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## I. BACKDROP: THE GREAT IMMODERATION

1. **At the root of the crisis, investors, intermediaries, and regulators failed to grasp both the weaknesses in the securitization model and the attendant risks posed by dramatic growth in increasingly complex securitization.** Between 2002 and 2006, asset-backed securities (ABS) issuance more than doubled to \$840 billion—roughly the size of bank credit flows—financed by domestic and foreign investors. While greatly facilitating the expansion of credit, securitization activity also reduced transparency about the distribution of risks, increased reliance on ratings (which bred complacency about risks in high-rated securities), and moved risk outside the core banking system (Box 1). In addition, skewed incentives eroded underwriting standards on underlying loans, although this did not become apparent until later.
2. **Falling volatility led market participants and regulators to underestimate risks, particularly in the housing market** (Figure 1). Low volatility also reinforced a prevailing view that financial innovation was beneficial in spreading risk to peripheral (and presumably, non-systemic) institutions. Relatedly, prudential supervision and regulation focused heavily on the core banking system, although its share of financial intermediation shrank as securitization burgeoned. Meanwhile, continuously rising house prices became the new norm, and rising home ownership was attributed to improved access to credit. In tandem, the share of the overall financial sector in corporate profits reached a historical high of about twice its long-run average, apparently validating the view that financial innovation enhanced efficiency (Figure 2).
3. **At a macro level, a seemingly virtuous circle developed—especially in the real estate market** (Figure 3). Home mortgage lending rose over 50 percent during 2002–05; the share of Alt-A and subprime loans surged to a third of new mortgage originations in 2005 compared with less than 10 percent at the start of the decade. The government-sponsored mortgage enterprises (GSEs) rapidly expanded both their securitization of prime mortgages and their purchases of nonprime mortgage-backed debt. As the credit-fueled housing bubble inflated, rising real estate prices fed consumption out of housing wealth; saving out of disposable income fell and briefly turned negative during 2005.
4. **But over 2006 and 2007, cracks began to appear in both financial markets and the broad economy.** Real estate prices and residential investment peaked, and as the housing downturn gathered pace, default rates on subprime mortgages rose and then surged. The deteriorating real estate market put increasing stress on intermediaries: in August 2007, measures of banking system stress—the Libor-OIS and TED spreads—jumped to as high as 100–200 basis points, 5 to 10 times pre-crisis levels, while spreads on credit default swaps for major banks began a steady upward trend. Against the background of growing financial strains that increasingly affected real activity, the Federal Reserve cut its policy rate by 100 bps over the second half of 2007, but the macro-financial feedback loop nevertheless intensified; and by end-year, the economy was in recession.

### Box 1. The Life and Death (and Rebirth?) of Securitization

**Securitization made the U.S. financial system brittle.** First, by creating a direct link between U.S. retail borrowers and investors (including those abroad), it increased the supply of mortgage finance, and fuelled the housing boom. Second, by creating a long production line—from lender to bundler to servicer to investor—it gave rise to severe principal/agent problems and information asymmetries, allowing credit standards to slip and risk to be obfuscated and mispriced. Third, by parking \$9 trillion in special purpose vehicles, it impeded needed loan modifications on a large amount of credit, worsening the impact of the tail event that was the U.S. house-price bust.

#### Failures occurred along the securitization chain.

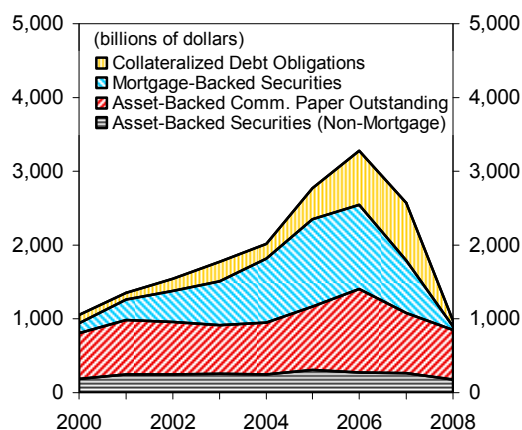
Lenders had limited incentives to maintain prudent underwriting and monitoring standards, as risks were transferred away; instead they focused on maximizing fees. Investors relied on credit ratings, rather than performing due diligence, especially as structures became more complex. They also put faith in protective structures such as over-collateralization and liquidity backstops, but in the event, these were of little protection given poor underwriting. The rating agencies, receiving a large and increasing share of their total income from a narrow set of issuers that dominated the bundling business, used often flawed methodologies and data inputs (themselves difficult for investors to evaluate, given the limited transparency). As a result, investors severely underestimated risks; and no one anticipated the scope and depth of subsequent downgrades. Also, in the face of soaring delinquencies on the underlying loans, servicers lacked the resources and incentives to carry out the most appropriate loss mitigation strategies (see Kiff and Klyuev, IMF Staff Position Note 2009/02).

**Several initiatives are underway to address these problems (see also the discussion of past steps in IMF Country Report 08/255, including pp 31–32):**

- *Aligning incentives:* The Treasury's June 17 *Regulatory Reform* paper proposes that originators retain five percent of the credit risk of securitized exposures, and the House *Mortgage Reform and Anti-Predatory Lending Act* would make bundlers legally liable for poor underwriting. The Treasury paper also proposes to link securitizers' compensation to the longer-term performance of the securitized assets.
- *Disclosure:* The Securities and Exchange Commission (SEC) may propose revisions to rules and forms to improve offering and disclosure requirements for asset-backed securities. The American Securitization Forum is leading industry efforts to improve disclosure practices.
- *Rating agencies:* The Treasury paper also calls for rating agencies to differentiate ratings on ABS from those on other debt and for improved disclosure, including ratings performance metrics. In December 2004, the International Organization of Securities Commissions issued a credit rating agency code of conduct, calling for firewalls between sales and analytic functions, and the SEC made more specific regulations in 2008. Also in 2008, rating agencies agreed with the New York Attorney General to implement a fee-for-service revenue model for MBS ratings—with originators required to pay the agencies whether or not they were ultimately selected to rate the security (to reduce "ratings shopping").

**These may be useful steps, but more can be done.** The *Regulatory Reform* proposes improved transparency, as well as risk-retention requirements that will help strengthen incentives for sound underwriting, although care must be taken to manage attendant risks in the core banking system. Encouraging simpler, more standardized, better capitalized structures through market codes of conduct or regulatory action could facilitate investor due diligence, and reduce the risk of mistakes in the ratings process. In addition, a broader legal "safe harbor" for servicers to modify underlying loans would protect them from lawsuits, better enabling them to pursue loss-mitigation efforts aimed at maximizing the value of the pool.

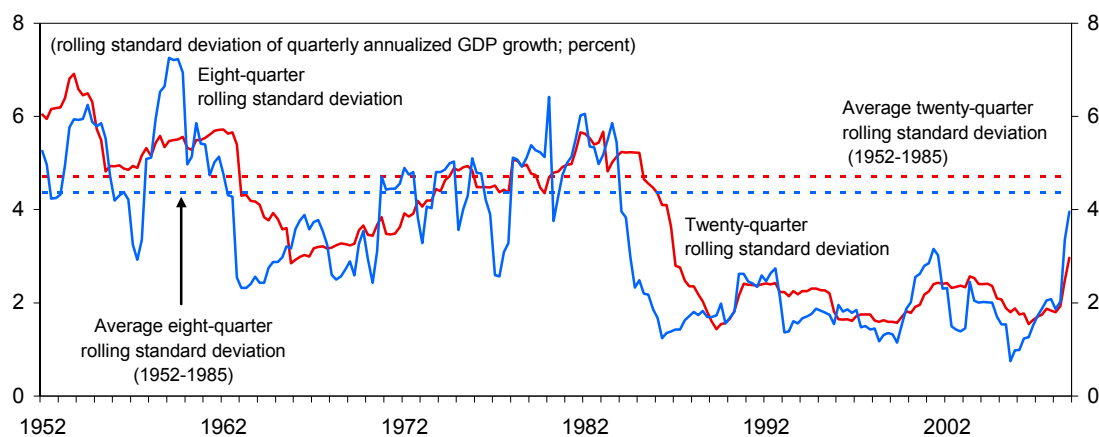
**U.S. Non-GSE Securitization Annual Issuance Volumes**



Sources: Merrill Lynch, JPMorgan Chase & Co., and Fund staff estimates.

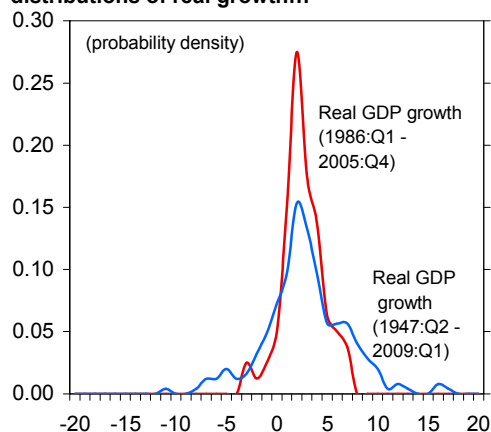
**Figure 1. The Great Moderation, Revisited**

**Beginning in the mid-1980s, volatility in U.S. economic growth moderated notably...**

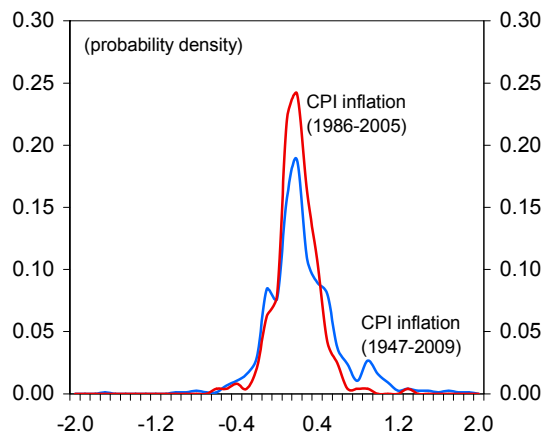


**... with less variance observed in post-1986**

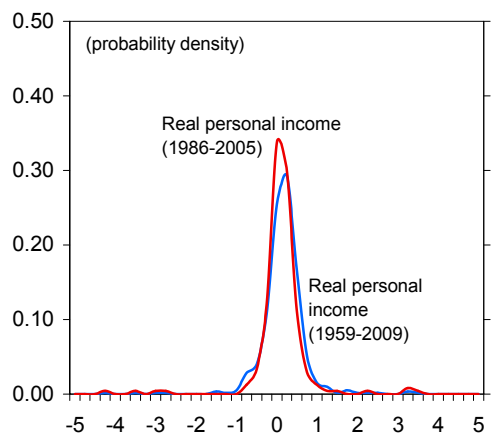
**distributions of real growth...**



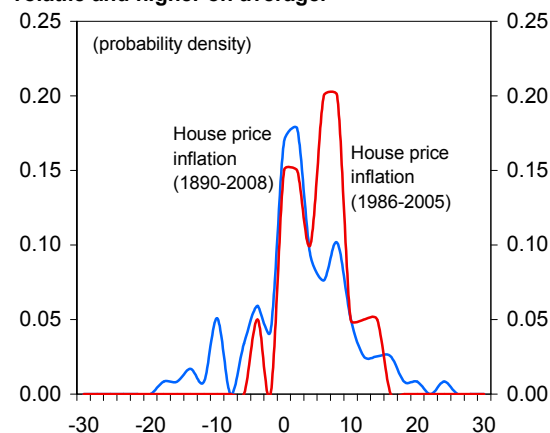
**... inflation...**



**... and real personal incomes.**



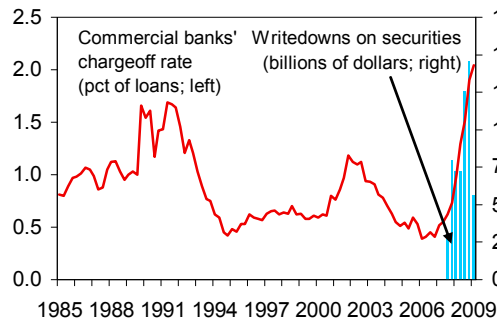
**Critically, gains in house prices became both less volatile and higher on average.**



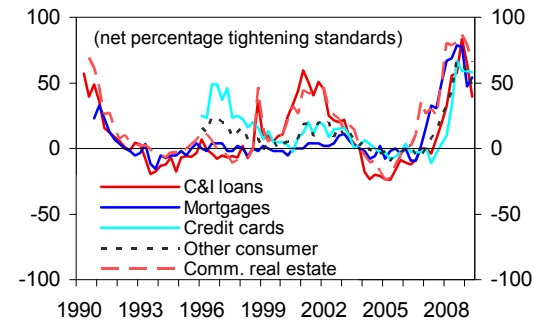
Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; Robert Shiller, *Historical Housing Market Data*; Haver Analytics; and Fund staff calculations.

**Figure 2. Financial Institution Leverage Cycle**

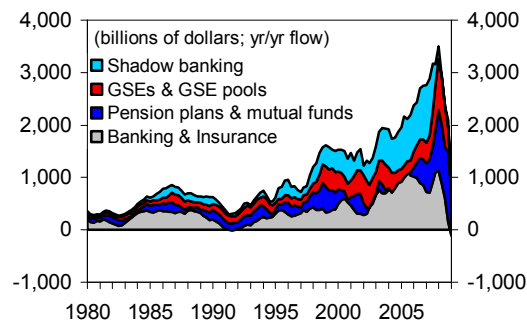
**Banks booked large and increasing losses as the recession intensified...**



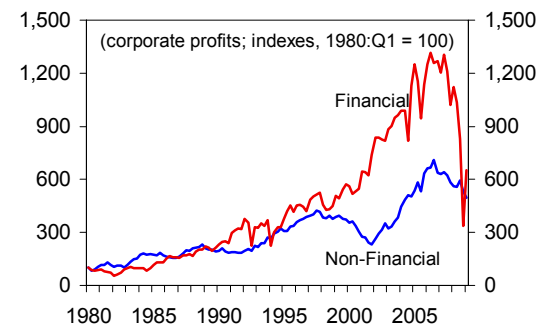
**... and tightened standards for loans ...**



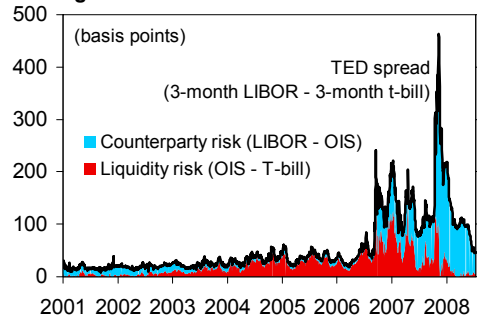
**... prompting a dramatic credit squeeze...**



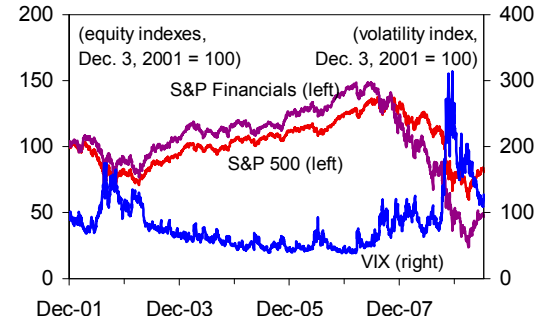
**... and financial sector profits tanked.**



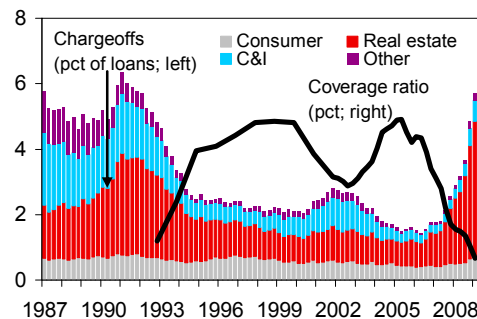
**An aggressive government response reduced funding risk...**



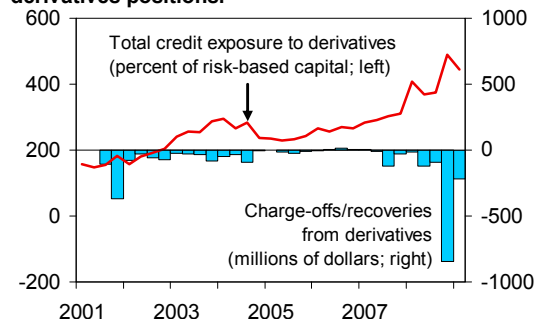
**... but overall, financial conditions remain stressed ...**



**... with credit risk on the rise ...**



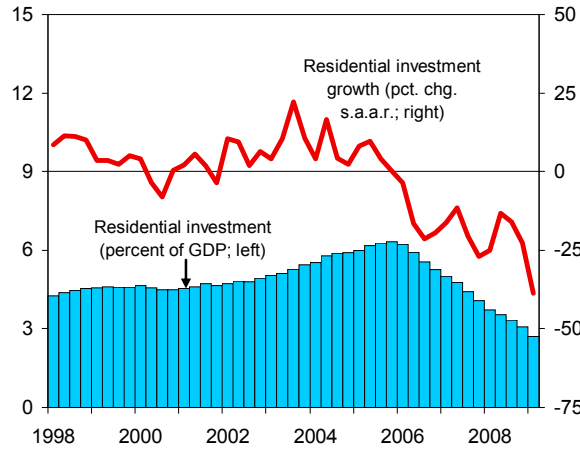
**... and substantial exposure and losses due to derivatives positions.**



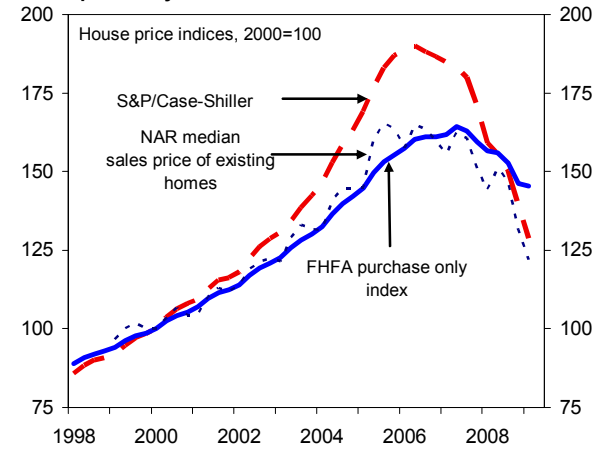
Sources: Bloomberg, LP; Board of Governors of the Federal Reserve System; Bureau of Economic Analysis; FDIC; Office of the Comptroller of the Currency; SNL Financial; Haver Analytics; and Fund staff calculations.

**Figure 3. Housing Boom and Bust**

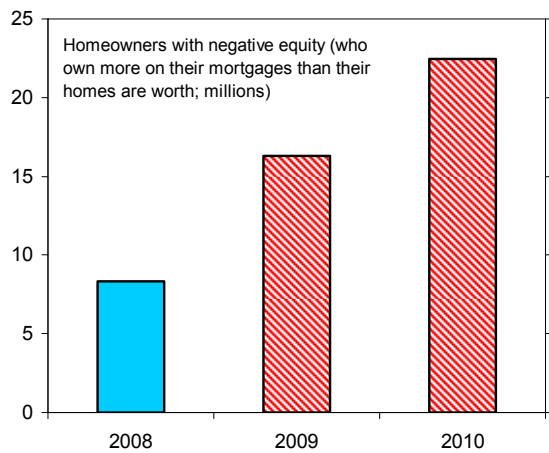
**Housing construction has crashed, leaving it with an ever smaller share in output.**



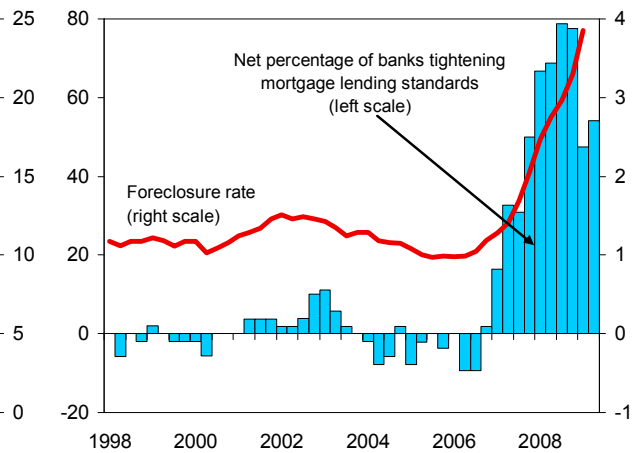
**And, after surging, house prices have been falling for the past few years...**



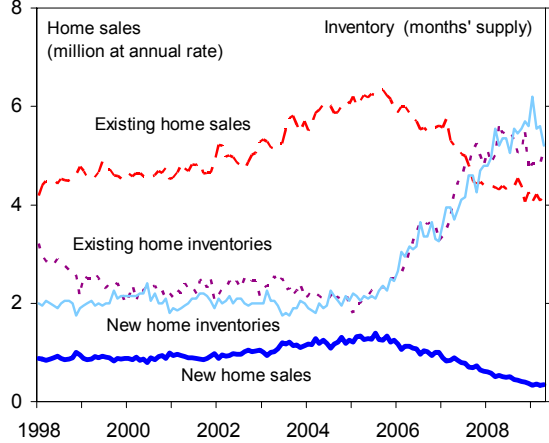
**...leaving a rising number owing more on their mortgages than their homes are worth...**



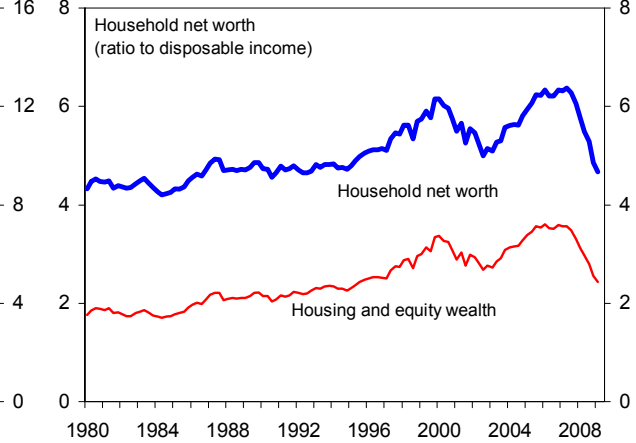
**...which has boosted foreclosures and resulted in a tightening of lending standards...**



**...raising the inventory of vacant homes, lowering sales...**



**...and causing household wealth to plummet after an extended boom.**



Sources: Mortgage Bankers Association; Bloomberg, LP; First American CoreLogic; Haver Analytics, and Fund staff calculations.

5. **From late 2007 into 2008, the virtuous cycle turned vicious.** Off-balance-sheet vehicles meant to keep risks at arms' length deteriorated sharply, and banks supported the vehicles to stem reputational risks—putting their own balance sheets at risk. A major investment bank (Bear Stearns) failed owing to mortgage exposure, and its purchase was facilitated by the Fed. CDS spreads spiked briefly. Worsening labor market conditions and a continued housing-market rout weighed on consumer spending (Figure 4). The authorities responded with fiscal stimulus of over 1 percent of GDP (tax rebates that took effect in late April), and monetary policy rate cuts to 2 percent, while providing ample liquidity. Housing initiatives included expanded Federal Housing Administration (FHA) guarantees aimed at limiting preventable foreclosures that were pressuring housing prices (and thus household and financial institution balance sheets).

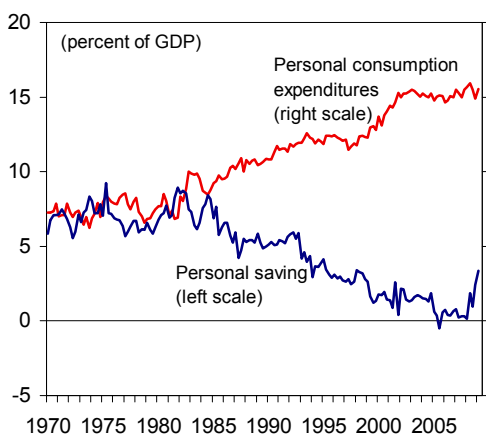
## II. THE CRISIS BREAKS

6. **In the second half of 2008, financial pressure escalated further, coming to a head with the failure of Lehman Brothers in September.** Despite sizeable liquidity injections, market strains remained high, while housing market stress continued to impact financial institutions (notably, the large thrift IndyMac failed). The two housing GSEs, Fannie Mae and Freddie Mac, were placed into conservatorship on September 6, with the government committing substantial financial resources to both institutions. Over three days in mid-September, the troubled investment bank Merrill Lynch was sold to Bank of America, and AIG (a global insurance group with huge derivatives positions) received \$85 billion in emergency Fed financing secured by its assets. Most significantly, another investment bank, Lehman Brothers, came under extreme stress. Given the absence of a framework for orderly resolution of systemic nonbanks, with no private buyer forthcoming, and as the Fed assessed Lehman's collateral as insufficient to back emergency lending, Lehman—in contrast to Bear Stearns—entered bankruptcy.

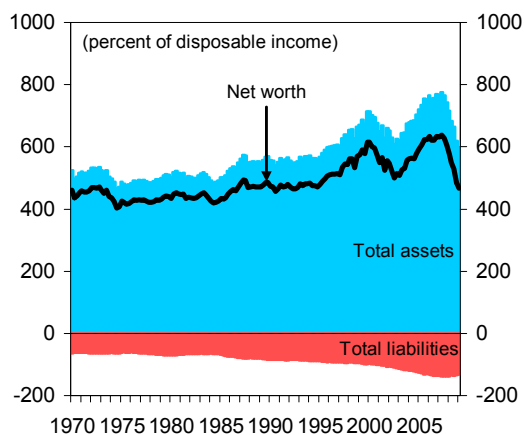
7. **The failure of Lehman Brothers triggered the worst bout of financial instability since the Great Depression.** Concerns about exposures to counterparties, highlighted by the collapse of Lehman, triggered massive turbulence in global interbank markets. LIBOR-OIS and TED spreads shot up to 350 and 500 basis points respectively, as interbank transactions in U.S. dollars and other major currencies (even on a secured basis) virtually disappeared beyond overnight maturities. A money-market fund holding Lehman paper fell below \$1 per share, triggering a run on money-market funds. This in turn caused the CP market (in which such funds invested) to dry up; outstanding financial-institution CP fell by more than a third while spreads doubled. Issuance of asset-backed securities, already declining, plummeted. In late September, the largest U.S. thrift failed, and another large U.S. bank was acquired. The drying-up of liquidity fed systemic concerns; financial institution CDS spreads shot up to over 400 basis points (Figure 5). In tandem, equity markets collapsed as financial stocks sold off abruptly, and equity volatility spiked.

**Figure 4. The Household Leverage Cycle**

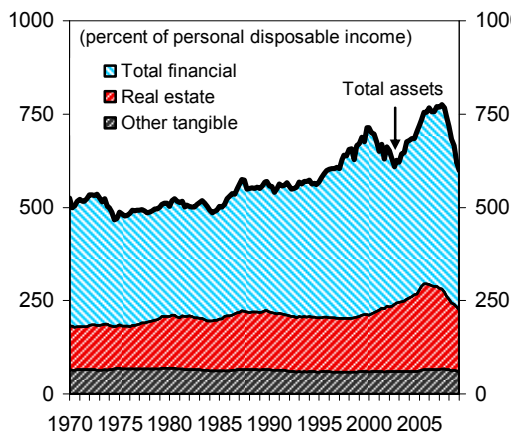
**Until recently, the consumption-oriented U.S. growth led to a drop in personal saving ...**



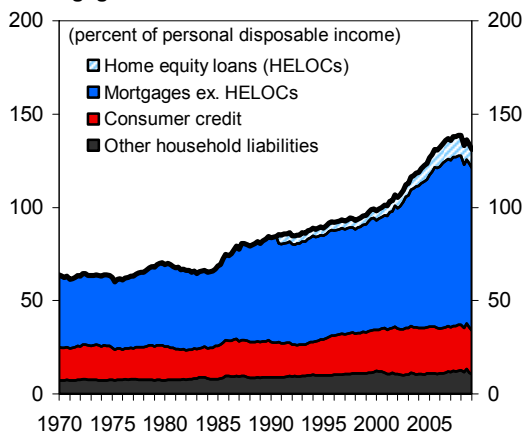
**... households' assets increased more than their liabilities, leading to a run-up in net worth.**



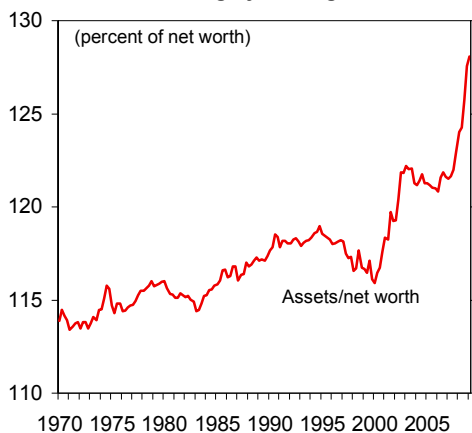
**Households increased their holdings of both financial assets and real estate...**



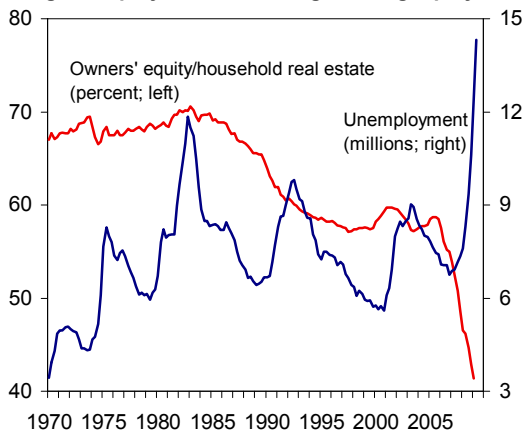
**... with the latter reflected in a sharp increase in mortgage debt.**



**With the drop in the value of their assets, households remain highly leveraged...**



**... and thus more vulnerable to fallout from rising unemployment and falling housing equity.**

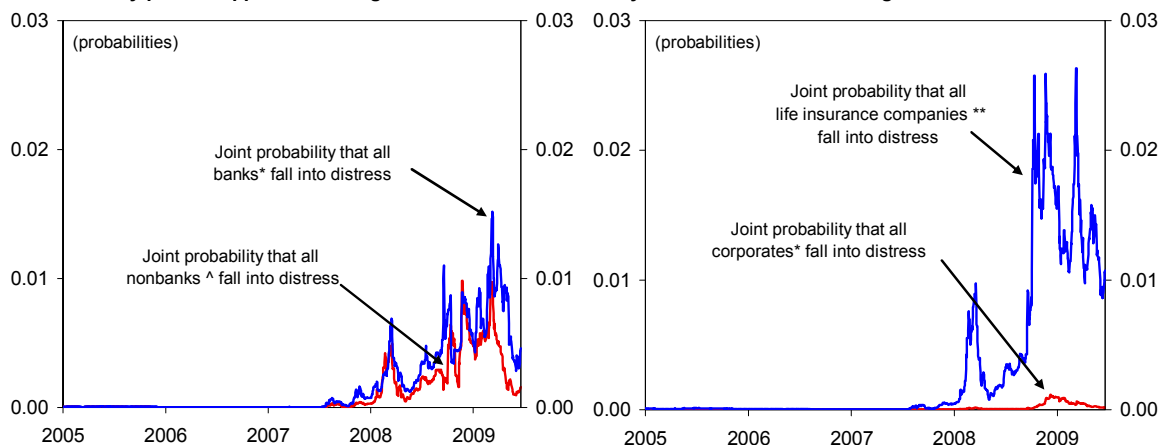


Sources: Board of Governors of the Federal Reserve System; Bureau of Economic Analysis; Bureau of Labor Statistics; Haver Analytics; and Fund staff calculations.

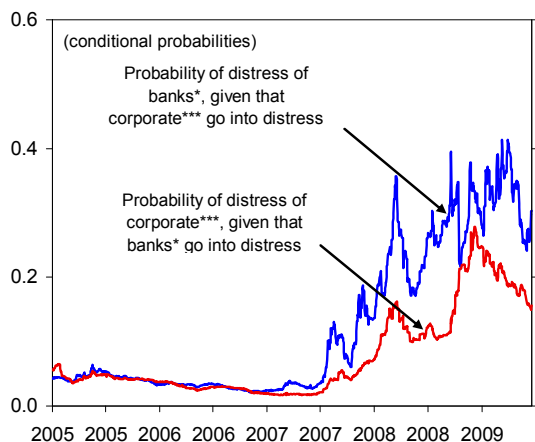


Figure 5. Evolution of Default Dependencies

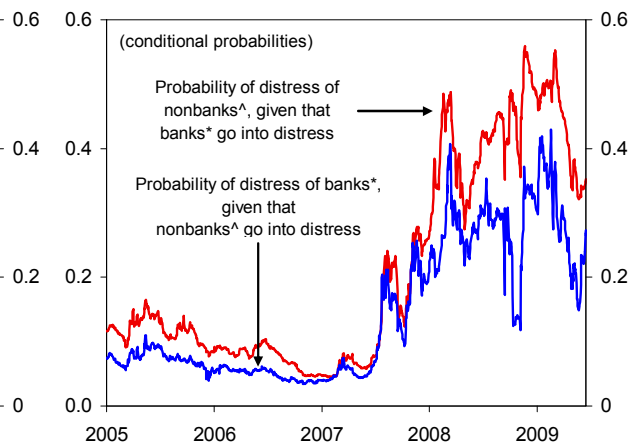
Extraordinary public support has brought tail risk in the financial system down from record highs...



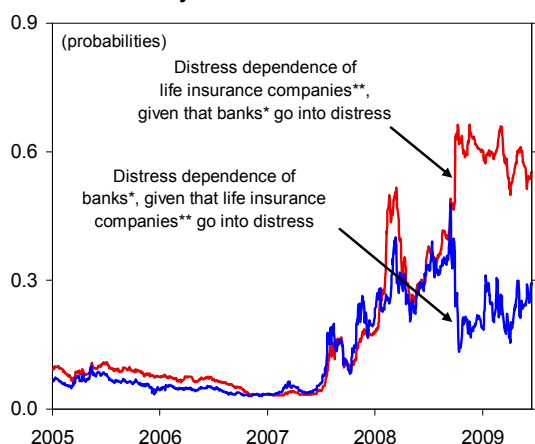
Although lessened, corporate weakness still weakens banks' resilience to distress...



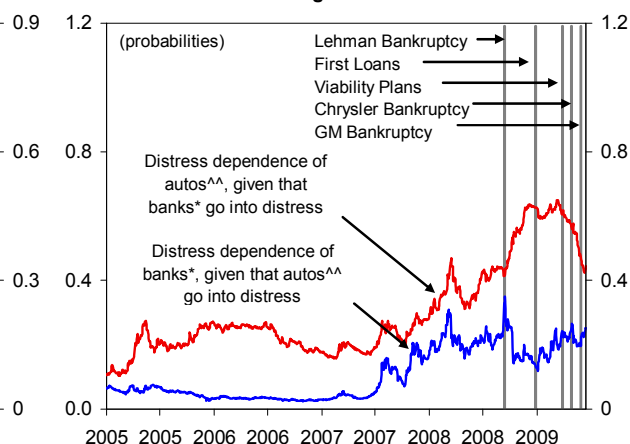
... making the default dependencies of nonbanks volatile.



The health of the life insurance sector has moved more closely with bank soundness...



Whereas the bailout of the auto sector helped to de-link it from the banking sector.



Sources: MarkIt; Bloomberg, LP; and Fund Staff estimates. \* Banks include Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, and Wells Fargo. \*\* Life insurance includes Hartford, MetLife, Prudential, Lincoln National, and Axa U.S. operations. \*\*\* Corporates include Boeing, AT&T, Johnson & Johnson, General Electric, IBM, Wal-Mart and Chevron. ^ Nonbanks include American Express, Allstate, Capital One, Travelers, and AIG. ^^ Autos include Toyota and Ford.

8. **The financial shock in the United States echoed around the world.** Globally, the “flight-to-quality” dynamic already underway intensified, as international investors sold private U.S. debt and rotated heavily into Treasury debt, and U.S. investors repatriated overseas holdings. Yields on 10-year Treasuries plunged and yields on short-term bills dropped to virtually zero, while the dollar strengthened. Meanwhile, banks tightened corporate loan standards at record rates to preserve their rapidly deteriorating balance sheets. Corporate bond spreads shot up while stocks plummeted to multi-year lows, amid intense risk aversion and concerns about solvency of major borrowers (Figure 6). With mounting stress at their financing arms and plummeting car sales exacerbating longstanding structural problems, U.S. automakers sought official financial help (Box 2).

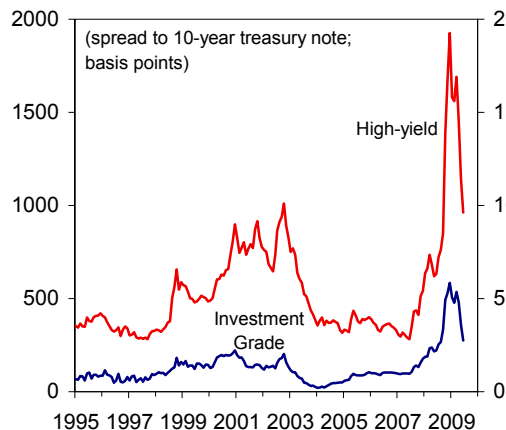
9. **The wave of financial instability then crashed over the broader real economy** (Figure 7). In the United States, the unemployment rate surged, with monthly job losses cresting at 741,000 in January. Consumer confidence plunged to record lows and spending on durable goods contracted by over 20 percent in the fourth quarter (q/q, SAAR). Nonresidential and residential investment shrank sharply, as overall GDP declined by 6¼ percent in the fourth quarter. Falling house prices created numerous “underwater” mortgages—i.e. owing more than the house is worth (estimates vary from about 8 million to 20 million households)—accompanied by a sharp rise in foreclosures. Output and trade also declined sharply, both for the United States and the rest of the world, with particularly pronounced effects on manufacturing exporters (Box 3).

10. **In response, U.S. macroeconomic policy shifted to a war footing:**

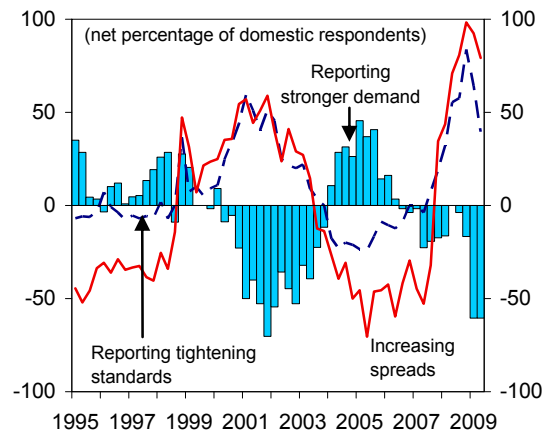
- ***Support for financial stability:*** in October 2008, \$700 billion was appropriated for a Troubled Asset Relief Program (TARP), ultimately used to provide capital injections to stressed financial institutions and support market facilities. The authorities also guaranteed selected balance sheet assets of Citibank (November) and Bank of America (January). The Treasury guaranteed money market mutual funds, while the FDIC and NCUA expanded deposit insurance coverage from \$100,000 to \$250,000 per depositor per bank, provided a temporary guarantee of non-interest-bearing transaction accounts over \$250,000, and guaranteed new bank debt for a fee. In February 2009, the Treasury announced a Financial Stability Plan including stress tests, further capital injections, and asset purchases; implementation has progressed subsequently.
- ***Unconventional monetary easing:*** in October 2008, the Fed participated in a coordinated rate cut with 5 other major central banks. In December, the Fed lowered its target rate to a range of 0–25 basis points, an all-time low, communicating in January 2009 that conditions were likely to warrant an exceptionally low rate for an extended period (Figure 8). It also ramped up its series of “credit easing” facilities to unfreeze segments of credit markets, particularly focused on securitized consumer credit, commercial paper, and money markets. In March 2009, it announced stepped-

**Figure 6. Corporate Sector Under Pressure**

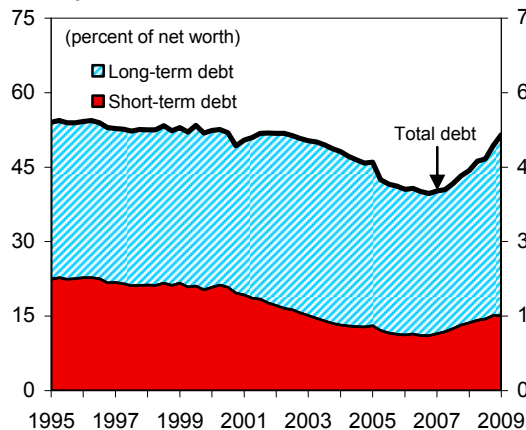
**Prior to the financial market turmoil, funding was cheap in credit markets...**



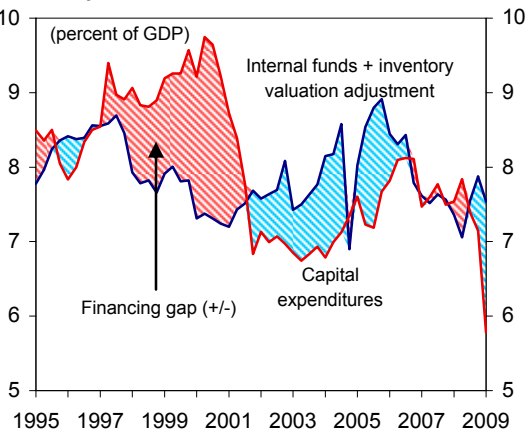
**... and also at banks, where standards were loosened, and demand for loans picked up.**



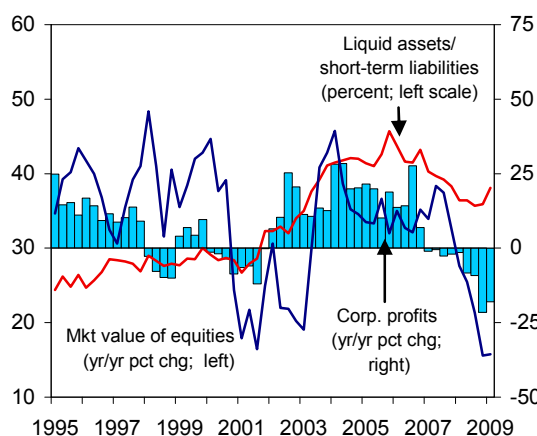
**However, it was only late in the expansion that the corporate sector debt increased...**



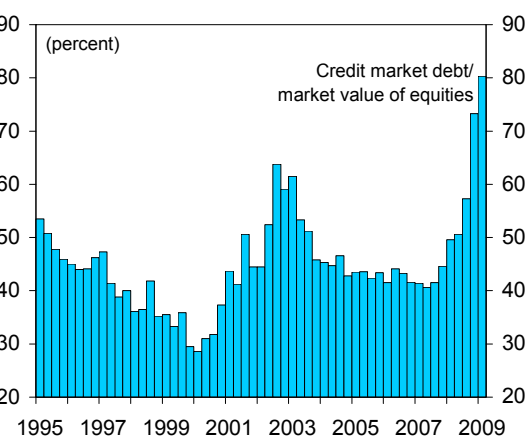
**...as internal funds were insufficient to cover all of the corporate sector's investment.**



**Firms' profitability is down, and their liquidity is off its peak, weighing on equities...**



**... helping to boost measures of firms' leverage.**



Sources: Board of Governors of the Federal Reserve System; Merrill Lynch; Bureau of Economic Analysis; Haver Analytics; and Fund staff calculations.

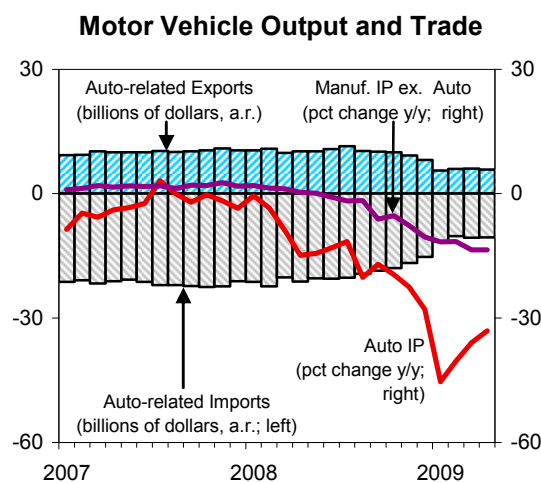
### Box. 2. The Motor Vehicles Sector

Although the financial crisis proved to be the blow that forced two major U.S. auto manufacturers into bankruptcy, the situation at the three major auto companies—General Motors, Ford, and Chrysler—had been getting bleaker for some time. The U.S. auto manufacturers have been steadily losing market share to imported brands over the past 15 years. They faced structural problems including high labor costs and oversized dealer networks. Compounding their problems, sharp increases in oil and gasoline prices further suppressed sales of domestic automobiles from an average of 13½ million units over 1995–2005 to 12½ million over 2006–07.

The onset of the financial crisis had dire implications for the auto industry. Worldwide, auto production decreased 3.7 percent to 70½ million units, with the share of the three U.S. manufacturers decreasing from 25 percent to 22 percent. In the United States, unit sales of domestic automobiles have collapsed to 6–8 million per month since October—the lowest levels since 1982—reflecting increased unemployment, decreased household wealth, and a spike in interest rates on auto loans. In line with weak sales, production of motor vehicles and parts dropped about 38 percent in May 2009 year-on-year (by comparison, output in other U.S. manufacturing industries decreased about 14 percent during the same period). International trade in autos and parts has also collapsed, with the value of total U.S. trade (imports plus exports) down 45 percent since last August. Finally, since August, motor vehicle and parts payrolls have decreased 25 percent and auto-retailer employment will be impacted, as both GM and Chrysler pare their dealer networks substantially. The problems of the U.S. auto sector spilled over to Mexico, where motor vehicle output has plummeted 45½ percent between August 2008 and March 2009 and employment in the transportation equipment sector dropped 17 percent.

These developments forced Chrysler and GM to appeal to the government for emergency financing in late 2008 and ultimately to file for bankruptcy protection. Chrysler's case, which was filed on April 30<sup>th</sup>, was completed on June 10<sup>th</sup>, with the United Auto Workers' retirees' medical trust and Fiat S.p.A. owning major shares in the reorganized Chrysler, and the U.S. and Canadian governments retaining small stakes. The GM bankruptcy is still proceeding, but according to the firm's reorganization plan, it is expected to emerge from bankruptcy majority-owned by the U.S. government (the Canadian and Ontario governments, the retirees' medical trust, and unsecured bondholders would own minority shares). Ford, which entered the crisis in a somewhat stronger financial position, has not availed itself of government loans, but has undertaken out-of-court debt restructuring, labor negotiations, and raised equity through a share sale in May.

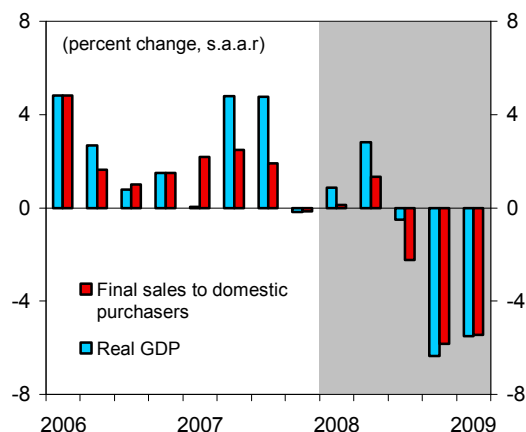
The difficulties in the automotive sector have had significant impacts on government finances. Since last December, the U.S. government has provided about \$80 billion in financial support to the two stressed auto manufacturers and the auto-finance company GMAC, which has not filed for bankruptcy. The Canadian government and the government of Ontario have provided \$2.4 billion to support the Chrysler restructuring and have offered \$9.5 billion to support the GM bankruptcy. In Germany, Opel (formerly owned by GM) received a \$2.1 billion bridge loan to facilitate a merger, and the government has guaranteed \$4.2 billion in Opel's loans.



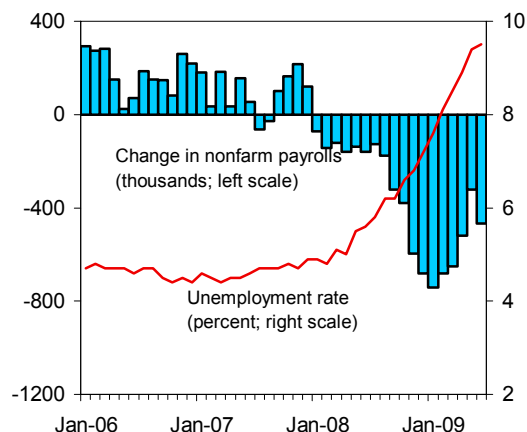
Sources: Board of Governors of the Federal Reserve System; Bureau of Economic Analysis; Haver Analytics; and Fund staff calculations.

Figure 7. U.S. Macroeconomic Performance

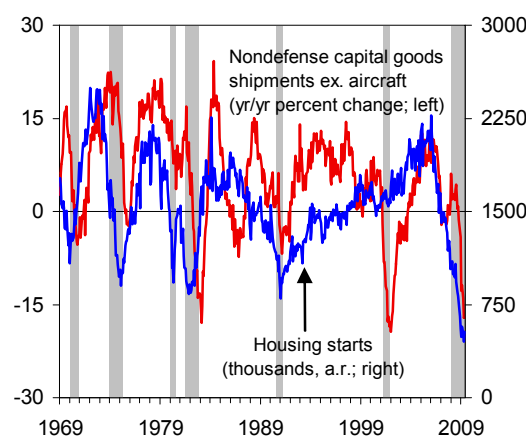
Real GDP has been contracting sharply...



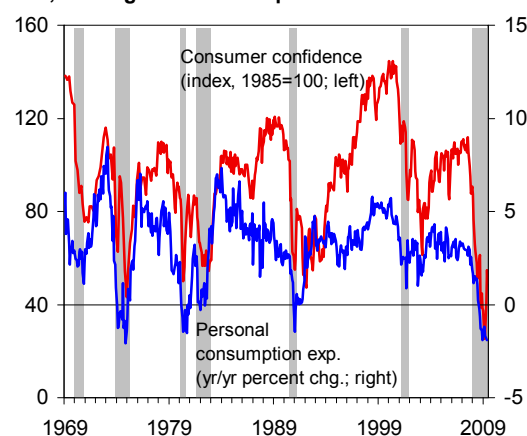
... and unemployment has been rising steadily...



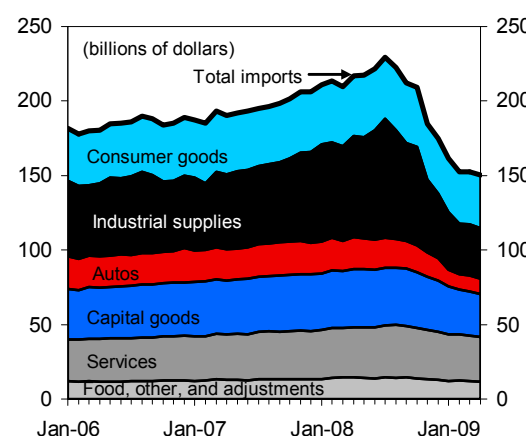
Investment is falling...



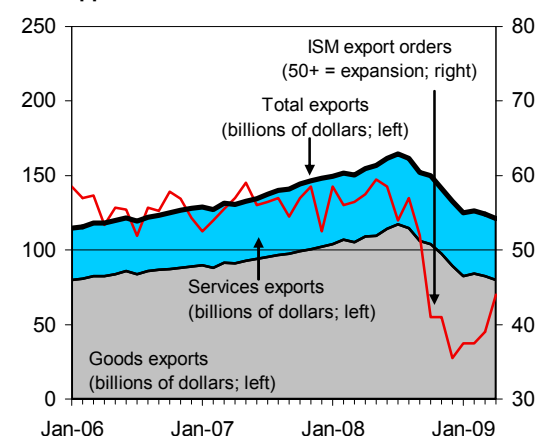
... and confidence continues to be near record lows, holding back consumption.



The narrowing trade deficit reflects collapsing imports...



... even though foreign demand for U.S. exports has dropped as well.



Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; U.S. Census Bureau; Institute for Supply Management; Haver Analytics; and Fund staff calculations.

### Box 3. International Spillovers

The U.S. financial and economic turmoil has been transmitted rapidly to the rest of the world:

- *Falling U.S. imports have hit manufacturing and commodity exporters* (see Figure on next page). Weakening aggregate demand and tighter finance have collapsed trade flows, pressuring manufacturing exporters such as Japan and triggering a plunge in commodity prices (the United States accounts for almost a fourth of world oil demand). Over the longer term, softer consumer demand will weigh on consumer goods exporters and their suppliers, particularly in Asia. At the same time, rising infrastructure spending could benefit net capital goods exporters such as Germany.
- *U.S. financial strains had repercussions abroad.* GFSR estimates of distress dependence matrices between major U.S. banks and those in emerging markets suggest pockets of high vulnerability, with correlations sometimes above 0.5. In addition, owing largely to their high exposures to the United States, some European countries (e.g., Ireland) remain particularly vulnerable to the deteriorating credit quality of U.S. banks. Also, U.S. banks pulled back from international markets in the fourth quarter (Table below), at the same time that dollar appreciation has raised the cost of servicing foreign currency obligations.
- *U.S. remittances have fallen sharply.* As the United States is the largest recipient of immigrants in the world (around 40 million)—accounting for an eighth of its population—the current recession has reduced remittances, and thus income, in many countries. This is particularly notable in Latin America and the Caribbean, including in some economies already under severe stress and with high poverty rates. The World Bank has projected that remittances to developing countries could fall by 5–8 percent in 2009.
- *Tourism dependent economies have been adversely affected as well.* With over 40 million U.S. tourists every year (and the second largest tourism expenditure in the world after Germany), economies dependent on U.S. tourism have been particularly affected by the crisis and the depreciating dollar. The Caribbean and Central America have been particularly affected, as almost a third of their tourism flows originate from the United States.

United States: Claims on Foreign Borrowers Held by U.S. Banks on an Ultimate Risk Basis, end-2008			
	Percent of country's GDP	Share of U.S. total Holdings	2008Q4 Change (U.S.\$ billion)
<b>Advanced Countries</b>	<b>2.3</b>	<b>74.2</b>	<b>-4.3</b>
Canada	4.9	5.6	-3.3
France	3.5	7.7	22.1
Germany	5.2	14.7	-8.9
Ireland	22.4	3.5	-1.6
Netherlands	16.9	5.1	-15.7
Switzerland	6.6	2.5	4.0
United Kingdom	5.5	11.1	0.7
<b>Eastern Europe</b>	<b>0.8</b>	<b>1.2</b>	<b>-1.8</b>
<b>Latin America and the Caribbean</b>	<b>6.3</b>	<b>6.7</b>	<b>-18.5</b>
Brazil	1.5	1.8	-8.5
Chile	4.9	0.6	-0.3
Mexico	2.3	2.0	-2.4
<b>Emerging Asia</b>	<b>2.8</b>	<b>9.3</b>	<b>-26.0</b>
China	0.3	0.9	-3.7
India	3.3	3.1	-3.3
Republic of Korea	4.1	2.9	-12.3
UAE	3.1	0.5	-1.4
<b>Africa</b>	<b>0.3</b>	<b>0.3</b>	<b>-1.6</b>
<b>Banking centers 1/</b>	<b>18.9</b>	<b>8.4</b>	<b>-50.5</b>
Cayman Islands 2/	3,570.2	5.5	-44.1

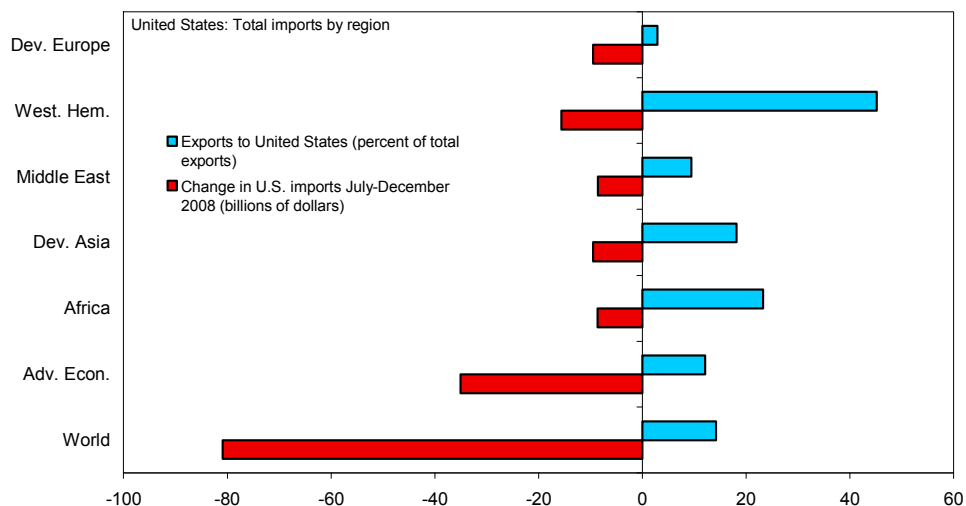
Sources: Federal Financial Institutions Examination Council; International Monetary Fund, *World Economic Outlook*; and Fund staff calculations.

1/ Data on GDP are staff's based estimates based on various sources.

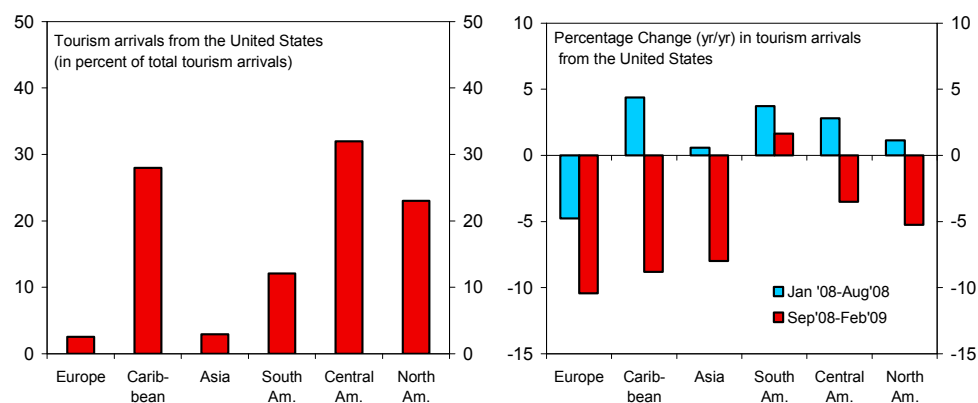
2/ Based on estimates of Nominal GDP from World Factbook.

## United States: The Financial Crisis Goes Global

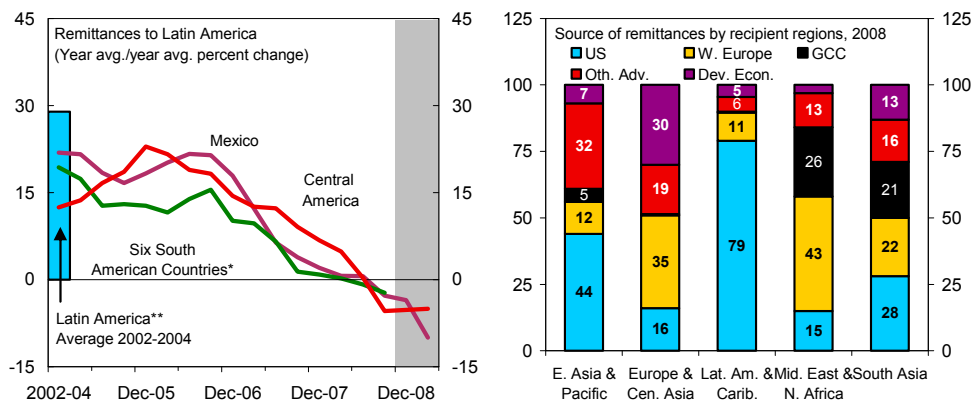
The crisis resulted in a collapse in U.S. goods imports....



...with U.S. tourism dependent economies also hit particularly hard...



...and U.S. remittances collapsing, particularly influencing Latin America and the Caribbean.

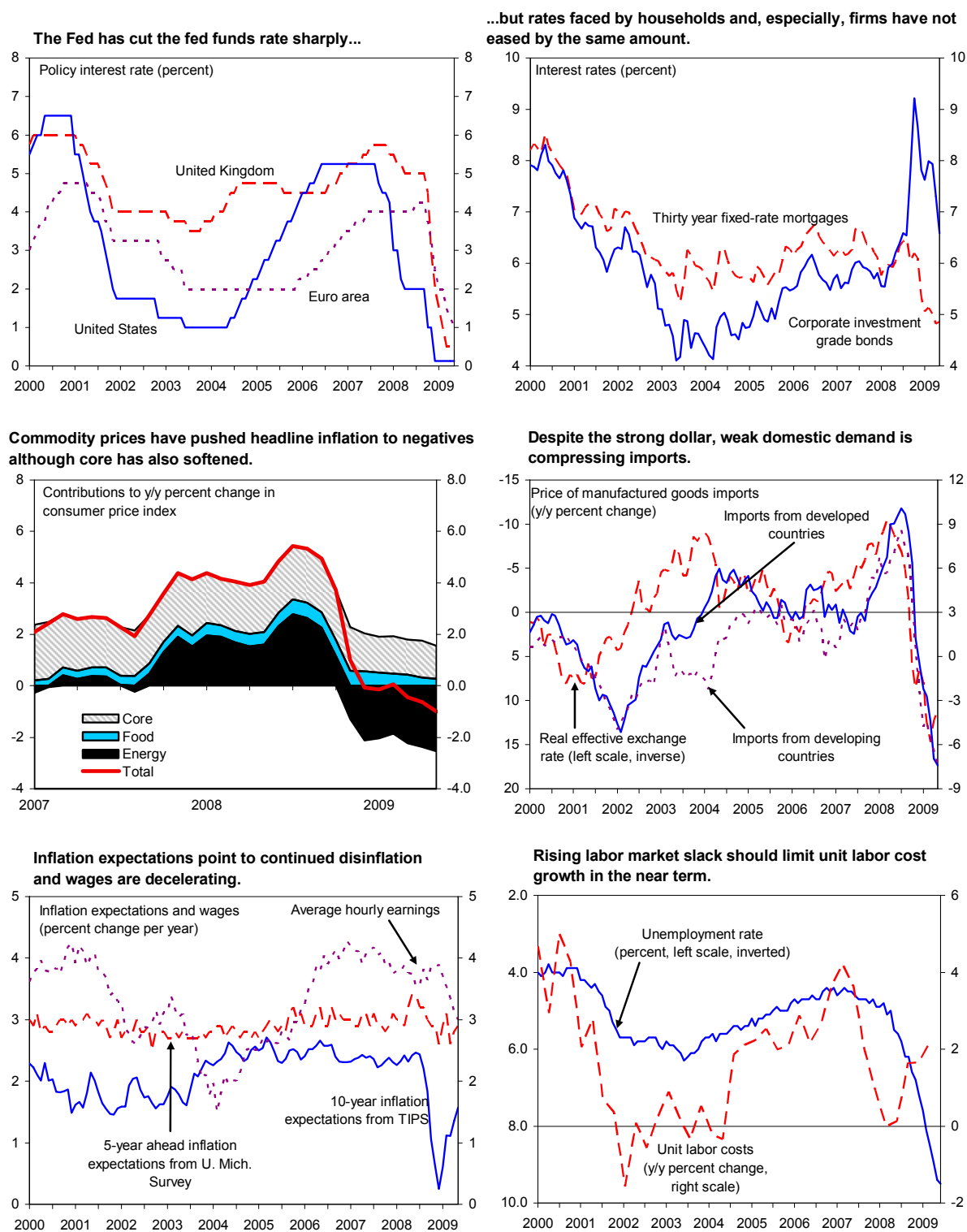


Sources: Country Central Banks; World Bank; Haver Analytics; and Fund staff estimates.

\* Six South American countries include Argentina, Brazil, Colombia, Ecuador, Peru, and Uruguay.

\*\* Latin American countries include Argentina, Brazil, Colombia, Ecuador, Mexico, Peru, Uruguay, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Dominican Republic.

Figure 8. United States: Monetary Policy Indicators



Sources: Haver Analytics; Board of Governors of the Federal Reserve System; and Fund staff calculations.



up securities purchases, including mortgage and agency securities as well as longer-term Treasuries. Owing to the numerous emergency measures, the Fed's balance sheet doubled in size to over \$2 trillion, with the potential to exceed \$4 trillion if facilities reached their caps.

- ***Housing market support:*** the Hope for Homeowners program initiated in October 2008 offered FHA guarantees for mortgages written down to more sustainable levels, while the Making Home Affordable plan announced in February 2009 offered subsidies to support sustainable mortgage modifications. In addition, the government introduced a tax break for first-time home buyers, while the housing GSEs ramped up support for mortgage markets (see Box 4).
- ***Fiscal stimulus:*** in February 2009, the authorities launched a fiscal stimulus totaling over 5 percent of one year's GDP over 2009–2011, consistent with the strategy agreed among the G-20, and comprising tax cuts, sizeable infrastructure spending, and aid to states and the vulnerable (Box 5 and Figure 9).

**11. Following two quarters of sharply declining activity, the combination of massive macroeconomic stimulus and interventions in financial markets began to stabilize financial and economic conditions.** GDP fell by 6¼ percent in the fourth quarter of 2008 and 5¾ percent in the first quarter of 2009. More recent higher-frequency indicators suggest, however, that the decline in economic activity is moderating and that the economy would shrink less rapidly in the second quarter and post modest growth in the rest of 2009. In credit markets, spreads have tightened substantially but remain above normal levels, while high-grade corporate issuance has rebounded (although private securitization remains moribund). Meanwhile, equity markets have rallied on the back of a better outlook; indeed, the improvement in financial conditions overall is surprisingly strong, in light of the modestly improved—and still weak—near-term economic prospects.

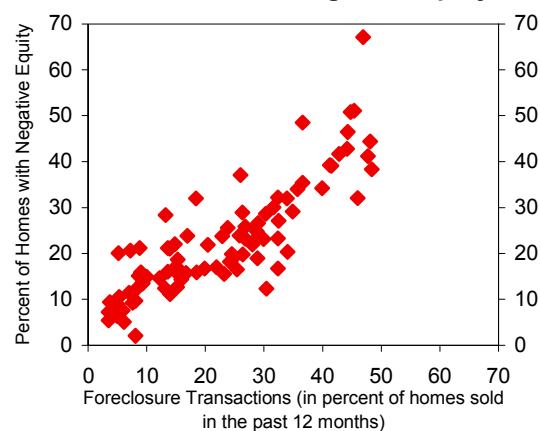
#### Box 4. Housing-Price Dynamics and Policy Responses

**The housing bubble burst in early 2007, following impressive price growth since the early 2000s.** Early payment defaults started to mount, triggering foreclosures that depressed home prices, impacting household real estate net wealth (down almost 40 percent by over \$4.5 trillion from the housing peak) and the ability to tap home equity, thus causing consumption to decline (the propensity to consume out of housing wealth is between 4 and 7 cents per dollar). Together with collapsing residential investment, weak consumption dragged down domestic demand, employment, and income. In turn, negative equity made it difficult to refinance or sell a house, inflating delinquencies and foreclosures (now at their highest levels since the Great Depression), with one fifth of all homes sold in the past 12 months in foreclosure and an estimated one in eight homes in short sale. This vicious circle hindered labor mobility while further lowering house prices (houses near foreclosed properties suffer an additional 1 to 9 percent price fall).

**Several initiatives have been undertaken to tackle the housing market collapse, with varying degrees of success.** The *Hope for Homeowners* (H4H) program—activated in October 2008 (to expire in September 2011)—achieved limited success, blamed in part on its tight guidelines for participation. The program aimed to refinance 400,000 underwater borrowers into affordable government-backed loans but received only 1,000 applications, with only a handful of refinancings undertaken. The February 2009 *Making Home Affordable* plan aimed to make mortgage payments more affordable for up to nine million homeowners, and included (i) measures to support low mortgage rates by strengthening confidence in Fannie Mae and Freddie Mac; (ii) a Home Affordable Refinance Program, which will provide new access to refinancing for up to 5 million homeowners; and, (iii) a Home Affordable Modification Program, which will reduce monthly payments on existing first lien mortgages for up to 4 million at-risk homeowners. and provide financial incentives for servicers and investors to perform sustainable modifications. The Making Home Affordable Program also introduced standardized, streamlined modifications, and provided incentive payments to encourage less costly short sales or “deed in lieu” of foreclosures.

**While these programs have been important steps, negative equity remains a concern.** With estimates of underwater households ranging from 8½ million to over 20 million, policies (such as subsidies) to directly address the complicated negative equity issue should be considered. Most mortgage analysts acknowledge that negative equity combined with rising unemployment are the primary drivers of default risks (data point to a positive and strong correlation between foreclosures and number of underwater homeowners).

**Foreclosure Transactions and Proportion of All Homes with Negative Equity\***



\* Data correspond to main U.S. metropolitan areas; data for homes with negative equity as of 2009:Q1.  
Source: Zillow.

### Box 5. Fiscal Stimulus

**President Obama and the Congress launched in February 2009 an economic stimulus package estimated to cost \$787 billion over the fiscal years 2009–19.** The package includes \$70 billion in alternative minimum tax (AMT) relief that was widely expected to be enacted and was incorporated into staff's pre-stimulus baseline. Excluding the AMT patch, the stimulus is projected to total \$652 billion in fiscal years 2009–11 (Table 1).

- **Tax provisions make up 39 percent of the stimulus in the fiscal years 2009–11.**<sup>1</sup> More than 45 percent of the tax relief occurs through the Making Work Pay credit for working individuals. Other tax provisions include refunds for low-income families and families with children, credits for education and first-time home buyers, energy incentives, and business tax incentives. The FY2010 budget blueprint proposed to make permanent a number of the tax relief provisions.
- **Aid to states and education spending take up about 29 percent.** The plan includes aid to states for Medicaid and funds to shore up state budgets, mainly for education. It also includes funds for student grants, special education, and education for the disabled.
- **Social safety spending accounts for about 15 percent,** and includes help for the unemployed and struggling families, health insurance assistance for the unemployed, and nutritional assistance.
- **The remaining 17 percent comprises investment.** Of this, about 1/3 is spending on transport, housing, and urban development. Other items include health information technology, health research, investments in energy and water, upgrading government buildings, and homeland security and defense.

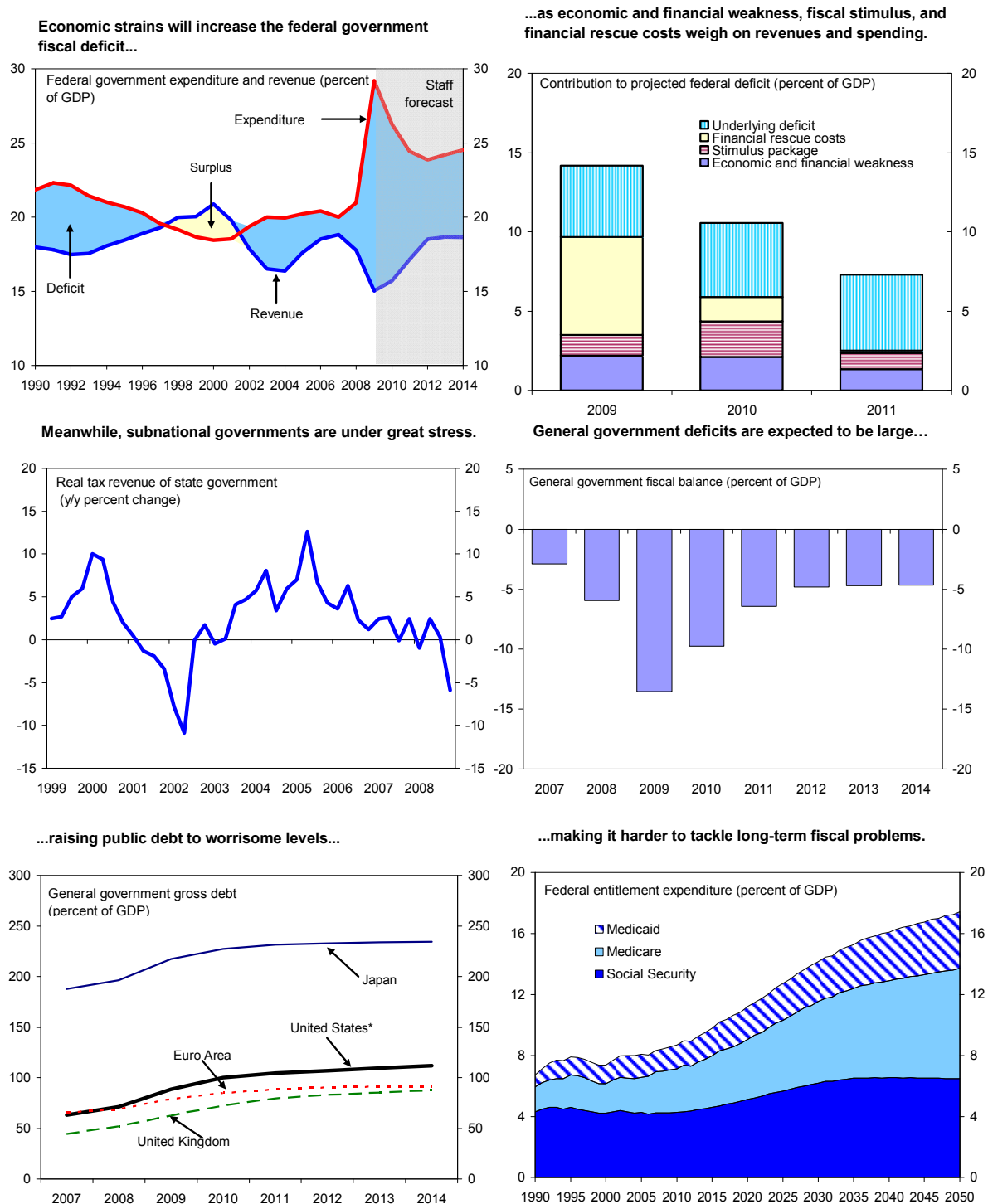
**By mid-June 2009, \$147 billion of stimulus funds were made available, and almost \$50 billion had been paid out.** The largest recipients were the Department of Education (mostly for education-related state aid), the Department of Health and Human Services (mainly for state Medicaid support), and the Department of Labor (mostly for unemployment compensation), and the Social Security Administration (mostly for economic recovery payments to Social Security and Supplemental Security Income beneficiaries).

**Staff projects the stimulus plan to boost the level of real GDP by 1.1 percent in 2009, 1.3 percent in 2010, and 0.7 percent in 2011,** relative to a no-stimulus scenario. Real GDP in the following three years would receive a boost of less than 0.3 percent.

United States: Effect of the American Recovery and Reinvestment Act of 2009 on the Federal Deficit (In billions of dollars; fiscal years)				
	2009	2010	2011	Total 2009-11
Total increase in the deficit (excl. AMT)	185	317	149	652
Tax provisions (excl. AMT)	70	131	54	254
Total Expenditures	115	187	96	398
Social safety	51	38	7	96
State aid and other education	44	102	42	188
Infrastructure and other job creating	20	47	47	113
Source: Fund staff estimates based on the cost estimates outlined in CBO's February 13, 2009 letter to Ms. Pelosi.				

<sup>1</sup> The plan is expected to raise revenues from 2012 onwards, so the percentage of tax provisions in the overall package excluding the AMT patch is closer to 30 percent in fiscal years 2009–19.

Figure 9. United States: Fiscal Indicators



Sources: Haver Analytics; Rockefeller Institute of Government; International Monetary Fund, *World Economic Outlook*; OECD; Office of Management and Budget; Congressional Budget Office; and Fund staff calculations.

\* General government gross debt for the U.S. includes federal government debt held by the public, debt liabilities of state and local governments, nonmarketable federal securities held by various federal government retirement and disability funds, and trade receivables; it does not include federal debt held by government accounts (including the Social Security and Medicare trust funds).

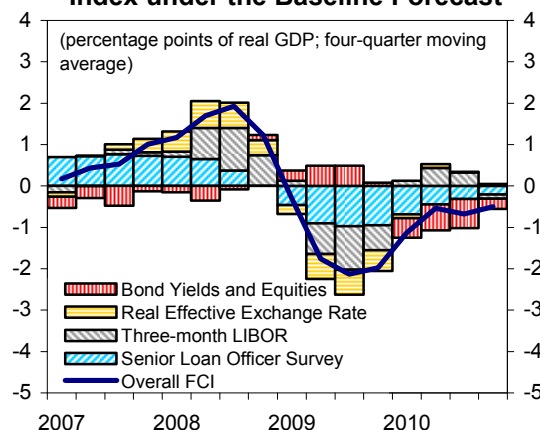
### III. THE OUTLOOK AND RISKS

12. The team observed that while the sharp decline in activity was ending, the recovery was likely to be sluggish. Financial conditions had improved but remained stressed, with spreads still high and private securitization activity still muted. While credit demand remained weak, financial strains would nonetheless weigh on investment and (in tandem with the effects of rising unemployment and falling house prices) consumption. In addition, partner country growth would remain subdued, restraining exports. Overall, the staff's assessment, based heavily on its analysis of the implications for the outlook of financial

conditions and stimulus in train, was that growth would turn sustainably positive only in the second quarter of 2010, with the unemployment rate continuing to rise through mid-2010 and peak at over 10 percent. Rising economic slack would weigh on core CPI inflation, leading it to bottom out at ½ percent in the first half of 2010. Staff projections are more pessimistic than consensus for 2010, consistent with analysis in the *World Economic Outlook* and prior U.S. Article IV reports that housing and financial busts generate prolonged recessions.

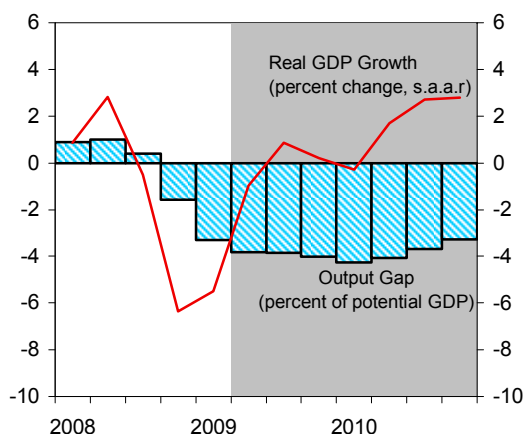
13. The team saw the near-term outlook as highly uncertain, with risks to the downside despite the significantly reduced tail risk of financial instability. On the upside, the strong policy response could spark a more typical rapid recovery, with a virtuous circle of rising confidence and strengthening financial conditions. On the downside, continued household deleveraging may weigh on consumption, with credit tight and unemployment

**Contributions to the Financial Conditions Index under the Baseline Forecast**

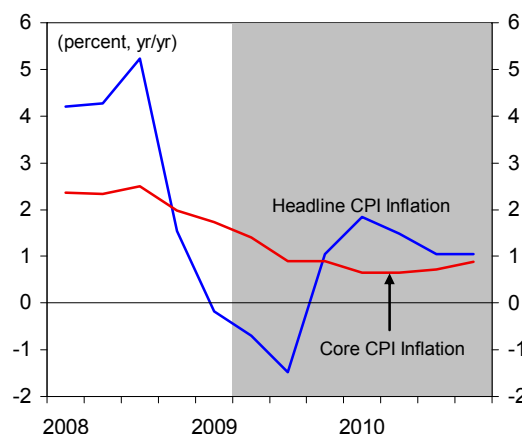


Source: Fund staff calculations and estimates.

**Real GDP and Output Gap**



**Inflation**



Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; Haver Analytics; and Fund staff estimates.

rising. Real estate markets are another source of risk; house prices had fallen closer to equilibrium, but the risk of overshooting remained as foreclosures ran apace. Further residential house price declines would pressure household and financial institution balance sheets, and the deterioration in commercial real estate may have further to run. Worsening economic conditions more generally could erode confidence and financial conditions. For example, corporate defaults could accelerate, impacting financial conditions and curbing economic activity. Risks may also emanate from abroad, notably the risk of protectionism if global growth falters. Deflation, a tail risk, could materialize if a large shock widened the output gap and destabilized inflation expectations.

**14. The authorities were in the process of revising their forecasts, but were—to varying degrees—more optimistic than the team.** The tail risk of systemic financial collapse had been greatly diminished by the many steps taken to support financial stability. In addition, some officials believed that the sizeable fiscal and monetary stimulus in place could foster a more typical V-shaped recovery. They broadly agreed with the risks identified by staff, and expressed particular concern about the pace of recovery in other countries, but saw the housing market stabilizing. While deflation could not be ruled out, they saw it as less of a risk than staff; inflation expectations remained well anchored, and high economic slack had put less downward pressure on prices than expected.

**15. Looking beyond the short term, the team saw the medium-term outlook as characterized by weak potential output and rising household savings.** Potential output would be restrained by higher financing costs (Figure 10); moreover, international evidence suggests that past financial crises have resulted in permanent losses of output (Selected Issues Paper, Chapter I).<sup>1</sup> In addition, personal saving would likely rise, as households worked to rebuild wealth, the more so if credit constraints are more binding than in the past. The authorities broadly agreed that the crisis would lead to higher saving over the medium term, though the extent was highly uncertain. They were more skeptical about sustained effects on potential growth, however, noting that the U.S. economy was highly flexible. Indeed, they believed that in the medium run, higher domestic saving could both feed stronger investment—supporting growth—and help contain pressure on long-term interest rates.

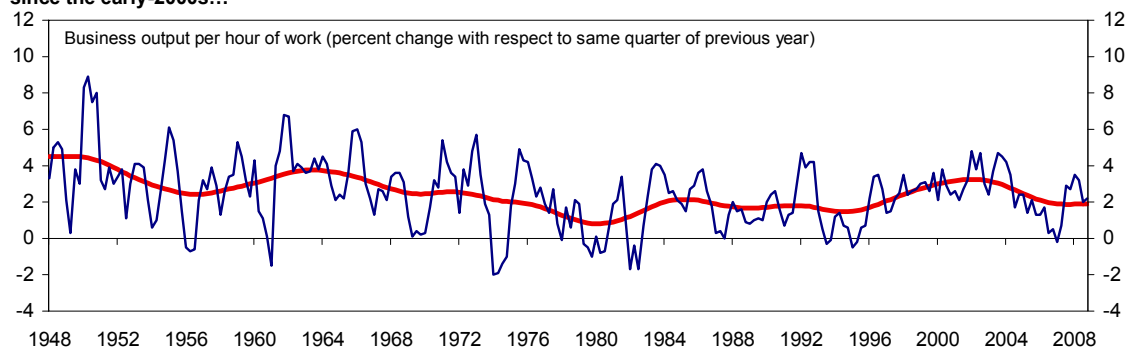
**16. The team assessed the U.S. dollar as moderately overvalued, although the assessment was subject to unusually high uncertainty.** The three standard Consultative Group on Exchange Rates (CGER) methodologies put the dollar at somewhat above equilibrium at end-June, on the basis of net external assets and fundamentals such as the

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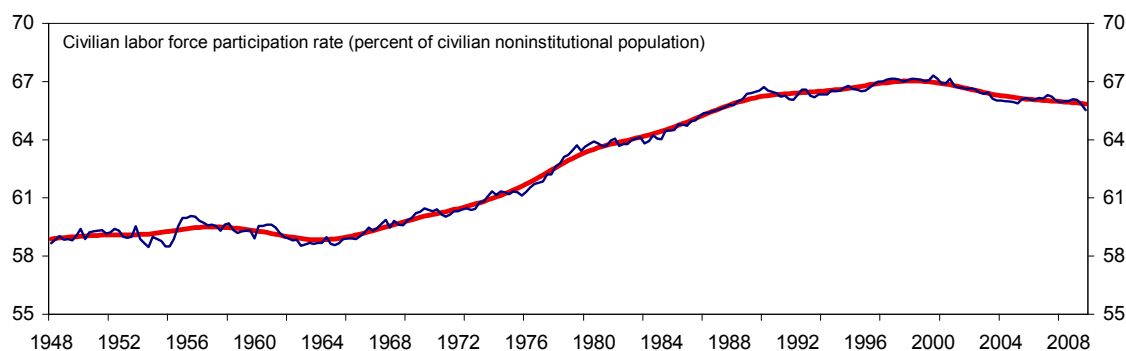
<sup>1</sup> See for instance Valerie Cerra and Sweta Saxena, “Growth Dynamics: The Myth of Economic Recovery,” *American Economic Review*, 98:1, pp 439–457, 2008.

**Figure 10. United States: Trend Output and Labor Productivity Growth**

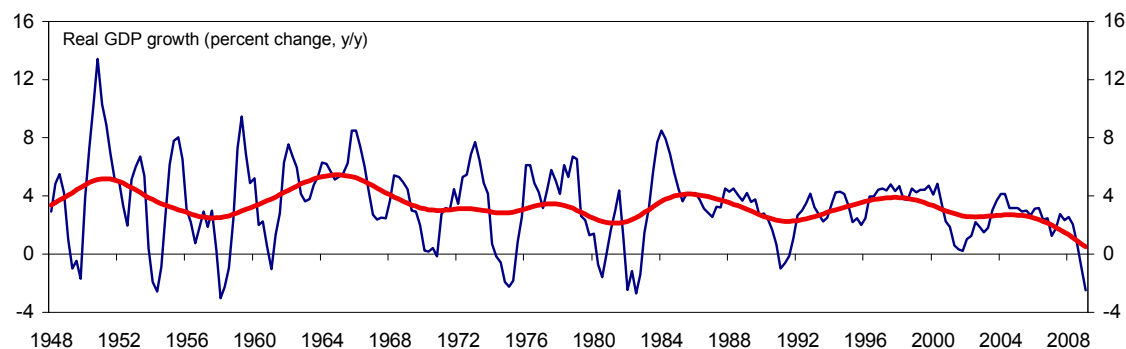
Despite a cyclical bounceback during the recent crisis, labor productivity growth has been slowing since the early-2000s...



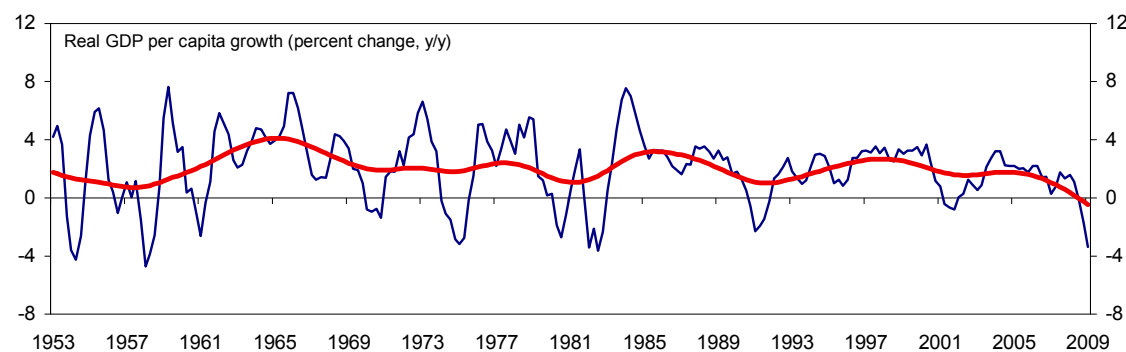
... which when combined with declining labor force participation ...



... has led to slowing trend economic activity ...



... which has hurt trend growth of GDP per capita.



Sources: Bureau of Economic Analysis; Bureau of Labor Statistics; Haver Analytics; and Fund staff calculations.

terms of trade and relative productivity.<sup>2</sup> That said, the outlook for capital inflows—not fully incorporated into the CGER—points to a number of downside risks, including a higher risk premium on U.S. assets, and lower demand for U.S. assets if saving falls in external-surplus countries following their large fiscal stimulus packages. Officials stressed that the exchange rate was market-determined and accordingly did not take a view on its valuation relative to fundamentals.

They noted the important role of safe-haven flows in boosting the value of the dollar during the crisis, and observed that the recent depreciation reflected the unwinding of such flows, as well as the increasing use of the dollar for funding of financial trades on the back of a favorable interest differential. Officials saw demand for U.S. assets as robust over the medium term, in light of the authorities' commitment to sound macroeconomic policies, the depth and liquidity of U.S. capital markets, and the size of the U.S. economy—the same properties which support the dollar's role as reserve currency.

United States: Estimates of Dollar Overvaluation (In percent)	
Methodology	Overvaluation
Macroeconomic balance	-1
Equilibrium exchange rate	7
External Stability	10
Source: Fund staff estimates.	

#### IV. POLICY DISCUSSIONS: STABILIZATION, UNWINDING, AND BALANCE-SHEET REPAIR

##### *The overall strategy*

##### **17. Over the next several years, U.S. policymakers face three broad challenges:**

- *Stabilization, to put a floor under the Great Recession and lay the basis for a sustained recovery.* Macroeconomic policies have played a supportive role, and can respond further if tail risks materialize; but the priority is returning financial institutions to full health via recapitalization and balance-sheet cleaning—a *sine qua non* for sustained recovery.
- *A “Great Unwinding” of extraordinary support.* Key elements include withdrawing public support from the financial system, and developing a strategy to shrink the Fed’s balance sheet, to position it to pull back on monetary stimulus when a sustained recovery is underway.
- *Dealing with the longer-term legacies of the crisis—the major imbalances in the fiscal, household and financial sectors,* against the backdrop of lower potential

<sup>2</sup> Adjustments to the CGER saving/investment norm to account for staff’s envisioned structural shift in household savings would imply an overvaluation according to the macro-balance approach.



growth. A key challenge is to enact rigorous, far-reaching reforms of financial regulation to prevent a recurrence of the financial markets excesses of recent years. Another essential element is restarting private securitization to support financial intermediation over the medium term.

**18. While near-term stabilization continues to have the greatest priority, it depends importantly on the other objectives.** Notably, monetary and fiscal stimulus have stoked concerns in some quarters about the longer-run risks of inflation and rising debt, which in the near term could exert upward pressure on interest rates. The dynamic interaction between near- and long-term challenges underscores the need to develop and communicate strategies for exiting extraordinary financial system support and dealing with long-term challenges, and implement them rigorously, to underpin confidence. All these challenges are further heightened to the extent that potential growth were to weaken relative to pre-crisis standards.

#### **A. Stabilization: Exiting the Great Recession**

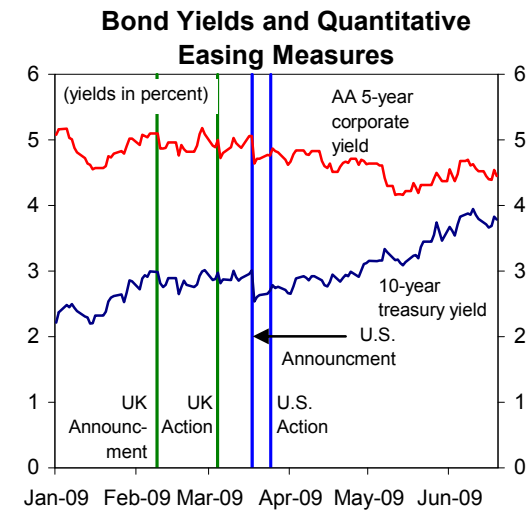
**19. The authorities believed that, while risks remained, considerable progress had been made towards stabilizing the financial system.** Notably, the Supervisory Capital Assessment Program (SCAP) had made a thorough, rigorous, and uniform evaluation of the risks to major institutions in an adverse scenario. The results had bolstered confidence in the stability of major financial institutions, and accordingly, some were able to access capital markets for equity and nonguaranteed debt. The next step was to complete recapitalization plans under the SCAP. While more needed to be done to return financial institutions to full health, capital was not seen as constraining lending, as credit demand remained subdued, and they saw remaining TARP resources as adequate. The Public-Private Investment Program (PPIP) could be useful in improving price discovery and cleaning bank balance sheets, and could be used to address capital shortfalls uncovered in the SCAP. However, with banks accessing private markets, profits unexpectedly robust in the first quarter, and the economy and asset prices recovering, the facility could be less needed than originally thought. Many applications had been received for the legacy securities program, but participation in the loan program was less clear.

**20. The team agreed that policies had substantially reduced systemic strains, but saw downside risks.** The team welcomed the SCAP exercise, particularly its high level of transparency. That said, while the SCAP's adverse economic scenario was more pessimistic than staff's baseline, losses could persist for a prolonged period, notably in commercial real estate (Annex III). Moreover, a worse-case outturn of sub-par growth, depressed earnings, and mounting losses could not be ruled out. Such a scenario would erode capital from the SCAP target level—a 4 percent ratio of Tier 1 common capital to risk-weighted assets—which was low by historical standards (averaging 7¼ percent over 1997–2007 for all FDIC banks). This called for continued close monitoring of the financial system, along with regular stress tests to evaluate vulnerabilities; meanwhile, it would be prudent to retain the Administration's proposed \$750 billion budgetary reserve for financial stabilization funds. It

would also be essential to quickly implement the proposed resolution framework for systemic nonbanks, to provide the options of receivership and conservatorship for orderly resolution. The team also supported the objective of cleaning bank balance sheets, but noted that the PPIP might not be extensively used for loan purchases (absent a large subsidy element) as banks might have to book significant losses on loan sales. In addition, potential investors had expressed concerns about risks that they could face restrictions on their compensation or be subject to criticism (or windfall taxes) if they reaped large gains.

**21. The team welcomed the continued efforts to stem preventable foreclosures, but expressed concerns about the high level of underwater mortgages.** The Making Home Affordable (MHA) initiative partially dealt with shortcomings of earlier programs by providing financial incentives to borrowers and servicers to perform sustainable modifications, as well as for alternatives to foreclosures such as short sales and deed in lieu of foreclosure. However, concerns remained that the structure of ABS contracts limited the incentives and ability of securitizers to modify mortgages, including the lack of a broad safe harbor for servicers against investor lawsuits. In addition, negative equity could reduce incentives for debtors to restructure their obligations, which—if it occurred—could call for greater incentives for equity writedowns. Officials saw the central issue as affordability; only 5 percent of foreclosures involved underwater borrowers defaulting on affordable mortgages. They noted that only large writedowns would improve affordability, entailing high costs and moral hazard.

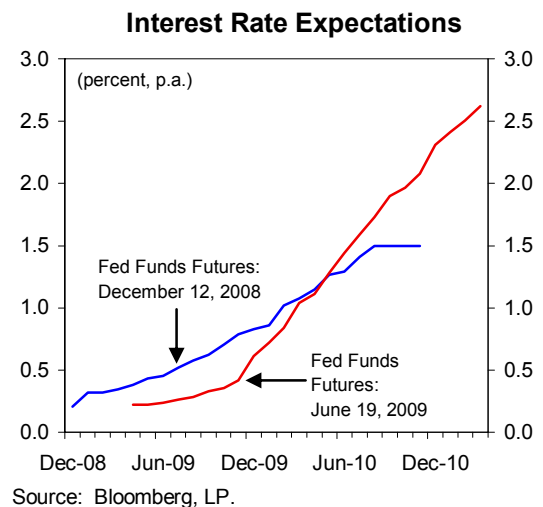
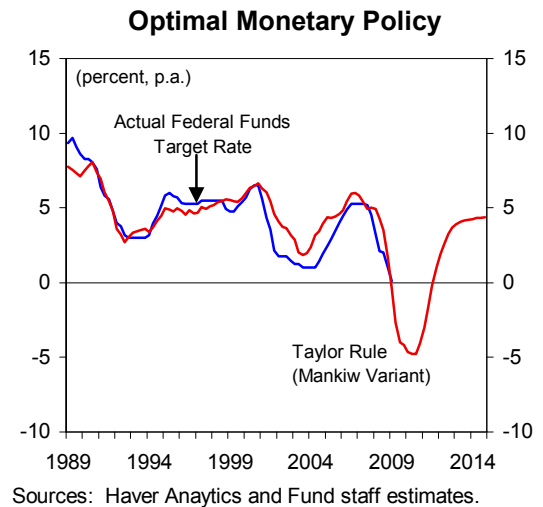
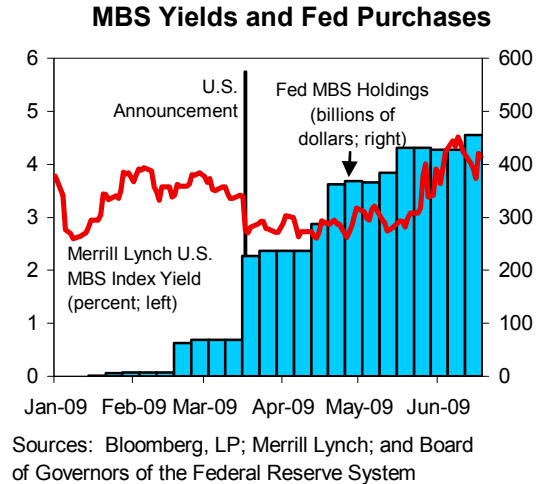
**22. The team also observed that the equity market downturn and credit market disruption had a severe impact on insurers and pensions.** The crisis had demonstrated how failures of large insurers could impose major losses on counterparties; it supported the use of TARP funds to recapitalize insurers, as well as the inclusion of a large insurer in the SCAP, in view of the potential risks from insurance failures. In addition, pension losses risked quasi-fiscal liabilities (particularly for public pensions) as well as losses to firms (for corporate pensions; the deficit of the Pension Benefit Guaranty Corporation was \$33.5 billion as of March 2009). Insurance regulators saw the problems in the sector as manageable and slow to crystallize, and saw no systemic risks stemming from the sector.



**23. The team welcomed the authorities' steps to stem stresses in financial markets.** The response was broad, including support for CP and money market mutual funds, FDIC

guarantees of bank liabilities under the Temporary Liquidity Guarantee Program (as well as NCUA guarantees), and the Fed's Term Asset-Backed Securities Loan Facility (TALF) and purchases of mortgage-backed securities (MBS). These initiatives had helped to improve conditions in markets, with money-market spreads narrowing sharply, interest rates on consumer borrowing coming down, and volumes generally improving. That said, longer-term markets still relied significantly on government measures; notably, Fed purchases of MBS were large relative to the fresh supply (flow-of-funds data suggest that purchases exceeded net GSE issuance in the first quarter of 2009). In addition, efforts to reduce borrowing costs faced the headwinds of rising benchmark Treasury rates. Officials saw that the array of programs had stabilized market conditions, and short-term securities markets now relied less on public support. Fed officials stressed that they did not aim to dominate the MBS market, nor to fix private borrowing rates, but to limit financing pressures. It was agreed that more needed to be done to return markets to full health, particularly for securitization (see below).

**24. Fed officials noted that—as indicated in recent policy statements—an exceptionally low policy rate target would be maintained for an extended period** (see Figure 8). Additional measures—including further credit easing aimed at unfreezing credit markets—could be taken if downside risks materialized. This could include additional purchases of government securities; while some observers had questioned whether such purchases had made a durable impact on yields, Fed research found significant short-run effects. More generally, Fed officials saw the recent rise in long-term Treasury rates as primarily driven by increased risk appetite and an improved economic outlook.



25. **The team asked whether there could be scope to enhance transparency and communication, especially in light of the upward sloping fed funds futures curve** (which at the time of the mission suggested that markets expected a tightening in the second half of 2009). In this connection, the recent moves to publish longer-term forecasts and elaborate its strategy for supporting economic and financial stability could be accompanied by more explicit communication of the Fed's perceptions of the risks surrounding the price stability outlook, to lower expected future interest rates and flatten the yield curve. Fed officials considered that market signals were difficult to read, in view of uncertainties about prevailing term and liquidity premia, but overall felt that their strategy and stance were well understood. Given the considerable prevailing uncertainty, they saw risks to committing more strongly to a particular stance of monetary policy going forward.

26. **The team viewed the broad stance of fiscal policy in 2009–10 as appropriate**, which—along with stimulus in key trading partners—was providing critical support to demand in the United States and in the rest of the world. According to staff estimates, stimulus would boost GDP growth by about 1 percent in 2009 and ¼ percent in 2010. Further fiscal stimulus could be considered if tail risks—such as serious deflationary pressures—materialized, but given long-term fiscal challenges, it must be set within a sustainable medium-term framework.<sup>3</sup> The authorities did not rule out additional stimulus if necessary, but saw the priority as implementing and monitoring the large package already in train, which they saw as broadly on track.

## **B. The Great Unwinding: Preparing the Exit from Extraordinary Support**

27. **The crisis response has swelled public sector balance sheets.** Fed, Treasury, and federal agency balance sheets have grown sharply and taken on sizeable credit risk. For example, the Fed balance sheet has doubled in size to 15 percent of GDP, and could double again to 30 percent of GDP if all existing facilities were deployed to their limits (for those with caps). The U.S. government now effectively owns a major global insurance group, the mortgage GSEs, and holds large shares in banks and auto manufacturers. Some 58 percent of bank liabilities are now guaranteed,<sup>4</sup> and for the six largest banks, TARP preferred and common shares account for a sizeable share of Tier 1 capital. Unwinding these interventions will pose major challenges: for the Fed, absorbing enough liquidity that it can effectively tighten monetary policy; and for government, withdrawing support without damaging confidence. Moreover, exit strategies—including strategies for orderly withdrawal of macroeconomic stimulus, once a durable recovery is secured—will need to be coordinated internationally, to avoid an unlevelled playing field.

<sup>3</sup> The team observed that large near-term gross financing requirements—estimated at some \$5 trillion—put a premium on a well-communicated strategy for medium-term fiscal sustainability to maintain market confidence.

<sup>4</sup> Guaranteed liabilities comprise \$4.8 trillion in insured deposits, \$700 billion in insured non-interest-bearing transaction accounts, and \$336 billion in guaranteed debt (the latter two are under the TLGP program).

### *Unwinding the Fed*

28. **The team saw a key priority as developing and communicating an exit strategy to withdraw monetary stimulus once a sustainable recovery is underway** (Box 6). While short-term facilities were unwinding as market conditions became more favorable, longer-term assets—such as TALF and assets purchased—were rising, which would be more difficult to unwind rapidly without disrupting markets (and could give rise to capital losses). The situation called for maximum operational flexibility, with a broad toolkit to reassure markets that liquidity could be withdrawn when and as needed. Instruments such as remuneration on excess reserves could be supplemented by reverse repos in agency securities and MBS, although the liquidity of the associated markets could be a constraint. Other tools included use of the Supplementary Financing Program sterilization facility with Treasury (subject to the federal debt ceiling), and if needed, issuance of Fed paper (although this would create a second tier of sovereign debt, and would require Congressional authorization). Also, as anticipated in the March joint statement with Treasury, Maiden Lane facilities (support to Bear Stearns and AIG assets) should be moved to the Treasury, in the view of the team at an early stage, to reduce Fed exposure to credit risk and support fiscal accountability.

29. **Fed officials believed they had sufficient tools to manage the exit, although additional instruments would be welcome.** Fed officials had addressed issues surrounding the exit strategy in recent public communications, to underpin confidence in its ability to manage the exit. Its credibility was reflected in asset prices, which revealed few fears about inflation, notwithstanding concerns among commentators. Interest on reserves would likely play a key role, and modalities of other options such as enhanced reverse repos were under development; officials expressed confidence that other tools would be provided if needed. On credit risks, apart from Maiden Lane, risks to the Fed's balance sheet were limited, reflecting high-quality collateral, large haircuts/over-collateralization, and (on some facilities) credit protection by the Treasury through capital investment. That said, Fed officials acknowledged that purchases of longer-term assets did entail some interest-rate risk.

### *Unwinding government interventions*

30. **The team observed that the government will need to wind down its interventions when the crisis fades to avoid distortions, fiscal risks, and governance issues.** Although a number of facilities have sunset provisions, and an exit strategy should not be implemented until the financial system has fully stabilized, there should be a clear medium-term objective to withdraw emergency facilities and support, coordinated internationally to avoid cross-border distortions. The pace of withdrawal would need to be calibrated to future financial conditions, but should gradually reduce subsidies and tighten access terms for any facilities that may need to be extended, both to minimize risks and differentiate stronger institutions from weaker ones (some of which might need assistance for a prolonged period). Healthy firms should be encouraged to repay capital injections and issue nonguaranteed debt to signal

### Box 6. Federal Reserve Exit Strategy

The Fed balance sheet has grown substantially—from \$900 billion in the first half of 2007 to about \$2.1 trillion at mid-June 2009. It could grow further—to over \$4 trillion—if all existing facilities were fully deployed. While the current size of the balance sheet is not a concern, the Fed will need to shrink excess liquidity in order to implement a positive policy interest rate as the economy enters a lasting recovery.

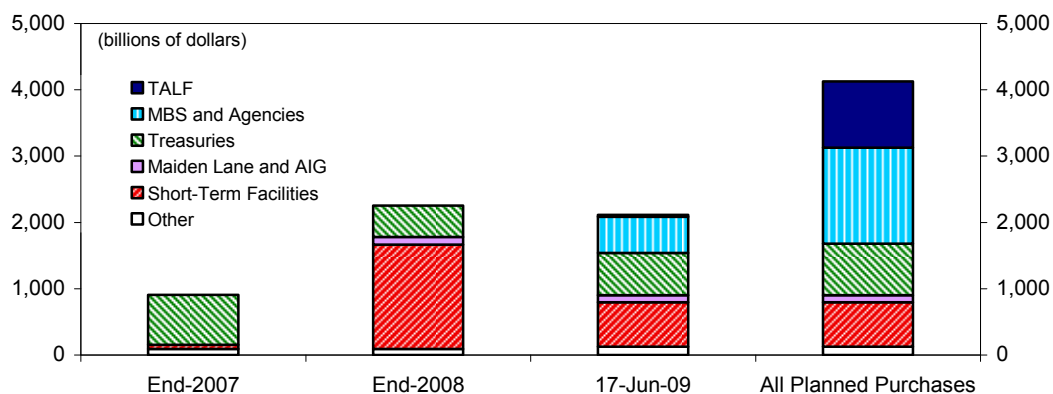
There are a number of tools available to the Fed to achieve that goal. *Short-term facilities can be rolled off.* Some roll-off is natural as financial markets stabilize, yet a constraint is that markets need to recover before the Fed fully withdraws its support. Similarly, the Fed might *sell tradable assets*, such as Treasury securities, and agency debt and MBS. However significant sales may affect interest rates in underlying markets (particularly for housing debt). As an alternative to sales, the Fed may perform *reverse repos* in a broader range of collateral. Yet their scope is limited by the liquidity of relevant funding markets, particularly for MBS collateral.

*The remuneration of bank reserve balances* will likely play a significant role in the exit strategy, as it can set a floor for short-term interest rates. Yet, beyond a certain level of excess reserves, reserve remuneration may lead to persistent disintermediation (crowding out) of interbank markets, and necessitate a higher level of short-term interest rates than would otherwise be appropriate.

Excess liquidity can also be sterilized through *the Supplementary Funding Program* (SFP, where the Treasury issues new debt and deposits proceeds with the Fed) or *issuance of Fed paper*. Allowing the Fed to issue paper would contribute to monetary policy independence, but would create a new tier of U.S. sovereign debt. Congressional approval would be required to adjust the debt ceiling to accommodate SFP issue or to allow the creation of Fed paper. Finally, implementing the intended *transfer of Maiden Lane and AIG facilities to the Treasury* would reduce excess reserves, if the Fed was compensated in cash.

Given the uncertainties surrounding the future evolution of financial and economic conditions, as well as the fact that many available instruments have not yet been fully tested, it would be appropriate for the Fed to have access to the largest possible set of instruments to enable responding to all contingencies.

**Federal Reserve Balance Sheet Size and Structure**



Sources: Board of Governors of the Federal Reserve System; Haver Analytics; and Fund staff estimates.

viability. Clear communication of the government's strategy, particularly on conditions for unwinding (linked to objectives of the programs), would help to secure market confidence.

**31. Officials saw the exit from financial system interventions as evolving organically in line with the recovery.** Officials expressed little concern that financial institutions would rely on government support for longer than necessary, as (for example) government capital injections carried a stigma, and banks were therefore eager to repay. This was in line with the government's strategy to encourage repayment of capital and return firms to private ownership as quickly as possible, guided by the principle that shareholders and taxpayers would be best served if the government exerted influence only on core governance issues and not day-to-day operations.<sup>5</sup> The repayment of capital injections by the healthier banks, in addition to banks' improved access to private markets for funding, was in line with this overall aim. They agreed that the exit strategy needed to be internationally coordinated, especially with regard to guarantees, where cross-border issues had arisen.

### **C. The Long-Term Legacies of the Crisis**

**32. The crisis and the policy response leave interrelated legacies: a weakened financial system, requiring major reforms and strengthening of supervision and regulation; unsustainable fiscal imbalances; and damaged household balance sheets.** These will also have sizeable international repercussions: the U.S. long-run fiscal position will have an important impact on global interest rates and financial markets; and slower U.S. growth, with a less-buoyant U.S. consumer, requires a rebalancing of global demand (Selected Issues Paper, Chapter II).

#### ***Strengthening the Financial Sector***

**33. The crisis has had two major implications for the U.S. financial sector.**<sup>6</sup> First, it revealed major weaknesses in supervision and regulation, including a failure to recognize and internalize a buildup of systemic risk, particularly risks outside the banking system and those related to flaws in the securitization model. Second, it has radically changed the shape of the U.S. financial system, with investment banks now reconfigured as bank-holding companies, nonbanks severely weakened, the housing GSEs now in government hands, and private securitization dormant. While securitization will likely pick up over time (see below), the legacy is likely to be a more bank-centered and (at least initially) more concentrated system. Overall, financial conditions are likely to be tighter, and innovation less rapid, than in the pre-crisis years, restraining growth.

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<sup>5</sup> Similarly, the principles for managing ownership stakes in auto companies centered on disposing of such stakes as soon as possible, managing stakes in a hands-off, commercial manner to protect taxpayers, and voting only on core governance issues.

<sup>6</sup> The planned Financial Sector Assessment Program (FSAP) will expand upon these and other issues related to the stability of the U.S. financial system.

34. **The authorities saw a number of priorities for regulatory reform, which were included in wide-ranging Administration proposals issued after the mission.**<sup>7</sup> These included an enhanced focus on systemic risk, with Fed regulation of all systemic financial institutions from a macroprudential perspective, as well as a Financial Services Oversight Council (FSOC) chaired by the Treasury to identify and report on emerging systemic risks, and steps over time to mitigate procyclicality. All institutions would be subject to tighter supervision and regulation, with even higher standards for large, interconnected firms (to internalize systemic costs), complemented by a broadened resolution framework for systemic firms; also, the Fed's emergency lending would require Treasury approval. On the international front, the report called for higher regulatory standards and improved cooperation, with strengthened capital frameworks, enhanced oversight of global financial markets (including OTC derivatives) and internationally active institutions, and reform of crisis prevention and management arrangements. On organizational changes, the plan would consolidate two bank regulators while creating a new consumer regulatory agency.

35. **The team generally welcomed the Administration's proposals, although their effectiveness would depend critically on implementation.** The team saw it as essential to implement the measures as a package, as allowing gaps to persist could prove problematic. Key details of implementation would be important: notably, there was an argument for regulation of systemic firms that would *penalize* size and complexity to discourage the promulgation of systemic risk (Selected Issues Paper, Chapter III), with the supervisory perimeter reviewed regularly to ensure that it remained adequate. Other questions surrounded whether the FSOC would be more effective than a single institution such as the Fed in identifying emerging systemic risks and highlighting them through a financial stability report; the mandates for systemic stability could be clarified, including the relationship between the Council and the Fed, and between the Treasury and Fed under the FSOC. A main concern was that the proposals missed an opportunity to consolidate the large number of regulatory agencies, which could have mitigated coordination problems, sped decision-making, and bridged the gaps and inconsistencies that contributed to the crisis.

36. **On securitization, the authorities and the team agreed that restarting private securitization markets would be essential to ensuring smooth credit flows when credit demand recovers.** The authorities noted that it would take time to restore a more normal pace of private securitization; while the TALF had grown rapidly and even catalyzed private deals on similarly-structured ABS, private market activity remained muted, in part reflecting weak credit demand. Proposed regulatory reforms would deal with issues such as the role of credit ratings, underwriting standards, and risk retention; efforts were also underway to improve incentives for bundlers to perform due diligence by increasing their liability. The

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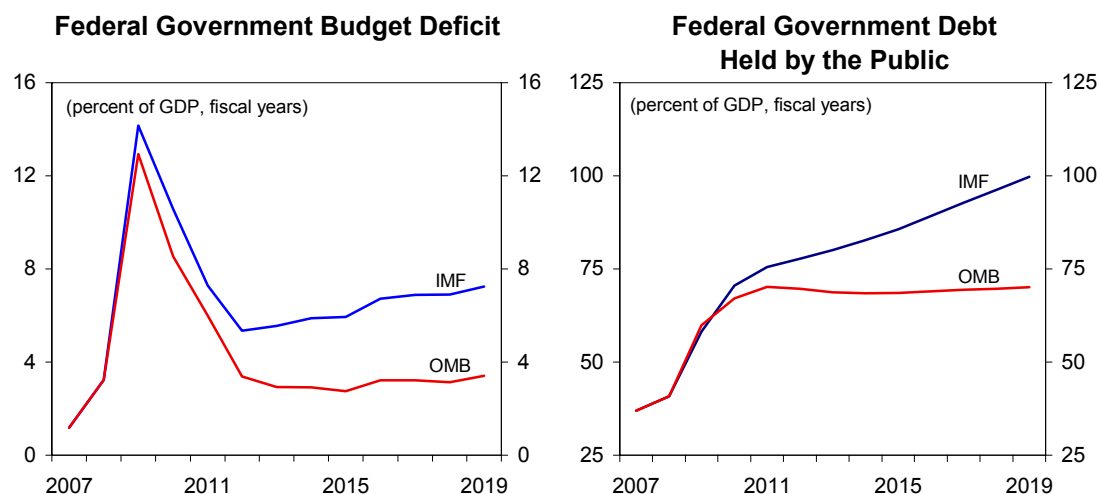
<sup>7</sup> See "Financial Regulatory Reform: A New Foundation") (<http://www.financialstability.gov/roadtostability/regulatoryreform.html>).



team agreed with these priorities but also saw scope for a broader legal “safe harbor” for servicers to modify loans, as well as efforts to support simplification and standardization of products (including through a market code of conduct). In addition, the role of the major housing GSEs would need to be addressed as the future structure of the financial system clarified; options ranged from privatization to full government ownership, but the key was to clarify whether their liabilities are explicitly guaranteed, and to subject the agencies to strict oversight and regulation.

### *The Fiscal Legacy*

**37. The team noted that the crisis—as in many countries—will leave unsustainable fiscal imbalances.** The combined effects of the stimulus, cyclical pressure on the deficit, and financial support costs will dramatically increase the fiscal imbalance. Deficits in 2009/10 and 2010/11 will average  $12\frac{1}{2}$  percent of GDP, pushing up gross federal government debt held by the public by almost 30 percent of GDP to about 70 percent of GDP, and—absent adjustment—to almost 100 percent of GDP by 2019, close to the level prevailing in the aftermath of World War II (Selected Issues Paper, Chapter IV). Gross financing requirements will rise sharply to some 30 percent of GDP, and with the maturity of debt having shortened in recent years, would remain high. Key fiscal risks included costs of financial rescue operations (including those accrued by the Fed), as well as possible calls to support private defined benefit pensions and state finances.



Sources: Office of Management and Budget and Fund staff estimates.

**38. Looking forward, even bigger challenges are posed by looming pension and health care pressures.** Pension entitlements are projected to generate gradually-widening deficits from 2017. Already-high public health care spending would rise from about 5 percent of GDP in 2009 to more than 6 percent in 2019, and about 8 percent in 2029, according to

CBO—mainly due to rising per capita expenditures. Expanded insurance coverage would help attain the policy objectives of better and more equitable health outcomes, but would greatly worsen fiscal imbalances if not coupled with efficiency gains (Box 7).

**39. The team observed that the Administration’s FY 2010 budget proposal made welcome steps toward addressing these problems, but fell short of a comprehensive solution.** In particular, the team welcomed the objective of stabilizing debt beginning in early 2012. The budget proposal increased transparency through ten-year forecasts and more realistic assumptions about defense spending and future tax policy, and appropriately emphasized fiscal discipline, including by proposing statutory pay-as-you-go rules. However, its medium-term forecasts relied on relatively optimistic economic assumptions, implying that only a modest cut in the primary deficit would be needed to stabilize debt.<sup>8</sup>

**40. Against this background, while the pace of fiscal consolidation should depend on overall economic developments, substantially more adjustment would be needed over the medium term.** For example, an adjustment of 3.5 percent of GDP (relative to the budget proposal) in the federal primary surplus would stabilize debt at about 70 percent of GDP over 2015–19. With nondefense discretionary expenditures near historical lows, most of the burden would need to fall on revenues. This could include base broadening (limiting deductions on household mortgage and corporate debt), higher marginal tax rates for most income groups than envisaged in the budget, higher energy taxes, a federal consumption tax, and measures to ensure better tax compliance, including by simplifying the tax code (the latter being studied by the President’s tax force on tax reform).<sup>9</sup>

**41. The authorities underscored their commitment to medium-term fiscal discipline, including the achievement of their 3 percent of GDP budget objective.**<sup>10</sup> Treasury officials acknowledged that fiscal consolidation would be challenging—updated projections were to be published in the forthcoming mid-term review—but considered that staff’s economic assumptions were on the pessimistic side. They saw less risk that concerns about fiscal sustainability would push up long-term interest rates (and assumed no rise in their projections), as a credible plan would minimize this risk. Officials agreed that funding requirements were large, but the Treasury aimed to lengthen debt maturity over time.

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<sup>8</sup> Staff employs a real interest-rate/growth differential—key for debt dynamics—of 1.9 percent, compared with OMB’s 0.5 percent, and CBO’s 1.4 percent. For comparison, the differential was 1.7 percent over 1985–1999, calculated using ex-post real interest rates (the average of real three-month Treasury bill rates and ten-year Treasury rates, deflated by the actual change in the GDP deflator over the subsequent quarter or ten years respectively). Real ex-post ten-year rates are not observable beyond 1999; in addition, that period was characterized by unusually low long-term yields.

<sup>9</sup> IRS research has estimated uncollected tax obligations at 2.9 percent of GDP, suggesting sizable returns to enhancing compliance through better enforcement (see <http://www.irs.gov/newsroom/article/0,,id=154496,00.html>).

<sup>10</sup> On staff’s economic assumptions, this would imply a debt ratio of about 75 percent of GDP.

## Box 7: Escalating U.S. Health Spending

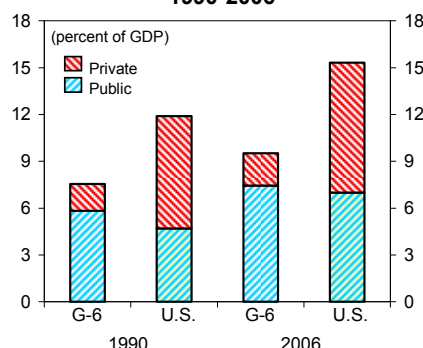
**Per capita health spending in the United States is the highest in the OECD, and is still rising.** U.S. health spending represents over 15 percent of GDP, compared to less than 10 percent in the G-6 group, and grew by about 5 percent a year in real terms over 2000–06 compared with 3½ percent in G-6. Without major reform, the Council of Economic Advisers project that health care's share of GDP will continue to rise rapidly, reaching around 28 percent of GDP in 2030 and 34 percent in 2040 (15 percent of GDP accounted by Medicare and Medicaid). Despite the large spending, health outcomes in the United States are less favorable than in many OECD countries. For example, the infant mortality rate is the fourth highest and years lost from preventable causes are the fifth highest in a sample of OECD countries.

**Health care costs are the main driver behind rising health spending.** The escalation in health costs is primarily explained by the emergence and widespread adoption of new medical technologies. Other factors found to be driving health costs include rising personal income, health care prices and administrative costs. Looking ahead, population aging and other demographic effects are estimated to drive one-quarter of the future increase in health spending.

**Health care inefficiencies might be driving health costs by about one-third (5 percent of GDP).** The sources of inefficiency include fee-for-service payment systems, high administrative costs, and inadequate focus on prevention. Also, market imperfections in the health insurance market create adverse selection problems, where healthy people overpay for health insurance coverage.

**Lowering the health cost growth rate by 1.5 percentage points would have dramatic implications for the share of GDP devoted to health care in 2040.** In May 2009, representatives from the health care industry pledged to reduce the annual growth rate of health care costs by 1.5 percentage points as soon as possible by improving care for chronic diseases, streamlining administrative tasks and reducing unnecessary care. The Council of Economic Advisers estimates that if these health cost savings take hold from 2014 onwards, then health spending would only rise to 23 percent of GDP by 2040 (reducing the budget deficit by 6 percent of GDP), versus 34 percent if no reforms are undertaken. In late June, the pharmaceutical industry also agreed to help close a gap in Medicare's drug coverage, by pledging to spend \$80 billion over the next decade to help reduce the cost of drugs for seniors and pay for a portion of any increase in health care coverage.

**Total Health Spending, by Source, 1990-2006**



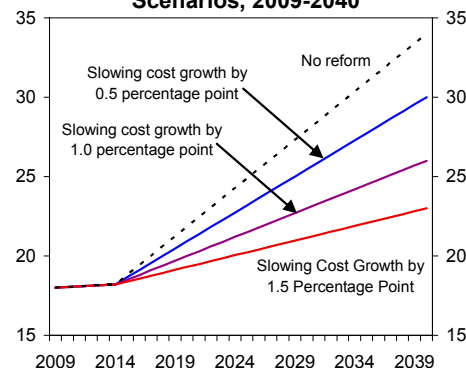
Source: OECD.

**United States: Estimated Contributions to Real Growth per Capita Health Spending, (In percent)**

Technological advances	38-65
Personal income growth	11-23
Prices in the health care sector	11-22
Administrative costs	3-13
Changes in third-party payment	10
Population aging	2

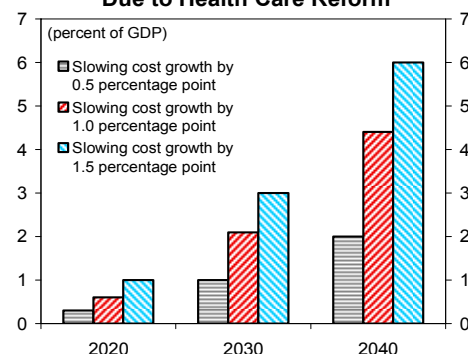
Source: Congressional Budget Office.

**Health Spending under Different Scenarios, 2009-2040**



Source: Council of Economic Advisors.

**Reduction in the Federal Budget Deficit Due to Health Care Reform**



Source: Council of Economic Advisors.

42. **The authorities emphasized that health care reform was critical for both growth and longer-term debt sustainability.** While discussions with Congress were ongoing, reforms would have two key elements. First was universal coverage, which should be budget neutral, and which they had proposed be financed by scaling back itemized deductions for high-earning taxpayers, reducing tax evasion and loopholes, and achieving efficiency gains in health care provision. Second, they aimed to reduce the rate of cost growth by 1.5 percentage points per year, notably through leveraging research on the relative effectiveness of alternative treatments, and setting incentives for providers to choose the most cost-effective ones. More generally, securing medium-term fiscal sustainability could require several rounds of measures on various fronts, but the Administration was determined to bring the fiscal situation under control.

43. **The team underscored the importance of ensuring that the ultimate package, when it emerged, was budget neutral in the short-run and made meaningful progress in reducing long-term health-care costs.** Given that the impact of measures to reduce costs was extremely difficult to assess, it saw a need for careful monitoring, with additional measures taken promptly if envisaged savings failed to materialize. In addition, medical care reform should be complemented by social security reforms, where savings would be smaller but more predictable. While the authorities agreed that the impact of specific measures was difficult to gauge, they underscored that substantial potential savings existed, particularly from ensuring more widespread use of cost-effective treatments. They indicated that once health-care reforms had been launched, attention would turn to social security reform.

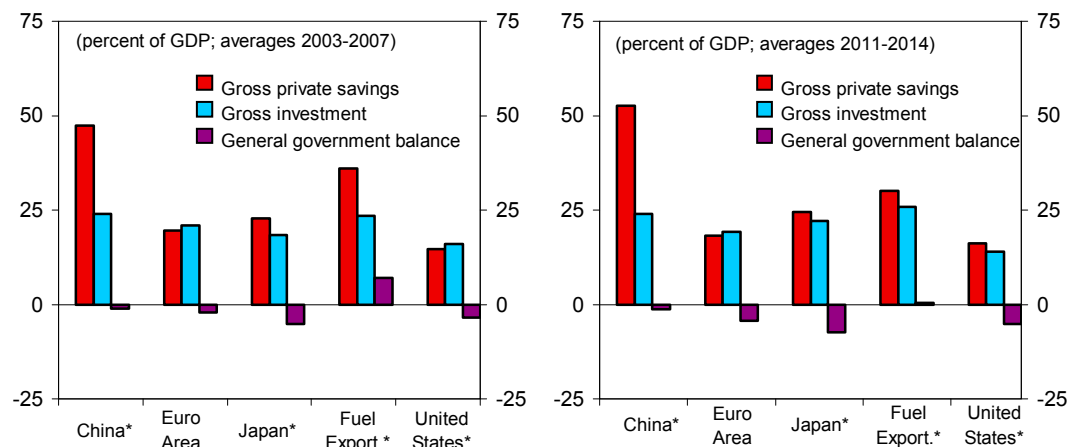
### *Household Balance-Sheet Adjustment*

44. **Consumption growth is likely to be weak over the medium term as households rebuild damaged balance sheets, which will support a narrower current account deficit.** Household net worth has fallen from a record-high 640 percent of disposable income before the current crisis to below 500 percent in the first quarter of 2009, near mid-1990s levels. At the same time, household debt remains high relative to disposable income, and debt to net worth (household leverage) has risen sharply. Against this backdrop, ongoing household deleveraging would likely restrain consumption growth and boost savings (as discussed above) going forward. Over the medium term, with the withdrawal of fiscal stimulus offset by a recovery in private investment from crisis-related lows, the increase in private savings would support a reduction in the current account deficit to about 2¾ percent of GDP (Table 2).

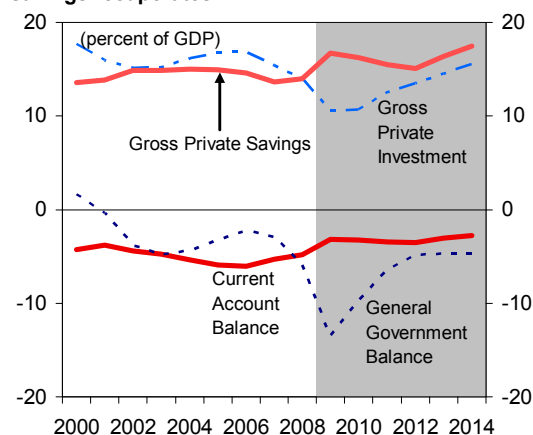
45. **Accordingly, the crisis would have significant implications for the U.S. role as the engine of global growth.** First, as noted above, the crisis appears to be leading to an adjustment in the U.S. contribution to global imbalances, which is likely to have substantial implications for key trading partners (Figure 11). Second, the combination of more cautious

**Figure 11. Narrowing U.S. External Imbalances**

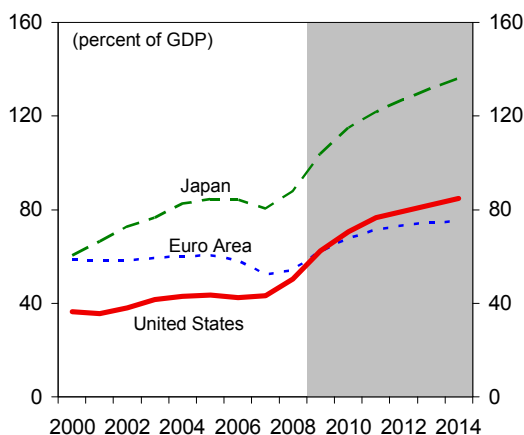
Global imbalances originated from large differences in regional savings-investment positions...



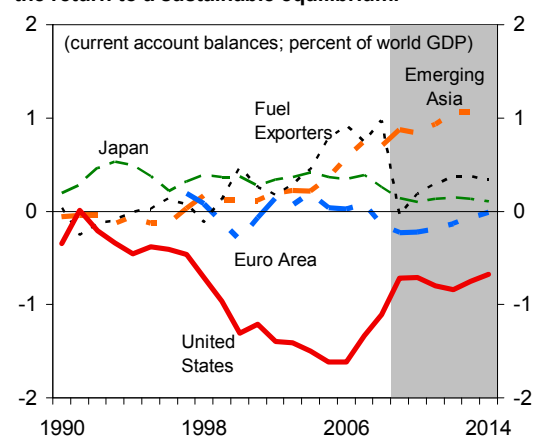
...which are likely to unravel as U.S. national savings recuperates ...



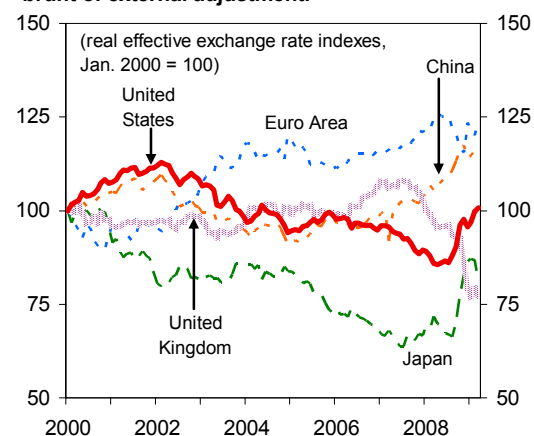
... even as public debt skyrockets.



The contraction in the United States may help the return to a sustainable equilibrium.



Although the U.S. dollar has not yet taken the brunt of external adjustment.



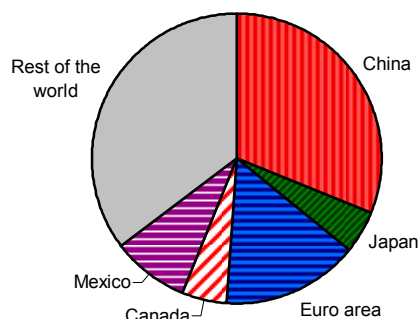
Sources: International Monetary Fund, *International Financial Statistics* and *World Economic Outlook*; Haver Analytics; and Fund staff calculations.

\* Gross investment is gross private investment for the United States, Japan, and China. Gross private savings is gross national savings for Fuel Exporters.

**Figure 11. Narrowing U.S. External Imbalances (cont.'d)**

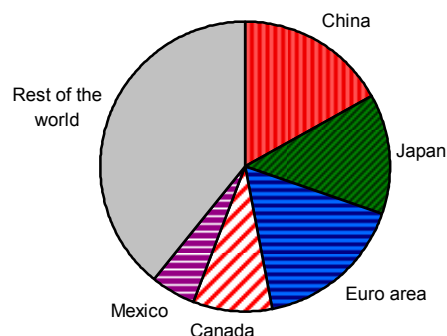
**A global rebalancing could have important implications for trade flows...**

(Shares of U.S. consumer goods imports)

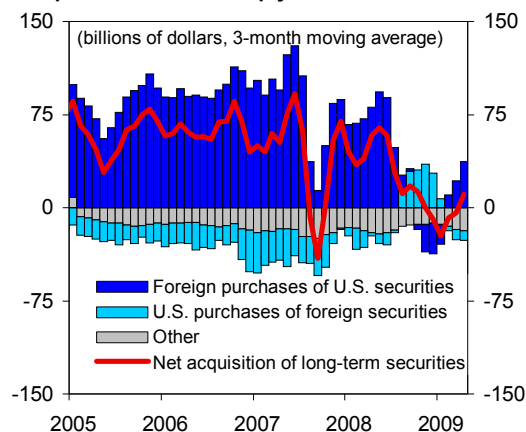


**... affecting China if the U.S. shifted imports away from consumer goods towards capital goods.**

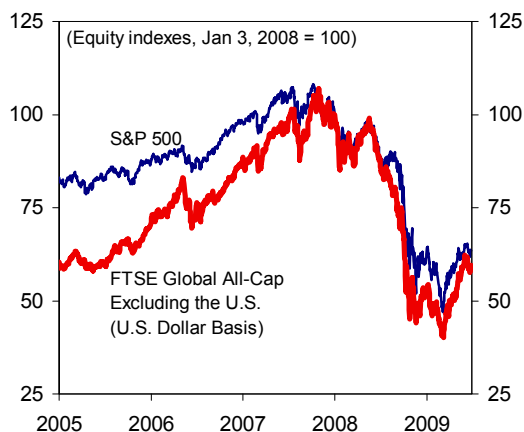
(Shares of U.S. capital goods imports)



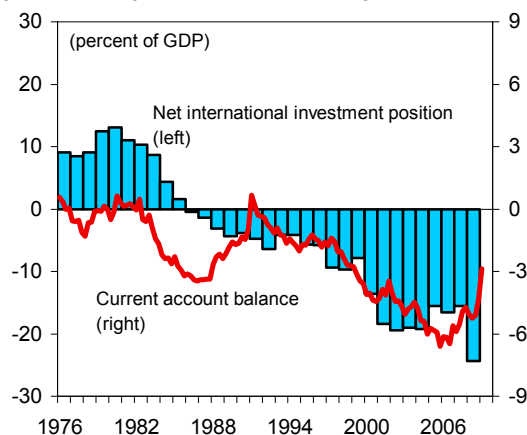
**Foreign appetite for U.S. long-term securities decreased throughout 2008, although short-term purchases rose sharply ...**



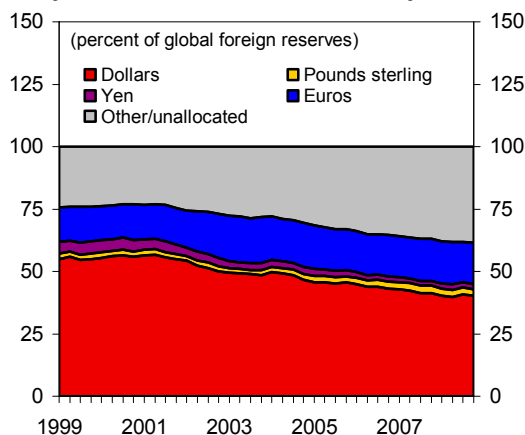
**...but steeper drops in equity prices internationally in late-2008 (and dollar appreciation) ...**



**... worsened the net international investment position, despite current account improvement.**



**Nevertheless, the dollar remains the most widely held international reserve currency.**



Sources: United States International Trade Commission; Department of the Treasury; Bureau of Economic Analysis; International Monetary Fund, *Composition of Foreign Exchange Reserves (COFER)*; Haver Analytics; and Fund staff calculations.

consumers, tighter financial regulation, and lower securitization is likely to reduce the U.S. interest elasticity of demand. As a result, the U.S. economy is likely to absorb a smaller proportion of future global shocks than it has in the past, which will in turn require greater flexibility and adjustment elsewhere.

**46. The authorities broadly agreed that the U.S. consumer was unlikely to be the global “buyer of last resort,” underscoring the need to rebalance global demand.**

Surplus countries would need to rely more on domestic demand instead of exports. If excess savings (the “savings glut”) re-emerged with U.S. saving also rising, global growth could be adversely affected (as well as heightening financial risks, as they saw global imbalances as one cause of the crisis). In addition, they believed that increased exchange rate flexibility was needed in some countries to facilitate adjustment.

**47. The authorities recognized the importance of open markets at home and abroad to U.S. economic performance, particularly in times of stress.** They supported the G-20 leaders' pledge to avoid raising barriers to trade or investment. While acknowledging that the U.S. trade regime remained very open, staff emphasized that holding the line against protectionism required that governments forgo any scope within their WTO obligations to raise barriers or to otherwise favor domestic industries. Buy American (BA) provisions of the U.S. stimulus package harmed expenditure efficiency, appeared to be causing some project delays, and added to protectionist pressures in partner countries. Staff welcomed efforts to limit the scope of BA and encouraged the authorities to utilize maximum flexibility in implementation (e.g., through waivers for products containing only limited import content or where public interest exceptions can be justified), and to urge state and local governments to follow international procurement agreements, even where they are not required to do so.

**48. The authorities underscored their commitment to the Doha Round and multilateralism.** The authorities sought to reinvigorate domestic support for trade by highlighting its benefits and demonstrating its consistency with their broader economic objectives. They attached great importance to concluding the Doha Round, both to reduce the future risks of protectionist measures and to generate substantial new market opening, especially in advanced and middle-income countries. In addition, the FY2010 budget puts foreign aid on a path to double (though it would still remain modest relative to UN targets).

## V. STAFF APPRAISAL

**49. The U.S. financial and economic crisis has had severe global repercussions.** The turbulent unwinding of unsustainable financial imbalances, culminating in the collapse of Lehman Brothers, revealed major weaknesses in the U.S. regulatory and resolution frameworks. The resulting financial turbulence has had a serious impact on financial stability and growth, both in the United States and in the rest of the world.

**50. Post-Lehman, an increasingly strong and comprehensive policy response has helped to stabilize economic and financial conditions.** The large monetary and fiscal stimulus and wide range of measures to restore financial stability are welcome, as is the attendant transparency. The sharp fall in economic output seems to be ending, and confidence in financial stability has improved. That said, financial strains are still elevated and the outlook remains for only a gradual recovery, with risks still tilted to the downside.

**51. Steps to stabilize financial conditions are helping to restore confidence, but risks remain.** The immediate priority is to complete the strengthening of the financial system. Policies under the Financial Stability Plan, notably the SCAP stress test, debt guarantees, and capital injections, have contributed to a significant improvement in financial conditions. However, risks persist, notably the risk that a prolonged recession could further erode capital. This situation warrants continued close monitoring and regular stress tests to evaluate vulnerabilities. The proposed reserve for stabilization funds should be retained, with the resolution framework for systemic nonbanks expeditiously implemented to improve the predictability and flexibility of crisis management. Balance-sheet cleaning remains a priority; the PPIP will provide a tool, although its usage may be limited. Recent steps to facilitate mortgage modifications are welcome, but more steps may be needed to encourage writedowns of underwater mortgages.

**52. Macroeconomic policies are providing helpful support to demand.** Monetary policy should remain highly accommodative until recovery is clearly underway. Meanwhile, continued clear communication by the Fed on the near-term outlook will be essential to anchor inflation expectations, given the prevailing uncertainty. If downside risks materialize, additional credit easing and a strengthened commitment to maintaining a highly accommodative stance could be deployed. Additional fiscal stimulus could also be used, provided it were set within a credible medium-term fiscal framework.

**53. A key priority will be to develop and to communicate exit strategies to unwind the extraordinary crisis-driven interventions.** For the Fed, a diverse set of tools will be needed to afford maximum flexibility in light of uncertainties about how market conditions will evolve and about the extent to which particular instruments can be used. In addition, Maiden Lane facilities should be transferred to the Treasury at an early stage, to reduce the Fed's exposure to credit risk. On support to financial institutions, terms should be tightened on facilities that need to be extended, to avoid distortions, fiscal risks, and governance issues. Clear communication of the strategy would bolster market confidence, and international coordination will be warranted as well.

**54. A crucial lesson from the crisis is the need for substantial strengthening of financial supervision and regulation.** The Administration's proposals to enhance the framework through Fed regulation of all systemic firms and the creation of a financial council are welcome. However, the remaining fragmentation in the regulatory structure is a



concern, the mandate for systemic stability should be clarified, and regulations for systemic firms should be stringent enough to discourage size and complexity. Measures will also be needed to mitigate financial procyclicality, coordinated internationally. The forthcoming FSAP will provide an opportunity to explore these and other issues in more depth.

**55. Restarting private securitization will be critical to restoring healthy credit flow.**

While implementation will take time, the faster reforms can be pursued, the lower the risk of impeding credit supply once economic activity (and credit demand) revive in earnest. Key steps, some envisioned in the authorities' plan, include improving disclosure about the ratings process and the underlying credits, and differentiating ratings for securitized products; strengthening the liability of bundlers to improve their accountability; and encouraging more standardized and simpler securitizations through market codes of conduct. An appropriate role for the housing GSEs will be needed, as the future shape of the financial system clarifies. Under any model, it should be made clear whether the housing agencies' liabilities are explicitly guaranteed, with the agencies subject to strict oversight and regulation.

**56. With public debt set to rise substantially over coming years, it will be critical to secure medium-term fiscal sustainability.**

The FY2010 budget is commendably transparent, and appropriately recognizes the need for an early stabilization of public debt. However, substantial additional measures will be required to achieve its goals. Given the low level of discretionary spending, measures would most likely need to include increased revenues. Options could include tax-base broadening, a federal consumption tax, higher energy taxes, and improved compliance.

**57. Substantial further measures will be needed to rein in soaring entitlement costs over the longer term.**

In this connection, the Administration's focus on health care reform is welcome, especially the goal of reducing growth in medical costs. However, the impact of potential cost-control measures is highly uncertain. Accordingly, progress on this front will need to be closely monitored, with additional measures taken promptly if improvements fail to materialize. In this connection, these steps should be supplemented by early social security reforms, where the gains are smaller but more certain. Thus, the Administration's intention to work toward developing a political consensus on social security reform once health care reforms are complete is welcome.

**58. The crisis has important implications for the U.S. role in the global economy.**

Over the medium term, rising personal savings and a fall in fiscal deficits from crisis levels may cement the recent reduction in the current account deficit at a more sustainable level. Moreover, the U.S. consumer is unlikely to play the role of global "buyer of last resort"—suggesting that other regions will need to play an increased role in supporting global growth and adjustment. The aim to raise foreign aid is welcome, as is the commitment to maintain an open trade regime during the crisis. However, the Buy American provision of the stimulus package is regrettable, as it harms expenditure efficiency, and adds to protectionist pressures

in partner countries. This provision, if not revoked, should be implemented with maximum flexibility.

59. **Staff proposes to hold the next Article IV Consultation on a 12-month cycle.**

Table 1. United States: Selected Economic Indicators 1/  
(Percentage change from previous period at annual rate, unless otherwise indicated)

	2007	2008	2009	2010	2011	2012	2013	2014
<b>National production and income</b>								
Real GDP	2.0	1.1	-2.6	0.8	3.1	2.8	2.6	2.2
Net Exports 2/	0.6	1.3	0.5	-0.2	0.0	0.2	0.2	0.1
Total domestic demand	1.4	-0.3	-2.9	1.0	3.0	2.5	2.3	2.1
Final domestic demand	1.8	0.0	-2.4	0.3	1.9	2.7	2.4	2.2
Private final consumption	2.8	0.2	-0.6	1.0	2.1	2.0	1.5	1.3
Public consumption expenditure	1.9	2.8	4.6	-0.8	-3.9	-1.4	-0.7	-0.5
Gross fixed domestic investment	-2.0	-3.5	-16.0	-2.1	8.2	10.2	9.6	8.3
Private fixed investment	-3.1	-5.0	-21.0	-2.7	11.4	13.2	13.2	12.1
Equipment & software	1.7	-3.0	-21.0	-0.1	13.2	15.0	15.0	13.8
Structures (non-residential)	12.7	11.2	-21.1	-10.3	7.5	9.0	9.0	8.0
Structures (residential)	-17.9	-20.8	-20.6	1.1	12.0	14.0	14.0	12.7
Public fixed investment	3.0	3.3	3.9	0.0	-0.8	0.7	-2.9	-6.8
Change in private inventories 2/	-0.4	-0.2	-0.6	0.7	1.1	-0.1	-0.1	-0.1
Nominal GDP	4.8	3.3	-1.3	1.9	4.4	4.5	4.6	4.2
Personal saving ratio (% of DI)	0.6	1.8	4.7	4.6	5.0	5.7	6.7	7.5
Private investment rate (% of GDP)	15.4	14.0	10.6	10.7	12.6	13.5	14.5	15.6
<b>Employment and inflation</b>								
Output gap (percent of potential)	1.7	0.2	-3.7	-3.8	-2.0	-0.9	-0.2	0.0
Potential GDP	2.8	2.6	1.4	0.9	1.2	1.6	1.9	2.0
CPI inflation	2.9	3.8	-0.3	1.4	1.6	2.1	2.2	2.2
GDP deflator	2.7	2.2	1.3	1.0	1.3	1.7	2.0	2.0
<b>Financial policy indicators</b>								
Central gov't balance (\$ b, public accounts)	-161	-459	-1,995	-1,505	-1,078	-828	-899	-994
In percent of FY GDP	-1.2	-3.2	-14.0	-10.4	-7.3	-5.5	-5.7	-6.1
Central government balance (\$ b, NIPA)	-295	-650	-1,743	-1,257	-855	-667	-735	-788
In percent of CY GDP	-2.1	-4.6	-12.3	-8.7	-5.8	-4.5	-4.7	-4.8
General government balance (\$ b, NIPA)	-399	-845	-1,903	-1,396	-963	-753	-772	-798
In percent of CY GDP	-2.9	-5.9	-13.4	-9.7	-6.5	-5.0	-5.0	-4.9
Three-month Treasury bill rate	4.5	1.4	0.2	0.9	2.7	4.2	4.2	4.2
Ten-year government bond rate	4.6	3.7	3.6	4.8	5.5	6.1	6.3	6.3
<b>Balance of payments</b>								
Current account balance (\$ b)	-732	-688	-445	-464	-517	-548	-495	-474
Merchandise trade balance (\$ b)	-831	-840	-657	-734	-791	-818	-810	-821
Balance on invisibles (\$ b)	99	152	212	271	274	271	315	347
Current account balance (% of GDP)	-5.3	-4.8	-3.2	-3.2	-3.5	-3.5	-3.0	-2.8
Merchandise trade balance (% of GDP)	-6.0	-5.9	-4.7	-5.1	-5.3	-5.2	-4.9	-4.8
Balance on invisibles (% of GDP)	0.7	1.1	1.5	1.9	1.8	1.7	1.9	2.0
Export volume 3/	7.5	6.0	-17.3	3.9	6.1	6.2	6.6	6.2
Import volume 3/	1.7	-4.1	-13.6	5.9	5.4	4.4	4.4	5.4
<b>Saving and investment (as a share of GDP)</b>								
Gross national saving	14.2	11.9	11.0	11.3	12.8	13.6	14.9	15.9
General government	0.5	-2.1	-5.7	-5.0	-2.7	-1.5	-1.5	-1.5
Private	13.7	14.0	16.7	16.3	15.5	15.1	16.4	17.5
Personal	0.4	1.4	3.6	3.5	3.8	4.4	5.2	5.9
Business	13.2	12.6	13.1	12.8	11.7	10.7	11.2	11.6
Gross domestic investment	18.8	17.5	14.4	14.5	16.3	17.1	17.9	18.7
Private	15.4	14.0	10.6	10.7	12.6	13.5	14.5	15.6
Fixed investment	15.5	14.3	11.4	10.8	11.6	12.7	13.8	15.0
Inventories	0.0	-0.3	-0.8	-0.1	1.0	0.8	0.7	0.6
Public	3.4	3.5	3.8	3.8	3.7	3.6	3.4	3.1

Sources: Haver Analytics; and Fund staff estimates.

1/ The data and forecasts shown are consistent with those in the July WEO update. Components may not sum to totals due to rounding.

2/ Contributions to growth.

3/ NIPA basis, goods.

Table 2. United States: Balance of Payments 1/  
(Billion U.S. dollars, unless otherwise indicated)

	2007	2008	Projection					
			2009	2010	2011	2012	2013	2014
Current account	-732	-688	-445	-464	-517	-548	-495	-474
Percent of GDP	-5.3	-4.8	-3.2	-3.2	-3.5	-3.5	-3.0	-2.8
Goods and services	-701	-696	-516	-555	-574	-561	-509	-477
Merchandise trade	-831	-840	-657	-734	-791	-818	-810	-821
Exports	1,138	1,277	960	1,000	1,080	1,182	1,307	1,413
Imports	-1,969	-2,117	-1,617	-1,735	-1,872	-2,000	-2,117	-2,234
Services	130	144	141	179	217	257	301	344
Receipts	505	550	518	567	623	687	757	829
Payments	-375	-405	-377	-388	-406	-430	-456	-485
Income	82	128	179	194	160	119	124	117
Receipts	818	755	602	563	862	1,263	1,508	1,534
Payments	-736	-628	-423	-370	-702	-1,143	-1,384	-1,417
Unilateral transfers, net	-113	-120	-107	-102	-103	-106	-110	-114
Capital account								
transactions, net	-2	-3	-3	-3	-3	-3	-3	-3
Financial account	768	547	447	466	520	550	498	477
Private capital	383	616	236	251	295	316	252	221
Direct investment	-96	7	-109	-106	-112	-120	-128	-136
Outflows	-333	...	...	...	...	...	...	...
Inflows	238	...	...	...	...	...	...	...
Securities	431	310	70	297	343	350	364	379
Outflows	-289	...	...	...	...	...	...	...
Inflows	720	...	...	...	...	...	...	...
Other investment	47	298	275	60	65	86	16	-22
Outflows	-642	...	...	...	...	...	...	...
Inflows	689	...	...	...	...	...	...	...
U.S. official reserves	0	-5	0	0	0	0	0	0
Foreign official assets	411	421	211	215	225	235	246	256
Other items	-26	-486	0	0	0	0	0	0
Statistical discrepancy	-34	144	0	0	0	0	0	0
<i>Memo item: Current account excluding petroleum</i>	-439	-302	-135	-102	-144	-173	-116	-92

1/ The data and forecasts shown are consistent with those in the July WEO update.

Sources: Haver Analytics; and Fund staff calculations.

Table 3. United States: Indicators of External and Financial Vulnerability  
(In percent of GDP, unless otherwise indicated)

	2001	2002	2003	2004	2005	2006	2007	2008
<b>External indicators</b>								
Exports of goods and services (percent change)	-6.1	-3.0	4.4	14.0	10.6	13.5	13.0	11.5
Imports of goods and services (percent change)	-5.5	2.1	8.3	16.7	12.8	10.8	6.1	7.3
Terms of trade (percent change)	2.8	1.5	-1.3	-1.7	-4.0	-1.2	0.6	-4.9
Current account balance	-3.8	-4.4	-4.8	-5.3	-5.9	-6.0	-5.3	-4.7
Capital and financial account balance	3.9	4.8	4.8	4.5	5.6	6.1	5.5	3.8
Of which:								
Net portfolio investment	3.3	4.5	4.2	6.2	5.0	5.8	5.9	1.4
Net foreign direct investment	0.2	-0.7	-0.8	-1.5	0.6	0.0	-0.7	0.1
Net other investment	0.4	1.0	1.5	-0.2	0.0	0.4	0.3	2.4
Official reserves (billion dollars)	68.7	79.0	85.9	86.8	65.1	65.9	70.6	77.6
Central bank foreign liabilities (billion dollars)	0.1	0.1	0.2	0.1	0.1	0.1	0.1	1.4
Official reserves (months of imports)	0.6	0.7	0.7	0.6	0.4	0.4	0.4	0.4
Net international investment position 1/	-18.5	-19.5	-19.0	-19.2	-15.5	-16.9	-17.7	...
Of which: General government debt 2/	12.1	13.8	15.6	17.7	19.1	20.8	23.4	...
External debt-to-exports ratio	1.9	2.1	2.1	1.9	1.5	1.5	1.5	...
External interest payments to exports (percent) 3/	23.7	20.7	19.0	20.5	25.9	32.5	35.9	28.0
Nominal effective exchange rate (percent change)	5.2	0.0	-6.4	-4.9	-2.6	-1.5	-4.3	-3.7
Real effective exchange rate (percent change)	5.7	-0.2	-6.4	-4.6	-1.4	-0.3	-3.9	-3.4
<b>Financial market indicators</b>								
General government gross debt	55.5	57.9	61.2	62.2	62.5	61.9	63.1	71.3
Three-month Treasury bill yield (percent)	3.5	1.6	1.0	1.4	3.2	4.8	4.5	1.4
Three-month Treasury bill yield (percent, real)	0.6	0.0	-1.2	-1.2	-0.2	1.6	1.6	-2.3
Equity market index								
(percent change in S&P500, year average)	-16.4	-16.5	-3.2	17.3	6.8	8.6	12.7	-17.3
<b>Banking sector risk indicators</b> (percent unless otherwise indicated) 4/								
Total assets (in billions of dollars)	6,552	7,077	7,602	8,416	9,040	10,092	11,176	12,311
Total loans and leases to assets	59.3	58.7	58.3	58.3	59.5	59.3	59.3	55.5
Total loans to deposits	88.7	88.6	88.0	87.7	88.6	88.9	90.7	84.6
Problem loans to total loans and leases 5/	1.4	1.5	1.2	0.9	0.8	0.8	1.3	2.9
Nonperforming assets to assets	0.9	0.9	0.8	0.6	0.5	0.5	0.9	1.8
Loss allowance to:								
Total loans and leases	1.9	1.9	1.7	1.5	1.3	1.2	1.3	2.3
Noncurrent loans and leases	132.4	127.1	145.7	174.6	170.5	144.6	102.6	78.3
Return on equity	13.2	14.4	15.3	13.7	12.9	13.0	9.1	1.4
Return on assets	1.2	1.3	1.4	1.3	1.3	1.3	0.9	0.1
Total capital to risk-weighted assets	12.7	12.8	12.8	12.6	12.3	12.4	12.2	12.7
Core capital ratio	7.8	7.8	7.9	7.8	7.9	7.9	7.6	7.4

Sources: IMF, *International Financial Statistics*; Federal Deposit Insurance Corporation; and Haver Analytics.

1/ With FDI at market value.

2/ Excludes foreign private holdings of U.S. government securities other than Treasuries.

3/ External interest payments: income payments on foreign-owned assets (other private payments plus U.S. government payments).

4/ FDIC-insured commercial banks.

5/ Noncurrent loans and leases.

Table 4. United States: Fiscal Indicators for the Federal Government 1/ 2/  
(Fiscal years; in percent of GDP except where otherwise indicated)

	2007	2008	Projection					
			2009	2010	2011	2012	2013	2014
Outlays	20.0	21.0	29.2	26.3	24.4	23.8	24.2	24.5
Debt service	1.7	1.8	1.0	0.8	1.6	2.4	3.0	3.3
Other	18.3	19.2	28.2	25.4	22.8	21.4	21.3	21.2
Revenue	18.8	17.7	15.0	15.7	17.1	18.5	18.7	18.6
Overall balance	-1.2	-3.2	-14.2	-10.6	-7.3	-5.4	-5.6	-5.9
Primary balance	0.6	-1.4	-13.2	-9.7	-5.6	-2.9	-2.6	-2.6
Overall balance (billion dollars)	-161	-459	-1995	-1505	-1078	-828	-899	-994
Debt held by the public	36.9	40.8	58.2	70.5	75.5	77.8	80.1	82.8
Debt net of financial assets	35.6	37.2	47.5	59.0	63.9	66.4	68.9	71.9
<b>Memorandum items:</b>								
Net borrowing requirement	1.5	5.4	17.0	12.9	7.7	5.5	5.7	6.0
Gross borrowing requirement	12.1	16.0	34.7	31.9	30.1	29.3	30.3	31.4
Structural balance 3/	-1.8	-3.6	-5.6	-6.6	-5.6	-4.4	-5.1	-5.5
Financial Rescue Expenditures (above the line)								
Total effect on deficit	...	...	6.2	1.6	0.2	-0.1	-0.2	-0.2

Sources: The FY 2010 Budget Proposal, The March 2009 CBO Budget Outlook, and Fund staff estimates.

1/ The data and forecasts shown are consistent with those in the July WEO update.

2/ The staff's projections are based on the Administration's estimates adjusted for differences in macroeconomic projections and reflect the CBO's estimates of the present value cost of the GSE takeovers and other financial stabilization measures.

3/ As a percent of potential GDP, based on proposed measures, under IMF staff's economic assumptions. Also incorporates CBO's and staff's adjustments for one-off items, including the costs of financial stabilization measures.

INTERNATIONAL MONETARY FUND

UNITED STATES

**Staff Report for the 2009 Article IV Consultation—Informational Annex**

Prepared by the Western Hemisphere Department

July 9, 2009

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**Annex I. United States: Fund Relations**  
(As of May 31, 2009)

I. **Membership Status:** Joined 12/27/45; Article VIII

II. <b>General Resources Account:</b>	<b>SDR Million</b>	<b>Percent Quota</b>
Quota	37,149.30	100.00
Fund holdings of currency	29,369.94	79.06
Reserve position in Fund	7,775.88	20.93

III. <b>SDR Department:</b>	<b>SDR Million</b>	<b>Percent Allocation</b>
Net cumulative allocation	4,899.53	100.00
Holdings	6,079.86	124.09

IV. **Outstanding Purchases and Loans:** None

V. **Financial Arrangements:** None

VI. **Projected Obligations to Fund:** None

VII. **Exchange Rate Arrangements:** The exchange rate of the U.S. dollar floats independently and is determined freely in the foreign exchange market.

VIII. **Payments Restrictions:** The United States accepted Article VIII of the IMF's Articles of Agreement and maintains an exchange system free of restrictions and multiple currency practices except for restrictions on payments and transfers for current international transactions imposed for security reasons. The United States maintains certain restrictions on payments and transfers for current international transactions with certain persons who threaten international stabilization efforts in the Western Balkans, including certain persons indicted by the International Criminal Tribunal for the former Yugoslavia; certain persons undermining democratic processes or institutions in Zimbabwe and Belarus; certain persons undermining the sovereignty of Lebanon or its democratic processes and institutions; certain persons contributing to the conflicts in the Democratic Republic of the Congo or Cote d'Ivoire; Cuba; certain restrictions with respect to North Korea and North Korean nationals; the former Iraqi regime of Saddam Hussein, its senior officials, and their family members; certain persons who threaten stabilization efforts in Iraq; Iran; the former Liberian regime of Charles Taylor; foreign terrorists who threaten to disrupt the Middle East peace process; governments supporting terrorism; foreign terrorist organizations; designated global



terrorists; designated proliferators of weapons of mass destruction; specifically designated narcotics traffickers; Burma; Sudan; and, Syria.

IX. **Article IV Consultation.** The 2008 Article IV consultation was concluded in July 2008 and the Staff Report was published as IMF Country Report 08/216. A fiscal ROSC was completed in the context of the 2003 consultation.

The 2009 Article IV discussions were conducted from May 18-June 10. Concluding meetings with Chairman Bernanke of the Board of Governors of the Federal Reserve System and Treasury Secretary Geithner occurred on June 9 and 10. A press conference on the consultation was held on June 15. The team comprised D. Robinson (Head), C. Kramer, M. Estevão, O. Celasun, A. Maechler, K. Mathai, and L. Ratnovski (all WHD); A. Bhatia and B. McDonald (all SPR); and J. Kiff and P. Mills (all MCM). Ms. Lundsager (Executive Director), Mr. Heath (Alternate Executive Director), and Mr. Lin (Advisor) attended some of the meetings. Outreach included discussions with the private sector and think tanks. The authorities have agreed to the publication of the staff report.

## Annex II. Statistical Issues

**Statistical Issues:** Comprehensive economic data are available for the United States on a timely basis. The quality, coverage, periodicity, and timeliness of U.S. economic data are adequate for surveillance. Coverage of international capital flows in external sector statistics has been improved, with the June 2007 releases of BOP and IIP data on financial derivatives. The United States has subscribed to the Special Data Dissemination Standard (SDDS) and its metadata are posted on the Dissemination Standard Bulletin Board (DSBB).

### United States: Table of Common Indicators Required for Surveillance

(As of June 30, 2009)

	Date of latest observation	Date received	Frequency of data <sup>6</sup>	Frequency of reporting <sup>6</sup>	Frequency of publication <sup>6</sup>
Exchange rates	June 26	June 29	D	W	W
International reserve assets and reserve liabilities of the monetary authorities <sup>1</sup>	June 26	June 30	W	W	W
Reserve/base money	June 24	June 25	B	W	W
Broad money	June 15	June 25	W	W	W
Central bank balance sheet	June 24	June 26	W	W	W
Interest rates <sup>2</sup>	same day	same day	D	D	D
Consumer price index	May 2009	Jun. 17	M	M	M
Revenue, expenditure, balance and composition of financing <sup>3</sup> – general government <sup>4</sup>	2009 Q1	Jun. 10	Q	Q	Q
Revenue, expenditure, balance and composition of financing <sup>3</sup> – central government	May 2009	Jun. 10	M	M	M
Stocks of central government and central government-guaranteed debt	May 2009	Jun. 10	M	M	M
External current account balance	2009 Q1	June 17	Q	Q	Q
Exports and imports of goods and services	Apr. 2009	Jun. 10	M	M	M
GDP/GNP (final)	2009 Q1	June 25	Q	M	M
Gross External Debt	2009 Q1	June 17	Q	Q	Q
International Investment Position <sup>5</sup>	2008	June 27	A	A	A

<sup>1</sup>Includes reserve assets pledged or otherwise encumbered as well as net derivative positions.

<sup>2</sup>Both market-based and officially-determined, including discount rates, money market rates, rates on treasury bills, notes and bonds.

<sup>3</sup>Foreign, domestic bank, and domestic nonbank financing.

<sup>4</sup>The general government consists of the central government (budgetary funds, extra budgetary funds, and social security funds) and state and local governments.

<sup>5</sup>Includes external gross financial asset and liability positions vis-à-vis nonresidents.

<sup>6</sup>Daily (D), Weekly (W), Biweekly (B), Monthly (M), Quarterly (Q), Annually (A); NA: Not Available.

### Annex III. Capital Needs of the Banking System—A Sensitivity Analysis

**Recent exercises by the U.S. authorities and Fund staff assessed the capital needs of the U.S. banking system from a forward-looking perspective.** The U.S. Supervisory Capital Assistance Program (SCAP) assessed the capital positions of the 19 largest U.S. bank holding companies (BHCs) under an “adverse” macroeconomic scenario that was moderately more pessimistic than the current WEO baseline.<sup>1</sup> It found that they would need \$185 billion in capital to maintain a minimum 4 percent ratio of Tier 1 common capital to risk weighted assets over 2009–10 (falling to \$74.6 billion once first-quarter earnings and other capital measures in train were accounted for). The April 2009 Global Financial Stability Report (GFSR) estimated that all U.S. banks would need \$275 billion of additional capital to maintain a 4 percent leverage ratio (tangible common equity/tangible assets) or \$500 billion to maintain a 6 percent leverage ratio, over the same period.

**The two exercises were quite different methodologically.** For example, the SCAP involved intensive bank-by-bank analysis for the top 19 institutions, including their derivatives and trading exposures, whereas the GFSR performed aggregated analysis using published balance-sheet data for the entire U.S. banking system. The SCAP incorporated banks’ first-quarter earnings and assumed somewhat larger losses than the GFSR, with a cumulative loss rate on total loans of 9.1 percent in the SCAP.

**Perhaps the most important difference regards the capital targets.** The SCAP’s 4 percent Tier 1 common target compares to the current average level of 5.2 percent (and a 1997–2007 average of 7.4 percent) for the 17 BHCs for which past prudential data are available (Figure 1). The GFSR targeted a minimum 4 percent tangible common equity to tangible assets, relative to a 4.3 percent current average for those banks, and a 6.1 percent historical average.

**A key question is the extent to which downside risks could increase capital needs.** For example, net losses could persist beyond the horizon used in the SCAP and GFSR exercises, which run through end-2010 (though the SCAP required banks to have adequate provisions at end-2010 to cover 2011 losses). A related risk is that the recession could be more prolonged, putting upward pressure on losses and downward pressure on earnings.

**To explore this question, staff performed an illustrative sensitivity analysis.** Drawing on GFSR methodologies, the exercise linked projected losses to macroeconomic assumptions.<sup>2</sup>

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<sup>1</sup> For example, the SCAP assumes GDP growth of -3.3 percent in 2009 and 0.5 percent in 2010, versus the staff’s -2.5 percent and 0.7 percent respectively.

<sup>2</sup> A description of the model used to estimate charge-off rates can be found in Box 1.7 of the April 2009 Global Financial Stability Report.

The staff simulated downside (and upside) scenarios in which real GDP growth was one percent lower (higher) than the WEO baseline through mid-2011, with unemployment and house price developments concomitantly worse (better).<sup>3</sup> The results were simulated for the 48 largest BHCs, accounting for over 75 percent of U.S. banking assets, over 2009–14. The exercise, while indicative in nature given the assumptions needed, may provide a broad sense of the orders of magnitude implied by various scenarios (Figure 2).

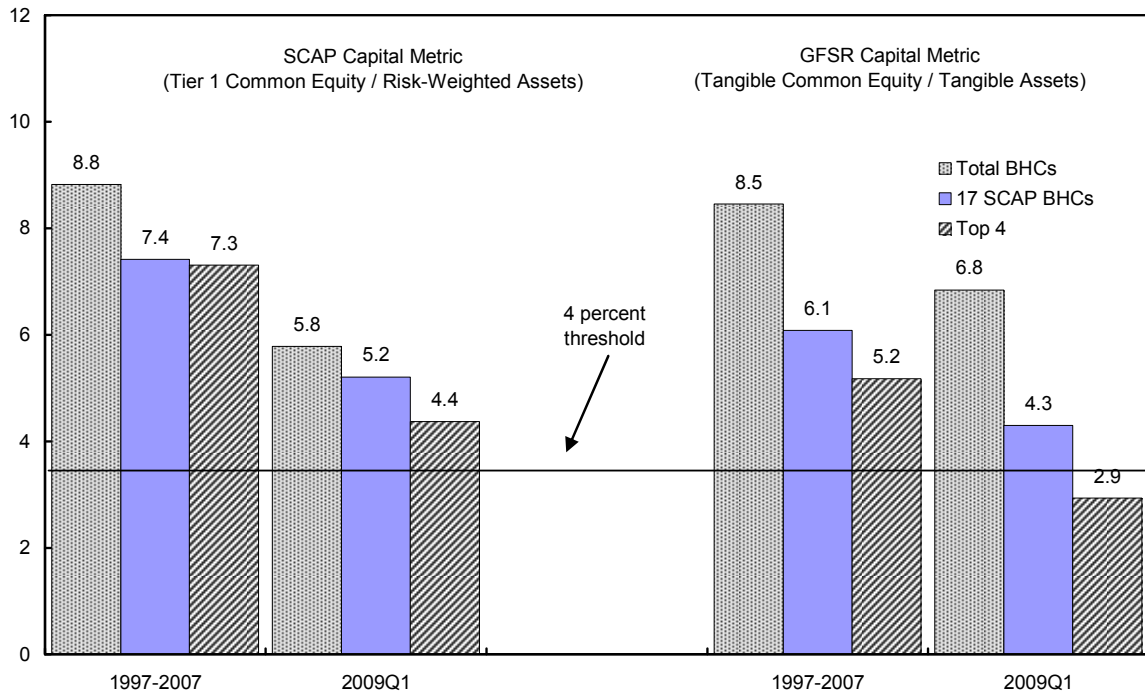
**The results suggest that capital needs may be significantly sensitive to the length and depth of the recession.** For example, under the downside risk scenario, net earnings (i.e., post-taxes, -dividends, and -losses) are \$71.4 billion lower than under the baseline over 2009–10. The actual capital shortfall rises by a smaller amount (\$40.5 billion), as some banks have sufficient excess capital to absorb losses; also, risk weighted assets are assumed to move in line with nominal GDP, which (other things equal) means a lower capital requirement in dollar terms. However, the capital need grows further, to an additional \$316.2 billion compared to the baseline, if potential losses during 2011–14 are taken into account. Alternatively, in the upside scenario, capital needs could be reduced by \$76 billion relative to a baseline scenario over the 2009–14 period.

**The downside risks underscore the need for vigilance and maintaining policy tools to deal with financial strains.** While banks have recently been able to raise significant amounts of capital in private markets, it would be desirable to retain the budget's placeholder for stabilization funds if needed. Similarly, the Public-Private Investment Program could prove a useful tool for balance sheet cleaning, especially if significant concerns about balance-sheet weaknesses re-emerged.

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<sup>3</sup> While the scenarios are symmetric, the results (capital needs) are asymmetric, reflecting that (1) capital shortfalls are bounded below by zero and (2) bank losses tend to fall less in good times than they rise in bad times.

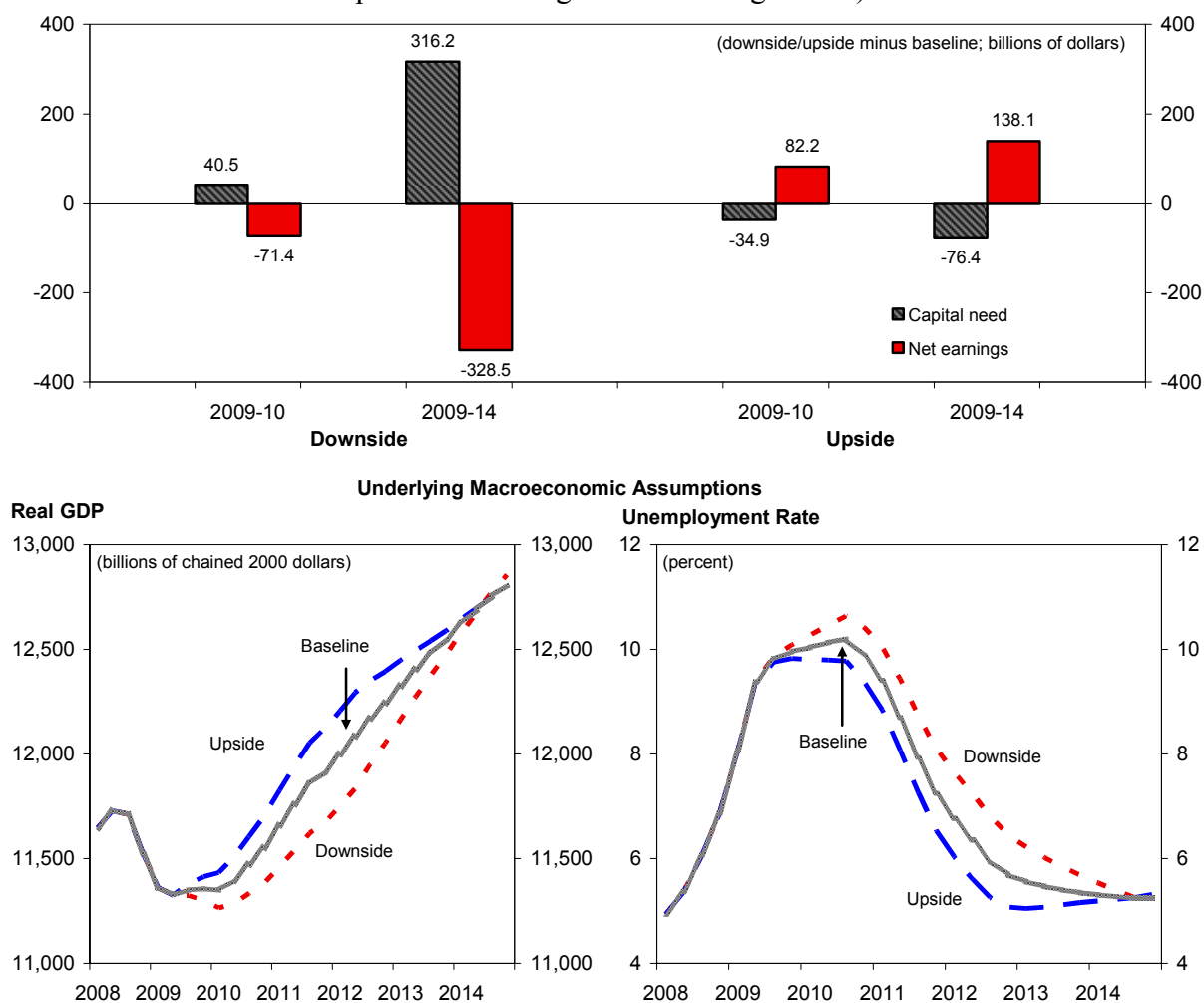
**Figure 1. Capital Ratios for U.S. Bank Holding Companies, 1997–2009 Q1**  
(in percent)



Source: SNL Financials.

Notes. Top four banks include Citigroup, JPMorgan, Bank of America and Wells Fargo. Tier 1 common capital is total tier 1 capital less qualifying minority interests in consolidated subsidiaries, qualifying trust preferred securities, and preferred stock and related surplus. Tangible common equity is total equity capital excluding goodwill and other intangible assets and preferred shares and related surplus.

**Figure 2. Sensitivity of U.S. Bank Capital Needs to Macroeconomic Assumptions**  
(Net earnings and capital need to maintain a 4 percent tier 1 common capital to risk weighted assets target ratio)



Sources: Bureau of Economic Analysis; Haver Analytics; SNL Financial; and Fund staff estimates.

Note: Capital need and net earnings are computed at the time when the capital ratio reaches its lowest point. Net earnings are post-taxes, post-dividends, and incorporate losses. The baseline reflects the latest WEO assumptions, a house price forecast, and an average 1.5 percent return on assets. The downside (upside) scenario assumes that real GDP growth is 1 percent lower (higher) than the baseline until 2011:Q2, unemployment peaks at 10.8 percent (9.8 percent), house prices decrease 22 percent (6.9 percent) at 2010:Q1, and the average return on assets is 1.4 percent (1.6 percent) over 2009-10. The estimates are based on data of 48 top U.S. bank holding companies (representing over 75 percent of total bank assets) and scaled up to cover the entire system.



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## **IMF Executive Board Concludes 2009 Article IV Consultation with the United States**

On July 24, 2009, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation with the United States.<sup>1</sup>

### **Background**

Since the last consultation, the U.S. economy has experienced the worst financial crisis since the Great Depression. In the second half of 2008, financial pressures intensified and came to a head with the failure of Lehman Brothers in September, triggering massive financial instability in U.S. and global financial markets, with severe repercussions for the real economy. In the United States, job losses and the unemployment rate surged, with GDP declining by 6¼ percent in the fourth quarter of 2008 (quarter over quarter, seasonally adjusted annual rate) and a further 5½ percent in the first quarter of 2009. Inflation sank and briefly reached negative territory. Internationally, production and international trade collapsed, with pronounced contractions in manufacturing exporters. Measures of financial stress, especially credit spreads, increased sharply, while Treasury yields fell and the dollar strengthened amid safe-haven flows. Despite the rise in the dollar, the U.S. current account deficit receded on the back of weak domestic demand and lower oil prices.

In response to these shocks, U.S. macroeconomic policy shifted to a war footing. In October 2008, the Troubled Asset Relief Program (TARP) provided capital injections to stressed financial institutions and bolstered financial markets. In addition, guarantees were provided on selected bank assets and liabilities and expanded on deposits. In the same month, the Fed participated in

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<sup>1</sup> Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board. At the conclusion of the discussion, the First Deputy Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities.

a coordinated rate cut with five other major central banks, and subsequently lowered its target rate to an all-time low range of 0–25 basis points and communicated that conditions were likely to warrant an exceptionally low rate for an extended period. The Fed also enhanced its securities purchases as well as facilities to unfreeze segments of credit markets. In February 2009, the authorities launched a fiscal stimulus of more than 5 percent of GDP over 2009–11 and ramped up support for the housing market. The authorities' Financial Stability Plan released in February 2009 included stress tests to assess banks' resilience to the economic downturn, which bolstered confidence in financial stability when results were announced in May, as well as a plan to address toxic assets on financial institutions' balance sheets.

The combination of massive macroeconomic stimulus and financial market intervention began to stabilize financial and economic conditions. That said, economic activity remains weak, while financial conditions remain somewhat stressed. Looking ahead, financial strains will weigh on investment and (in tandem with the effects of rising unemployment and falling house prices) consumption. In addition, the outlook for partner country growth remains subdued, which will restrain exports.

The medium to longer run will pose a series of major challenges. These include, for the medium term, formulating exit strategies from interventions to stabilize the financial system, as well as extraordinary monetary policy stimulus. For the longer term, challenges include addressing the weaknesses in financial supervision and regulation brought out by the crisis, stabilizing the public finances (particularly in light of rising pressures from entitlements), and coping with an environment of rising saving and slower growth as household balance sheets adjust.

### **Executive Board Assessment**

Executive Directors noted that the U.S. financial and economic crisis has had severe domestic as well as international repercussions on financial stability and growth. Directors commended the authorities' forceful and internationally coordinated actions to stabilize and repair the financial sector, bolster domestic demand, and address international spillovers. As a result of their increasingly strong and comprehensive policy measures, the sharp fall in economic output seems to be ending, and confidence in financial stability has strengthened. Nevertheless, with financial strains still elevated, the recovery is likely to be gradual, and risks are tilted to the downside. In addition, potential growth could remain well below past trends for a considerable period. Nevertheless, the long-term growth effects expected from structural policies now being implemented were also noted, and a few Directors expected the crisis to have little lasting effect on potential growth, given the flexibility of the economy.

Directors commended the steps taken to stabilize financial conditions and help restore confidence. Policies under the Financial Stability Plan—notably stress tests, debt guarantees, and capital injections—have contributed to a significant improvement in financial conditions. Continued close monitoring and regular stress tests to evaluate vulnerabilities are nevertheless needed. Directors supported implementing expeditiously the resolution framework for systemic nonbank financial institutions, and retaining the proposed reserve for stabilization funds. Balance sheet cleaning remains a priority. More steps might be needed to encourage writedowns of underwater mortgages, but care must be taken to avoid moral hazard.



Directors agreed that macroeconomic policies are providing significant support to demand, and an eventual unwinding would have to wait until an economic recovery is clearly underway. If downside risks materialize, additional credit easing and a strengthened commitment to maintaining a highly accommodative monetary stance could be considered. Additional fiscal stimulus could also be used, although the immediate focus should be on implementing the current fiscal measures and monitoring their impact. Directors welcomed the authorities' commitment to set policies in a sound medium-term policy framework.

Directors considered that a key priority will be to develop comprehensive exit strategies to unwind the extraordinary crisis-driven interventions, once a sustainable recovery is underway. Directors agreed that the Fed will need a diverse set of tools to respond to the uncertain evolution of market conditions, while the transfer of Maiden Lane facilities to the Treasury would reduce its exposure to credit risk. If extended, the terms of support to financial institutions should be tightened. Directors stressed that clear communication of exit strategies, along with international coordination, would bolster market confidence and facilitate a smooth exit.

Directors welcomed the Administration's recent proposals for substantial reform and strengthening of financial supervision and regulation. They saw scope for further actions to address fragmentation in the regulatory structure and to clarify the mandate for systemic stability. Some Directors also encouraged consideration of regulations aimed at discouraging size and complexity. Directors supported the authorities' commitment to an internationally coordinated approach, especially in areas such as crisis management and cross-border supervision. The forthcoming FSAP will provide an opportunity to explore financial supervisory and regulatory issues in more depth.

Directors emphasized that restarting private securitization will be crucial to restore a healthy credit flow. Key steps, some already envisioned in the authorities' plan, include improving disclosure about the ratings process and underlying credit quality; differentiating ratings for securitized products; strengthening the liability of bundlers to improve their accountability; and encouraging more standardized and simpler securitizations through market codes of conduct. The housing GSEs would need to be subject to strict oversight and regulation, and their role should be clarified as the future shape of the financial system emerges, including whether their liabilities are explicitly guaranteed.

With public debt set to rise substantially over coming years, Directors underscored the need for an ambitious medium-term fiscal consolidation to secure fiscal sustainability, as recognized in the FY2010 budget. As the crisis has exacerbated existing fiscal imbalances, consolidation will likely require significant additional adjustment. Given the low level of discretionary spending, the adjustment would most likely need to focus on the revenue side. Noting the considerable uncertainties surrounding the economic outlook, Directors supported the authorities' intention to re-evaluate the options for achieving fiscal sustainability if deficits do not decline as expected.

Directors underscored that addressing soaring entitlement costs remains the critical medium-term fiscal challenge. They welcomed the Administration's focus on health care reform, emphasizing that the ultimate package should include substantial measures to reduce health care costs over

the longer term, while aiming at budget neutrality in the short term. Directors underscored that the impact of cost control measures will need to be carefully monitored, and that additional measures should be taken promptly as needed. Directors also welcomed the Administration's intention to work towards developing a political consensus for social security reform.

Directors observed that the crisis will have important implications for the role of the United States in the global economy. The U.S. consumer is unlikely to play the role of global "buyer of last resort"—suggesting that other regions will need to play an increased role in supporting global growth. Directors welcomed the authorities' intention to increase foreign aid, and their commitment to maintain an open trade regime during the crisis and, in this context, underscored the importance of resisting protectionism.

**Public Information Notices (PINs)** form part of the IMF's efforts to promote transparency of the IMF's views and analysis of economic developments and policies. With the consent of the country (or countries) concerned, PINs are issued after Executive Board discussions of Article IV consultations with member countries, of its surveillance of developments at the regional level, of post-program monitoring, and of ex post assessments of member countries with longer-term program engagements. PINs are also issued after Executive Board discussions of general policy matters, unless otherwise decided by the Executive Board in a particular case. The [staff report](#) (use the free [Adobe Acrobat Reader](#) to view this pdf file) for the 2009 Article IV Consultation with the United States is also available.