



# Recovery—It's Happening but Difficulties Remain

Karl W. Smith

North Carolina and the United States generally are recovering from the worst recession since the Great Depression. Though it may not be readily apparent, recovery is happening; that difficulties still remain for federal, state, and local governments only highlights the recession's depth. As of this writing, however, the economy is growing, and estimates indicate that revenues should increase.

This bulletin will provide a sense of the evolving state of the U.S. economy and where North Carolina's economy is in relation to other states. Primarily, it will discuss overall economic conditions and the implications for own source revenue. The potential for stimulus spending will be the key determinant in the near future for state and local budgets. However, stimulus funding is determined by a political process into which economists have few insights.

## Economic Overview

It is impossible to understand the economy at present without considering the condition of the U.S. financial markets. The United States' strong economic downturn, and downturns in financial markets worldwide, began with the collapse of Lehman Brothers in September 2008 and the rapid increase in credit spreads. This increase in credit spreads made it more difficult for businesses and consumers to borrow.

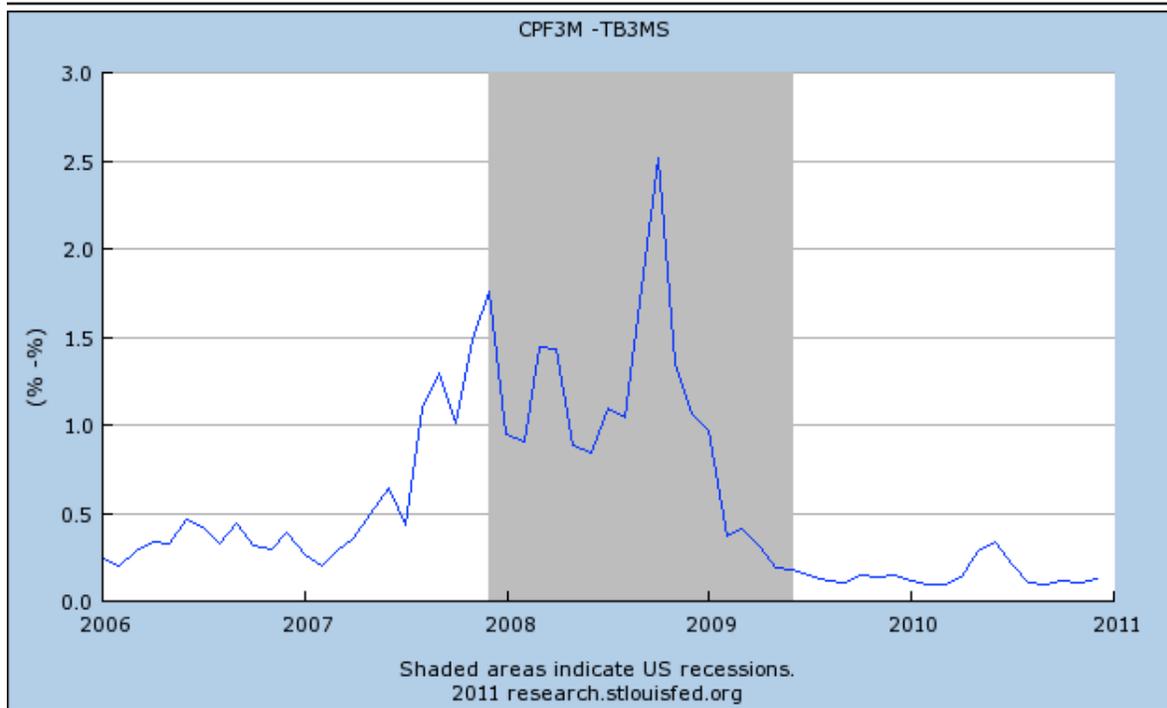
## Treasury Euro-Dollar Spread

Therefore, a precondition for recovery is the presence of stable financial markets. For the most part, economists have seen that stability return to the U.S. market; the economic situation in Europe will be covered below. Two important measures of stability, the Treasury Euro-dollar spread (TED spread) and the Commercial Paper Index spread, are necessary to consider in this situation.

The TED spread essentially measures how nervous banks are about lending money to one another. The more nervous the banking system gets, the less willing that banks are to lend money out to customers. Thus the measure of nervousness, as illustrated in figure 1, can tell economists a lot about stability.

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**Figure 1. Commercial Paper Treasury Spread**

Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

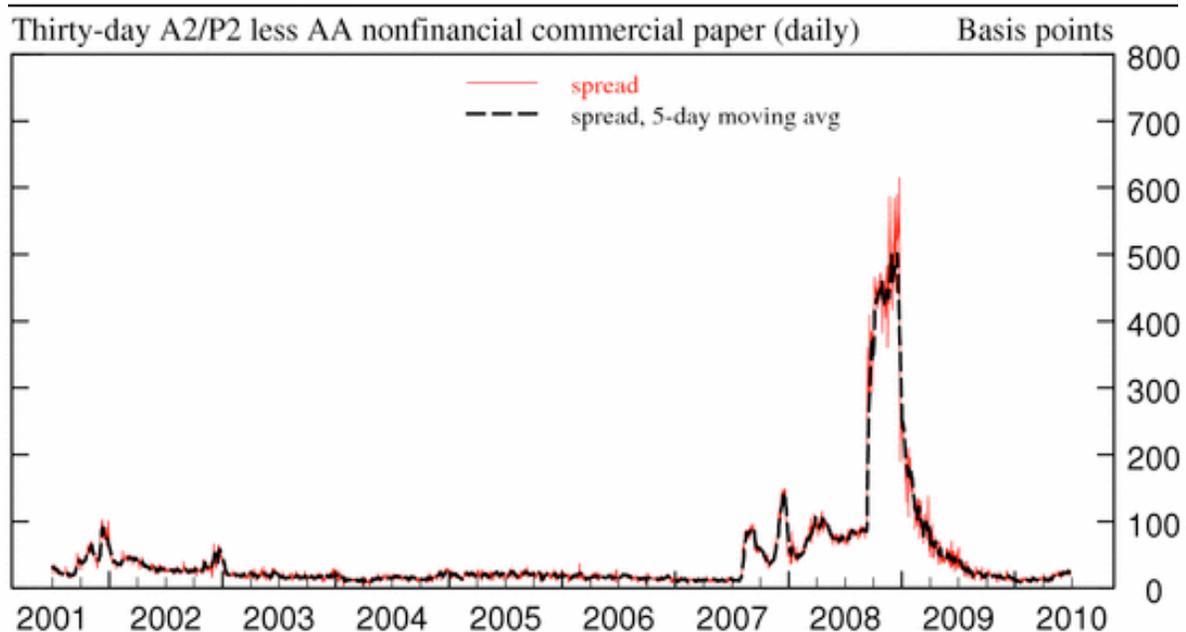
Prior to August 2008, the TED spread was in its normal state, fluctuating around 50 basis points.<sup>1</sup> The credit crisis came in several waves culminating, with the TED spread spiking in the days after the collapse of Lehman Brothers. Since that time, the TED spread has come down significantly and has remained at a level that is in fact extraordinarily low due to both the Troubled Asset Repurchase Program (TARP) as well as actions by the Federal Reserve to expand banking reserves. In recent months, the TED spread has been rising, although it is still not at a level that raises alarm. However, the Federal Reserve has not repealed its efforts to quell stress in the banking sector, and it is mildly troubling that the TED spread is rising nonetheless. This will be an indicator to watch through the end of 2010 and beyond.

If the TED spread spikes above 100 basis points again, this will signal increased stress and would indicate that the United States may be headed toward a new wave of credit crisis. This in turn would produce another downturn in economic activity. In short, the TED spread provides an early warning for any officials looking for a sign of worsening conditions. Another credit crisis is one of the ways the United States could see a worsening economic outlook. That is, a credit crisis is not a necessary condition for a return of the recession, but it is sufficient.

### CPI Spread

The nonfinancial Commercial Paper Index (CPI) spread is a second measure that serves largely to corroborate information found in the TED spread. See figure 2. It is a measure of how hard it is for businesses with less than stellar credit to borrow money short term.

1. A basis point is 1/100th of one percentage point. For example, 150 basis points is 1.5 percent.

**Figure 2. Commercial Paper Spread**

Source: Federal Reserve Bank of New York; [www.federalreserve.gov](http://www.federalreserve.gov)

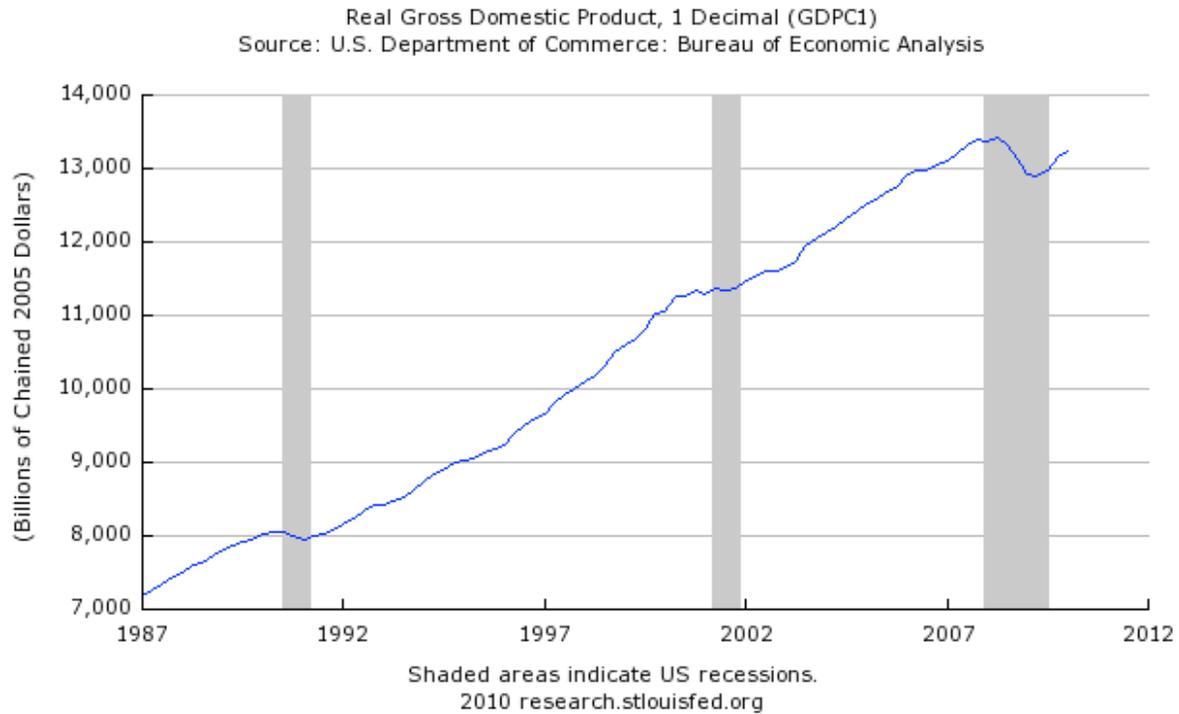
Short-term borrowing is a key tool for businesses managing cash flow. Vendors must be paid. Payroll must be met. When short-term borrowing is difficult, businesses must cut expenses to make sure they always have enough cash on hand. This in turn cuts revenue to other businesses that must then be even more concerned about cash flow. This chain reaction creates a downward spiral of increasing cash holdings and decreasing spending, known as a liquidity crisis or a spike in money demand. In essence, a collapse of the credit markets means that all businesses need to hold more cash to operate at their current levels. Because only so much cash exists in the economy, all businesses cannot simultaneously increase their cash holdings. The result is that all businesses must cut operations until the demand for cash falls to meet the total amount of cash available.

The CPI spread shows largely the same pattern as the TED spread. Note that the post-Lehman Brothers spike is exaggerated in figure 2. This indicates just how damaging this period was for U.S. businesses. In addition, relatively little recent movement is evident.

These results give economists some confidence that current credit conditions are not likely to generate a second recession. However, as with the TED spread, it would be wise to keep an eye on this indicator moving forward.

### Condition of the U.S. Economy

The larger U.S. economy is recovering. After an exceptionally large dip, U.S. gross domestic product (GDP) is once again growing. As illustrated in figure 3, in terms of total output the economy is roughly halfway back to where it was before the recession began.

**Figure 3. Real Gross Domestic Product, 1 Decimal**

Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Commerce: Bureau of Economic Analysis; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

Figure 3 tells only part of the story, however. GDP measures how much the entire economy produces within a twelve-month period. This is determined in part by the number of workers who are working and in part by worker productivity. As presented in figure 4, since the recession began, average worker productivity has soared.

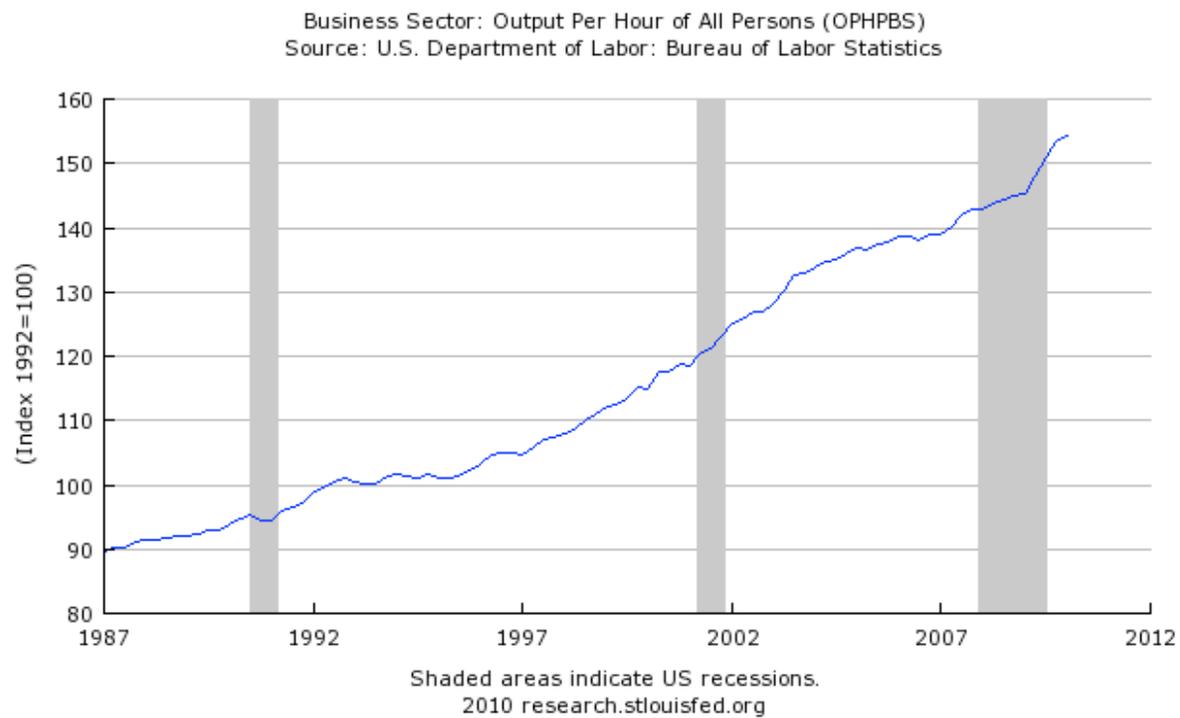
The increase in productivity implies that the economy has been able to return to growth without a significant increase in the proportion of people working.

The broadest measure of work being done is the aggregate weekly hours index (AWHI). This index, presented in figure 5, has made up only a fraction of the ground lost during the recession, and it implies very little movement in the unemployment rate. The unemployment rate is one of the most often cited economic statistics. This is in part because it closely reflects the financial pain that everyday U.S. citizens feel. When the unemployment rate is high, it not only means that many citizens are out of jobs, but also that every job seeker has great deal of competition. As a result, wage increases will be hard to come by, and the threat of job loss will be more acute. Workers will be reluctant to attempt to change jobs, and families, in general, will face more stress.

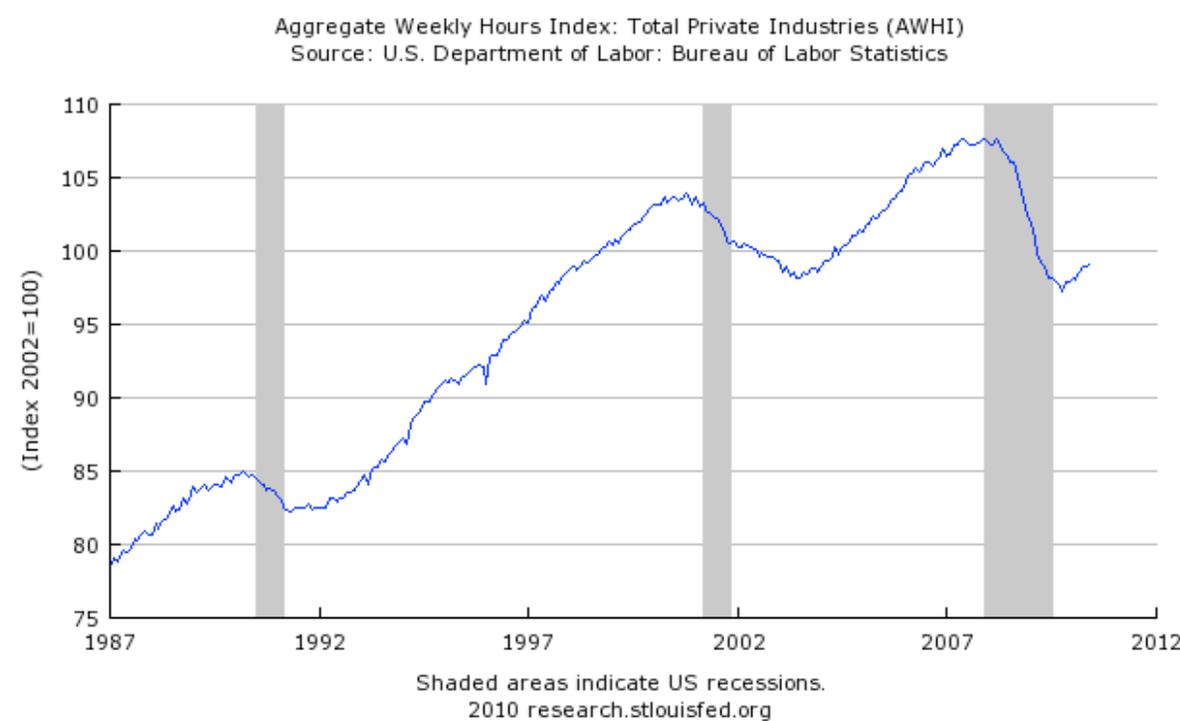
Considering all of the above economic indicators, the unemployment rate is a good gauge of the economic pain felt by U.S. citizens. As a measure of economic performance, it has some weaknesses, however. For example, the unemployment rate may rise (or fall) not because more people are losing (or getting) jobs but because more (or fewer) people are looking; in short, a worker is unemployed if—and only if—he or she does not have a job but is actively looking for a job. If some workers give up and stop looking, the unemployment rate will fall.

For this reason, the AWHI gives economists a better sense of how much work is actually being done in the economy, what to expect for total economic output going forward, and what

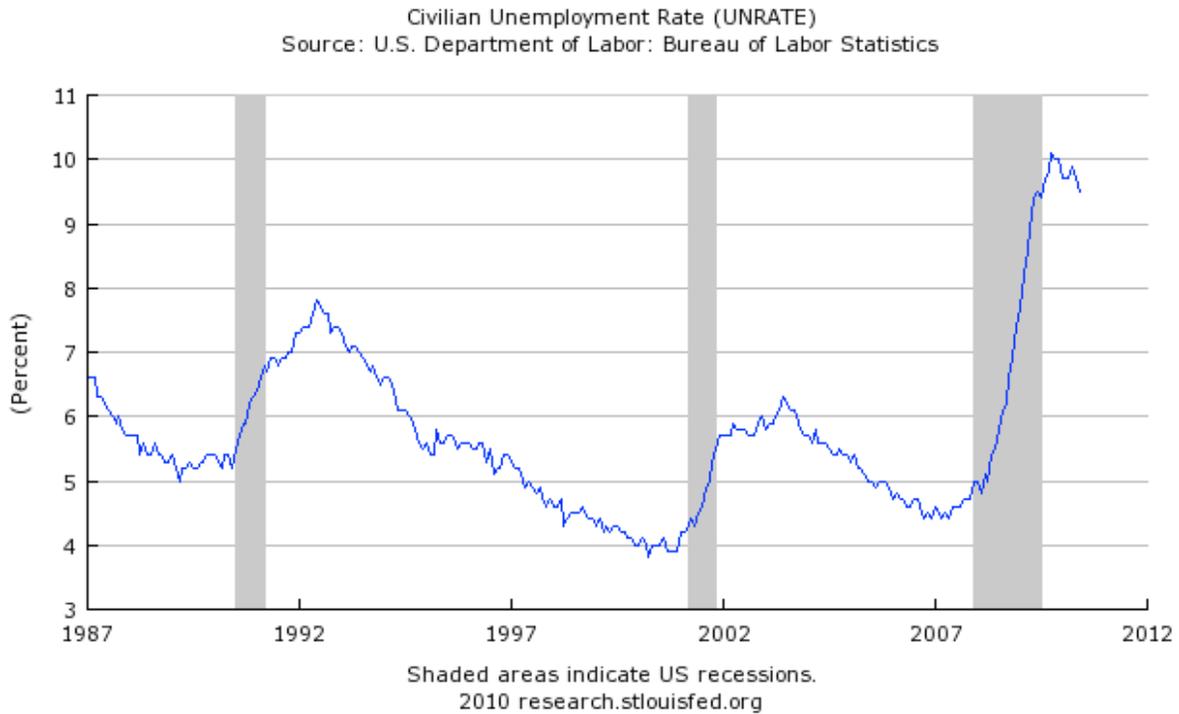
**Figure 4. Business Sector: Output Per Hour of All Persons**



**Figure 5. Aggregate Weekly Hours Index: Total Private Industries**



Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

**Figure 6. Civilian Unemployment Rate**

Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

the tax base will look like. Nonetheless, a look at the unemployment rate, seen in figure 6, is important for interpreting the well-being of U.S. citizens.

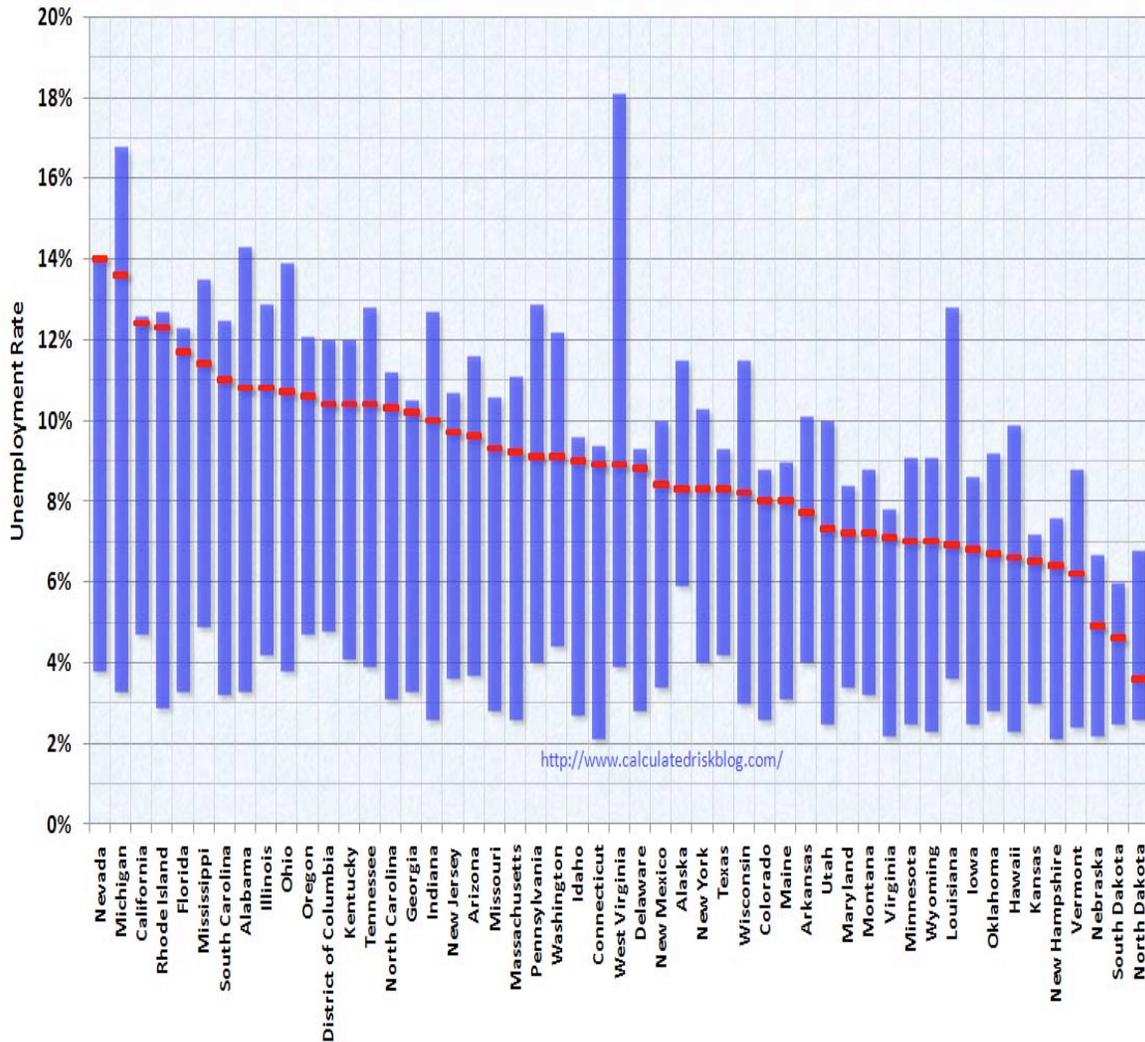
The U.S. unemployment rate has fallen slightly in the past several months. It is reasonable to assume this trend will continue in part because of additional hiring but also because of an usually high number of workers dropping out of the labor force. Typically, workers enter the labor force as the economy recovers, which actually results in a rise in unemployment during the beginning phases of the recovery.

The beginning phase of this recovery has been different. In particular, teenagers are dropping out of the labor force at high rates. This is somewhat welcome news for the adults who would be competing against them as earners, but it is bad news for government revenues. Teenage wages and teenage spending contribute to the tax base, and without them, economists expect weaker revenues at all levels of government.

### Condition of North Carolina's Economy

The most recent recession hit North Carolina relatively harder than recessions in the past. Historically, North Carolina has tended to fare better than other states; however, this recession has been different. As of May 2010, North Carolina had the fourteenth highest unemployment rate in the nation (see figure 7) and was near its historical high. That high was set earlier in the most recent recession.

**Figure 7. State Unemployment Rates: High, Low, and Current (Since January 1976), May 2010**

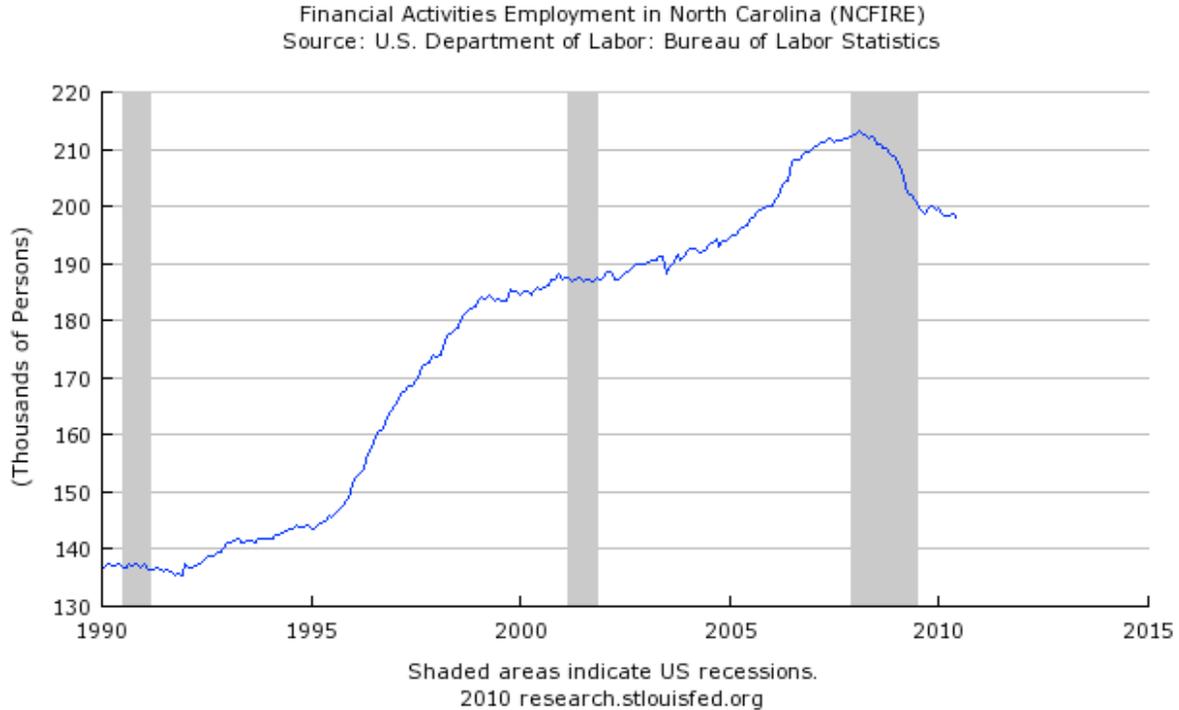


Source: U.S. Department of Labor: Bureau of Labor Statistics; [www.calculatedriskblog.com](http://www.calculatedriskblog.com)

Unfortunately this dampens the prospects for additional federal aid for state governments. If pressure exists for additional federal funds, then one can tell whether North Carolina is relatively more or less desperate. That is, if the state is in dire straits, one can expect that other entities will also be lobbying for additional funds. Predicting the outcome of a political process is beyond the scope of this bulletin. However, each state delegation to the United States Congress acts based on the unemployment rate in its own state. Congress as a whole will be less interested in increasing aid to North Carolina than will be members of the state’s delegation. Naturally, politicians respond to factors other than the employment situation in their own districts.

**Particular Economic Factors Affecting North Carolina**

As stated above, the economic situation in North Carolina is somewhat worse than the national average due to a couple of factors. First, North Carolina in general and the Charlotte

**Figure 8. Financial Activities Employment in North Carolina**

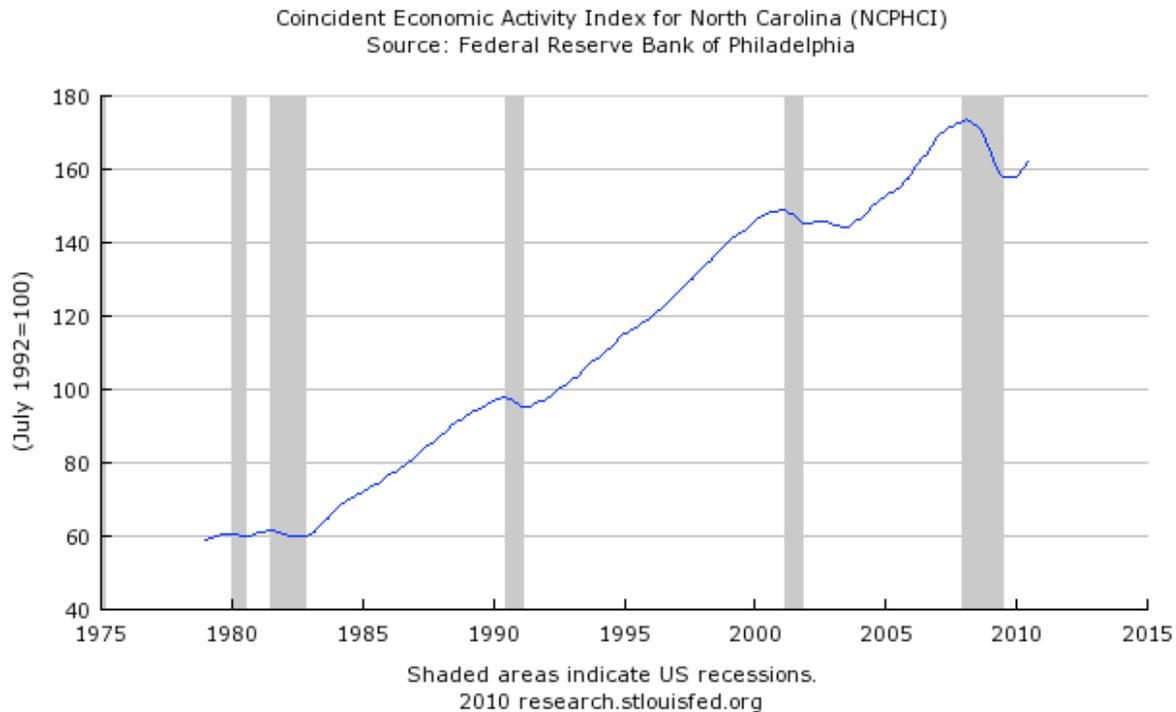
Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

metropolitan area in particular are large finance centers. The economic crisis began in the finance sector, and unlike previous recessions, employment in finance dropped significantly. See figure 8.

Indeed, employment in financial services has not recovered, and it is not reasonable to expect a recovery anytime soon. There is enormous uncertainty concerning the future size of the financial sector within the overall economy. Significant political pressure exists to shrink the size and scope of the financial services industry and to place restrictions on the type of products that might be offered. To the extent that these efforts are successful, a permanent reduction in the size of the consumer financial industry may occur. This is likely to permanently impact the growth rate of the Charlotte region. Economists disagree regarding the extent to which a community's growth is driven by factors intrinsic to that community or by the growth of industries based in the region. For example, one could question whether the Detroit area is experiencing significant stress simply because the auto industry is shrinking or if factors endemic to Detroit exist that prevent the region from retooling for the new economy.

It is beyond the scope of this bulletin to settle that debate. However, it is important for policy makers to note that whichever theory of community development one subscribes to, the reduction in the growth of a major industry will, at minimum, pose a significant challenge to the region it calls home.

Despite the ongoing stress in the financial sector, economic activity in North Carolina has begun to turn around, albeit more slowly than the nation as a whole. See figure 9.

**Figure 9. Coincident Economic Activity Index for North Carolina**

Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of Philadelphia;  
[www.research.stlouisfed.org](http://www.research.stlouisfed.org)

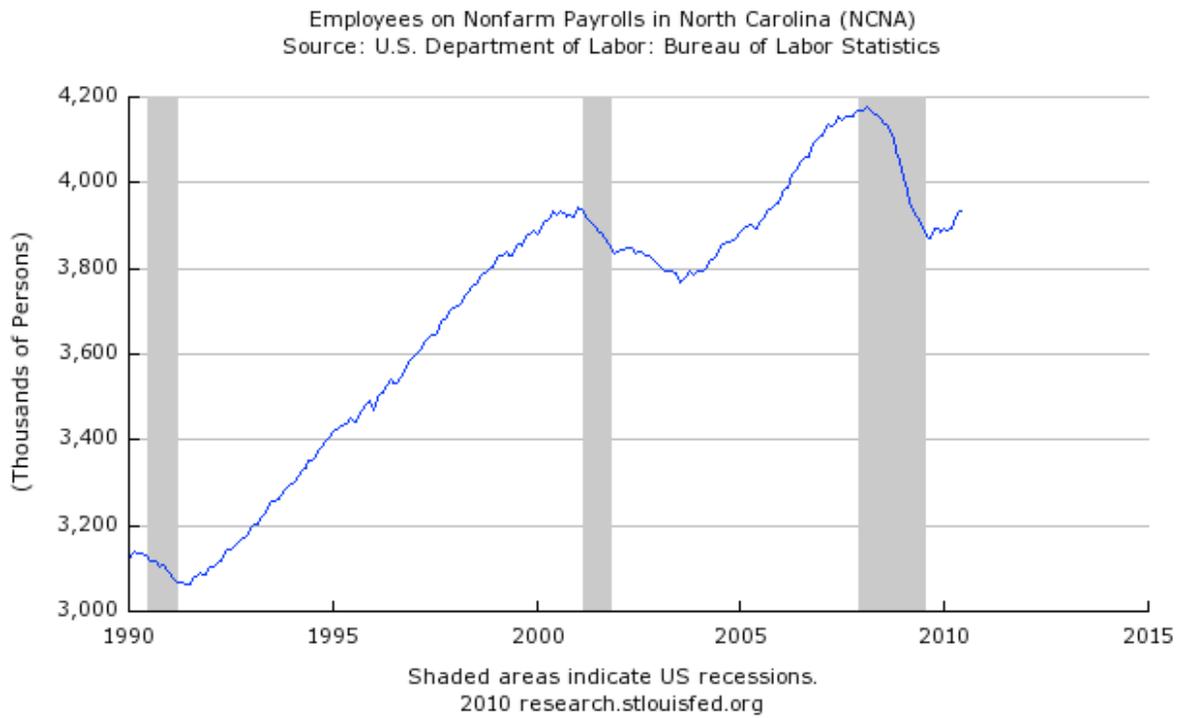
Barring a new crisis of some sort, it is reasonable to expect economic activity in North Carolina to continue its upward trajectory. However, at its current pace, it will be another eighteen months before North Carolina's economy returns to its prerecession levels.

Employment data show a similar picture, though like the nation as a whole, even more ground needs to be made up. See figure 10. Again, this is accounted for by the surge in productivity during the most recent recession. Some readers might be tempted to say that the slow employment growth is caused by the productivity surge. Strictly speaking, this is not accurate.

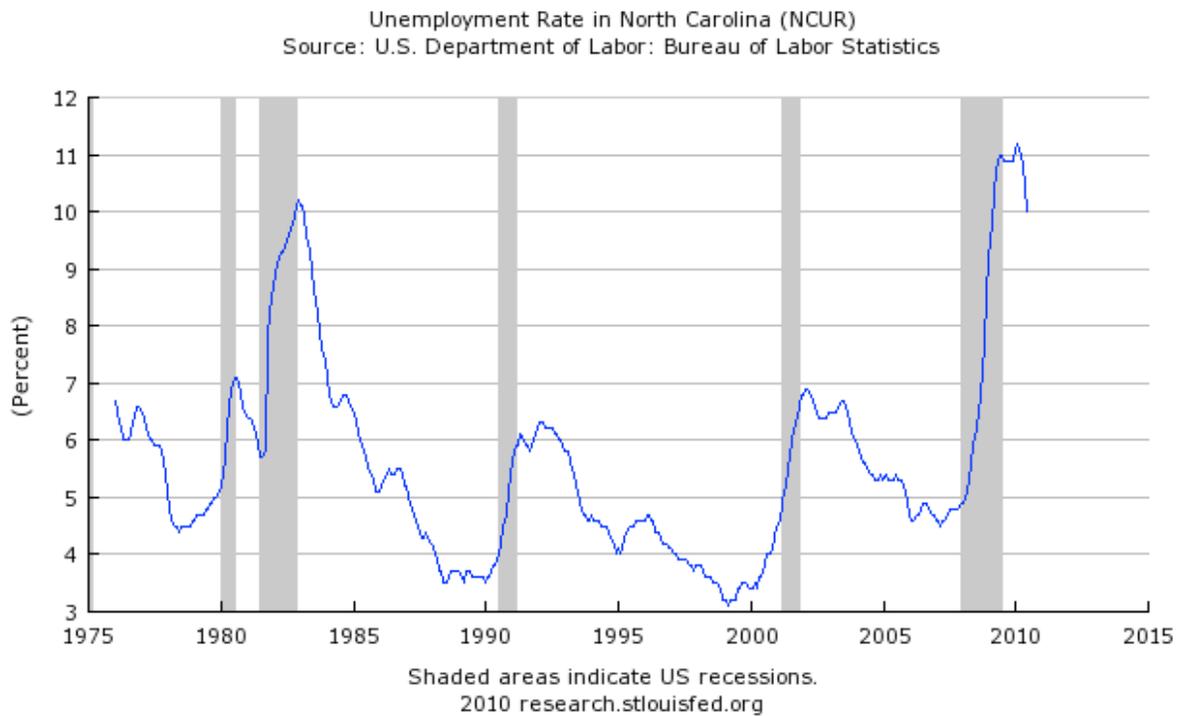
It is true that if economic activity were at its current level and if productivity had not surged, then employment would be higher. However, it is impossible to be certain that economic activity would be at its current level had there been no surge. Interestingly, it also cannot be said that it would not have been, because a relationship exists between productivity growth and the effectiveness of monetary policy; that is, the faster productivity grows, the more aggressively the Federal Reserve has to stimulate the economy in order to prevent deflation. An economy that is growing in productivity but has a stagnant money supply will experience persistent deflation. The "What's Next" section, below, will review how and why deflation suppresses economic activity.

The unemployment rate, as shown in figure 11, appears to have peaked in North Carolina as in the nation as a whole. In large part, however, this is due to large numbers of teenagers exiting the workforce. As discussed above, this makes it easier for adults to find jobs, but it potentially lowers overall production and spending—and revenue for the state.

**Figure 10. Employees on Nonfarm Payrolls in North Carolina**



**Figure 11. Unemployment Rate in North Carolina**



Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

**Figure 12. Unemployment Rate in Charlotte-Gastonia-Concord NC-SC**

Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

### Large Localities

Charlotte and Raleigh are the two largest and fastest growing metropolitan areas in the state. In addition to providing employment for a large fraction of North Carolinians, growth in these regions is a significant driver of state revenues. None of the data presented in the following sections is particularly surprising, but it is worth noting.

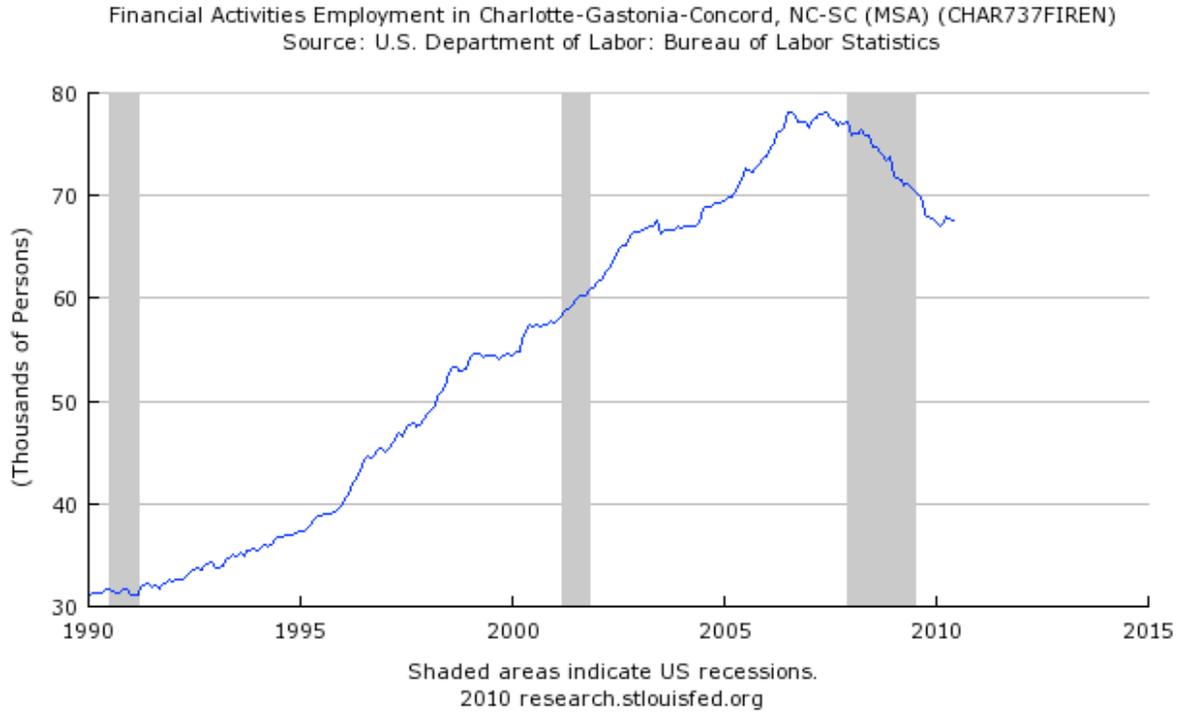
As noted above, the recession has been particularly difficult in the Charlotte metropolitan area. See figure 12. Unemployment in this region peaked at 12.7 percent, which is more than a point higher than the statewide average.

Also, there has been a fairly steady loss in financial sector employment in the region, totaling more than ten thousand jobs since the recession began. A small uptick in employment occurred recently (see figure 13), but at this point it is reasonable to assume that it is merely statistical noise. As such, economists can expect the sector to continue to deteriorate in the near future. Recovery will be a long, slow process.

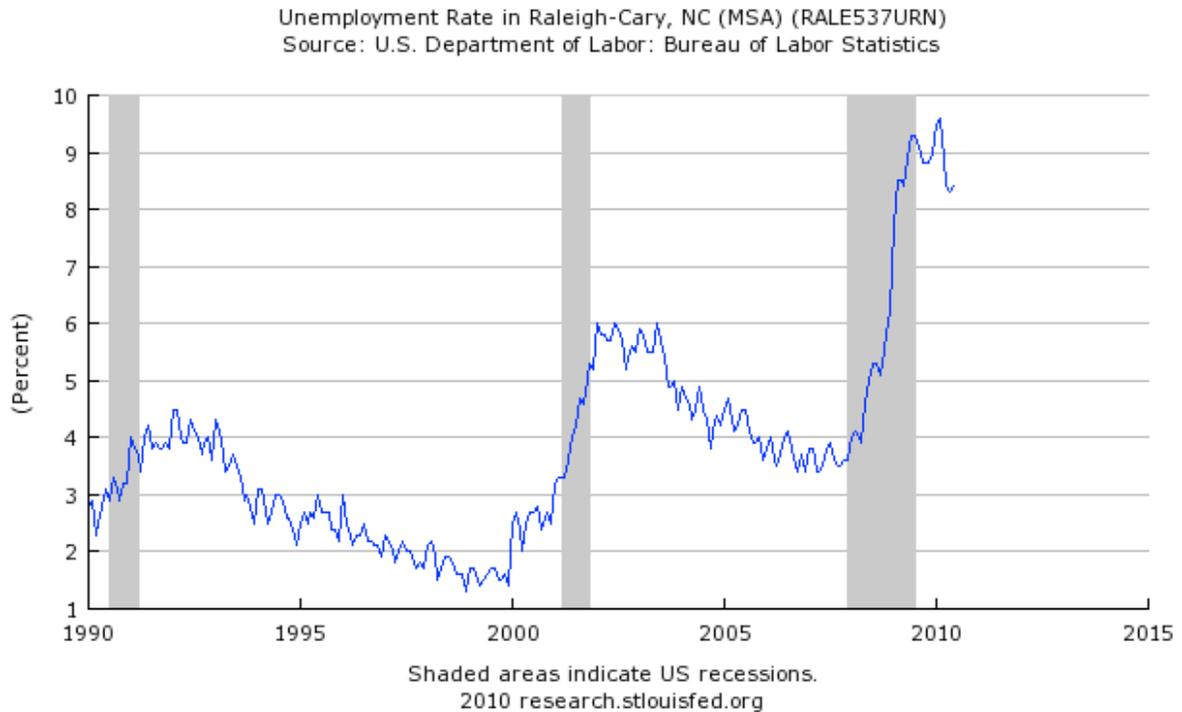
On the other hand, the Raleigh metropolitan area has experienced better than average conditions with unemployment peaking at less than 10 percent. Indeed, relative to the 2001 economic crisis, Raleigh has not seen an extreme unemployment surge. During this recession unemployment surged from roughly 4 percent to roughly 9.5 percent, an increase of 6 percentage points. From the dot-com crash in 2000 to the end of the 2001 recession unemployment moved from just more than 1 percent to 6 percent for an increase of nearly 5 percent. See figure 14.

The reasons for the area's low unemployment rate are straightforward. The 2000 recession was concentrated information technology (IT). The astounding growth rate that Raleigh was

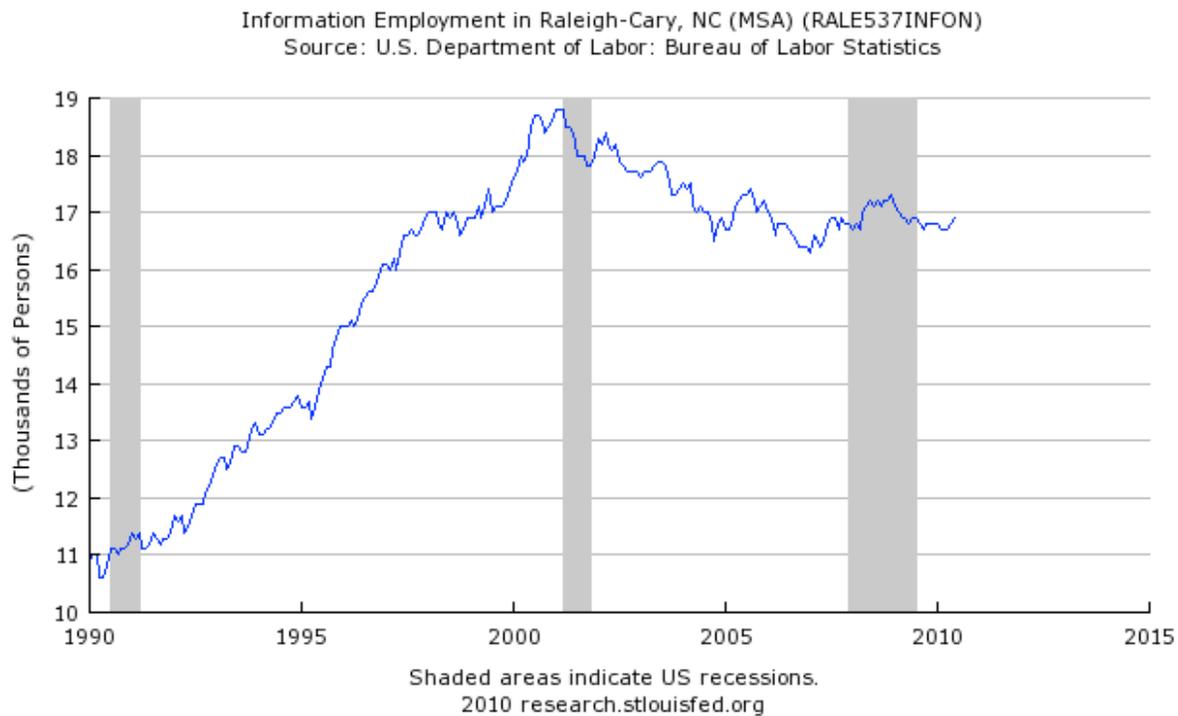
**Figure 13. Financial Activities Employment in Charlotte-Gastonia-Concord NC-SC**



**Figure 14. Unemployment Rate in Raleigh-Cary, NC**



Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

**Figure 15. Information Employment in Raleigh-Cary, NC**

Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

experiencing suddenly turned around in 2000 and never fully recovered. However, IT employment was relatively unaffected by the most recent recession. See figure 15. Thus the year 2000 was relatively bad, but the most recent recession was relatively mild in comparison to other regions.

The takeaway from this situation is that the dynamics of a region and by extension the state are largely tied to the dynamics of the constituent industries and their position within the national economy. Some policies exist that can be adopted over the long run to attract certain industries to North Carolina. This would involve economic development policy. However, once clusters are established, the employment and revenue situation is inextricably tied to those sectors. If the finance sector is experiencing stress, there is little that Charlotte can do to prevent this, and it, and the state as a whole, must prepare for the worst. On the other hand, less-affected industries, such as IT during the recent recession, will buffer both their regions and to a lesser extent the state as a whole.

Therefore, it is extremely useful as a first approximation to think of how the major industries will fare during the next few years when attempting to forecast employment and revenue. Even though this type of back-of-the-envelope analysis may seem primitive relative to large-scale economic models, it does a good job over the two-to-three-year horizon.

## What's Next

The baseline forecast is for a steady but tepid recovery for North Carolina generally. However, there are a few risks of which policy makers should be aware.

### **Double-Dip Recession**

The first risk is the possibility of a double-dip recession. A number of economic pundits have raised this concern. Generally speaking, a double-dip recession or “W-shaped” recovery occurs when a factor or set of factors has artificially boosted demand for a brief period but in a way that is unsustainable. At this point, these effects do not appear strong enough to pull the United States or North Carolina into recession, but advocates of the double dip theory are monitoring three possible sources.

### ***Inventory Correction***

As seen in figure 16, in response to the 2008 recession, retailers and wholesalers sharply cut orders for new goods. The orders were cut so sharply that inventories actually fell during the recession; that is, retail sales were falling, but new orders were falling even faster. Thus retailers tended to run out of goods.

In response to the goods deficit, retailers upped their orders to replenish lost inventories. This created a temporary surge in production. However, no inventories were actually replenished, and sales are still weak. Thus, a possibility exists for a double dip.

It is reasonable to suggest that inventory correction should be taken seriously; expect strong headwinds going forward. However, although the level of retail sales has not recovered, the growth rate has improved. Ultimately, it is the growth of retail sales that determines the growth of orders. See figure 17. Thus, although we expect orders to be below their prerecession levels, they should continue to show growth in the coming quarters.

### ***Census Workers***

Some pundits point to the temporary hiring of census workers as a factor artificially supporting the economy. Although it is true that the census workers significantly distorted the jobs picture for a short time, as illustrated in figure 18, the hours worked, wages earned, and job duration were too short to produce a pronounced economic effect. Moreover, census workers were fully aware that their jobs were temporary, so it is highly unlikely that they significantly boosted personal spending in response to those jobs. All in all, this is likely to be a small effect.

### ***Stimulus Spending***

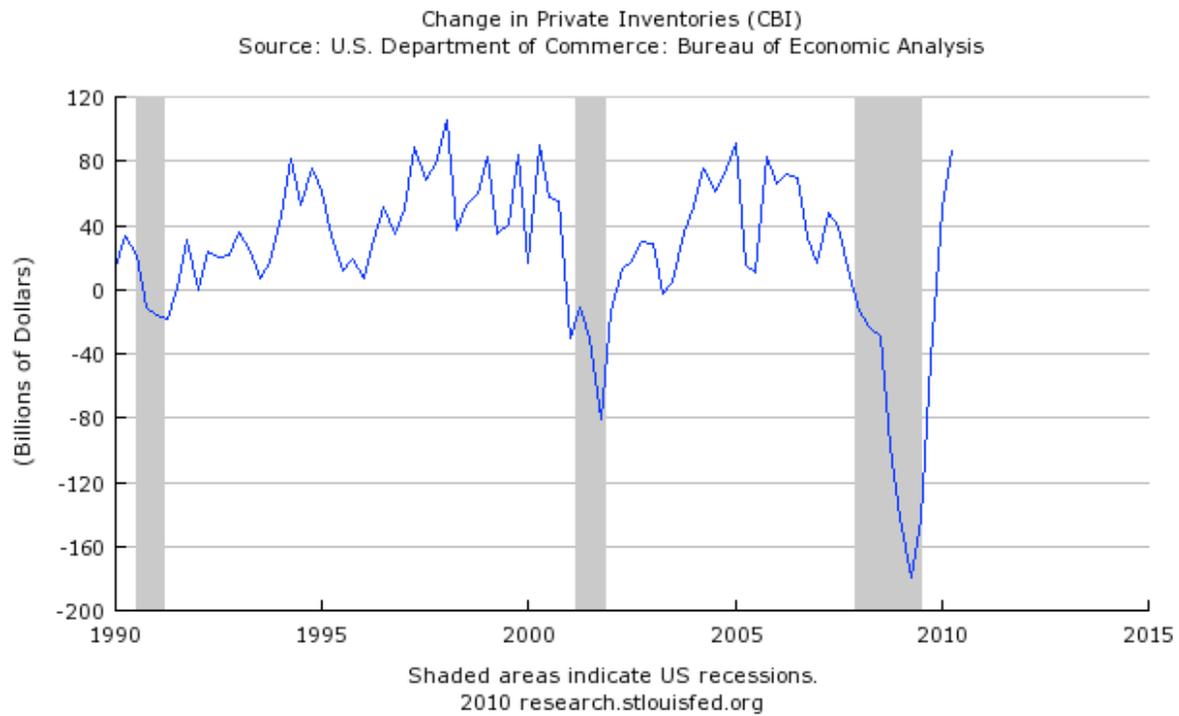
Lastly, concern exists that the end of the stimulus spending, in particular, federal aid to the states, may contribute to a double dip. Indeed, Moody's estimates that up to 3 percentage points of growth during the past year were due to effects of the stimulus package. Additionally, many state and local employees were paid with stimulus funds.

As the stimulus funding runs out, Moody's predicts that those state and local workers will lose their jobs, resulting in a drag on economic growth.<sup>2</sup> This is a significant concern, leading economists to question whether the loss of state and local employees will be sufficient to drag the economy back into recession.

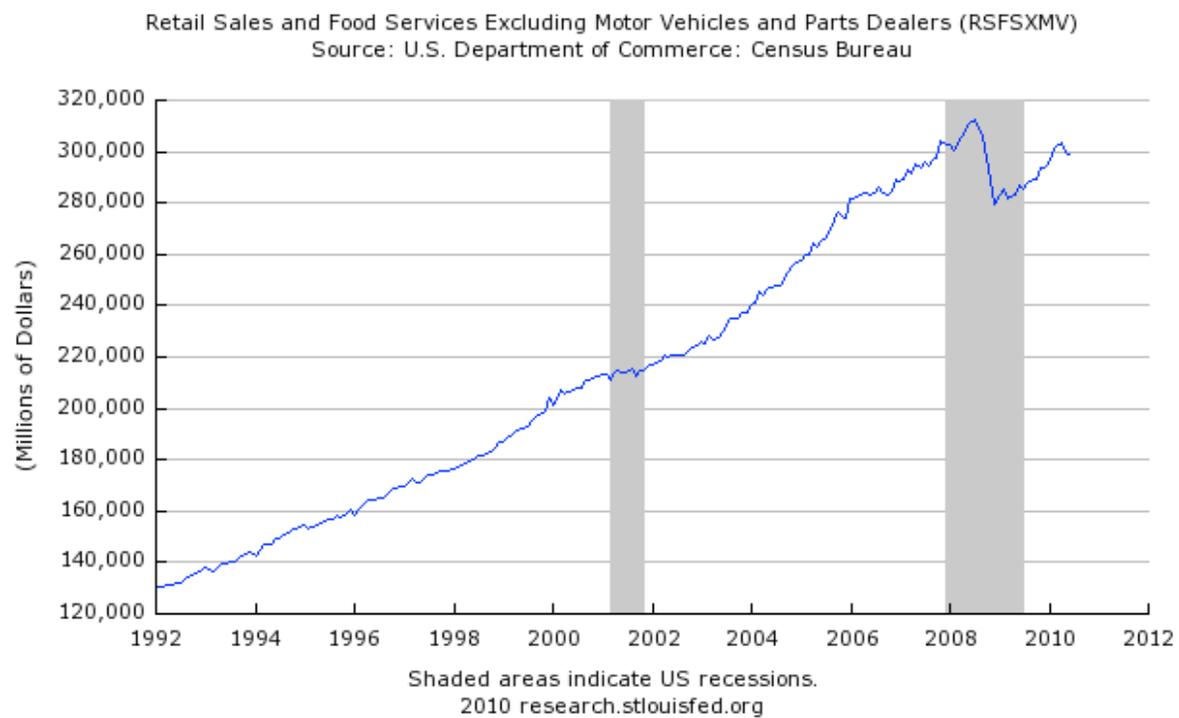
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2. Mark Zandi, “The Economic Impact of a \$600 Billion Fiscal Stimulus Package,” Moody's Economy.com, [www.economy.com/mark-zandi/documents/The\\_Economic\\_Impact\\_of\\_a\\_600\\_Billion\\_Fiscal\\_Stimulus\\_Package.pdf](http://www.economy.com/mark-zandi/documents/The_Economic_Impact_of_a_600_Billion_Fiscal_Stimulus_Package.pdf).

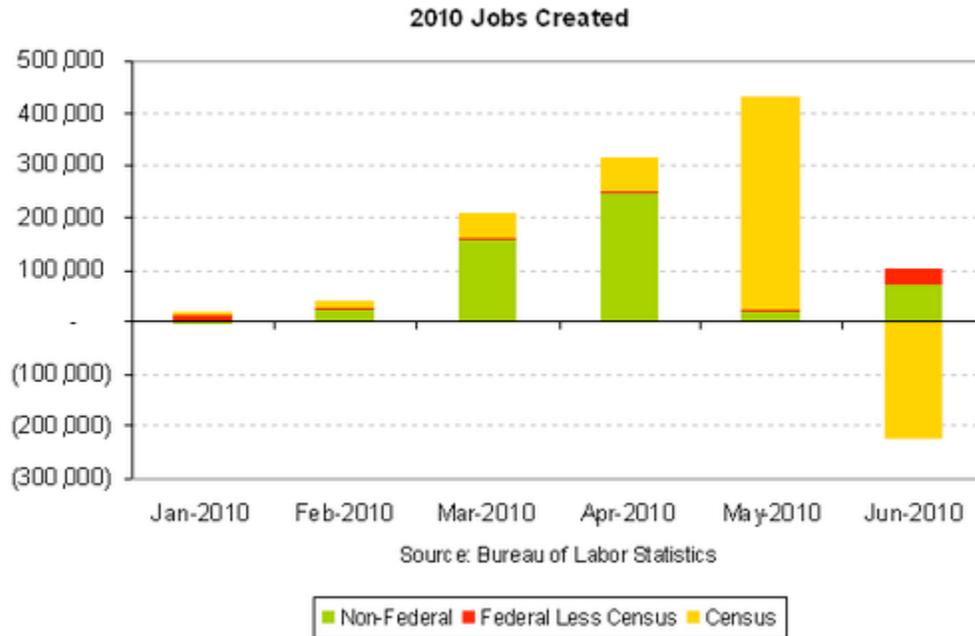
**Figure 16. Change in Private Inventories**



**Figure 17. Retail Sales and Food Services Excluding Motor Vehicles and Parts Dealers**



Source: FRED, Federal Reserve Economic Data, Federal Reserve Bank of St. Louis; U.S. Department of Commerce: Census Bureau; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

**Figure 18. 2010 Jobs Created**

Source: Daniel Idiviglio, *The Atlantic*, [www.theatlantic.com](http://www.theatlantic.com)

As of this writing, the Moody's forecast estimates that the loss of those workers will subtract roughly 1 percent from GDP. This will weaken the economy, but it is not likely to be enough to drag the country back into recession.

### Europe's Economic Crisis

The second risk is the possibility of a second financial crisis in Europe. European bond spreads are showing the same type of activity that warned of a collapse in the U.S. financial markets.<sup>3</sup>

Several European economies, most notably Greece and Portugal, may have trouble meeting their debt obligations. Those nations were extremely hard hit by the global collapse in real estate prices. They saw the same type of price appreciation as Florida, California, and other sun destinations; they then saw a similar market collapse.

The European Union, the International Monetary Fund, and the European Central Bank have all attempted a rescue package for the troubled nations similar to the TARP program instituted in the United States. However, as of this writing, the program appears not to have been as effective. If a second financial crisis occurs, then it is reasonable to expect another decline in global output and increased strain for the United States and North Carolina.

### Monetary Policy

The most troubling risk facing the United States generally is the condition of its monetary policy, that is, policy made by the Federal Reserve. The Federal Reserve controls the printing of U.S. currency. By controlling the rate at which it prints money, the Federal Reserve can control

3. Federal Reserve Bank of Atlanta, [www.frbatlanta.org/cenfig/pubs/scf/vn\\_credit\\_default\\_swaps.cfm](http://www.frbatlanta.org/cenfig/pubs/scf/vn_credit_default_swaps.cfm).

short-term interest rates. In particular, it controls an interest rate called the Fed Funds rate—the rate at which banks inside the United States loan money to each other for a single night.<sup>4</sup>

### ***Calculation of the Fed Funds Rate***

The key point to understand is that the Fed Funds rate serves as the basis for all other interest rates in the economy, and to a large extent, it controls the growth rate of the economy. If the Fed Funds rate is too high, the economy will slow down and slide into recession. If the Fed Funds rate is too low, the economy will heat up and inflation will ensue. Thus economists have spent a great deal of time attempting to estimate the ideal Fed Funds rate.

One method, known as the Mankiw Rule,<sup>5</sup> is named for Harvard University economics professor Greg Mankiw. Specifically, the Mankiw Rule states that the Fed Funds rate should be calculated as follows:

$$\text{Fed Funds Rate} = 8.5 + 1.4 \times (\text{Core Inflation} - \text{Unemployment})$$

This rule matched monetary policy very closely throughout the 1990s. There was some deviation during the 2000s, but the two departed greatly in January 2008.

The Mankiw Rule suggested that the Federal Reserve should have continued cutting interest rates throughout 2008, and 2009, and 2010. However, one problem exists. The Fed Funds rate hit zero in January of 2008. Unless some very unconventional policies were adopted, it is not possible for the Fed Funds rate to be driven below zero. This would imply that banks were paying each other to take money. There is no reason for banks to do this. They would simply keep any extra cash in the vault, and that is exactly what they have been doing. As demonstrated in figure 19, one can see that bank holdings of excess cash, that is, cash over the amount they are legally required to have in the vault, has skyrocketed.

As of this publication, banks are holding more than \$1 trillion in extra cash in their vaults. There is no conventional way to encourage banks to lend this money out. By construction, the Federal Reserve is an institution that hews closely to convention. A lingering question is whether it will institute a policy designed to force the banks to release their funds.

### ***Calculation of Inflation and Deflation***

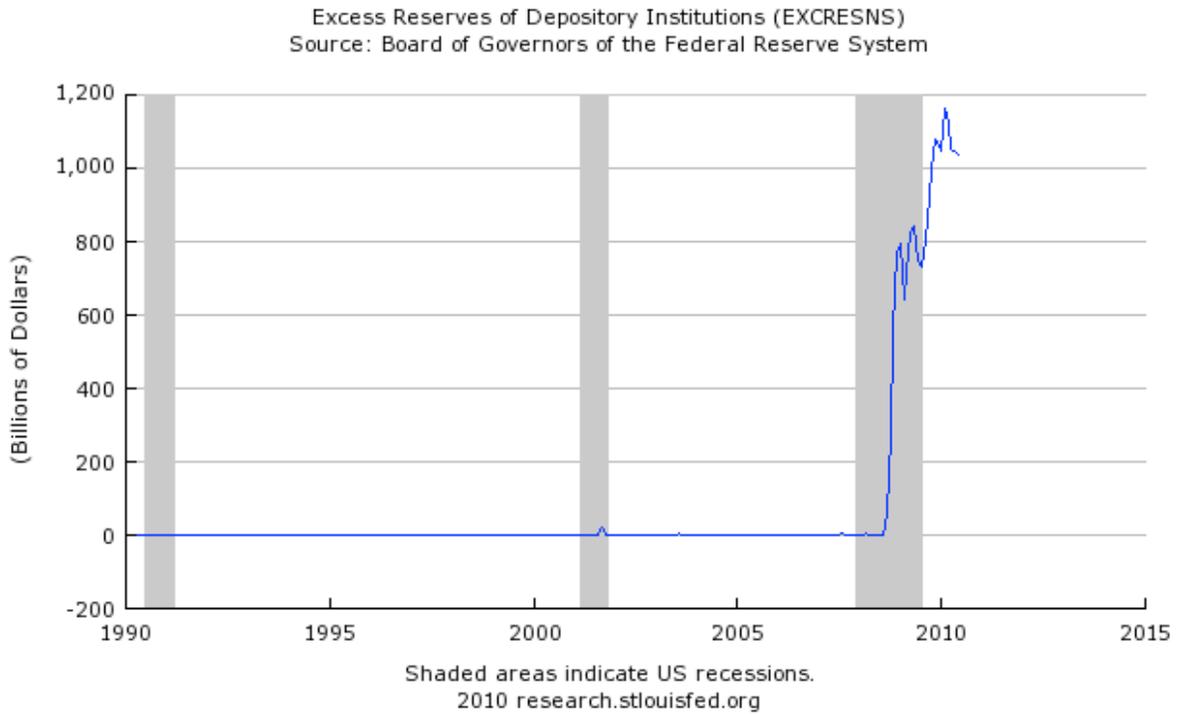
Making the problem even worse is the spectre of deflation. The inflation rate has been falling steadily, and a significant probability exists that the United States will begin to experience negative inflation or deflation within the next year. See figure 20.

This makes the problem of banks hoarding cash even worse, because if deflation exists, the implication is that every year the price of real things in the economy is shrinking. In particular, it means that the value of any collateral, whether a house, a car, a factory, or even a store's inventory, will be shrinking over time. This makes it dangerous to lend money. At the same time, the amount that a dollar purchases is rising. This means that by simply holding cash in the vault

4. For more information on the Fed Funds rate, see Karl W. Smith, "Housing, Exports, and North Carolina's Economy," *Economics Bulletin* No. 1 (UNC School of Government, Sept. 2008) [www.sog.unc.edu/pubs/electronicversions/pdfs/eb1.pdf](http://www.sog.unc.edu/pubs/electronicversions/pdfs/eb1.pdf).

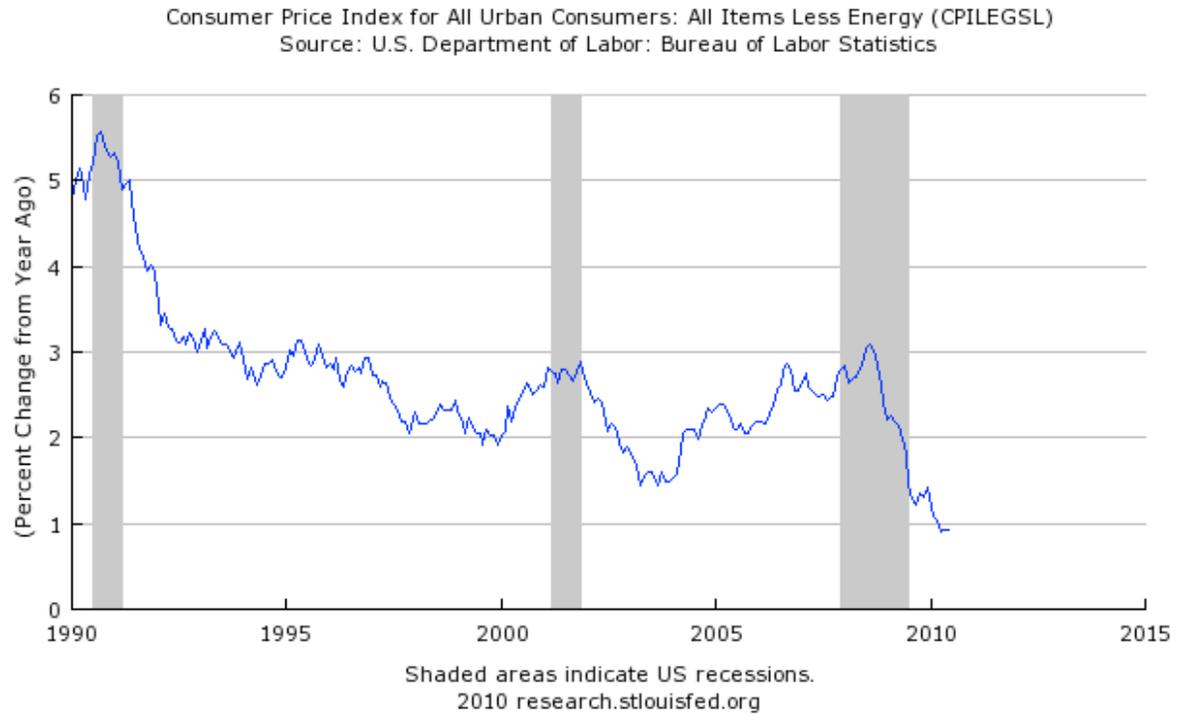
5. See Andy Harless, U.S. Monetary Policy under Greenspan and Bernanke, [http://3.bp.blogspot.com/\\_97gJOpvVAWE/TAgWIO4AnSI/AAAAAAAAABI/TMs5BB\\_u-wU/s1600/mankiwRuleChartApril2010.jpg](http://3.bp.blogspot.com/_97gJOpvVAWE/TAgWIO4AnSI/AAAAAAAAABI/TMs5BB_u-wU/s1600/mankiwRuleChartApril2010.jpg).

**Figure 19. Excess Reserves of Depository Institutions**



Source: FRED, Federal Reserve Economic Data; Board of Governors of the Federal Reserve System; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

**Figure 20. Consumer Price Index for all Urban Consumers: All Items Less Energy**



Source: FRED, Federal Reserve Economic Data; U.S. Department of Labor: Bureau of Labor Statistics; [www.research.stlouisfed.org](http://www.research.stlouisfed.org)

banks effectively earn a return. The \$1 trillion they are holding at present will buy more things next year and even more things the year after that.

Thus banks are faced with the choice of lending out money against collateral which is quickly depreciating in value or holding on to that money and having a guaranteed increase in buying power. This is a strong incentive for banks to reduce lending. This thinking can turn into a deadly spiral because the less lending banks do, the less spending consumers do. This in turn means that retailers will cut prices, leading to further deflation and further weakness. In theory, the cycle can persist indefinitely. Indeed, the Japanese economy has experienced deflation and weakness ever since a real estate and stock market crash in 1989.

## Conclusion

North Carolina was hard hit by the most recent recession in large part because of significant job losses in the financial sector. It is unlikely that the state's financial industry will recover anytime soon. North Carolina faces significant headwinds moving forward. Nonetheless, the base-line forecast is for steady if tepid growth. Unemployment will remain high for some time, and restructuring will be difficult, particularly in the Charlotte region.

On the other hand, policy makers should be aware that significant risks still remain. The opportunity for stimulus funding is fading. Either the state budget will have to shrink in size or it will have to consume a larger fraction of economic resources. Either choice will involve significant sacrifice on the part of the state's residents. This will cause obvious difficulty in balancing the state budget, but it also means that the very likely possibility of state employee layoffs will cause economic activity to be further slowed.

On a national level, the economic crisis in Europe remains an open possibility on which the federal government should keep its eye. Should the European crisis grow in severity, it would be prudent to begin preparations for an even more adverse revenue picture. Much of the country's economic future depends on whether the Federal Reserve is willing to adopt unconventional means to encourage bank lending. This bulletin will not recommend specific measures, but it is relevant to note that it is within the power of the Federal Reserve to take a more unconventional tack. Whether it does is up to its policy leaders. The consequences of conventional monetary policy could be a repeat of Japan's experience following its 1989 market crash, that is, continual weakness and persistent deflation.

Federal and state economies have likely moved to a lower growth path. Policy makers should consider that changes made in response to the current economic weakness are likely to be semi-permanent, because economic growth will likely remain below trend for some time. Cuts to personnel should not be viewed as temporary reductions but as steps toward possibly permanent restructuring. Likewise, tax increases should not be viewed as temporary gap-closing measures but as semipermanent increases in the share of the economy taken by the state.

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