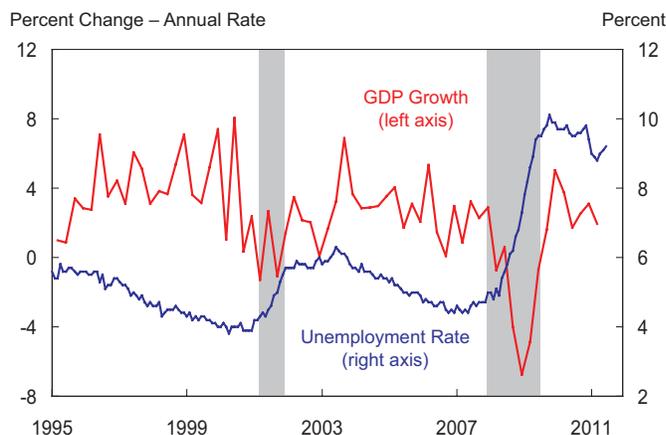


4 Macroeconomic Environment

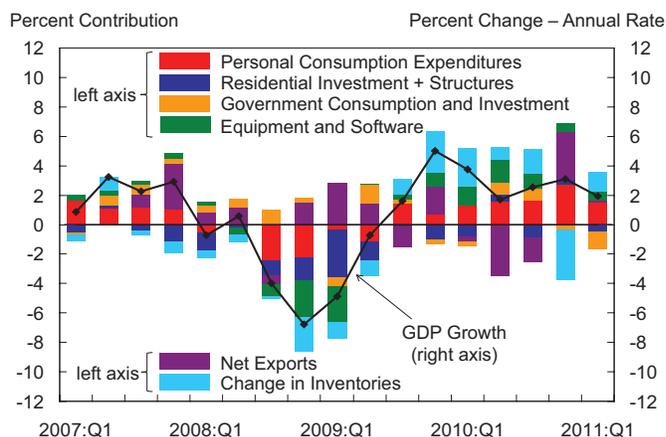
The U.S. economy expanded at a moderate pace in 2010 and early 2011. The economy is healing slowly from the lingering effects of the extraordinary financial market dislocations in 2008–09 and the severe declines in employment and output (**Chart 4.0.1**). Businesses have increased investment, and consumers have increased spending (**Chart 4.0.2**). However, construction and housing demand remain depressed, the unemployment rate is elevated, and the gains in total employment have been insufficient to raise the employment-population ratio.

Chart 4.0.1 Real GDP Growth and the Unemployment Rate



Source: BLS and BEA

Chart 4.0.2 Real GDP Growth and Its Components



Source: BEA

Most foreign economies also continue to recover from the most severe global downturn since the Great Depression, albeit at differing paces. Emerging economies, which suffered fewer financial disruptions from the crisis, have been able to recover more quickly, and many of those economies have returned to or exceeded their previous trend growth rate. Recovery in the advanced economies has been slowed by the weakness of the financial sector, and many have not yet reached their pre-crisis level of economic activity. With interest rates in advanced economies at historically low levels to support economic growth, funds have flowed to emerging markets, where returns are relatively higher. Political tensions in North Africa and the Middle East, and the natural disaster in Japan added to uncertainty in the first half of 2011.

The recession depressed tax revenues and required additional public sector spending, leading to substantial increases in government debt in many advanced economies (**Charts 4.0.3 and 4.0.4**). For the most part, financial markets have been able to smoothly accommodate elevated government borrowing, as private savers have increased their demand for government debt. However, certain governments and financial institutions in peripheral Europe have encountered severe difficulties in maintaining access to private financial market funding. As the global economy continues to recover, governments

Chart 4.0.3 United States Nonfinancial Net Debt Flows

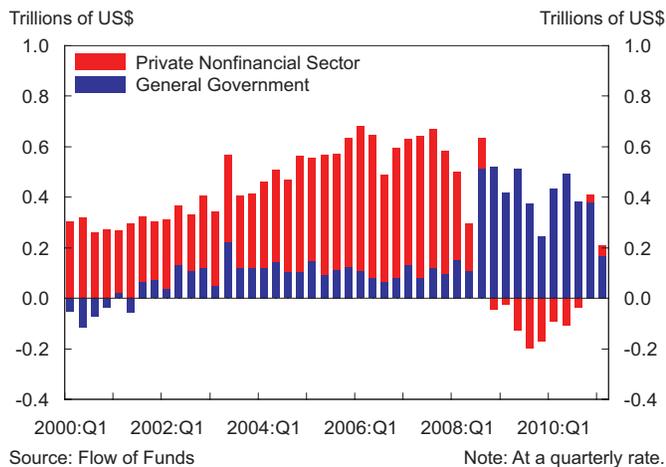


Chart 4.0.4 Euro Area Nonfinancial Net Debt Flows

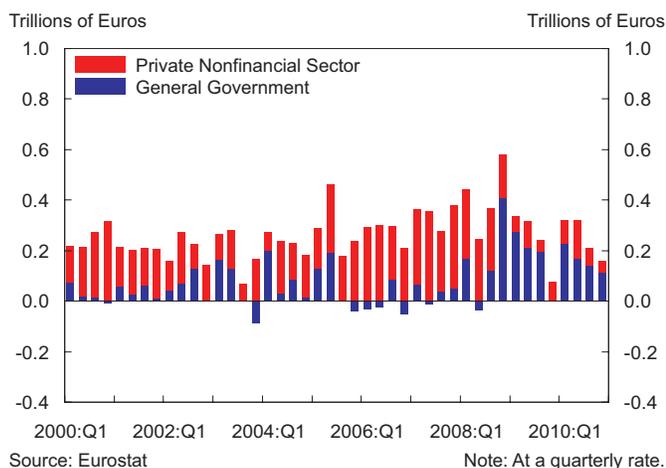
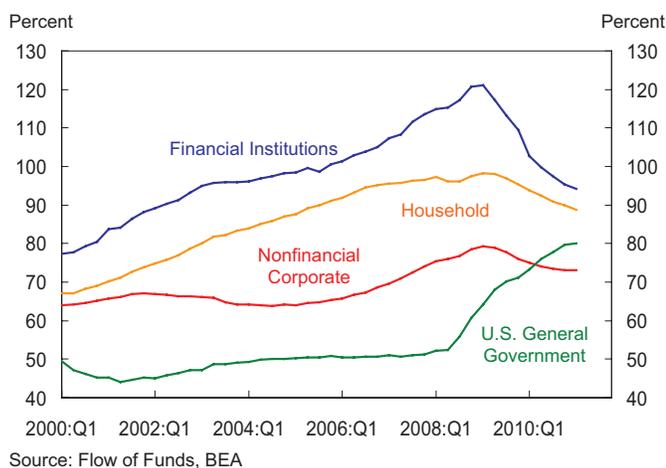


Chart 4.1.1 Net Debt Outstanding as a Percent of GDP



face the challenge of rebalancing revenue and expenditures.

4.1 Provision of Financial Services to the Real Economy

Functions of the Financial System

The financial system has three primary functions: (1) credit flow facilitation, (2) risk transfer, and (3) transaction and payment services.

Credit flows: A primary function of the financial system is to facilitate the flow of funds from savers to borrowers at prices that appropriately compensate all parties for the inherent riskiness of lending; hence, financial markets and their participants play a key role in price discovery.

Risk transfer: Another key function of the financial system is to facilitate the efficient allocation of risk across households and businesses.

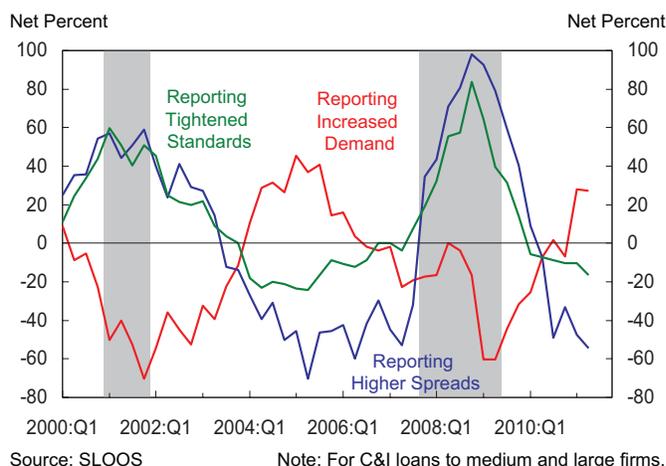
Transaction and payment services: The financial system is also responsible for providing reliable and robust transaction and payment services to the real economy.

4.1.1 Credit Flows

The reduction in credit flows to households and businesses during the crisis reflected both a decline in demand for credit and a reduction in the supply of available credit. Combined credit flows to businesses and households have started to increase. However, persistent weakness in real estate markets continues to restrain demand for and supply of mortgage credit.

Before the financial crisis, many households and financial market participants increased their debt loads. Some of this credit flowed to borrowers with limited ability, and at times limited incentives, to repay their loans. Further, some companies that originated mortgages and sold them for securitization were compensated on the basis of volume and did not always retain a stake in the mortgages. This meant that they had less incentive than traditional

Chart 4.1.2 Bank Business Lending Standards and Demand



originate-to-hold lenders to underwrite loans to high standards.

The crisis triggered significant reductions in the flow of credit and an unprecedented deleveraging by consumers, businesses, and, most dramatically, the financial sector itself. Even as the recession stressed government budgets, public borrowing largely replaced private borrowing in the credit markets (**Chart 4.1.1**). These trends have begun to moderate, and net flows of credit to the private nonfinancial sector have turned marginally positive owing to increases in both demand for and supply of credit.

Credit Flows to the Corporate Sector

The nonfinancial corporate sector continues to recover as increased demand and low labor costs contribute to profitability. In the aggregate, corporate borrowers are experiencing more favorable financing conditions from banks, bond markets, and syndicated loan markets, which allow large corporate firms to finance their activities on better terms. For instance, bank underwriting standards have eased from the extremely tight conditions at the peak of the crisis (**Chart 4.1.2**).

Credit intermediation for large corporations in the United States is characterized by a high degree of funding through debt capital markets rather than through banks. Debt capital markets, somewhat impaired during the crisis, are again functioning well. Corporate bond markets have recovered, and issuance of investment-grade and speculative-grade bonds has been robust in recent months (**Chart 4.1.3**). Spreads between yields on corporate bonds and comparable-maturity U.S. Treasury securities have narrowed, although they remain above the very low pre-crisis levels (**Chart 4.1.4**). In addition, new equity issuance has been robust lately and M&A activity has picked up, indicating that credit has become more available.

Corporate leveraged buyouts (LBOs) remain well below the elevated levels seen during the last credit cycle, although they have increased somewhat as credit conditions have improved

Chart 4.1.3 Corporate Bond Market Issuance

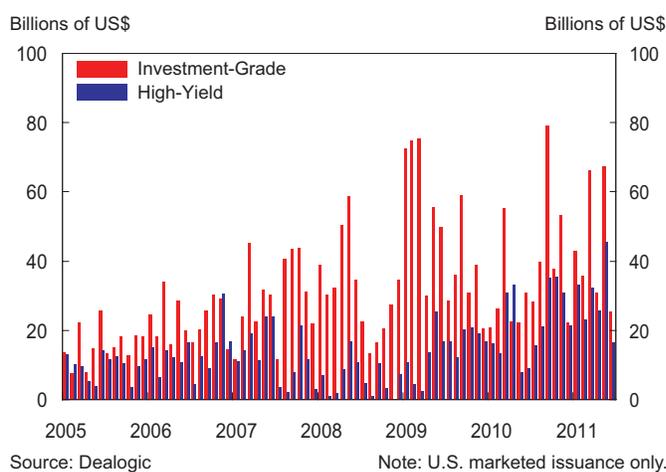


Chart 4.1.4 Corporate Bond Spreads

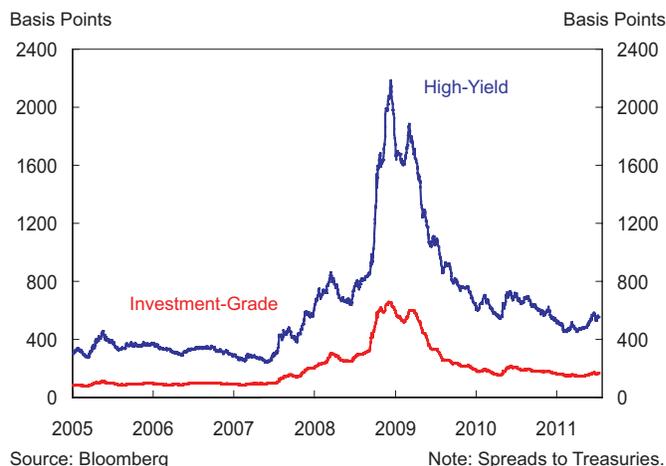
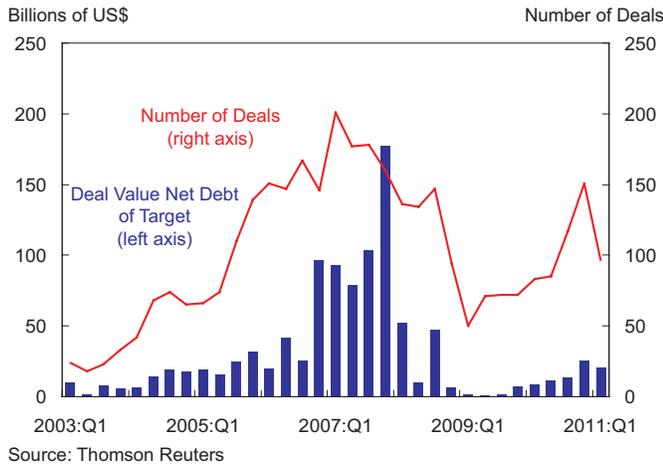


Chart 4.1.5 North American Completed LBOs

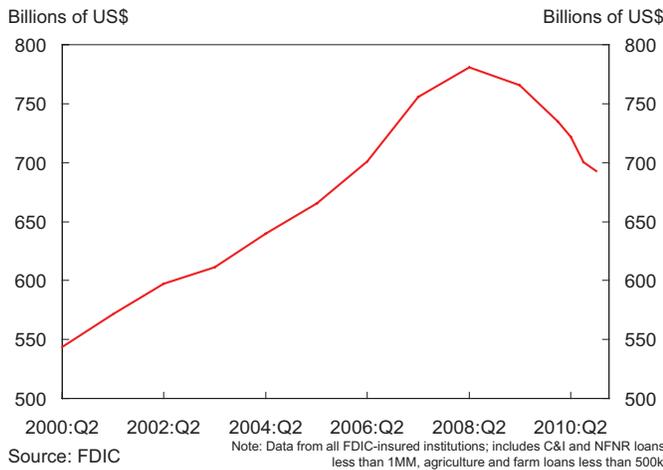


(Chart 4.1.5). Private equity firms continue to hold high levels of committed but uninvested capital available for LBO activity.

Credit Flows to the Small Business Sector

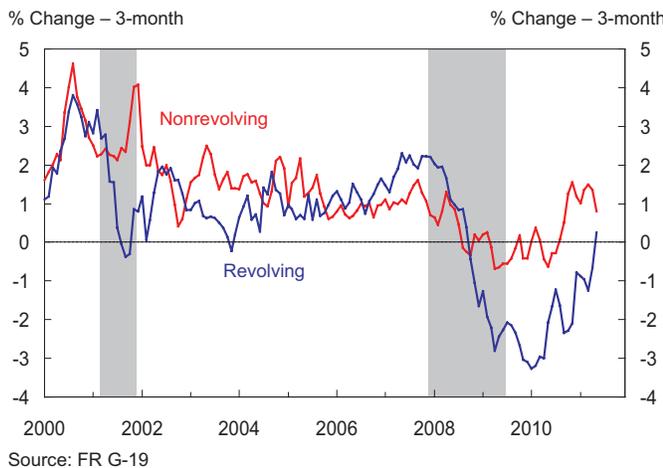
Banks are a large source of credit for small businesses: banks provide these businesses with term loans, credit cards, credit lines, commercial mortgages, and capital leases. Regulatory data on business loans less than \$1 million and agricultural loans less than \$500,000 suggest that small business lending had increased solidly in the years leading up to 2008, before declining by more than 10 percent through 2010 **(Chart 4.1.6)**. A number of related factors explain the decline, including the general dislocation of credit during the crisis, the adverse effect of the crisis on borrowers' balance sheets and on the value of their available collateral, and the reduced demand for credit in light of lower inventory investment and cuts in investment and payrolls as these businesses have experienced weak demand and stagnant prospective sales.

Chart 4.1.6 Proxy for Small Business Lending



In the National Federation of Independent Business (NFIB) June 2011 Small Business Survey, the number of small businesses reporting that credit is "harder to obtain" has declined to mid-2008 levels. Small businesses continue to cite weak demand for their products or services as the main factor limiting growth. Additionally, with more than half of credit to small businesses secured by some form of real estate, borrowing capacity is limited by the ongoing stress in real estate.

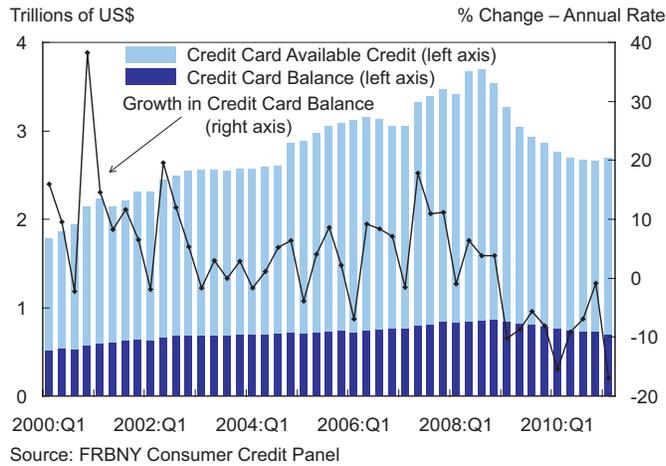
Chart 4.1.7 Nonmortgage Consumer Credit Flows



Credit Flows to the Household Sector

Consumer spending has risen at a moderate pace since mid-2009, contributing to overall economic growth. However, consumer credit flows, which fell sharply during the crisis, have only recently begun to recover. The modest recovery of these flows reflects restraints on the availability of consumer credit as well as subdued demand as households face weaker income prospects. Nonmortgage lending to consumers, which declined for several years, began growing in 2010, driven by nonrevolving credit **(Chart 4.1.7)**. The amount of revolving credit available to consumers has been

Chart 4.1.8 Credit Card Limit and Outstanding Balance

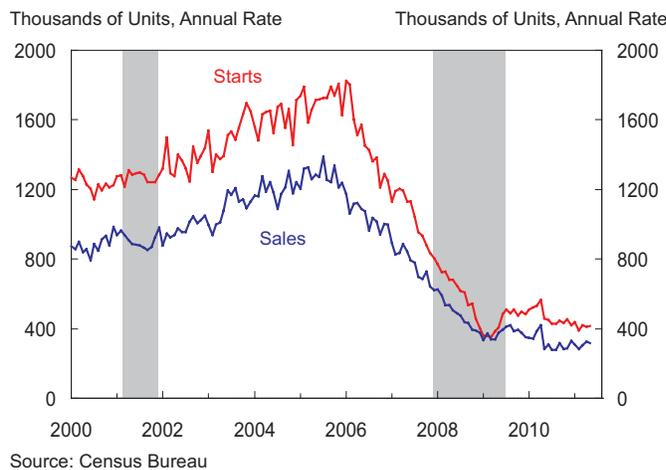


substantially reduced, although aggregate borrowing capacity remains considerable (**Chart 4.1.8**). Demand for auto financing has risen along with the increase in vehicle purchases from the lows of the crisis. Student loan volumes increased during the downturn in part because of rising enrollments and increased tuition costs; these volumes have been increasingly supported by government-guaranteed loan programs.

Real Estate and Mortgage Markets

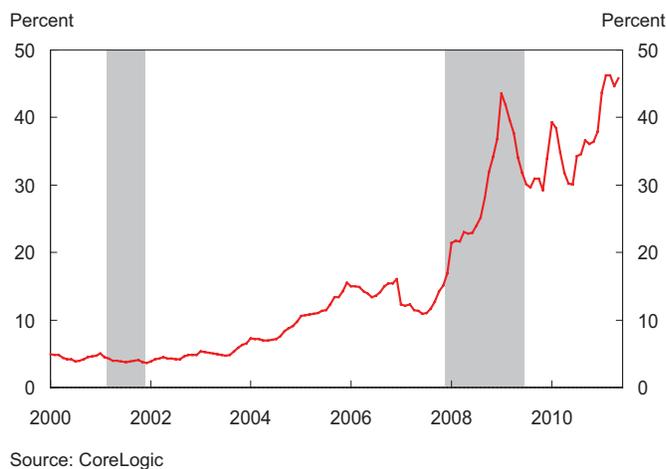
The housing sector remains depressed. To date, real residential investment has fallen nearly 60 percent since its peak in early 2006. Housing starts and sales of new homes have remained near record low levels, and distressed sales have increased, recently comprising 46 percent of all sales (**Charts 4.1.9 and 4.1.10**). As a result of the pullback in mortgage lending and an elevated level of charge-offs, overall mortgage debt outstanding contracted for two years (**Chart 4.1.11**).

Chart 4.1.9 Single-Family New Home Starts and Sales



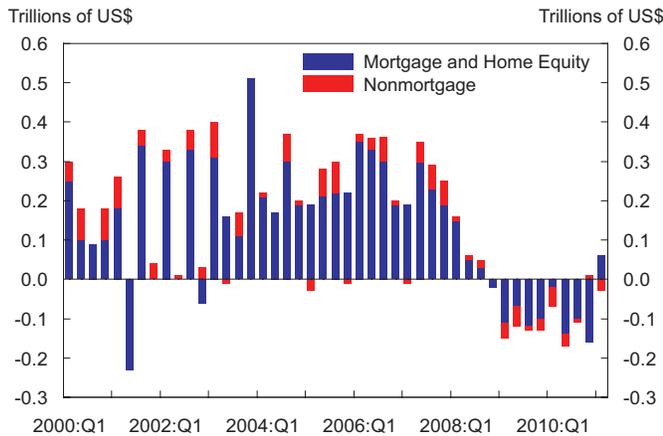
Home prices face continued downward pressure from excess inventory, lackluster demand, and distressed sales, in part coming from foreclosures. After stabilizing in late 2009 and early 2010, home prices have fallen further since the summer of 2010. The CoreLogic repeat sales home price index, which is representative of conforming and non-conforming mortgages, is back down to its mid-2003 levels, about one-third below its 2006 peak (**Chart 4.1.12**). The Federal Reserve Board's Senior Loan Officer Opinion Survey for April 2011 showed that demand for residential mortgages at banks continued to decrease.

Chart 4.1.10 Distressed Sales Share of Total Home Sales



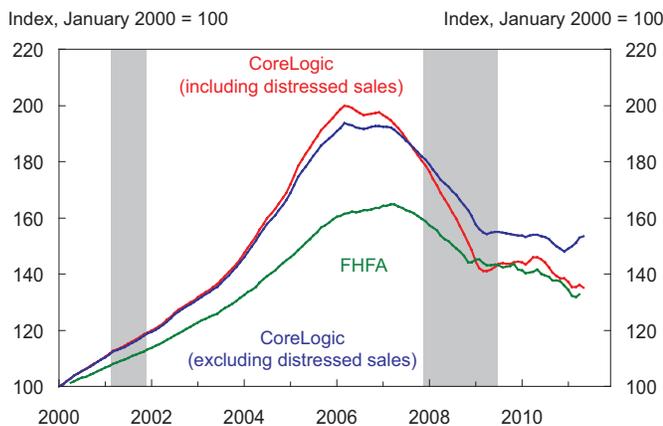
Some of the housing market fundamentals have shown signs of improvement. Indexes of affordability based on current interest rates, median incomes, and median home prices have risen to historic highs (**Chart 4.1.13**). The very low levels of new home construction in recent years have helped trim the backlog of excess new homes for sale. In addition, the unusually low levels of household formation over the past several years could reverse once the labor market improves sufficiently, suggesting the possibility of pent-up demand for housing.

Chart 4.1.11 Net Consumer Sector Credit Flows



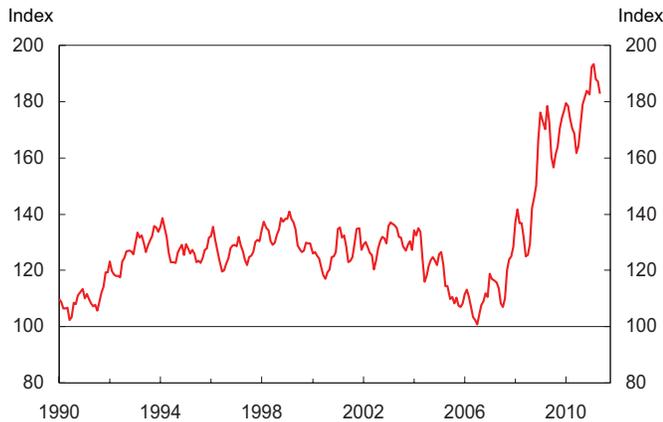
Source: FRBNY Consumer Credit Panel

Chart 4.1.12 National Repeat Sales Home Price Indexes



Source: FHFA and CoreLogic

Chart 4.1.13 Housing Affordability Index



Source: NAR

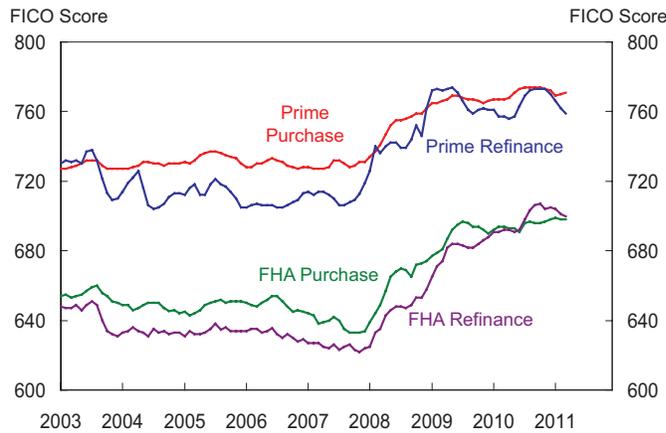
More than offsetting the developments in these fundamentals, ongoing operational deficiencies and legal challenges in the processing of foreclosure filings have significantly slowed the foreclosure process, adding to a growing inventory of distressed properties. Moreover, the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac, as well as the Federal Housing Administration (FHA) and the Department of Veterans Affairs (VA)—which together account for the guarantee and insurance of more than 90 percent of originations—have tightened their underwriting standards. Standards have been tightened across product, credit score, and loan-to-value (LTV) spectrums, and fewer loans with low down payments are being guaranteed. FICO scores on mortgage originations have risen sharply, reflecting the tighter underwriting standards as well as the characteristics of borrowers who are applying for credit (**Chart 4.1.14**).

On the other hand, FHA/VA loans, which typically have higher LTVs and hence greater risk compared with GSE loans, have gained a larger share of the market, rising from 3 percent of total market originations in 2005 to more than 30 percent in mid-2010.

National commercial real estate (CRE) markets also weakened dramatically during the credit crisis and recession. Moody's/REAL commercial property price index fell by about 45 percent from its 2007 peak (**Chart 4.1.15**). Sales activity also decreased sharply: commercial property transactions fell 89 percent to \$66 billion in 2009 from a peak of \$579 billion in 2007. A combination of weaker cash flows, lower collateral values, and tightened underwriting standards since 2008 has made it more difficult for CRE owners to refinance their debt, putting further stress on the market. Since mid-2008, bank lending to finance commercial property has fallen by 50 percent. One-quarter of recent CRE activity has involved distressed properties.

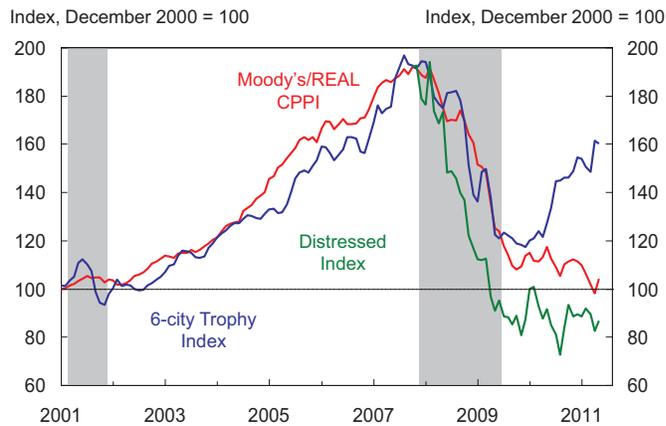
Commercial mortgage-backed security (CMBS) issuers account for nearly 25 percent of the total CRE debt. Reflecting the credit crisis

Chart 4.1.14 Median Credit Score at Mortgage Origination



Source: LPS Applied Analytics

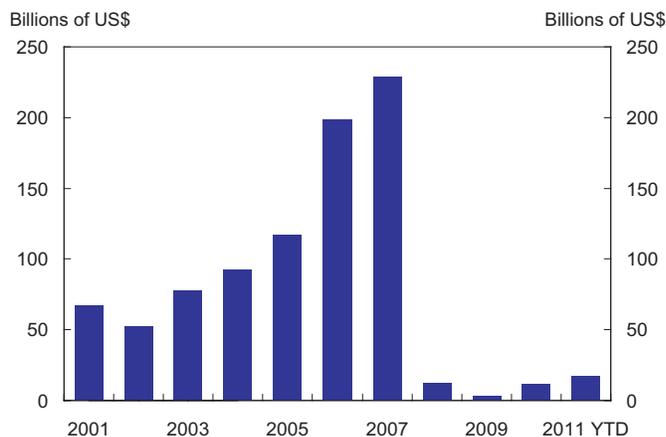
Chart 4.1.15 Commercial Property Price Indexes



Source: Real Capital Analytics, Geltner & Associates

Note: Trophy Index for sales >\$10MM.

Chart 4.1.16 CMBS New Issuance



Source: Commercial Mortgage Alert

Note: 2011 YTD as of 6/30/2011.

and economic stress, issuance of CMBS in the United States was only \$2.7 billion in 2009 and \$11.6 billion in 2010, well below the approximately \$200 billion issued in both 2006 and 2007 (**Chart 4.1.16**).

Recently, the commercial property market has shown tentative signs of recovery, with more sales activity among higher quality, well-leased properties in major metropolitan markets, as well as signs of increased demand for and supply of commercial property loan financing. The Senior Loan Officer Opinion Survey for April 2011 showed that about 35 percent of domestic banks on net had seen increased demand for CRE loans, and a few large banks and foreign banks had eased their lending standards somewhat, although outstanding bank commercial property loans have continued to fall.

Securitization Markets

Much of the large increase in credit leading up to the financial crisis was driven by an expansion of securitized credit, particularly in the mortgage market. During this time, financial market participants and regulators tended to view securitization favorably: it allowed banks to reduce their exposure to certain types of loans, redistributing those risks to investors who were more willing to handle them and lowering the borrowing costs for households and businesses.

However, the crisis revealed deep flaws in the implementation of securitization. For example, banks and other firms that originated mortgages and packaged them into residential mortgage-backed securities (RMBS) for sale to investors often did not retain an interest in those mortgages and, thus, had no incentive to adequately monitor the performance of the originated mortgages. In the years before the crisis, underwriting standards deteriorated and nontraditional mortgage products proliferated (**Chart 4.1.17**).

The private-label (non-GSE) RMBS market collapsed in 2007 after house prices began to fall, which led to greater and more correlated

Chart 4.1.17 Private-Label RMBS Gross Issuance

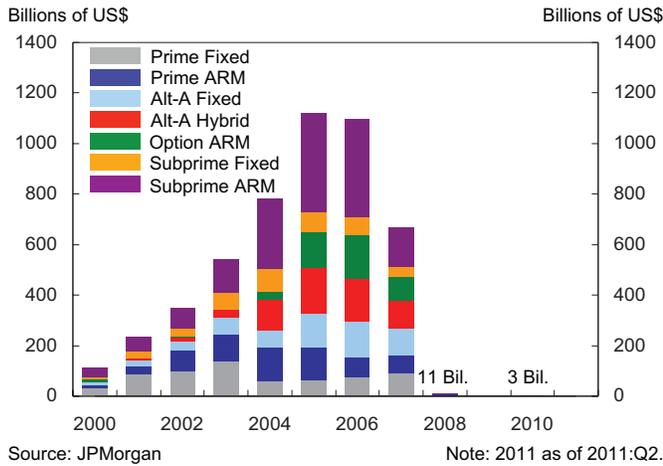
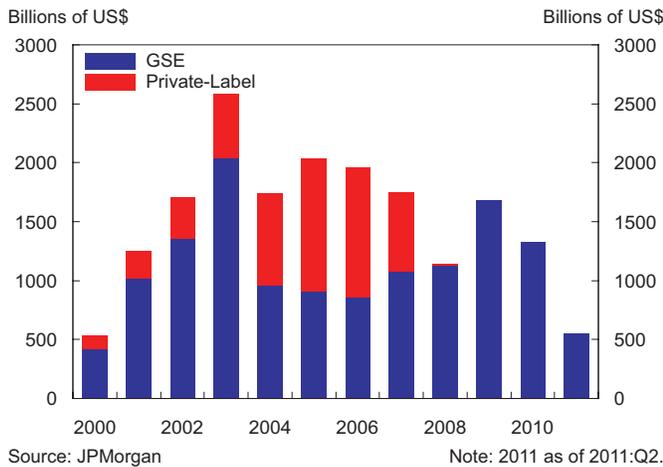


Chart 4.1.18 GSE and Private-Label RMBS Gross Issuance



delinquencies of nontraditional mortgages and thus reduced the value of these securities considerably. This market remains severely impaired and has affected other asset-backed securities markets. In the absence of strong offsetting developments, the lack of a meaningful rebound to overall private sector securitization activity is likely to have implications for the types of lending or fee-based activities that banks will choose to engage in and, in turn, for the future cost and level of credit intermediation (**Chart 4.1.18**). For nearly all asset classes, securitization activity remains at levels well below those that prevailed before the crisis. Recent issuance has been concentrated in securitizations of consumer auto loan and lease receivables, as well as resecuritizations of real estate mortgage investment conduits, which are repackaged CMBS and RMBS.

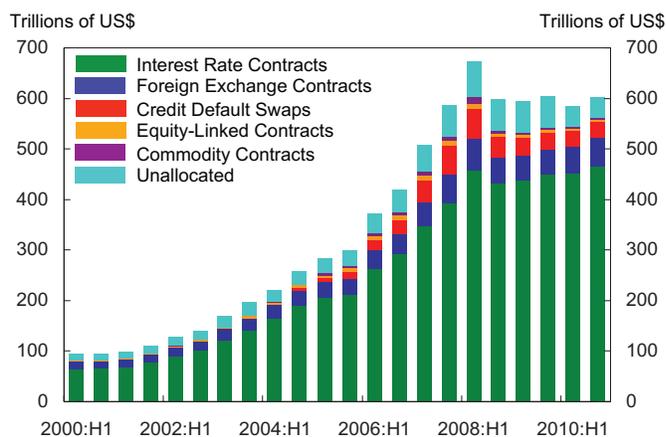
4.1.2 Risk Transfer

The financial system provides risk transfer services to the economy through a wide range of insurance and derivatives products. Certain credit risk transfer products played an important role in exacerbating the financial crisis and have not returned to their pre-crisis form.

A key role of financial markets and institutions is to allocate risk efficiently across households and businesses. The insurance market is a key market in financial risk transfer. Unlike most cases of credit intermediation, in which borrowers receive a large payment at the start and then repay the obligation over time, insurance policies typically involve upfront customer payments (premiums) in exchange for a contractual promise from the insurer to pay benefits upon a specified event in the future. The traditional U.S. insurance market largely functioned without disruption in payments to consumers throughout the financial crisis and the recovery.

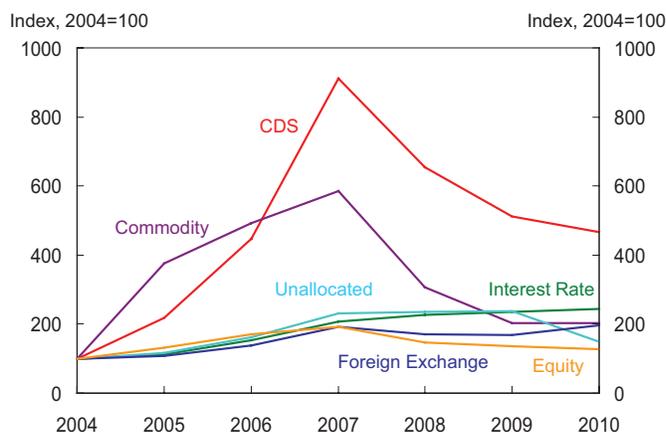
Derivative contracts have become another important source of risk transfer in the financial system. The market for these contracts, which

Chart 4.1.19 OTC Derivatives



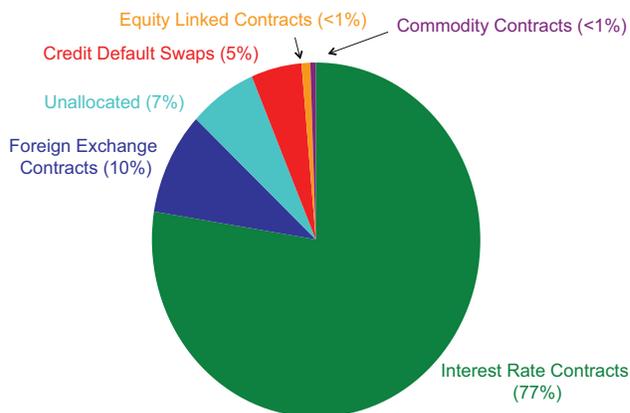
Source: BIS Note: Notional values, CDS data not available before 2004:H2.

Chart 4.1.20 OTC Derivatives Growth



Source: BIS Note: Year-end notional amounts outstanding.

Chart 4.1.21 Distribution of OTC Derivatives



Source: BIS

Note: As of 2010:Q4.

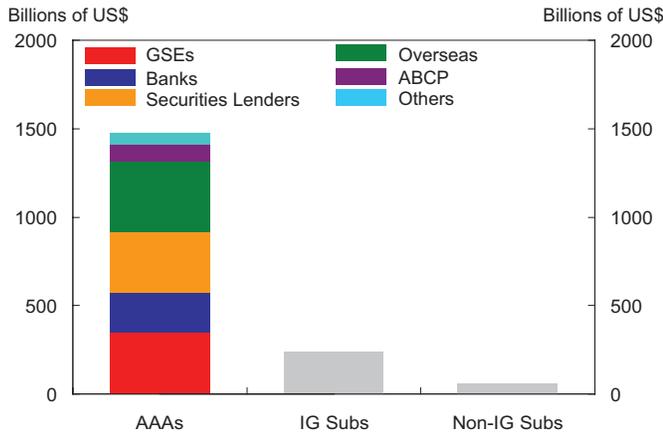
may be traded on exchanges or over the counter (OTC), has grown significantly over the past 10 years. Gross notional volume amounts of OTC derivatives contracts peaked in June 2008 at over \$670 trillion. Derivatives—whose value can be based on interest rates, foreign exchange, credit, equities, and commodities—have long been used by financial and nonfinancial institutions for both risk insurance (hedging) and risk acquisition (speculation) purposes, enabling risks to be traded globally (**Charts 4.1.19, 4.1.20, and 4.1.21**). While OTC derivatives markets, with the exception of credit risk transfer products, were not a central cause of the crisis and did not experience any specific clearing or settlement failures, they were a factor in the propagation of risks, as their complexity and opacity contributed to excessive risk taking and a lack of clarity about the ultimate distribution of risks, exacerbating a loss in confidence.

Credit Risk Transfer Products

The rapid growth in the private-label RMBS market in the years preceding the financial crisis was enabled by two market innovations: collateralized debt obligations (CDOs), which are instruments to bundle pieces of previously issued asset-backed securities, and credit default swaps, which are credit derivatives. By allocating credit risks in complex ways that market participants, credit rating agencies, and regulators did not understand well, these products contributed to the buildup of the housing boom, the severity of the subsequent bust, and the broadening of the financial crisis beyond its origins in the subprime mortgage market.

Private-label RMBS and CDOs shared two key characteristics. First, they combined many assets into pools, which should have helped diversify the risks of loss. Second, they were sold to investors in tranches that varied in risk and return, with payments going first to senior tranche investors. The independent credit rating agencies played an important role in this process by giving the vast majority of these securities their highest rating (e.g., AAA), anticipating that junior tranche investors

Chart 4.1.22 Private-Label Residential MBS Exposures

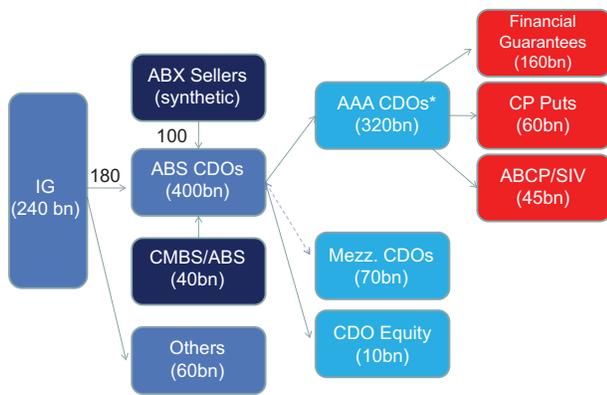


Source: Lehman Brothers Note: As of 2007:Q2.

would cover expected losses based on the low historical default rates for residential mortgages, the diversification of the asset pools, and the assumption that house prices would generally continue to rise.

During the mortgage boom, senior tranches of RMBS attracted broad classes of investors, including banks, insurance companies, and GSEs (Chart 4.1.22). The riskier junior-investment-grade tranches of RMBS were typically pooled by investment banks and purchased by CDOs (Chart 4.1.23). Although most of the securities issued by these CDOs also received the highest credit rating (again, based on the presumed benefits of diversification), senior CDO tranches had a very different investor base from senior RMBS tranches. They were typically retained by the originating bank or sold with liquidity or credit guarantees provided by the originating bank or with insurance written by a segment of the insurance industry known as financial guarantors. In many cases, the credit rating agencies based their high ratings on these securities on the availability of these guarantees. Junior-investment-grade CDO tranches were typically purchased by other CDOs.

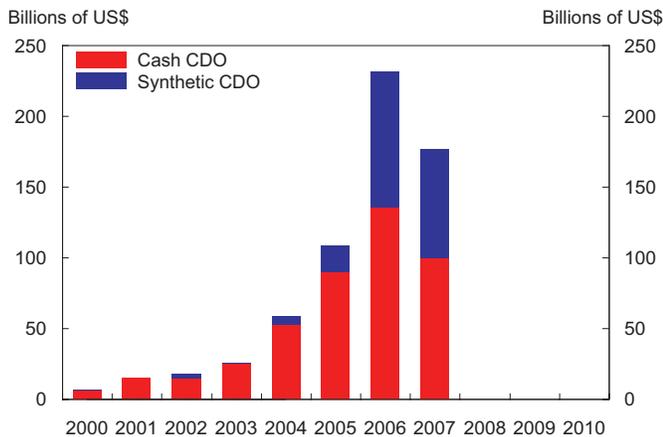
Chart 4.1.23 Ownership of Investment Grade Subordinates in RMBS and ABS CDOs (June 2007)



Note: *Issuing banks often retained AAA CDO securities while buying protection from guarantors. They also sold senior CDO securities to CP investors while providing protection in the form of liquidity puts.
Source: Lehman Brothers

An important component in maintaining this structure during the mortgage boom was credit default swaps (CDS). Financial institutions and investors purchased CDS to help manage their risks from RMBS and CDO securities. The insurance conglomerate AIG was a large seller of these CDS. In addition, synthetic CDOs grew rapidly during the pre-crisis period. These were derivative-linked CDOs that packaged long positions in CDS referencing RMBS or CDO securities; if the underlying securities did not perform, the synthetic CDO investors would lose money as if the CDOs owned positions in actual securities (Chart 4.1.24).

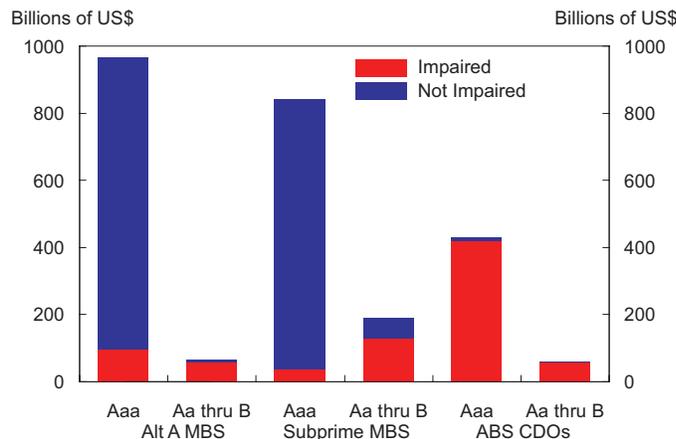
Chart 4.1.24 ABS Structured Finance CDO Issuance



Source: Cordell, Huang and Williams (2011)

The result of this complex and opaque system was that a surprising amount of the credit risk in the mortgage market was concentrated in senior CDO tranches held or guaranteed by the banks that created CDOs and by a small number of financial guarantors. These large institutions and other investors in MBS and CDOs suffered billions of dollars in losses

Chart 4.1.25 Impaired MBS and CDO Securities



Source: Cordell, Huang and Williams (2011), Moody's Note: As of 2009:Q4.

when mortgage defaults across the country exceeded expectations and the performance of diverse pools of RMBS turned out to be highly correlated. By the end of 2009, \$319 billion of subprime and Alt-A MBS had been materially impaired, as had \$479 billion of CDOs that invested in MBS (**Chart 4.1.25**).

The market for CDOs has not recovered since the crisis. The financial guarantors, with one exception, are not currently providing such guarantees and appear unlikely to return to the market in the near term. However, the broader market for CDS referencing the risk of default by corporate entities remains robust.

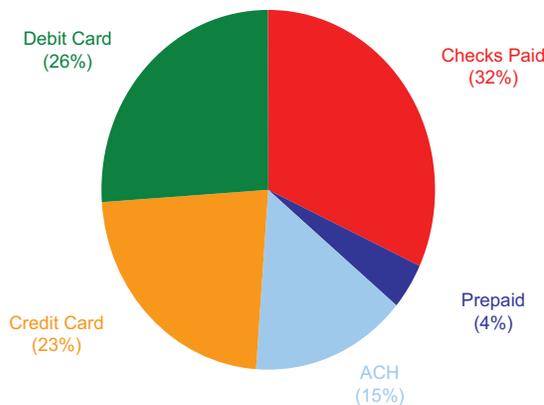
4.1.3 Transactions and Payment Services to Households and Businesses

Transaction and retail payment services, which facilitate a high volume of payments across the financial system, functioned well during the crisis.

Depository institutions provide a variety of retail payment services to consumers and businesses, such as check, debit card, credit card, automated clearing house, and prepaid card transaction services. Retail payments, which are characterized by high volumes but low average dollar transaction values, have undergone significant technological and financial innovation in recent years, changing how they are transacted. According to the most recent Federal Reserve Payments Study, the estimated number of noncash payments totaled \$109 billion in 2009, with a total value of approximately \$72 trillion. More than three-quarters of these retail payments, by volume, were made electronically, a 9.3 percentage point increase since 2006 (**Charts 4.1.26** and **4.1.27**). Retail payments depend critically on consumer and business accounts at depository institutions that are used for transaction purposes.

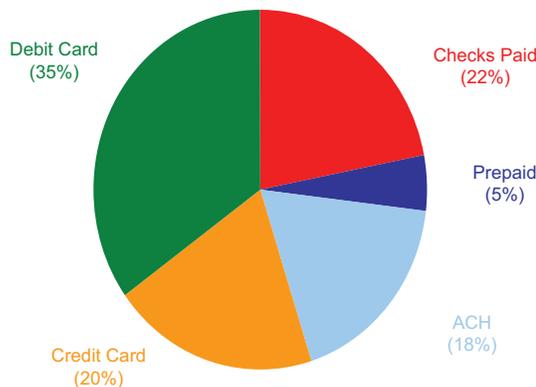
While there have been a number of bank, thrift, and credit union failures—including several high-profile failures or near-failures of large complex financial institutions—the FDIC and the NCUA were able to prevent any disruptions in retail

Chart 4.1.26 Noncash Retail Payments: 2006



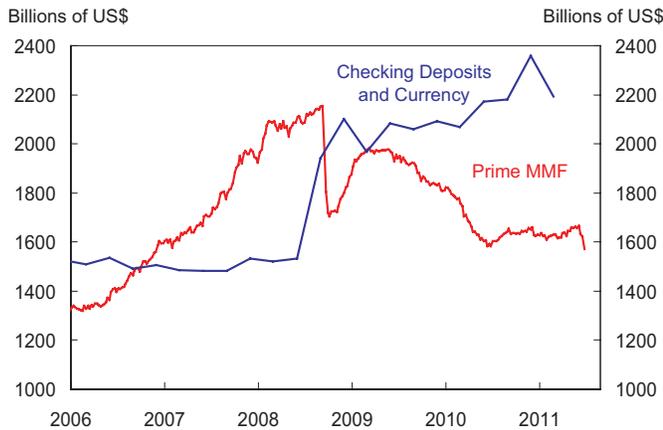
Source: 2010 Federal Reserve Payments Study

Chart 4.1.27 Noncash Retail Payments: 2009



Source: 2010 Federal Reserve Payments Study

Chart 4.1.28 Money Market Funds and Checking Deposits



Source: ICI, Flow of Funds

payments and transaction services as a result of the failure, or fear of failure, of an insured depository institution. In contrast, certain parts of the financial system, such as prime money market funds, experienced the equivalent of a bank run in late 2008 (**Chart 4.1.28**).

The Transaction Account Guarantee Program (TAGP) brought stability and confidence to deposit accounts that are commonly used for payroll and other business transaction purposes. Through the TAGP, the FDIC guaranteed, for a fee, noninterest-bearing transaction accounts held at participating insured depository institutions. More than 7,100 banks and thrifts, or 86 percent of FDIC-insured institutions, initially opted into the program. The Dodd-Frank Act replaced TAGP with a provision mandating unlimited deposit insurance coverage without a separate fee through December 2012 for certain noninterest-bearing accounts at all insured depository institutions.

4.2 Private Nonfinancial Sector Balance Sheets

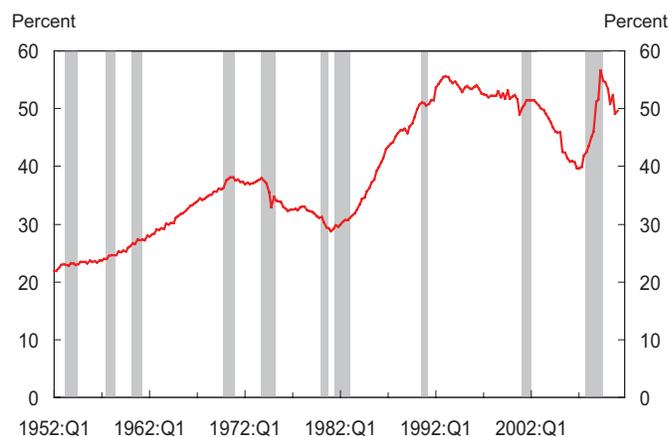
The ability of households and businesses to repay loans depends on the income they generate from productive activities and on their net worth: the value of their assets less liabilities. If income from productive activities does not meet expectations, as occurred during the recession, the ability to repay falls more heavily on net worth.

Corporate income has recovered more quickly than household and small business income, and corporate balance sheets were less exposed to the decline in real estate values. The decrease in real estate and other asset values has increased the leverage of the household sector, the debt levels of which had increased in the years before the crisis. Low interest rates and extended unemployment benefits have mitigated some of the loss of income and the decline in asset values.

4.2.1 Business Sector

The levels of debt to net worth in the corporate and noncorporate business sectors,

Chart 4.2.1 Corporate Credit Market Debt to Net Worth



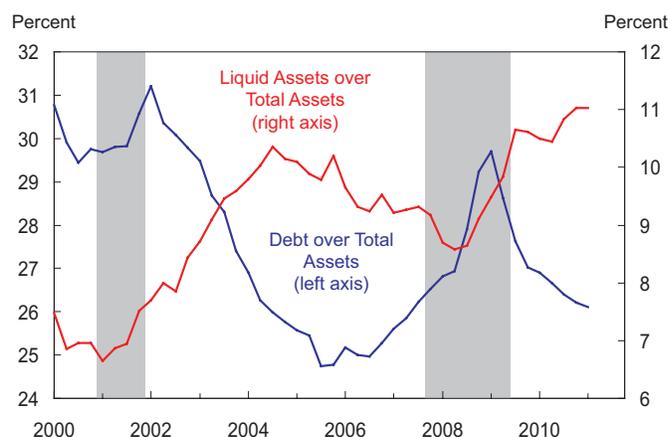
Source: Flow of Funds Note: Nonfarm nonfinancial corporate business.

which spiked during the downturn as a result of deteriorating asset values, remain elevated but are showing modest improvement.

Corporate

Nonfinancial corporate balance sheets deteriorated significantly during the downturn, as leverage reached historical highs, primarily because of unprecedented declines in the value of assets held by these firms. Corporate balance sheets have recovered somewhat over recent quarters. Nevertheless, leverage has decreased only modestly and remains at elevated levels, as the value of assets in the sector have increased only moderately faster than liabilities (**Chart 4.2.1**).

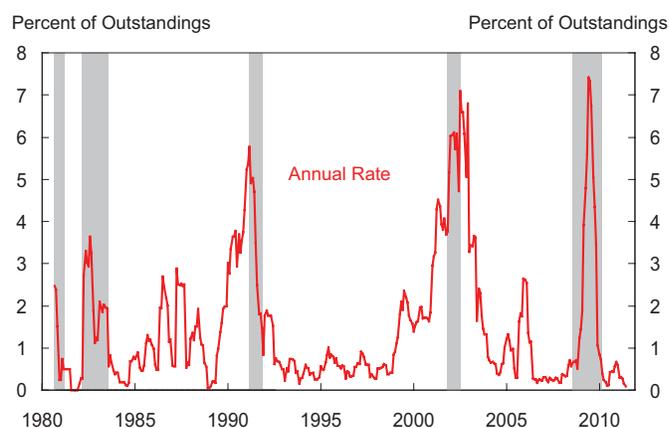
Chart 4.2.2 Financial Ratios for Nonfinancial Corporations



Source: Compustat

Since mid-2009, corporations have generated strong profit growth and improved cash flow, reflecting the impact of aggressive cost-cutting, moderate revenue growth, and lower interest costs. This has driven equity market valuations back to near pre-crisis levels and has allowed nonfinancial corporations to increase capital through retained earnings. These developments have also allowed corporations to significantly bolster their liquidity (**Chart 4.2.2**).

Chart 4.2.3 Nonfinancial Corporate Bond Default Rate



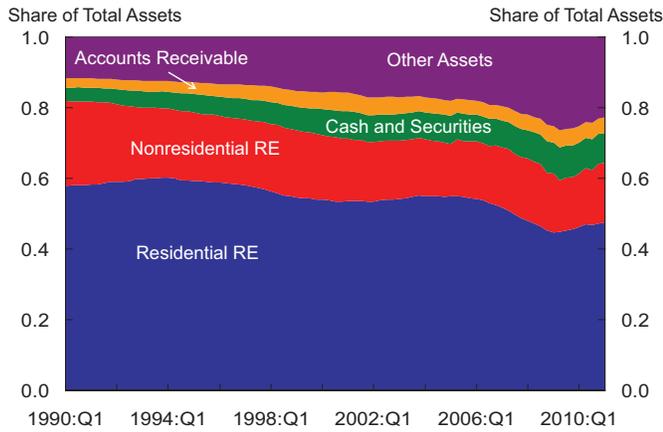
Source: Moody's Investors Service Note: 6-month trailing defaults divided by beginning-of-period outstandings.

Nonfinancial corporate balance sheets were in relatively good condition entering the crisis. As a result, the corporate bond default rate, which spiked to a similar level as that in the previous recession, was lower than expected given the severity of this recession, particularly compared with the level implied from bond prices in early 2009 (**Charts 4.1.4 and 4.2.3**). Since the crisis, high-yield issuers have improved their ability to cover their debt payments out of cash flow. These firms also have only a limited amount of debt maturing over the near term and (as discussed in Section 4.1.1) benefit from improved financing conditions.

Noncorporate

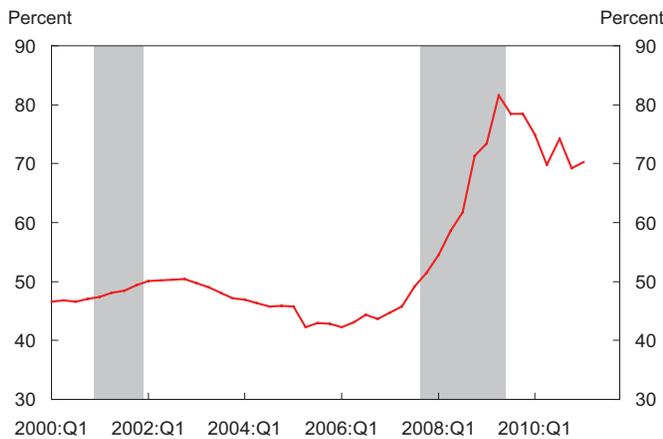
Balance sheets in the noncorporate sector, composed primarily of small businesses, were adversely affected by the credit crisis and recession owing to poor sales, declines in asset values, and a reduction in credit availability.

Chart 4.2.4 Noncorporate Assets



Source: Flow of Funds Note: Nonfarm noncorporate business.

Chart 4.2.5 Noncorporate Credit Market Debt to Net Worth



Source: Flow of Funds Note: Nonfarm noncorporate business.

In the aggregate, the assets of small businesses are composed primarily of real estate (**Chart 4.2.4**). Consequently, the sharp drop in real estate values during the crisis had a severe impact on the balance sheets of many small businesses and led to a sharp increase in the measured leverage of small businesses. Leverage in this sector has fallen only modestly since then and remains well above its pre-crisis levels (**Chart 4.2.5**).

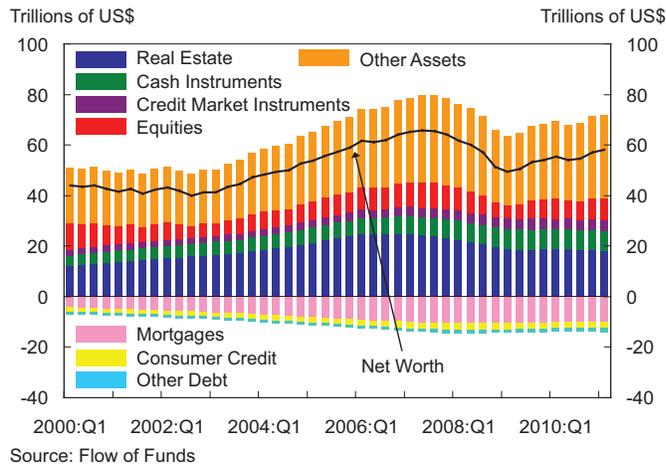
Small businesses generally have less access than corporations to capital markets and thus depend more on bank financing. Therefore, the improvements in the functioning of corporate bond markets have had little direct positive impact on the small business sector. Also, continued strains in the banking sector, particularly for smaller community banks, have constrained credit availability for small businesses. According to the Federal Reserve Board's Senior Loan Officer Opinion Survey, loan standards to small firms, which were tightened sharply during the crisis, have not been loosened to any significant extent over the past year.

The Senior Loan Officer Opinion Survey also indicates that the demand for bank loans from small businesses has not picked up much over the past year. The weakness in demand probably reflects two main factors. First, because many small business loans are secured by real estate collateral, declines in real estate prices have affected available collateral, which may prevent small businesses from seeking loans. Second, small businesses still report weak sales; in the latest NFIB survey, nearly one-quarter of respondents cited poor sales as their primary problem.

4.2.2 Household Sector

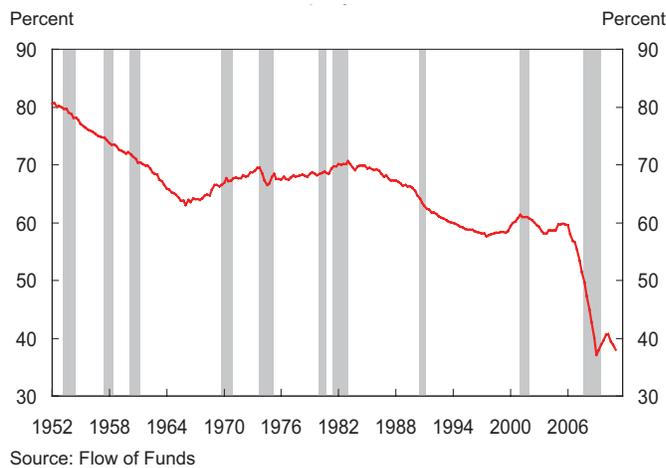
Household net worth increased over the year through the first quarter of 2011, as equity values increased and debt levels decreased modestly. The burden of debt payments relative to income has improved. However, mortgage-related debt remains high relative to the value of housing. Households have taken on more debt to fund college education.

Chart 4.2.6 Household and Nonprofit Balance Sheets



In the aggregate, household balance sheets are recovering, with net worth increasing moderately over the year through the first quarter of 2011 after large falls in 2008 and 2009. Declines in housing wealth have restrained the increase in aggregate net worth, which has been driven primarily by a rebound in stock values from their March 2009 lows (**Chart 4.2.6**). However, the recovery in household balance sheets has not been evenly distributed across income levels, particularly for lower income households that do not have much participation in equity markets. Because of the continued weakness in home prices, owners' equity in housing has remained near a record low of approximately 40 percent since mid-2008, more than 20 percentage points lower than its average over 1990–2005 (**Chart 4.2.7**).

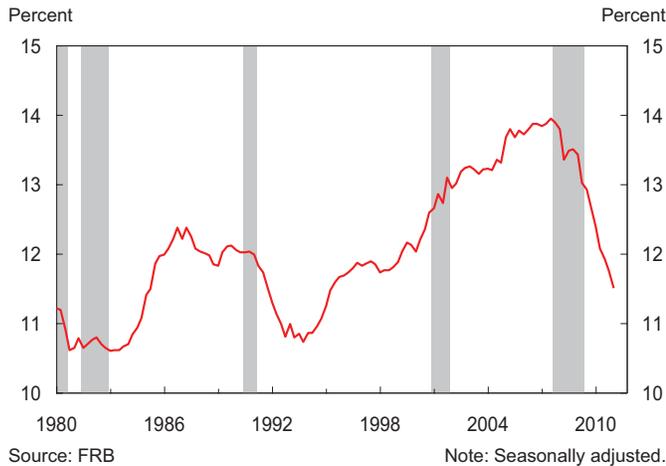
Chart 4.2.7 Share of Owners' Equity in Household Real Estate



Consumer debt outstanding, driven primarily by mortgages, peaked in 2008 and has declined by about \$1 trillion. In part, this decline is the result of households' active efforts to reduce their debt levels. But it also reflects the impact of foreclosures, which have removed mortgage debt from household balance sheets.

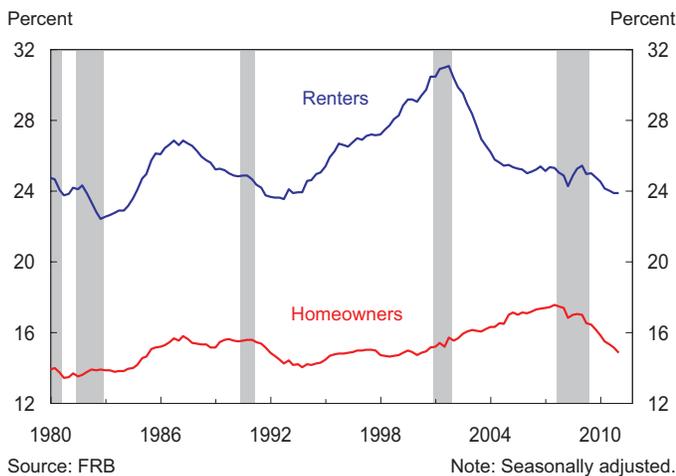
Many homeowners who were delinquent on their mortgages have been able to lower their payments through government and private modification programs. Nearly five million mortgage modification arrangements were started between April 2009 and the end of April 2011, which is more than double the number of foreclosure completions for the same period (2.1 million), although some homeowners may have received help from more than one program. More than 730,000 homeowners have received permanent modifications under the Troubled Asset Relief Program's Home Affordable Modification Program, with estimated median savings of about 37 percent, or \$525 per month per homeowner. Others have been helped by government programs to modify second liens or to encourage foreclosure alternatives, such as short sales and deeds-in-lieu. Still, with about 2.5 million mortgages entering the foreclosure process annually in recent years, many homeowners remain financially stressed.

Chart 4.2.8 Household Debt Service Ratio



Deleveraging by households, along with low interest rates and the extension of unemployment benefits, has helped households meet their debt obligations. The household debt service ratio (the ratio of household debt payments to disposable income) has fallen sharply, highlighting the improved ability of households to make debt payments (**Chart 4.2.8**). The financial obligations ratio (which measures a household's ability to service a broader measure of commitments, including rent payments and homeowners' insurance) has also fallen since 2007. These declines signal that, overall, both homeowners and renters are better able to meet their financial commitments than they were in the pre-crisis period (**Chart 4.2.9**).

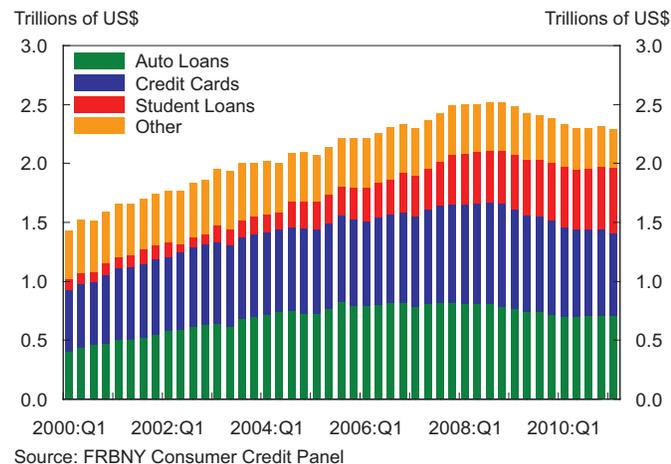
Chart 4.2.9 Household Financial Obligations Ratio



Education loans are the only major consumer debt category to have increased over the past three years (**Chart 4.2.10**). Increased college tuition costs and a finite pool of grants have, in part, resulted in increased demand for student loans. Repayment ability depends on both the completion rate of educational programs and labor market conditions over the repayment period. Unlike revolving credit card debt, student loan debt generally cannot be discharged in bankruptcy. Education lending has been increasingly provided by federal government-guaranteed loan programs.

4.3 Government Balance Sheets

Chart 4.2.10 Outstanding Balances of Consumer Loans

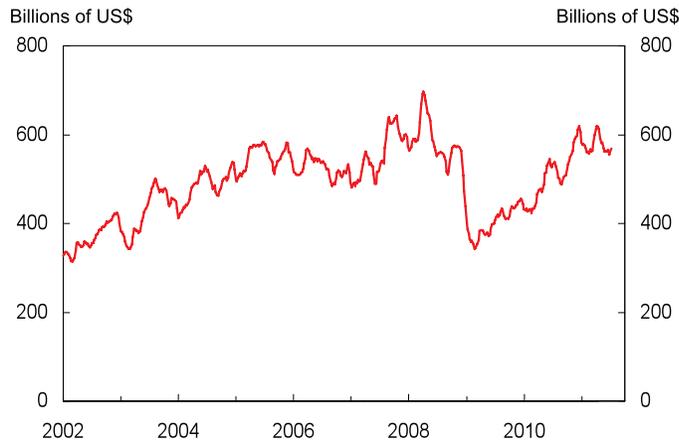


The recent recession produced a marked deterioration in finances at all levels of government in the United States. Global financial markets have been able to readily accommodate the substantial increase in U.S. federal debt. With interest rates low, the current financing costs of government debt are small. All levels of government face challenges in achieving and maintaining sustainable budgets, particularly with growing future obligations as the baby boom generation ages and retires.

4.3.1 Federal

Federal government debt has increased for a number of reasons, including the direct effects of the recession and the fiscal interventions to prevent a deeper recession.

Chart 4.3.1 Total Treasury Market Turnover

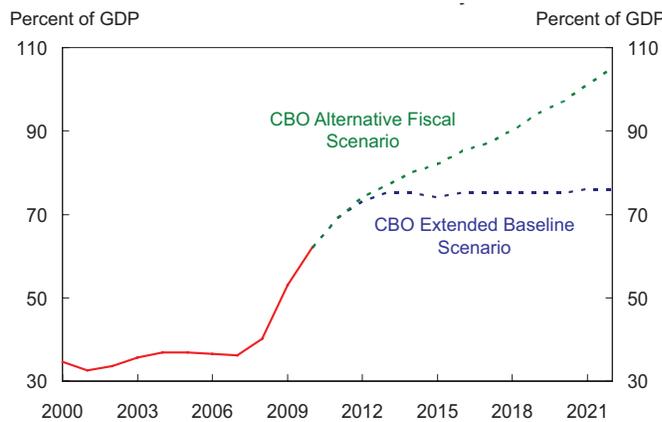


Source: FR 2004 Note: 12-week moving average of daily values.

The U.S. federal government is the largest issuer of debt in the world. This mainly reflects the large size of the U.S. economy relative to the rest of the world. The size of the market for U.S. debt, its liquidity, and the long-term stability and flexibility of the U.S. economy have made the U.S. dollar the dominant global reserve asset (see **Chart 4.3.1** and **Box A: U.S. Dollar as the International Reserve Asset**).

In fiscal year (FY) 2007, the federal government had a deficit of 1.2 percent of GDP and net debt outstanding of \$5.02 trillion. In FY2010, the deficit increased to 8.9 percent of GDP; it is projected to remain around this level in FY2011. At the end of FY2010, net public debt outstanding reached \$9.01 trillion, 62 percent of GDP (**Chart 4.3.2**). Total public outstanding debt increased from \$9.00 trillion in FY2007 to \$13.56 trillion in FY2010. In May 2011, total Treasury debt reached the limit set by Congress in February 2010.

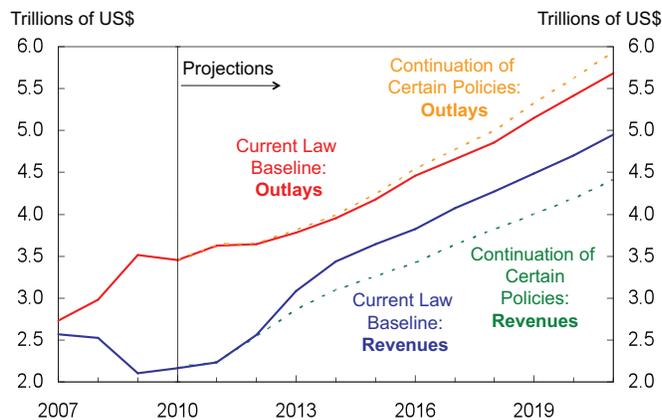
Chart 4.3.2 Federal Government Debt Held by the Public



Source: CBO Note: Fiscal years.

Much of the increase in the debt was driven by the direct effects of the recession on revenues and expenditures, and the use of fiscal policy to mitigate some of the risks of a deeper recession. A small part of the increase in debt is due to direct government assistance to the financial sector, mainly in the form of capital provided to Fannie Mae and Freddie Mac, the two large GSEs. The Congressional Budget Office estimates that the net cost of the Troubled Asset Relief Program will be less than 0.25 percent of GDP. The assistance to the financial sector resulted in the government accumulating financial assets.

Chart 4.3.3 Outlays and Revenues Using CBO Projections



Source: CBO Note: Projection is based on the Mar. 2011 CBO baseline budget forecast adjusted using Table 1.7 of the CBO Jan. 2011 outlook that specifies the effect of a continuation of certain policies. Revenues and outlays were adjusted from the baseline by accounting for the effects of maintaining the Medicare payment rates at the 2011 level, extending certain income, estate, and gift tax provisions scheduled to expire at the end of 2012 while indexing the AMT for inflation.

Even before the recession and the attendant increase in the deficit, government finances were acknowledged to be on an unsustainable path, partly owing to the increased expenditures for Medicare and Social Security anticipated with the aging of the baby-boom generation. The unsustainable path of government debt under the continuation of certain revenue and expenditure policies is widely recognized (**Charts 4.3.2** and **4.3.3**). The need for long-run fiscal balance has been a focus of recent

Box A: U.S. Dollar as the International Reserve Asset

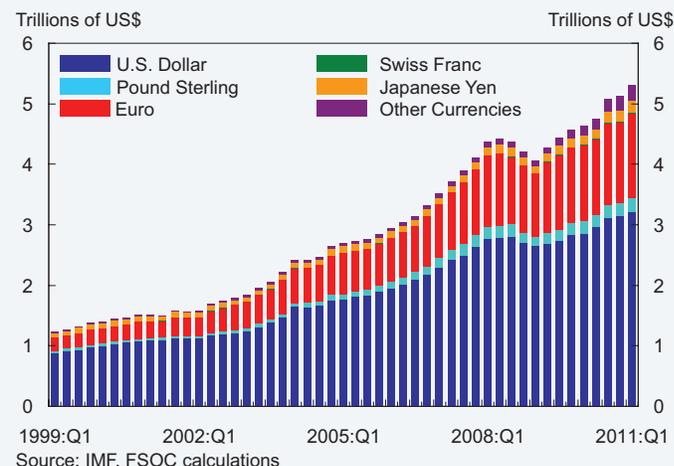
The United States and the rest of the global financial system continue to receive important benefits from the role of the dollar as the principal international reserve asset.

The U.S. dollar is the world's most actively traded currency in foreign exchange markets and the main reserve asset held by foreign central banks and finance ministries. This has been true since the end of World War II.

The attraction of U.S. assets for foreign investors reflects the large size and stability of the U.S. economy and the relative stability of U.S. economic and political institutions. It also reflects the fact that the United States has the world's largest and most liquid financial markets. One measure of this liquidity is average daily trading volume in the Treasury market, which remained robust through the financial crisis (**Chart 4.3.1**). These characteristics are highly valued by global investors and, in times of financial market turmoil such as the recent crisis, investors often use U.S. assets as a safe haven.

The dollar's share of "known allocated" global reserves adjusted for exchange rate fluctuations has generally exceeded 70 percent. Without adjusting for valuation effects from exchange rate fluctuations, the share has declined over the past decade from approximately 70 percent to just over 60 percent (**Chart A.1**). The

Chart A.2 Currencies in Allocated Global Reserves



dollar has maintained its dominant role even as global reserve assets have increased rapidly in the last 10 years (**Chart A.2**).

The value of all U.S. securities held by foreign investors, public and private, totaled \$10.7 trillion as of June 2010, an increase of \$1.1 trillion from June 2009. Some of this increase represented net purchases, while valuation changes in bonds and equities also contributed. Foreign holdings of all U.S. securities were estimated at \$11.3 trillion as of April 2011, and foreign holdings of U.S. Treasury securities totaled \$4.5 trillion, or just under half of publicly held net federal government debt. These large holdings lower the cost of funding the current U.S. account deficit. In fact, net investment income received by the United States from the rest of the world was estimated to be \$174 billion in 2010.

The U.S. and global financial systems receive important benefits from the role of dollar assets. While foreign investors benefit from the liquidity in U.S. financial markets, they are also an important source of that liquidity. High demand from abroad for Treasuries lowers the cost of funding for the U.S. government.

Chart A.1 U.S. Dollar Share of Allocated Reserves

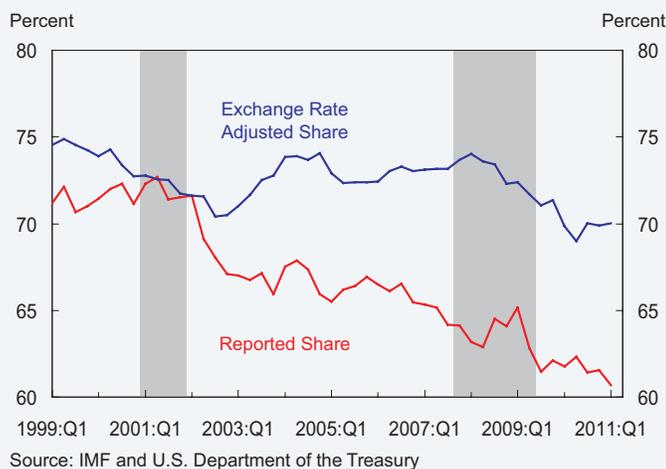
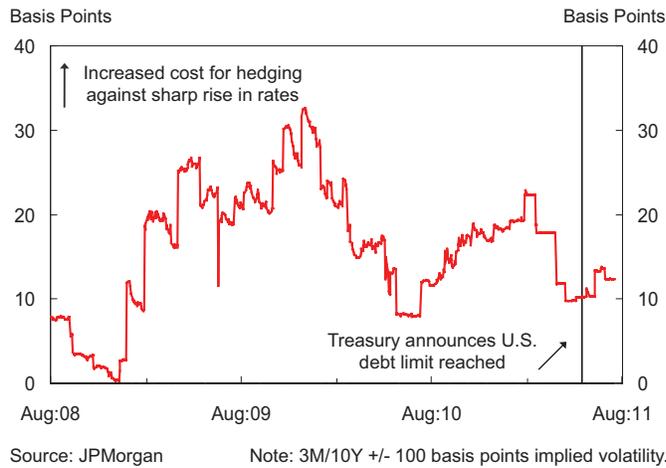


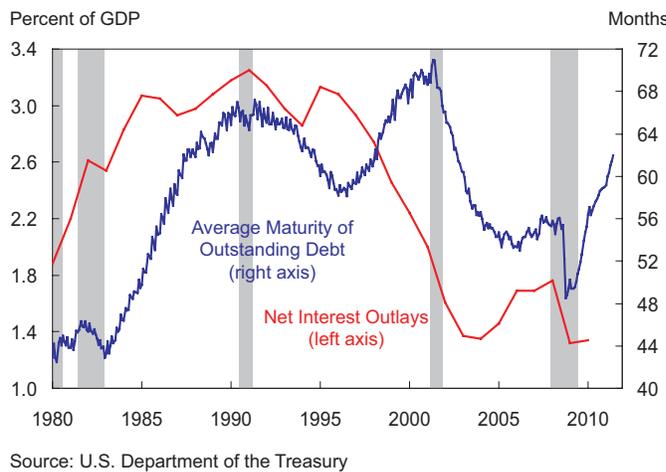
Chart 4.3.4 Interest Rate Payer Skew



attention from credit rating agencies. Current pricing of U.S. government debt implies that markets assume a long-term solution to the fiscal imbalance will be found and that, in the short run, the debt limit will be raised without disrupting market functioning (**Chart 4.3.4**).

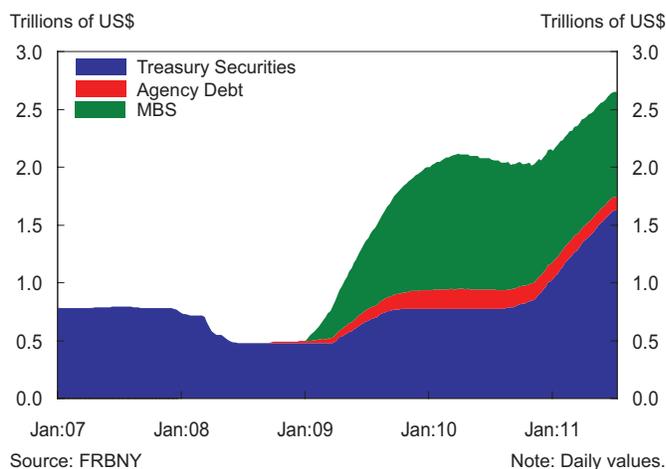
Despite the large increase in public debt outstanding, net interest costs as a percentage of GDP fell to 1.34 percent in FY2010, below the 2.97 percent average observed in the 1990s (**Chart 4.3.5**). This decline reflects the fact that interest rates have fallen considerably and remain near historically low levels. The average maturity of marketable debt outstanding has risen in the past two years from a low of 49 months to its current level of 62 months. This is modestly above the 30-year average of 58 months but below the average maturity of outstanding debt in other developed countries.

Chart 4.3.5 Interest Outlays and Average Maturity



Over the past three years, the balance sheet of the Federal Reserve has also grown. At first, much of this growth was driven by liquidity support to the financial sector; recently, growth has been sustained by the monetary policy tool of large-scale asset purchases (**Chart 4.3.6**). During the financial crisis, the Federal Reserve was granted immediate authority to pay interest on reserve balances held by depository institutions. As of June 30, 2011, reserve balances stood at about \$1.62 trillion. While the current interest rate on these reserves is 25 basis points, it is below the average interest rate (across all Treasury debt maturities) of around 3 percent paid by the federal government. Incorporating these liabilities would lower the average maturity of the federal government's debt obligations.

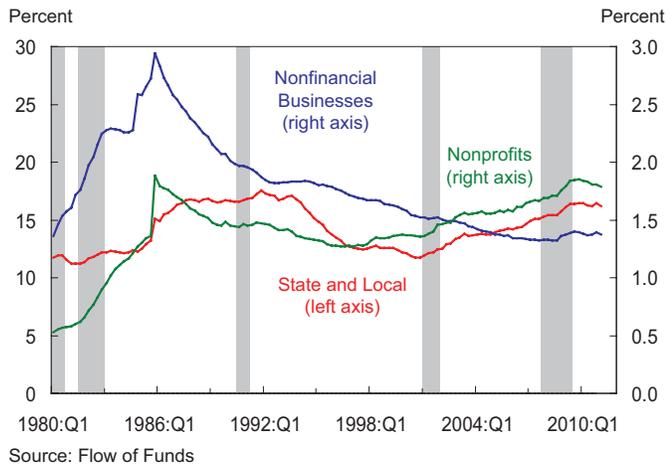
Chart 4.3.6 Outright Holdings of Domestic Assets in the SOMA



4.3.2 State and Local

Municipal governments experienced varying degrees of stress during the downturn. States are rebalancing budgets as federal government support is withdrawn; local governments are recovering more slowly. The municipal debt market has been strained amid concerns about state and local government finances. Longer term challenges associated with retirement benefits owed to government employees remain.

Chart 4.3.7 Municipal Liabilities as a Percent of GDP

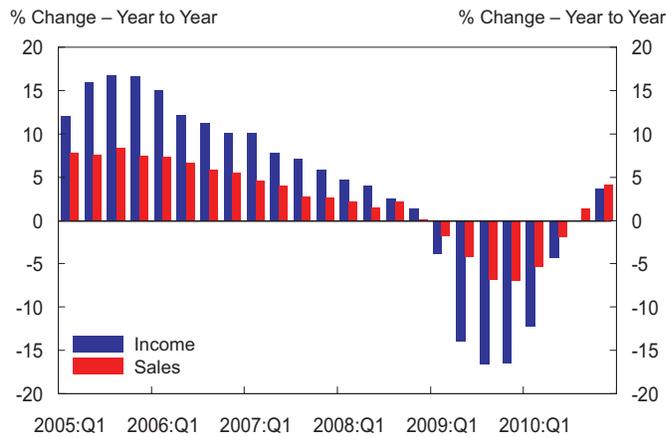


State constitutions generally require balanced operating budgets, but states and localities may issue long-term debt to finance activities such as investments in bridges, schools, and other public infrastructure projects. In addition, certain public and quasi-private authorities can issue municipal debt to finance their activities. Total outstanding municipal debt from all sources is \$3 trillion, which is about 20 percent of GDP, up from record lows in 2000 but in line with average levels from the mid-1980s to the mid-1990s (**Chart 4.3.7**). The annual rate of increase in total state and local debt has slowed markedly from an average of 9 percent in 2001–07 to an annual average rate of less than 4 percent since 2008, although some municipalities’ debt loads have increased much more than the average.

Municipal bonds are broadly divided into general obligation (G.O.) and revenue bonds. G.O. bonds, with approximately \$1 trillion outstanding, are secured by the full faith and credit of the issuer, meaning that the issuer (typically a government with the power to levy taxes) is committed to raising revenue sufficient to repay. Revenue bonds are more common, with approximately \$2 trillion outstanding; they are secured by a defined stream of revenues from a particular project and possibly by the project itself. Revenue bonds are the principal instrument for special-purpose and quasi-private entities. Because of their narrower and less certain revenue support, municipal projects that depend on increases in use (e.g., new toll roads) or increases in property values (e.g., tax increment bonds), or those with a tie to a corporate entity (e.g., industrial development bonds), are generally riskier than revenue bonds related to the provision of essential services (e.g., water/sewer revenue bonds).

States rely on cyclically sensitive income and sales taxes for over half of their revenue. The lower level of economic activity during the recession had a significant adverse effect on these revenues from 2007 through the first half of 2010. Part of the decrease was absorbed by the federal government, which provided, on average, \$53 billion in annual support to municipalities from FY2009 to FY2011, and

Chart 4.3.8 State Tax Revenue

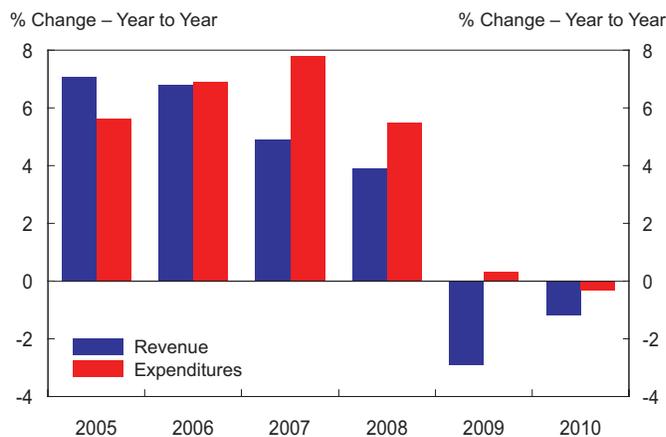


Source: U.S. Census Bureau

bridged approximately a third of state budget shortfalls in 2010. Tax revenue is recovering and states are going through the process of rebalancing revenues and expenditures as federal government support is withdrawn (**Chart 4.3.8**).

Local governments and smaller municipal issuers are more vulnerable as they have smaller tax bases than states and are less able to raise revenue (**Chart 4.3.9**). Cities are currently facing reductions in state aid, on which they have historically relied for 30 percent of their funding. They also face declining property tax collections, traditionally their largest independent source of revenue, due to the sustained declines in real estate values and lower sales tax revenue (**Chart 4.3.10**). Funding has also become more difficult to obtain for single-purpose entities such as hospital authorities.

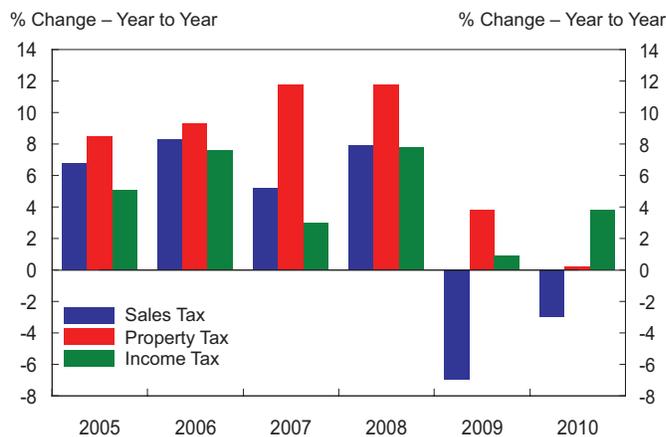
Chart 4.3.9 City General Fund Revenues and Expenditures



Source: National League of Cities

Despite the strains induced by the recession, municipal bond defaults are historically low. Defaults are associated with smaller municipal entities in geographic areas hardest hit by the housing crisis and recession. Also, defaults are more common for municipal projects that relied on future growth that did not materialize, or revenue bonds backed by issuers with corporate credit characteristics, such as industrial development bonds, pollution control bonds, or bonds in the health care sector (**see Box B: Municipal Debt Market**).

Chart 4.3.10 City General Fund Tax Receipts



Source: National League of Cities

State and local governments face longer term challenges associated with the unfunded portion of future benefits owed to their employees. With high equity valuations in 2000, state pension systems were considered more than adequately funded; however, by 2008, declines in asset values led to significant underfunding, and approximately 80 percent of states failed to make their actuarially required contributions to their pension funds. Estimates of the unfunded portion of state and local retirement liabilities range from \$1 trillion to \$3 trillion. Other postemployment benefits represent an additional \$0.5 trillion to \$0.9 trillion in unfunded liabilities. The widening unfunded portion of pension obligations

Box B: Municipal Debt Market

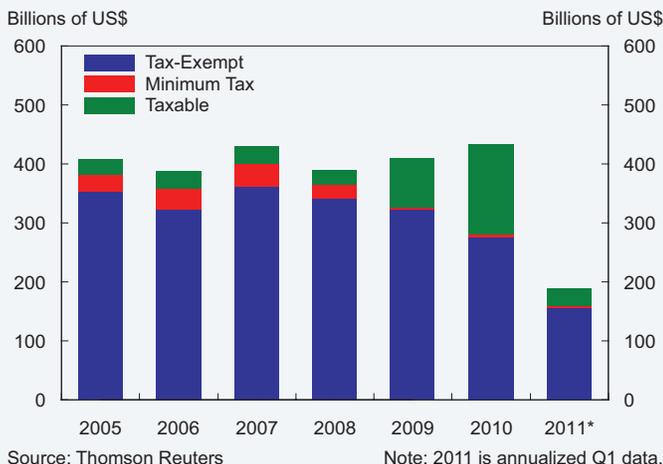
The municipal bond market provides a critical source of private capital for state and local governments and certain nongovernment issuers.

Municipal bonds may be exempt from federal, state, and local taxes if the proceeds of such bonds are used by a government unit for its own purposes and if the property financed by the bonds will be owned by the government unit. Generally, with some exceptions, bonds that do not meet these standards are considered private activity bonds and are not tax-exempt. Furthermore, some types of private activity bonds that are exempt from the regular tax may be subject to the alternative minimum tax.

Most municipal debt issuance is tax-exempt (**Chart B.1**), which has made it an attractive class for retail investors. As a result of the financial crisis, the market has undergone significant structural changes that have left it even more dependent on retail demand.

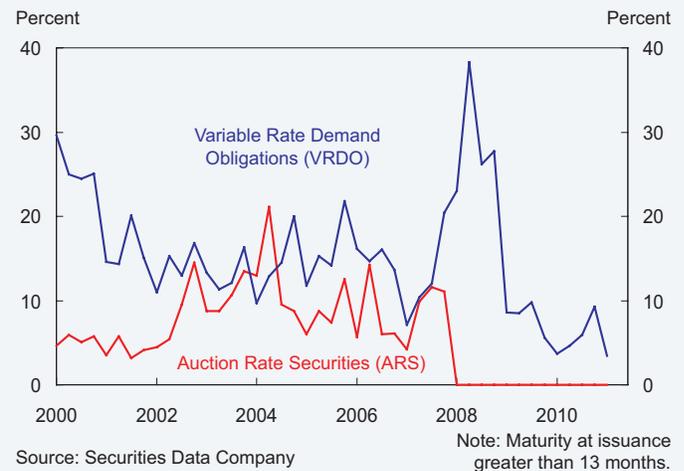
Municipal bonds may have fixed or variable interest rates, or they may be zero coupon bonds. Many variable rate municipal bonds give investors the right to put the bond back to the issuer. Such securities are known as variable rate demand obligations (VRDOs). If the investor exercises the put, a remarketing agent sells the bonds to another investor. If the bonds cannot be resold, either a bond insurer or a liquidity facility provides the funds for the issuer to purchase the bonds.

Chart B.1 Issuance by Tax Status



The auction rate securities (ARS) and tender option bond (TOB) programs were large pre-crisis sources of liquidity in the long end of the municipal bond market. Like other off-balance-sheet maturity transformation vehicles, these were almost completely eliminated in the financial crisis, as banks and other investors became less willing to assume the associated credit and interest rate risks. As a result, many municipal bond issuers replaced auction rate debt and insured VRDOs with uninsured VRDOs supported by liquidity facilities. These facilities generally have terms of three years, and many of the facilities originated in 2008–09 are currently up for renewal (**Chart B.2**).

Chart B.2 ARS and VRDO Funding of Long-Term Muni Bonds



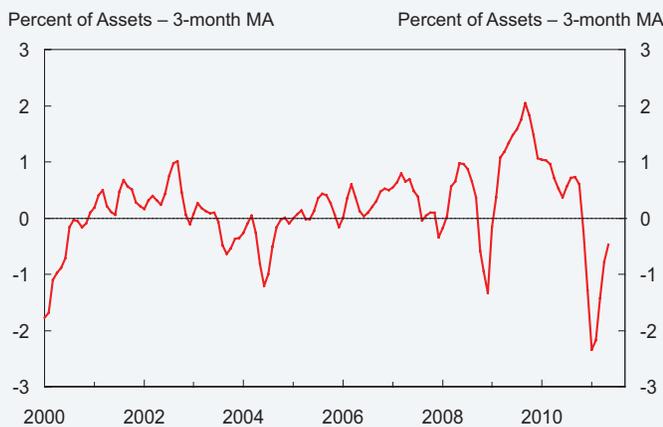
Following significant dislocations experienced by the municipal market in 2008 and early 2009, the federal government launched the Build America Bonds (BAB) program to stimulate infrastructure spending and ease the pressure on the municipal bond market. The BAB program was designed to broaden the municipal bond investor base beyond those who typically invest in municipal bonds by providing a federal subsidy that allowed municipal borrowers to issue long-term taxable bonds. Specifically, municipal borrowers could issue long-term taxable bonds for capital expenditure instead

of tax-exempt bonds, with the federal government rebating 35 percent of the taxable interest expense directly back to the issuer.

The program played an important role in increasing the investor base for municipal bonds and indirectly provided support for the long-term tax-exempt municipal market by limiting the amount of tax-exempt supply. During the first three quarters of 2010, borrowing costs for 30-year municipal issuance fell by 45 basis points, and nearly \$500 million flowed into municipal bond mutual funds.

However, in advance of the BAB program's expiry on December 31, 2010, expectations that supply would shift back to the tax-exempt market pressured yields higher. At the same time, widespread press and analyst commentary on the credit conditions of state and local governments began to trigger sharp outflows from retail municipal bond mutual funds (**Chart B.3**). Muni-to-Treasury yields, which had already become increasingly differentiated, rose further for some issuers to levels well above their long-term average of 85 percent (**Chart B.4**). Even though most municipal bond investors generally employ negligible levels of leverage, there were reports of forced selling at distressed levels as some mutual funds struggled to meet redemptions.

Chart B.3 Municipal Bond Flows

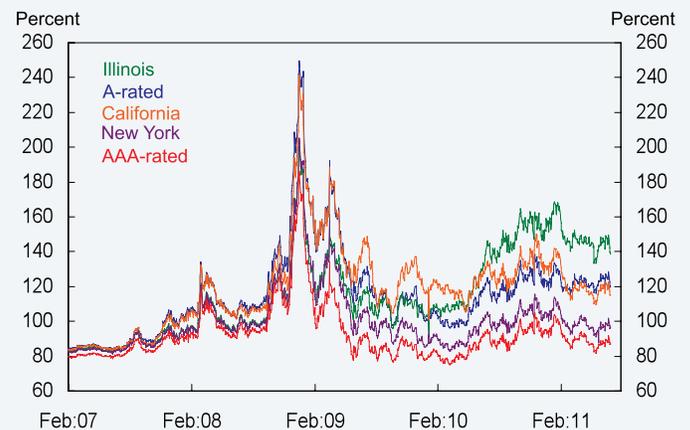


Source: ICI

The increasing speed of redemptions created concern about municipalities' ability to issue certain short-term debt instruments called revenue anticipation notes, which cover the mismatch between revenue collections and operating expenditures. However, relatively attractive valuations induced investors to enter the tax-exempt space, and demand from crossover institutional buyers helped counteract redemptions from tax-exempt mutual funds, although these have since recovered.

Going forward, structural issues with the municipal bond investor base remain. Long-term debt generally is not attractive to retail investors. As VRDOs expire, and without maturity transformation structures such as ARS and TOB, it is unclear how cost-effective longer term funding will be sourced through the municipal bond market.

Chart B.4 Municipal Tax-Exempt Bond Ratios



Source: Thomson Reuters, Bloomberg
 Note: 10-Year General Obligation Municipal Bonds to 10-Year Treasury Yields.

Chart 4.4.1 Indebtedness and Leverage in Selected Advanced Economies (April 2011)

	Government Net Debt, 2011	Primary Balance, 2011	Government debt held abroad (% of net debt)	Nonfinancial Corporates' Debt over Equity (percent)	Bank Leverage (tangible common equity)	Total Economy Net External Liabilities
US	72	-9	44	105	13	19
Japan	128	-8.6	13	176	23	-55
UK	75	-5.5	30	89	24	14
Canada	35	-4.1	48	72	18	7
Euro area	67	-1.7	38	106	26	13
Belgium	82	-0.5	80	43	30	-43
France	78	-3.5	72	76	26	11
Germany	55	-0.3	77	105	32	-39
Greece	N/A	-0.9	N/A	218	17	99
Ireland	95	-7.5	71	113	18	102
Italy	101	0.2	56	135	20	20
Portugal	86	-1.6	60	145	17	106
Spain	53	-4.6	60	152	19	90

Note: As a percent of 2010 GDP, unless otherwise noted.

Source: IMF Global Financial Stability Report

increases the likelihood of changes in fiscal policy, such as increases in tax revenues or service reductions to close funding gaps.

4.4 External Environment

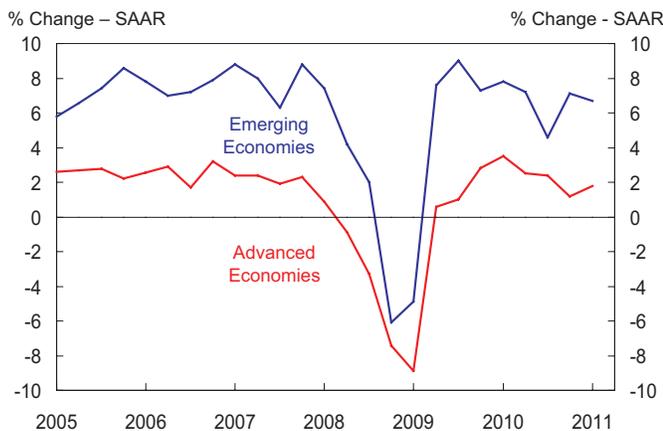
Many advanced economies face high debt levels and an uneven recovery. Growth in emerging market economies has rebounded more quickly, with implications for capital flows and the potential for overheating.

The United States was not alone among advanced countries in experiencing a large increase in government debt during the financial crisis, while private sector debt shrank or grew at much slower rates than in previous years (**Charts 4.0.3** and **4.0.4**). For some countries, the direct cost of support to the financial sector has been a large contributor to the increase in government debt.

Starting in early 2010, financial markets began to apply additional pressure on certain peripheral European countries through sharply higher government funding costs. Amid considerable market turmoil in the spring of 2010, concerns over sovereign credit risk came to the forefront (**Chart C.2**). European authorities working with the International Monetary Fund have developed financial assistance packages for three countries and established mechanisms to resolve future debt problems in the euro area (**see Box C: Country Support Developments in Europe**).

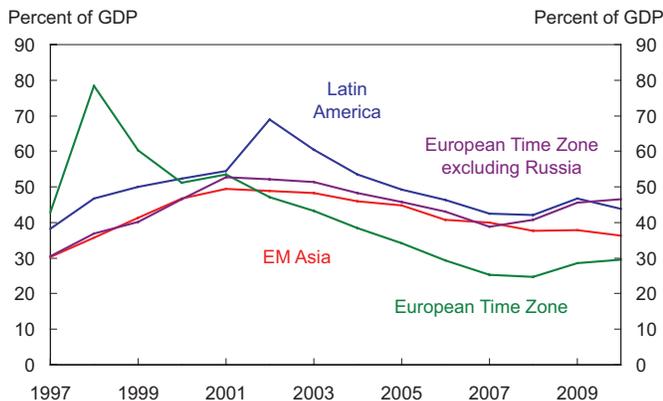
The abilities of advanced countries to service their debts without provoking sharp market concerns are not exclusively related to total public debt or current fiscal deficits. The size of a country's net external liabilities, the size of the financial sector relative to GDP, and the share of government debt held externally are other considerations (**Chart 4.4.1**). Lingering balance sheet weaknesses in the advanced economies are limiting the pace of their recoveries. The natural disaster in Japan has not had widespread impacts on capital flows, as markets effectively absorbed this exogenous shock; but it has interrupted some international supply chains.

Chart 4.4.2 Real GDP Growth



Source: National Authorities and FRBNY

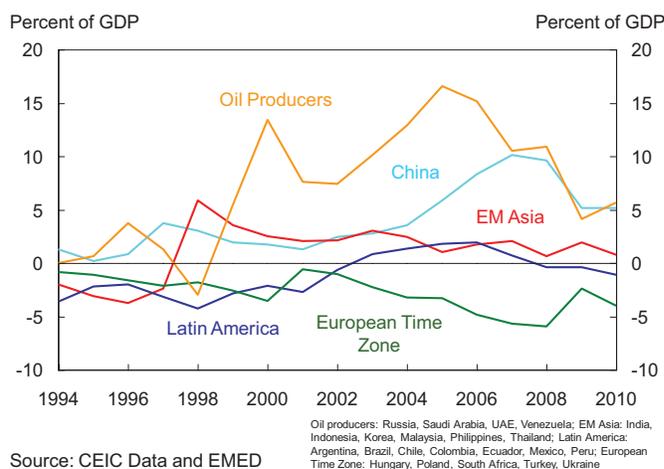
Chart 4.4.3 Emerging Markets: Public Debt to GDP



Source: National Authorities, CEIC Data, EMED, FSOC calculations

European Time Zone: Hungary, Poland, Russia, South Africa, Turkey, Ukraine; EM Asia: China, Korea, Indonesia, Malaysia, Philippines, Thailand; Latin America: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Venezuela

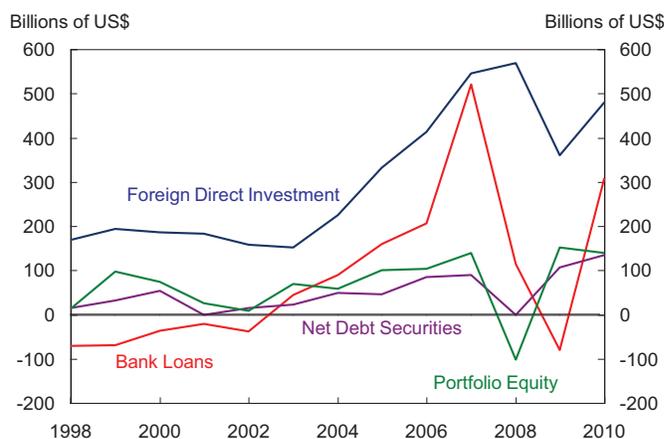
Chart 4.4.4 Emerging Markets: Current Account



Source: CEIC Data and EMED

In contrast, most emerging market economies (EMEs) have recovered strongly from the global recession (**Chart 4.4.2**). Moreover, most EMEs currently do not exhibit the macroeconomic and balance sheet vulnerabilities that have been associated with past EME crises, such as large fiscal or current account deficits, banking sector weaknesses, heavy debt burdens, or significant currency and maturity mismatches. However, some countries in emerging Europe are still working through the aftermath of abrupt reversals in financial and economic conditions (**Charts 4.4.3 and 4.4.4**).

Chart 4.4.5 Private Capital Flows to Emerging Markets

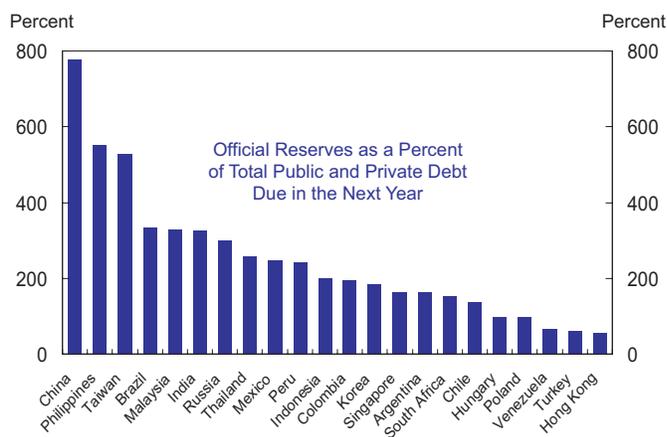


Source: BIS, EMED, CEIC Data, and FSOC calculations

Nonetheless, prospects for sustained strong capital inflows and moderately strong credit growth in some EMEs present challenges. A number of EMEs are now experiencing record private capital inflows, spurred by their strong growth prospects and by low interest rates in the advanced economies (**Chart 4.4.5**).

To head off the risks of overheating, authorities in many EMEs are tightening policy through a number of channels, including interest rate increases and macroprudential measures such as restrictions on LTV ratios, stricter lending criteria, and restraints on credit growth. However, some policy actions pose difficult trade-offs; for example, they may encourage further capital inflows. Against this backdrop, many countries continue to add to their large holdings of foreign exchange reserves while running current account surpluses, reflecting a desire to limit currency appreciation against the U.S. dollar (**Chart 4.4.6**).

Chart 4.4.6 EM Foreign Exchange Reserves Coverage



Source: CEIC Data, EMED, IMF, FSOC calculations

Note: As of 2010.

Box C: Country Support Developments in Europe

In the wake of the financial crisis, several European countries have experienced severe macroeconomic and financial challenges. These challenges have exposed tensions within the European Monetary Union and limitations in the pre-crisis set of tools available to European policymakers to respond to economic and financial stress.

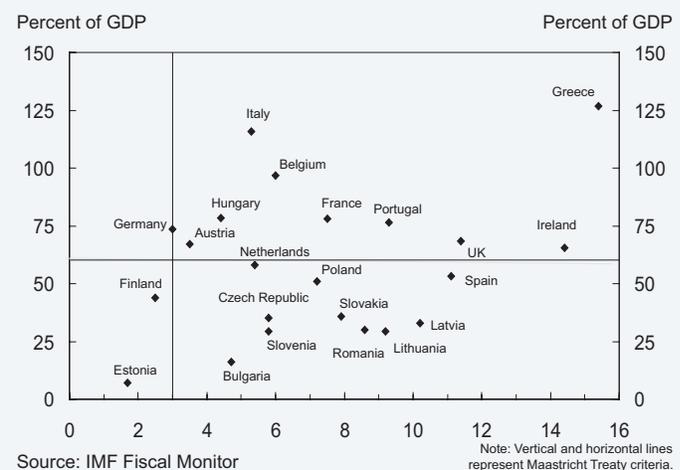
The European Union (EU), supported by the International Monetary Fund (IMF), committed to lend €255.5 billion to help Greece, Ireland, and Portugal address their vulnerabilities through adjustment programs. In addition, European leaders have agreed on a more comprehensive response that includes increased emergency financing, new EU economic governance rules, and member country commitments to take measures to support fiscal sustainability and competitiveness.

Vulnerabilities differ across the supported European countries. Greece's crisis has stemmed from unsustainable growth in the public sector, fueled by low-cost cross-border finance that has led to very large fiscal deficits and public debt (**Chart C.1**). Portugal's public debt is more moderate, but its private and bank debt is large. Even during periods of vibrant global expansion, Portugal's growth rates have been anemic, and the structure of the economy is skewed toward low value added industries. In Ireland, the collapse of the property sector and a deep and prolonged recession produced very large banking sector losses and structural fiscal deficits. Irish government support for the banking system has amounted to 46 percent of GDP, which along with large fiscal deficits, has pushed public debt close to 100 percent of GDP.

As of early 2008, markets were not significantly differentiating among euro area countries, with 10-year yields for Greece, Portugal, and Ireland trading at just 10 to 30 basis points above those for Germany. But Greek bond spreads surged following a late 2009 announcement by the Greek government that its budget deficit would be more than three times the original forecast (**Chart C.2**). Spreads have since increased sharply in Ireland and Portugal. Markets remain attentive to the risk of further contagion.

In May 2010, Europe launched a multipronged effort to address the crisis, making two emergency financing vehicles available to member states: the European

Chart C.1 2009 Gross General Government Debt & Deficits



Financial Stability Facility (EFSF), with an initial effective lending capacity of €255 billion, and the European Financial Stability Mechanism (EFSM), with a capacity of €60 billion. Adjustment programs are to be undertaken jointly with the IMF.

In March 2011, European leaders announced broad agreement on a more comprehensive debt crisis response, which must be ratified by national parliaments. The agreement covers three broad areas: (1) an increase in emergency financing; (2) new EU economic governance rules; and (3) a commitment by countries to take additional policy measures on fiscal sustainability and competitiveness.

Leaders committed to raise the EFSF's lending capacity to its notional cap of €440 billion. The European Stability Mechanism (ESM) will become the permanent financing vehicle in 2013, with €500 billion in lending capacity. Lending under both the EFSF and the ESM requires unanimous agreement by member countries and an adjustment program with IMF participation.

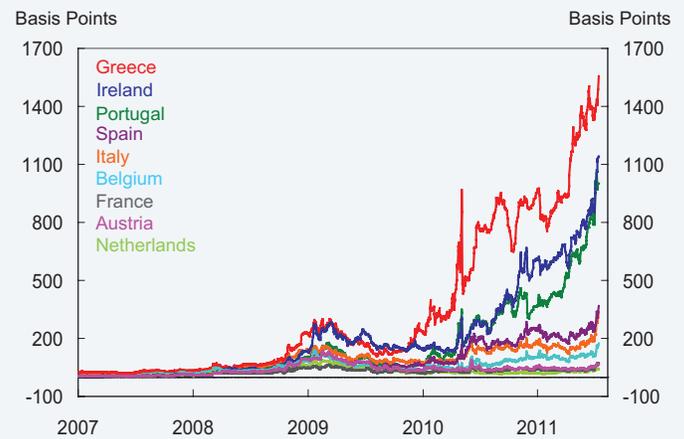
Leaders agreed to enhanced EU surveillance of fiscal sustainability and economic imbalances and to a broader array of potential sanctions for noncompliance. Member states also agreed to undertake structural reforms to boost competitiveness, fiscal sustainability, employment, and financial stability to safeguard the common currency.

Meanwhile, Europe and the IMF are extending financing to the three countries most affected by the crisis.

Greece is receiving €110 billion in IMF and EU loans while it undertakes fiscal adjustment and structural reforms. Despite concerns about domestic support for reform, the government enacted a fiscal consolidation of 5 percent of GDP last year, even as the economy shrank by 4.4 percent.

In December 2010, Europe and the IMF committed €67.5 billion to Ireland for budget support and to finance a fundamental restructuring of the banking sector. In May 2011, Portugal entered into a €78 billion IMF/EU program for fiscal consolidation and extensive structural reforms to boost growth.

Chart C.2 European Sovereign 10-year Spreads



Source: Bloomberg

Note: Spreads relative to 10-year German Bund.