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An Economic Report to the Governor of the State of Tennessee

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Preface

This 2008 volume of An Economic Report to the Governor of the State of Tennessee is the thirty-second in a series of annual reports compiled in response to requests by state government officials for assistance in achieving greater interdepartmental consistency in planning and budgeting efforts sensitive to the overall economic environment. Both short-term, or business cycle-sensitive forecasts, and longer-term, or trend forecasts, are provided in this report.

The quarterly state forecast through the first quarter of 2010 and annual forecast through 2017 represent the collective judgment of the staff of the University of Tennessee’s Center for Business and Economic Research in conjunction with the Quarterly and Annual Tennessee Econometric Models. The national forecasts were prepared by Global Insight, Inc. Tennessee forecasts, current as of January 2008, are based on an array of assumptions, particularly at the national level, which are described in Chapter One. Chapter Two details evaluations for major sectors of the Tennessee economy, with an agriculture section provided by the University of Tennessee Agricultural Policy Analysis Center. Chapter Three presents the long-run outlook and forecast for the state. Chapter Four discusses welfare policy changes and the extent to which graduates from Tennessee’s institutions of higher education contribute to the state’s economy.

The primary purpose of this annual volume—published, distributed, and financed through the Tennessee Department of Finance and Administration, Tennessee Department of Economic and Community Development, the Tennessee Department of Revenue, the Tennessee Department of Labor and Workforce Development, and the Appalachian Regional Commission—is to provide wide public dissemination of the most-current possible economic analysis to planners and decision-makers in the public and private sectors.
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The U.S. Economy continued its slowdown in 2007 as the housing market slumped further and banks tightened credit availability. While the economy expanded for the sixth straight year following the 2001 recession, pessimism and uneasiness characterized the economic landscape, especially as the year came to a close. Inflation-adjusted gross domestic product (GDP), perhaps the most widely used indicator of overall economic health, grew at an annual rate of 0.6 percent in the fourth quarter of 2007. However, GDP growth for 2007 overall is expected to come in at only about 2.2 percent, the lowest level since 2002.

This chapter provides an overview of the current economic situation for the nation along with a short-term forecast of things to come. To summarize briefly in advance, the U.S. economy appears to be on shaky ground, with some risk of recession in the near future. A relatively decent labor market, low interest rates, and controlled inflation have all contributed to slow, but stable, spending by businesses and consumers. However, economic conditions deteriorated toward the end of 2007. The nation’s December payroll report showed a loss of jobs, the unemployment rate is on the rise, growth in personal disposable income has weakened and the housing market has

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1 Unless otherwise noted, all growth rates in this chapter are seasonally adjusted annual rates (SAARs).

2 CBER bases its U.S. forecast on that provided by Global Insight, Inc.
shown no sign of a turnaround. The depth of the problem is illustrated by the Federal Reserve Bank’s (Fed) dramatic action in cutting the federal funds rate by three-quarters of a percentage point on January 22, following three interest rates cuts last year. The cuts of 2007 were the first in over four years.

Psychology and animal spirits will have an important bearing on the direction of the economy in the quarters ahead. The performance of global stock markets is testimony to the role played by psychology. According to the University of Michigan Consumer Sentiment Index, Americans’ confidence in the state of the economy has faltered: consumer sentiment was almost 18 percent lower in December 2007 than it was a year earlier. Oftentimes, this doubt becomes self-fulfilling in the sense that consumers and businesses will curb current spending today if they anticipate rougher times ahead. This in turn causes economic growth to slow and the economy to weaken—exactly what was originally feared.

Despite waning confidence, economic growth is expected to continue in 2008, although at a slower rate. Inflation-adjusted GDP is expected to rise at a 1.9 percent seasonally adjusted annual rate. However, this estimate is “back-loaded” in the sense that the economy is expected to grow at only a 0.9 percent annual average rate for the first three quarters of the year, narrowly escaping recession. This growth will be aided by an eventual recovery of the housing sector, continued improvement in trade balances and further interest rate cuts by the Fed, which will spur business and residential investment. While the Fed has already lowered the federal funds rate substantially, expect further cuts as the year unfolds.

As this goes to print, federal policymakers are also actively discussing a wide variety of fiscal stimulus packages designed to boost the economy in the short-term, most of which include both tax rebates and spending programs designed to put money in the hands of those that will spend it. The discussion to date has primarily focused on plans that call for around $150 billion in tax relief and increased federal spending, which represents roughly 1 percent of GDP.
1.2. The U.S. Economy: Year in Review

Economists traditionally define a recession as at least two consecutive quarters of inflation-adjusted GDP decline. As shown in Figure 1.1, inflation-adjusted GDP growth has been positive since the third quarter of 2001. For much of the subsequent five years, growth was around 3 percent, with some fluctuation. Unfortunately, the economy dipped in 2006 and has spent the past couple years with below-average growth, with the exception of the third quarter of 2007. The most recent data confirmed news of weak Christmas sales by retailers and low consumer and producer sentiment. Annualized GDP growth in the fourth quarter came in at only 0.6 percent, even lower than was anticipated.

The Business Cycle Dating Committee at the National Bureau of Economic Research (NBER) is responsible for officially determining the beginning and ending dates of U.S. recessions. The NBER goes well beyond GDP in this process, looking instead at more detailed indicators of macroeconomic activity, some of which are discussed at length in the paragraphs that follow.

Components of GDP

Inflation-adjusted GDP represents the total value of goods and services sold in the nation in a given period of time. By definition, it is the sum of consumption spending, investment (including plant and equipment, structures, residential housing, and inventories), government spending, and spending on the international market (net exports, or exports less imports). An examination of each component of GDP offers a more complete picture of overall economic health.

Consumption spending, which typically makes up about two-thirds of total inflation-adjusted GDP, increased at an annual rate of 2.9 percent in 2007. This is less than the 2006 and 2005 annual growth rates of 3.1 percent and 3.2 percent respectively. This slowdown has been driven by sluggish growth in consumer purchases of nondurable goods and services. On the other hand, consumer purchases of durable goods remained relatively strong, growing at an annual rate of 4.8 percent in 2007, up from 3.8 percent in 2006. Typically, the holiday shopping season provides a year-end boost to consumption. However, that

Figure 1.1. Inflation-Adjusted GDP Growth

![Graph of Inflation-Adjusted GDP Growth](source: Bureau of Economic Analysis.)
was not the case last year as November and December retail sales growth was the slowest since 2002.

Spending on residential housing continued its drastic retreat in 2007, providing countless headlines along the way. Residential fixed investment fell by an annualized rate of 24 percent in the fourth quarter of 2007 and 17 percent for the year, significantly worse than the 4.6 percent decline in 2006. As shown in Figure 1.2, the average 30-year mortgage interest rate has generally risen since historical lows in mid-2003, peaking in July 2007. Since then, mortgage rates have fallen, partially in response to the interest rate cuts by the Fed. As concerns of rising mortgage rates and falling home prices have mounted, sales of single-family homes have plummeted over the past two and a half years. Sales fell by an annual rate of 46.3 percent in the third quarter of 2007, far exceeding the losses of 2006, which generated an 18 percent decline.

Business fixed investment rose at an annual rate of 4.8 percent in 2007, down from the 2006 increase of 6.6 percent. This was driven primarily by continued exceptional growth in non-residential investment in structures. The third and fourth quarters of 2007 posted annual growth rates of 16.4 and 15.8 percent, respectively, to go along with solid 8.4 percent growth in 2006. Purchases of equipment and software (3.7 percent annual growth in the fourth quarter of 2007) remained modest.

Government spending grew by 1.7 percent at the federal level and 2.3 percent at the state and local level in 2007. This growth was similar to 2006 (2.2 and 1.6 percent, respectively). Much of the growth in federal spending can be attributed to increased defense spending (2.8 percent annual growth in 2007 compared to 1.9 percent in 2006).

Historically, the biggest drain on domestic economic growth has come from the international market. Since spending by domestic consumers on imports is included in consumption, it is subtracted from export spending in order to avoid double counting and to gauge the true level of international activity that contributes to U.S. economic growth. As shown in Figure 1.4, imports have exceeded exports for well over a

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**Figure 1.2. Mortgage Rates and New Home Sales**

![Figure 1.2. Mortgage Rates and New Home Sales](chart)

Source: Fannie Mae and the Census Bureau.
1.2. The U.S. Economy: Year in Review, continued

The Housing Market

The fall in the housing market and the concurrent sub-prime mortgage turmoil was undoubtedly the most significant economic story of 2007. Housing prices began to fall as streets became lined with *For Sale* signs. Inventories of unsold homes, both new and pre-existing, rose to historical levels causing builders to slow down construction of new homes. Figure 1.3 shows the annual growth rate of Fannie Mae’s Housing Price Index and the number of new single-family housing starts per quarter.

The housing buildup began to gain steam in the early part of the decade as mortgage rates declined from their high in mid-2000 to historical lows in 2003. Sustained high rates of home-price appreciation for much of the last 15 years combined with favorable tax treatment made housing an attractive investment for both families and investors. And since houses were appreciating so quickly, banks were quick to finance them. Many of these buyers were considered “subprime” in that they had blemished credit histories. Many others did not put much (if any) money down or chose nontraditional financing such as interest-only and/or adjustable-rate mortgages (ARMs).

Interest rates began to creep upwards and house prices began to flatten in 2005. At the same time, many homeowners who took out ARMs with low introductory rates began facing rate resets which drove monthly payments to higher and often unaffordable levels. And since many of these homeowners had not made the traditional 20 percent down payment, refinancing into a lower fixed-rate mortgage was unavailable. As a result, delinquency rates and foreclosures rose. This increasing supply of existing homes combined with continued new construction by homebuilders put downward pressure on houses. These pressures will be sustained well into 2009.

*continued on page 6*

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**Figure 1.3. Home Prices and Housing Starts**

![Graph showing annual home price growth and single-family housing starts](image)

Source: Fannie Mae and the Census Bureau.
1.2. The U.S. Economy: Year in Review, continued

decade, subtracting from inflation-adjusted GDP. The gap between exports and imports is known as the trade deficit.

The trend of increasing trade deficits has begun to reverse. As seen in the figure, the deepening trade deficit has stabilized since 2004, and more recently, begun to improve. In 2007, the trade deficit decreased substantially as annual export growth (7.9 percent) far exceeded import growth (2 percent). Last year (2007) was the second consecutive year of decreasing trade deficits,

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Figure 1.4. Inflation-Adjusted Exports and Imports

![Figure 1.4](image-url)

Source: Bureau of Economic Analysis.

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The Housing Market, continued

Now, three years into the housing decline, home price appreciation has grinded to a halt. In fact, home prices decreased at an annual rate of 1.3 percent nationwide in the third quarter of 2007—the first outright decline since the early 1990s. Many regions throughout the country have been experiencing home depreciation for several quarters now. Construction firms have responded to slowing prices and high inventories of unsold homes by slowing development and laying off workers. Single-family housing starts have decreased by 43 percent since the beginning of 2006 and continue to fall more quickly as time goes on. In the fourth quarter of 2007 there were 33 percent fewer housing starts than in the same quarter of 2006.

Nonresidential investment spending has helped temper the downturn in the construction trades and in building material sales. But nonresidential investment is expected to weaken substantially in 2008. The absence of a recovery in the residential sector by the close of 2008 could mean a still deeper trough for the overall construction sector.
mainly a result of changes in exchange rates (see sidebar on page 11 and Figure 1.11).

Inflation and Prices

Figure 1.5 shows recent movements in the Consumer Price Index (CPI). The CPI measures the total cost of a typical market basket of consumer goods and services over time, relative to some base period (1982-84). The CPI rose at an annual rate of 2.9 percent in 2007, down from 3.2 percent in 2006. However, in the fourth quarter, prices grew at a 4 percent annual rate, which may be a cause for concern, especially as policymakers pursue stimulative economic policies. Maintaining low levels of inflation has been a primary goal of the Fed, the chief executor of monetary policy in the U.S. When the Fed cuts interest rates, it becomes less expensive for consumers and businesses to borrow money to finance their purchases, driving up demand. This increased demand places upward pressure on prices, which can lead to higher overall inflation.

At least some of the recent rise in inflation can be attributed to rising gasoline and crude oil prices. As Figure 1.6 shows, average retail gasoline prices went up 35 percent during 2007, from $2.29 to over $3.00 per gallon. The cost of oil continues to rise due to strong global demand in general and the sharply higher demand coming from developing countries such as Brazil, China, and India. Supply simply cannot grow quickly in the short run to meet the increased demand for oil. Since oil and gasoline are involved in some part of the production process for almost all goods, higher petroleum prices increase the prices of these goods, contributing to inflation.

The Labor Market

The labor market continued to be relatively favorable in 2007, though markets had softened by the end of the year. Shown in Figure 1.7 is the civilian unemployment rate, which measures the share of the national labor force that is out of work but actively seeking employment. For most of the past year the unemployment rate remained around the 4.5 to 4.7 percent range, as it has since the beginning of 2006. As a result, wage inflation has remained relatively subdued. The employment cost index, a popular leading indicator of inflationary pressure in the economy, rose by 3.1 percent in the fourth quarter of 2007. This is down from 3.8 percent in the third quarter of 2004 but up from a recent low of 2.8 percent in the first quarter of 2006. Annualized employment growth, shown in Figure 1.8, has continued to slow since...
1.2. The U.S. Economy: Year in Review, continued

2005 contributing to an unemployment rate that has crept slightly higher. Nonfarm employment growth slowed to a less than a 1 percent annual rate during the last three quarters of 2007 for the first time since 2003. The year closed on a particularly poor note, as figures for December indicate an annual nonfarm employment growth rate of less than 0.2 percent. For the year as a whole, job growth was up only 1.1 percent. The increase in nonfarm payrolls has occurred despite sharp declines in manufacturing employment dating back to 1998; there were 14 million manufacturing jobs in 2007 compared to 17.6 million in 1998, a 20 percent drop. Manufacturing employment continued to struggle in 2007, posting losses in all four quarters. December was particularly weak, with an annualized loss of 1.7 percent. In total, almost 275,000 manufacturing jobs were lost in 2007 alone in the U.S. The

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**Figure 1.6. Average Gasoline and Oil Prices**

![Average Gasoline and Oil Prices Graph]

Source: Energy Information Administration and the Federal Reserve Bank of St. Louis.

**Figure 1.7. Unemployment Rate**

![Unemployment Rate Graph]

1.2. The U.S. Economy: Year in Review, continued

situation would have been much worse absent the decline in the value of the dollar in international currency markets. Despite the jobs losses in manufacturing, industrial production for the national economy continues to grow benefiting from productivity gains.

Disposable personal income is shown in Figure 1.9. Prior to 2007, total personal disposable income showed solid growth since the 2001 recession except for slight adjustments in late 2003 and late 2005. However, the country experienced another period of downward adjustment in 2007 with drops in the second and fourth quarters. This will hamper consumer spending growth in the quarters ahead.

GDP growth over the past several years has exceeded employment growth thanks to strong gains in labor productivity. Unfortunately, as shown in Figure 1.10, this productivity growth has slowed considerably.

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**Figure 1.8. Employment Growth**

![Employment Growth Chart](source)


**Figure 1.9. Disposable Personal Income**

![Disposable Personal Income Chart](source)

Source: Bureau of Economic Analysis.
1.2. **The U.S. Economy: Year in Review, continued**

Since 2004, although productivity was 2.7 percent higher in the third quarter of 2007 than the same quarter in 2006. However, this is significantly lower than the 3–4 percent gains that the economy typically enjoyed in the early part of the decade. This may reflect a lag between slower growth in output and sales and employment; layoffs are likely to grow through 2008.

![Figure 1.10. Worker Productivity](image)

*Output Per Hour, Nonfarm Business Sector (Year-Over-Year % Change)*

1.2. The U.S. Economy: Year in Review, continued

The Falling Dollar

Figure 1.11 provides a clear picture of one of the most significant economic stories of the past several years—and one that promises to continue to play out in the coming years. That is the dramatic fall in value of the U.S. dollar relative to foreign currencies. Shown is the value of the U.S. dollar relative to a weighted average of several major foreign currencies.

On one hand, a “weak” dollar is viewed as a negative from the standpoint of U.S. residents. There is the symbolic effect of a falling currency as well as the real impact as travel to foreign countries becomes more expensive. On the other hand, residents of other nations traveling into the U.S. enjoy relatively cheaper travel to the U.S. A weaker dollar can often generate welcome increases in the flow of international visitors (and their spending money) into the U.S. A weak dollar also raises production costs for domestic firms that purchase inputs from foreign suppliers.

At the same time, a falling dollar can be good for overall GDP growth. If U.S. exports become relatively cheaper and U.S. imports from other countries become relatively more expensive, export growth will accelerate and import growth will slow. Both of these trends would reduce the U.S. trade deficit, leading to higher rates of overall inflation-adjusted GDP growth. This is perhaps why more U.S. officials have not expressed alarm at the falling dollar. Even if alarm bells went off, there is little policymakers can do when American savings rates are near zero and the federal government continues to run a deficit.

Of course, the combination of relatively more expensive imports and increased demand for U.S. exports can result in greater rates of inflation. Indeed, the falling dollar is responsible for a significant share of the expected increase in prices in 2008, compounding the inflationary pressure as the Fed works to promote GDP growth while keeping inflation at reasonable levels.

Figure 1.11. Foreign Exchange Rate
Weighted Average Value U.S. Dollar Against Major Currencies

Source: Federal Reserve Bank.
1.3. The U.S. Forecast

Economic growth will continue in 2008, although at a slower rate than that observed in late 2007. Inflation-adjusted GDP will grow at a 1.9 percent annual rate for the year, the slowest growth since 2002. All broad segments of the economy are expected to show weak but positive growth, as shown in Figure 1.12, with the sole exception of residential investment (housing). As the economy slows, inflation is expected to slow as well. Weaker job growth will contribute to a rising unemployment rate.

Investment and Interest Rates

As economic growth continues slowly, the federal funds rate is projected to continue its descent from 4.25 percent at the end of 2007 to 3.8 percent in 2008, falling throughout the course of the year. In fact, the Fed has already made sizeable cuts in 2008, lowering the target rate from 4.25 to 3.5 percent on January 22 and to 3.0 percent a week later. Many economists expect further cuts, and it is conceivable that the 2008 average falls below 3.5 percent. These actions should be enough to stimulate investment and consumption spending enough to avoid recession while not adding excessively to inflationary pressures.

Residential investment will continue its dramatic decline, and business investment will slow in 2008. Housing starts will slow to an annual rate of 1.03 million units in 2008 as inventories of unsold houses rise to historical levels. Starts will be down an estimated 24 percent from their 2007 levels, representing the weakest performance of the decade. Further softening of the housing market will occur despite lower mortgage interest rates; the 30-year fixed mortgage rate is expected to average 6.0 percent and bottom out in mid-2008. On net, residential fixed investment is expected to fall by 21.3 percent overall in 2008 compared to a 17.3 percent setback in 2007.

Lower interest rates and a possible...

Figure 1.12. Expected Annual Percentage of Growth in the Primary Components of GDP

![GDP Components Graph](image-url)
1.3. The U.S. Forecast, continued

fiscal stimulus package should help business fixed investment provide solid, but unspectacular, growth for the economy in 2008. Growth for the year is projected to come in at 2.7 percent. Much of this slowdown from 2007’s estimated growth of 4.5 percent can be attributed to a substantial fall in nonresidential investment in structures (from an annual rate of 12.6 percent in 2007 to only 0.8 percent in 2008). After a strong rebound in manufacturing structure investment from 2004 to 2006, growth is expected to be down 2.7 percent in 2008. Most segments of business investment will experience positive growth this year.

Consumption and the Labor Market

Personal income is expected to grow at a 4.9 percent annual rate in 2008, below its 6.0 percent pace in the third quarter of 2007 and estimated 6.2 percent growth rate for all of 2007. Annual growth in consumption spending over the course of 2008 is expected to reach 1.9 percent, down from 2007’s expected annual growth rate of 2.9 percent. Consumption of services will rise 2.2 percent, spending on nondurable goods will be up 1.8 percent and durable goods’ spending will see a 1.1 percent gain. The housing market slump will be a prime contributor to slower growth in durable goods. Weak housing prices will dampen the use of home equity loans and the purchase of home furnishings and appliances.

Labor market conditions are expected to deteriorate further, but job growth should remain in the black. Job growth outside of manufacturing will barely offset continued declines in manufacturing employment. Overall nonfarm payroll employment will rise by only 0.8 percent nationwide over the course of 2008, while the unemployment rate rises to 5.1 percent. Job growth in 2007 totaled 1.3 percent and the unemployment rate averaged 4.6 percent.

Government Spending

There has been much talk of a possible fiscal stimulus package being introduced by the federal government to provide the economy with a shot in the arm. President Bush has called for $150 billion of additional federal spending targeted to ailing sectors of the economy. This amount is equal to about 1 percent of total GDP. Any potential stimulus would likely include both spending programs targeted to businesses and households that would be most apt to spend the additional money and tax cuts designed to leave households with more after-tax income to spend. There is ongoing controversy regarding the optimal stimulus package. There have been calls to funnel assistance to low-income groups who would likely spend all of this on consumption, as opposed to overall taxpayers who may save some of the aid and dampen the stimulus. Others have called for a wave of much needed infrastructure investments. Each proposal has its unique set of problems. Consumer relief would likely mean significant spending on imports which would not help the domestic economy, while infrastructure investments might occur too late in the year to boost the economy. And in general, any stimulus package will put upward pressure on inflation.

Total spending growth at the federal, state, and local levels is expected to exceed 2007 growth levels. Expect growth in federal government spending of 3.3 percent in 2008. Increased spending related to national defense and slower revenue growth from a weakened economy will result in a significantly larger federal budget deficit in 2008. In the event that any major bill aimed
1.3. The U.S. Forecast, continued

at stimulating the economy is passed, actual growth rates would likely exceed this estimate, and the deficit would grow further. State and local spending will also increase, but only at an annual rate of 1.7 percent.

Net Exports

The most significant contributor to inflation-adjusted GDP growth in 2008 will continue to be from exports to international markets. Exports will rise at an annual rate of 9.6 percent in 2008, the highest growth in four years. Inflation-adjusted imports will rise at a slower rate of 2.1 percent. These patterns reflect continued strong foreign markets for U.S. products alongside slower demand for foreign products among U.S. buyers, partially a result of an anticipated continued fall in the value of the dollar against the currencies of major trading partners.

Prices and Inflation

Inflation is expected to measure 2.2 percent in 2008, slowing relative to the estimated 2.9 percent growth in 2007 as pressure weakens due to slower personal income growth and consumer spending, and lower business spending. Also contributing to slower inflation is the projected easing of oil prices. The price of West Texas Intermediate crude should fall from current highs of around $90 per barrel to under $75 per barrel by midyear and continue to hover around that level into 2010. Keep in mind that expectations of “lower prices tomorrow” have been with us for many quarters now, but the moderation in prices has not materialized.
1.4. Alternative Scenarios

There exists widespread pessimism that the recent slowdown in the U.S. economy could turn into recession. While inflation-adjusted GDP is expected to grow slowly, but grow nonetheless, there are several scenarios that could result in even slower growth or push the economy into recession. The primary candidates for slowing the economy further than expected are familiar—the continued correction in the housing market and rapid oil price increases. If both of these markets play out more unfavorably than already anticipated, economic growth could be lower than the baseline forecast of 1.9 percent.

With mortgage foreclosures primed to hit record highs in 2008, the fall in residential investment may be even more severe than the forecasted decline of 23.1 percent. Other potential concerns include creeping inflation, further tightening in credit markets and weak growth in overseas demand for U.S. goods. Since GDP growth in 2008 is highly dependent on strong export growth buoyed by a U.S. dollar that is predicted to lose value against other major currencies for the seventh consecutive year, any event that disrupts overseas demand could jeopardize the outlook.
1.5. Forecast Summary and Conclusions

Expect the ongoing economic slowdown to continue in 2008 as the housing market remains a significant drag on the economy.

- Inflation-adjusted GDP will increase at an annual rate of 1.9 percent.
- Residential housing investment will continue its drastic decline (21.3 percent) despite lower mortgage interest rates.
- Government spending will grow at the federal (3.3 percent) and state and local (1.7 percent) levels.
- Strong export growth (9.6 percent) will exceed import growth, improving the trade deficit.
- The inflation rate, as measured by the Consumer Price Index, will fall to 2.2 percent.
- The unemployment rate will rise to 5.1 percent.
- Interest rates are likely to fall further as the Fed attempts to boost sluggish GDP growth.