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# Economic Recovery: Sustaining U.S. Economic Growth in a Post-Crisis Economy

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*Congressional Research Service*

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# Economic Recovery: Sustaining U.S. Economic Growth in a Post-Crisis Economy

## **Abstract**

[Excerpt] The 2007-2009 recession was long and deep, and according to several indicators was the most severe economic contraction since the 1930s (but still much less severe than the Great Depression). The slowdown of economic activity was moderate through the first half of 2008, but at that point the weakening economy was overtaken by a major financial crisis that would exacerbate the economic weakness and accelerate the decline.

Economic recovery began in mid-2009. Real gross domestic product (GDP) has been on a positive track since then, although the pace has been uneven and slowed significantly in 2011. The stock market has recovered from its lows, and employment has increased moderately. On the other hand, significant economic weakness remains evident, particularly in the balance sheet of households, the labor market, and the housing sector.

Congress was an active participant in the policy responses to this crisis and has an ongoing interest in macroeconomic conditions. Current macroeconomic concerns include whether the economy is in a sustained recovery, rapidly reducing unemployment, speeding a return to normal output and employment growth, and addressing government's long-term debt problem.

In the typical post-war business cycle, lower than normal growth during the recession is quickly followed by a recovery period with above normal growth. This above normal growth serves to speed up the reentry of the unemployed to the workforce. Once the economy reaches potential output (and full employment), growth returns to its normal growth path, where the pace of aggregate spending advances in step with the pace of aggregate supply. There is concern that this time the U.S. economy will either not return to its pre-recession growth path but perhaps remain permanently below it, or return to the pre-crisis path but at a slower than normal pace. Problems on the supply side and the demand side of the economy have so far led to a weaker than normal recovery.

If the pace of private spending proves insufficient to assure a sustained recovery, would further stimulus by monetary and fiscal policy be warranted? One lesson from the Great Depression is to guard against a too hasty withdrawal of fiscal and monetary stimulus in an economy recovering from a deep decline. The removal of fiscal and monetary stimulus in 1937 is thought to have stopped a recovery and caused a slump that did not end until WWII. Opponents of further stimulus maintain that the accumulation of additional government debt would lower future economic growth, but supporters argue that additional stimulus is the appropriate near-term policy. Moreover, in 2011-2012, the sharply fading effects of fiscal stimulus and weaker growth in Europe have likely dampened economic growth.

In regard to the long-term debt problem, in an economy operating close to potential output, government borrowing to finance budget deficits will in theory draw down the pool of national saving, crowding out private capital investment and slowing long-term growth. However, the U.S. economy is currently operating well short of capacity and the risk of such crowding out occurring is therefore low in the near term. Once the cyclical problem of weak demand is resolved and the economy has returned to a normal growth path, mainstream economists' consensus policy response for an economy with a looming debt crisis is fiscal consolidation—cutting deficits. Such a policy would have the benefits of low and stable interest rates, a less fragile financial system, improved investment prospects, and possibly faster long-term growth.

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**Keywords**

economic growth, recovery, recession, financial crisis, unemployment

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# Economic Recovery: Sustaining U.S. Economic Growth in a Post-Crisis Economy

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April 18, 2013

**Congressional Research Service**

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## Summary

The 2007-2009 recession was long and deep, and according to several indicators was the most severe economic contraction since the 1930s (but still much less severe than the Great Depression). The slowdown of economic activity was moderate through the first half of 2008, but at that point the weakening economy was overtaken by a major financial crisis that would exacerbate the economic weakness and accelerate the decline.

Economic recovery began in mid-2009. Real gross domestic product (GDP) has been on a positive track since then, although the pace has been uneven and slowed significantly in 2011. The stock market has recovered from its lows, and employment has increased moderately. On the other hand, significant economic weakness remains evident, particularly in the balance sheet of households, the labor market, and the housing sector.

Congress was an active participant in the policy responses to this crisis and has an ongoing interest in macroeconomic conditions. Current macroeconomic concerns include whether the economy is in a sustained recovery, rapidly reducing unemployment, speeding a return to normal output and employment growth, and addressing government's long-term debt problem.

In the typical post-war business cycle, lower than normal growth during the recession is quickly followed by a recovery period with above normal growth. This above normal growth serves to speed up the reentry of the unemployed to the workforce. Once the economy reaches potential output (and full employment), growth returns to its normal growth path, where the pace of aggregate spending advances in step with the pace of aggregate supply. There is concern that this time the U.S. economy will either not return to its pre-recession growth path but perhaps remain permanently below it, or return to the pre-crisis path but at a slower than normal pace. Problems on the supply side and the demand side of the economy have so far led to a weaker than normal recovery.

If the pace of private spending proves insufficient to assure a sustained recovery, would further stimulus by monetary and fiscal policy be warranted? One lesson from the Great Depression is to guard against a too hasty withdrawal of fiscal and monetary stimulus in an economy recovering from a deep decline. The removal of fiscal and monetary stimulus in 1937 is thought to have stopped a recovery and caused a slump that did not end until WWII. Opponents of further stimulus maintain that the accumulation of additional government debt would lower future economic growth, but supporters argue that additional stimulus is the appropriate near-term policy. Moreover, in 2011-2012, the sharply fading effects of fiscal stimulus and weaker growth in Europe have likely dampened economic growth.

In regard to the long-term debt problem, in an economy operating close to potential output, government borrowing to finance budget deficits will in theory draw down the pool of national saving, crowding out private capital investment and slowing long-term growth. However, the U.S. economy is currently operating well short of capacity and the risk of such crowding out occurring is therefore low in the near term. Once the cyclical problem of weak demand is resolved and the economy has returned to a normal growth path, mainstream economists' consensus policy response for an economy with a looming debt crisis is fiscal consolidation—cutting deficits. Such a policy would have the benefits of low and stable interest rates, a less fragile financial system, improved investment prospects, and possibly faster long-term growth.

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## Background

### Severity of the 2008-2009 Recession

The 2008-2009 recession was long and deep, and according to several indicators was the most severe economic contraction since the 1930s (but still much less severe than the Great Depression). The slowdown of economic activity was moderate through the first half of 2008, but at that point the weakening economy was overtaken by a major financial crisis that would exacerbate the economic weakness and accelerate the decline.<sup>1</sup>

When the fall of economic activity finally bottomed out in the second half of 2009, real gross domestic product (GDP) had contracted by approximately 5.1%, or by about \$680 billion.<sup>2</sup> At this point the output gap—the difference between what the economy could produce and what it actually produced—widened to an estimated 8.1%. The decline in economic activity was much sharper than in the 10 previous post-war recessions, in which the fall of real GDP averaged about 2.0% and the output gap increased to near 4.0% (see **Figure 1**). However, the decline falls well short of the experience during the Great Depression, when real GDP decreased by 30% and the output gap probably exceeded 40%.<sup>3</sup>

As output decreased the unemployment rate increased, rising from 4.6% in 2007 to a peak of 10.1% in October 2009. The U.S. unemployment rate has not been at this level since 1982, when in the aftermath of the 1981 recession it reached 10.8%, the highest rate of the post-war period. (During the Great Depression the unemployment rate reached 25%.) This rise in the unemployment rate translates to about 7 million persons put out of work during the recession. Another 8.5 million workers have been pushed involuntarily into part-time employment.<sup>4</sup>

The recession was intertwined with a major financial crisis that exacerbated the negative effects on the economy. Falling stock and house prices led to a large decline in household wealth (net worth), which plummeted by over \$16 trillion or about 24% during 2008 and 2009. In addition, the financial panic led to an explosion of risk premiums (i.e., compensation to investors for accepting extra risk over relatively risk-free investments such as U.S. Treasury securities) that froze the flow of credit to the economy, crimping credit supported spending by consumers such as for automobiles, as well as business spending on new plant and equipment.<sup>5</sup>

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<sup>1</sup> See CRS Report R40007, *Financial Market Turmoil and U.S. Macroeconomic Performance*, by Craig K. Elwell.

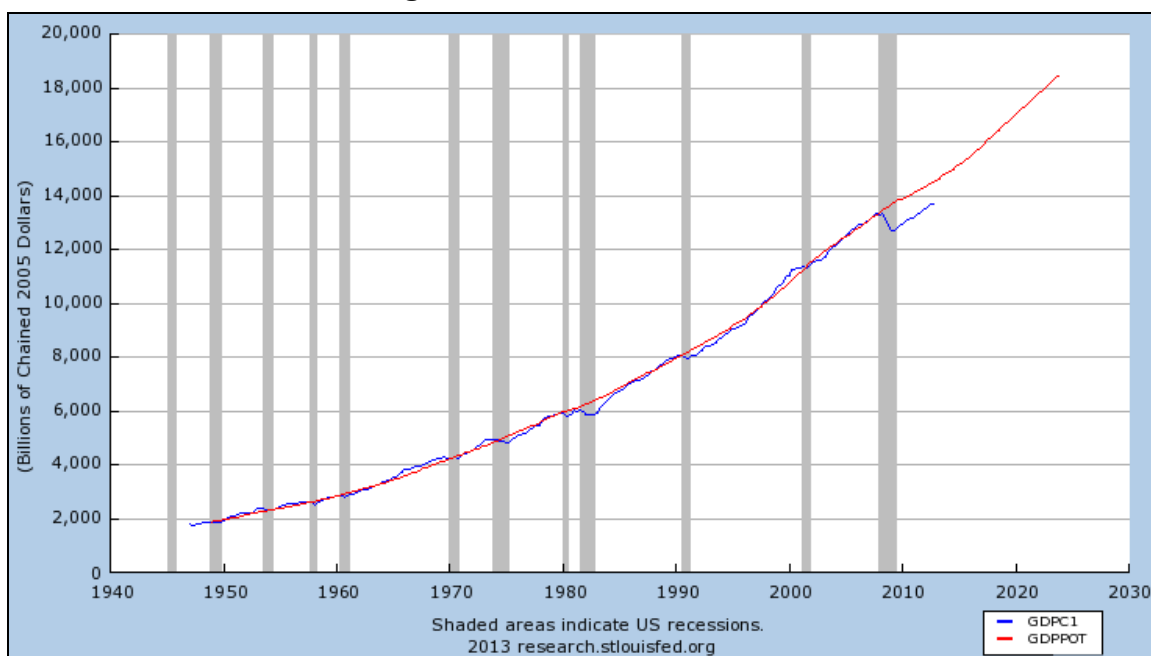
<sup>2</sup> Real GDP is the total output, adjusted for inflation, of goods and services produced in the United States in a given year.

<sup>3</sup> Data on real GDP are available from the Department of Commerce, Bureau of Economic Analysis, at <http://www.bea.gov/national/index.htm#gdp>. Size of output gap is based on CRS calculations using Congressional Budget Office estimate of potential GDP, data for which is available at FRED Economic Data, St. Louis Fed, at <http://research.stlouisfed.org/fred2/series/GDPPOT>.

<sup>4</sup> Data on unemployment and employment are available from the Department of Labor, Bureau of Labor Statistics, at <http://www.bls.gov/>.

<sup>5</sup> Data on wealth and financial flows available at the Board of Governors of the Federal Reserve System, at <http://www.federalreserve.gov/releases/z1/Current/z1r-5.pdf>.

**Figure I. Post-War Recessions**



**Source: U.S. Department of Commerce: Bureau of Economic Analysis.**

The negative shocks the economy received in 2008 and 2009 were, arguably, more severe than what occurred in 1929. However, unlike in 1929, the severe negative impulses did not turn a recession into a depression, arguably because timely and sizable policy responses by the government helped to support aggregate spending and stabilize the financial system.<sup>6</sup> That stimulative economic policies would have this beneficial effect on a collapsing economy is consistent with standard macroeconomic theory, but without the counterfactual of the economy's path in the absence of these policies, it is difficult to establish with precision how effective these policies were.

## Policy Responses to the Financial Crisis and Recession

Both monetary and fiscal policies as well as some extraordinary measures were applied to counter the economic decline. This policy response is thought to have forestalled a more severe economic contraction, helping to turn the economy into the incipient economic recovery by mid-2009. These policies likely continued to stimulate economic activity into 2012.

### Monetary Policy Actions

To bolster the liquidity of the financial system and stimulate the economy, during 2008 and 2009 the Federal Reserve (Fed) aggressively applied conventional monetary stimulus by lowering the

<sup>6</sup> See IMF, *World Economic Outlook*, October 2009, Chapter 2, at <http://www.imf.org/external/pubs/ft/weo/2009/02/pdf/c2.pdf>; Ben J. Bernanke, *Semiannual Monetary Policy Report to Congress*, before the senate Banking Committee, July 21, 2010, <http://www.federalreserve.gov/newsevents/testimony/bernanke20100721a.htm>; and Alan S. Blinder, *After the Music Stopped: The Financial Crisis, The Response, and The Work Ahead*, Penguin Press, January 24, 2013, Chapter 8.



federal funds rate to near zero and boldly expanding its “lender of last resort” role, creating new lending programs to better channel needed liquidity to the financial system and induce greater confidence among lenders. Following the worsening of the financial crisis in September 2008, the Fed grew its balance sheet by lending to the financial system. As a result, between September and November 2008, the Fed’s balance sheet more than doubled, increasing from under \$1 trillion to more than \$2 trillion.

By the beginning of 2009, demand for loans from the Fed was falling as financial conditions normalized. Had the Fed done nothing to offset the fall in lending, the balance sheet would have shrunk by a commensurate amount, and some of the stimulus that it had added to the economy would have been withdrawn. In the spring of 2009, the Fed judged that the economy, which remained in a recession, still needed additional stimulus.

On March 18, 2009, the Fed announced a commitment to purchase \$300 billion of Treasury securities, \$200 billion of Agency debt (later revised to \$175 billion), and \$1.25 trillion of Agency mortgage-backed securities.<sup>7</sup> The Fed’s planned purchases of Treasury securities were completed by the fall of 2009 and planned Agency purchases were completed by the spring of 2010. At this point, the Fed’s balance sheet stood at just above \$2 trillion.<sup>8</sup> (Further monetary policy actions taken to accelerate the pace of economic recovery are discussed later in the report.)

## **Fiscal Policy Actions**

Congress and the Bush Administration enacted the Economic Stimulus Act of 2008 (P.L. 110-185). This act was a \$120 billion package that provided tax rebates to households and accelerated depreciation rules for business. Congress and the Obama Administration passed the American Recovery and Reinvestment Act of 2009 (ARRA; P.L. 111-5). This was a \$787 billion package with \$286 billion of tax cuts and \$501 billion of spending increases that relative to what would have happened without ARRA is estimated to have raised real GDP between 1.5% and 4.2% in 2010 but increased real GDP by progressively smaller amounts in the years that followed.<sup>9</sup>

In terms of extraordinary measures, Congress and the Bush Administration passed the Emergency Economic Stabilization Act of 2008 (P.L. 110-343), creating the Troubled Asset Relief Program (TARP). TARP authorized the Treasury to use up to \$700 billion to directly bolster the capital position of banks or to remove troubled assets from bank balance sheets.<sup>10</sup>

Congress was an active participant in the emergence of these policy responses and has an ongoing interest in macroeconomic conditions. Current macroeconomic concerns include whether the economic recovery will be sustained, reducing unemployment, speeding a return to normal output and employment growth, and addressing government’s long-term debt situation.

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<sup>7</sup> Agency debt and securities are issued by “government sponsored enterprises” (GSEs), such as Fannie Mae and Freddie Mac.

<sup>8</sup> For further discussion of Fed actions in this period, see CRS Report RL34427, *Financial Turmoil: Federal Reserve Policy Responses*, by Marc Labonte.

<sup>9</sup> See CRS Report R40104, *Economic Stimulus: Issues and Policies*, by Jane G. Gravelle, Thomas L. Hungerford, and Marc Labonte.

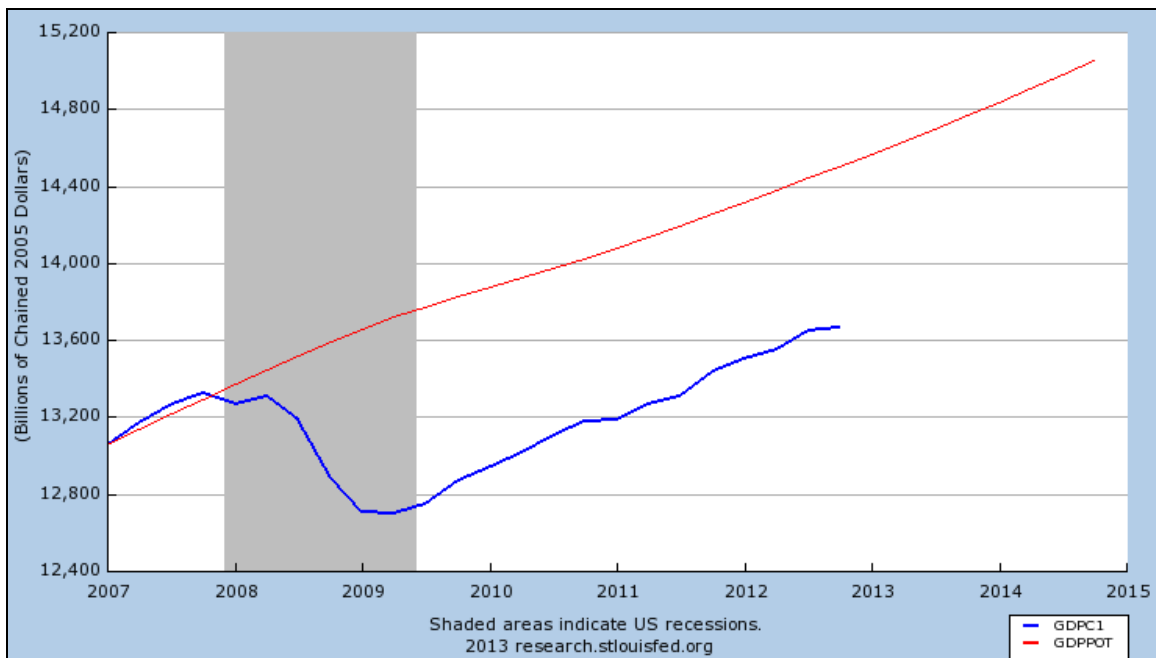
<sup>10</sup> For more information on TARP, see CRS Report R41427, *Troubled Asset Relief Program (TARP): Implementation and Status*, by Baird Webel.

## A Sustained but Slow Economic Recovery

The U.S. economy, as measured by real GDP growth (i.e., GDP adjusted for inflation) began to recover in mid-2009. However, the pace of growth over the next 3½ years was slow and uneven. From the second half of 2009 and through 2010 real GDP increased at an annualized rate of 2.5%. Compared with the early stage of previous post-war economic recoveries, this is a relatively slow pace and much of the economy’s upward momentum at this time was sustained by the transitory factors of inventory increases and fiscal stimulus.

Therefore, sustainable recovery would depend on more enduring sources of demand such spending by consumers and businesses reviving to give continued momentum to the recovery. To a degree, this occurred, but the momentum provided has been lackluster, with the pace of growth decelerating to a 1.8% annualized rate, and the output gap remains sizable (see **Figure 2**), prompting recurring concerns about the recovery’s sustainability.<sup>11</sup>

**Figure 2. Output Gap**



**Source:** U.S. Department of Commerce: Bureau of Economic Analysis.

While business investment spending has been relatively strong during the recovery, consumer spending, typically accounting for two-thirds of final demand, has been relatively weak. Moreover, in 2011-2012, the sharply fading effects of fiscal stimulus and weaker growth in Europe have likely dampened economic growth.<sup>12</sup> Nonetheless, economic activity in the private economy shows signs of slow but steady improvement.

<sup>11</sup> The output gap is a measure of the difference between actual output and the output the economy could produce if at full employment.

<sup>12</sup> U.S. Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, at [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm).

- Credit conditions have improved, making getting loans easier for consumers and businesses, loosening a constraint on many types of credit supported expenditures. The Fed's January 2013 survey of senior loan officers indicated that, on net, bank lending standards and terms continued to ease during the previous three months and that the demand for commercial and industrial loans had increased.<sup>13</sup>
- The stock market has rebounded and interest rate spreads on corporate bonds have narrowed. The Dow Jones stock index, which had plunged to near 6500 in March 2009, by early 2013 had regained all of its lost capitalization. Spreads on investment-grade corporate bonds, a measure of the lenders' perception of risk and creditworthiness of borrowers, have fallen from a high of 600 basis points in December 2008 to near 25 basis points in early 2013.<sup>14</sup>
- Manufacturing activity has shown steady improvement during the recovery. Through February 2013, output had increased 2.0% over a year earlier. Capacity utilization has risen from a low of 64% in mid-2009 to 78.3% in February 2013. (A capacity utilization rate of 80%-85% would be typical for a fully recovered economy.)<sup>15</sup>
- From mid-2009 through February 2013, non-farm payroll employment has increased by about 4 million jobs. Monthly gains have been consistently positive since late 2010, but as evidenced by a weak gain of only 88,000 jobs in March 2013, often not at a scale characteristic of a strong recovery. However, for the 12 months ending in March 2013, monthly employment gains have increased; averaging about 160,000 jobs (see **Figure 3**).<sup>16</sup>
- The housing sector has recently shown evidence of improving health. Private new housing starts pushed above 900,000 in December 2012, most recently increasing at an annual rate of 917,000 units in February 2013, up from less than 400,000 units during the recession (see **Figure 4**). Also, house prices have begun to increase, on average, up about 8% over 12 months ending January 2013.<sup>17</sup>

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<sup>13</sup> Board of Governors of the Federal Reserve System, *Senior Loan Officers Survey on Bank Lending Practices*, January 2013, at <http://www.federalreserve.gov/boarddocs/SnLoanSurvey/>.

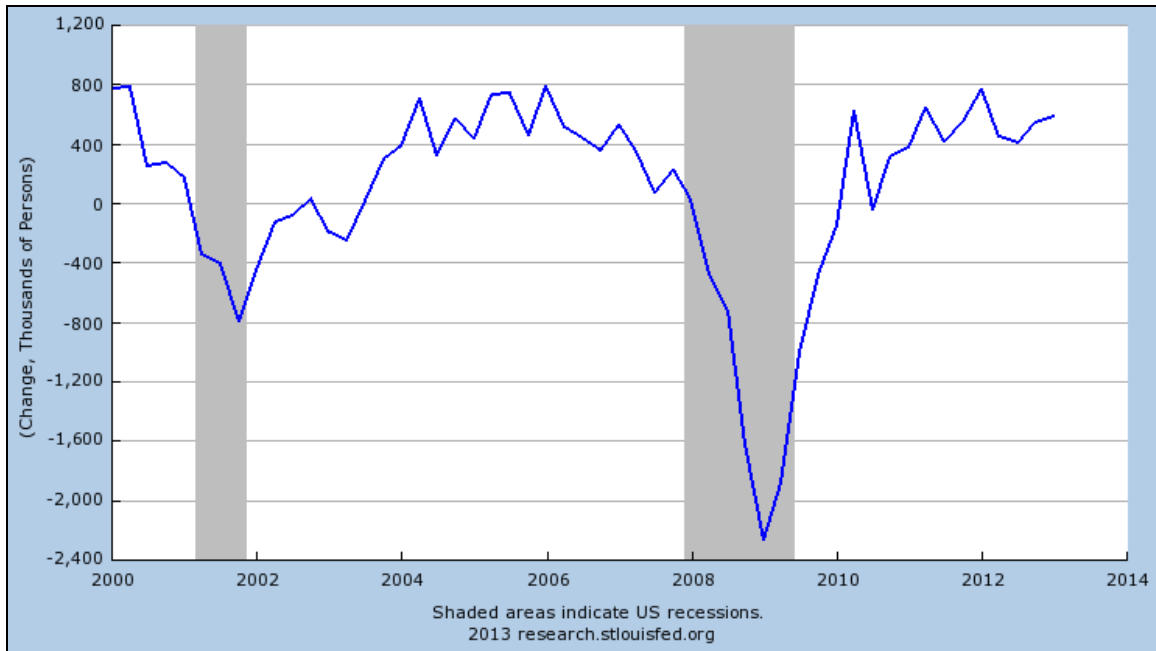
<sup>14</sup> Spread of 600 basis points is 6%. Data on spreads found at <http://www.bloomberg.com/apps/quote?ticker=.TEDSP%3AIND>.

<sup>15</sup> Board of Governors of the Federal Reserve System, *Statistical Release G.17*, March 2013, at <http://www.federalreserve.gov/releases/g17/>.

<sup>16</sup> Bureau of Labor Statistics, *Labor Force Statistics from the Current Population Survey*, March 2013, at <http://www.bls.gov/cps/>.

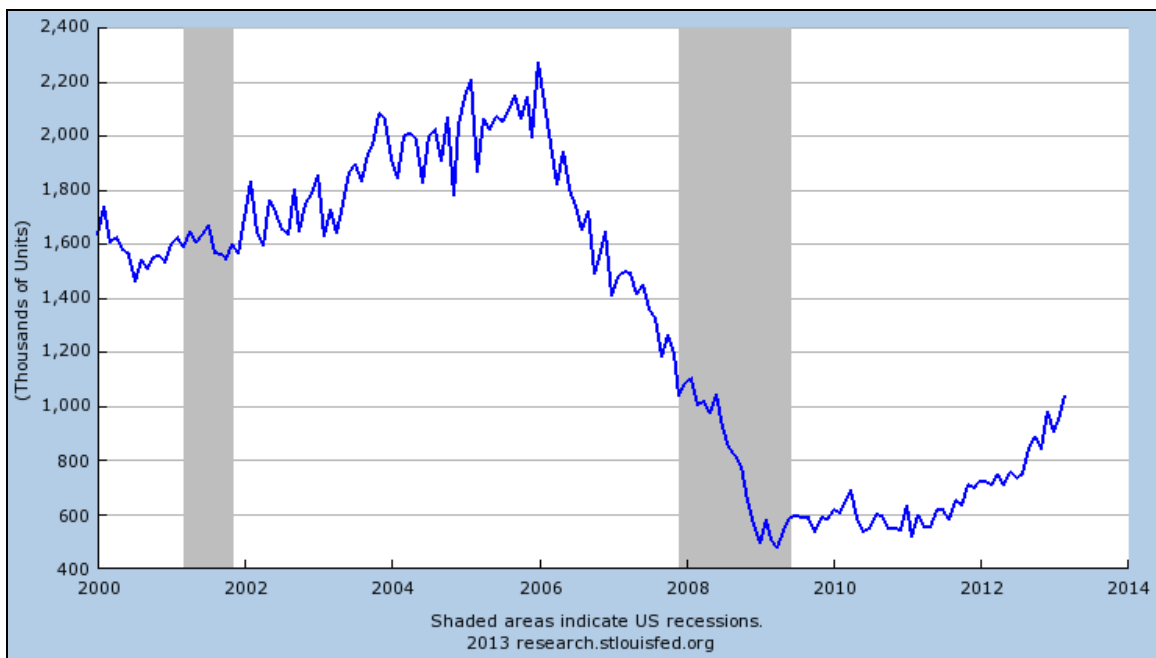
<sup>17</sup> U.S. Census Bureau, *New Residential Construction In February 2013*, joint release, March 19, 2013, at <http://www.census.gov/construction/nrc/pdf/newresconst.pdf> and *S&P Case-Shiller 20-City Home Price Index*, available at <http://www.standardandpoors.com/indices/sp-case-shiller-home-price-indices/en/us/?indexId=spusa-cashpidff-p-us>.

**Figure 3. Monthly Employment Net Gain or Loss**



**Source:** U.S. Department of Labor: Bureau of Labor Statistics.

**Figure 4. Housing Starts**



**Source:** U.S. Department of Commerce: Census Bureau.

On the other hand, growth is well below the historical norm for U.S. economic recoveries as persistent sources of economic weakness continue to dampen economic activity.

- Pointing to the slow pace of real GDP growth over 3½ years of recovery, the output gap had narrowed to only 5.8% of real GDP (see **Figure 2**).<sup>18</sup>
- Consumer spending, the usual engine of a strong economic recovery, remains tepid, generally slowed by households' ongoing need to rebuild substantial net worth lost during the recession, continued high unemployment and underemployment, and a surge in energy prices in the first half of 2012.
- Employment conditions, despite improvement, remain weak. The unemployment rate, which had peaked at 10.0% in October 2009, has edged down to 7.6% in March 2013, but is still high for this stage of the economic recovery (see **Figure 5**). A considerable share of the improvement in the unemployment rate is not the result of workers finding jobs, but by discouraged workers leaving the ranks of the officially unemployed by leaving the labor force. The employment to population ratio, which is not affected by changes in labor force participation, has remained near its recession low through three years of economic recovery (see **Figure 6**).<sup>19</sup> This suggests a labor market that, at best, is only "treading water."
- The housing market, although showing signs of revival, is likely to continue to fall short of its typical contribution to economic recoveries. Although the value of household's financial assets have bounced back since 2009, the value of their real estate assets have not, continuing to dampen consumer spending.<sup>20</sup>
- Growth in the UK and the Euro area has been weak and fiscal austerity measures to stem the growth of public debt have likely pushed the region back into recession, slowing growth further. Slower growth in this region, a major U.S. export market, has likely transmitted a contractionary impulse to the United States, slowing the pace of the U.S. recovery in 2012 and will likely continue to do so into 2013.<sup>21</sup>
- Fiscal policy has tightened significantly since 2010, with federal government expenditures contracting 2.8% in 2011 and 2.2% in 2012, and exerting a dampening effect on economic growth.<sup>22</sup> The current budget debate points to more fiscal tightening in 2013.

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<sup>18</sup> CRS calculation from Bureau of Economic analysis data for real GDP and CBO estimate of potential GDP both available from *Federal Reserve Economic Data (FRED)*, St. Louis Federal Reserve Bank, at <http://research.stlouisfed.org/fred2/>.

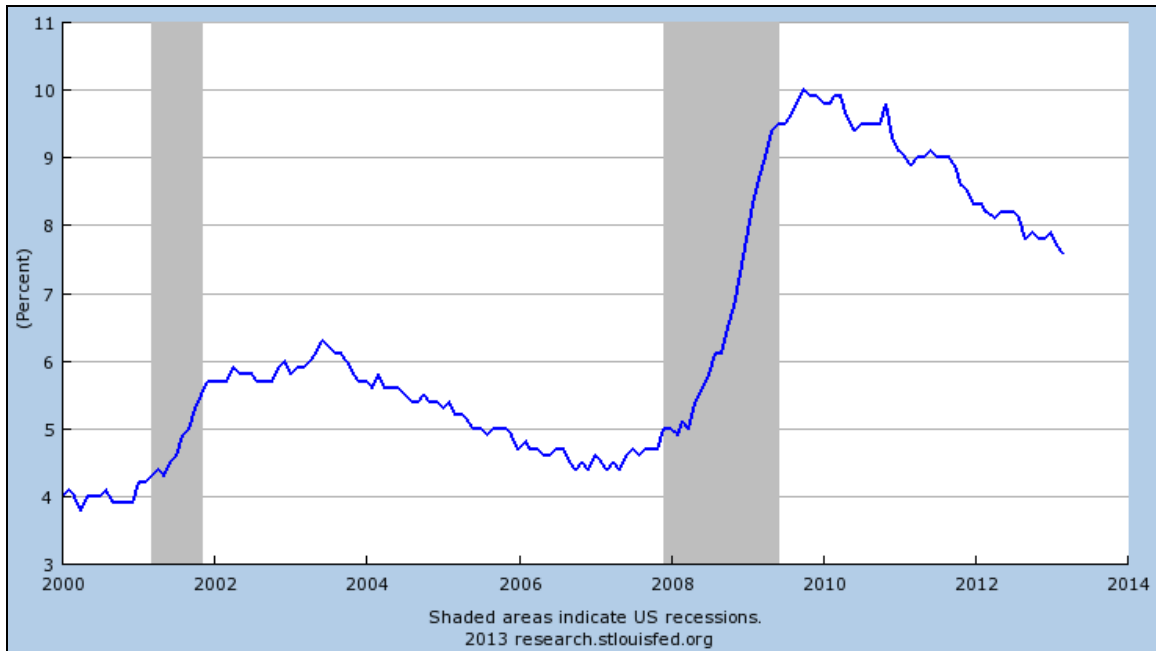
<sup>19</sup> Bureau of Labor Statistics, *Labor Force Statistics from the Current Population Survey*, March 2013, <http://www.bls.gov/cps/>.

<sup>20</sup> See Atif Mian and Amir Sufi, Consumers and the Economy, Part II: Household Debt and the Weak Recovery, *Federal Reserve Bank of San Francisco Economic Letter*, January 18, 2011.

<sup>21</sup> International Monetary Fund (IMF), *World Economic Outlook*, January 2013, at <http://www.imf.org/external/pubs/ft/weo/2013/update/01/index.htm>.

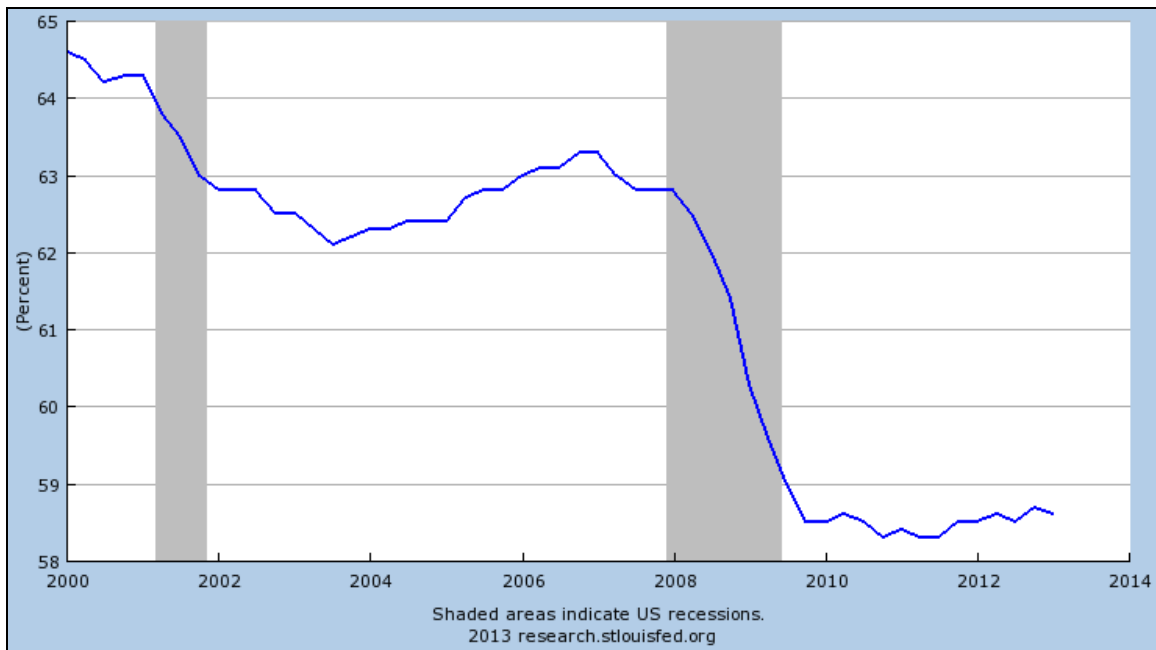
<sup>22</sup> U.S. Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, at [http://www.bea.gov/iTable/index\\_nipa.cfm](http://www.bea.gov/iTable/index_nipa.cfm).

**Figure 5. Unemployment Rate**



Source: U.S. Department of Labor: Bureau of Labor Statistics.

**Figure 6. Employment Population Ratio**



Source: U.S. Department of Labor: Bureau of Labor Statistics.

## The Shape of Economic Recovery

In the typical post-war business cycle, lower than normal growth of aggregate demand during the recession is quickly followed by a recovery period with above normal growth of spending, perhaps spurred by some degree of monetary and fiscal stimulus. The degree of acceleration of growth in the first two to three years of recovery has varied across post-war business cycles, but has been at an annual pace in a range of 4% to 8%.<sup>23</sup> This above normal growth brings the economy back more quickly to the pre-recession growth path, and speeds up the reentry of the unemployed to the workforce.

Once the level of aggregate demand approaches the level of potential GDP (or full employment), the economy returns to its pre-recession growth path, where the growth of aggregate spending is slower because it is constrained by the growth of aggregate supply, which in recent years is estimated to have been at an annual pace of near 3.0%. (A subsequent section of the report looks more closely at aggregate supply.)<sup>24</sup>

There is concern, however, that this time the U.S. economy, without supporting stimulus from policy actions, will either not return to its pre-recession growth path, perhaps remain permanently below it, or return to the pre-crisis path but at a slower than normal pace, or worse, dip into a second recession. Below normal growth would almost certainly translate into below normal recovery of employment, whereas a second round of recession could increase the already high unemployment rate. The next sections of this report discuss problems on the supply side and the demand side of the economy that could lead to a weaker than normal recovery.

### Demand Side Problems?

Much of the vigor that occurred on the demand side of the economy in 2009 and 2010 appears to have come from fiscal stimulus and business inventory restocking. Fiscal stimulus and inventory rebuilding are, however, temporary sources of support of aggregate spending. Sooner or later fiscal stimulus falls away. The Congressional Budget Office (CBO) projects that fiscal stimulus peaked in 2010, provided a smaller boost to demand in 2011, and continued to diminish to a negligible force by the end of 2012.<sup>25</sup> Inventory building is a self-limiting process that will not go on indefinitely; stock-building was weaker during most of 2011, and despite a stronger turn in late 2011 and early 2012, inventory growth will unlikely continue to have a major positive effect on aggregate demand.

A strong recovery of private sector demand, including consumer spending, investment spending, and exports, is required to sustain an economic recovery that brings the economy quickly back to its pre-recession growth path and unemployment rate. However, there are major uncertainties about the potential medium-term strength of each of these components that could dampen aggregate spending and constrain the economy's ability to generate a recovery period with above normal growth and quickly falling unemployment.

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<sup>23</sup> Department of Commerce, Bureau of Economic Analysis, at <http://www.bea.gov/national/index.htm#gdp>.

<sup>24</sup> The long-term growth of aggregate supply is determined by the growth in the supplies of capital and labor and on the growth in production technology used to turn capital and labor into goods and services.

<sup>25</sup> The Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2020*, January 2012, at <http://www.cbo.gov/publication/42905>.

## Consumption Spending

Personal consumption expenditures historically constitute the largest and most stable component of aggregate spending in the U.S. economy. During the first three post-war decades, personal consumption spending averaged a 62% share of GDP. However, that share rose significantly over the next three decades, averaging about 65% in the 1980s, 67% during the 1990s, and about 70% between 2001 and 2007. The high level of household spending reached during the 2001-2007 expansion is unlikely to reemerge during the current recovery because it was supported by an unsustainable increase in household debt, a decrease in personal savings, ease of access to credit, and lower energy prices.

## Household Debt

In the mid-1980s, after a long period of relative stability at a scale of around 45% to 50% of GDP, the debt level of households began to rise steadily, reaching over 100% of GDP by 2008. Such a substantial rise in the level of household debt was sustainable so long as rising home prices and a rising stock market continued to also increase the value of household net worth, and interest rates remained low, countering the rise in the burden of debt service as a share of income.

The collapse of the housing and stock markets in 2008 and 2009 substantially decreased household net worth, which had, by mid-2009, fallen about \$16 trillion below its 2007 peak of nearly \$67 trillion.<sup>26</sup> This near 25% fall in net worth pushed the household debt burden up substantially. Unlike in earlier post-war recoveries, the need of households to repair their damaged balance sheets induced a large diversion of current income from consumption spending to debt reduction.<sup>27</sup> Since 2008, households have reduced their outstanding debt about \$1 trillion.<sup>28</sup> If debt reduction continues in 2013, it is likely to be a continuing drag on the pace of economic recovery.

A substantial rebuilding of household net worth has occurred during the recovery. Through the fourth quarter of 2012, household net worth has increased by about \$15 trillion from its 2009 trough, reaching about \$66 trillion and recovering nearly 95% of what was lost during the recession. This improvement has occurred largely on the asset side of the household balance sheet and primarily for financial assets due to the rise of the stock market from its low point in early 2009.<sup>29</sup> Such gains tend to be concentrated in higher-income households and not a major source of wealth for the average household. Traditionally, rising home equity, largely dependent on the path of house prices, has been the major contributor to household wealth. The rapid rise of home prices during the last economic expansion caused an equally rapid rise in home equity. Consumers borrowed against this equity to fund current spending. With the sharp fall of home prices, home equity was reduced substantially, erasing that source of funding. Home prices are only now beginning to rise and the housing market is expected to remain relatively weak for

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<sup>26</sup> Board of Governors of the Federal Reserve System, "Flow of Funds Accounts," Table B.100, March 7, 2013, at <http://www.federalreserve.gov/releases/z1/Current/>.

<sup>27</sup> See Evan Tanner and Yassar Abdih, "Rebuilding U.S. Wealth," *Finance & Development*, IMF, December 2009 at <http://www.imf.org/external/pubs/ft/fandd/2009/12/tanner.htm>.

<sup>28</sup> Board of Governors of the Federal Reserve System, "Flow of Funds Accounts," Table B.100, March 7, 2013, at <http://www.federalreserve.gov/releases/z1/Current/z1r-5.pdf>.

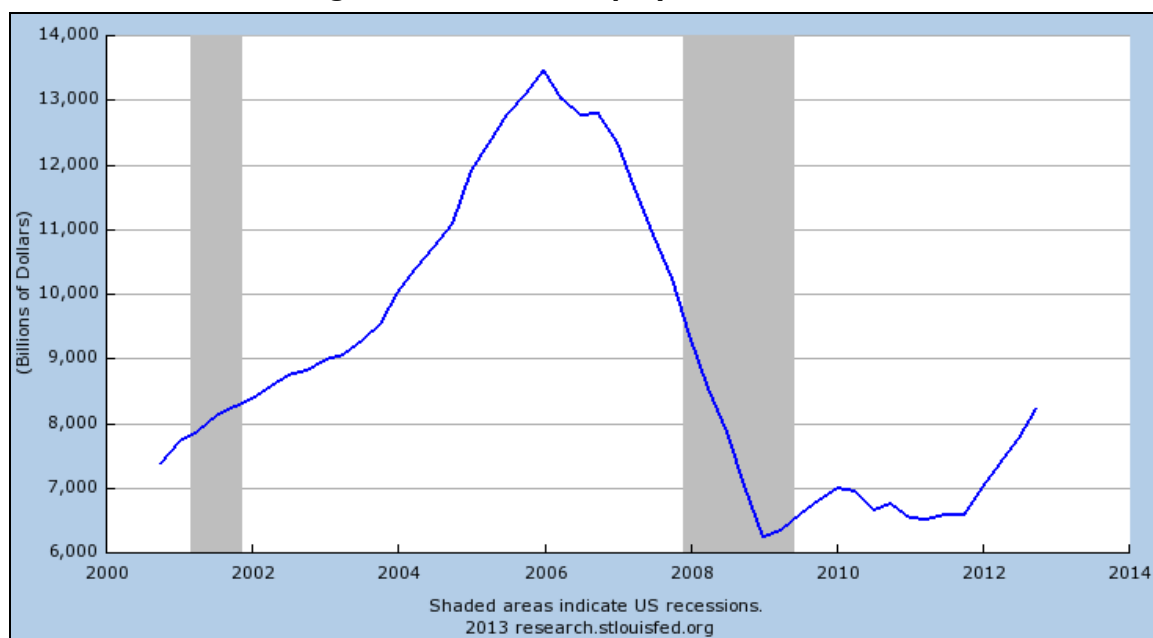
<sup>29</sup> Board of Governors of the Federal Reserve System, "Flow of Funds Accounts," Table B.100, March 7, 2013, at <http://www.federalreserve.gov/releases/z1/Current/z1r-5.pdf>.



several more years, slowing the pace of households rebuilding this component of their net worth, and continuing to dampen the pace consumer spending (see **Figure 7**).<sup>30</sup>

In addition to diverting more personal income to saving, a continued weak labor market is likely to dampen income growth and, in turn, slow the recovery of consumer spending.

**Figure 7. Household Equity in Real Estate**



**Source:** Board of Governors of the Federal Reserve System.

### *Credit Conditions*

Easy credit availability in the pre-crisis economy enabled households to readily borrow against their rising home equity to fund added spending. Financial innovations allowed lenders to keep interest rates low and offer liberal terms and conditions to entice households to borrow. Many believe that credit conditions will remain tighter during the current expansion. Interest rates are still historically low, but banks greatly tightened the terms and conditions of consumer loans during the crisis and recession and have only slowly relaxed them as the recovery has proceeded. While not likely as important a driver of higher savings as high household debt, tighter credit conditions will make it less likely that households will exploit any increase in their home equity to fund current spending, further constraining consumer spending relative to what occurred during the 2001-2007 economic expansion.

<sup>30</sup> The standard model of consumer spending used in economic analysis assumes that consumers seek to avoid large swings in their living standards over the course of their lifetimes. Thus as incomes rise and fall both in the short and long term, individuals are expected to vary their saving rate in order to minimize the effect on their consumption. If consumers seek to maintain a fairly stable level of consumption over their entire lives, then the level of consumption at any given point in their lives will depend on their current wealth and some expectation about their income over the rest of their lives. See Annamaria Lusardi, Jonathan Skinner, and Steven Venti, "Saving Puzzles and Saving Policies in the United States," National Bureau of Economic Research, Working Paper 8237, April 2001.

## ***Personal Saving***

The U.S. personal saving rate averaged about 10% of GDP consistently through the 1970s, 1980s, and 1990s. Subsequently, the personal saving rate declined sharply, reaching a low of 1.0% by 2005.<sup>31</sup> It is likely that the reduction of household saving was in large measure a consequence of the sizable increase in household net worth associated with increased house prices and stock prices occurring at that time. As wealth rose rapidly, it was less urgent to divert current income to saving.

The sharp reduction of household net worth during the recent recession dramatically changed the financial circumstances of households, reducing the use of debt-financed spending. The need to repair household balance sheets induced households to pay down debt. The poor prospect for the appreciation of house prices has eliminated the ability to use rising equity as a substitute for saving.

In addition, the increase in economic uncertainty in the aftermath of the financial crisis and recession will likely mean that over the medium term, households could continue to be more inclined to save. As the economic decline intensified, the personal saving rate increased, climbing from 3.5% of GDP in 2007 to 6.1% of GDP at the bottom of the recession in 2009.<sup>32</sup> However, with economic recovery the personal saving rate has fallen, averaging about 3.8% in 2012. The passing of the dire financial and economic circumstances that prevailed in 2008 and 2009 has likely led to some of the recent moderation in households' saving behavior. A lower rate of saving enables higher rates of consumption, but it is uncertain that continued fall of the saving rate will be a substantial source of support for current spending by households.

## ***Energy Prices***

A 30% increase in the price of oil from October 2011 through April 2012 adversely affected household budgets and likely contributed to the slow rate of increase in consumer spending over the same period.<sup>33</sup> In the short run, the U.S. demand for energy is relatively inelastic, with little curtailment of energy use in the face of the rising price. As households and businesses spend more for energy, which is largely imported, they tend to spend less on domestic output, slowing economic growth.<sup>34</sup> Since April 2012, the price of oil decreased and appears to have stabilized at about 10% below this peak. If it remains near the current level, the dampening effect on economic growth is likely to fade. In addition, increasing supplies of shale gas have resulted in lower natural gas prices, which may benefit household budgets.

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<sup>31</sup> See CRS Report R40647, *The Fall and Rise of Household Saving*, by Brian W. Cashell.

<sup>32</sup> U.S. Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, Table 5.1, <http://www.bea.gov/national/nipaweb/SelectTable.asp?Selected=N>.

<sup>33</sup> U.S. Energy Information Administration, *Petroleum; Weekly Spot Price*, July 2012, at <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RCLC1&f=D>.

<sup>34</sup> Research indicates that a \$10 increase in the per barrel price of oil sustained for two years is likely to reduce real GDP growth relative to base-line by 0.2 percentage points in the first year and 0.5 percentage points in the second year. See U.S. Energy Information Administration, *Economic Effects of High Oil Prices*, 2006, [http://www.eia.gov/oiaf/aeo/otheranalysis/aeo\\_2006analysispapers/efhop.html](http://www.eia.gov/oiaf/aeo/otheranalysis/aeo_2006analysispapers/efhop.html).

## ***Slow Recovery of Consumer Spending?***

If consumer spending continues its slow paced recovery, then for the U.S. economy to return to its normal pre-crisis growth path, an improved pace of GDP growth will have to come from other components of aggregate demand: investment spending, net exports, or government spending.

## **Investment Spending**

Investment spending is the third-largest component of aggregate spending, historically averaging 17% to 18% of GDP in years of near normal output growth. (Government spending is second largest at about 20%.) Historically, the largest portion of total investment spending is business fixed investment, its share averaging 11% to 12% of GDP in periods of normal growth. The second component of total investment is residential investment (i.e., new housing), averaging 4% to 5% of GDP.

Investment spending is very sensitive to economic conditions and more volatile than consumer spending. This sensitivity is at least in part because investment projects are often postponable to a time when economic conditions are more favorable. Its volatility makes investment spending an important determinant of the amplitude, down and up, of the typical business cycle.<sup>35</sup>

As aggregate spending fell and credit availability tightened in 2008, investment spending quickly weakened. As a share of real GDP, investment spending fell from about 16% in 2007 to about 11% at the economy's trough in 2009. The sharp fall in real GDP from the second quarter of 2008 through the first quarter of 2009 was nearly fully accounted for by the sharp fall of investment spending over this same period. Throughout the economic recovery, investment spending has been a leading source of economic growth, elevating its share of real GDP to 12.7% in 2010, 13.5% in 2011, and 14% in 2012.<sup>36</sup>

In particular, the *equipment and software* component of nonresidential investment has been the principal source of business spending strength and an important contributor to the pace of the economic recovery. Equipment and software spending increased 14.6% in 2010, contributing nearly a full percentage point to the growth of real GDP in that year. This category of business investment spending continued to be an important source of economic growth in 2011, increasing at an annual rate of 11.0% and contributing 0.7 percentage points to real GDP growth. However, in 2012, investment spending on equipment and software slowed, advancing at a 6.9% annual rate and contributing 0.5 percentage points to real GDP growth.<sup>37</sup>

Typically, this same sensitivity also works in the opposite direction. Strongly rising investment spending, responding to improving market demand, reduced uncertainty, and expanding credit availability, often gives an above normal contribution to the rebound of aggregate spending during the recovery phase of the business cycle.

Looking forward, however, some significant constraints on both residential and business investment raise uncertainty about whether investment spending will continue to be a strong

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<sup>35</sup> Ibid., Table 1.1.5.

<sup>36</sup> Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, Table 1.1.5, at <http://www.bea.gov/national/index.htm#gdp>.

<sup>37</sup> Ibid., Table 1.1.5, at <http://www.bea.gov/national/index.htm#gdp>.

contributor to economic recovery, and therefore, whether it could be a component of aggregate spending capable of compensating for a weaker than normal recovery of spending by consumers.

The principal constraint on residential investment has been the large inventory of vacant housing, left over from the 2002-2006 housing boom. It is estimated that the number of vacancies could be more than 2 million units above what would normally be expected at this stage of the business cycle.<sup>38</sup> As discussed above, the housing market has recently shown signs of stabilizing, and residential investment spending has risen strongly in 2012, albeit from a very low base. On balance new house construction is likely to remain relatively weak for the next two years while the inventory overhang continues to be worked down.

The prospect for nonresidential investment is likely to be better than for residential investment, but it is not clear that with economic recovery nonresidential investment will exceed its pre-crisis level. On the supply side, capacity utilization rates have climbed back from record lows of below 70% reached during the recession, but, at about 78% currently, are still only near the lows reached in the 1990 and the 2001 recessions and well short of the 80% to 85% that would typically correspond to operating near or at capacity.<sup>39</sup> On the demand side, business investment in new plants and equipment is most often a response to the expectation of increased demand for the products they produce. The main driver of that demand is consumer spending and, as discussed above, that spending has been tepid, with the not unlikely prospect that it may continue to be weak over the near term if households have made a lasting commitment to increased savings.

Stronger foreign demand could also stimulate investment spending and in theory compensate for the weaker pull of domestic demand, but as discussed more fully below, foreign demand may also be weak. Also, problems in the financial sector have caused sharply reduced activity in commercial real estate, contributing to persistent weakness in business investment spending on structures.<sup>40</sup>

In general, it seems questionable whether total investment spending would provide the offset to a below normal contribution of consumption spending to economic growth over the near term.

## **Net Exports**

The U.S. trade deficit (real net exports) shrank from about 6% of real GDP in 2006 to below 3% in 2009. Since the beginning of the recession in late 2007 through the end of the contraction in mid-2009, net exports have made a significant positive contribution to real GDP in an otherwise declining economy. Even as economic weakness abroad caused U.S. exports to fall, imports fell by more, providing a net positive push to current economic activity.<sup>41</sup>

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<sup>38</sup> U.S. Census Bureau, *Housing Vacancies and Home Ownership*, at <http://www.census.gov/hhes/www/housing/hvs/historic/>.

<sup>39</sup> Data for capacity utilization are available at Board of Governors of the Federal Reserve System, *Industrial Production and Capacity Utilization*, Table G17, <http://www.federalreserve.gov/releases/g17/>.

<sup>40</sup> Bureau of Economic Analysis, *National Income and Product Accounts*, Table 1.1.5, at <http://www.bea.gov/national/index.htm#gdp>.

<sup>41</sup> Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, Table 1.1.6, at <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1>.

The 3 percentage point swing in real net exports is, however, largely the consequence of the severe economic weakness in the United States over this period. Since mid-2009, the deficit in net exports has decreased very little, falling slightly to 2.9% of real GDP in 2012. This relatively flat performance means that over the course of the current recovery net exports have not had either a substantial positive or negative impact on economic growth. This neutral pattern makes it uncertain that net exports can be expected to boost aggregate spending sufficiently to offset weak consumption over the medium term and help assure a sustained recovery at a pace that steadily reduces unemployment.

### ***Boosting U.S. Net Exports Through a Rebalancing of Global Spending***

Increasing U.S. net exports to any degree requires that the trade deficit continues to decrease. For that to happen, trade surpluses of the rest of the world with the United States must also decrease. To achieve this adjustment of trade flows, a sizable rebalancing of domestic and external demand on the part of the deficit and surplus economies would need to occur.<sup>42</sup>

Because a trade deficit is a consequence of an economy spending more than it produces, rebalancing in this circumstance requires a decrease of domestic spending and increase of domestic saving. In contrast, for overseas trade partners, because a trade surplus is a consequence of an economy spending less than it produces, rebalancing in this circumstance requires an increase of trade partner domestic spending and decrease in trade partner domestic saving.

This rebalancing of spending will put pressure on the dollar to depreciate and foreign currencies to appreciate. A fall in the value of the dollar relative to the currencies of the surplus countries causes the price of foreign goods to rise for U.S. buyers and the price of U.S. goods to fall for foreign buyers. This change in the relative price of foreign versus domestic goods will cause the net exports of the United States to rise, giving the boost in spending needed to potentially offset reduced consumption spending. The change in relative prices would also cause the net exports of surplus countries to fall as more of current output is absorbed by increased domestic spending.

In the United States, as discussed above, some measure of rebalancing seems to be occurring, as evidenced by the increase in the personal saving rate above its pre-recession low. Although there are good reasons to expect this increase to be sustained, there is the possibility that households would eventually revert to their pre-crisis low saving patterns. However, even if household saving remains higher, it is likely that any significant increase in the overall U.S. national saving rate would also require an increase in government saving via smaller federal budget deficits.

Large U.S. budget deficits over the near term are providing a needed boost to weak aggregate spending during the early stages of an economic recovery. With the strengthening of private spending as the recovery matures, large government budget deficits would fade away, causing government saving to rise. What puts this fading away of budget deficits in doubt over the long term is the prospect of having to fund the obligations attached to the rising demand of an aging U.S. population for healthcare, Social Security, and other entitlements. Without policy actions to address these long-term demands, it is not clear how the long-term budget deficits will fall.

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<sup>42</sup> On global rebalancing, see for example, Olivier Blanchard, “*Sustaining Global Recovery*,” International Monetary Fund, September 2009, “Rebalancing,” *The Economist*, March 31, 2010, at <http://www.imf.org/external/pubs/ft/fandd/2009/09/index.htm>, and Board of Governors of the Federal Reserve System, Vice-chairman Donald L. Kohn, Speech “Global Imbalances,” May 11, 2010, at <http://www.federalreserve.gov/newsevents/speech/kohn20100511a.htm>.

Effective global rebalancing arguably also involves sizable adjustments by the largest surplus economies—Germany, Japan, and China. However, there are significant potential constraints on how substantially each of these three economies can “save less and spend more,” perhaps limiting any sizable appreciation of their currencies relative to the dollar, and any associated boost in U.S. net exports.

The inability of Germany to move its exchange rate independently from the other Euro area economies reduces its flexibility of adjustment. In addition, the effects of the 2008-2009 recession have left limited room for further fiscal expansion and small ability to lower the household saving rate. In addition, the ongoing sovereign debt crisis in the euro area has dampened growth prospects in Germany, likely weakening the demand for U.S. exports. Although its level of debt is not high, recent German policy actions have stressed fiscal consolidation, tending to increase saving and dampen spending.<sup>43</sup> Japan, which does have a very high level of public debt, has little to no room for fiscal expansion and a poor prospect of boosting household spending. Moreover, both Germany and Japan, faced with substantial near-term economic weakness in the aftermath of the global recession, may take steps to avoid the dampening of their net exports that a sizable appreciation of the exchange rate would cause.

China has the largest bilateral trade surplus with the United States and therefore has the potential to have a large impact on U.S. export sales and through that a significant positive impulse on the pace of the U.S. economic recovery. Also, economic growth has remained relatively strong in China through the recent global financial crisis and recession, and aggregate demand is expected to be strong through the next two to three years. What is uncertain, however, is whether a greater share of this spending will be domestic demand, particularly consumption spending by Chinese households.

The very high rate of saving by Chinese households is thought to be a precautionary measure to compensate for a lack of social insurance. It likely also reflects limited access to consumer credit. The difficulty for the near-term task of sustaining economic recovery is that even if policy actions are taken to remove these constraints on consumer spending, households are likely to only gradually change their pattern of consumption and not provide a sharp near-term boost to domestic spending.

Also, a closer look at the sources of increase in China’s domestic saving over the last decade reveals that the principal contributor to that growth was Chinese companies, not households. Therefore, changing the saving practices of Chinese companies is likely to be an important aspect of any large increase in China’s saving rate. It is argued by some that Chinese companies retain too large a share of their earnings. Better access to credit and changes in the governance rules of Chinese business would likely reduce the business saving rate. But, as with households, even if such policy initiatives are forthcoming, the change in the business saving rate is likely to emerge only gradually.<sup>44</sup>

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<sup>43</sup> OECD, *Restoring Public Finances*, Country Notes: Germany, 2010, at <http://www.oecd.org/gov/budgetingandpublicexpenditures/47840777.pdf>.

<sup>44</sup> Of course, for these reforms to translate into a shift in China’s trade balance, that nation must be willing to allow its’ exchange rate to rise relative to the dollar, causing a decrease in the price of foreign goods relative to domestic goods, and exerting downward pressure on China’s trade surplus. From July 2005 to February 2009, China abandoned its dollar peg, allowing the yuan to appreciate by 28% (on a real trade-weighted basis). However, faced with weakening export sales due to the global financial crisis China for the last 10 months has re-pegged the yuan to the dollar. China’s export-led growth model, relying on a high saving rate (to keep internal demand low) and a low exchange rate pegged (continued...)

Even with a successful rebalancing, it is unlikely that China alone can propel a boost in U.S. net exports sufficient to offset weak domestic demand and pace economic recovery. China's global trade surplus is estimated to be about 10% of GDP. However, China is only about one-third the size of the U.S. economy. Therefore, if China's trade were only with the United States, it would have to reduce its trade surplus by 3% of GDP to effect a 1 percentage point reduction of the U.S. trade deficit. But since, in fact, only about 16% of China's trade is with the United States, it would take a 15 percentage point change in China's trade balance (moving from a surplus equal to 10% of GDP to a deficit equal to 5% of GDP) to reduce the U.S. trade deficit by 1 percentage point. (This assumes that the fall of China's trade surplus is not offset by an increase of other trading partners' surpluses.)

Other emerging Asian economies also run trade surpluses, and adding these to the calculation makes the relative scale of rebalancing needed to achieve a given amount of improvement in the U.S. trade deficit more feasible. However, all of emerging Asia is only about half the size of the U.S. economy. Therefore, if the U.S. share of the whole region's trade is similar to China's, emerging Asia would need to accomplish a sizable 7 percentage point change in its trade balance to generate a 1 percentage point change in the U.S. trade balance. As with China, for a reduction of the trade surpluses of other emerging Asian economies to happen quickly, their currencies will need to appreciate against the dollar.

All in all, there are reasons to doubt whether U.S. net exports can increase over the near term at a pace sufficient to fully compensate for the prospect of slower than normal growth of other components of U.S. domestic spending.

## **Supply Side Problems?**

The supply side of the economy governs its capacity for producing goods and services. That capacity is a function of the economy's supplies of labor and capital and the level of technology used to turn labor and capital into the output of goods and services. In the short run, the potential supplies of these productive factors are relatively fixed and will determine the economy's potential output. In periods of economic slack, rising aggregate demand can increase the economy's output and employment up to the level of potential output, which corresponds with full employment.

In the long run, as the supplies of capital and labor and the level of technology increase, the level of potential output also increases. Over time the steady rise of potential output will define the economy's long-term growth path (called the "trend" growth rate). When aggregate demand is below potential output the economy can grow faster than trend growth, but when the level of aggregate demand reaches the level of potential output, further growth of output will be constrained to the trend growth rate.

Typically the long-run growth path is thought to be relatively stable and not greatly affected by recessions and the associated short-term fluctuations in aggregate demand. Over the post-war

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(...continued)

to the dollar (to keep external demand high), has been very successful and, despite the possible advantages of reforms to boost domestic demand, it is uncertain whether China would move substantially away from this model.

period, the average annual growth rate of potential output for the United States has been 3.4%; however, since the 1970s it has averaged closer to 3.0%.<sup>45</sup>

An analysis by the International Monetary Fund (IMF) examines the question of whether output will return to its pre-crisis trend.<sup>46</sup> It examines the medium-term and long-run paths of output after 88 banking crises over the past four decades in a wide range of countries (including both advanced and developing economies). A key conclusion was that seven years after the crisis, output had declined relative to trend by nearly 10% for the average country. But there was considerable variation of outcomes across crisis episodes.

In other words, such crises not only reduce actual output, but also may reduce potential output (the economy's structural and institutional capacity to produce output). In this circumstance, the economy could return to its trend growth rate, but there is unlikely to be a rebound period of above normal growth to quickly return the economy to its pre-crisis potential output and growth path and, in turn, quickly reduce unemployment. This failure to return to the pre-crisis potential output means that the economy bears the burden of a permanent output loss and the large initial increase in the unemployment rate caused by the crisis could persist even as the economy is growing at its trend rate.

The IMF analysis suggests that the reduction of the post-crisis growth path is likely to be the consequence of decreases of approximately equal size in the employment rate, the capital-labor ratio, and productivity. The adverse effect of the financial crisis on the employment rate is thought to arise from an increase in the "structural unemployment rate," hampering the post-crisis economy's ability to accomplish the needed reallocation of labor from sectors that have contracted permanently to sectors that are expanding.

Because the aftermath of the crisis will likely involve sizable changes in the composition of the economy, it likely also increases the mismatch between the skills of the unemployed and the skills demanded in the post-crisis labor market—job vacancies go unfilled for lack of a worker with sufficient skills for the job.<sup>47</sup> Also, labor force participation rates may fall if the crisis is severe enough to substantially increase the numbers of the long-term unemployed, some of whom may become discouraged from searching for a new job. A crisis-induced fall of house prices and a rising incidence of mortgages with negative equity will also discourage the geographic mobility of workers who are unable to sell their houses.

The adverse impact of a financial crisis on capital accumulation is likely the combined outcome of several factors. Decreased demand for products and heightened uncertainty of potential return dampens the incentive to invest. In addition, the financial crisis could impede the process of

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<sup>45</sup> The Congressional Budget Office, *Key Assumptions in Projecting Potential Output*, August 2012, at <http://www.cbo.gov/publication/43541>.

<sup>46</sup> P. Kannan, A. Scott, and M. Terrones, "From Recession to Recovery: How Soon and How Strong?," in *World Economic Outlook*, International Monetary Fund, April 2009, pp. 103-138. Also see Davide Furceri and Annabelle Mourougane, *The Effect of Financial Crisis on Potential Output: New Empirical Evidence from OECD Countries*, OECD Economics Department, Working Paper no. 699, May 2009.

<sup>47</sup> Employment in construction, financial services, and some types of manufacturing may remain depressed for some time, requiring some who lose their jobs in those sectors to seek employment in other sectors. See also CRS Report R41785, *The Increase in Unemployment Since 2007: Is It Cyclical or Structural?*, by Linda Levine, which suggests that most of current U.S. unemployment is cyclical.



financial intermediation for up to several years, as weakened balance sheets, lower collateral values, and elevated risk premiums slow the flow of credit and elevate the real cost of borrowing.

The dampening effect on productivity may occur as higher risk premiums and a generally more cautious approach to spending by businesses diminish the willingness and ability to finance relatively high-risk projects. Expenditures on research and development are typically pro-cyclical and likely to be sharply reduced in times of crisis.

Productivity tends to recover quickly after recessions and thus allows the economy to resume growth at the pre-crisis trend rate. However, the capital and employment losses tend to endure and keep the economy on a lower growth path.

Has the recent financial crisis caused a reduction in the potential output of the U.S. economy and placed it on a lower trend growth path? It is difficult to make a concurrent determination because potential output is not directly observable, and can only be imputed from the economy's actual post-crisis performance. A clear determination of any such permanent output loss is some years in the future.

Although the IMF study gives reasons why the financial crisis possibly could have adversely affected the economy's supply side, the study also finds that there can be some significant mitigating factors that could be particularly relevant for the U.S. economy. First, a high pre-crisis investment share is a good predictor of a large potential output loss. This is a reflection of the high sensitivity of investment to the negative effects of a financial crisis. For the United States there was no sharp increase in investment spending above trend as measured as a share of GDP for the three years prior to the financial crisis, averaging near a typical 16% of GDP.<sup>48</sup>

Second, the IMF study also found that those economies that aggressively apply stimulative fiscal and monetary policies during the crisis tend to have smaller medium-term output losses. As already discussed, the United States has applied quickly and substantially stimulative policies in response to the financial crisis.

Third, countries with fewer labor market rigidities suffered smaller medium-term output losses. U.S. labor markets, as compared with other advanced economies, are relatively free of labor market rigidities, though as mentioned declining house prices may have reduced mobility of some workers who own their own homes.

The Congressional Budget Office (CBO) currently projects U.S. potential output to increase at an annual average rate of 2.2% for the 2013-2018 period, the same pace as during the 2002-2012 period. CBO's projected rate of growth of potential output is well below the post-war average of 3.3%. Slower growth of potential GDP is largely the consequence of a projection of significantly slower labor force growth than during the post-war period in the coming decades. Most of the slowdown in labor force growth is related to long-term demographic changes forced by an aging population; however, a protracted recession with growing numbers of long-term unemployed and discouraged workers has also contributed to this labor force dynamic.<sup>49</sup>

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<sup>48</sup> Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, Table 1.1.6, at <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1>.

<sup>49</sup> The Congressional Budget Office, *Budget and Economic Outlook: An Update*, August 2012, Table 2-3, at <http://www.cbo.gov/doc.cfm?index=12316>.

## **Policy Responses to Increase the Pace of Economic Recovery**

The momentum of the current economic recovery has been assisted by injections of fiscal and monetary stimulus. But with substantial economic slack remaining and with unemployment still stubbornly high, would further stimulus by monetary and fiscal policy be warranted to sustain economic recovery?

### **Fiscal Policy Actions Taken During the Recovery**

In 2010, many economists argued that another dose of fiscal stimulus was warranted because the effects of the first stimulus package were beginning to fade, and because of evidence that private spending lacked sufficient vigor to sustain a healthy recovery.<sup>50</sup> In this situation, the risk of not applying further fiscal stimulus could be several years of sub-normal growth, or worse, dipping into a second recession.

In response to concerns that the recovery was faltering, Congress passed and President Obama signed in December 2010 the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (P.L. 111-312). The essential features of that measure were an extension for two years of the “Bush” tax cuts, a 2 percentage point cut in the payroll tax during 2011, a 13-month extension of unemployment benefits, and allowance for more rapid expensing of business investment in 2011. The CBO estimated that the direct stimulative effect of these revenue and spending changes as measured by the increase in the federal budget deficit would be approximately \$374 billion in 2011 and \$422 billion in 2012.<sup>51</sup>

A major counterforce to federal stimulus policies during this recovery has been the contraction of spending by state and local governments. Direct expenditures by state and local governments decreased 1.8% in 2010, 3.4% in 2011, and 1.4% in 2012, and subtracting from real GDP growth 0.2 percentage points in 2010, 0.4 percentage points in 2011, and 0.2 percentage points in 2012.<sup>52</sup>

In 2013, federal fiscal policy has reversed course and tightened, exerting a drag on the recovery. This fiscal tightening results from automatic spending cuts, enacted by the Budget Control Act of 2011 (P.L. 112-25), and the expiration at the end of 2012 of the 2 percentage point cut in payroll taxes and of tax rate cuts for incomes above certain thresholds. CBO estimates that this fiscal tightening will cause economic growth in 2013 to be 1.5 percentage points below what it otherwise would be.<sup>53</sup>

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<sup>50</sup> Lawrence H. Summers, “*Reflections on Fiscal Policy and Economic Strategy*,” Speech at the Johns Hopkins School of Advanced International Studies, May 24, 2010, at <http://www.whitehouse.gov/administration/eop/nec/speeches/fiscal-policy-economic-strategy>. Other economists have also concluded that further stimulus is called for. See, for example, Brad DeLong “The Worst -of-Both-Worlds Fiscal Policy,” June 18, 2010, <http://delong.typepad.com/sdj/2010/06/worst-of-both-worlds-fiscal-policy.html>; and “The Case for More Stimulus” Interview with William Gale of the Brookings Institution, June 2010, at <http://www.theatlantic.com/business/archive/2010/06/the-case-for-more-stimulus/57776/>.

<sup>51</sup> The Congressional Budget Office, *CBO Estimate of Changes in Revenue and Direct Spending for the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010*, at <http://www.cbo.gov/ftpdocs/120xx/doc12020/sa4753.pdf>.

<sup>52</sup> Department of Commerce, Bureau of Economic Analysis, *National Income and Product Accounts*, Tables 1.1.1 and 1.1.2, at <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1>.

<sup>53</sup> The Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2013 to 2023*, February 5, 2013, (continued...)

## *Evaluating the Case for Fiscal Stimulus*

Fiscal stimulus is not without its critics. The case against more fiscal stimulus comes in three forms, used separately or in combination: one, no further stimulus is needed; two, fiscal stimulus does not work; and three, stimulus increases the budget deficit, makes the U.S. long-term debt problem worse, and dampens economic growth.<sup>54</sup>

In regard to the need for stimulus, the U.S. economy does have strong recuperative powers and it is possible that private spending and economic growth will soon surge without further fiscal stimulus. Events such as improved consumer confidence, lower energy prices, a more normal flow of credit, or faster growth in the rest of the world could separately or in combination induce stronger spending by households and businesses. However, given the severity of the recent recession and, as outlined above, given the current weakness of private spending and the several economic obstacles that households and businesses will probably continue to face over the near term, there remains a significant risk of sub-normal growth for the next several years.

In regard to the ability of fiscal stimulus to boost output and employment, some economists argue that fiscal stimulus only shifts spending, it does not increase spending. In this view, when people see the government running a budget deficit, they anticipate that the government will need to increase taxes in the future to pay off the debt. This anticipation causes households and businesses to increase their current savings to pay for the higher taxes. The increase in saving tends to offset the stimulative effect of the budget deficit.<sup>55</sup> There is little empirical support for this theory, however. Mainstream economic analysis indicates that in circumstances like the present, in which the economy's output is likely constrained by insufficient demand, fiscal stimulus can raise the level of output and employment.<sup>56</sup>

In regard to the long-term debt problem, it is often pointed out that for an economy operating close to potential output, government borrowing to finance budget deficits will draw down the pool of national saving, leaving less available to support private capital investment. Private investment by business and households in education, housing, research and development, and capital equipment that would have otherwise occurred is in theory "crowded out" through higher interest rates bid up by government borrowing. If budget deficits divert national saving from private investment, other things equal, future productivity and income growth may be slowed.

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available at <http://www.cbo.gov/publication/43907>.

<sup>54</sup> See for example, Derek Thompson, "The Case Against More Stimulus," *The Atlantic*, June 2010, at <http://www.theatlantic.com/business/archive/2010/06/the-case-against-more-stimulus/57774/>, and "Here's Why Fiscal Stimulus Won't Work," *The Atlantic*, February 2010, at <http://www.theatlantic.com/business/archive/2010/02/heres-why-government-stimulus-does-not-work/36466/>.

<sup>55</sup> This theory is called "Ricardian equivalence." It is named after the nineteenth-century economist David Ricardo who first made the argument. For further discussion see N. Gregory Mankiw, *Principles of Economics* (Ft. Worth, Dryden Press, 1998), p. 556, and Robert J. Barro, "Are Government Bonds Net Wealth?" *Journal of Political Economy*, vol. 82, no. 6 (November-December, 1974), pp. 1095-1117.

<sup>56</sup> See CRS Report RL31235, *The Economics of the Federal Budget Deficit*, by Brian W. Cashell; Alan J. Auerbach and William G. Gale, "Activist Fiscal Policy to Stabilize Economic Activity," working paper, September 29, 2009, available at <http://elsa.berkeley.edu/~auerbach/activistfiscal.pdf>; and Robert E. Hall, "By How Much Does GDP Rise If the Government Buys More Output?" *Brookings Papers on Economic Activity*, fall 2009, pp. 183-250. On the probable stimulative impact of alternative fiscal measures see CBO, *Policies for Increasing Economic Growth and Employment*, March 2010, at [http://www.cbo.gov/ftpdocs/112xx/doc11255/02-23-Employment\\_Testimony.pdf](http://www.cbo.gov/ftpdocs/112xx/doc11255/02-23-Employment_Testimony.pdf), and J. Bradford DeLong and Lawrence H. Summers, "Fiscal Policy in a Depressed Economy," The Brookings Institution, March 2012.

However, the U.S. economy is currently operating well short of capacity and market interest rates are generally at or near historical lows, making the risk of such “crowding out” occurring and damaging future economic growth not seem immediate.<sup>57</sup> Another variant of this argument against fiscal stimulus maintains that by increasing public debt, fiscal stimulus undermines household and business confidence and causes them to postpone current spending. In this view, contrary to mainstream economic thinking, shrinking the deficit would, by improving confidence, actually stimulate current spending by consumers and business.<sup>58</sup>

### ***The Short-Term and Long-Term Fiscal Problems***

Because the United States faces two macroeconomic problems, two policy responses are, arguably, appropriate: a short-term policy to sustain a cyclical recovery of economic growth and a long-term policy to trim government debt. Conceptually there is no necessary tradeoff between these two objectives. They can be mutually reinforcing: a credible commitment to dealing with the long-term debt problem allays investor uncertainty and increases the near-term incentive to spend, while effectively dealing with the short-term problem of weak aggregate demand puts the economy on a stronger growth path, which boosts tax revenue and eases the long-term debt problem.

Once the short-term problem of weak demand is solved and the economy has returned to a normal growth path, the appropriate policy response for an economy with a looming debt crisis is arguably fiscal consolidation—cutting deficits. Such a policy is thought to have the benefits of low and stable interest rates, a less fragile financial system, improved investment prospects, and possibly faster long-term growth.

To address the government’s long-term fiscal problem, Congress passed on August 2, 2011, the Budget Control Act of 2011 (P.L. 112-25). The Budget Control Act (BCA) sets caps on discretionary spending. It also created the Congressional Joint Select Committee on Deficit Reduction, whose task was to propose further policy changes that would lead to \$1.5 trillion in further deficit reduction over 10 years. The joint committee was unable to reach an agreement on how to achieve further deficit reduction. In the absence of an agreement, the BCA established a process for automatic spending reduction.<sup>59</sup>

### **Monetary Policy Actions Taken During the Recovery**

On November 3, 2010, the Fed announced that it would provide more monetary stimulus by means of the purchase an additional \$600 billion of Treasury securities at a pace of about \$75 billion per month, and continue the practice of replacing maturing securities with Treasury security purchases. When this second round of monetary stimulus (sometimes referred to as “quantitative easing 2” or QE2)<sup>60</sup> was completed in June 2011, the Fed had increased the size of

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<sup>57</sup> For discussion of the long-term debt issue, see President Obama’s *National Commission on Fiscal Responsibility and Reform*, at <http://www.fiscalcommission.gov/>.

<sup>58</sup> For further discussion of this issue, see CRS Report R41849, *Can Contractionary Fiscal Policy Be Expansionary?*, by Jane G. Gravelle and Thomas L. Hungerford.

<sup>59</sup> For more information on the BCA, see CRS Report R41965, *The Budget Control Act of 2011*, by Bill Heniff Jr., Elizabeth Rybicki, and Shannon M. Mahan; and the Congressional Budget Office, *Budget and Economic Outlook: An Update*, August 2011, p. 38, at <http://www.cbo.gov/doc.cfm?index=12316>.

<sup>60</sup> On the policy of quantitative easing, see CRS Report R41540, *Quantitative Easing and the Growth in the Federal* (continued...)

its balance sheet to more than \$2.5 trillion. The maturity lengths of the securities purchased were mostly between 2½ and 10 years.<sup>61</sup>

The Fed argued at that time that a second dose of monetary stimulus was needed because economic growth is decelerating and much of what economic momentum existed was being provided by the transitory factors of inventory adjustment and fiscal stimulus. In the second half of 2010, growth slowed to around 2%, a pace barely fast enough to keep the unemployment rate from rising. Fed Chairman Ben Bernanke indicated that of particular concern was the substantial increase in the share of the long-term unemployed (workers who have been without work for six months or more). Such long-term unemployment tends to convert temporary cyclical unemployment into more intractable structural unemployment. In addition, the lingering economic slack in the economy had added to deflationary pressure. Measures of core inflation had been decelerating during 2010, reaching a low of only slightly above 1%. A continuous decline in the price level is troublesome because in a weak or contracting economy it can lead to a damaging, self-reinforcing, downward spiral of prices and economic activity. Deflation exacerbated the economy's decline during the Great Depression.<sup>62</sup>

To support a stronger recovery, the Fed announced on September 21, 2011, that it would purchase by the end of June 2012 \$400 billion of Treasury securities with remaining maturities of 6 years to 30 years and to sell an equal amount of Treasury securities with remaining maturities of 3 years or less.<sup>63</sup> In June 2012, the Fed announced that it would extend this program through the end of 2012. This program does not expand the size of the Fed's balance sheet. Rather, by changing the composition of its asset holdings toward longer maturities, the Fed is attempting to put downward pressure on longer-term interest rates and increase monetary policy's stimulative effect on economic activity.<sup>64</sup>

On September 13, 2012, the Fed announced a third round of quantitative easing, or QE3. Pointing to slow economic growth and an unemployment rate that has not improved since the beginning of the year, the Fed expressed concern that “without further policy accommodation, economic growth might not be strong enough to generate sustained improvement in labor market conditions.”<sup>65</sup> QE3 will increase policy accommodation by purchasing additional agency mortgaged-backed securities at a pace of \$40 billion per month, which together with its “maturity extension program” to increase the average maturity of its asset holdings as announced in June, will increase the Fed's holdings of long-term assets by about \$85 billion per month through the end of 2012. Moreover, in a significant change from the earlier rounds of quantitative easing, the QE3 mortgaged-backed security purchases are open-ended, meaning that the Fed is committing to

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*Reserve's Balance Sheet*, by Marc Labonte; and CRS Report RL30354, *Monetary Policy and the Federal Reserve: Current Policy and Conditions*, by Marc Labonte.

<sup>61</sup> Board of Governors of the Federal Reserve System, *Federal Open Market Committee*, <http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm>.

<sup>62</sup> For further discussion of deflation, see CRS Report R40512, *Deflation: Economic Significance, Current Risk, and Policy Responses*, by Craig K. Elwell.

<sup>63</sup> Board of Governors of the Federal Reserve System, press release, September 2011, at <http://www.federalreserve.gov/newsevents/press/monetary/20110921a.htm>.

<sup>64</sup> Board of Governors of the Federal Reserve System, press release, June 2012, at <http://www.federalreserve.gov/newsevents/press/monetary/20120620a.htm>.

<sup>65</sup> Board of Governors of the Federal Reserve System, press release, September 13, 2012, at <http://www.federalreserve.gov/newsevents/press/monetary/20120913a.htm>.

continuing the program until labor market conditions improve. The Fed also gave further “forward guidance” by announcing that it intends to keep the federal funds interest rates at “exceptionally low levels” through mid-2015. On March 20, 2013, the Fed announced it continues to be committed to QE3.<sup>66</sup>

### *Evaluating the Case for Monetary Stimulus*

The Fed’s recent policy initiatives to provide successive rounds of monetary stimulus have been criticized. One concern is an increased risk of inflation. Such a large increase in bank reserves could also lead to a rapid increase in the overall money supply through the “money multiplier” effect, which in normal times might generate inflation. At present, the sizable degree of slack in the economy and banks’ heightened tendency to hold reserves rather than lend them out keeps the risk of inflation low.

As noted above, one of the reasons for initiating a second round of monetary stimulus in late 2010 was to counter an incipient deflation problem, which is accomplished by policies that exert upward pressure on the level of prices, that is, policies that generate some degree of inflation. The Fed’s second round of monetary stimulus seems to have reduced the deflation risk.

Also, some of the recent increase in broad measures of inflation, such as the consumer price index (CPI), is due to the sharp rise in oil and other commodity prices in the first half of 2011 and again in early 2012. However, such inflation effects are most often temporary and not a source of persistent inflationary pressure. The “core CPI,” a measure of inflation that does not include volatile food and energy prices, has remained low. Other indicators also suggest that inflation is likely to remain subdued. First, wages, which are generally the most important determinant of unit production costs, have been stable. Second, longer-term inflationary expectations, as measured by the yields on long-term securities, have not risen appreciably.

However, when the economy returns to more normal conditions, reserves would likely need to be removed to avoid excessive upward pressure on prices. The likely unprecedented scale of the reserves that might need to be drained from the economy has raised concerns about whether the Fed could effectively provide the degree of restraint needed to keep inflation under control.

A second criticism of the Fed’s monetary stimulus during the recovery is that it is depreciating the dollar. Although influencing the exchange rate is not a stated goal of the Fed’s policy, standard macroeconomic theory would predict, all else equal, that a by-product of monetary stimulus would be a depreciation of the dollar (assuming other countries do not similarly alter their monetary policy in response). A weaker dollar would add to the stimulative effect of monetary stimulus on total spending in the United States by increasing exports and decreasing imports. However, countries such as Germany, Japan, and China that have relied on net exports to propel their economic growth are resistant to a depreciating dollar and have criticized the Fed’s actions.

As it turns out, the dollar depreciation that has occurred over the last year is, arguably, not the result of Fed actions, but a correction from the appreciation of the dollar in late 2008 and 2009 that was caused by a flight to safety by foreign investors during the financial crisis. At that time, a strong global demand for relatively safe U.S. Treasury securities bid up the dollar’s exchange

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<sup>66</sup> Board of Governors of the Federal Reserve System, press release, March 20, 2013, at <http://www.federalreserve.gov/newsevents/press/monetary/20130320a.htm>.

rate. As financial panic receded, the demand for safety abated, and the dollar depreciated to its pre-crisis level.

A third criticism is that monetary stimulus will have little impact on real economic activity. In the current economic environment, with badly weakened household and business balance sheets placing a premium on improving liquidity, it is difficult for monetary policy to get “traction,” stimulating the broader economy by pumping reserves into the banking system. For this reason, the stimulus to the real economy from the Fed’s successive rounds of quantitative easing have not been expected to be a “cure-all” for sustaining economic recovery. Moreover, how effective monetary stimulus has been is difficult to judge because there is no ready “counterfactual” state of the economy from which to judge its impact on output and employment. Nevertheless, estimates are possible. Using statistical economic models that incorporate past relations between financial conditions and the economy, it is possible to estimate the impact of monetary stimulus on the economy. For example, one recent study found that the first two rounds of quantitative easing may have increased output by 3% and increased employment by more than 2 million jobs.<sup>67</sup> Other studies have found comparable effects.<sup>68</sup>

### **A Lesson from the Great Depression**

One of the important lessons from the Great Depression is to avoid a hasty withdrawal of fiscal and monetary stimulus in a fragile economy still recovering from a sharp economic decline. Beginning in 1933, the U.S. economy rebounded from its sharp fall into what has become known as the Great Depression. From 1933 to 1936, supported by expansionary fiscal and monetary policies, the U.S. economy grew briskly at an average rate of 9.0% and unemployment fell from 25% to 14%. Economic output had nearly returned to its level in 1929, but the economy was still well short of full recovery. But in 1937, the recovery halted and the economy tipped into a second recession. Most economists believe that the second dip into recession was caused by an unfortunate premature switch to contractionary monetary and fiscal policies in a still-fragile recovering economy.

On the monetary side, in 1936, the Federal Reserve began to worry about inflation. After several years of relatively loose monetary policy, the U.S. banking system had built up large quantities of reserves in excess of legal reserve requirements. The Fed feared, despite little overt evidence of a problem, that should the banks begin to lend these excess reserves, it could lead to an overexpansion of credit and generate an inflationary surge. In an attempt to sop up those excess reserves, the Fed raised the banks’ reserve requirements three times during 1936. However, banks were still nervous about the financial panics of the early 1930s and uncertain about the durability of the economic recovery, and consequently wanted to hold excess reserves as a cushion. In response to the higher reserve requirements erasing that cushion, the banks worked to rebuild it by reducing lending, leading to a contraction of credit-supported spending.

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<sup>67</sup> Hess Chung, Jean-Phillippe Laforte, David Reifschender, and John C. Williams, “Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events,” *Journal of Money, Credit and Banking*, vol. 44, issue si (February 2012), pp. 47-82.

<sup>68</sup> See for example, Jeffrey C. Fuher and Giovanni P. Olivei, “The Estimated Macroeconomic Effects of the Federal Reserve’s Large-Scale Treasury Purchase Program,” *Public Policy Briefs*, April 2011, Federal Reserve Bank of Boston; and Michael Kiley “The Aggregate Demand Effects of Short-Term and Long-Term Interest Rates,” *Finance and Economics Discussion Series* 2012-54, Board of Governors of the Federal Reserve System, Washington DC.

On the fiscal side, by 1936, following several years of large budget deficits, the federal government had a strong urge to declare victory and get back to normal policy—specifically, balancing the government budget. The veterans’ bonus that was paid in 1936 was not renewed in 1937; in addition, Social Security taxes were collected for the first time in 1937. The overall effect was a fiscal contraction equal to about 3% of GDP.

The double hit of contractionary monetary and fiscal policy in an economy that had still not reached the point in which private demand was capable of fully sustaining economic growth led to a recession. In 1938, GDP fell 4.5% and the unemployment rate increased to 19%.<sup>69</sup>

Economic policy quickly changed course and recovery resumed in the second half of 1938, but the policy error added about two years to the Great Depression, which ended with the step-up in war-time government spending in 1941.

The euro zone countries appear to be re-learning this policy lesson from the Great Depression, at considerable economic cost. The IMF’s has recently argued that attempts to impose austerity measures to combat growing government debt, while still in the mist of economic recovery, is pulling growth down.<sup>70</sup>

## **Economic Projections**

Given the unusually large deterioration of the balance sheets of households and businesses, the possible reduction of the U.S. economy’s level of potential output, the fragile state of the global economy, and uncertainty about fiscal policy, projections of the U.S. economy’s near-term path carry a higher than normal degree of uncertainty. During 2012, most economic forecasters have steadily trimmed their growth projections as it became ever more evident that the economy seemed to be only “treading water,” particularly in labor markets. Despite “headwinds” from a return to recession in Europe and federal fiscal tightening at home, most forecasters expect the U.S. economic recovery to continue, albeit at a slow pace.

- In its March 2013 meeting, the Fed’s Open Market Committee projected real GDP in 2013 to advance in a range between 2.3% and 2.8% and in 2014 advance in a range between 2.9% to 3.4%. The unemployment rate in 2013 is projected to be in a range of 7.3% to 7.5% and in 2014 in a range of 6.5% to 3.5%.<sup>71</sup>
- The IMF’s April 2013 projection sees real GDP in the United States increasing 1.9% in 2013 and 3.0% in 2014. Globally, the IMF expects an unbalanced recovery to persist, with growth in the advanced economies in 2013 averaging 3.3% compared with growth in the emerging developing economies in 2013 averaging 5.3%.<sup>72</sup>

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<sup>69</sup> For further discussion of the recession of 1937, see Christina D. Romer, “The Nation in Depression,” *Journal of Economic Perspectives* 7 (spring 1993), pp. 19-39; Milton Friedman and Anna D. Schwartz, *A Monetary History of the United States, 1867-1960* (Princeton, NJ: Princeton University Press, 1963); Francois R. Velde, “The Recession of 1937—A Cautionary Tale,” *Economic Perspectives*, Federal Reserve Bank of Chicago, fourth quarter 2009, pp. 16-36.

<sup>70</sup> See remarks by Olivier Blanchard in the International Monetary Fund, *World Economic Outlook*, October 2012, Forward, at <http://www.imf.org/external/pubs/ft/weo/2012/02/index.htm>.

<sup>71</sup> Board of Governors of the Federal Reserve System, *Minutes of March 12 FOMC Meeting*, Projection Materials, at <http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm>.

<sup>72</sup> International Monetary Fund, *World Economic Outlook*, April 2013, Table 1.1, <http://www.imf.org/external/pubs/ft/> (continued...)



- In its February 2013 projection, CBO sees real GDP advancing 1.4% in 2013 and 2.6% in 2014, and the unemployment rate at 7.9% in 2013 and 7.8% in 2014.<sup>73</sup>

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<sup>73</sup> CBO Budget and Economic Outlook, February 2013, at <http://www.cbo.gov/publication/43907>.