

Employment outlook: 2006–16

The U.S. economy to 2016: slower growth as boomers begin to retire

Real GDP growth is expected to average 2.8 percent a year over the next decade, less than its previous 10-year trend, while productivity growth is expected to slow as well; continued increases in defense spending and strong foreign markets also characterize the outlook for the coming decade

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As of late 2007, the U.S. population is aging, with baby boomers approaching their retirement years. The high productivity growth of the late 1990s and early 2000s appears to be slowing. Globalization marches on. In this context, the Bureau of Labor Statistics (BLS) has projected economic trends for the U.S. economy to 2016. Under the assumptions used in developing these projections, gross domestic product (GDP) is expected to reach \$14.9 trillion in chained 2000 dollars by 2016, an increase of \$3.6 trillion over the 2006–16 projection span. Rising by an average annual rate of 2.8 percent, GDP is projected to grow at a slower pace, less than the 3.1 percent posted over the preceding 10-year period.

Demographic factors are a primary driving force in determining the growth potential of the economy over the long term. BLS anticipates that, as the 77 million baby boomers begin to retire in the next few years, the pace of labor force growth will slow down over the projection horizon.¹ Other factors, such as capital input and productivity growth, also will contribute to the slower growth. As regards employment prospects in the next decade, slower growth in civilian household employment is expected, from a rate of 1.3 percent per year during the 1996–2006 period to 0.8 percent annually between 2006 and 2016. The latter percentage translates into an employment increase of 11.5 million over the pro-

jection horizon, less than the increase of 17.7 million across the 1996–2006 decade. The BLS employment projection is accompanied by an assumed unemployment rate of 5.0 percent in 2016, up from 4.6 percent in 2006.

Reflecting the increased globalization of the U.S. economy, international and foreign trade activities are expected to continue their fast-growing trend over the projection period. Personal consumption expenditures are expected to grow along with GDP, and business investment in new equipment and software will continue to play a major role in the economy over the projection span. On the government side, a projected increase in defense spending reflects long-term efforts to fight global terrorism and to ensure U.S. domestic security.

After the economic boom of the 1990s—the longest economic expansion in U.S. history—the Nation's economy weathered many challenges, including recession, terrorist attacks, two wars, corporate scandals, the dot-com burst, and oil price hikes.² Despite the setbacks that buffeted the economy, one of the most striking features of the period was the uninterrupted surge in productivity growth. During the late 1990s, a fundamental change in the pace of labor productivity emerged. Businesses began to use a wide range of technological advances and managerial innovations to improve their supply chain management and information systems and to better tailor their products and services

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to meet customer demands. Rapid innovation led to the implementation of new technology in capital equipment, which, in turn, contributed substantially to the acceleration in productivity.

The strong productivity gains gave the economy enough momentum to overcome the effects of the 2001 recession. From 1996 to 2006, U.S. nonfarm business productivity rose at a pace of 2.6 percent per year, significantly faster than the 1.5-percent growth registered during the 1975–95 period. The speedup allowed the economy to grow strongly, with a low rate of unemployment and without causing price pressures and rising interest rates.

Every 2 years, the BLS develops a set of projections for the U.S. economy as part of a program of studies aimed at analyzing long-term economic growth and its implications for the structure of employment by industry and occupation. This article focuses on projected trends in the aggregate economy for the 10-year period from 2006 to 2016; it sets the stage for BLS projections of detailed industry and occupational employment. The article begins with highlights of the macroeconomic model and its key underlying assumptions. Then projections of GDP and its demand categories are examined, as are projections of income growth, labor productivity, and employment. The last section briefly addresses uncertain factors that might have a significant impact on the economic projections. Each section of the article describes the projections in the context of trends covering the 2006–16 period and is based on apparent economic relationships over the previous decade or two.

The macroeconomic model

To generate an economic projection, the BLS employs a macroeconomic model provided by Macroeconomic Advisers, LLC, a St. Louis, Missouri, based forecasting group.³ The company's quarterly model comprises 744 variables in 543 equations descriptive of the U.S. economy; 201 of the variables are exogenous—variables whose values must be provided to the model in order to calculate a solution for a given period. Among the 201 exogenous variables, only a relatively small number significantly affect the long-term projections of the value of GDP and its demand makeup, as well as the level of employment necessary to produce that value of GDP. Included in the list of critical assumptions are those having to do with monetary and fiscal policies, the U.S. energy outlook, and population growth and demographics. The key assumptions are listed in table 1.

In addition, the projections are generally prepared with some selected variables, such as the inflation rate, the unemployment rate, the labor productivity growth rate, and

the international trade-related issue, much more carefully evaluated than other variables in the model. Setting a preliminary target value for those key variables helps BLS analysts define the parameters around which the aggregate projections are developed.

Monetary policy assumptions. Through the 2001 recession and the initially weak recovery period, the Federal Reserve Board (Fed) cut the funds rate, from 6.50 percent at the beginning of 2001 to a four-decade low of 1.00 percent in mid-2003. The rate cut was aimed at stimulating economic activity by lowering the costs of borrowing to make it easier for consumers to buy and for businesses to invest. Beginning in 2004, as the economy expanded at a healthy clip, the Fed began to move toward a more neutral stance and capped a 2-year credit-tightening campaign with 17 consecutive quarter-point rate hikes until the funds rate reached 5.25 percent. The increases were designed to prevent the economy from overheating and to cut inflation just enough by making it harder to raise prices and wages. From June 2006 through August 2007, the Fed held the 5.25-percent rate steady. In September 2007, due to growing market uncertainty, the Fed shaved the target funds rate by half a percentage point, to 4.75 percent, to stabilize financial markets.⁴ In October 2007, the Fed again lowered the funds rate, by 25 basis points, to 4.50 percent, in hopes of warding off a possible slowdown.

For the purpose of developing its projections, the BLS assumes that, in the long term, the Fed will set monetary policy so as to keep inflation within a “comfort zone”⁵ and hold the funds rate at an average of 5.15 percent through 2016. Ten-year bond yields will generally move parallel to the funds rate over the projection interval, but run somewhat higher.

Fiscal policy assumptions. Fiscal policy describes two governmental actions: government outlays and taxation. The tax-related assumptions, such as the effective marginal tax rate, which measures the amount of an extra dollar in income earned taken away in taxes, affect Federal Government revenues. Reflecting tax cuts enacted in 2001 and 2003, the effective marginal personal tax rate dropped from 22.5 percent in 1996 to 22.0 percent in 2003 and then fell further, to 21.4 percent in 2006.

The projections assume that these recent tax cuts will become permanent.⁶ Under this assumption, the effective marginal personal tax rate will remain at the same level in 2016 as it was in 2006. The capital-gains tax rate, which dropped significantly from 25.7 percent in 1996 to 16.9 percent in 2003 and 15.0 percent in 2006, is anticipated

Table 1. Major assumptions affecting aggregate projections, 1986, 1996, 2006, and projected 2016

Exogenous variables	Billions of chained 2000 dollars (unless otherwise noted)				Average annual rate of change		
	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Monetary policy related:							
Federal funds rate (percent)	6.81	5.30	4.96	5.15	-2.5	-0.7	0.4
Excess reserves (billions of current dollars) .....	.89	1.09	1.62	2.49	2.1	4.0	4.4
Ninety-day Treasury bill rate (percent).....	5.98	5.01	4.73	4.79	-1.8	-.6	.1
Yields on 10-year Treasury notes (percent).....	7.68	6.44	4.79	5.63	-1.8	-2.9	1.6
Fiscal policy, tax related:							
Effective Federal marginal tax rate on wages and salaries (percent)	25.9	22.5	21.4	21.4	-1.4	-.5	.0
Effective Federal marginal tax rate on interest income (percent)	25.7	24.3	23.0	23.0	-.6	-.6	.0
Effective Federal marginal tax rate on dividend income (percent)	34.3	27.8	22.5	22.5	-2.1	-2.1	.0
Effective Federal marginal tax rate on capital gains (percent)	40.0	25.7	15.0	15.0	-4.3	-5.2	.0
Maximum Federal corporate rate (percent)	46.0	35.0	35.0	35.0	-2.7	.0	.0
Fiscal policy, Government outlays related:							
Defense intermediate goods and services purchased	147.0	120.3	209.7	239.9	-2.0	5.7	1.4
Defense gross investment	69.5	51.3	76.6	94.2	-3.0	4.1	2.1
Nondefense intermediate goods and services purchased	53.1	61.0	96.5	104.7	1.4	4.7	.8
Nondefense gross investment	19.3	28.6	38.5	37.9	4.0	3.0	-.2
Federal grants-in-aid, Medicaid and other (billions of current dollars)	87.6	191.1	358.5	588.5	8.1	6.5	5.1
Federal transfer payments, Medicare (billions of current dollars)	75.3	195.7	393.8	900.0	10.0	7.2	8.6
Energy related:							
Refiners' acquisition cost of imported oil (nominal dollars per barrel).....	14.3	20.6	58.9	55.2	3.7	11.1	-.6
Domestic share of U.S. crude oil acquisitions (as percentage of total acquisitions)	67.5	46.3	33.6	35.8	-3.7	-3.2	.7
Domestic oil product	37.8	32.1	29.1	26.3	-1.6	-1.0	-1.0
Demographic related:							
Total population, including overseas Armed Forces (millions)	240.4	269.8	300.5	327.0	1.2	1.1	.9
Population aged 16 years and older (millions).....	180.6	200.6	228.8	250.6	1.1	1.3	.9

SOURCE: Historical data—Federal Reserve Board, Bureau of Economic Analysis, Energy Information Administration, and U.S.

Census Bureau; projected data—Bureau of Labor Statistics, Energy Information Administration, and U.S. Census Bureau.

to stabilize and remain at 15.0 percent in 2016. The maximum Federal corporate tax rate has been left unchanged at 35.0 percent since 1993 and also is assumed to hold at the same level throughout the entire projection period.

Turning to fiscal policy on government-outlays-related assumptions, real increases in gross defense investments are foreseen as it becomes necessary to replace or improve the equipment available to the Armed Forces. As regards other fiscal-policy-related assumptions, Federal grants-in-aid to State and local governments are assumed to slow their growth, reflecting a shift of more responsi-

bilities from the Federal Government to State and local levels. By contrast, due in substantial part to the coming retirement of baby boomers and to continued increases in health care costs, rapid growth is assumed in the Federal Government's Medicare Program.

Energy assumptions. Amid surging demand, worries over possible supply shortages, and tensions in the Middle East, U.S. crude-oil prices reached a record \$79 per barrel in July 2006 before retreating to around \$60 a barrel by the end of the year. Beginning in May 2007, oil prices rose again,

reaching about \$90 per barrel in October. For the past 2 years, helped by growing income and profits, consumers and businesses have absorbed the impact of the rise in oil prices. BLS energy assumptions are developed from the U.S. Department of Energy's annual energy projections. Under the basic assumption of no further shocks from the Organization of the Petroleum Exporting Countries (OPEC) and an optimistic outlook regarding the long-term supply potential of non-OPEC producers, the BLS projects a decline in world oil prices from current high levels, with prices expected to hover around \$55 per barrel in nominal dollars in 2016. In addition, new technologies are expected to hold prices down, and some alternative energy supplies might enter the market over the next decade.⁷

Demographic assumptions. As mentioned earlier, demographic factors play a key role in determining the growth potential of the economy over the long term. The growth rate of the U.S. population, together with changes in its composition, has a considerable impact on the labor force, the unemployment rate, housing demand, and other categories of spending. BLS assumptions in these areas are based on the Census Bureau's middle-series population projections, with its "interim" projections adjustments.⁸ The Census Bureau projections show the U.S. population expanding at an average of 0.9 percent annually between 2006 and 2016, attaining a level of 327.0 million by the end of the period. Growth in the older age cohorts will be strong as baby boomers age. The 77 million baby boomers, who make up a quarter of the Nation's population, will have a variety of significant effects on the labor force and on labor force participation rates.

The BLS prepares labor force and participation rate projections for detailed age, sex, race, and ethnicity groups. Presented elsewhere in this issue,⁹ these more detailed projections are aggregated to produce the higher level projections. Overall, the BLS expects the labor force to grow from 151.4 million in 2006 to 164.2 million in 2016, representing an annual growth rate of 0.8 percent over the projection period.

Inflation assumptions. Inflation slowed significantly from the late 1990s until mid-2004. Since then, it has begun to show signs of acceleration, primarily in response to surging energy costs. As inflation rose, the Fed instituted a series of increases in the Federal funds target rate that began in June of 2004 and ended in June of 2006. Inflation eased in 2006, with falling fuel prices and a slowing economy that cooled the pace of consumer price increases. Over the long run, inflation is a monetary phenomenon, and, as mentioned earlier, the BLS projections assume that the

Fed sets monetary policy so as to keep inflation within a target range. If inflation rises above the maximum value of the range, the Fed tightens monetary policy. As measured by the chain-weighted GDP price index, inflation is expected to pick up moderately, but remain stable, with an annual average growth rate of 2.7 percent over the 2006–16 projection horizon.

Unemployment rate. Unemployment peaked in mid-2003. The labor market began to recover at the beginning of 2004, and the recovery has gained traction, with the unemployment rate tailing off gradually. On the basis of the labor force projections and a target GDP growth rate, the economy is expected to reach full employment by the end of the projection interval. With moderate inflation expected to prevail over the projection period, the assumed unemployment rate in 2016 is about 5.0 percent. (The subject is discussed further in a later section.)

Productivity assumptions. As mentioned earlier, one striking aspect of recent U.S. economic history has been vigorous growth in labor productivity. High productivity growth allows for a mix of higher wages and profits and lower consumer prices. Together, these permit a higher standard of living and quality of life. Since 1995, the U.S. economy has had the fastest productivity gains in 30 years. However, beginning in the second quarter of 2005, productivity growth slowed.

It is uncertain whether the productivity slowdown is a lull or is an end to the productivity boom of the late 1990s and early 2000s, but what is clear enough is that productivity growth is one of the critical influences on the economy's long-term growth potential and increases in living standards. With steady GDP growth projected over the next 10 years, the BLS has assumed that productivity will grow at a pace of about 2.2 percent annually between 2006 and 2016. (The subject is discussed further in a later section.)

Foreign-trade assumptions. The trade deficit has widened, and the current-account deficit has risen significantly, since 1998. Although exports of U.S. products to the rest of the world remain strong, they have been growing less rapidly than have U.S. imports over the past decade. The large trade deficit in 2006 also likely reflected a steep rise in the U.S. foreign oil bill and an all-time high in the trade gap with China.

The assumptions underlying BLS foreign trade projections contemplate a wider trade deficit by 2016 than the deficit registered in 2006, but increasing at a more modest

clip over the 2006–16 period, compared with a steep increase between 1996 and 2006. The BLS has assumed that, over the projection period, the dollar will continue to depreciate against foreign currencies and the trade-weighted exchange rate will depreciate by 13 percent. Net exports (exports minus imports) are expected to have a deficit of \$682 billion in real terms in 2016, while the current-account deficit is projected to grow, but at a slower pace. (The subject is discussed further in a later section.)

GDP from the demand side

In the 1990s, the U.S. economy recorded the longest uninterrupted period of expansion in its history. Technological developments brought a wide range of sophisticated new electronics products. Innovations in telecommunications and computer networking spawned a vast computer hardware and software industry and changed the way many industries operate. The economy grew rapidly and corporate earnings rose sharply. With low inflation and low unemployment, the Federal Government posted a budget surplus and the stock market experienced an unprecedented boom. Real GDP growth reached a historical high at an average of 4.4 percent annually from 1996 to 1999.

The U.S. economic performance slowed in 2000 and

tipped into a recession in 2001. The 2001 recession was a production-side recession, led by unsustainable business capital investment and equity market bubbles, but consumer spending and the housing market remained relatively healthy. During three quarters of decline in 2001, GDP registered a mild drop. However, the lingering effects from the weakening of the technology sector, the terrorist attacks, the emergence of corporate finance scandals, and the wars in Afghanistan and Iraq had an impact on some business sectors during the recovery period.

In mid-2003, the U.S. economy began to grow more strongly. Buoyed by Federal tax cuts, gains in household wealth, growing optimism about the pace of business investment, and continued strength in corporate profits, real GDP grew at an average rate of 3.4 percent annually during the 2003–05 period. This rate was sufficient to generate moderate employment growth. In 2006, although a rising trade gap and a slump in the Nation's housing market undercut U.S. economic performance, GDP growth remained stable at a rate of 2.9 percent per year.¹⁰ As mentioned earlier, over the 2006–16 span, real GDP is projected to grow at an average annual rate of 2.8 percent. (See table 2.)

GDP measures the total output of the economy. Another indicator for assessing how well an economy performs is the growth of GDP per capita. It is important to

Table 2. Real gross domestic product, by major demand category, 1986, 1996, 2006, and projected 2016

Category	Billions of chained 2000 dollars				Average annual rate of change			Contributions to percent change in real GDP		
	1986	1996	2006	2016	1986–96	1996–2006	2006–16	1986–96	1996–2006	2006–16
Gross domestic product.....	\$6,263.6	\$8,328.9	\$11,319.4	\$14,875.2	2.9	3.1	2.8	2.9	3.1	2.8
Personal consumption expenditures	4,228.9	5,619.4	8,044.1	10,718.3	2.9	3.7	2.9	1.95	2.52	2.08
Gross private domestic investment...	843.9	1,234.3	1,919.5	2,609.5	3.9	4.5	3.1	.59	.75	.53
Exports	353.7	843.4	1,304.1	2,229.7	9.1	4.5	5.5	.84	.48	.70
Imports ¹	510.0	923.0	1,928.6	2,912.0	6.1	7.6	4.2	–.68	–1.05	–.76
Federal defense consumption expenditures and gross investment.	462.4	383.8	491.5	542.3	–1.8	2.5	1.0	–.10	.11	.04
Federal nondefense consumption expenditures and gross investment.	160.1	189.6	250.7	253.1	1.7	2.8	.1	.04	.06	.00
State and local consumption expenditures and gross investment.	766.4	990.5	1,239.0	1,489.0	2.6	2.3	1.9	.30	.26	.22
Residual ²	–41.7	–9.1	–.8	–54.8	...	...	...	...	...	...
Addendum										
GDP per capita, chained 2000 dollars	26,055	30,870	37,675	45,490	1.7	2.0	1.9	...	...	...

¹ Imports are subtracted from the other components of GDP because they are not produced in the United States.

² The residual is calculated as real gross domestic product, plus

imports, less other components.

SOURCE: Historical data, Bureau of Economic Analysis; projected data, Bureau of Labor Statistics.

recognize that the two indicators do not necessarily move in the same direction. For example, a massive increase in labor supply would tend to increase GDP, but reduce GDP per capita and real wages.¹¹ Clearly, GDP per capita is a key measure of purchasing power, and most economists believe that it is an adequate proxy for well-being because it summarizes or otherwise quantifies important aspects of the average availability of goods and services. The BLS projects that real GDP per capita will grow at an average annual rate of 1.9 percent over the 2006–16 projection period, down slightly from a 2.0-percent growth rate between 1996 and 2006. (See table 2.)

Personal consumption expenditures. Personal consumption spending, which fuels two-thirds of U.S. economic activity, is the largest component of demand. During the last economic expansion, buoyed by steady income growth and sharply increasing wealth from rising asset prices, consumer spending accelerated at a robust pace. From 1996 to 2000, consumer spending grew by 4.6 percent yearly.

Mirroring the expansion in consumption, the personal savings rate continued to drop, from 8.2 percent in 1986, to 4.0 percent in 1996, and down to 2.3 percent by 2000. The decline was due in part to rising consumer spending as a proportion of disposable income, but it also was due to perceived wealth effects of a soaring stock market and rising housing prices, a phenomenon that is not adequately captured by the savings rate statistic.¹² It is important to emphasize that the two-decade downturn of the per-

sonal savings rate that began in the 1980s is a systematic response of households to changes in the fundamental determinants of the rate, most notably the sizable gains in wealth from financial and real-estate assets.

Throughout the recession and recovery in the early 2000s, households contributed more to GDP growth than in the past. In 2004 and 2005, personal consumption, spurred by rising household wealth and solid job markets, exhibited extremely strong growth. In 2006, despite soaring gasoline prices, a slump in the housing market, and worries over subprime mortgages, consumer spending was steady.¹³ Overall, consumer spending grew at an average rate of 3.7 percent between 1996 and 2006, far exceeding the pace of GDP growth over the same period. (See table 2.) By contrast, the personal savings rate dipped to 0.5 percent in 2005, followed by a further decline to 0.4 percent in 2006, the lowest rate since the Great Depression.

Over the long run, consumer spending is determined primarily by the growth of real permanent income, demographic influences, and changes in relative prices. Personal consumption as a share of nominal GDP is projected to be 70.1 percent in 2016. (See table 3.) Real consumer demand is projected to grow at an average annual rate of 2.9 percent from 2006 to 2016. (See table 2.) The importance of the relationship between GDP and personal consumption expenditures also can be viewed from the perspective of the contribution of real personal consumption to the change in real GDP; such change provides a measure of the composition of growth in GDP.¹⁴ Over the 2006–16

Table 3. Nominal gross domestic product, by major demand category, 1986, 1996, 2006, and projected 2016

Category	Billions of current dollars				Percent distribution			
	1986	1996	2006	2016	1986	1996	2006	2016
Gross domestic product.....	\$4,462.8	\$7,816.9	\$13,194.7	\$22,642.3	100.0	100.0	100.0	100.0
Personal consumption expenditures.....	2,899.8	5,256.8	9,224.5	15,881.1	65.0	67.2	69.9	70.1
Gross private domestic investment.....	746.5	1,240.3	2,209.2	3,769.1	16.7	15.9	16.7	16.6
Exports.....	320.5	868.6	1,467.6	3,162.4	7.2	11.1	11.1	14.0
Imports ¹	453.3	964.8	2,229.6	4,194.3	10.2	12.3	16.9	18.5
Federal defense consumption expenditures and gross investment.....	330.9	354.6	624.3	913.0	7.4	4.5	4.7	4.0
Federal nondefense consumption expenditures and gross investment.....	107.8	172.8	308.2	437.2	2.4	2.2	2.3	1.9
State and local consumption expenditures and gross investment.....	510.7	888.6	1,590.5	2,673.9	11.4	11.4	12.1	11.8

¹ Imports are subtracted from the other components of GDP because they are not produced in the United States.

SOURCE: Historical data, Bureau of Economic Analysis; projected data, Bureau of Labor Statistics.

projection period, consumption spending will contribute about 2.1 percentage points to the 2.8-percent annual growth rate in real GDP projected by BLS. Real disposable income is projected to grow at a 3.0-percent annual rate between 2006 and 2016 (see table 4), whereas the savings rate is projected to improve gradually, reaching 1.5 percent by 2016.

A closer look at the major expenditure categories reveals that consumer spending on long-lasting items is highly cyclical. During the 1990s, the U.S. economy experienced sustained spending on big-ticket items such as automobiles, home furniture, and major household appliances. In 2000, sales of light vehicles, including autos and light trucks, climbed sharply to a peak of 17.3 million units, as the value of sales incentives reached a new high and buyers responded eagerly to those incentives. In particular, since the 1999 introduction of gas-electric hybrid cars into U.S. markets, consumers have been becoming more and more intrigued by fuel-efficient vehicles.

Other high-end durable goods, such as top-of-the-line television sets and refrigerators, appeal to the affluent, who have been driving much of the growth of U.S. consumer spending. Automobile sales did decline in 2006, but strong demand on other kinds of durable goods offset the decline. In the long run, spending on total durable goods is expected to remain strong, but somewhat lower than its performance over the past 10 years. The lower level of spending is attributable mainly to demographic shifts: as consumers increasingly move into older age cohorts, demand for motor vehicles and large household items tends to taper off. In sum, demand for total durable goods is projected to grow steadily, but at a relatively lower rate of 5.2 percent yearly between 2006 and 2016, compared with the robust 7.1-percent rate of growth exhibited over the 1996–2006 period. (See table 5.)

Historically, as incomes rise, spending on short-term consumable products, such as food, clothing, and gasoline, also rises, but tends to increase more slowly than income. For decades, expenditures for nondurable goods increased much more slowly than spending on durable goods and services. Correspondingly, the share of nominal personal consumption attributed to nondurable goods decreased from 33.1 percent in 1986, to 29.6 percent in 1996, and down to 29.1 percent in 2006. Note that, despite recent surges in energy prices,¹⁵ consumers seem resilient overall, but rising energy prices have a significant effect on a number of business sectors and individual consumers. In sum, the BLS projects that the long-term diminution in the growth of spending for nondurable goods will continue over the projection horizon, so that nondurable goods will account for a 25.6-percent

share of nominal personal consumption by 2016.

Expenditures for consumer services, including housing, medical care, and other personal services, represent the largest share of total consumption, and they have been steadily growing larger as a share over the past few decades. A major contributor to overall growth in spending on services is the increase in health care expenditures. As the Nation's 77 million baby boomers age, and as medical technology advances, demand for health services will rise, and the average per-person cost of many kinds of health care services also will rise. Real spending on medical services increased 3.5 percent annually during the 1996–2006 period. Over the coming 10 years, due to the importance of demographic factors, spending on medical services is expected to continue to post solid gains and is projected to grow at a higher rate of 3.7 percent per year.

Nonresidential investment. An increase in the number of technological establishments contributed substantially to growth in equipment spending during the boom of the late 1990s. However, large overcapacities that developed during the boom period also were the major cause of the 2000 “tech bubble.” During the 2001 recession and recovery, nonresidential investment declined severely, and spending on equipment and software—the largest category of business investment—plummeted 4.9 percent from 2000 to 2001, followed by a further drop of 6.2 percent between 2001 and 2002.

By mid-2003, business investment started to recover, benefiting partly from a temporary tax break that allowed companies to write off their investment in new plant and equipment and partly from a reduction in the capital gains and dividend tax rates.¹⁶ The ensuing turnaround in business investment during the 2004–06 period, and especially in 2006, was dramatic because of continuing growth in output, a tight labor market, and strong demand for new capital equipment. Between 1996 and 2006, nonresidential spending for equipment and software exhibited a growth rate of 6.1 percent annually, far exceeding the pace of GDP growth over the same timeframe. (See table 6.)

After the collapse of the dot-com market, investment in nonresidential construction, including buildings for office use and industrial buildings, dropped by about 8.0 percent from 2000 to 2003. Moreover, a sizable decline in investment in power and communication facilities occurred during the 2004–05 period. Nevertheless, purchases of nonresidential structures have picked up during the past couple of years, due in part to a decline in available space when the investment slump in the early 2000s

Table 4. Personal income, 1986, 1996, 2006, and projected 2016

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1986	1996	2006	2016	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Sources											
Personal income	\$3,722.4	\$6,520.6	\$10,983.4	\$19,370.3	100.0	100.0	100.0	100.0	5.8	5.4	5.8
Compensation of employees.....	2,570.1	4,386.9	7,440.8	13,239.2	69.0	67.3	67.7	68.3	5.5	5.4	5.9
Wage and salary disbursements.....	2,114.8	3,619.6	6,018.2	10,688.0	56.8	55.5	54.8	55.2	5.5	5.2	5.9
Supplements to wages and salaries.....	455.3	767.3	1,422.6	2,551.4	12.2	11.8	13.0	13.2	5.4	6.4	6.0
Proprietors' income	275.7	543.2	1,006.7	1,765.4	7.4	8.3	9.2	9.1	7.0	6.4	5.8
Rental income	33.5	131.5	54.5	148.0	.9	2.0	.5	.8	14.6	-8.4	10.5
Personal income on assets.....	695.5	1,089.2	1,796.5	2,844.7	18.7	16.7	16.4	14.7	4.6	5.1	4.7
Personal interest income.....	589.5	793.0	1,100.2	1,892.6	15.8	12.2	10.0	9.8	3.0	3.3	5.6
Personal dividend income.....	106.0	296.2	696.3	952.1	2.8	4.5	6.3	4.9	10.8	8.9	3.2
Personal current transfer receipts	451.0	925.0	1,612.5	3,046.4	12.1	14.2	14.7	15.7	7.4	5.7	6.6
Federal social benefits	343.6	677.9	1,184.6	2,273.9	9.2	10.4	10.8	11.7	7.0	5.7	6.7
State and local social benefits	84.3	224.2	400.8	714.1	2.3	3.4	3.6	3.7	10.3	6.0	5.9
Other, from business (net).....	22.9	22.9	27.2	58.4	.6	.4	.2	.3	.0	1.7	8.0
Less social insurance contribution	303.4	555.2	927.6	1,673.4	8.2	8.5	8.4	8.6	6.2	5.3	6.1
Use											
Personal income	3,722.4	6,520.6	10,983.4	19,370.3	100.0	100.0	100.0	100.0	5.8	5.4	5.8
Personal consumption ...	2,899.7	5,256.8	9,224.5	15,881.1	77.9	80.6	84.0	82.0	6.1	5.8	5.6
Personal taxes	437.3	832.1	1,354.3	2,663.6	11.7	12.8	12.3	13.8	6.6	5.0	7.0
Personal interest payments	96.1	150.3	238.0	377.7	2.6	2.3	2.2	2.0	4.6	4.7	4.7
Personal transfer payments	20.9	52.9	127.8	191.3	.6	.8	1.2	1.0	9.7	9.2	4.1
To government	12.0	34.9	78.9	117.8	.3	.5	.7	.6	11.3	8.5	4.1
Federal.....	1.3	7.2	15.2	23.4	.0	.1	.1	.1	18.4	7.8	4.4
State and local	10.6	27.8	63.8	94.5	.3	.4	.6	.5	10.1	8.7	4.0
To the rest of the world (net).....	9.0	18.0	48.9	73.5	.2	.3	.4	.4	7.2	10.5	4.2
Personal savings.....	268.4	228.4	38.8	256.7	7.2	3.5	.4	1.3	-1.6	-16.2	20.8
Addenda											
Disposable personal income	3,285.1	5,688.5	9,629.1	16,706.7	...	...	...	...	5.6	5.4	5.7
Disposable personal income, chained 2000 dollars	4,791.0	6,080.9	8,396.9	11,275.5	...	...	...	...	2.4	3.3	3.0
Per capita disposable income	13,665	21,083	32,049	51,091	...	...	...	...	4.4	4.3	4.8
Per capita disposable income, chained 2000 dollars	19,929	22,538	27,948	34,482	...	...	...	...	1.2	2.2	2.1
Savings rate (percent)....	8.2	4.0	0.4	1.5	...	...	...	...	-6.9	-20.6	14.4

SOURCE: Historical data, Bureau of Economic Analysis; projected data, Bureau of Labor Statistics.

Table 5. Personal consumption expenditures, 1986, 1996, 2006, and projected 2016

Category	Billions of chained 2000 dollars				Average annual rate of change		
	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Personal consumption expenditures	\$4,228.9	\$5,619.5	\$8,044.1	\$10,718.3	2.9	3.7	2.9
Durable goods	412.5	595.9	1,180.5	1,951.5	3.7	7.1	5.2
Motor vehicles and parts	256.0	285.3	437.3	640.5	1.1	4.4	3.9
Other durable goods	174.5	311.5	756.9	1,387.0	6.0	9.3	6.2
Nondurable goods	1,344.7	1,680.4	2,337.7	2,745.8	2.3	3.4	1.6
Services	2,479.5	3,356.0	4,545.5	6,160.3	3.1	3.1	3.1
Housing services	717.6	901.1	1,148.3	1,471.9	2.3	2.5	2.5
Medical services	669.9	922.5	1,300.3	1,866.3	3.3	3.5	3.7
Other services	1,092.0	1,533.9	2,096.2	2,815.4	3.5	3.2	3.0
Residual ¹	-25.8	-15.3	-32.6	-208.6	...	...	...

¹ The residual is the difference between the first line and the sum of the most detailed lines.

SOURCE: Historical data, Bureau of Economic Analysis; projected data, Bureau of Labor Statistics.

Table 6. Gross private domestic investment, 1986, 1996, 2006, and projected 2016

Category	Billions of chained 2000 dollars				Average annual rate of change		
	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Gross private domestic investment	\$843.9	\$1,234.3	\$1,919.6	\$2,609.5	3.9	4.5	3.1
Fixed nonresidential investment	533.3	833.6	1,306.8	1,910.1	4.6	4.6	3.9
Equipment and software	303.3	578.7	1,050.6	1,701.5	6.7	6.1	4.9
Computers and software	7.8	106.0	393.8	863.3	19.5	14.0	8.2
Other equipment	345.6	485.4	666.5	949.7	3.5	3.2	3.6
Structures	271.9	261.1	268.6	313.2	-.4	.3	1.5
Fixed residential structures	334.2	381.3	569.5	675.8	1.3	4.1	1.7
Single family	163.7	197.3	302.7	336.1	1.9	4.4	1.1
Multifamily	45.7	25.0	39.1	48.4	-5.8	4.6	2.2
Other	123.9	158.9	227.8	291.3	2.5	3.7	2.5
Change in business inventories	8.3	28.7	40.3	40.5	13.3	3.4	.1
Residual ¹	-132.9	-28.0	-19.2	-233.0	...	...	...

¹ The residual is the difference between the first line and the sum of the most detailed lines.

SOURCE: Historical data, Bureau of Economic Analysis; projected data, Bureau of Labor Statistics.

left many markets with too few new buildings. Taken together, all these changes during the early years of the 21st century resulted in purchases of nonresidential structures increasing at an average annual pace of 0.3 percent between 1996 and 2006, in contrast to a decrease of 0.4 percent over the 1986–96 period.

BLS projections indicate that, over the coming decade, the U.S. economy will expand at a steady pace with good profitability, technological innovation, and solid growth in demand. Meanwhile, nonresidential investment in equipment and software is expected to grow at a sustainable rate of 4.9 percent per year from 2006 to 2016. Purchases

of nonresidential structures are anticipated to grow faster than the historical pace, but still modestly, at a 1.5-percent rate of growth annually over the projection period.

Residential investment. When the U.S. economy entered into a recession in 2001, the strength of the housing market kept the downturn short and mild. After 5 boom years of record sales for new and existing homes from 2001 through 2005, the housing market dropped in 2006. Clearly, the robust upswing in the previous housing market cycle was due largely to a combination of particularly low mortgage rates and high expectations of rapid growth in housing prices. In addition, immigration into the United States fueled activity in the housing market. When rates on a 30-year mortgage sank to a four-decade low of 5.37 percent in April 2004, housing starts surged to 1.95 million units that year, followed by an all-time high of 2.07 million units in 2005. The national homeownership rate set a record high of 69.0 percent in 2004 and repeated the performance in 2005. Overall, residential construction grew at a historically high average of 8.3 percent annually from 2003 to 2005.

Starting in 2006, however, the once-hot housing market cooled considerably when potential buyers found home ownership less affordable in the face of rising housing prices and mortgage interest rates. Slowing demand led to sharply increasing numbers of homes on the market and resulted in stagnating housing prices. Defaults mounted in the market for subprime home loans and led to a wave of foreclosures and more homes remaining in an oversupplied market. In many markets across the Nation, home sales and prices fell sharply as a result. New-home sales plunged to 1.051 million units in 2006, down from a record 1.283 million units in 2005.

Under the circumstances, it is difficult to predict how deep the housing downturn will be and how long it will last, especially in light of the downturn in the subprime mortgage market and rapid developments in the credit market. Nevertheless, over the long term, the number of homes constructed will depend less on interest rates than on demographic trends. In 2009, the last of the baby boomers will have passed the prime home-buying age range of 25 to 44 years—the range in which people exhibit the greatest propensity to establish and maintain independent households. Spending on residential investment is anticipated to stay weak for some time and stabilize in the latter portion of the projection period. A moderate 1.7-percent average annual growth rate is expected over the 2006–16 period, while housing starts are expected to number about 1.818 million units in 2016, almost the same as the 1.812

million units started in 2006.

Business investment as a whole is expected to increase at a rate of 3.1 percent per year for the 2006–16 period, with higher growth of nonresidential investments offsetting lower growth of residential investment. This 3.1-percent-per-year business investment growth translates to a 0.5-percentage-point annual contribution to the 2.8-percent rise in real GDP over the 2006–16 projection span. Nominal private investment's share of GDP is anticipated to be about 16.6 percent in 2016, almost no change from its 16.7-percent share measured in 2006. (See table 2 for data on real GDP and table 3 for data on nominal GDP.)

Foreign trade in goods and services and current account. The United States is becoming increasingly integrated with the global economy in trade of goods and services, as well as in finance. During the 1990s, a strong U.S. dollar and falling foreign commodity prices in emerging markets helped keep the Nation's rate of inflation low and, combined with other factors, helped trigger strong growth in consumer spending. Clearly, globalization creates opportunities because of the emergence of greater U.S. competitiveness in a growing world economy. Globalization also creates challenges to the U.S. economy, including a widened trade deficit in total goods and services. The trade deficit has posed increasing difficulties for the U.S. economy since the 1990s.

Although a weaker dollar is now making U.S. exports more competitive overseas, exports are being hindered by slower growth in the foreign markets,¹⁷ especially in Europe. At the same time, strong U.S. demand for goods from abroad continues to bring in more imports. Coupled with a steep rise in the price of imported oil, the slower foreign growth of exports and the robust demand for imported goods have caused the U.S. trade gap to balloon to a record high in 2006, with real imports exceeding real exports by \$625 billion. (See table 7.)

As a share of GDP, nominal exports increased from 7.2 percent in 1986 to 11.1 percent in 1996 and remained at the same 11.1 percent in 2006, while the nominal import share of GDP increased from 10.2 percent in 1986 to 12.3 percent in 1996 and jumped further, to 16.9 percent, by 2006. (See table 3.) In terms of real growth, exports increased at a 9.1-percent annual rate from 1986 to 1996, while imports posted an average annual growth rate of 6.1 percent. Over the 1996–2006 period, exports exhibited a 4.5-percent rate of growth and imports grew much more rapidly, at 7.6 percent. (See table 7.) As mentioned earlier, the widening deficit posted in 2006 reflected higher oil prices, which increased the Nation's import bill; in addi-

Table 7. Exports and imports of goods and services, 1986, 1996, 2006, and projected 2016

Category	Billions of chained 2000 dollars				Average annual rate of change		
	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Exports of goods and services	\$353.7	\$843.4	\$1,304.1	\$2,229.7	9.1	4.5	5.5
Goods	229.2	581.1	927.4	1,520.7	9.8	4.8	5.1
Nonagricultural	197.4	532.2	871.1	1,449.9	10.4	5.1	5.2
Agricultural	31.5	47.6	58.1	78.0	4.2	2.0	3.0
Services	128.9	263.5	377.1	708.4	7.4	3.6	6.5
Residual ¹	-4.1	.1	-2.1	-6.5	...	...	...
Imports of goods and services	510.0	923.0	1,928.6	2,912.0	6.1	7.6	4.2
Goods	401.8	762.7	1,646.9	2,541.6	6.6	8.0	4.4
Nonpetroleum	347.2	671.9	1,523.3	2,448.0	6.8	8.5	4.9
Petroleum	65.6	101.4	138.2	165.0	4.4	3.1	1.8
Services	110.7	160.5	283.8	379.2	3.8	5.9	2.9
Residual ²	-13.5	-10.8	-16.7	-80.3	...	...	...
Trade surplus or deficit	-156.4	-79.6	-624.5	-682.2	-6.5	22.9	.9

¹ This residual is the difference between the aggregate category “exports of goods and services” and the sum of the figures for the separate categories under that aggregate category.

² This residual is the difference between the aggregate category

“imports of goods and services” and the sum of the figures for the separate categories under that aggregate category.

SOURCE: Historical data, Bureau of Economic Analysis; projected data, Bureau of Labor Statistics.

tion, it reflected the American consumer’s rising appetite for foreign-made goods, which helped to nudge the trade deficit higher.

In any long-term projections program, the international trade sector is the most difficult to project. The key to the BLS 10-year outlook for U.S. trade is increasing global accessibility and international competition, as the world becomes more open to trade and as the United States maintains its ability to compete in world markets. Over the next decade, the BLS expects that U.S. exports will benefit from strong overseas demand, with China, in particular, becoming an increasingly important export destination for U.S.-made products and services. In addition, a continued decline in the exchange rate or a weaker dollar will be a key factor in making U.S. goods and services more competitive in foreign markets, in turn helping the United States shift to a more export-driven economy. In sum, total exports of goods and services are expected to grow at a 5.5-percent annual rate between 2006 and 2016.

Total imports of goods and services are projected to grow at a rate of 4.2 percent annually over the 2006–16 projection period, much lower than the 7.6-percent annual growth rate over the 1996–2006 span. World oil prices

are expected to fall from the recent peak, down to \$55 per barrel in nominal terms by 2016. Demand for petroleum imports is projected to increase at a rate of 1.8 percent per year during the 2006–16 period, much lower than the 3.1 percent recorded over the 1996–06 period.

Although imports of goods are expected to grow at 4.4 percent per year during the 2006–16 period, a 2.9-percent annual rate of growth is anticipated for imports of services over the same span. The BLS projects a continued increase in the trade surplus in services, but this gain will not be large enough to offset the considerable deficit in goods. In sum, a substantial trade deficit is still expected in 2016, reaching \$682.2 billion in real terms, but the trade imbalance is anticipated to grow at a slower pace than it did during the previous decade, and its share of GDP will drop considerably, from 5.8 percent of nominal GDP in 2006 to 4.5 percent in 2016. (See table 3.)

The current-account deficit (the excess of imports and income flows to foreigners over exports and foreign income of Americans) has increased sharply since the late 1990s, reflecting not only the growth in the trade deficit, but also a rapid increase in foreign investment in the United States. For more than a decade, many economists have been issuing warnings about an unsustainable trade

deficit,¹⁸ but the fact is that prosperity at home makes the United States an attractive destination for foreign investors, resulting in a heavy global demand for U.S. securities. Even when U.S. investment abroad is factored into the mix, it becomes clear that the imbalance in investment contributes in no small measure to the large current-account deficit. Finally, a drop in the national savings rate, due to a rising Federal deficit, pushed the current-account deficit to a 6.0-percent share of GDP in 2006.¹⁹

Owing to steady pressure on the value of the dollar from the current-account deficit, further depreciation is projected to help make imported goods more expensive while making U.S.-made goods more competitive in global markets. However, a continued increase in foreign investment in the United States is expected throughout the projection period. By 2016, the current-account deficit is projected to increase overall, but to remain with about a 6.0-percent share of nominal GDP.

Federal Government. After three decades of Federal budget deficits, a surplus was realized in 1998. Two years later, the surplus reached \$189.4 billion, in nominal terms, and accounted for 1.9 percent of GDP, the largest share in the previous four decades. This dramatic change was attributable largely to increasing tax revenues from the expanding economy. Also, the end of the Cold War allowed the growth in defense spending to slow. However, the Federal budget once more fell into deficit, as economic growth began to cool after 2000. On the spending side, defense expenditures increased sharply to pay for military operations in Iraq and Afghanistan and for antiterrorism activities; on the revenue side, Federal receipts increased more slowly in response to tax cuts. Taken together, these factors led to the Federal Government's incurring a peak deficit of \$370.6 billion in 2004, accounting for a 3.2-percent share of nominal GDP.²⁰ Over the 2005–06 period, increases in tax revenue from the improving economy and high incomes, combined with cutbacks in domestic programs, partly offset the continued surge in spending for the war in Iraq, as well as for certain benefit programs providing health coverage. As a result, the deficit shrank by more than one-third in 2006, to \$220 billion, or 1.7 percent of GDP. (See table 8.)

The BLS projects that the Federal budget will remain in deficit throughout the projection period. The deficit is expected to be as much as \$436.9 billion by 2016, accounting for 1.9 percent of nominal GDP. The projections also anticipate shifts in the composition of Federal expenditures over the 2006–16 period. In 2008, the oldest baby boomers will turn 62 and become eligible for Social Security retire-

ment benefits. After 2010, they will be eligible to receive Medicare benefits. As spending due to the aging of the baby-boom generation rises, along with increases in life expectancy, the Government will face considerable pressure with regard to the budget. In addition, new medical technologies and drugs will keep pushing up health care costs. On the basis of demographic changes anticipated for the next decade, the BLS projects that spending for Medicare and Social Security will account for a 40.9-percent share of Federal expenditures by 2016, up substantially from 34.8 percent in 2006 and 32.2 percent in 1996.

A new Medicare prescription drug benefit that took effect in January 2006 provides drug coverage for Medicare beneficiaries. The program replaces Medicaid payments for individuals who qualify for both Medicare and Medicaid. In accordance with this change, the share of total Federal expenditures held by Federal grants-in-aid (primarily Medicaid funding and support) is projected to fall from 13.2 percent in 2006 to 12.3 percent in 2016. Overall, transfer payments are projected to account for a 60.6-percent share of total Federal expenditures by 2016, an increase from 58.0 percent in 2006.

In the National Income and Product Accounts system, defense purchases of goods and services used by the U.S. military are defined as defense consumption and gross investment.²¹ In absolute terms, real defense purchases declined over the 1988–98 period as military force levels were reduced and purchases of new weapons systems were postponed. In 1999, however, as mentioned earlier, real spending on defense reversed its 10-year trend and started to rise slightly, due mainly to increases in the consumption of capital goods and in investment in equipment and software.

After the September 11, 2001, terrorist attacks, defense spending surged, with most of the increase attributable to the cost of ongoing military operations in Iraq and Afghanistan, as well as the cost of conducting antiterrorism activities. On the basis of Defense Department estimates, the BLS assumes that military force levels will remain fixed at 1.4 million troops throughout the projection period. The future cost of military operations, as well as the cost of replacing equipment, depends mostly upon how long troops will stay in Iraq. The duration of deployment affects the actual compensation of personnel, equipment, and operations, in addition to the longer term consequences, such as veterans' expenses.²² Real defense spending is anticipated to increase from a 40-year record high of \$491.5 billion in 2006 to \$542.3 billion by 2016, growing about 1.0 percent yearly over the period. (See table 9.)

Real nondefense spending, which includes the salaries

Table 8. Federal Government receipts and expenditures, 1986, 1996, 2006, and projected 2016

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1986	1996	2006	2016	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Receipts	\$815.2	\$1,524.0	\$2,495.8	\$4,349.9	100.0	100.0	100.0	100.0	6.5	5.1	5.7
Tax receipts.....	479.6	932.4	1,537.5	2,630.2	58.8	61.2	61.6	60.5	6.9	5.1	5.5
Personal taxes	350.1	663.4	1,053.2	2,110.3	42.9	43.5	42.2	48.5	6.6	4.7	7.2
Corporate income taxes	83.8	190.6	373.1	332.8	10.3	12.5	14.9	7.7	8.6	6.9	-1.1
Taxes on production and imports	44.0	73.2	98.6	168.9	5.4	4.8	3.9	3.9	5.2	3.0	5.5
Taxes from the rest of the world	1.7	5.2	12.6	18.2	.2	.3	.5	.4	11.6	9.4	3.7
Contributions for social insurance	297.5	542.8	901.6	1,631.5	36.5	35.6	36.1	37.5	6.2	5.2	6.1
Income receipts on assets.....	31.4	26.9	24.7	36.1	3.8	1.8	1.0	.8	-1.5	-.8	3.9
Interest receipts	29.0	23.0	17.1	20.5	3.6	1.5	.7	.5	-2.3	-2.9	1.8
Rents and royalties	2.4	4.0	7.7	15.6	.3	.3	.3	.4	5.1	6.8	7.4
Transfer receipts.....	8.2	23.1	35.2	52.0	1.0	1.5	1.4	1.2	10.9	4.3	4.0
From businesses	6.9	16.0	20.0	28.6	.8	1.0	.8	.7	8.8	2.2	3.7
From persons.....	1.3	7.2	15.2	23.4	.2	.5	.6	.5	18.4	7.8	4.4
Surplus of government enterprises	-1.5	-1.2	-3.2	.0	-.2	-.1	-.1	.0	(¹)	(¹)	(¹)
Expenditures	1,006.0	1,665.8	2,715.8	4,786.7	100.0	100.0	100.0	100.0	5.2	5.0	5.8
Consumption expenditures	358.3	446.3	812.8	1,197.0	35.6	26.8	29.9	25.0	2.2	6.2	3.9
Transfer payments.....	445.1	888.3	1,576.1	2,899.1	44.2	53.3	58.0	60.6	7.2	5.9	6.3
Government social benefits	345.3	680.0	1,187.9	2,279.1	34.3	40.8	43.7	47.6	7.0	5.7	6.7
Social Security benefits	193.6	342.0	552.6	1,058.5	19.2	20.5	20.3	22.1	5.9	4.9	6.7
Medicare benefits.....	75.3	195.7	393.8	900.0	7.5	11.7	14.5	18.8	10.0	7.2	8.6
Unemployment benefits.....	16.3	22.0	29.9	41.1	1.6	1.3	1.1	.9	3.0	3.1	3.2
Other benefits to persons	58.4	118.2	208.2	274.2	5.8	7.1	7.7	5.7	7.3	5.8	2.8
Benefits to the rest of the world.....	1.6	2.2	3.3	5.2	.2	.1	.1	.1	2.8	4.5	4.4
Other transfer payments	99.9	208.2	388.2	620.0	9.9	12.5	14.3	13.0	7.6	6.4	4.8
Grants-in-aid to State and local government.....	87.6	191.2	358.6	588.5	8.7	11.5	13.2	12.3	8.1	6.5	5.1
To the rest of the world	12.3	17.1	29.6	31.5	1.2	1.0	1.1	.7	3.4	5.7	.6
Interest payments.....	178.1	297.3	277.5	617.9	17.7	17.8	10.2	12.9	5.3	-.7	8.3
To persons and businesses	153.5	232.0	143.8	243.1	15.3	13.9	5.3	5.1	4.2	-4.7	5.4
To the rest of the world.....	24.6	65.3	133.8	374.8	2.4	3.9	4.9	7.8	10.2	7.4	10.9
Subsidies.....	24.5	34.0	49.4	72.8	2.4	2.0	1.8	1.5	3.3	3.8	4.0
Less wage accruals less disbursements .....	.0	.0	.0	.0	...	...	...	...	(¹)	(¹)	(¹)
Net Federal Government saving	-190.8	-141.8	-220.0	-436.9	...	...	...	...	-2.9	4.5	7.1
Surplus or deficit as a percentage of gross domestic product	-4.3	-1.8	-1.7	-1.9	...	...	...	...	-8.2	-.9	1.5

¹ Data not computable.

data, Bureau of Labor Statistics.

SOURCE: Historical data, Bureau of Economic Analysis; projected

Table 9. Government consumption expenditures and gross investment, 1986, 1996, 2006, and projected 2016

Category	Billions of chained 2000 dollars				Average annual rate of change		
	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Government consumption expenditures and gross investment.....	\$1,392.5	\$1,564.9	\$1,981.4	\$2,286.6	1.2	2.4	1.4
Federal Government consumption and investment.....	623.7	573.5	742.3	795.6	–.8	2.6	.7
Defense consumption and investment.....	462.4	383.8	491.5	542.3	–1.8	2.5	1.0
Consumption expenditures.....	391.5	332.2	416.6	452.5	–1.6	2.3	.8
Compensation, military.....	124.2	94.9	97.9	102.2	–2.7	.3	.4
Compensation, civilian.....	77.0	58.7	51.7	47.6	–2.7	–1.3	–.8
Consumption of fixed capital.....	50.6	63.3	65.1	73.8	2.3	.3	1.3
Intermediate goods and services purchased.....	147.0	120.3	209.7	239.9	–2.0	5.7	1.4
Less own-account investment.....	1.6	1.7	1.6	1.7	.2	–.6	.8
Less sales to other sectors.....	1.3	2.9	2.9	2.1	8.0	.0	–2.8
Gross investment.....	69.5	51.3	76.6	94.2	–3.0	4.1	2.1
Own-account investment.....	1.6	1.7	1.6	1.7	.2	–.6	.8
Other investment.....	67.8	49.7	75.2	92.9	–3.1	4.2	2.1
Nondefense consumption and investment.....	160.1	189.6	250.7	253.1	1.7	2.8	.1
Consumption expenditures.....	142.2	161.1	212.5	215.3	1.3	2.8	.1
Compensation.....	90.0	91.3	97.6	89.9	.1	.7	–.8
Consumption of fixed capital.....	10.7	17.0	25.6	29.6	4.8	4.1	1.5
Intermediate goods and services purchased:							
Commodity credit corporation purchases.....	7.3	–.1	–.1	.0	(¹)	(¹)	(¹)
Other.....	45.8	61.2	96.7	104.7	2.9	4.7	.8
Less own-account investment.....	2.5	3.0	2.1	1.9	1.8	–3.6	–.9
Less sales to other sectors.....	6.1	5.0	3.9	3.2	–1.9	–2.6	–1.9
Gross investment.....	19.3	28.6	38.5	37.9	4.0	3.0	–.2
Own-account investment.....	2.5	3.0	2.1	1.9	1.8	–3.6	–.9
Other investment.....	17.0	25.7	36.7	36.2	4.2	3.6	–.1
State and local government consumption and investment.....	766.4	990.5	1,239.0	1,489.0	2.6	2.3	1.9
Consumption expenditures.....	641.9	812.8	990.9	1,183.1	2.4	2.0	1.8
Compensation.....	521.6	626.9	707.3	763.6	1.9	1.2	.8
Consumption of fixed capital.....	46.6	70.6	103.2	139.5	4.2	3.9	3.1
Intermediate goods and services purchased.....	226.4	317.4	446.5	556.6	3.4	3.5	2.2
Less own-account investment.....	9.1	12.1	17.5	20.0	2.9	3.7	1.3
Less sales to other sectors.....	141.3	189.7	247.8	255.2	3.0	2.7	.3
Gross investment.....	125.9	178.0	248.0	306.1	3.5	3.4	2.1
Own-account investment.....	9.1	12.1	17.5	20.0	2.9	3.7	1.3
Other investment.....	116.8	165.8	230.4	286.1	3.6	3.3	2.2
Residual ²	82.5	91.2	90.2	74.5	...	...	...

¹ Data not computable.

² The residual is the difference between the first line and the sum of the most detailed lines.

SOURCE: Historical data, Bureau of Economic Analysis; projected data, Bureau of Labor Statistics.

of Federal Government employees, capital spending on nondefense items, and gross investment in equipment and facilities, is anticipated to increase marginally at a rate of 0.1 percent per year between 2006 and 2016. This

figure contrasts with a 2.8-percent annual rate of growth between 1996 and 2006. As noted earlier, high-priority spending increases for national defense and homeland security are expected to squeeze Federal investments in

virtually all other research-and-development areas. In accordance with this assumption, the BLS projects that Federal nondefense spending will account for a nominal GDP share of 1.9 percent in 2016, below the 2.2-percent share attained in 1996 and 2.3-percent share reached in 2006. (See table 3.)

State and local governments. Under the assumption of general fiscal restraint on non-security-related discretionary spending, the BLS expects that State and local government receipts of grants-in-aid from the Federal Government for Medicaid and other programs will have grown much more slowly by 2016 than in the past.²³ Federal grants-in-aid, which represented 19.9 percent of State and local revenues in 2006, are projected to drop to 18.9 percent in 2016. The 18.9-percent figure translates to an average annual rate of growth of 5.1 percent from 2006 to 2016, well below the 8.1-percent annual rate of growth over the 1986–96 period and the 6.5-percent rate of growth during the 1996–2006 period. (See table 10.)

On the purchases side, current consumption expenditures are expected to continue to be the largest component of total State and local spending in 2016. Current consumption expenditures' share of total purchases of goods and services is projected to be 71.0 percent in 2016, down slightly from 71.2 percent in 1996 and 72.0 percent in 2006. In addition, due to increases in Medicaid services, it is expected to keep the total State and local government consumption expenditure share rising, from 17.6 percent in 2006 to 19.1 percent in 2016.

Real spending by State and local governments, which includes the salaries of State and local government employees, administrative expenses, and gross investment in equipment and facilities, is projected to increase 1.9 percent annually from 2006 to 2016. This rate is less than the 2.3-percent annual rate of growth posted for the 1996–2006 period and 2.6 percent for the 1986–96 period. (See table 9.) As a percentage of GDP, nominal consumption by State and local governments is projected to keep close to its 10-year trend in the economy, representing 11.8 percent of GDP in 2016, down moderately from 12.1 percent in 2006. (See table 3.) State and local governments are expected to run surpluses throughout most of the projection period, because their expenditures are tied closely to available revenues. (See table 10.)

GDP from the income side

On the income side, the compensation of employees, or labor income, has remained a steady share of total personal

income over the past 20 years, accounting for 69.0 percent of personal income in 1986, 67.3 percent in 1996, and 67.7 percent in 2006. Similarly, wage and salary disbursements, the largest segment of labor income, have shown the same steady share, around 55 percent, during the same period. The BLS anticipates that over the next 10 years labor income will hold approximately the same portion of 68.3 percent of total income in 2016, accompanied by a 55.2-percent share for wage and salary disbursements. (See table 4.)

Another major component of personal income—business-related personal income, which includes proprietors' income, rental income, and personal income on assets—declined from a 27.0-percent share of personal income in 1986 and 1996 to 26.1 percent in 2006. The BLS projects that the decreasing trend in shares for this type of income will continue through the projection period, falling to 24.6 percent in 2016.

Substituting for the decline in business-related personal income, the receipt of transfer payments has become an increasingly substantial source of personal income over the past two decades. Transfer payments rose as a share of personal income from 12.1 percent in 1986 and 14.2 percent in 1996 to 14.7 percent in 2006. The BLS projects that this category of income receipts will continue to rise until it accounts for 15.7 percent of personal income in 2016, reflecting both per capita medical costs and the increasing elderly population, the most likely users of Medicare programs. Rising transfer payments also reflect increases in Social Security benefit payments to baby boomers as they count down to their retirement.

Traditionally, personal consumption is considered the most important indicator of how people spend their incomes and how lifestyles change as consumption's share of income increases over time. In 2006, this share increased rapidly to a historical high of 84.0 percent, resulting in record-low personal savings. Over the projection period, the trend of increased consumption is anticipated to ease and settle down to an 82.0-percent share in 2016, while the personal savings rate is projected to improve gradually, reaching 1.5 percent that same year.

Real disposable personal income is projected to increase at an average annual rate of 3.0 percent from 2006 to 2016. Real disposable income per capita is projected to reach a level around \$34,500 in 2016, a gain of \$6,500 over the projection span. Another way of interpreting this growth is that, measured on the basis of growth of disposable personal income, real standards of living will continue to rise over the projection period.

Table 10. State and local government receipts and expenditures, 1986, 1996, 2006, and projected 2016

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1986	1996	2006	2016	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Receipts	\$561.7	\$1,043.3	\$1,797.7	\$3,112.0	100.0	100.0	100.0	100.0	6.4	5.6	5.6
Tax receipts.....	389.5	709.6	1,232.3	2,186.3	69.4	68.0	68.6	70.3	6.2	5.7	5.9
Personal taxes	87.2	168.7	301.2	553.3	15.5	16.2	16.8	17.8	6.8	6.0	6.3
Corporate income taxes	22.7	33.0	62.4	71.7	4.0	3.2	3.5	2.3	3.8	6.6	1.4
Taxes on production and imports	279.7	507.9	868.8	1,561.3	49.8	48.7	48.3	50.2	6.1	5.5	6.0
Sales taxes and other	163.6	295.6	500.9	813.2	29.1	28.3	27.9	26.1	6.1	5.4	5.0
Property taxes.....	116.2	212.4	367.8	748.1	20.7	20.4	20.5	24.0	6.2	5.6	7.4
Contributions for social insurance	6.0	12.5	26.0	41.9	1.1	1.2	1.4	1.3	7.7	7.6	4.9
Income receipts on assets	58.4	73.3	87.1	135.5	10.4	7.0	4.8	4.4	2.3	1.7	4.5
Interest receipts	52.0	67.3	73.8	113.4	9.3	6.4	4.1	3.6	2.6	.9	4.4
Dividends .....	.2	1.4	2.6	4.2	.0	.1	.1	.1	24.6	6.8	4.9
Rents and royalties	6.2	4.6	10.7	18.0	1.1	.4	.6	.6	-2.9	8.7	5.3
Transfer receipts.....	105.0	234.1	462.9	748.3	18.7	22.4	25.8	24.0	8.3	7.1	4.9
Federal grants-in-aid.....	87.6	191.2	358.6	588.5	15.6	18.3	19.9	18.9	8.1	6.5	5.1
From businesses (net)	6.7	15.2	40.6	65.3	1.2	1.5	2.3	2.1	8.5	10.3	4.9
From persons.....	10.6	27.8	63.7	94.5	1.9	2.7	3.5	3.0	10.1	8.7	4.0
Surplus of government enterprises	2.8	13.9	-10.7	.0	.5	1.3	-6	.0	17.4	(¹)	(¹)
Expenditures	540.7	1,017.5	1,773.0	3,027.3	100.0	100.0	100.0	100.0	6.5	5.7	5.5
Consumption expenditures	417.9	724.8	1,276.5	2,149.1	77.3	71.2	72.0	71.0	5.7	5.8	5.3
Government social benefit payments to persons.....	84.3	224.2	400.8	714.1	15.6	22.0	22.6	23.6	10.3	6.0	5.9
Medicaid.....	46.9	163.6	312.1	578.9	8.7	16.1	17.6	19.1	13.3	6.7	6.4
Other.....	37.5	60.6	88.7	135.2	6.9	6.0	5.0	4.5	4.9	3.9	4.3
Interest payments	38.2	68.1	95.4	163.5	7.1	6.7	5.4	5.4	5.9	3.4	5.5
Subsidies .....	.3	.3	.4	.6	.1	.0	.0	.0	.8	2.1	4.8
Less wage accruals less disbursements .....	.0	.0	.0	.0	.0	.0	.0	.0	(¹)	(¹)	(¹)
Net State and local government saving	21.0	25.8	24.6	84.7	...	...	...	...	2.1	-5	13.2

¹ Data not computable.

data, Bureau of Labor Statistics.

SOURCE: Historical data, Bureau of Economic Analysis; projected

Productivity

Labor productivity, measured as output per hour in the private nonfarm business sector, is one of the critical components responsible for rising living standards. Growth in labor productivity allows companies to increase worker salaries on the basis of their greater efficiency, rather than

passing salary increases through to consumers in the form of higher prices for products, which would increase inflation. Historically, in periods of strong economic growth, gains in productivity accelerated as business orders increased, allowing workers and machines to be used at full efficiency. However, the surge in productivity after the mid-1990s has not been due simply to strong economic

growth. Rather, rapid advances in computing power, greater software efficiency, and more sophisticated communications capabilities have formed a set of powerful complementary innovations.

These productivity-enhancing technological innovations, along with a favorable U.S. economic environment, boosted productivity sharply. From 2001 to 2004, growth in productivity averaged 3.5 percent annually, far exceeding the pace in any other period of rapid productivity growth in U.S. history. However, the downside of that increased efficiency was that, by getting more output from their existing workforces, companies were able to avoid hiring new workers.

Since 2005, the contribution of productivity to overall economic growth appears to have decreased, while the share coming from additional hiring has picked up. In 2006, productivity growth was the weakest in 9 years, and unit labor costs surged.²⁴ With demand still strong, the recent job gains suggest that companies were ready to rely more on additional workers, and less on greater productivity, to meet increases in production.

Many economists believe that the technological and organizational innovations that contributed to higher productivity in the last decade will continue into the future and that a new round of business investment and improvements in productivity will begin.²⁵ Clearly, increases in productivity are an important driver of the long-term growth of GDP. With steady GDP growth projected over the next 10 years, the BLS anticipates that productivity will grow at a more “trendlike” 2.2 percent per year over the 2006–16 period, slower than the stellar 2.6-percent average annual growth achieved during the past decade, but faster than the rate posted in the two decades that preceded the boom. (See table 11.) This expected productivity growth in the aggregate economic projections stems in large part from the healthy growth of capital stocks resulting from projected rates of business investment, especially in efficiency-enhancing equipment and computer software.²⁶

Employment

During the most recent decade-long economic expansion, the civilian unemployment rate fell from 7.5 percent in 1992 to 4.0 percent in 2000, the lowest reading in 30 years. Nonfarm payroll employment expanded by about 23.1 million over the 1992–2000 period. By contrast, starting approximately with the recession of 2001, the country suffered about 3 years of declines in payroll employment. However, the ongoing recovery in output, combined with continued strong demand, finally caught

up with the robust growth in productivity, and employment increased by about 5.8 million workers on an annual average basis from 2002 to 2006.

The monthly unemployment rate has remained in a narrow band between 4.4 percent and 4.7 percent since the third quarter of 2006. Under the assumption of long-term economic stability, a 5.0-percent unemployment rate is assumed in the macroeconomic model in 2016. (See table 11.)

With the baby-boomer generation beginning to retire and leave the labor force, the civilian labor force is projected to grow at a rate of 0.8 percent per year from 2006 to 2016, 0.4 percentage point lower than the rate of growth over the preceding 10-year period. This rate translates into an increase of 12.8 million labor force participants over the projection period. The Census Bureau projects that the total U.S. population will increase at a 0.9-percent rate of growth over the period, 0.2 percentage point lower than the rate of growth between 1996 and 2006. The Census Bureau also estimates that the population aged 16 years and older will increase at the same rate of 0.9 percent over the projection span, 0.4 percentage point lower than the rate of growth in the earlier period. By contrast, the number of persons aged 65 years and older is projected to increase from 37.4 million in 2006 to nearly 48.7 million in 2016, accounting for 14.9 percent of the total population the latter year, up from 12.4 percent in 2006.²⁷

Slower long-run increases in the labor force indicate more moderate long-run employment growth in the future. Total civilian household employment is projected to increase by 0.8 percent per year from 2006 to 2016, resulting in about 11.5 million employed persons being added to the economy over the 10-year projection period, less than the increase of 17.7 million over the 1996–2006 span. Nonfarm payroll employment is projected to grow at an annualized rate of 1.0 percent between 2006 and 2016, rising from 136.2 million to 151.1 million, an increase of 14.9 million jobs.²⁸

Uncertainty of the economic projections

Any look into the future must take uncertainties into account. Thus, the BLS must judge its work against an uncertain future. Although the use of the macroeconomic model to prepare the aggregate economic projections is a scientific approach, a divergent viewpoint about the assumptions would naturally lead to different economic projection paths. For instance, in the model, the population 16 years and older probably has the strongest influence upon real GDP. The demographic characteristics of this

Table 11. Labor supply and factors affecting productivity, 1986, 1996, 2006, and projected 2016

Category	Levels				Average annual rate of change		
	1986	1996	2006	2016	1986–96	1996–2006	2006–16
Labor supply (millions, unless noted):							
Total population	240.4	269.8	300.5	327.0	1.2	1.1	0.9
Population aged 16 years and older	180.6	200.6	228.8	250.6	1.1	1.3	.9
Civilian labor force	117.8	133.9	151.4	164.2	1.3	1.2	.8
Civilian household employment	109.6	126.7	144.4	155.9	1.5	1.3	.8
Nonfarm payroll employment	99.5	119.7	136.2	151.1	1.9	1.3	1.0
Unemployment rate (percent)	7.0	5.4	4.6	5.0	-2.6	-1.5	.8
Productivity:							
Private nonfarm business output per hour (billions of chained 2000 dollars)	30.4	35.3	45.6	56.9	1.5	2.6	2.2

SOURCE: Historical data—Bureau of Economic Analysis, U.S. Census Bureau, and Bureau of Labor Statistics; projected data—Bureau of Labor Statistics.

population, along with certain other variables, are used to determine the size of the labor force in the model employed in the BLS economic projections. The labor force itself constitutes the most important element in determining the economy's ability to supply output.

Besides affecting the supply of output, an increase in the population 16 years and older has a significant impact upon various components of demand. For example, an increase in this population would result in a larger home-buying popu-

lation, which in turn would lead to more housing starts, along with a greater demand for residential construction.

In conclusion, a hallmark of the BLS projections is that the assumptions and model-based findings on which they are based are made explicit, although any number of unexpected key factors may modify the path of the 2016 projections. With these points in mind, readers will be better able to grasp and appreciate the projections and estimates presented in this issue of the *Review*. □

Notes

¹ Baby boomers are the generation of Americans who were born between 1946 and 1964. For a full discussion of BLS population and labor force projections, see Mitra Toossi, "Labor force projections to 2016: more workers in their golden years," this issue, pp. 33–52.

² Currently, the Nation is in the throes of a housing slump whose effect on the economy is still unfolding. It is too early to assess just how deeply or adversely the economy will be affected.

³ This model has been used to prepare BLS aggregate economic projections since May 2002. Macroeconomic Advisers developed and still supports the Washington University Macro Model, which the firm's team uses as a central analytical tool for its short- and long-term forecasts of the U.S. economy. The model operates and performs simulations on a Windows-based software program called WUMMSIM.

⁴ Recently, much has happened in financial markets. Problems in the subprime lending market have spread to other structural credits. The Fed maintained the funds rate target at 5.25 percent at its August 2007 meeting, but turned quickly to concerns about the liquidity of short-term credit markets. Initially, the Fed intervened to pump in li-

quidity through open-market operations. Then, on August 17, the Fed announced a 50-basis-point cut in its discount rate (the rate at which the agency will lend to commercial banks), to 5.75 percent. Finally, the aforementioned half-percent funds rate cut to 4.75 percent came on September 18, followed by the cut to 4.50 percent in October.

⁵ In recent years, Fed officials under then Chairman Alan Greenspan made it clear that they had an informal target, or "comfort zone," with respect to inflation, namely, 1 to 2 percent a year on core inflation. (Core inflation excludes food and energy prices, which tend to be volatile. Core inflation is thus less volatile than regular inflation and generally is viewed as a better reflection than the latter of the mix of supply and demand in domestic markets.) That is, any growth in core inflation of more than 1 to 2 percent a year would eventually trigger a hike in the funds rate, to keep inflation under control. Current Chairman Ben Bernanke appears to firmly endorse the Fed's longstanding practice of focusing more heavily on core price measures in setting monetary policy.

⁶ In conformity with the Administration's policy to make tax re-

lief permanent, rather than allowing it to expire as scheduled at the end of this decade, the Macroeconomic Advisers' model assumes that the recent tax cuts will be permanent. In contrast, the Congressional Budget Office's 2007 baseline assumption is that the tax cuts and other expiring tax provisions will "sunset" beginning in 2011. (See notes 16 and 20 for further discussion.)

⁷ Each year, the Energy Information Administration of the Department of Energy publishes a range of estimates regarding energy supply and demand over the coming 20 years. The Bureau's energy assumptions about nominal world oil prices are based on the Department of Energy's reference-case estimates. (See *Annual Outlook 2007 with Projections to 2030* (U.S. Department of Energy, February 2007), pp. 34–35.)

⁸ The 2006–16 BLS projections of population and the labor force reflect the results of Census 2000 adjustments. The new BLS weighting procedures resulted in higher estimates of the U.S. population and civilian labor force, due to a major reevaluation of net international migration estimates. For a further discussion of population and labor force projections, see Toossi, "Labor force projections to 2016."

⁹ For a further discussion of labor force projections, see Toossi, "Labor force projections to 2016."

¹⁰ GDP growth slowed to a near-standstill 0.6-percent annual rate in the first quarter of 2007, the slowest pace in 5 years. The economy rebounded in the second quarter, growing at an annual rate of 3.8 percent, and edged up to 3.9 percent in the third quarter.

¹¹ For a further discussion of GDP per capita, see Richard B. Freeman, "Labor Market Imbalances: Shortages or Surpluses, or Fish Stories?" paper presented at the Boston Federal Reserve Economic Conference: "Global Imbalances—As Giants Evolve," Chatham, Massachusetts, June 14–16, 2006.

¹² In the National Income and Product Accounts, the personal savings rate is defined as the percentage of personal after-tax income that is not spent on consumption, paid out as interest, or given away to foreigners. The savings rate does not, however, take into account gains from rising stocks or the appreciation of owned homes. Thus, the values of people's assets are growing even as those people are spending more of their pay.

¹³ Note that the extent to which the subprime crisis affects other parts of the mortgage finance sector currently is being heavily debated.

¹⁴ The contributions to any percent change in a real aggregate, such as real GDP, provide a measure of the composition of growth in the aggregate, and that growth is not affected by the nonadditivity of its components. This property makes contributions to percent change a valuable tool for economic analysis. Contributions of subaggregates, such as goods purchased with personal consumption expenditures, to the percent change of the aggregate—say, total personal consumption expenditures or GDP—are calculated by summing the contributions of all the deflation-level components contained in the subaggregate. For a further discussion, see *Calculating the Contributions of Components to the Change in GDP and in other Major Aggregates, National Income and Product Accounts of the United States, 1929–97: Volume 1* (U. S. Department of Commerce, Bureau of Economic Analysis, September 2001), p. M-18.

¹⁵ The average price of gasoline hit \$3.26 a gallon in May 2007, a record high in nominal dollars, just above the inflation-adjusted record, which was set in March 1981 at \$3.22 per gallon in today's dollars. Capacity in the U.S. refining industry is tight, and the tightness of supply set against continuing increases in demand keeps gasoline prices soaring as a result.

¹⁶ The Congress enacted a tax reduction program in 2002 and 2003.

A provision to encourage small-business investment by raising the expensing limits for equipment purchases was extended through 2009, and a reduction in the capital gains and dividend tax rate was extended through 2010. For more information, see *Budget of United States Government, Fiscal Year 2008* (Office of Management and Budget, February 2007), pp. 7–14.

¹⁷ On April 20, 2005, in his remarks to the Economics Club of the University of North Carolina at Chapel Hill, Federal Reserve Board member Roger W. Ferguson, Jr., presented the slump in foreign domestic demand as 1 of 5 possible explanations for the U.S. current-account deficit.

¹⁸ For a further discussion of the U.S. current-account balance, see Sebastian Edwards, "Is the current account deficit sustainable? and if not, how costly is adjustment likely to be?" NBER working paper 11541 (National Bureau of Economic Research, August 2005); Marc Labonte, "Is the U.S. Current Account Deficit Sustainable?" *Congressional Research Service, CRS Report for Congress, Order Code RL33186*, December 2005; and Michael P. Dooley, Peter M. Garber, and David Folkerts-Landau, "The two crises of international economics," NBER working paper 13197 (National Bureau of Economic Research, June 2007).

¹⁹ Based on national accounting identities, the national savings rate is calculated by adding the current-account balance (exports less imports, with net factor income added) to gross investment and dividing by GDP. In other words, the current-account balance is the mathematical difference of national savings and domestic investment. Thus, a decrease in the national savings rate reflects a widening of the external deficit.

²⁰ The President's 2008 budget shows the Federal deficit falling in each of the next 5 years and, by 2012, producing a \$61 billion surplus. (See *Budget of United States Government, Fiscal Year 2008* (Office of Management and Budget, February 2007).) Also, according to Congressional Budget Office baseline projections, the deficit will essentially reach a balance in 2011 and turn a \$170 billion surplus by 2012. However, the Congressional Budget Office projects that if the tax cuts and other expiring tax provisions are extended, the deficit would hit \$146 billion in 2012 and grow thereafter. (See *The Budget and Economic Outlook: Fiscal Years 2008 to 2017* (Congress of the United States, Congressional Budget Office, January 2007).) Note that, in this article, the budget surplus or deficit is measured in calendar-year terms and on the basis of the National Income and Product Accounts.

²¹ The category of government consumption expenditures and gross investment, or government spending, consists of two components: (1) consumption expenditures by Federal and by State and local governments and (2) gross investment by government and government-owned enterprises. Government consumption expenditures consist of the goods and services that are produced by any level of government. The value of government production is measured as spending for labor and capital services and for intermediate goods and services. Gross investment consists of investment in new and used structures and equipment and in software purchased or produced by government and government-owned enterprises. (See "Government Spending," *Survey of Current Business*, June 2007, p. 7.)

²² See Kasmira Smarzo, "Consideration for National Defense Projections," unpublished manuscript (Bureau of Labor Statistics, Division of Industry Employment Projections, February 2007). See also Robert A. Sunshire, "Issues in budgeting for operations in Iraq and the war on terrorism," CBO testimony before the Committee on the Budget, U.S. House of Representatives, Jan. 18, 2007. For a discussion of defense spending and estimates of military force levels, see *National Defense Budget Estimates For FY 2008* (Office of the Under Secretary of Defense (Comptroller), March 2007); and *Fiscal 2008 Department of Defense Budget Release* (Department of Defense, Feb. 5, 2007).

²³ For more information, see *Budget of United States Government, Fiscal Year 2008* (Office of Management of Budget, February 2007), pp. 15–16.

²⁴ In the first quarter of 2007, labor productivity growth was held down by the cyclical slowdown in the economy. Weak GDP growth of 0.6 percent in the first quarter translated into a slowdown in productivity growth of 0.7 percent. After this languid first quarter, productivity growth rebounded to 2.2 percent in the second quarter and then surged to a strong 4.9 percent in the third quarter.

²⁵ See, for example, Dale W. Jorgenson, Mun S. Ho, and Kevin J. Stiroh, “Potential Growth of the U.S. Economy: Will the Productivity Resurgence Continue,” Nov. 17, 2005, on the Internet at post.economics.harvard.edu/faculty/jorgenson/papers/nabe.draft_41.pdf; and Anthony M. Santomero, “The U.S. Economy: How Fast Can We Grow?” paper presented before the CFA [Chartered Financial Analysts] Society of Philadelphia at the Racquet Club of Philadelphia, Feb. 23, 2006.

²⁶ For more detailed information on labor productivity and employment, see Rose A. Woods and Eric B. Figueroa, “Industry output and employment projections to 2016,” this issue, pp. 53–85. (See also *Labor Productivity: Developments Since 1995* (Congressional Budget

Office, March 2007); James A. Kahn and Robert W. Rich, “Tracking Productivity in Real Time,” *Current Issues in Economics and Finance, Federal Reserve Bank of New York*, November 2006; and “Productivity Growth,” *Economic Report of the President, the Annual Report of the Council of Economic Advisers*, chapter 2, February 2007, pp. 45–62.

²⁷ See note 8 for more information on population and labor force estimates.

²⁸ The measure of civilian employment used in the aggregate economic projections discussed in this article is a count of persons who are working. Estimates of civilian employment are derived from the Current Population Survey (CPS), a survey of households carried out for the Bureau of Labor Statistics by the Census Bureau. Payroll employment is a count of jobs and is based on the Current Employment Statistics survey (CES), a BLS survey of establishments. Although the employment measures from the two surveys show similar trends over the long term, shorter term discrepancies have arisen. For further information on these two employment measures and on employment growth discrepancies, see “Understanding the employment measures from the CPS and CES survey,” *Monthly Labor Review*, February 2006, pp. 23–38; on the Internet at www.bls.gov/opub/mlr/2006/02/art2full.pdf (visited Nov. 30, 2007). The BLS maintains a monthly update on CES-CPS employment trends, on the Internet at www.bls.gov/web/ces_cps_trends.pdf (visited Nov. 30, 2007).