AN ECONOMIC REPORT TO THE GOVERNOR OF THE STATE OF TENNESSEE

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PREFACE

This 2015 volume of An Economic Report to the Governor of the State of Tennessee is the thirty-ninth 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 2017 and annual forecast through 2024 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 IHS Global Insight, Inc. Tennessee forecasts, current as of January 2015, 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 discusses Tennessee’s role in the international economy and presents the long-run outlook and forecast for the state. Chapter Four presents Tennessee’s labor market before and after the Great Recession.

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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CHAPTER 1: THE U.S. ECONOMY

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1.1. Introduction

Six years after the end of the Great Recession, the U.S. economic recovery is on solid footing. While much of the world economy is struggling to maintain positive economic growth, U.S. inflation-adjusted gross domestic product (GDP) grew by an estimated 2.4 percent in 2014. In the third quarter of 2014, U.S. GDP grew 5.0 percent, its strongest rate of growth since the recession. For comparison, the GDP of the Eurozone is estimated to have grown by only 0.9 percent and the GDP of Japan is estimated to have grown by only 0.2 percent in 2014.

Perhaps the most important economic development in 2014 was the improving labor market. The economy added 2.5 million nonfarm jobs in 2014, bringing total payrolls up to 138.9 million. This makes 2014 the first year that nonfarm payrolls reached, and exceeded, their prerecession level of 137.9 million in 2007. This strong job growth reflects the fact that all major industries, except for the federal government and the information sector, added jobs in 2014. In addition to strong job growth, inflation-adjusted disposable income rose in 2014 by 2.4 percent, compared to its 2013 drop of 0.2 percent, with the 2014 increase driven by lower energy prices. The unemployment rate continued its decline to 6.2 percent for the year and 5.6 percent in the month of December. Because of these positive economic indicators, the Federal Reserve ended its quantitative easing program (QEIII) in October 2014 and expectations are that it will begin to raise the federal funds rate in mid-2015.

Although most economic indicators are positive, there are some causes for caution. The housing market did not continue to grow at the rate it had for the past two years, causing housing starts to be considerably lower than expected in 2014.
1.1. Introduction, continued

Also, while the labor market is strengthening, the labor force participation rate continued falling in 2014. Overall, however, 2014 was a year of overwhelmingly positive economic news and a signal that the recovery continues unabated.

The forecast for 2015 is a continuation of the growth in 2014. U.S. inflation-adjusted GDP is expected to grow by 3.1 percent in 2015, the economy is expected to create 2.8 million jobs, and inflation-adjusted disposable income is expected to continue to rise partially because of low energy prices. This drop in energy prices is spurred by an unexpected decline in oil prices after the October OPEC meeting and reflects a glut of production and a global slowdown in demand. While this drop in oil prices is expected to help the global economy as well as the U.S., many other countries in the world are expected to have low growth during 2015 while they continue slower recoveries. Moreover, domestic oil producers will be hit hard by the slowdown, especially in places where the fracking boom has taken place.

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

Last year began with a drop in GDP: in the first quarter, GDP fell by 2.1 percent on a seasonally-adjusted basis. The economy bounced back in the second and third quarters of 2014, growing by 4.6 and 5.0 percent respectively. These two quarters represent some of the strongest growth seen since the recession ended. This strong growth was caused by ongoing business hiring, low energy prices, and strong inventory growth in the second quarter. The economy grew at a slower but still solid pace of 2.6 percent in the fourth quarter.

Economic indicators for the U.S. point to strong growth and a high likelihood of a continuation of growth through 2016. The consumer sentiment index hit 89.8 in the fourth quarter, the highest it has been since the recession began. The unemployment rate fell to 5.8 percent in the fourth quarter, and the economy finally reached the level of payrolls it had prerecession. The U.S. economy is arguably one of the strongest economies in the global economy today.

Components of GDP

GDP is composed of personal consumption expenditures, investment, government purchases, and the balance of international trade (exports minus imports). In this section, we analyze how each of these helped or slowed GDP growth last year.

**Consumption**

Personal consumption expenditures are by far the largest component of U.S. GDP. In 2014, they accounted for 68 percent of GDP. Overall, inflation-adjusted consumer spending grew by 2.5 percent in 2014, compared to 2.4 percent in 2013 and 1.8 percent in 2012. Increases in consumer spending accounted for 1.7 percentage points of the 2.4 percent GDP growth in 2014. The strongest consumption growth was recorded in the fourth quarter, up 4.1 percent annualized compared to 3.2 percent and 2.5 percent growth for the preceding two quarters and 3.7 percent growth for the fourth quarter of 2013.

The factors that typically help explain consumer spending include disposable income growth, consumer confidence, and the unemployment rate. Inflation-adjusted disposable income grew by 2.4 percent in 2014, compared to a 0.2 percent drop in 2013. (Disposable personal income fell in 2013 largely because of the termination of the federal payroll tax holiday which meant higher Social Security payments.) This growth in disposable income is largely due to falling energy prices, especially the falling cost of gasoline. Oil fell from $109 per barrel in the fourth quarter of 2013 to $78 in the fourth quarter of 2014; consumers benefited from this fall in oil prices through lower prices at the pump. The unemployment rate
1.2. The U.S. Economy: Year in Review, continued

continued to fall from 7.4 percent in 2013 to 6.2 percent in 2014. The consumer sentiment index also moved in a favorable direction. Inflation-adjusted household net worth grew by 4.4 percent in 2014, compared to 12.3 percent in 2013.

Personal consumption has three components: services, nondurable goods and durable goods. Spending on services accounts for approximately two-thirds of total consumption spending and is the least volatile of the three components. Service spending grew by 2.0 percent in 2014. Healthcare spending grew by 2.5 percent, compared to 0.9 for housing services.

With a share of 22 percent, nondurable goods are the second largest source of consumption. Nondurable goods include food, beverages, clothing, medical products, gas and other similar short-lived products. Spending on nondurable goods increased by 1.8 percent in 2014, compared to 1.9 percent in 2013. The sub-category that contributed the most to this increase is pharmaceuticals and other medical products; spending in this sub-category alone increased by 6.6 percent, compared to 4.7 percent and 1.3 percent in 2013 and 2012 respectively.

Personal spending on durable goods includes motor vehicles, furnishings, recreational goods, computers and other household equipment. Durable goods made up 13 percent of total consumption in 2014 and are by far the most volatile of all three consumption categories because purchases can often be delayed as household finances weaken. Spending on durable goods typically sinks during recessions and increases more than any other category during periods of recovery or expansion. In 2014, durable goods spending increased for the fifth consecutive year, by 7.1 percent, after 6.7 percent and 7.3 percent increases in 2013 and 2012 respectively. This is compared to an increase of 1.8 percent in nondurable goods and an increase of 2.0 percent in services spending in 2014.

Similar to the past five years, spending on recreational goods and equipment (computers

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**Figure 1.1: Vehicle Sales Continue to Grow but Are Below Prerecession Levels**

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

and other information processing equipment) and spending on used vehicles increased the most within the durable goods category, with 13.3 percent and 17.5 percent growth respectively. Consumer spending on new motor vehicles increased by 5.2 percent, compared to 4.3 percent in 2013 and 12.2 percent in 2012. The number of new vehicles purchased increased by 5.7 percent in 2014 compared to 7.6 percent in 2013. This makes 2014 the fifth year of growth in number of new vehicles sold but new vehicle sales remain below their prerecession level. The number of total vehicles sold masks the disparity between sales of new light trucks and sales of new cars, however: the number of new cars sold rose by 1.1 percent while the number of new light trucks sold rose by 10.2 percent. Spending on new light trucks and new cars was similarly uneven: spending on light trucks grew by 9.9 percent while spending on cars declined by 2.4 percent.

**Investment**

Investment made up about 17 percent of U.S. inflation-adjusted GDP and contributed 0.9 percentage points of the total 2.4 percent GDP growth in 2014. Investment includes three subcomponents: nonresidential fixed investment, residential fixed investment (new housing) and the change in business inventories. All three contributed positively to GDP growth in 2014. Note that investment, as included in GDP, does not include financial instruments like stocks and bonds.

With a share of roughly 78 percent, nonresidential fixed investment is by far the largest sub-component of investment. It includes equipment purchases by firms, intangible products such as software and licenses and commercial structures. In 2014, growth in nonresidential fixed investment increased by 6.3 percent compared to 3.0 percent in 2013 and 7.2 percent in 2012. While computers and related

![Figure 1.2: Durable Goods are the Most Volatile Category of Consumption](source: Bureau of Economic Analysis.)
1.2. The U.S. Economy: Year in Review, continued

Products purchases fell by 0.5 percent, industrial equipment and transportation equipment rose by 13.9 and 11.5 percent respectively. Purchases of intellectual property products increased by 4.6 percent, the largest increase since 2007.

The second largest sub-component of investment is residential fixed investment, which refers to households’ spending on new housing. It accounts for approximately 18 percent of investment and grew by only 1.6 percent in 2014, compared to 11.9 and 13.5 percent in 2013 and 2012 respectively. Although this ends the double-digit growth of the housing sector, this marks its fourth year of positive growth. Despite this continued growth, inflation-adjusted residential investment remains significantly below its prerecession levels. In 2014, it increased to $496 billion in inflation-adjusted terms, reaching roughly 57 percent of peak prerecession levels in 2005. A major reason for this lower-than-expected growth in the housing sector is the weakness in household formation. Household formation is expected to bounce back in 2015, leading to another year of double-digit growth in the housing sector.

The number of housing starts increased by 6.9 percent to reach 994 thousand units in 2014, a modest increase from 930 thousand units in 2013. It is rather remarkable that in 2006 the number of housing starts was 1.8 million, which means the housing sector still has a long way to full recovery. Sales of existing houses fell by 3.0 percent, while sales of new houses rose by 0.7 percent.

House prices continued their upward trend that began in 2012. Average and median prices of existing homes increased to reach $253 thousand and $206 thousand respectively in 2014. The average price of a new home increased to reach $340 thousand and the median price of a new home was $282 thousand. The Federal Housing Finance Administration (FHFA) Housing Price Index increased for the second year in a row and the Purchase-Only Index increased for the third year in a row.

As is the case for investment in general, interest rates are one of the key determinants of growth in the housing sector. The multiple rounds of quantitative easing – asset-purchase programs – conducted by the Federal Reserve have helped

![Figure 1.3: The Housing Sector Continued to Rebound in 2014, but Not as Strongly as Hoped](image)

Source: U.S. Census Bureau, Federal Housing Finance Agency (FHFA), and IHS Global Insight, Inc.
1.2. The U.S. Economy: Year in Review, continued

keep interest rates low. The Fed ended its final quantitative easing program in October 2014. In another show of belief in the strength of the economic recovery, it is expected that beginning in mid-2015, the Fed will begin raising the federal funds rate. Other short-term rates will follow suit. In 2014, both long-term and short-term rates remained significantly below their historical averages. The 30-Year Fixed Mortgage Rate dropped from 4.36 in the first quarter to 3.97 in the fourth quarter. The annual average rate in 2014 was 4.2, compared to 4.0 in 2013 and 3.7 in 2012. The average rate before the recession was above 6.0 percent.

Changes in inventory, the highly cyclical component of investment, contributed strongly to GDP growth in the second quarter of 2014, but had negative impacts in the first quarter and negligible impacts in the third and fourth. The overall effect was a slightly positive 0.1 percentage point contribution to the 2.4 percent GDP growth in 2014. Typically, the change in inventories only accounts for less than 3 percent of total investment, yet it can have a strong contribution to overall GDP growth in some quarters due to its cyclical nature. The change in inventories increased by 16.9 percent in 2014, driven by changes in manufacturing inventories and wholesale inventories, which increased by 145.7 percent and 30.3 percent respectively. Farm inventories, which had more than doubled in 2013, fell by 27 percent in 2014.

**Government Purchases**

Government purchases, including both federal as well as state and local spending, made up about 18 percent of GDP in 2014. Government purchases continued to fall at the federal level, but there was a small uptick at the state/local level. Federal purchases fell in inflation-adjusted terms for the fourth consecutive year, down to $1.12 trillion from $1.27 trillion in 2010. This helps alleviate concerns that fiscal drag will slow economic growth. Defense purchases fell by 2.2 percent, compared to falling 6.6 percent in 2013 and 3.3 percent in 2012. Nondefense purchases fell by 1.6 percent in 2014, compared to falling 4.1 percent in 2013. At the state and local level, the increase of $15 billion (a 0.9 percent gain) in inflation-adjusted spending arose largely from increases in wages and salaries, which rose by $7.1 billion (an increase of 0.6 percent).

The federal government’s deficit remains high at $483 billion in nominal dollars, but is small when compared to the deficits run during the recession. In 2009, the deficit reached a peak of $1.42 trillion. This makes 2014 the third consecutive year that the deficit has fallen. The federal debt increased to $18.22 trillion at the end of 2014, the third consecutive year that the federal debt has topped 100 percent of GDP.

An omnibus spending bill was passed at the last moment in 2014. The $1.1 trillion bill will continue to fund the government until October 2015. The passage of the bill ensured that there will not be another government shutdown in the near future.

**Trade**

In 2014, the U.S. recorded a trade deficit of $449 billion in inflation-adjusted terms, 3 percent of GDP. Prior to the recession, the trade deficit made up 10 percent of GDP in 2006. Typically, purchases of foreign goods and services by U.S. consumers (imports) exceed sales of goods and services produced in the U.S. and sold to other countries (exports). Last year ended the three consecutive years that exports grew faster than imports. In 2014, exports grew by 3.2 percent while imports grew by 3.8 percent, compared to exports growing by 3.0 percent and imports growing by 1.1 percent in 2013. The trade deficit in inflation-adjusted terms rose from $421 billion in 2013 to $449 billion in 2014, though it still remains much smaller than its prerecession deficit of $794 billion in 2006. Exports growing the most include vehicles and parts, industrial supplies and materials, and consumer goods. Imports growing the most include aircraft, vehicles and parts, as well as food, feeds, and beverages.

The strong U.S. recovery is beneficial for the developing world because of the size of U.S. imports. As the U.S. economy strengthens,
1.2. The U.S. Economy: Year in Review, continued

American consumers import more, benefiting both developed and emerging economies.

*Inflation, Prices and Interest Rates*

The most popular measure of the aggregate level of prices in the economy is the Consumer Price Index or the CPI. As measured by the CPI, overall prices rose by only 1.6 percent in 2014, compared to 1.5 percent in 2013 and 2.1 in 2012.

Low energy and commodity prices continue to put downward pressure on overall inflation. Core-CPI, which excludes prices of energy and food, increased by 1.8 percent last year. Food prices rose by 2.4 percent while energy prices fell by 0.6 percent. Producer prices (finished goods) rose by 1.9 percent in 2014, compared to 1.2 percent in 2013.

Both long-term and short-term rates dropped during 2014. The 10-Year Treasury note yield dropped from 2.76 percent in the first quarter of 2014 to 2.28 percent in the fourth quarter of 2014. Rates have fallen further since then. Short-term rates inched even closer to zero: the 3-Month Treasury bill rate dropped from 0.05 in the first

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**Long-Term Unemployment**

The media and policymakers have referenced long-term unemployment on many occasions since the end of the Great Recession as displaced workers in the U.S. and Tennessee have struggled to find employment. Long-term unemployment refers to durations of unemployment that last longer than 26 weeks. This definition is based on the traditional length of time that a person can receive unemployment insurance. On average, long-term unemployment makes up 15 percent of all unemployment when the economy is not in recession. The average length of unemployment is 14 weeks, a little more than half of the typical duration of unemployment insurance, when the economy is not in a recession. During a recession, as the number of people losing jobs increases and the number of job openings decreases, both the unemployment rate increases and the portion of total unemployment that is long-term increases.

One distinguishing feature of the latest recession is a much higher long-term unemployment rate than during previous recessions. The total U.S. unemployment rate peaked in the fourth quarter of 2009 at 9.9 percent. A year later, the portion of the unemployed who were long-term unemployed rose to 45 percent. This was a steep increase from prerecession levels and a cause for concern. In 2011, the nation’s long-term unemployed had a 10 percent chance of becoming employed the next month; the short-term unemployed had a 31 percent chance of finding employment the next month. This relationship between length of time unemployed and in the likelihood of finding a job is referred to as “negative duration dependence”: the longer a person is unemployed, the less likely it is they will find a job. There are different explanations as to why this phenomenon exists. It may be because as people remain unemployed for longer periods of time, they lose job skills and are not able to keep up with contemporary job demands, thus their human capital degrades and they are less likely to be hired. It is also possible that people’s networks that might help them gain employment deteriorate the longer a person is unemployed. Last, it may be that businesses believe that long-term unemployment is a signal that a worker is of lower quality.

As the recovery continues, the unemployment rate has fallen and long-term unemployment has fallen as well. From November 2013 to November 2014, the percent of the nation’s unemployed that are long-term unemployed has fallen by 6.7 percentage points, from 38.8 percent to 32.1 percent. In fact, the falling rate of long-term unemployment is the cause of two-thirds of the decline in the overall unemployment rate since the peak of the recession. There are recent other causes for optimism concerning long-term unemployment. A recent study showed that the long-term unemployed were only slightly less likely than the short-term unemployed to be employed a year later: there is a 38 percent probability that someone who was long-term unemployed a year previously is employed a year later, compared to a 50 percent probability if that person was short-term unemployed. Further, it does not appear that the long-term unemployed have a different attachment to the labor force than the short-term unemployed, and as the ability of the short-term unemployed to find stable employment has risen, so has the ability of the long-term unemployed.
1.2. The U.S. Economy: Year in Review, continued

The Federal Reserve has kept the federal funds rate low (below 0.25 percent) for twenty-four consecutive quarters. The Fed maintained that interest rates would stay low until the unemployment rate was below 6.5 percent and labor market indicators improved. The unemployment rate finally dipped below 6.5 percent in the second quarter of 2014 and continued dropping until it reached 5.8 percent in the fourth quarter of 2014. After their December meeting, the Fed announced that they would begin raising interest rates in mid-2015. The unemployment rate had finally reached a level where the Fed can focus on their other mandated goal: price stability.

Although inflation is not an imminent concern for the U.S. economy, there is some concern that the extremely low inflation the U.S. is experiencing could lead to deflation, i.e. a drop in overall level of prices. (The Eurozone is dealing with declining rates of inflation and growing concerns over deflation.) Most economists agree that deflation can be much more harmful to the economy than stable and moderate inflation (like the Fed’s target rate of 2 percent). When everyone expects prices and wages to be lower in the future, consumers slow spending and firms slow hiring and investment. The unexpectedly low gas prices ended up creating deflation in the fourth quarter of 2014: inflation dropped by 1.2 percent. This deflation, caused by the low energy prices, is expected to last into the first quarter of 2015. After this first quarter, prices are expected to remain low but further falls in prices are not anticipated.

Figure 1.4: The Unemployment Rate is Recovering from the Recession, While the Labor Force Participation Falls

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

The Labor Market

The national unemployment rate continued falling for the fourth year, falling to 6.2 percent in 2014 and reaching 5.6 percent in December. The 6.2 percent annual rate is the lowest that the unemployment rate has been since 2008. Throughout 2014, the unemployment rate decline has been slow but steady. However, the falling labor force participation remains a cause for concern. It implies that part of the reason the unemployment rate is falling may have to do with discouraged unemployed workers who stop looking for work and are no longer considered unemployed. In 2014, the labor force participation rate fell to 61.4 percent. In 1995, the labor force participation rate stood at 65.0 percent.

More encouragingly, the economy continued to create jobs in 2014. Overall, more than 2.5 million nonfarm payroll jobs were added in 2014, causing nonfarm payroll jobs to reach 138.9 million. This makes 2014 the first year that payroll jobs reached their prerecession 2007 peak of 137.9 million jobs. The private sector continued to drive job creation across the board. The public sector (federal and state combined) increased payroll size by 37 thousand jobs in 2014. However, the federal government eliminated 50 thousand jobs while state and local governments added 87 thousand. Other than the federal government, the only other major industry that lost jobs was the information sector, which shed 10 thousand jobs from 2013 to 2014.

The trade, transportation, and utilities sector alone added 538 thousand jobs to the economy. The construction sector continued to come in strong, adding 202 thousand jobs in 2014, compared to 184 thousand in 2013, making 2014 the fourth consecutive year of net gains in construction payrolls. The manufacturing sector sustained some of its momentum, adding 135 thousand jobs in 2014, compared to 78 thousand in 2013 and 201 thousand in 2012. Education and health services continued to foster job creation with 382 thousand net jobs created in 2014, compared to 404 thousand in 2013 and 465 thousand in 2012.

Figure 1.5: Total Payrolls Reached their Prerecession Level in 2014

1.3. U.S. Forecast

In 2014, the U.S. economy continued its recovery from the trough of the recession in the summer of 2009. The economy’s growth is expected to be sustained this year and next year. Inflation-adjusted GDP grew at a 2.4 percent rate in 2014, coming in at 5.0 percent annualized growth in the third quarter due to rising consumer optimism, increased industrial production, and high job growth. Inflation-adjusted annual GDP in 2015 is expected to see solid growth of 3.1 percent. Calendar year 2015 is expected to start with strong 3.1 percent growth in the first quarter, followed by 2.5 percent growth in the second quarter. Growth in the third and fourth quarter is expected to continue with gains of 2.6 and 2.4 percent.

While the rest of the world is experiencing a slowdown, the U.S. economy is expected to continue with its healthy growth for several reasons. One primary reason is that the U.S. economy is driven by domestic demand, with consumer demand making up approximately 70 percent of GDP. This domestic demand is not expected to drop off in 2015, especially considering that in 2014 the economy regained the number of payroll jobs that it had prerecession. Further, capital spending is expected to remain strong, and residential investment is expected to grow by 11.1 percent, compared to a disappointing 1.6 percent in 2014. Finally, falling gas prices have impacted many different aspects of the economy, but in particular they have freed up household’s disposable income. The fall in gasoline prices is expected to be sustained through 2015. There will be cutbacks in the oil and drilling sector of the economy, but lower gasoline prices represent a net gain to short-term economic growth.

The Fed is expected to begin raising the federal funds rate by mid-2015. Other interest rates, both short- and long-term, are expected to follow. This combination of rising interest rates and strong domestic economic growth is predicted to lead to the U.S. dollar to continue to appreciate relative to other currencies.

Figure 1.6: The Economy is Expected to Have Strong Growth Throughout 2015

Source: Bureau of Economic Analysis and IHS Global Insight, Inc.
1.3. The U.S. Forecast, continued

Consumption

Consumer spending remained strong in 2014 and is expected to accelerate in 2015 and grow by 3.4 percent. This acceleration is primarily the result of a stronger labor market. In addition, wage growth is expected to outpace inflation in 2015. These factors are expected to lead to a healthy increase in inflation-adjusted disposable income in 2015. Consumers’ real net worth is also expected to increase by 4.0 percent in 2015.

Spending on durables is expected to remain strong, and spending on nondurables and services is expected to accelerate. Consumer spending on nondurables is expected to grow by 3.0 percent in 2015, compared to 1.8 percent in 2014. Consumer spending on services is expected to grow by 3.0 percent in 2015, compared to 2.0 percent in 2014. Consumer spending on durables is expected to increase by 7.1 percent in 2015, the same growth seen in 2014. Light vehicle sales are expected to grow by 5.9 percent compared to 5.2 percent in 2014. However, spending on cars and light trucks are expected to be more balanced than was the case in 2014, with expected growth of 6.7 percent and 5.5 percent respectively.

The Labor Market

The U.S. economy is expected to add 2.8 million nonfarm jobs in 2015. The largest sectors for job creation will be professional and business services, education and health services, as well as trade, transportation, and utilities. Together, these sectors will add 1.9 million jobs to the economy. The sectors expected to have the highest growth rate in 2015 are professional and business services as well as construction, with expected increases of 4.9 percent and 4.3 percent respectively.

Investment

Nonresidential fixed investment is expected to grow by 4.8 percent in 2015. Investment in transportation equipment, which experienced strong growth in 2014, is expected to experience slower growth in 2015. However, investment in information processing systems, specifically

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**Figure 1.7: The Unexpected Drop in Energy Prices Led to Deflation at the End of 2014**

![Graph showing Brent Crude, Spot Price (dollars per barrel) and Inflation Rate (%)]

Note: Dollars per barrel is not seasonally adjusted.
in computers and peripherals as well as communications equipment, is expected to rebound. Investment in computers and peripherals is expected to grow by 13.0 percent, up from a drop of 0.5 percent in 2014. Investment in communications equipment is expected to grow by 8.7 percent, up from a drop of 3.0 percent in 2014. Spending on structures is expected to decline by 1.9 percent in 2015. This decline reflects uneven growth between the different sectors. Commercial and healthcare structures as well as manufacturing structures are expected to experience significant increases, growing by 10.9 percent and 9.7 percent respectively. On the other hand, power and communication structures and mining and petroleum structures are predicted to experience significant declines, with real spending falling by 8.9 and 15.2 percent respectively. The decline in mining and petroleum structures is a consequence of lower gasoline prices.

While residential fixed investment was significantly lower in 2014 than was projected, it is expected to rebound in 2015. Residential fixed investment is projected to grow by 11.1 percent in 2015, comparable to the double-digit increases seen in 2012 and 2013. The first and second quarters are expected to be especially strong times of growth, with annualized growth rates of 16.1 and 18.0 percent respectively. The housing market is expected to continue to improve, with 1.163 million housing starts expected in 2015 compared with 994 thousand in 2014. Sales of existing homes is expected to reach 5.4 million, the highest since the recession but still below 2006 levels. Sales of new homes are expected to reach 481 thousand, making 2015 the fourth year of consecutive growth in new home sales. However, like the sales of existing homes, this level remains significantly lower than prerecession levels.

House prices for existing houses will continue to rise, with a 4.2 percent expected increase in the average price of existing homes in 2015. The average price for new homes is expected to increase by 4.5 percent. The FHFA Housing Price Index and the FHFA Purchase-Only Index are expected to rise by 7.1 percent and 4.1 percent respectively.

**Interest Rates and Prices**

The Federal Reserve is expected to begin raising interest rates during mid-2015. Though the positive labor market conditions indicate that the Fed will begin raising interest rates, the pace of these interest rate hikes is still uncertain. The federal funds rate is expected to rise to 0.44 percent from 0.09 percent in 2014. The 10-Year Treasury note yield is expected to rise slightly to 2.68 percent from 2.54 percent in 2014, and the 3-Month Treasury bill rate is expected to rise to 0.39 percent from 0.03 percent in 2014. The 30-Year Fixed Mortgage Rate is expected to continue to rise, up from 4.17 percent in 2014 to an expected 4.35 percent in 2015. By 2016, expectations are that the federal funds rate will rise to 1.56 percent, the 3-Month Treasury bill rate will be at 1.58 percent, and 10-Year Treasury note yield will be at 3.59 percent. The 30-Year Fixed Mortgage Rate is predicted to rise to 5.43 percent in 2015, the highest it has been since 2008.

As measured by the CPI, inflation is expected to rise by 0.1 percent in 2015. This low rate of inflation is driven by lower energy prices, particularly lower gasoline prices. These lower gasoline prices are expected to save the average household $750 over the course of 2015. Consumer energy prices are expected to fall by 18.1 percent in 2015. Core-CPI, which excludes food and energy prices, is expected to rise by 2.0 percent in 2015. In 2016, inflation is expected to increase slightly with the CPI and the Core-CPI growing 2.3 percent and 2.1 percent.

**Federal Budget**

The federal deficit was cut by 28.9 percent in 2014, but in 2015 the federal deficit is expected to increase by 2.8 percent to $497 billion. By 2016, the federal deficit is predicted to fall by 21.5 percent to $390 billion. Federal receipts are expected to increase by 8.9 percent in 2015, compared to an 8.1 percent increase in outlays. The federal debt is expected to grow to $19.0 trillion in 2015, exceeding 100 percent of GDP for the fourth consecutive year.
1.3. The U.S. Forecast, continued

In inflation-adjusted terms, government purchases at the federal level will continue to decline by 0.3 percent in 2015, compared to a 2.0 percent decrease in 2014. Inflation-adjusted defense spending is expected to decrease by 0.2 and 0.3 percent in 2015 and 2016, respectively. These reductions are much lower than the 2.2 and 6.6 percent cuts in 2014 and 2013. This predicted change is caused by an expectation of increased spending to combat Islamic State militants in Iraq and elsewhere. Inflation-adjusted nondefense spending is predicted to fall by 0.5 percent, compared to a 1.6 percent cut in 2014.

**International Trade**

The outlook for the U.S. economy is positive, but the outlook for the global economy is less positive. As a result, it is expected that the foreign sector will be a drag on GDP growth in 2015. Exports are expected to grow by 3.9 percent, while imports are expected to grow a stronger rate of 5.3 percent. Imports of services are expected to grow by 6.0 percent, the highest rate of increase since 2007. Imports of petroleum and related products are expected to grow by 0.1 percent, the first year of increase since 2010. Imports of computers and related products are expected to grow by 7.9 percent. Aircraft imports are expected to fall by 9.7 percent, the first year of decline since 2010. Exports of computers and related goods are expected to fall by 7.3 percent, while aircraft exports are expected to rise by 1.8 percent. The dollar’s appreciation will contribute to the strong growth in imports and modest sales of export products.
Emergence of Millennials

Like any generation, Millennials (the generation born between 1982 and 2006) have come of age during a unique time. Most importantly in an economist’s view, Millennials are coming into the labor market during the Great Recession and its aftermath. When the Great Recession began in December 2007, the oldest Millennials were twenty-five years old and had been engaged in the economy for a short period of time. These younger workers were and are experiencing higher rates of unemployment, lower rates of labor force participation, and lower rates of wage growth than previous generations. Some of these changes are continuations of long-term trends but doubtless they are exacerbated by the Great Recession.

In 2013, U.S. workers between the ages of 34 and 16 represented 34 percent of the employed but 57 percent of the short-term unemployed (those who had been unemployed for less than 14 weeks) and 42 percent of the long-term unemployed (those who had been unemployed for more than 26 weeks). In addition to being overrepresented in short-term and long-term unemployment, Millennials have lower rates of labor force participation than other age groups. From 2002 to 2012, overall labor force participation fell by 2.9 percentage points but it is Millennials pulling this average down. From 2002 to 2012, participation rates for 16-19 year-olds fell by 13.1 percentage points, participation rates for 20-24 year-olds fell by 5.5 percentage points, and participation rates for 25-34 year-olds fell by 2 percentage points. Only 45-54 year-olds experienced a similar decline (1.9 percentage points). In fact, workers 55 years old and older experienced increased labor force participation in the decade from 2002 to 2012. This decline is even sharper when looking at male Millennials: participation rates fell 13.5 percentage points for male 16-19 year-olds, 6.2 percentage points for male 20-24 year-olds, and 2.9 percent for male 25-34 year-olds.

Not only do younger workers have higher rates of unemployment and lower rates of labor force participation, it is taking them longer than previous generations to begin making the median wage. In 1980, the average worker achieved the median wage by age 26; in 2012, the average worker achieved the median wage at age 30. This is because younger workers now experience slower rates of wage growth: from ages 23 to 28, a college graduate in the ’90s could expect their wages to increase by 50 percent. For the same age range, a college graduate in 2008 could expect their wages to increase by only 25 percent. Some of this low wage growth is caused by the rigidity remaining in the labor market. During a recession, employers hire fewer workers, giving workers fewer opportunities to change jobs. Millennials stay at the same job longer than the two previous generations at the same age. While remaining at the same job may allow Millennials to gain more experience, it also curtails their ability to move from one job to another with an increased salary.

What is the economic future like for this generation, and how will the background of the Great Recession continue to impact them? Even in more social terms, the generation is already very different from previous ones. In 2014, only 35 percent of people under age 35 own a home; in 2007, 42 percent did. Millennials are also getting married at much lower rates than previous generations: 30 percent of those 34-20 years-old were married in 2013. For comparison, in 2014, 31 percent of 34-18 year-olds lived with their parents. There are certain to be economic differences, as well. Because they entered the economy during a recession, older Millennials will probably have diminished earning capacity. One possible reason for this phenomenon is that because labor market conditions are so poor during a recession, new workers take jobs that are not as good a fit for them. If Millennials respond to the Great Recession as economists predict, they will save more and be more cautious investors throughout their lifetime. They did, after all, come of age seeing previous generations lose considerable ground.
1.4. Alternative Scenarios

The 2015 forecast rests on several key assumptions. The first is that there will be no government shutdown in 2015. Also, the Federal Reserve will begin raising interest rates in the second quarter of 2015. Major currency partners will have GDP growth of only 2.0 percent. The value of the dollar will continue rising which will increase imports and dampen exports. Finally, the price of oil will continue dropping into the second quarter of 2015.

In the pessimistic scenario (15 percent probability), household formation drops due to continued poor wage growth, low immigration, and low marriage rates, among other factors. This drop in household formation, rising construction costs, and scarcity of developed lots leads to a lower level of housing starts than predicted in the baseline scenario. The stock market declines, causing both consumption and nonresidential fixed investment to grow at slower rates. The global economy also grows slower than predicted, and because of this the level of exports is lower than at the baseline. This lower level of exports and slower growth of nonresidential fixed investment weaken businesses. A weakened business environment leads to slow wage and job growth, as well as a rising unemployment rate.

In the optimistic scenario (15 percent probability), OPEC cuts oil prices, leading to gas prices falling more than predicted. These lower-than-predicted gas prices cause consumer spending to rise above the baseline scenario. The Eurozone recovery strengthens, the GDP of major trading partners grows by 2.7 percent, and emerging market GDP growth is higher than expected. The combination of an increase in consumption and an improving world economy leads to increased production. In turn, increased production leads to increasing wages and job growth.

1.5. Forecast Summary and Conclusions

- U.S. inflation-adjusted GDP will grow by a solid 3.1 percent in 2015.
- The unemployment rate will continue to fall and reach 5.5 percent from 6.2 percent in 2014.
- The labor force participation rate will continue to rest at a low level of 61.6 percent.
- Consumer spending will grow by 3.4 percent.
- Oil prices will continue to fall, bottoming out at $59 per barrel in the second quarter.
- The housing market recovery will strengthen, with residential fixed investment growing by 11.1 percent, compared to 1.6 percent in 2014.

- The Fed will begin raising interest rates during the second quarter, and by the fourth quarter the federal funds rate will reach 0.79 percent, compared to 0.10 in the fourth quarter of 2014.
- The global economy will continue to recover but this recovery will be slow. Major trading partners’ GDP is expected to grow by only 2.0 percent.