgage Prepayment Penalty Patterns," *Housing Policy Debate*, vol. 15, no. 3 (2004), pp. 687–714.

The growth of the subprime mortgage industry stemmed from three factors. First, legislative and regulatory changes made in the 1980s lifted constraints on the types of institutions that could offer mortgages and the rates that could be charged. Second, the development of new credit-scoring technology in the 1990s made it easier for lenders to evaluate and price the risks of subprime borrowers. Third, the expansion of the securitization of subprime mortgages allowed the market to bear the risks of those mortgages more efficiently and at lower costs.[2]

As has become apparent, the underwriting standards of some originators in the subprime mortgage market slipped. Some made loans to borrowers who put little money down—and had little to lose if they defaulted—and to borrowers with particularly weak credit histories. Some subprime lenders also required little or no documentation of borrowers' income and assets, and determined borrowers' qualification for mortgages on the basis of initial teaser rates. That approach created opportunities for both borrowers and originators to exaggerate borrowers' ability to repay the loans. Those problems fundamentally stemmed from a failure of lenders to provide the right incentives to and oversight of originating brokers. In the traditional form of mortgage financing, the originator of the loan also holds the loan in its portfolio and therefore has a strong incentive to learn about the borrower's ability to repay. By contrast, in the securitized form of mortgage financing, the originator sells the mortgage to a third party and earns a fee for origination but receives little immediate reward for discovering relevant information about the borrower. As a result, the originator may not have adequate incentives to exercise care and discretion in its underwriting unless the ultimate purchaser carefully structures such incentives.

Some borrowers may also have not understood the complex terms of their mortgages, and some mortgage originators may also have taken advantage of unsophisticated borrowers. Certain adjustable-rate mortgages may have been among the more difficult mortgages for first-time borrowers to understand. Many of those mortgages made in recent years included teaser rates, which may have confused some borrowers about the eventual size of their mortgage payments when their mortgage rates were reset. Most of those mortgages also included prepayment penalties, which protected lenders from the potential churning of mortgages with very low initial rates but also made it more expensive for borrowers to refinance their loans when their monthly payments rose. As Edward Gramlich asked in a speech that was delivered on his behalf just before he died, "Why are the most risky loan products sold to the least sophisticated borrowers?"[3]

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2. Securitization is a process whereby mortgages are pooled, and then their cash flows are sold as securities (tranches) with different risk characteristics. Some of the risk tranches are designed to be relatively safe, and others can be quite risky; investors can choose according to their preferences and objectives.

3. Edward M. Gramlich, "Booms and Busts, The Case of Subprime Mortgages" (address given at the symposium "Housing, Housing Finance, Monetary Policy," sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 31,

The subprime market began to experience growing problems after 2004, when delinquencies on subprime ARMs began to rise. By the second quarter of 2007, almost 17 percent of subprime ARMs were delinquent, up from a recent low of 10 percent in the second quarter of 2005 (see Figure 3). In addition, the share of subprime ARMs entering foreclosure increased from an average of 1.5 percent in 2004 and 2005 to 3.8 percent in the second quarter of 2007. Although delinquencies have also risen for fixed-rate subprime loans, the level of delinquencies for fixed-rate loans has been lower and its increase has been slower.

Housing markets have weakened throughout the country, but a only few states have had significant increases in foreclosure rates (see Figure 4).

Several factors seem to have contributed to the growing delinquencies of subprime mortgages. Mortgage rates moved upward during the period as monetary policy tightened, and some ARM borrowers may have been surprised at how high their mortgage rate became. Many ARM borrowers appear to have defaulted after the initial period of low rates expired and their monthly payments were reset at significantly higher levels. Such ARM borrowers often found it difficult to refinance their mortgages to avoid increasing payments. In addition, some borrowers who had purchased their home with little money down may have seen their equity vanish as home prices began to decline in some areas. In the industrial Midwest, especially in Michigan, those problems were aggravated by the slowdown of the regional economy as the automotive industry retrenched.

The problems have undermined investors' confidence in the securities backed by subprime mortgages. During the boom years, investors may not have fully appreciated the risks of subprime loans and seem to have underpriced them. Investment managers around the globe were seeking securities that offered higher yields but apparently did not fully appreciate the risks that they were taking on. The price that investors charged for taking on risk in the subprime mortgage market, as well as other financial markets, plummeted to abnormally low levels. The rating agencies, too, appear to have not kept up with some fast-emerging problems in the quality of securities backed by subprime loans, and they may have placed undue emphasis on the unusual period of substantial price appreciation in evaluating the risks of mortgage-related securities. This year, when the risks of subprime mortgages were recognized, the prices for securities backed by them dropped sharply. Liquidity in both the primary and secondary markets for subprime mortgage-backed securities has also declined, as some of the country's largest originators of such loans collapsed.

2007), available at http://www.kansascityfed.org/publicat/sympos/2007/pdf/2007.09.04.gramlich.pdf.

Risks to Individuals and the Broader Economy

The shakeout in housing markets has already affected both individuals and the overall economy. House prices have declined in some areas of the country, mortgage delinquencies and foreclosures have risen, and housing investment has fallen dramatically. The effects that have occurred to date, however, may only be the beginning. Even if the economy manages to maintain a fairly steady pattern of growth, many homeowners will face dramatically higher mortgage payments, which will probably lead to additional foreclosures, and some mortgage investors will experience further losses. Moreover, the problems in the subprime mortgage market have spilled over into the broader financial markets, raising borrowing costs for other mortgage and nonmortgage borrowers and threatening to further depress economic activity. Although the consensus forecast for the economy still indicates real growth of about 2-1/2 percent next year, economists generally agree that the probability of a recession next year has risen and is now quite elevated relative to normal conditions.

Individuals

Mortgage payments, delinquencies, and foreclosures will be a problem for many years as interest rates are reset on prime and subprime ARMs that were originated during the 2004–2006 period. Rates have already been reset for some of those ARMs, and the remaining instances (most of which will occur before the end of 2010) will eventually add about $30 billion to annual payments.[4] Although that increase is not large relative to total household income of $10 trillion, many households will be hard pressed to make the higher payments, and some will become delinquent on their mortgages.

New foreclosures on ARMs have risen over the past year and are likely to remain high for some time. About 1.65 percent of the 8.7 million ARMs (both prime and subprime) included in data tabulated by the Mortgage Bankers Association (MBA) went into foreclosure in the second quarter of this year, about twice the rate during the second quarter of last year. Extending that percentage to all 12.4 million ARMs that were outstanding during the second quarter of 2007 suggests that about 200,000 may have gone into foreclosure.

The rate of new foreclosures in the future depends upon a wide variety of factors, particularly the overall state of the economy and housing prices, so forecasts vary widely—from an additional 1 million over the next few years to more than 2 million. The lower estimates suggest that the pace of foreclosures may slow next year, reflecting the fact that many of the recent foreclosures stem from the expiration of extremely low and very short-term (one- to six-month) teaser rates on some ARMs. Such mortgages will not have as large an effect on the overall foreclosure rates in the future as they have had recently. The higher estimates, however, reflect a concern about the outlook for the overall economy and the

4. See Christopher L. Cagan, *Mortgage Payment Reset: The Issue and the Impact* (Santa Ana, Calif.: First American CoreLogic, March 19, 2007).

possibility that a negative cycle may develop—higher rates of foreclosure may depress housing prices, undermining efforts to refinance mortgages, pushing more homes into foreclosure, and lowering prices further.

Individuals who owned assets that were affected by the recent turmoil in financial markets have experienced losses as a result of the problems in mortgage markets. No data are available about how the losses were distributed among various categories of investors—domestic or foreign, individuals or institutions—nor about how pension funds may have been affected.

The Broader Economy

The problems created by mortgage markets threaten to slow economic activity, possibly by a substantial amount. Four channels exist through which the turbulence in housing markets could affect the broader economy:

- **Reduced Housing Investment**. Between 1995 and 2005, investment in residential housing directly contributed an average of 0.3 percentage points per year to economic growth. The slump in residential housing has already weakened the economy, and more weakness in the housing market could constrain growth further by reducing that source of investment.

- **Less Consumer Spending Based on Housing Wealth**. Lower house prices also are likely to weaken economic activity through the housing wealth effect: Reduced housing wealth causes a decline in consumer spending. The effect could be somewhat larger than expected if households have increased difficulty withdrawing equity from their homes.

- **Contagion in Mortgage and Financial Markets.** Higher mortgage rates and weaker house prices, contributing to higher foreclosure rates and losses for mortgage lenders, threaten to precipitate a spiral of tighter mortgage standards, lower house prices, and more foreclosures. The broader spillover, or contagion, of the subprime mortgage problems into other credit markets, causing stricter standards and terms for other types of borrowing, could reduce economic activity by weakening business investment.

- **A Decline in Consumers' and Businesses' Confidence.** A slowdown in economic activity and employment growth triggered by the problems in mortgage markets, especially if associated with spillover effects in financial markets, could weaken consumers' and businesses' confidence about income growth in the future. Such a reaction could then constrain economic activity further.

Those various channels through which the problems in mortgage markets could spread to the broader economy make the current situation particularly uncertain; the potential effects involving contagion and confidence are especially difficult to evaluate because they depend in part on how financial market participants, consumers, and business executives perceive the situation.

Analysts have lowered their economic forecasts as a consequence of this summer's turmoil in financial markets. In July, the *Blue Chip* consensus anticipated that real GDP would grow by 2.9 percent next year; by September, however, the *Blue Chip* consensus forecast for 2008 had dropped to 2.6 percent. The average growth in the bottom 10 forecasts in the *Blue Chip* survey fell somewhat more—from 2.5 percent to 2.0 percent—but even the average for the bottom 10 forecasts in the *Blue Chip* does not suggest a recession next year. In other words, although the risk of a recession is elevated relative to normal conditions, at least as of now economists generally do not expect a recession next year.

Residential Housing Investment. Investment in residential housing bolstered the economy from the middle of 2003 to early last year, but by that time, the combination of increased mortgage rates and high prices for houses had reduced the affordability of buying a house. Home sales and construction began to falter, and the appreciation in housing prices subsequently slowed. By mid-2007, housing construction activity was 32 percent lower than it had been in early 2006, and by one widely used measure, the national average of housing prices was about 3 percent lower than it had been at its peak. The direct effect of the fall in residential investment reduced real GDP growth in the second half of 2006 and the first half of 2007 by about a percentage point.

The severity of the problems in mortgage markets will exacerbate the decline in residential investment. A few months ago, before the extent of the troubles in the subprime market was recognized, housing analysts generally anticipated a rebound in housing construction during 2008. Now, however, they assume that increased difficulty in arranging financing will cause housing sales and construction to fall much further, perhaps delaying the recovery in the housing market until 2009.

The Housing Wealth Effect. The major factors influencing consumer spending are household income and housing wealth. Greater income and wealth provide consumers with more buying power. The amounts that consumers spend out of their income and wealth vary over their lifetime and vary with the actual and expected pace of economic activity, with interest rates, and with opportunities to borrow, among other things. In recent years, homeowners have been able to easily make use of their housing wealth by using home equity loans and lines of credit and by taking cash out when refinancing their mortgages. The withdrawal of housing equity (net of mortgage fees, points, and taxes) amounted to $735 billion in 2005 and $564 billion in 2006.

A significant amount of uncertainty exists about precisely how much spending changes when wealth changes (known as the marginal propensity to consume out of wealth). Estimates of that parameter range from 2 cents to 7 cents out of a dollar of wealth.[5] So if the value of a home drops by $10,000, the owner might reduce his annual spending by between $200 and $700, if nothing else changes. Some studies find that people adjust their spending more in response to changes in housing wealth than to changes in other forms of wealth, while other studies do not reach that conclusion.

The outlook for home prices is highly uncertain, but it seems likely that house prices will continue to fall next year.

- The inventory of unsold homes stands at record levels, which will place continued downward pressure on house prices in many regions of the country.

- The futures market for the Case–Shiller composite home price index for 10 metropolitan areas expects a decline of about 6 percent over the coming year (see Figure 5).[6] That expectation may not be a reliable guide, however, because those index futures do not trade frequently or in large numbers, so it may not represent a broad consensus of investors. Moreover, the index covers only a relatively few metropolitan areas and, hence, is not indicative of prices nationwide.

- Home prices are still quite high relative to rents by historical standards, although the ratio of house prices to rents is only a very rough guide to the magnitude of possible movements in house prices (see Figure 2). The ratio has risen sharply over the past 10 years and now stands about 60 percent above its average from 1975 to 1998. In the past, when the ratio has deviated from its historical norm, most of the adjustment has occurred in house prices rather than in rents—although that adjustment can take many years.

Although the magnitude of the possible decline in house prices is subject to great uncertainty, the housing wealth effect alone is unlikely to push the economy into a recession. CBO examined two cases (at the low end and the high end of assumptions about the marginal propensity to consume out of housing wealth) of the potential effects of a substantial decline of 20 percent in real house prices over two years. At the low end, by the third year, real output would be about 1 percent lower, implying that growth would fall by about one-half of a percentage point per year. At the high end, those effects would more than double; that is, growth could drop by about 1-1/2 percentage points per year on average (see Figure 6). In neither case would the decline be enough to slow the economy, otherwise growing at something like 2-1/2 percent per year, into a recession. The Federal

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5. See Congressional Budget Office, *Housing Wealth and Consumer Spending* (January 2007).

6. The S&P/Case-Shiller® 10-City Composite Home Price Index tracks changes in the value of residential real estate in 10 metropolitan regions. Futures based on that index trade on the Chicago Mercantile Exchange.

Reserve conducted similar experiments using its model and found even smaller effects.[7]

Contagion. The plausible effects of the decline in housing markets through reduced investment in housing and the effects of reduced housing wealth on consumption are thus negative but do not appear to be large enough to tip the economy into recession. If those were the only potential effects of the problems in housing markets on the economy, the risk of a recession would probably not be as elevated as many economists believe it currently is. The turbulence in housing markets could have other effects on the economy, though.

For example, some economists are concerned about the adverse impacts on growth that could occur if the problems in the subprime mortgage market continue to spread to other credit markets. That is indeed a serious risk to the economic outlook. The possibility of such contagion initially upset financial markets in the spring of this year, when the problems in the subprime market first surfaced. Markets were further roiled in July and August following the failure of several hedge funds that had invested heavily in subprime securities, concerns over some European banks' contingent liabilities for similar types of hedge funds, and the arrival of other news on the depth of the problems in mortgage markets. Because of a lack of clear information about who holds those subprime investments in their portfolios, investors often do not know who has exposure to the losses in the subprime market. That confusion has led to a repricing of risk in general, which has affected valuations and interest rates on a wide variety of investments—prices of risky assets fell, whereas prices of Treasury securities rose. That repricing followed a period in which risk spreads had been unusually low.

Price changes in the market for assets collateralized by subprime mortgages have been dramatic. Financial institutions issue mortgage-backed securities (MBSs) to investors with the payments of interest and principal tied to the payments made by subprime borrowers. MBSs are structured to create multiple classes of claims, or seniority, on the cash flows from the underlying mortgages. Investors holding securities in the safest or most senior tranche (AAA) stand first in line to receive payments from borrowers (and expect to receive a correspondingly low return). Investors holding the least senior securities stand last in line to receive payments after all more senior claims have been paid. Hence, they are first in line to absorb

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7. See Frederic S. Mishkin, *Housing and the Monetary Transmission Mechanism*, Finance and Economics Discussion Series No. 2007-40, Federal Reserve Board (August 2007). Both CBO's and the Federal Reserve's analyses assume that the Federal Reserve offsets some of the negative effects of the decline in house prices. In the Federal Reserve's simulation, the federal funds interest rate is more than 1-1/2 percentage points lower by the end of the third year; in CBO's simulation, the rate is between half of a percentage point and 2 percentage points lower at the beginning of the third year.

losses on the underlying mortgages. In return for assuming that risk, holders of less senior, lower-rated claims expect to receive correspondingly higher returns.

As of mid-August, the prices of the riskiest tranche of mortgages issued in 2006 and early 2007 had fallen to 40 cents or less on the dollar, but the prices of the safest tranche were above 90 cents on the dollar. Prices of tranches based on mortgages issued earlier, in the last half of 2005, ranged from 60 cents for the BBB- tranche (the lowest investment grade) to almost 97 cents for the AAA tranche, indicating that the worst losses seem to apply to originations made in 2006 and early 2007.

Difficulties in the subprime mortgage market spread to jumbo mortgages, which are those that exceed the maximum size of a mortgage that Fannie Mae and Freddie Mac are eligible to purchase. That amount, which is also known as the conforming limit, was $417,000 in 2007. As problems in the market for financing subprime mortgages became more apparent, investors began to demand much higher premiums on jumbo mortgages, raising interest rates on them. In addition, the terms of those jumbo loans tightened, as many lenders began to require larger down payments and higher credit scores. By contrast, mortgage rates on conforming loans have actually declined, as they have benefited from a “flight to quality.” Moreover, prime borrowers are not having significant difficulties in obtaining credit for loans under the conforming limit.

The contagion has spread beyond mortgage markets, leading to higher interest rates on various types of business borrowing. One indication is the change in the differences, or spreads, between interest rates on corporate bonds and the rate on 10-year Treasury notes. To date, the increase in spreads on riskier bonds (those with lower credit ratings) has been substantial and greater than the increases on less risky bonds (see Figure 7). Much of the recent increase, though, simply brings the spreads of risky assets back to more normal levels. That is, investors appear to have been underpricing risk for some time, and the jump in the riskiest rates in recent months brings them up to levels that are still low relative to those in more serious episodes of credit restraint, during the fall of 1998, for instance, when the Long-Term Capital Management hedge fund failed, and at the end of 2000, when the stock market started to fall.

Serious problems have appeared in the riskier end of the market for commercial paper. The commercial paper market is an important source of short-term funds for businesses; in July, the outstanding amount of commercial paper was almost $2.2 trillion (see Figure 8). Interest rates on the lower grade A2/P2 and asset-backed paper rose sharply during the turmoil in financial markets in August (see Figure 9), when holders of the asset-backed paper became concerned that the underlying assets might include very risky subprime mortgages. The underlying collateral was difficult to value because the market for trading subprime loans was never liquid to begin with, and is less so now. The amount of commercial paper outstanding fell by an unprecedented $260 billion in August, with most of the drop in asset-backed paper.

The difficulties in some segments of the credit markets are relatively easy to observe through price spreads or ratings downgrades. Other market segments, however, may have shifted substantial portions of risk from subprime mortgages through private transactions that were not evaluated by rating agencies. The publicly traded participants to those transactions will disclose the impact on their earnings statements, but depending on the structure of the transactions involved, the process for valuing losses may take months.

The problems in the credit markets have resulted in a shortening of the maturity structure of commercial paper and a big jump in term premiums for asset-backed paper with maturities longer than a week. Those large premiums indicate that investors are quite uncertain about what will happen to the market for that paper. One test for the asset-backed commercial paper market in coming weeks is the large fraction of the outstanding paper that matures and must be rolled over. About 44 percent ($418 billion) of the asset-backed commercial paper outstanding in early September will mature by September 21, and 73 percent ($688 billion) by October 19. If investors' demand for that paper is insufficient, issuers will have to find other sources of funds to finance their assets.

Consumer and Business Confidence. The turmoil in credit markets could also affect the broader economy through a decline in consumer and business confidence about future economic activity. To be sure, those consumers and businesses directly affected by the turmoil may already have lowered their expectations of the future economic activity. Diminished expectations by other consumers and businesses, which would show up in the aggregate data for gauging confidence, would be a signal that a broader slowing of economic activity may be in the offing. To date, consumer confidence has held up fairly well even though problems in housing markets have been building up for the past year (see Figure 10). Results from the Business Roundtable's Economic Outlook Survey appeared consistent with a broad slowing in the economy, but not with the kind of collapse in business spending that could precipitate a recession. Notably, the survey was conducted between August 20 and September 5, the period of greatest disruption in the commercial paper market. Also, the Index of Small Business Optimism, based on a survey conducted by the National Federation of Independent Businesses, fell slightly in August, but it is not much lower than its average of the last six months. By contrast, investors' optimism, as measured by the UBS/Gallup index, dropped sharply in August, falling 14 points, to 73, its lowest level in 12 months.[8]

8. The UBS/Gallup Index of Investor Optimism, published monthly, is available at www.ubs.com.

Policy Responses

Three objectives appear dominant in current policy proposals for addressing the financial difficulties originating in the subprime market: sustaining the overall economy; helping homeowners facing foreclosures; and preventing future crises by reducing the chances of a recurrence of financial instability, while keeping the subprime market open.

In evaluating policies to achieve those goals, it is important to recognize that not all current housing and credit policies are broken. Some are working well. The challenge is to find ways of correcting the abuses and instability that are now becoming apparent while strengthening successful institutions and continuing the benefits of market innovation.

Sustaining the Overall Economy

One of the central goals for policy is to limit the potential effects of turmoil in the subprime market on the economy as a whole. The Federal Reserve, as the lender of last resort, is the institution that is best placed to take action to meet that goal.

The Federal Reserve faces two problems. The most immediate is to stabilize credit markets, especially to avoid problems with liquidity that could emerge if commercial borrowers (including those unrelated to the housing industry) have difficulty refinancing their short-term debt as it matures. That problem is short term and will diminish as financial markets develop ways to assure investors of the quality of borrowers. Market participants are already discussing ways to improve such transparency.[9] Traditionally, the Federal Reserve has provided that liquidity for banks at times such as these. Some economists have noted that with changes in the financial system, the Federal Reserve may need to extend liquidity to others, although other economists have noted that such a change would represent a fundamental shift in the conduct of monetary policy and would need to be carefully evaluated before being adopted.

The second problem is to stabilize the economy, which the Federal Reserve tries to do by adjusting its target for the interest rate on federal funds. That adjustment requires an estimate of how much the turmoil in subprime mortgages will affect the broader economy. As noted above, such estimates are quite uncertain. Moreover, while the Federal Reserve's actions to provide liquidity work quickly, there is a considerable lag between changes in interest rate targets and their effects on the economy.

The Federal Reserve and other central banks have already taken steps to help limit the spillover of the problems in the subprime market to other financial markets. In August, the Federal Reserve provided liquidity for the financial system in a timely manner and helped prevent the collapse of a few markets from quickly spreading

9. See Reuters, London, "ESF Head Sees Investors Returning to Asset-Backed CP," September 13, 2007.

to other parts of the financial system: It allowed the actual federal funds rate to move below its target level as a result of the injection of liquidity. It lowered the discount rate, though that move initially led to very little additional borrowing. It has also reiterated its ongoing commitment to financial stability, suggesting in recent statements that it might be willing to go beyond the ordinary tools of monetary policy if the problems in the market prove recalcitrant. (Although the Federal Reserve was not specific about what it might do, some people have discussed providing liquidity in other parts of the market, beyond the interbank market in which it normally operates.)

Especially in the face of the significant uncertainties in the economic outlook, but more broadly as a matter of principle, there appears to be significant benefit in allowing the Federal Reserve the independence to evaluate macroeconomic tradeoffs as best it can. At its September 18 meeting, the Federal Reserve lowered the discount rate and its target for the federal funds rate by 50 basis points.

Aiding Borrowers Facing Foreclosure

A second major goal for policy may be to aid borrowers who are facing the possibility of foreclosure. Because most of those foreclosures stem from homeowners with adjustable-rate mortgages, most of the options involve increasing opportunities for those borrowers to restructure their debt in a manner that reduces their debt-service burden and shares the cost among the parties to the transaction: the homeowner, the lender, and participants in the secondary market

Such opportunities could be created in a variety of ways. For example, federal financial regulators have sought to encourage lenders to consider refinancing the mortgages of troubled borrowers as an alternative to the costly process of foreclosure. Another possibility is to expand the use of community-based organizations, such as community development corporations and community development financial institutions, which provide services, counseling, and foreclosure protection to households. In his recent book, Edward Gramlich described the role of such organizations and the possibilities for expanding their work given the turmoil in the mortgage market.[10]

In addition, the Administration has made changes to federal regulations that govern the Federal Housing Administration (FHA) to make such refinancing easier. Specifically, the new FHASecure plan modifies the existing rules for the agency's mortgage insurance and increases opportunities for some homebuyers to refinance their mortgages on more affordable terms. For those buyers who can meet FHA's existing underwriting standards but cannot afford to service their existing mortgages, the policy will avoid the high cost of foreclosure.

10. Edward M. Gramlich, *Subprime Mortgages: America's Latest Boom and Bust* (Washington, D.C.: Urban Institute Press, 2007).

The FHASecure policy is unlikely to be a solution for all subprime borrowers with high-cost ARMs, however. Many of those at risk will be unable to meet FHA's eligibility requirements, including a 3 percent down payment and full-documentation of income. In addition, refinancing troubled ARMs may be hampered by heavy penalties for prepayment. Finally, the ability of lenders to renegotiate and refinance existing mortgages is restricted by tax provisions intended to limit the role of lenders in the operation of trusts that hold the mortgage pools backing the MBSs.

In providing assistance to vulnerable households, it is important to strike an appropriate balance between reducing the harm to homeowners and inappropriately signaling that the government will make whole future borrowers who place risky bets in housing markets. As Douglas Elmendorf of the Brookings Institution has noted, ". . . some struggling borrowers are the victims of predatory lending practices, and others entered into mortgage contracts they did not fully understand. Others knew what they were doing and deliberately took risks, but we should still be sympathetic to low-income people who would have their lives disrupted by losing their homes, giving up any equity in their homes, and damaging their credit histories. That said, our economic system of letting people make their own decisions is sustainable only if people bear the consequences of those decisions. . . . Moreover, helping people who took risks and lost can encourage excessive future risk-taking."[11]

Regulatory and Administrative Changes. The Administration and federal financial regulators have begun to take steps to help defaulting borrowers using the legal authorities that they already have.

In addition, the Congress could consider a variety of legislative approaches, most of which would probably have a budgetary cost. One possibility is to reduce the burden on distressed borrowers by changing the tax code. Other approaches could include facilitating refinancing of distressed loans, either directly through government lending programs or indirectly by guaranteeing those loans.

Eliminating the Tax on Debt Forgiveness. The Administration has proposed a Debt Relief Liability Waiver, which would eliminate the tax liability for debt forgiveness. Under current law, loan forgiveness is taxable income to the recipient. Therefore, loan balances that are forgiven as a part of a debt restructuring are taxable to borrowers. Similarly, a shortfall between the value of a foreclosed property and the remaining balance on the mortgage is currently considered income to borrowers and is taxed. Legislation to waive that tax liability could provide assistance to financially troubled borrowers, but the waiver would need to be crafted carefully to avoid the gaming that could result. For

11. Douglas W. Elmendorf, "Notes on Policy Responses to the Subprime Mortgage Unraveling," The Brookings Institution, September 17, 2007, available at www.brookings.edu/views/papers/elmendorf200709.htm.

example, if the waiver were too general, a firm could give a loan to a worker (rather than taxable wages) and then forgive the principal.

Expanding FHA's Guarantees. Increasing the size limit on mortgages eligible for FHA's guarantees to 100 percent of the conforming loan ceiling would make it possible for some current homeowners with mortgages up to $417,000 to refinance with a guarantee from the agency, provided they can meet the eligibility requirements. Additional borrowers could be assisted by easing those requirements and by reducing the guarantee fees for those refinanced mortgages. However, expanding the government's portfolio of loan guarantees could prove costly to the government, even though beneficial to borrowers.

Easing Restrictions on Fannie Mae and Freddie Mac. The secondary, or resale, market for low-risk first mortgages of $417,000 or less is dominated by the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac. With the support of an implicit federal guarantee of their debt and other liabilities, those enterprises have privileged access to funds in the capital markets. In fact, during times of financial turmoil and uncertainty when there is often a "flight to quality" by investors, the securities issued by those entities are favored investments.

Some legislative proposals would increase the maximum mortgage size that housing GSEs are permitted to purchase, from $417,000 to $500,000 nationally and to $625,000 in designated high-cost areas. The aim of the proposal is to increase demand by investors for jumbo mortgages, for which the availability of funds has been limited and interest rates have risen in recent months.

Another proposal would raise the maximum size of loans that could be purchased by Fannie Mae and Freddie Mac. In addition, some variations of that proposal would increase current limits on the dollar volume of mortgages and mortgage-backed securities that Fannie Mae and Freddie Mac could hold as investments rather than reselling them to investors as guaranteed asset-backed securities. The current limits were imposed on the housing GSEs by the federal safety and soundness regulator, the Office of Federal Housing Enterprise Oversight, in response to the accounting scandals at the enterprises last year. Former Treasury Secretary Lawrence Summers has proposed expanding the GSEs' securitization of subprime mortgages (and perhaps also expanding their holdings of such mortgages).[12] That approach could be implemented in conjunction with an increase in the dollar limits on the GSEs' portfolios.

Adopting those proposals could increase the demand for mortgages and lower interest rates on them. However, the proposals also raise concerns about an increase in risk to the financial system (and perhaps implicitly to the federal budget) from further concentrating mortgage holdings in enterprises that have

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12. Lawrence Summers, "This Is Where Fannie and Freddie Step In," *Financial Times*, August 26, 2007.

problems with financial controls and accounting capabilities. Shifts in the GSEs' portfolios with a given aggregate cap would raise the demand for some types of mortgages and reduce the demand for other types. Creating new refinancing opportunities directly through a federal agency such as FHA, rather than the for-profit housing GSEs could also improve the targeting of assistance to those families with the greatest need.[13]

Encouraging Other Solutions. Federal regulators might encourage solutions, such as renting defaulted homes back to the homeowners, that both minimize the disruption for them and provide an income stream for investors.[14] That sort of solution was probably easier to achieve when mortgages were held by the issuers; with ownership widely spread through tranches of pooled mortgages, it might be difficult to get agreement among all parties, absent regulatory encouragement. It may also prove difficult to make sure that renters take proper and sufficient care of their previous homes.

Preventing Future Crises

Preventing future crises is a third important goal for policy. Two broad approaches could be taken: addressing deceptive lending practices and improving regulation of the subprime market.

Other areas that policymakers may want to revisit, but that pose difficult trade-offs, involve the role of the rating agencies and regulation of hedge funds and private equity funds. The incentives of rating agencies may not be adequately aligned with investors purchasing securities. Former Chairman of the Securities and Exchange Commission (SEC) Arthur Levitt, for example, has proposed a variety of measures to realign incentives in the rating agency market (for example, by requiring in debt-offering documents full disclosure about consulting advice from related parties and imposing SEC's oversight of the agencies). Other observers have called for increased regulation of hedge funds and private equity funds.

Although the government may need to take important and relevant steps to reduce the risk of future crises, the private sector also has an incentive to limit such risk. Financial losses being incurred by lenders and investors are forceful reminders of the enduring need to adhere to basic standards of prudence in underwriting and evaluating risk.[15] The consequences of the current disturbance for investors may help to avoid a recurrence of the worst excesses of recent years.

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13. See Elmendorf, "Notes on Policy Responses."

14. See Dean Baker and Andrew Samwick, "Save the Homeowners, Not the Hedge Funds," *Providence Journal*, September 3, 2007.

15. Those developments have also exposed weaknesses in some relatively new financial structures, such as structured investment vehicles (SIVs), which are a means of deriving profit from the difference between short-term borrowing rates and long-term rates. SIVs may use subprime loans as collateral when issuing asset-backed commercial paper. When

Addressing Deceptive Practices. For the federally chartered and regulated financial institutions, the Federal Reserve has authority under the Truth in Lending Act and the Home Ownership Equity Protection Act (HOEPA) to require specific provisions in mortgage contracts and to prohibit practices deemed "unfair" or deceptive.[16] Currently, the Federal Reserve is reviewing proposals that would require lenders to include in monthly repayments and escrow accounts amounts sufficient to pay taxes and insurance on mortgaged properties, as most prime lenders do routinely. The Federal Reserve is also considering rules that would restrict or prohibit prepayment penalties when payments under ARMs are reset and loans are made without documentation that verifies the borrower's income. The coverage of HOEPA could also be expanded. For example, Edward Gramlich proposed reducing the interest rate threshold at which HOEPA applies from 8 percentage points to 5 percentage points above the Treasury bond rate on comparable securities; he noted that such an expansion may partially supplant the variety of regulations that have been adopted by about 40 states.

Prosecution of fraudulent lenders and mortgage brokers by federal and state authorities under current law (including HOEPA) is likely to reduce the recurrence of the most abusive, illegal practices in the future. Some legislative proposals would also hold mortgage originators and investors in mortgage-backed securities liable for loan terms defined in legislation as "abusive." Such consumer protection initiatives can prevent some uninformed borrowers from agreeing to disadvantageous terms and teaser rates, but they also restrict the ability of lenders to tailor mortgage terms to the legitimate needs of some borrowers. For example, prohibiting prepayment penalties may help protect unsophisticated households from entering contracts that lock them into excessively costly payments—but it may also allow higher-quality borrowers to refinance more rapidly than lower-quality borrowers, thereby causing a reduction in the average quality of the mortgage pool and forcing investors to charge a higher interest rate on the mortgages in the first place.

Improving Regulation of the Subprime Market. Over the longer term, the subprime mortgage finance industry may require more uniform regulation. Currently, about half of all subprime mortgages are originated by lenders subject to federal safety and soundness regulation. The other half of the market is made up of state-chartered independent mortgage lenders and brokers. Some, but not all, of the latter group are subject to effective operating oversight and consumer protection by state regulatory authorities. Those lenders and brokers who operate outside of effective government-imposed regulation or industry self-regulation are the source of much, though not all, of the fraudulent and abusive practices that

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banks create them, they are usually kept off the balance sheet, adding to problems in the interbank market.

16. Ben S. Bernanke, "The Sub-Prime Market" (address at the Federal Reserve Bank of Chicago's Annual Conference on Bank Structure and Competition, May 17, 2007).

have come to light as a result of the current wave of defaults and foreclosures. More uniform regulation of those entities would be consistent with both fair competition and consumer protection.

Investors' interest in increasing the transparency of the operations of structured finance entities, including the pooling of subprime mortgages in a trust for the purpose of selling various classes of ownership shares in the pool to investors, has been reported in the press. To date, however, no legislation has been introduced for that purpose. In general, the creators of structured finance vehicles have strong incentives to meet investors' needs for information and to maintain low-cost access to the capital markets. Current deficiencies in the information provided by such entities to investors may be self-correcting.