

CBO TESTIMONY

**Statement of
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Director**

The Current Economic Situation

**before the
Committee on the Budget
U.S. House of Representatives**

December 5, 2007

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Mr. Chairman, Congressman Ryan, and Members of the Committee, I appreciate the opportunity to testify this morning on the current economic situation.

The economic outlook right now is particularly uncertain. Most backward-looking indicators suggest a relatively healthy economy: Despite the drop in housing construction and sales, economic activity has remained strong and the rate of inflation in core consumer prices has fallen. But the economy has been buffeted this year by several interlinked shocks, most importantly the turbulence in the subprime mortgage market, decreased confidence within the financial markets, and substantially higher prices for oil. Economic activity has probably already slowed significantly, and the risk of a recession is now elevated. Most analysts currently believe the economy will avoid a recession but will grow relatively slowly for several quarters.

My testimony this morning covers five main topics:

- **The Housing and Financial Markets.** The turmoil that began in the subprime mortgage market and then spread to broader financial markets has posed substantial challenges for the economy. Housing activity remains quite weak, and house prices have declined in many areas, reducing household wealth and the outlook for consumer spending. Lenders' losses on mortgage-related assets and lower tolerance for risk have constrained the supply of credit, particularly for the riskiest borrowers. The problems in the housing and financial markets has reduced consumers' and businesses' confidence about future economic conditions, and presumably their willingness to spend and invest.
- **Oil Markets.** Crude oil prices have risen by over 60 percent this year. Most of that increase appears to reflect underlying fundamentals, including rapid growth of demand (especially in China, India, and other developing nations) and slow growth of supply. Geopolitical tensions and speculative and precautionary demand have also exerted some influence on prices. Although the economy is not as sensitive to oil price shocks as it was in the 1970s, the recent rise in oil prices could still dampen economic growth.
- **The Current Account and the Dollar.** Continued improvement in the nation's current account balance provides an important counterbalance to the weakness expected in domestic spending. After falling for many years, net exports have risen by over \$100 billion (in constant dollars) since the end of 2005 and have added about 1-1/3 percentage points to the growth of real (inflation-adjusted) gross domestic product (GDP) in the past two quarters. Further depreciation of the dollar and strong economic activity in the rest of the world are likely to contribute to continued improvement in net exports.
- **Consumption and Consumer Confidence.** The growth of consumer spending has been healthy this year but is likely to weaken over the coming year in response to slower income growth, lower housing wealth, stricter standards and terms for loans, and higher oil prices. Especially during times in which

economic conditions are shifting rapidly, projecting consumer spending accurately is difficult; the effects of many influencing factors, including housing wealth and consumer confidence, have a significant range of uncertainty surrounding them. Because consumer spending currently accounts for 70 percent of GDP, the difficulties in projecting such spending pose challenges for projecting overall growth of GDP.

- **The Potential for a Recession and Its Effects on the Federal Budget.** The combined effect of those various forces is an elevated risk of a recession. The most likely scenario, though, remains slow economic growth. Few analysts currently expect an outright recession next year. For example, the average for the bottom 10 forecasts included in the *Blue Chip* survey (which covers about 50 private-sector forecasts) released in early November suggested 1.9 percent growth in real GDP in 2008, and not a single forecaster projected negative growth. However, the next *Blue Chip* survey is likely to show further downward revisions of the forecasts. Moreover, recessions have often proved very difficult to foresee, or even to recognize in their early stages: Indeed, the apparently robust growth for the third quarter of this year may eventually be revised down.

Either an extended period of sluggish growth or a recession would cause a noticeable deterioration in the budget deficit. Since 1968, during recessions, the deficit has increased by about 1 percent to 3 percent of GDP, which translates to about \$140 billion to \$420 billion in today's economy (after the estimated effects of policy changes are removed). Such increases in the deficit during periods of economic weakness in large part reflect the operation of the budget's "automatic stabilizers." When the economy weakens, tax burdens and revenues tend to decline, and some types of spending (on unemployment insurance, for instance) tend to rise, helping to boost the demand for goods and services and thereby stabilize the economy.

The Congressional Budget Office (CBO) will release an updated economic and budget outlook in January. This testimony, therefore, does not provide specific economic or budget projections.

The Housing and Financial Markets

The housing market has weakened significantly this year. Sales of new and existing homes have declined, and many forecasters expect further declines in coming months. The construction of new single-family homes has diminished sharply. The inventory of unsold new homes has climbed to high levels, about 8-1/2 times the rate of sales in October, which is about twice the ratio that existed on average earlier in this decade. Home prices have begun to fall in many areas: According to the Standard & Poor's (S&P)/Case-Shiller national house price index, the average price has fallen by 5 percent from its peak. Many forecasters now believe that the national average price of a home will decline significantly more before the housing market stabilizes.

The current contraction of the housing market comes after several years of extraordinary 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 who otherwise would have been renters owned their homes. Investors and second-home buyers also purchased a large number of properties.

Background on the Housing Market

The housing boom stemmed from three main factors.

- **Low Interest Rates on Mortgages.** Over the past several years, nominal long-term rates were exceptionally low, driven by a benign outlook for inflation, high tolerance of risk by investors, and strong investment in the United States by foreigners. In addition, the Federal Reserve kept the federal funds rate at very low levels through mid-2004.¹ 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 ultimately helped feed the increase in house prices.
- **Homebuyers' Expectations of Rapid Appreciation in House Prices.** As the housing market began to heat up and house prices rose, people began to believe that prices would continue to rise. That expectation made housing an attractive investment opportunity, spurring demand and putting upward pressure on prices. Thus, for a time, the expectation of higher prices became a self-fulfilling prophecy that bore little relation to the underlying determinants of demand, such as demographic forces, construction costs, and the growth of household income.
- **A Plentiful Supply of Mortgage Credit, Including the Expansion of Subprime Mortgage Lending.** The share of subprime mortgages, which are extended to borrowers who have low credit scores, rose rapidly after 2002, constituting 21 percent of all home mortgage originations (in dollar terms) in 2005 and 2006. By the end of 2006, the outstanding value of subprime mortgages totaled more than \$1 trillion and accounted for about 13 percent of all home mortgages.

The growth of the subprime mortgage industry was facilitated by changes in regulations and innovations in financial markets. Legislative and regulatory changes made in the 1980s lifted constraints on the types of institutions that could

1. The federal funds rate is the rate at which banks make overnight loans to one another.

offer mortgages and the rates that could be charged. The development of new credit-scoring technology in the 1990s made it easier for lenders to evaluate and price the risks of subprime borrowers. The securitization of subprime mortgages expanded, encouraging such lending by allowing the market to spread the associated risks.² Global investors poured large amounts of money into subprime investments that they judged to offer attractive risk-adjusted returns. Indeed, the price that investors charged for taking on risk in the subprime mortgage market, as well as other financial markets, fell to abnormally low levels. Finally, the rating agencies appear to have miscalculated the risks of some securities backed by subprime loans, and they may have unduly emphasized the unusual period of appreciating prices.

Many of the subprime mortgages turned out to be riskier than many investors expected. The problems in the market began to appear after 2004, when delinquencies on subprime adjustable-rate mortgages (ARMs) started to rise unexpectedly rapidly. 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 2). 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 for those loans has been lower, and the increase has been slower.

Those problems have undermined investors' confidence in the securities backed by subprime mortgages. Liquidity in both the primary and secondary markets for subprime mortgage-backed securities (MBSs) has declined, as some of the country's largest originators of such loans have experienced severe difficulties (see Box 1). In the market for assets collateralized by subprime mortgages, price changes have been dramatic. The price of the BBB tranche of subprime MBSs (close to the riskiest investment grade) issued in the second half of 2006 was 20 cents on the dollar as of November 30, and the price of even the safest (AAA) tranche was 77 cents on the dollar—in both cases, a dramatic worsening from the amounts when CBO last testified on this issue in September (see Figure 3). Prices of tranches based on MBSs issued earlier, in the last half of 2005, ranged from 33 cents for the BBB tranche to 95 cents for the AAA tranche.

Several factors seem to have contributed to the growing delinquencies of subprime mortgages. After mortgage rates began to move up in late 2005, 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. Faced with prepayment penalties (which protected lenders from the potential

2. Securitization is a process whereby mortgages are pooled and then their cash flows 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.

Box 1. What Are Mortgage-Backed Securities?

Financial institutions issue mortgage-backed securities (MBSs) to investors with the payments of interest and principal backed by the payments on a package of mortgages. MBSs are structured by their sponsors to create multiple classes of claims, or tranches, of different seniority, based 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 require the lowest contractual interest rate of all the tranches. Investors holding the least senior securities (the equity tranche) stand last in line to receive payments, after all more senior claims have been paid. Hence, they are first in line to absorb losses on the underlying mortgages. In return for assuming that risk, holders of the equity tranche require the highest contractual interest rate of all the tranches.

churning of mortgages with very low initial rates), such borrowers often found it expensive to refinance their mortgages to avoid the increasing payments. In addition, some borrowers who had purchased their home with little money down may have seen their equity vanish as house 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 underwriting standards of some originators in the subprime mortgage market had slipped in recent years, perhaps because they as well as investors were lulled by unusually low default rates while house prices were rising rapidly. Some made loans to borrowers who put little money down—and who 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 established borrowers' qualification for mortgages on the basis of initially low teaser rates. That approach created opportunities for both borrowers and originators to exaggerate borrowers' ability to repay the loans.

Those problems seemed to have stemmed from a high tolerance for risk on the part of investors, exacerbated by a failure 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 make the loan payments. 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, originators may not have had adequate incentives to exercise care and discretion in their underwriting.

The rise in defaults of subprime mortgages may also reflect the fact that some borrowers lacked a complete understanding of the complex terms of their mortgages and assumed mortgages that they would have trouble repaying.³ Defaults in areas where speculation drove home sales and prices may also reflect investors' inability to sell their properties as prices fell.

Difficulties in the subprime mortgage market have spread to other mortgage markets. One is the market for 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. In addition, the terms of those jumbo loans tightened, as many lenders began to require larger down payments and higher credit scores. The market for conventional loans also has been affected. Although mortgage rates on conventional loans have actually declined in recent months, as they have benefited from a "flight to quality," the Federal Reserve reports that commercial banks have tightened lending standards for all mortgage borrowers.

Mortgage delinquencies and foreclosures will be a problem for a number of years as interest rates on subprime ARMs that were originated in recent years are reset to higher market rates. Rates have already been reset for some of those ARMs, but an additional 1.8 million subprime mortgages will have their rates reset during 2008.⁴ Those resets, plus additional ones in later years (most of which will occur before the end of 2010), could eventually add about \$40 billion to borrowers' annual payments.⁵ Although that amount is not large relative to total household after-tax income of \$10 trillion, many households will be hard pressed to make the higher payments, and some will become delinquent on their mortgages.

Risks to the Economy from the Housing Market

The turbulence in the housing market reflects the correction of an unsustainable growth of house prices. Although a significant adjustment has already occurred, the current correction in the housing market could continue to affect the broader economy through several main channels:

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3. Certain ARMs 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.
 4. Statement of Ben S. Bernanke, *The Economic Outlook*, before the Joint Economic Committee (November 8, 2007).
 5. See Christopher L. Cagan, *Mortgage Payment Reset: The Issue and the Impact* (Santa Ana, Calif.: First American CoreLogic, March 19, 2007).

- Reduced investment in residential housing;
- Less spending by consumers because of their reduced housing wealth; and
- Contagion in mortgage and financial markets.

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, along with the effects of a decline in consumers' and businesses' confidence (to be discussed later), are especially difficult to evaluate because they depend in part on how financial market participants, consumers, and business executives perceive the situation.

Residential Housing Investment. Investment in residential housing bolstered the economy every quarter from 2002 to the end of 2005, at times contributing up to 1 percentage point to the growth of real GDP. By the end of 2005, though, 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 the third quarter of 2007, housing construction activity was almost 25 percent lower than it had been in early 2006, and according to the S&P/Case-Shiller national house price index, the national average of house prices was 5 percent lower than it had been at its peak. The direct effect of the fall in residential investment reduced annualized real growth of GDP in each of the past six quarters 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.

Housing Wealth. The major factors influencing consumer spending are household income and 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, for example. But lower house prices constrain the opportunity for such cash withdrawals. The withdrawal of housing equity (net of mortgage fees, points, and taxes) amounted to \$644 billion in 2005, \$662 billion in 2006, and \$567 billion in the first half of 2007.⁶

6. Defaults on mortgages might even have helped to support consumer spending at first.

The outlook for home prices is highly uncertain, but it seems likely that house prices and, consequently, housing wealth will continue to fall next year. The inventory of unsold homes stands at high levels, which will place continued downward pressure on house prices in many regions of the country. Moreover, the ratio of housing prices to rents still seems very high relative to its history (Figure 4). To be sure, homebuyers' expectations of home prices may deviate from long-term fundamentals for extended periods of time, and the price–rental ratio may therefore not provide a reliable guide to potential changes in prices over relatively short periods of time.⁷

Futures markets expect significant further declines in house prices. One measure, which looks at a constant-quality index of home prices in 10 metropolitan areas, anticipates a decline in nominal prices of about 7 percent over the coming year (see Figure 5).⁸ However, the index may not indicate what is happening to prices nationwide. Another measure, from Radar Logic, Incorporated, a New York-based real estate and data analytics firm, with coverage of 25 metropolitan areas but with a less sophisticated adjustment for changes in the quality of the homes sold, projects a decline of 11 percent over one year and 24 percent over the next three years. Those expectations may also not be a reliable guide, however, because those contracts do not trade frequently or in large numbers and therefore may not represent a broad consensus of investors.

Private forecasters differ widely in their projections of the decline in house prices, although all agree that there is a substantial decline still to come. Macroeconomic Advisers projects a 6 percent decline over two years, while Global Insight projects a similar decline over the next year. Goldman Sachs projects a 15 percent total decline before an upturn occurs—perhaps as much as a 30 percent decline if a recession occurs.

A significant amount of uncertainty exists about the extent to which 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.⁹ So if the value of a home drops by \$10,000, the owner might

Such defaults mean a loss for investors (who tend to be relatively wealthy and may not have needed to adjust their consumption) but can be a gain for the people who default because they no longer need to make unaffordable mortgage payments and may be able to spend the money on other things.

7. See Jonathan McCarthy and Richard W. Peach, “Are Home Prices the Next ‘Bubble’?” *Federal Reserve Bank of New York Economic Policy Review*, vol. 10, no. 3 (December 2004), pp. 1–17.
8. 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.
9. See Congressional Budget Office, *Housing Wealth and Consumer Spending* (January 2007).

eventually reduce his or her 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 combined effects of lower housing wealth and the reduction in home construction could together be enough to push the economy toward a recession. In order to evaluate the size of just the wealth effect, 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 16 percent in nominal 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, just from the wealth effect (see Figure 6).¹⁰ If the economy would otherwise be growing at something like 2-1/2 percent per year, a response by consumers at the high end combined with the drop in construction spending could be enough to reduce growth to close to zero.

Contagion from Mortgage Markets to Other Financial Markets

Concerns about future economic activity have been magnified by the possibility that the problems in the subprime mortgage market could continue to create further problems for banks and other institutions in the credit markets. The possibility of such contagion upset financial markets earlier this year, as the market's expectation of the potential magnitude of problems in the subprime market worsened. Markets were further roiled in July and August following the failure of several hedge funds that had invested heavily in subprime securities, the knowledge that some European banks were exposed to large losses from similar types of hedge funds, and the arrival of other news on the depth of the problems in mortgage markets. The third round of turmoil, in November, was triggered when quarterly financial reports of banks and other financial institutions revealed larger-than-expected losses derived from the subprime mortgage market that could threaten the supply of credit to businesses and households. Those developments have led to a repricing of risk in general, which has affected valuations of and interest rates on a wide variety of investments: Prices of risky assets fell, whereas prices of Treasury securities rose, widening the unusually narrow risk spreads that had existed.

10. The Federal Reserve conducted similar experiments using its model and found smaller effects. See Frederic S. Mishkin, *Housing and the Monetary Transmission Mechanism*, Finance and Economics Discussion Series No. 2007-40 (Washington, D.C.: Federal Reserve Board, August 2007). Both CBO's and the Federal Reserve's analyses assume that the Federal Reserve adjusts its target for the federal funds rate to offset 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 one-half of a percentage point and 2 percentage points lower at the beginning of the third year.

Box 2. Issues in the Credit Markets, in Brief

The disruption in the credit markets reflects the fundamental fact that in the wake of the turbulence in the subprime market, investors' tolerance for risk, which was unusually high in the past few years, has fallen sharply. That change has had two effects: The value of risky assets has declined; and the availability of credit to risky borrowers is constricted. In addition, some domestic and foreign investors who in recent years have invested in U.S. markets are now investing more in other countries.

Although the adjustment in asset prices has been going on since August, it is not clear whether the adjustment has finished, and the prices of some securities remain exceptionally volatile. The prolonged period of price adjustment reflects in part uncertainty about when and how the problems in the subprime mortgage market will be resolved and to what extent they will spill over into the broader economy.

Decreased tolerance of risk has led to higher interest rates and less availability of credit, particularly for high-risk borrowers. In recent years, financial markets developed an alphabet soup of new channels that allowed credit to flow to risky borrowers and allowed investors to get high returns while diversifying their risk. The growth of the subprime mortgage market and of highly leveraged investment pools are examples of those developments (see Box 3). Many of those new channels for funding investments are currently largely closed. As a result, the credit now being extended is flowing to a larger extent through more traditional channels, such as banks.

The result is that some relatively risky activities, including some housing investment, are not being funded. That reduces total spending in the economy. Whether there will be any further real effects on the economy depends on whether the banks (and other financial institutions) experience capital problems and have to curtail lending because of their own exposure to losses on subprime mortgages and other affected securities. Further reductions in asset prices could impair the capital positions of some institutions and curtail their ability to lend, at least until they are able to raise additional new capital. The Federal Reserve and the bank regulators are closely monitoring those developments.

Interest rates have risen on various types of business borrowing. One indication of the lower tolerance for risk is the change in spreads between interest rates on corporate bonds and the rate on 10-year Treasury notes. To date, interest rates on riskier bonds (those with lower credit ratings) have increased substantially, while rates on less risky bonds have fallen (see Figure 7). Much of the recent change, though, simply brings the spreads on risky assets back to more normal levels. That is, investors appear to have been underpricing risk for some time, and the jump in spreads on the riskiest bonds in recent months brings their rates up to

levels that are still fairly low relative to those in more serious episodes when investors' aversion to risk was heightened, such as during the fall of 1998, when the Long-Term Capital Management hedge fund failed, and in late 2000, after the last peak in the stock market.

Serious problems have persisted in the asset-backed segment of the commercial paper market.¹¹ Asset-backed paper (which totaled \$981 billion in August) accounts for about half of the commercial paper market. Since the beginning of August, though, the amount of asset-backed paper that is outstanding has fallen by about 30 percent (see Figure 8). Interest rates on asset-backed paper rose sharply during the turmoil in financial markets in August, when holders of those investments became concerned about the extent of their exposure to subprime mortgages (see Figure 9). The underlying collateral was difficult to value, in part because the market for trading subprime loans was never liquid to begin with.¹² Although the spreads over Treasury rates have since declined, they remain substantial.

The problems in the market for asset-backed commercial paper may force some firms to tap their lines of credit with banks, leaving less bank credit available for other borrowers. Moreover, some large banks are committed either explicitly or implicitly to providing varying levels of liquidity to entities known as structured investment vehicles (SIVs), which have invested in a variety of asset-backed securities such as subprime MBSs (see Box 3). Such entities, which are off the banks' balance sheets, allow the banks to earn extra income without correspondingly expanding their capital. Should SIVs be unable to continue to fund their holdings through the commercial paper market, the banks may need to provide the necessary liquidity. If SIVs' losses worsen, the sponsoring banks may decide to bring the assets—and losses—back onto their balance sheets, possibly impairing other lending activities. One European bank, HSBC, has already decided to do so: Its SIV-sponsored assets were marked down 30 percent. The losses will reduce its capital, which in turn will slow the growth of its lending to households and businesses.

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11. Asset-backed commercial paper is collateralized by receivables including MBSs, credit card loans, and student loans.
 12. Some of the financial contracts underlying that paper contain clauses that delay price discovery if the market for an underlying asset is too illiquid. Designed to prevent a “fire sale” of an individual asset, in the aggregate such mechanisms have partially contributed to the slow emergence of the losses sustained as a result of the turmoil in the subprime mortgage market. Generally, if an asset becomes subject to some triggering event, an agent solicits bids for the asset to discover the asset's current value. If the agent receives too few bids, the agent solicits bids at a later date. Although the subsequent valuation dates and the requisite number of bids are privately negotiated, such mechanisms may delay price discovery by 30 days or more. That delay effect is compounded if the new-found values then cause triggering events for another set of contracts.

Box 3. Structured Investment Vehicles

Structured-investment vehicles (SIVs) are entities that issue commercial paper and medium-term notes and then invest the funds in higher-yield, longer-maturity assets, such as asset-backed securities, including mortgage-backed securities and collateralized debt obligations (CDOs) backed by subprime mortgages. (CDOs are securities that are collateralized with a range of asset-backed securities.) Fitch Ratings estimates that there are \$320 billion of SIVs.¹ SIVs are usually not carried on the balance sheets of the institutions creating them (because the institutions do not have a legal obligation to cover the SIVs' losses). As long as they remain off the balance sheets, they have little or no effect on the institutions' capital requirements.

Because of the mismatch in maturity between the assets and liabilities of SIVs, they periodically need to roll over their debt. That "refunding" requires that lenders are willing to take on the risks associated with a SIV's underlying portfolio. However, when markets are disrupted and ascertaining the value of such portfolios is difficult, refunding may be difficult or impossible. In that case, the SIV will have to liquidate its portfolio.

Although some financial analysts initially believed that bank-sponsored SIVs were well positioned to avoid forced liquidations because their portfolios were diversified and they had commitments of liquidity from their sponsoring banks, that view has changed. SIVs are often required to start selling their assets once their losses exceed threshold percentages of their capital or if they violate liquidity provisions. Those involuntary sales could then push down asset prices, which could cause losses at other SIVs to exceed their capital thresholds. The losses could also trigger defaults on commercial paper already issued by the SIVs and further impede their ability to borrow money.

A consortium of financial institutions, prodded by the Treasury, has agreed to create a new entity, the Master Liquidity Enhancement Conduit (MLEC), to purchase the best of the assets from SIVs as necessary. Although the MLEC may mitigate refunding difficulties and help the market to distinguish between good and bad assets, critics of the proposal fear that the MLEC might simply postpone the recognition of losses, which could delay the recovery of the credit markets by reducing transparency.

SIVs and CDOs also remain vulnerable to the failure or downgrading of bond guarantors. Most of the rated securities held by the CDOs carry credit enhancements in the form of insurance guarantees, because the underlying securities are, on average, rated BBB. Thus, those guarantees are critical to the AAA ratings for the senior tranches of CDOs. Perhaps more significantly, bond guarantees are also critical to a smoothly functioning municipal bond market. The rating agencies have placed several of the leading bond insurers (which are likely to suffer significant losses and have seen their market values fall between 50 percent and 75 percent from their peaks) on their watch lists of institutions whose credit rating they might downgrade, which suggests that those insurers might have to raise more capital.

1. Fitch Ratings, *SIVs—Assessing Potential Exposure of Sponsor Banks*, Special Report, November 14, 2007.

Although some banks may be distressed, most are well capitalized and should be able to absorb the losses. According to the most recent data available, as of September 30, 2007, the book value of equity capital for banks whose deposits were insured by the Federal Deposit Insurance Corporation (FDIC) totaled more than \$1.3 trillion. In addition, the FDIC has indicated that of the 8,560 institutions covered, the vast majority (8,481) are well capitalized. Those well-capitalized banks, furthermore, hold 99.8 percent of the industry's assets. Only nine institutions, holding a trivial percentage of the industry's assets, are undercapitalized. Another 70 institutions, holding 0.2 percent of assets, are considered adequately capitalized.

Still, the large size of potential losses suggests that some banks, abroad as well as here, will absorb losses that could impair their lending.¹³ On the basis of current discounts on subprime MBSs, expected depreciation in home prices, and past experience with defaults, some private-sector analysts estimate that mortgage losses over several years could be \$300 billion to \$400 billion. Because those losses will also be shared globally by investors, including hedge funds, pension funds, and other investment funds, it is unlikely that the banking system as a whole will be imperiled.

Credit losses have also affected the potential lending capacity of Fannie Mae and Freddie Mac. Their concentration in the prime mortgage market serves as an insulating factor, but they hold about \$230 billion in subprime and Alt-A mortgages.¹⁴ Their credit losses have lowered their capital cushions to just about \$3 billion, on top of the \$73 billion in capital currently required to safeguard \$1.6 trillion of balance-sheet assets and \$3.3 trillion of off-balance-sheet guarantees of mortgage-backed securities. That modest cushion leaves little capacity to absorb further losses. Consequently, Freddie Mac has announced that it will raise \$6 billion in new capital and cut its dividend in half. However, even if the enterprises chose not to raise more capital, they could continue guaranteeing MBSs as long as they reduced their portfolios of mortgages, because the capital requirements for the mortgages held on their balance sheets are about five times higher than the requirements for their guarantees. Because the enterprises' guarantees with their implicit federal backing are the source of lower borrowing costs in the conforming mortgage market, any problems that they encounter are unlikely to affect that market but could affect their ability to buy more subprime and Alt-A mortgages.

13. Citigroup has been identified as having the largest exposure to losses arising from SIVs. In its third-quarter financial filings, Citigroup's total risk-based capital was 10.6 percent of assets, barely above the 10 percent level needed to be considered well capitalized under current law.

14. Alt-A mortgages are higher rated than subprime mortgages but lower rated than prime mortgages.

The Response of Monetary Policy

As the extent of the turmoil in financial markets became clear in August, central banks in both the United States and elsewhere took action to maintain liquidity. Starting on August 10, the Federal Reserve injected \$24 billion in temporary reserves into the U.S. banking system, a larger-than-usual amount, by accepting greater-than-normal amounts of mortgage-backed securities as collateral (see Figure 10). That action included a tacit temporary suspension of targeting the federal funds rate, as it was permitted to trade below the 5.25 percent target set on August 7. That approach continued until the Federal Reserve reduced the target to 4.75 percent on September 18. On August 17, the Federal Reserve also reduced the discount rate from 6.25 percent to 5.75 percent, and it extended the length of loans to 30 days and allowed borrowers to renew them.¹⁵ On October 31, the Federal Reserve again cut the target federal funds rate by another 25 basis points, to 4.5 percent (see Figure 11).

The trouble in the U.S. subprime mortgage market also directly affected banks in other countries that had invested heavily in U.S. securities backed by subprime mortgages or were relying on short-term interbank financing (which became disrupted by the troubles in the mortgage markets) for longer-term loans. The European Central Bank (ECB), the Bank of Japan, the Bank of Canada, and the Bank of England all have injected substantial amounts of liquidity into their countries' financial markets to contain the credit crisis. For example, on August 9, the ECB provided an unprecedented amount equivalent to \$129 billion, which the Bank of Japan followed the next day with \$9 billion. On September 6, the ECB injected \$59 billion into temporary reserves. Even the Bank of England, which was reluctant to intervene earlier, announced on September 19 that it would inject \$20 billion into money markets, in a bid to bring down short-term interest rates, which had risen after the Northern Rock bank experienced difficulties in refinancing. So far, those foreign central banks have not yet cut their interest rates, but they have held off planned increases.

The resurgence of market jitters in November has prompted the central banks to take or announce new steps intended to calm the markets. For example, that month, the Bank of Canada provided to money markets funds totaling more than \$3 billion to bring the overnight rate down to its target (4.5 percent). On November 26, the Federal Reserve announced that it would extend the length of loans to bond dealers to ease funding pressure on banks through the end of the year. On November 29, the Bank of England announced that it would inject about \$20 billion to alleviate concerns about overly tight credit conditions. Earlier this month, the ECB also announced that it would inject \$85 billion in three-month loans on November 23, to be followed by another \$85 billion on December 12.

15. The discount rate is the rate at which banks can borrow from the Federal Reserve.

Oil Markets

Developments in oil markets could also affect the macroeconomic outlook, although their impact to date has been modest. In 2007, the price of crude oil increased by over 60 percent, reaching almost \$100 a barrel in recent weeks, an inflation-adjusted level not seen since the 1980s (see Figure 12). Supply and demand fundamentals account for much of the recent increase in crude oil prices, but geopolitical tensions and related increases in speculative and precautionary demand for oil have also exerted upward pressure on prices. The increase in crude oil prices has pushed higher the prices of petroleum products such as gasoline and heating oil.

The Energy Information Administration (EIA) of the Department of Energy projects that world consumption of crude oil will have increased in 2007 by about 1.1 million barrels per day, to 85.8 million barrels per day.¹⁶ China, India, and nations in the Middle East together account for over 75 percent of the projected increase. Although the United States accounts for about 25 percent of global oil consumption, it accounts for much less of the recent increase: Only about 10 percent of the increase in 2007 is attributable to the United States.

That increase in global demand comes against the backdrop of slow growth in world oil production. According to EIA's forecasts, total production will be about 200,000 barrels per day higher in 2007 than in 2006. Total production by nations outside of the Organization of Petroleum Exporting Countries (OPEC) will increase, but that increase will have been almost completely offset by the organization's cuts in production in November 2006 and February 2007.¹⁷ Crude oil prices have declined in recent days to below \$90 a barrel, on the basis of expectations of a near-term increase in OPEC's production, though the organization has yet to confirm such an increase. With such limited growth of supply, the increase in crude oil consumption is being drawn from privately held inventories. While tight markets result in elevated prices, lower inventories reduce the buffer against uncertainties about the supply and increase the potential for price volatility.

Over the longer term, there is some concern that future supply may not be able to keep pace with increased demand and that prices could rise further. World consumption is expected to continue to grow, reflecting large growth in demand in China, India, the Middle East, and elsewhere. The International Energy Agency forecasts growth of world petroleum consumption of about 2 percent per annum in the years ahead.¹⁸ However, the supply may become increasingly limited as

16. Energy Information Administration, *Short-Term Energy Outlook* (November 2007), available at www.eia.doe.gov/emeu/steo/pub/contents.html.

17. OPEC nations are Algeria, Angola, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

18. International Energy Agency, *Medium-Term Oil Market Report* (July 2006), p. 6.

crude oil from existing reserves becomes harder and more expensive to access. In some areas, for example, the North Sea, Mexico, and Venezuela, production has been unresponsive to rising prices. But analysts differ on whether the market as a whole is constrained by a limited accessible supply or whether specific factors, such as political unrest in Nigeria or slow development of new central Asian oil fields, account for relatively flat production despite rising prices. Regardless of the underlying cause of a sluggish supply response, prices will increase if future increases in demand are not matched by a growing supply.

Some analysts argue that the rise in the price of oil also reflects increases in speculative and precautionary demand for oil. For example, Middle East tensions could disrupt the supply and drive prices higher, and some of that risk is currently reflected in the market price. Similarly, some investors may conclude that holding crude oil is a better investment than other assets.

Looking to the future, both EIA's price forecasts and futures prices available at the New York Mercantile Exchange (NYMEX) suggest that crude oil prices will decline from current levels next year, though prices are still projected to remain high relative to historical experience. In its most recent forecast, EIA estimates that the prices for West Texas Intermediate crude oil will be about 11 percent lower at the end of 2008 than at the beginning of that year.¹⁹ That projection is somewhat greater than current NYMEX futures prices; the current price for December 2008 is about \$85 per barrel, or about 4 percent below the January 2008 prices.²⁰

Gasoline

The price of gasoline has broadly reflected the rise in crude prices since the beginning of the year. As of late November 2007, the weekly average retail price for all grades of gasoline in the United States was about \$3.15, or about 32 percent higher than it was at the beginning of January. (See Figure 13). However, short-term movements in gasoline prices did not necessarily reflect movements in crude oil prices throughout the year. As is typical, average gasoline prices peaked during the late spring in anticipation of increased summer driving. By late August, average prices for retail gasoline in the United States declined by nearly 15 percent from the spring peak even as crude oil prices had risen by about 10 percent.²¹ Since August, both crude oil prices and average retail prices for gasoline have increased.

available at http://omrpublic.iea.org/currentissues/MED_OMR06.pdf.

19. Energy Information Agency, *Short-Term Energy Outlook* (November 2007).

20. New York Mercantile Exchange, *Light Sweet Crude Oil*, accessed December 3, 2007, available at www.nymex.com/lscf_fut_csf.aspx.

21. Energy Information Agency, *Weekly Heating Oil and Propane Prices*, accessed December 3, 2007, available at http://tonto.eia.doe.gov/dnav/pet/pet_pri_wfr_a_

Heating Oil and Natural Gas

According to current data from EIA, average real prices for heating oil are about \$3.30 a gallon, about 38 percent higher than they were a year earlier.²² In contrast, winter 2006–2007 heating oil prices were approximately unchanged from those of the previous winter. By EIA’s projections, heating oil prices will decline in 2008 by about 8 percent, approximately the same amount that the agency predicts for crude oil prices. However, the severity of the winter will be a key determinant of whether heating oil prices continue to increase over the next several months.

Natural gas prices have fluctuated throughout the past year and currently stand at about \$8 per million British thermal units, a level approximately consistent with prices a year earlier. EIA estimates that natural gas prices will grow by about 3 percent in 2008,²³ while NYMEX futures indicate greater growth of about 11 percent.²⁴

Macroeconomic Effects

The historically high crude oil and related energy prices have had a limited impact on the U.S. economy to date. At the consumer level, individuals tend to be inflexible in their use of gasoline, at least in the short term. Estimates of the short-run elasticity of demand for gasoline suggest that a 10 percent increase in the price of gasoline will cause the consumption of gasoline to decline by 0.5 percent or less. According to CBO’s research, higher gasoline prices have induced only a small change in driving patterns. Individuals are buying somewhat more fuel-efficient vehicles than in the past, and the share of sport utility vehicles has declined as the share of passenger cars has increased. But even if high prices persist, the full effect of that higher efficiency on gasoline demand will not be completely realized for many years because fully replacing the automobile fleet takes about 15 years.

The relatively modest effects on the economy from higher oil and related prices may seem puzzling to those who remember the substantial impact from the oil price shocks of the 1970s. At that time, however, monetary policymakers had been unable to control inflation in the years before energy prices rose, and many other aspects of the structure of the U.S. economy made it less able to respond to energy price shocks than it is today.²⁵

EPD2F_prs_cpgal_w.htm.

22. Ibid.

23. Energy Information Administration, *Short-Term Energy Outlook* (November 2007).

24. New York Mercantile Exchange, *Natural Gas*, accessed December 3, 2007, available at www.nymex.com/ng_fut_csf.aspx.

25. See Congressional Budget Office, *The Economic Effects of Recent Increases in Energy Prices* (July 2006).

The Current Account and the Dollar

The current-account balance has stabilized in recent years and real net exports have increased sharply since early last year, providing an important offset to the weakness of housing spending. But after increasing for many years, the nation's current-account deficit has become unsustainably large. Between 2000 and 2005, it grew from about \$400 billion to about \$800 billion. Since then, it has remained roughly constant, even though the cost of oil imports has risen sharply. Indeed, with oil excluded, the deficit has begun to decrease since 2005. The stabilization of the current account reflects a slight increase in the real growth of exports and a sharper decrease in the real growth of imports. Thus far, the adjustment in the current account has occurred in an orderly way without major disruptions of exchange markets.

Both strong growth abroad and depreciation of the dollar have played roles in stabilizing the current account. The economic growth of major U.S. trading partners has been stronger than expected so far this year, mainly because of the strength of emerging economies. The problems in the U.S. subprime mortgage market, though they have caused a credit squeeze in advanced economies, appear to have channeled capital to some emerging economies, especially those of Brazil and India, supporting their domestic growth and imports and adding to the growth of their asset prices and exchange rates. Economic growth in other countries, however, appears to have slowed since the summer, as industrial economies grapple with the problems in financial markets, the sharp rise in oil prices, and the appreciation of their currencies against the dollar.

The dollar, which has been on a downtrend since early 2002, has dropped by more than 5 percent against the currencies of the country's major trading partners since midsummer. The recent more rapid decline probably largely reflects the consequences of the financial strains in the United States, through the following channels:

- The Federal Reserve cut interest rates more aggressively than most other central banks have, lowering the rate of return on U.S. short-term securities;
- Investors remained concerned about the dollar's status as the main reserve currency for central banks, and some countries are rebalancing their official portfolios and reducing the share of dollar assets; and
- Fear of a U.S. recession and uncertainty about the true scale of U.S. corporations' exposure to the fallout from the financial turmoil may also have reduced foreign demand for U.S. stocks and bonds.

Eventually, such a large movement of exchange rates would be expected to have some impact on consumer prices, but little impact has been seen yet. Several studies have observed that the "pass-through" from exchange rates to U.S. prices has recently been smaller than it used to be, perhaps because foreign exporters have so far been able to absorb a large part of the dollar's depreciation without

changing U.S. prices much.²⁶ However, there is a limit to how much compression of profits those exporters can absorb, and eventually more of the decline in exchange rates is likely to be passed through to prices. That limit—whose position is unknown—is likely to be reached more quickly when exchange rates depreciate more rapidly.

Consumption and Consumer Confidence

Because consumption accounts for such a large share of overall economic activity, the economic outlook will be substantially affected by what happens to consumer spending. The turmoil in credit markets could affect consumption because consumer and mortgage loans may be more difficult to obtain, because the decline in house prices reduces consumer wealth, and because consumer confidence about future economic activity may be diminished. Moreover, continued weakness in stock markets also would work to reduce consumption spending somewhat.

So far, there is little direct evidence of any significant slowing in consumption. Through the third quarter of this year, real personal consumption expenditures had not moved to a significantly lower trend growth path (see Figure 14). The first look at overall consumer spending in October, which came out last Friday, indicates weaker growth, but some of that weakness may reflect unseasonably warm temperatures that reduced heating needs and purchases of seasonal clothing and shoes. Despite the problem of delinquencies of subprime mortgage loans, delinquency rates on consumer loans at commercial banks have moved up only slightly in the past year and are not signaling major problems.

The apparent resilience of consumption is somewhat less reassuring in light of some other factors. First, consumers' energy bills have risen significantly this year, by roughly \$80 billion (at an annual rate) in the first half of the year, which may force consumers to cut back on other spending. Although energy costs fell by about \$18 billion between June and September—just as the financial turmoil emerged—oil and gasoline prices have risen again since September. Second, the effect of weaker house prices and the lower stock market may not have yet filtered through to consumer spending. As house prices continue to decline, they may affect consumer spending because houses are the main source of collateral for loans (mortgages and home equity lines) to consumers. But such effects are likely to take some time to occur. Third, the Federal Reserve reports that commercial banks have tightened their lending standards and terms on consumer

26. See Mario Marazzi and others, *Exchange Rate Pass-Through to U.S. Import Prices: Some New Evidence*, International Finance Discussion Paper No. 833 (Washington, D.C.: Federal Reserve Board of Governors, April 2005), available at www.federalreserve.gov/pubs/ifdp/2005/833/ifdp833.pdf. See also Mario Marazzi and Nathan Sheets, "Declining Exchange Rate Pass-Through to U.S. Import Prices: The Potential Role of Global Factors," *Journal of International Money and Finance*, vol. 26, no. 6 (October 2007), pp. 924–947.

loans other than credit cards and on residential mortgage loans, including prime mortgages.

Moreover, consumers' attitudes have deteriorated this year and suggest that a broader slowing of economic activity from its pace during the middle of this year may be in the offing. The consumer sentiment index, created by the University of Michigan, fell to 76.1 in November, its lowest level since the aftermath of the 2005 hurricanes (see Figure 15). Higher energy prices and continued weakness in the housing market continue to depress consumers' assessments of current conditions. The Conference Board's index of consumer confidence also has fallen sharply since the summer. Both of those entities' indexes of consumers' expectations also have fallen this year and are at levels that, if maintained, appear to be consistent with weak growth in consumer spending.

The Possibility of a Recession and Effects on the Budget

Recessions are notoriously hard to forecast, so it is not surprising that very few forecasters have a recession in their base forecast for the near future, though most have revised down their forecasts of growth since last summer (see Table 1). From the point of view of the budget, however, the effects of being in a mild recession may not differ very much from those of being in a period of slow growth.

Forecasters currently face considerable uncertainty about what has already happened—not an unusual occurrence.²⁷ In the third quarter of 2007, the most recent for which data are available, real growth of GDP was reported to have been 4.9 percent at an annual rate. However, a measure of total income in the economy—which apart from measurement errors should be the same as GDP—suggests much slower growth of slightly below 2 percent.

In evaluating the possibility of a recession, forecasters must balance the negative aspects of the economy described above—the collapse of housing, the risk of contagion, and the likely weakness of consumption—against the better news from the rest of the economy. Among that better news is the improvement of the current-account balance and inflation that is still contained despite the increases in oil prices and the weakness of the dollar. Such news gives the Federal Reserve room to adjust interest rates.

27. See Dennis J. Fixler and Jeremy J. Nalewaik, News, Noise, and Estimates of the "True" Unobserved State of the Economy, Finance and Economics Discussion Series No. 2007-34 (Washington, D.C.: Federal Reserve Board of Governors, September 18, 2007).

Table 1.
Comparison of Forecasts of Real GDP for 2008
 (Percentage change, fourth quarter to fourth quarter)

	<u>Current</u>	<u>As of Mid-2007</u>
Administration	2.7	3.1
<i>Blue Chip</i>	2.4	2.9
Federal Reserve	1.8 to 2.5	2.5 to 2.75
Global Insight	1.9	2.9
Macroeconomic Advisers	2.8	2.9
NABE	2.6	3.1

Sources: Council of Economic Advisers, Department of the Treasury, and Office of Management and Budget, “Administration Economic Forecast” (joint press release, November 29, 2007, and June 6, 2007); Aspen Publishers, Inc., *Blue Chip Economic Indicators* (November 10, 2007, and July 10, 2007); Federal Reserve Board of Governors, *Minutes of the Federal Open Market Committee* (October 30-31, 2007), and *Monetary Policy Report to the Congress* (July 18, 2007); Global Insight, Inc., *U.S. Economic Outlook* (November 2007 and July 2007); Macroeconomic Advisers, LLC, *Economic Outlook* (November 21, 2007, and July 10, 2007); National Association for Business Economics (NABE), *NABE Outlook* (November 2007 and May 2007).

Notes: GDP = gross domestic product.

The *Blue Chip* consensus is the average of about 50 forecasts by private-sector economists. The forecast from the Federal Reserve is termed the central tendency, which reflects the most common views of the Federal Open Market Committee. The NABE Outlook is a survey of about 50 professional forecasters.

One way of thinking about the probability of a recession is to look at indicators that in the past have been correlated with recessions. The best single such indicator is an inverted yield curve—which occurs when a short-term interest rate (such as the rate for one-year Treasury bills) is above a long-term interest rate (such as the rate on 10-year notes). Such an inversion has preceded every recession in the past 50 years and has given only one false signal (see Figure 16). The yield curve was inverted for much of last year and the first five months of this year. It is not inverted now, but such an inversion has frequently ended before a recession starts.

Another approach is to see what people are willing to put money on. Trading on the Intrade Web site, which allows investors to trade a derivative based on a recession in 2008, in September put the probability of a recession close to 60 percent. Since then, the probability dropped to 30 percent and is now a little below 50 percent, according to that market. That indicator is a very thinly traded

contract, though, and therefore may not accurately reflect the broader views of investors.

A third approach is to survey forecasters. The November *Blue Chip* survey asked participants about the probability of recession in 2008. While the consensus of the 10 most pessimistic forecasters thought that the probability was over 43 percent, the consensus of all responders put that probability at about 1 in 3 (up from 1 in 4 in August). No forecaster in the survey thought that a recession was the most likely outcome. Forecasters do agree, however, that the next year will see GDP growing considerably below its potential trend, and the next survey will probably reveal forecasts of lower projected growth.

In January, CBO will release its comprehensive analysis of the current economic situation and the implications for the federal budget. Pending that full analysis, a look back at what past recessions have meant for the budget provides a rough guide to what might happen in the event of a recession in the coming year. Since 1968, recessions have worsened the annual budget balance—by CBO’s rough estimate, by between about 1 percent and 3 percent of GDP from just before the cyclical peak to the second fiscal year following. In the current economy, a recession similar to those experienced over the past four decades might therefore increase the deficit by between \$140 billion and \$420 billion (see Table 2).

The deterioration in the budget deficit during periods of economic weakness provides a form of automatic stimulus to the economy. As the economy slows, the decline in income, payrolls, profits, and production causes tax receipts to fall relative to spending—and causes outlays, for unemployment compensation and food stamps, for instance, to rise. The combination temporarily boosts demand for goods and services, thereby helping to offset some of the macroeconomic weakness.²⁸

Fiscal policy interventions that go beyond those automatic stabilizers in attempting to boost the economy during periods of economic weakness have had a mixed track record. Although there have been examples of effective discretionary fiscal stimulus, in several other cases, attempts to stimulate demand through changes in fiscal policies have proved to be poorly timed or relatively ineffective. Part of the reason has to do with the time lag typically involved in enacting such legislative changes. Another involves the specific stimulus policies enacted in the

28. Economists have long noted that the tax system serves as an automatic stabilizer that offsets at least part of demand shocks to the economy. A decline in aggregate before-tax income of one dollar generates a decline in aggregate after-tax income of less than one dollar. As a result, the tax system helps to stabilize demand for goods and services, which in turn helps to reduce fluctuations in the overall economy. See Alan J. Auerbach and Daniel Feenberg, “The Significance of Federal Taxes as Automatic Stabilizers,” *Journal of Economic Perspectives*, vol. 14, no. 3 (Summer 2000), pp. 37-56; and Thomas J. Kniesner and James P. Ziliak, “Tax Reform and Automatic Stabilization,” *American Economic Review*, vol. 92, no. 3 (June 2002), pp. 590-612.

Table 2.
Budget Effects of the Past Six Recessions
 (Percentage of gross domestic product)

<u>Period Before Peak to Trough</u>	<u>Change in</u>	
	<u>Actual Deficit</u>	<u>Adjusted Deficit</u>
1969 to 1971	-2.5	-2.5
1973 to 1975	-2.3	-2.0
1979 to 1981	-1.0	-0.8
1981 to 1983	-3.5	-2.0
1990 to 1992	-0.8	-1.5
2000 to 2002	-4.0	-2.9
Average	-2.3	-2.0

Source: Congressional Budget Office.

Notes: In this table, the period before the peak is the fiscal year preceding the onset of a recession, and the trough is either the fiscal year containing the last quarter in which the economy was in recession or the fiscal year following that last quarter.

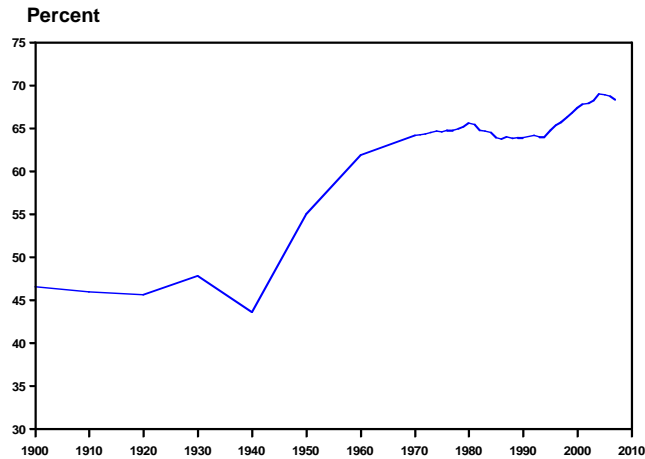
The adjusted deficit is calculated by removing from the actual deficit (1) all discretionary spending; (2) the effects of legislation on taxes and mandatory spending; and (3) all interest payments. In addition, the adjusted deficit has the impact of inflation attributable to progressivity (bracket creep) removed from individual income tax receipts (except for the last two recessions, because personal income tax brackets have been indexed for inflation since 1985). Finally, it includes the effect that the increase in the deficit has on debt service.

past, as different types of changes in spending and tax policies can have substantially different effects on short-term macroeconomic demand.²⁹ Policymakers considering whether to adopt measures beyond the budget's existing automatic stabilizers would need to carefully weigh not only the macroeconomic environment but also the lessons from past attempts at such economic stimulus.

29. See Congressional Budget Office, *Economic Stimulus: Evaluating Proposed Changes in Tax Policy* (January 2002).



Figure 1. U.S. Home Ownership Rate

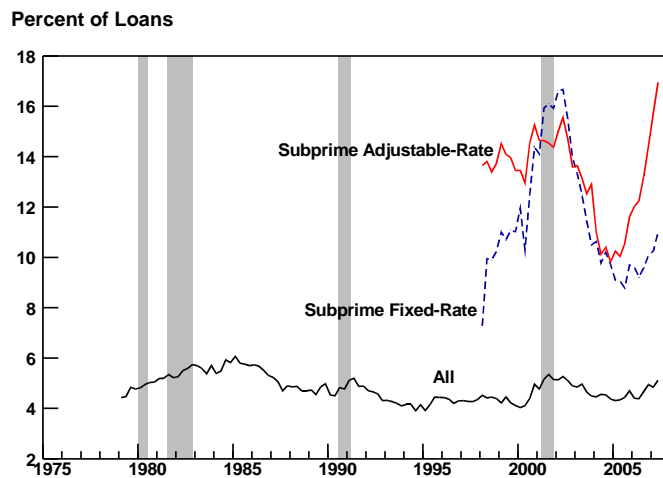


Sources: Congressional Budget Office; Bureau of the Census.

Notes: Data are for census years from 1900 to 1960 and annual from 1970 to 2007. The value for 2007 is an average for the first three quarters.



Figure 2. Mortgage Delinquencies

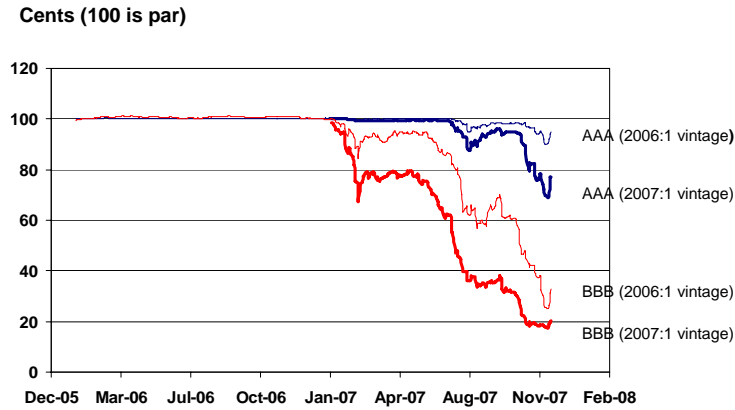


Sources: Congressional Budget Office; Mortgage Bankers Association.

Note: Data are quarterly and are plotted through the second quarter of 2007.



Figure 3. Prices of Subprime Mortgage Tranches

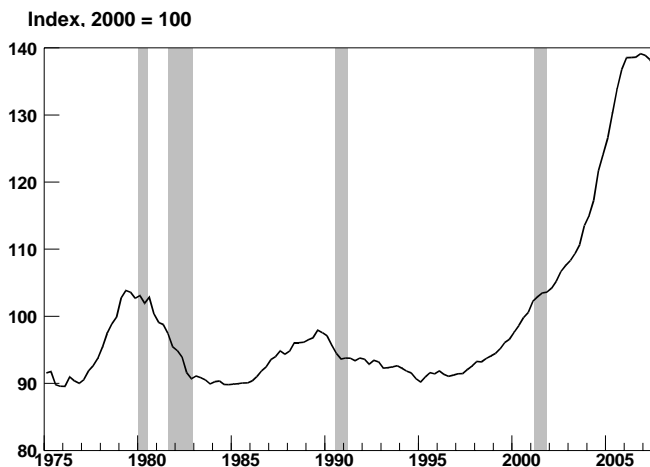


Source: Congressional Budget Office based on data from Markit.

Notes: Markit ABX.HE index published by Markit for the BBB (close to the lowest investment grade) and the safest (AAA) tranches of mortgage-backed securities. The 2006:1 vintage reflects mortgages available for securitization from July 19, 2005, to January 5, 2006. The 2007:1 vintage reflects mortgages available for securitization from July 19, 2006, to January 5, 2007. Data are daily and are plotted through November 30, 2007.



Figure 4. House Price-to-Rent Ratio

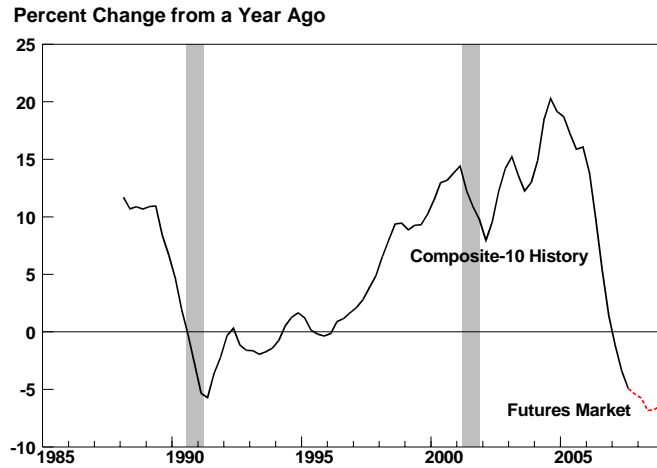


Sources: Congressional Budget Office; Office of Federal Housing Enterprise Oversight; Department of Commerce, Bureau of Economic Analysis.

Note: Data are quarterly and are plotted through the third quarter of 2007.



Figure 5. S&P/Case-Shiller Home Price Index and Futures Market



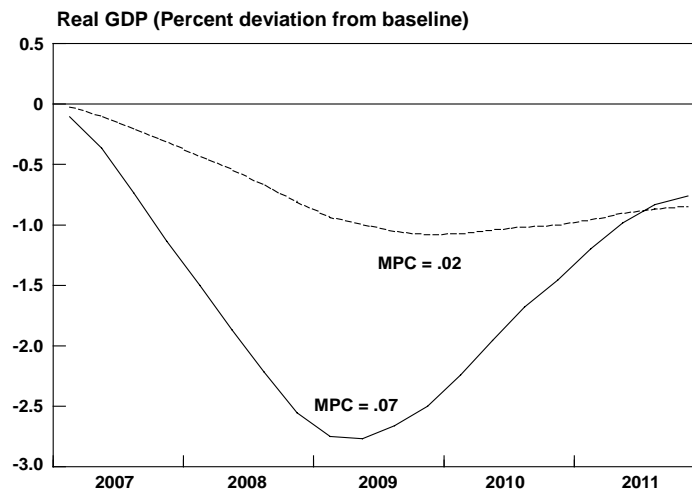
Sources: Congressional Budget Office; Bloomberg.

Notes: The S&P/Case-Shiller Home Price Index tracks price changes from the previous time a house was sold. Data are quarterly and are plotted through the third quarter of 2007.

Includes futures contracts from the fourth quarter of 2007 to the fourth quarter of 2008.



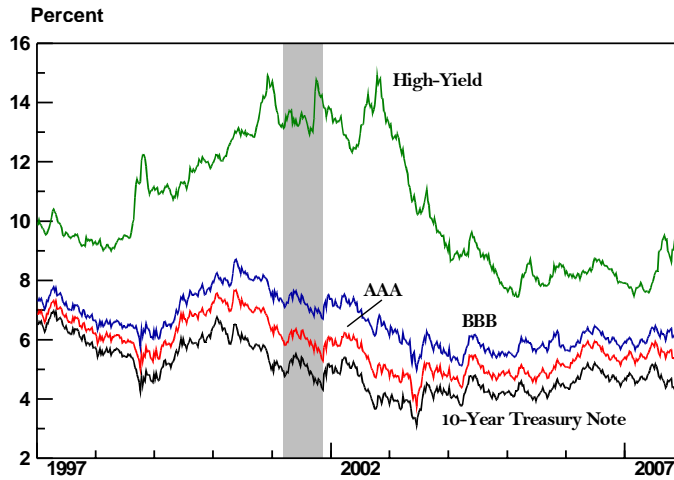
Figure 6. Simulations of a 16 Percent Decline in House Prices



Note: MPC = Marginal propensity to consume out of wealth.



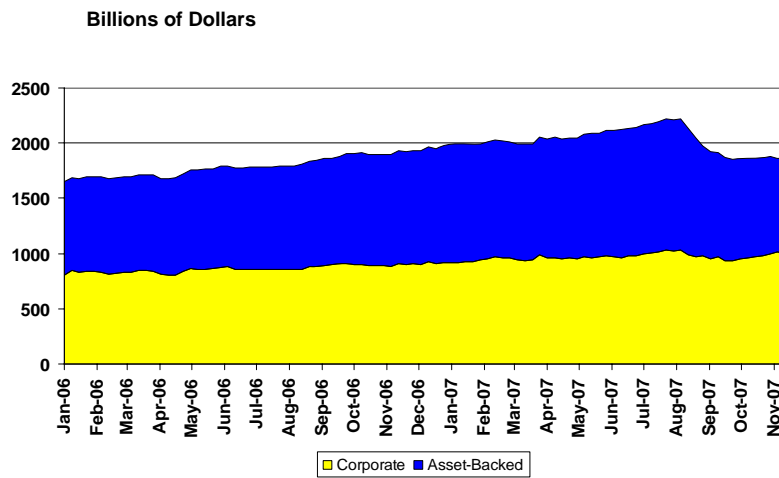
Figure 7. Interest Rates for Corporate Bonds



Sources: Congressional Budget Office; Bloomberg.
Note: Data are weekly and are plotted through November 23, 2007.



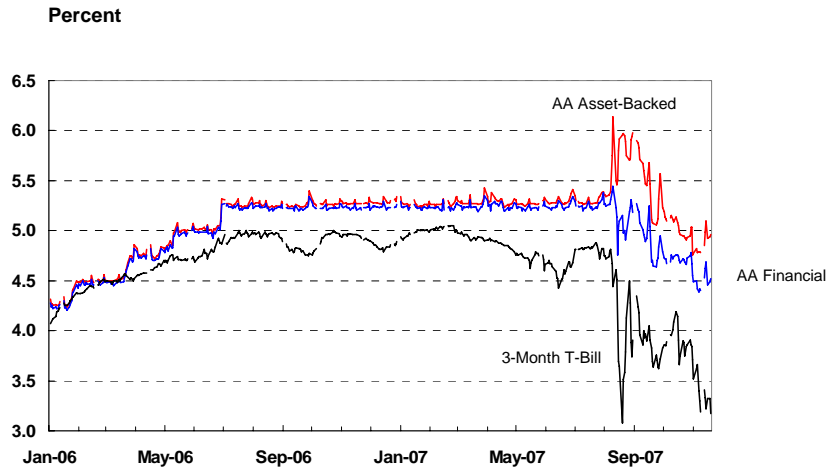
Figure 8. Commercial Paper Outstanding



Source: Congressional Budget Office based on data from the Federal Reserve.
Note: Data are weekly and are plotted through November 14, 2007.



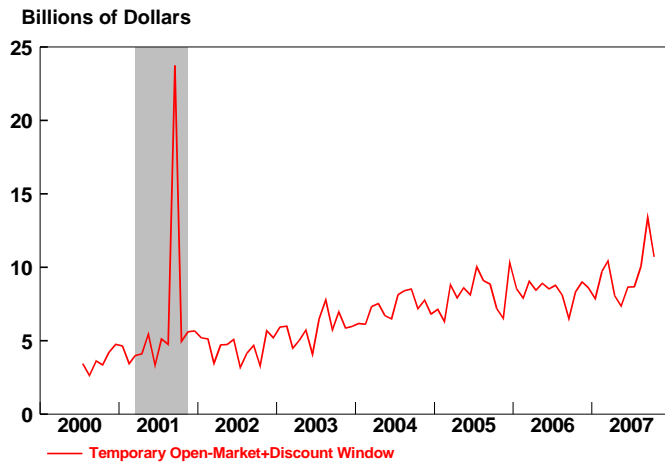
Figure 9. Overnight Commercial Paper Rates



Source: Congressional Budget Office based on data from the Federal Reserve.
Note: Data are daily and are plotted through November 20, 2007.



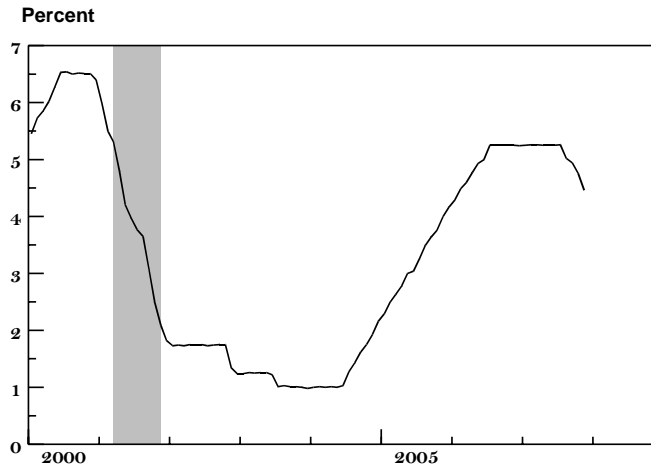
Figure 10. Injections of Reserves by the Federal Reserve



Sources: Congressional Budget Office; Federal Reserve Board.
Notes: Includes both reserve injections through open-market operations and the discount window.
Data are monthly and are plotted through October 2007.



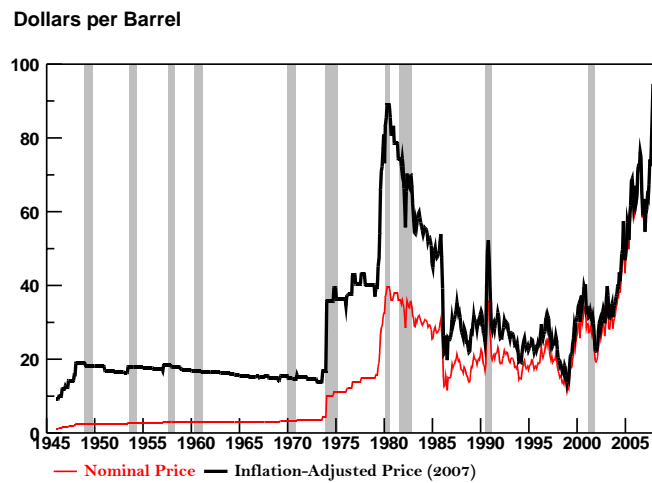
Figure 11. Effective Federal Funds Rate



Sources: Congressional Budget Office; Federal Reserve Board.
Notes: Data are monthly and are plotted through November 2007.
The value for November is an average for the first three weeks.



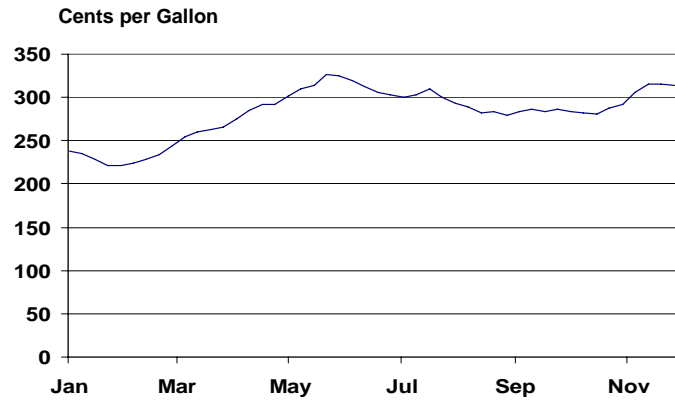
Figure 12. Price of West Texas Intermediate Crude



Sources: Congressional Budget Office; Foundation for International Business and Economic Research.
Notes: The inflation-adjusted price is computed using the price index for personal consumption.
Data are monthly and are plotted through November 2007.



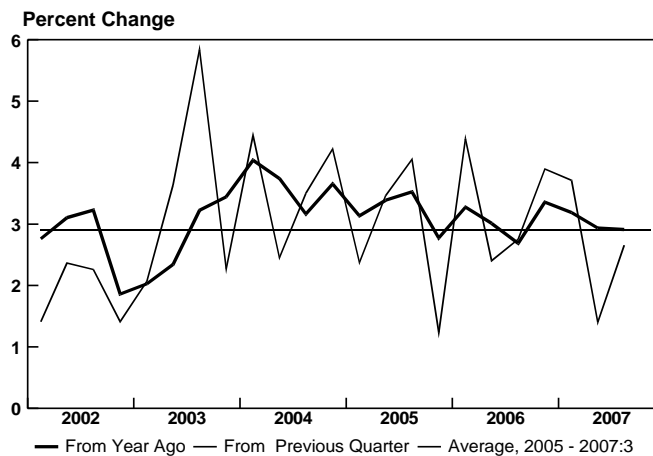
Figure 13. 2007 Average Retail Gasoline Price (all grades)



Sources: Congressional Budget Office; Department of Energy, Energy Information Administration.
Note: Data are weekly and are plotted through November 26, 2007.



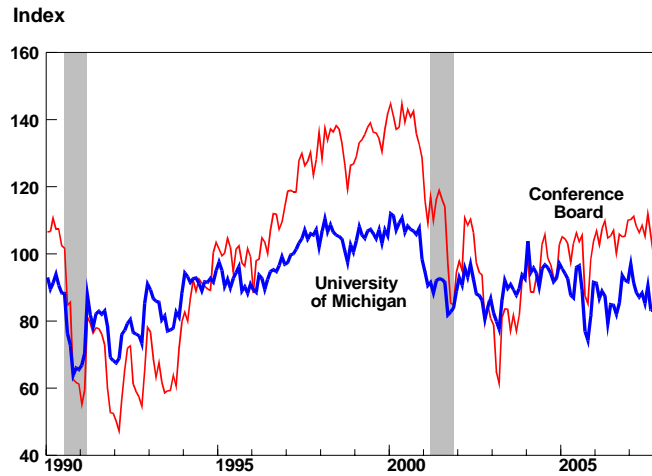
Figure 14. Real Personal Consumption Expenditures



Sources: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.
Note: Data are quarterly and are plotted through third quarter 2007.



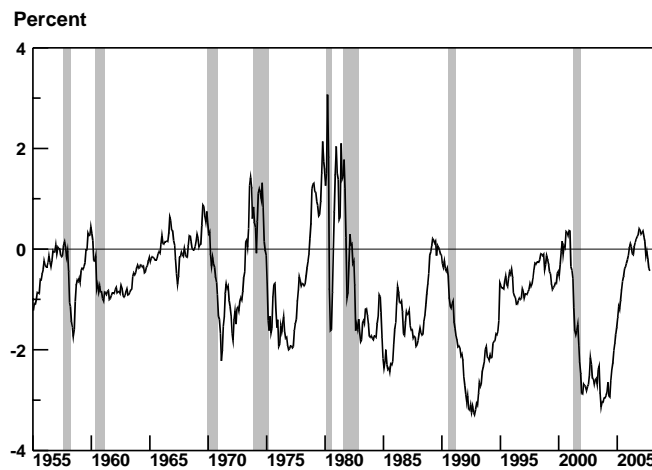
Figure 15. Consumer Confidence



Sources: Congressional Budget Office; University of Michigan; Conference Board.
Note: Data are monthly and are plotted through October 2007.



Figure 16. Difference in Yield Between 1-Term and 10-Year Treasury Notes



Sources: Congressional Budget Office; Federal Reserve Board.
Note: Data are monthly and are plotted through October, 2007.