

MONETARY POLICY REPORT

Recovery

Introduction

Recovery

When the business cycle hits a recession, a recovery will follow. This is indicated by a period of abnormally high economic activity, such as lower unemployment, higher output, and notably improved confidence in the securities market.

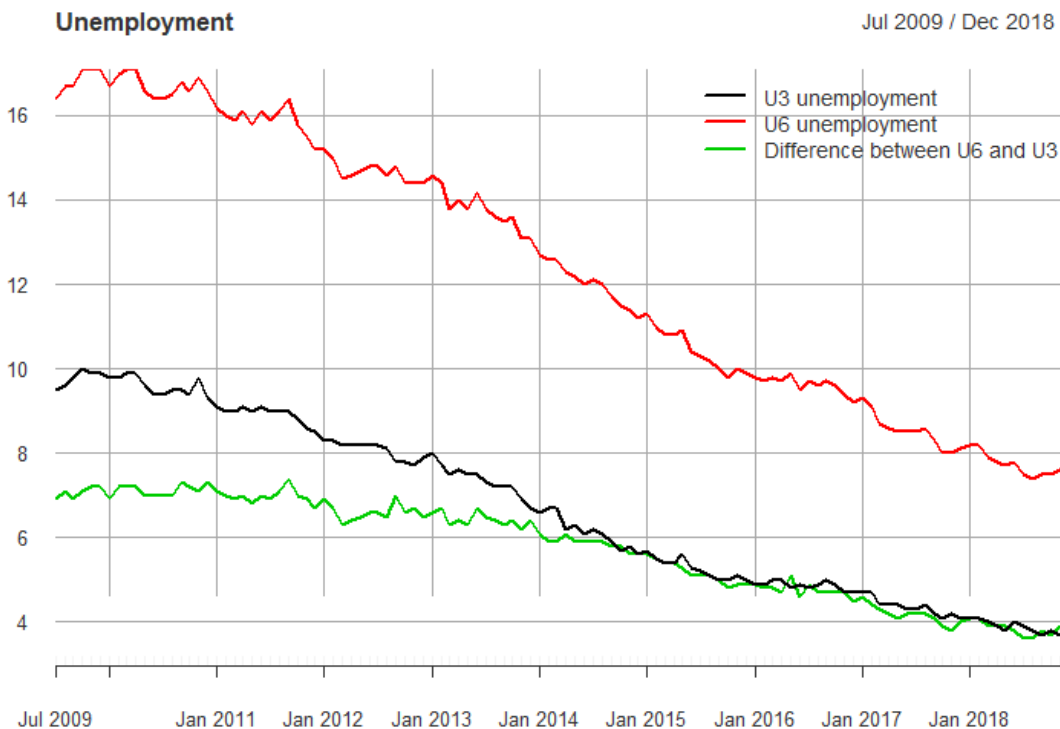


FIGURE 1

As shown in Figure 1, the U3 and U6 rates have declined steadily since 2009 Q3, with the U3 going from a high of 10% at the beginning of October 2009 to less than 4% by July 2018 and a low of 3.7% on November 2018, a decline over 8 and a half years of just over 6%. The U6 over the same period was at 17.1% from October 2009 to April 2010, then declined steadily to

settle around 7.5% by July 2018 where it has remained, a drop of almost 10%. During this period, the difference between these two unemployment rates declined, indicating that discouraged workers and people previously working part-time were able to find full-time employment. At the same time, though, the civilian labor force participation rate steadily declined from the end of the recession until 2014. Because this indicates people leaving the labor force entirely, it is a component in the decline of both U3 and U6, which count people who are in the labor force.



FIGURE 2

The real GDP dropped by \$638 million between October 2008 and July 2009. As Figure 3 shows, real GDP has steadily increased, returning to the pre-recession value of \$15.671 trillion by July 2010.

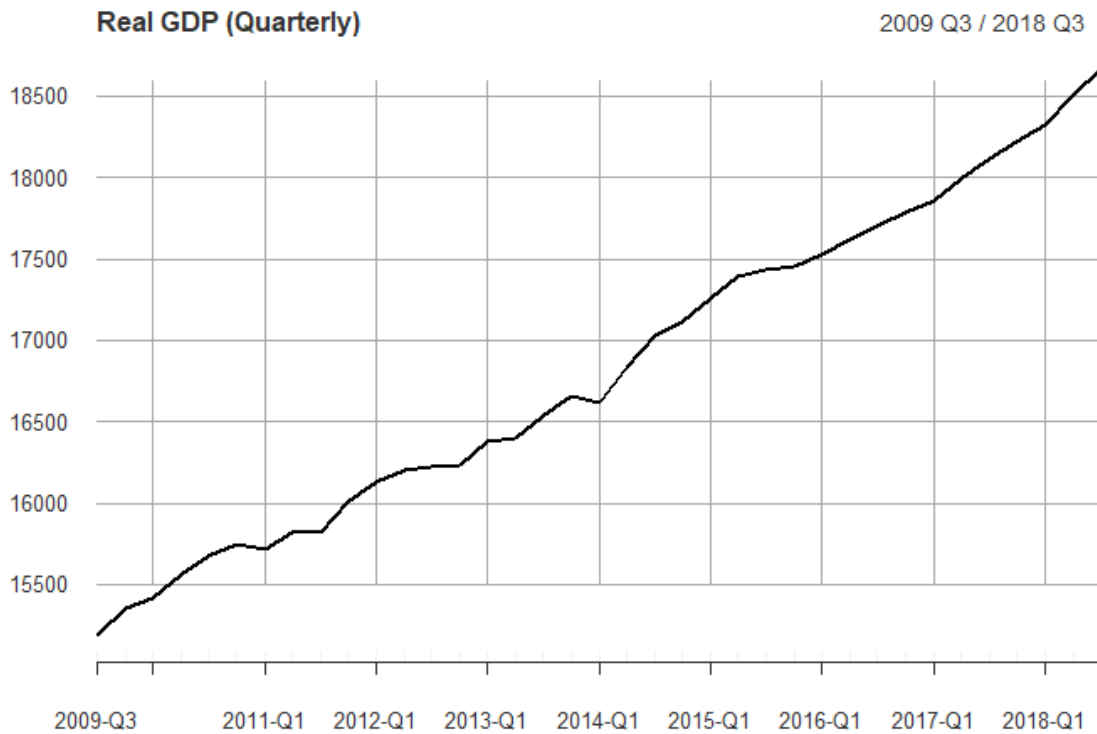


FIGURE 3

Figure 4 shows the Chicago Board Options Exchange (CBOE) Volatility Index, a market index representing the expectation of 30-day forward looking volatility. Known also as the “Fear Index,” its calculation results in a high index when the market is falling, and lower values when the market is advancing. Note that towards the end of 2008 and the first half of 2009, the index was quite high, showing that there was great uncertainty. There were several spikes after that marking periods of uncertainty, but by and large it has returned back to pre-recession levels.



FIGURE 4

While indicators show that things have improved since the height of the recession, there has not been the aggressive increase historically seen when the business cycle shifts from

recession to recovery. In previous recoveries, the real GDP has run from 4% to as high as 7% per year; from 2009 to 2010, the real GDP increased by only 2.6%, and has increased an average of only 2.2% since. Unemployment rates have returned to pre-recession levels, but it took 10 years for that to happen, all while labor force participation has declined steadily. I believe that a slow reversal of the policies that spurred the recovery should be considered, although it may be premature to fully undo those policies just yet.

Comparison

It is difficult to find a recession recovery in U.S. history that is comparable to the recovery following the Great Recession. According to a report published by *The Economist* 29 July 2011 (“Recessions Compared: How the Recovery in the United States Compares to Previous Ones”), the current recovery did not experience the higher than average spike in employment and output that is the historic norm. Particularly unique is that the current recovery has been very slow in adding new jobs, to the point where it is being called a “jobless recovery.” Normally, the boost in output fuels job creation, but this has not been the case since 2009: much of the rise in real GDP has been from increases in government spending related to the policies of quantitative easing, while people leaving the civilian workforce has been a large factor in declining unemployment. The shape of the current recovery is genuinely without precedent.

Factors in Recovery

The key factor in ending the Great Recession was a set of policies known as quantitative easing (QE) which took place in three rounds: March 2009 to June 2010, November 2010 to July 2011, and September 2011 to October 2014. Normally, a central bank such as the Federal Reserve engages in monetary policy by buying or selling short-term government bonds to reach a desired interest rate. During a recession, the banks will aim for a low interest rate, but this process breaks down, when the recession continues even though interest rates are closing in to zero. With QE, the central bank turns to other forms of investment such as longer term government bonds, mortgage-backed securities, and other investments.

During the three phases of QE, the Federal Reserve accumulated an estimated \$4.5 trillion in assets above the \$700 to \$800 billion it held before these policies were implemented, as seen in Figure 5. Most of this is in the form of bank debt, particularly mortgage-backed securities. This helped to keep inflation from dropping too low, which would have entrenched the recession and make recovery more difficult.

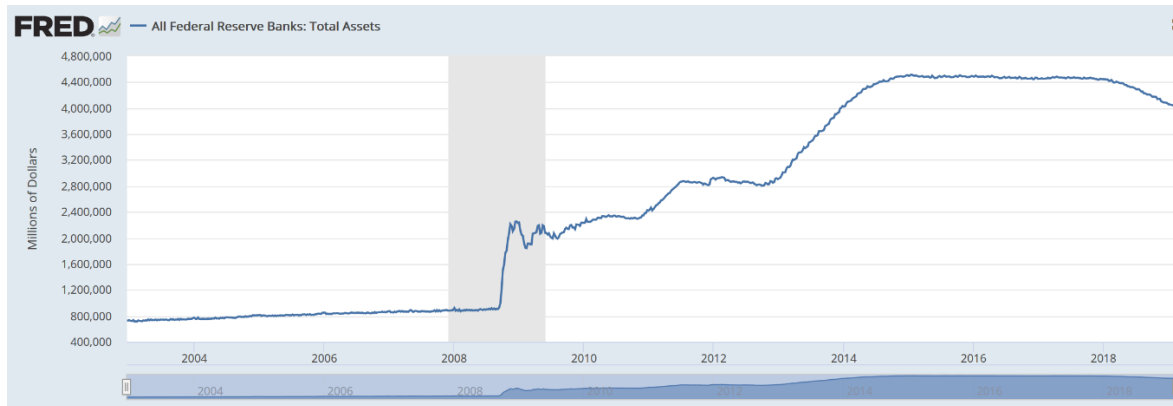


FIGURE 5

While the policies of quantitative easing did help end the recession, it is arguable if there was ever any recovery as understood within the business cycle. Rather than seeing the creation of new jobs and a resulting sharp increase in new jobs and consumer confidence, we have seen, at best, the resumption of what we had before the recession.

Part II – The Recovery

Background

The goal of a recession recovery plan is to prompt an increase in investment. The Federal Reserve initiates policies that increase the money supply; this lowers interest rates, which encourages companies to borrow money and use it to make capital investments such as new equipment. This raises aggregate demand (AD), and short run aggregate supply (SRAS) shifts to meet that demand. This shift will typically overcompensate, creating the surge normally seen in employment and output. After a few years, the long run aggregate supply (LRAS) will shift towards the equilibrium of AD and SRAS, and the economy settles back down to a period of stability.

In the current recovery, we did not see the expected shift in SRAS. On 1 December 2017, *The Atlantic* noted that many companies used the recession as an opportunity to cut payrolls and replace the workers with automation (“The Great Recession Is Still With Us”), the result being a loss of the manufacturing, assembly, administrative support and other jobs that historically have been the backbone of America’s middle class. Many of these workers became discouraged and left the labor pool entirely rather than accept minimum wage service jobs. This led to both higher output and profitability in the business sector, which increased SRAS, and lower employment in the private sector, which decreased SRAS. Between these forces, SRAS increased only slightly, and while output increased, there was not the expected surge. LRAS has been moving towards the new equilibrium, but sluggish growth in output and a shrinking labor pool have provided little momentum.

The business sector has responded to the surge of new workers by increasing the “cost” of being allowed to work. A job opening that required an associate degree and three years of experience in 2007 might require a bachelor’s degree and five years of experience in 2017. According to a 4 May 2016 article in *The Washington Post*, this has resulted in the economic recovery for individuals to benefit wealthy urbanites overwhelmingly, while those of less economic means and people living in rural parts of the United States continue to struggle (“Exclusive Neighborhoods, Exclusive Recovery”). Those who remained employed tended to use their disposable income to pay down debt rather than consume or invest, resulting in a decline in AD which further slowed growth.

Is it accurate to describe this as a recovery? According to the standard metrics, yes. The U6 unemployment rate was at 8.8% when the recession began in December 2007; it returned to this rate on March 2017 and has remained below this point ever since (Figure 6.) The real GDP recovered more quickly: it was at \$15.762 trillion¹ in the 4th quarter of 2007, and returned to that point in the 2nd quarter of 2011, when it hit a level of \$15.825 trillion. Even so, it was not until the 2nd quarter of 2018 that real GDP caught up with real potential GDP (Figure 7.)

¹ Real GDP given in seasonally adjusted 2012 dollars.

Volatility in the S&P 500 index largely settled down by the start of 2014, indicating confidence in the financial markets (Figure 4.)

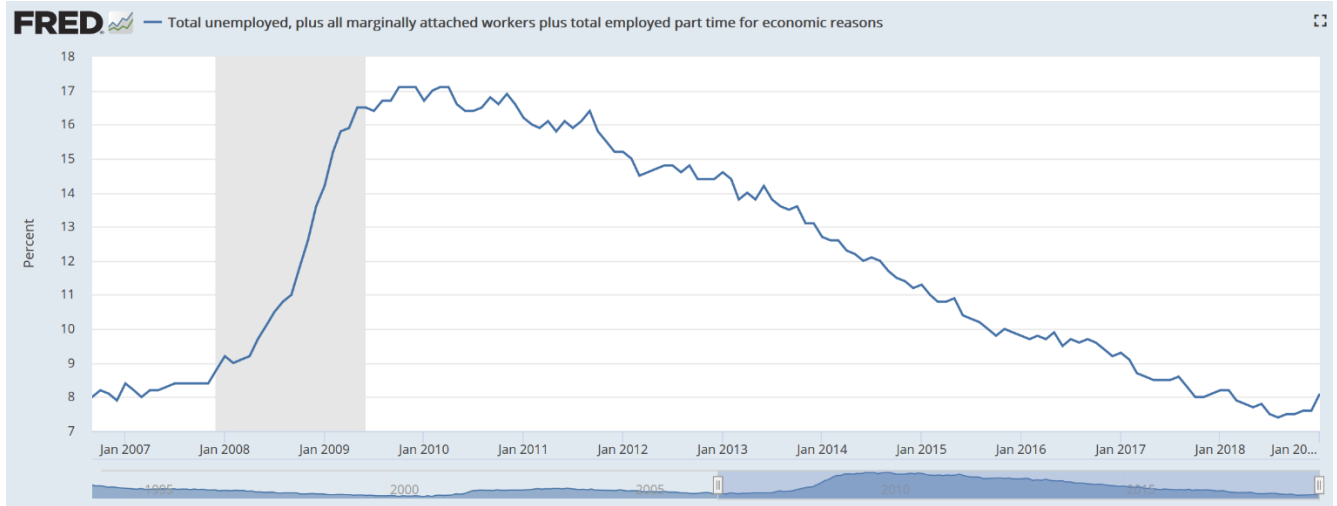


FIGURE 6

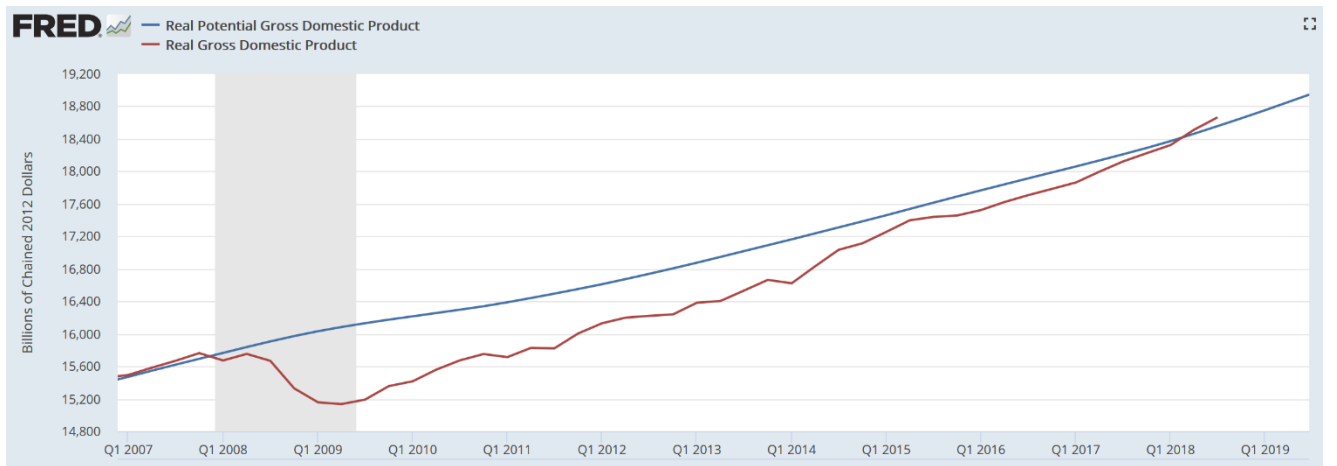


FIGURE 7

Monetary Policy by the Federal Reserve

In July 2007, the effective federal funds rate (eFFR) was at 5.26%. This is the rate where banks issue short term loans to other banks; it is the one influenced by the actions of the Federal Reserve and it serves as the foundation for many other rates. To control inflation, the Fed began increasing the money supply, bringing the eFFR to 4.24% in December 2007, when the recession began. Once a recession had been identified, the Fed followed standard procedure and began to increase the money supply, bringing the eFFR down to 0.16% in December 2008. (Figure 8.) This did not have the effect of lifting the recession.

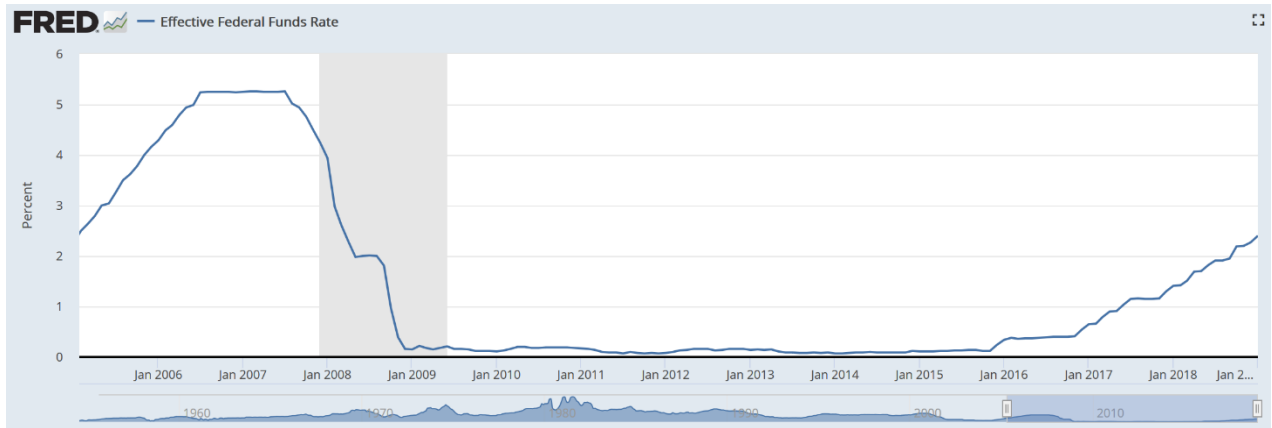


FIGURE 8

Because there was no room for the interest rate to drop any further, the Fed initiated a plan for quantitative easing (QE) which was implemented starting March 2009. They began buying bank debt, mostly the kind of mortgage-backed securities that prompted the sub-prime mortgage crisis, which itself was one of the triggers for the recession (Figure 9.) These securities were then used to increase the excess reserves of banks, which increased the money supply without affecting interest rates. In essence, the Federal Reserve assumed the risks of the mortgage crisis in order to keep banks liquid and thus head off an incipient banking crisis that would have made the recession much, much worse.

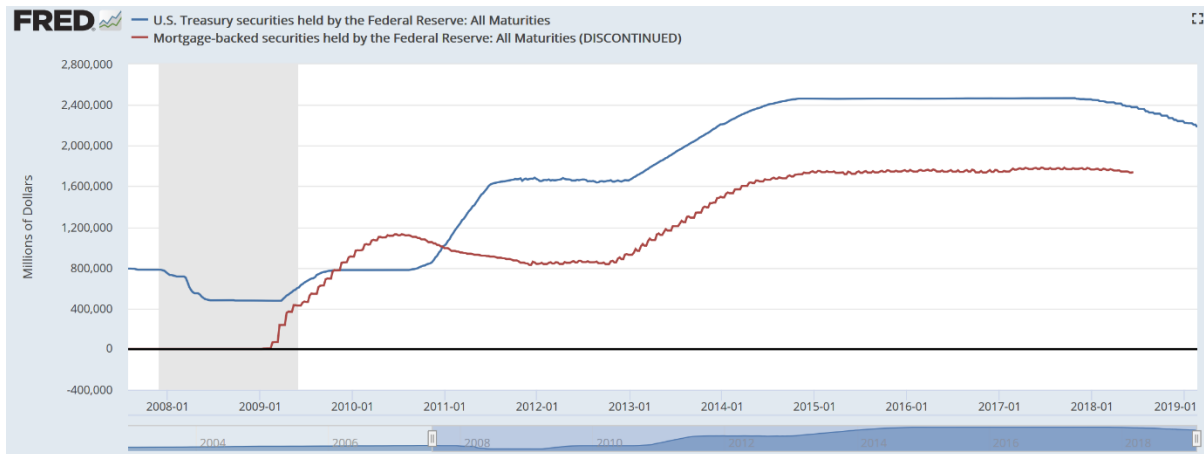


FIGURE 9

Referencing the IS-LM model, QE increased the money supply without lowering interest rates any further. I am still not clear how this worked, but it would have required that the money demand be almost completely elastic, i.e. effectively horizontal. The resulting increase in real money shifted the LM line to the right with a consequential increase in output. Normally this is met with a corresponding decrease in interest rates but, again, there was no room for interest rates to decline, meaning that the IS line would have to be near horizontal.

Purchases related to QE stopped in June 2010, when it looked like the economy was beginning to recover. By this point, the Fed was holding \$1.75 trillion in securities including 2- to 10-year Treasury securities, bank debt, and mortgage backed securities. With no bounce in

the GDP and still very high unemployment, the Fed initiated a second round of QE in November 2010. This became known as QE 2, which made the previous round of quantitative easing retroactively named QE1. This ran until June 2011, with the focus on both increasing the money supply and gradually easing up inflation to incentivize consumption. A “phase two” for QE2, named Operation Twist, ran from September 2011 through December 2012, but this was primarily to replenish the Fed’s debt holdings that had expired. Along with replacing shorter term bonds with longer ones – an indication that the Fed accepted that easing would be a long view project – they also increased their holdings in mortgage backed securities with the desire to support a housing market that had remained very slow.

A third round of quantitative easing, QE3, ran from September 2012 to October 2014. It resumed the purchases of Operation Twist and committed to three unprecedented actions: they would keep the Federal Funds Rate at zero until 2015, continue purchasing securities until the number of new jobs was reliably increasing, and take steps to actively boost the economy rather than merely stave off recession. In January 2013, Operation Twist reached its scheduled end. Rather than continue on with an extended termination, the Federal Reserve instead committed to continue the purchases until either unemployment fell below 6.5% or inflation started to rise above 2.5%. In December 2013, the Federal Open Market Committee (FOMC) announced that the Federal Reserve was closing in on the target goals and that quantitative easing would start to taper off. On 29 October 2014, FOMC announced that they had made their last purchase. At that time, the Federal Reserve held an estimated \$4.5 trillion in various securities. In June 2017, the Fed announced that they would begin to reduce these holdings, mainly by not replacing debt that expires (Figure 4.)

Fiscal Policy by the United States Government

In February 2008, as the recession was becoming evident, Congress passed, and President George W. Bush signed, the Economic Stimulus Act of 2008 (ESA.) The main thrust of the act was to provide tax rebates of up to \$600 per person to low and middle income Americans. The hope was that people would spend this money and help spur the economy, although many either put it into savings or used it to pay off debt.

A year later, The American Recovery and Reinvestment Act of 2009 (ARRA) was signed by President Barak Obama. This act combined several stimulus measures that would unfold over the following decade. The measures were based on the standard protocol for fiscal policy during a recession: cut taxes so consumers have more money for purchases and increase government spending to make up for the decline in private spending. The combined effect is to keep aggregate demand where it is and thereby avoiding deflation and decreased output.

ARRA consisted of tax incentives for individuals for the 2009 and 2010 tax years totaling \$237 billion; tax incentives for companies, some of which expired in 2012 and some which will expire in 2019, totaling \$51 billion; an increase in government spending for Medicaid, COBRA, and many other health services, totaling \$155.1 billion; increases to the Pell Grant program, aid to local school districts, and programs to improve educational technology and other areas of national education, totaling \$100 billion; an extension of unemployment benefits, expansion of federal job training programs, and increases in funding for SNAP and other food assistance programs, totaling \$82.2 billion; federal infrastructure investments in many areas including transportation, public lands, and government facilities, totaling \$105.3

billion; money made available to improve energy efficiency and further research into renewable energy, totaling \$27.2 billion; increasing funding for several housing assistance programs, totaling \$14.7 billion; increased grants for scientific research, totaling \$7.6 billion; and \$10.6 billion for various other programs including grants to law enforcement agencies, adding jobs to the Social Security Administration to handle a processing backlog, and preparation for the 2010 census. ARRA also included a provision requiring that projects funded by the act must use materials produced in the United States. Altogether, ARRA cost about \$720 billion in tax cuts and increased expenditures.

In a report on the anticipated impacts of ARRA, the Congressional Budget Office (CBO) predicted on 11 February 2009 that the act would increase GDP by as much as 3.8% by the end of the year, with declining increases until 2014, when the crowding out effect was expected to cause a brief decline in GDP. Soon after, however, it was projected that the economy would stabilize.

Whether any of this worked is still a matter of considerable debate. Because the tax cuts appeared on the 1040 forms rather than an actual check as with the ESA, it is not clear if consumers were aware of the cuts. The business incentives created jobs, but many of the new jobs were low wage service work. The aid to states certainly helped, but many of the states were so mired in their own financial problems that federal aid only helped to keep them from sinking further. The public works projects funded by ARRA – highway construction, bridge replacement, work in national parks and hazardous waste cleanup, among many others – were the only unambiguous successes. It is estimated that such works led to 3 million jobs, including jobs that would have been lost during the recession and new jobs that were created.