

Employment outlook: 2002–12

The U.S. economy to 2012: signs of growth

Based on the assumptions used in developing economic projections, real GDP is expected to grow during the next decade, while productivity remains strong and inflation remains stable

Betty W. Su

Every 2 years, the Bureau of Labor Statistics prepares a set of projected U.S. economic factors that form the basis for the employment projections program. This article presents the projections of U.S. economic factors that underlie the 2002–12 employment projections. This set of aggregate economic projections presents some unique challenges. After the boom of the 1990s, the U.S. economy suffered a number of serious setbacks, including: the bursting of the technology bubble; the September 11, 2001, terrorist attacks; significant losses of stock market wealth; a stagnant job market; corporate accounting scandals; and uncertainties related to the war in Iraq.

Although the economy has had difficulty shaking off a stubborn slowdown, recent statistical data suggest that we are now poised for a more sustained recovery. During the 2000–02 period, the U.S. economy has experienced low inflation, low interest rates, strong productivity growth, and a healthy housing market. Also, both government monetary and fiscal policies have been focused on stimulating economic growth. Under the assumptions used by the Bureau in developing these projections, gross domestic product (GDP) is expected to reach \$12.6 trillion in chained 1996 dollars by 2012, an increase of \$3.2 trillion during the 2002–12 decade. (Also see box on page 25.)¹ This translates to an average annual rate of growth for real GDP of 3.0 percent over the period, 0.2

percentage point lower than the historical rate of 3.2 percent from 1992 to 2002. A slower growth of civilian household employment, from 1.3 percent a year during the 1992–2002 period to 1.2 percent from 2002 to 2012, is expected to result in an increase of 17.3 million employees over the latter period, still greater than the increase of 15.8 million employees over the preceding 10-year period, from 1992 to 2002. The employment projection is accompanied by an expected unemployment rate of 5.2 percent in 2012, 0.6 percentage point lower than that in 2002.

Reflecting increased globalization of the U.S. economy, foreign sectors are expected to continue their fast growing trend in the next 10 years. Besides foreign trade, gross private domestic investment also is expected to play a substantial role in the economy over the 2002–12 period. Business spending on high-tech and computer-related equipment is anticipated to lead the rapid growth. On the government side, a projected increase in defense spending reflects the long-term efforts to win the global war on terrorism and protect the American homeland.

This article begins the discussion of economic projections with the macroeconomic model and major underlying assumptions. It then examines more closely the projections of aggregate demand categories of GDP. Lastly, the Bureau's expectations for the growth of incomes, employment, and labor productivity are discussed in turn. The

Betty W. Su is an economist in the Division of Industry Employment Projections, Office of Occupational Statistics and Employment Projections, Bureau of Labor Statistics. E-mail: Su_B@bls.gov.

projections are described in the context of trends over the 2002–12 period.

The macroeconomic model

The aggregate economic projections presented in this article have been developed in the context of the macroeconomic model provided by Macroeconomic Advisers, LLC, a St. Louis, MO, based forecasting group.² The company's quarterly model comprises 609 variables descriptive of the U.S. economy, of which 169 are exogenous assumptions—that is, variables whose values must be provided to the model in order to calculate a solution for a given period of time. Among the 169 exogenous variables, only a relatively small number of these assumptions 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 GDP. Those key assumptions are listed in table 1.

In addition, the projections are generally prepared with selected variables, such as the inflation rate, the level of the unemployment rate, the labor productivity growth rate, and the international trade-related issue, which are much more carefully evaluated than the other variables in the model. Setting a preliminary target value for those key variables, helps in defining the parameters around which overall projections are developed.

Major assumptions

Monetary policy. Early in 2001, just before the economy officially entered a recession,³ the Federal Reserve started easing monetary policy and cutting the Federal funds rate. Within a year, the rate was cut a total of 11 times, from 6.50 percent to 1.75 percent. In the following year, the rate fell further, to 1.25 percent in November, in response to the economic shocks accompanying the 9/11 attacks and the war with Iraq. Increasingly worried that U.S. economic growth was close to stalling, the Federal Reserve cut the funds rate again in late June 2003 to a 45-year low of 1.00 percent to help revive the economy and help prevent the economically dangerous threat of deflation.⁴

Generally, the monetary sector in the econometric model is designed to determine the money supply with a long-term steady growth. The BLS projection assumes that once growth recovers towards “trend,” the Federal Reserve will reverse course and undertake monetary tightening that will push the funds rate up. By 2012, the Federal funds rate is assumed to rise to 5.33 percent, a rate close to its historical average. Bond yields will generally move parallel to the funds rate over the projection interval, but run somewhat higher. The yield on the 10-year Treasury note is expected to reach 6.25 percent in 2012. (See table 1.)

Fiscal policy. The Bureau's 10-year projections incorporate the policy impacts associated with three major tax bills enacted in the past 2–1/2 years. The first tax cuts are the immediate implementation of provisions in the “Economic Growth and Tax Relief Reconciliation Act of 2001” (EGTRRA or Economic Growth Act); the second tax cuts are the provisions of the “Job Creation and Worker Assistance Act of 2002” (JCWAA, or Job Creation Act); and the third are the recently enacted provisions of the “Jobs and Growth Tax Relief Reconciliation Act of 2003” (JGTRRA or Jobs and Tax Relief Act). The fiscal stimulus packages include reduced tax rates for individuals and on capital gains, and increases of expensing limits for certain types of investment. Although some of the provisions in the Jobs and Tax Relief Act are set to expire and return to the provisions set in the Economic Growth Act, and all of the provisions of the Economic Growth Act are scheduled to expire in 2010 and return to prior law, the model assumes that the provisions will be extended through the projection period.⁵

Tax-related assumptions affect Federal Government revenues. The Federal effective marginal personal tax rate increased from 21.3 percent of personal income in 1992 to 22.5 percent by 2002. Reflecting the recently enacted tax cut package, a gradual decrease in this rate is expected to occur over the next decade. In the BLS projections, it is assumed that the effective marginal personal tax rate will drop to 21.4 percent in 2012, noticeably lower than that in 2002. The effective marginal dividends tax rate is expected to drop significantly from 28.0 percent in 2002 to 22.5 percent in 2012, while the capital gains tax rate is anticipated to fall from 18.8 percent in 2002 to 15.0 percent in 2012. The maximum Federal corporate tax rate is assumed to be maintained at 35.0 percent in 2012; the same as in 2002.

Government spending and the budget deficit. Since 2001, Federal defense spending has increased sharply in response to the terrorist attacks of September 11 and the military operations in Afghanistan and Iraq. The acceleration of spending, together with reduced revenues due to the recent economic slowdown and legislation enacted over the past couple of years, has pushed the Federal budget from a surplus of \$207 billion in 2000 and \$72 billion in 2001 to a deficit of \$202 billion in 2002 and an estimated \$400 billion in 2003. According to the Department of Defense's current established budget plan for the next 6 years through 2009, it would require funding at higher levels than defense spending has been in any year since 1980. The budget emphasizes strong support for the global war on terrorism, sustaining high quality personnel and forces, and transforming the U.S. defense establishment.⁶ On the basis of Defense Department estimates, the Bureau has assumed that, after 2009, defense spending will continue the same trend toward increased levels, growing about 2 percent per year through the rest of the projection period.

The 2003 comprehensive NIPA revision

In December 2003, the Bureau of Economic Analysis (BEA), Department of Commerce, released the 2003 comprehensive, or benchmark, revision of National Income and Product Accounts (NIPA's). This latest comprehensive revision characterizes the changes in definitions and classifications, methodologies and source data, as well as changes to the tables that present the economic figures. In the comprehensive revision, the reference year for the statistical time-series data has been advanced from 1996 to 2000 for the chain-weighted-dollar estimates. The implications of those changes do not affect the projections in this issue, because the BLS projections

were completed prior to the NIPA revision. All the data presented in the 2002–12 projections are still measured on a chained-1996 dollars basis, and the historical data presented in this article are consistent with data published through the BEA's November 2003 issue of the *Survey of Current Business*, the last issue before the comprehensive revision.

Further information on the NIPA revision and the time series estimates are available in the December 2003 issue of the *Survey of Current Business*, or on the Internet at: www.bea.gov/national/2003_comprehensive_revision_of_the_National_Income_and_Product_Accounts.

In addition, the significant long-term strains on spending will begin to intensify within the next decade as the baby-boom generation begins reaching retirement age. Driving those pressures on the budget will be growth in the largest retirement and health programs. Federal spending on Social Security, Medicare, and Medicaid will consume a growing portion of budgetary resources. BLS assumes that long-term defense spending on consumption and gross investment will continue to rise over the entire projection period. In short, high spending levels accompanying tax reductions will add to fiscal stimulus throughout the entire projections, but will result in budget deficits, reaching an estimated \$164 billion in nominal terms in 2012. (A further discussion is presented later in the "Federal Government" section.)

Energy. Among the energy-related assumptions, the most important is the refiners' acquisition price for crude oil, expressed in dollars per barrel. Growing concerns about a U.S. confrontation with Iraq and wider disruptions to Gulf supplies drove U.S. crude oil over \$40 per barrel in February 2003, approaching the \$41.15 record set during the buildup to the 1991 Gulf War. Although oil prices dropped after the U.S. attacked Iraq, with little disruption to Middle East crude flows, energy prices are still on the high side.

In the aggregate economic model, the level of GDP determines the level of energy demanded by the economy; the price of crude oil determines the level of domestic production, and the residual amount of the energy demand not met by domestic production is, by assumption, met by imports of crude petroleum. This particular assumption is drawn from annual energy projections prepared by the U.S. Department of Energy, which expects the dollar value of a barrel of crude oil to rise from about \$23.61 per barrel in 2002 in nominal terms to \$30.52 per barrel in 2012. The domestic share of crude-oil production is expected to continue to decline from 54.6 percent

of total U.S. demand in 1992 and 39.5 percent in 2002 to 31.2 percent by 2012.⁷

Demographic assumptions. The demographic assumptions are based on the 2000 Census middle-series population projections. These projections estimate the U.S. population to be expanding at an annual rate of 0.9 percent between 2002 and 2012, when the population reaches 315 million. Growth in the older age cohorts will be strong as baby boomers age. The BLS labor force projections are consistent with the Census Bureau population projections and are prepared at detailed levels as well as for the aggregate; the estimates then carry over to the aggregate economic model.⁸

Inflation. After accelerating in the 1970s and early 1980s, inflation has slowed significantly in recent years. Combined with high productivity, relatively cheaper imports, and the absence of commodity shocks, even during a long-lived expansion in the 1990s, changes in the labor market prevented any significant acceleration of wages. While wage pressures remained remarkably modest, inflation remained moderate.

Monetary policy remains important in the long-term projections, not so much in determining the level of output, but rather in determining the rate of inflation. With a steady-state rate of inflation in mind, it is assumed that the Federal Reserve will attempt to keep inflation contained over the projection period while providing adequate money growth to fuel economic expansion. The rate of inflation, as measured by the chain-weighted GDP price index, will grow at an average rate of 2.2 percent per year over the projection horizon.

Unemployment rate. During the recession of 2001, the unemployment rate rose from a 30-year low of 4.0 percent in 2000 to 4.7 percent in 2001 and jumped further to 5.8 percent in 2002. The unemployment rate reached an 8-year-high of 6.0 percent in

Table 1. Major assumptions affecting aggregate projections, 1982, 1992, 2002, and projected 2012

Exogenous variables	Billions of chained 1996 dollars (unless noted)				Average annual rate of change		
	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Monetary policy-related:							
Federal funds rate (percent)	12.26	3.52	1.67	5.33	-11.7	-7.2	12.3
Excess reserves (billions of dollars) .....	.40	1.00	1.50	3.30	9.6	4.1	8.2
Ninety-day Treasury bill rate (percent)	10.61	3.43	1.60	5.03	-10.7	-7.3	12.1
Yields on 10-year Treasury notes (percent)	13.00	7.01	4.61	6.25	-6.0	-4.1	3.1
Fiscal policy, tax-related:							
Effective Federal marginal tax rate on wages and salaries (percent)	28.0	21.3	22.5	21.4	-2.7	.5	-5
Effective Federal marginal tax rate on interest income (percent)	28.5	22.0	24.5	23.0	-2.6	1.1	-6
Effective Federal marginal tax rate on dividend income (percent)	37.1	25.1	28.0	22.5	-3.8	1.1	-2.2
Effective Federal marginal tax rate on capital gains (percent)	40.7	25.7	18.8	15.0	-4.5	-3.1	-2.2
Maximum Federal corporate rate (percent)	46.0	34.0	35.0	35.0	-3.0	.3	.0
Government outlays-related:							
Defense consumption, other	101.0	124.8	152.1	225.5	2.1	2.0	4.0
Defense gross investment expenditures	38.2	66.4	63.3	99.5	5.7	-5	4.6
Nondefense consumption, other	36.9	52.4	58.3	60.4	3.6	1.1	.4
Nondefense gross investment expenditures	14.8	28.0	45.9	54.1	6.6	5.1	1.7
Federal transfer payments to persons, other	81.0	105.0	139.3	170.5	2.6	2.9	2.0
Federal grants-in-aid to State and local governments, Medicaid	38.7	81.4	127.8	154.3	7.7	4.6	1.9
Federal grants-in-aid to State and local governments, other	81.4	87.0	140.2	175.7	.7	4.9	2.3
Energy-related:							
Refiners' acquisition cost of imported oil (nominal dollars per barrel)	33.59	18.11	23.61	30.52	-6.0	2.7	2.6
Domestic share of U.S. crude oil acquisitions (as percentage of total acquisitions)	72.2	54.6	39.5	31.2	-2.8	-3.2	-2.3
Domestic oil product	38.9	35.0	31.5	28.5	-1.1	-1.0	-1.0
Demographic-related:							
Total population including overseas Armed Forces (in millions)	231.9	255.4	287.5	314.8	1.0	.9	.9
Population aged 16 and over (in millions)	172.3	192.8	218.0	242.0	1.1	1.0	1.1

SOURCE: Historical data—Federal Reserve Board, Bureau of Economic Analysis, Energy Information Administration, and Census Bureau; projected

data—Bureau of Labor Statistics, Energy Information Administration, and Census Bureau.

2003. However, the model assumes that long-term economic growth and job recovery will gradually push the unemployment rate down over the projection period. Keeping the labor force projections with steady inflation in mind, by the end of the projection interval, the economy is expected to make a transition towards “full employment.” This underlies the expected unemployment rate of 5.2 percent in 2012. (A further discussion is presented later in the “Employment” section.)

Productivity growth. It is the economy’s ability to increase supply in the face of increasing demand over the long run that determines its potential growth path. Growth in aggregate supply depends on the increase in the labor force, the growth of the capital stock, and improvements in productivity. In general, productivity is a cyclical variable that typically falls during recessions because both labor and capital are underutilized as output sags or grows more slowly. Surprisingly, productivity

never declined during the most recent economic downturn. Better still, acceleration has continued even as investment in information technology has fallen from its late-1990’s peak. Productivity has increased at its fastest pace of more than 3.0 percent annually over the 2000–02 period, compared with 2.5 percent yearly from 1995 to 2000 and 1.4 percent from 1973 to 1995.

It is unclear to what extent the continued rise is due to unusual cyclical factors and to what extent the rise reflects a further increase in underlying structural productivity. It is clear that productivity growth is the main influence on long-term growth and living standards. The projections assume that productivity will keep close to its previous 10-year trend and grow at an average of 2.1 percent per year during the projection period. The increase is consistent with a projected faster growth of the capital stock and capital services, as well as more capital deepening over the same projection horizon. (A further discussion is addressed in the “Productivity” section.)

International trade. The trade deficit has widened and the current account deficit has deteriorated significantly since 1998. The U.S. trade deficit reached \$424 billion or 4.1 percent of GDP in 2002, a record in nominal dollars and as a percentage of GDP. Slow economic growth abroad has continued to depress the growth of U.S. exports, as the economies of many major European countries are still struggling toward recovery and as Japan lags behind U.S. growth. In addition, the drop in the U.S. dollar since 2002 is still modest on a trade-weighted basis. In the long run, the greatest uncertainty lies with potential export growth, depending as it does on growth in the economies of major U.S. trading partners in the European Community and in the Pacific Rim countries. The dollar will have to depreciate steadily against foreign currencies in order to keep the U.S. current account deficit from growing too fast. Over the next decade, the projection contemplates that the exchange rate will drift downward over the projection period. A trade deficit in goods will still exist throughout the entire projections, while a surplus in services will continue to improve. (A detailed discussion on exports and imports is described in the “exports and imports” section.)

In sum, the projections anticipate a growth economy, including a steady expansion of the labor force, strong productivity growth, a favorable outlook regarding inflation, and opportunities for jobs.

Aggregate demand GDP

After the late-1990’s boom, the U.S. economy began to slow down in the middle of 2000, with a recession taking place in 2001. During the 3-year period ending in mid-2003—a period including the burst of the stock market bubble, the shock of 9/11, corporate accounting scandals, and uncertainties associated

with the war in Iraq—the U.S. economy struggled with below-trend real growth at an annual average of roughly 1.6 percent from 2000 to the second quarter of 2003. The path of growth was insufficient to keep the unemployment rate from continuing to rise, in part because of the hefty growth of productivity, which enables companies to get more output from fewer workers. During this period, consumer spending was moderate, inventory accumulation was slow, business investment was sluggish, foreign trade deficits were wide, and only defense spending was growing with any real strength. In the second half of 2003, however, statistics indicate a sharp increase in output, providing significant evidence that the U.S. economy has begun to strengthen.⁹ As mentioned earlier, over the long term, real GDP is projected to grow at an average annual rate of 3.0 percent per year over the 2002–12 span.

Personal consumption expenditures. Spending by consumers, which makes up two-thirds of economic activity, is the largest component of demand. During the past four decades, the growth of consumer spending reflected the interaction of many factors that influenced consumers’ decisions. Among those particularly important factors were: increasing affluence, changing demographics, technological innovations, and changing tastes and lifestyles. Affected by the wave of baby boomers moving through the population beginning in the 1960s, consumer spending grew from an average of 2.5 percent yearly between 1972 and 1982 up to 3.4 percent over the latter 10-year period, from 1982 to 1992. Rising disposable incomes during these periods supplied the resources necessary to support the expansion in consumption. As consumers got into the spending habit, however, increases in personal consumption were more often made at the expense of the savings rate, which dropped from a high of 10.9 percent in 1982 to 8.7 percent by 1992. (See tables 2 and 3.)

Table 2. Gross domestic product by major demand category, 1982, 1992, 2002, and projected 2012

Category	Billions of chained 1996 dollars				Average annual rate of change		
	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Gross domestic product	\$4,919.4	\$6,880.1	\$9,439.9	\$12,638.0	3.4	3.2	3.0
Personal consumption expenditures	3,275.5	4,594.5	6,576.0	8,673.3	3.4	3.7	2.8
Gross private domestic investment	615.3	899.8	1,589.6	2,728.1	3.9	5.9	5.5
Exports	314.6	651.0	1,058.8	1,842.2	7.5	5.0	5.7
Imports	329.2	670.8	1,547.4	2,576.8	7.4	8.7	5.2
Federal defense consumption expenditures							
and gross investment	333.6	417.1	400.0	510.2	2.3	–.4	2.5
Federal nondefense consumption expenditures							
and gross investment	129.8	177.9	213.3	238.7	3.2	1.8	1.1
State and local consumption expenditures							
and gross investment	584.6	815.3	1,099.7	1,267.2	3.4	3.0	1.4
Residual ¹	–4.9	–4.6	49.9	–45.0	–	–	–

¹ The residual is calculated as real gross domestic product, plus imports, less other components.

NOTE: Dash indicates data not computable.

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

Table 3. Personal income, 1982, 1992, 2002, and projected 2012

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1982	1992	2002	2012	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Personal income	\$2,768.4	\$5,390.4	\$8,922.2	\$14,949.0	100.0	100.0	100.0	100.0	6.9	5.2	5.3
Labor income	1,816.2	3,432.1	5,607.0	9,685.8	65.6	63.7	62.8	64.8	6.6	5.0	5.6
Disbursements of wages and salaries	1,593.4	2,982.6	4,996.4	8,568.0	57.6	55.3	56.0	57.3	6.5	5.3	5.5
Other labor income	222.8	449.6	610.7	1,117.8	8.0	8.3	6.8	7.5	7.3	3.1	6.2
Business-related personal income ..	697.1	1,433.1	2,411.1	3,650.3	25.2	26.6	27.0	24.4	7.5	5.3	4.2
Proprietors' income	179.9	434.4	756.5	1,226.8	6.5	8.1	8.5	8.2	9.2	5.7	5.0
Rental income	39.5	63.3	142.4	198.2	1.4	1.2	1.6	1.3	4.8	8.4	3.4
Personal dividend income	76.1	185.3	433.8	697.4	2.7	3.4	4.9	4.7	9.3	8.9	4.9
Personal interest income	401.6	750.2	1,078.4	1,527.8	14.5	13.9	12.1	10.2	6.4	3.7	3.5
Transfer payments	354.1	751.7	1,288.0	2,324.6	12.8	13.9	14.4	15.6	7.8	5.5	6.1
Less social insurance contributions	-99.1	-226.6	-384.0	-711.7	-3.6	-4.2	-4.3	-4.8	8.6	5.4	6.4
Uses											
Personal income	2,768.4	5,390.4	8,922.2	14,949.0	100.0	100.0	100.0	100.0	6.9	5.2	5.3
Personal consumption	2,079.3	4,209.6	7,303.8	12,394.0	75.1	78.1	81.9	82.9	7.3	5.7	5.4
Tax and nontax payments	361.6	635.8	1,111.9	1,899.8	13.1	11.8	12.5	12.7	5.8	5.7	5.5
Personal interest payments	58.8	118.7	188.4	296.5	2.1	2.2	2.1	2.0	7.3	4.7	4.6
Transfers to foreigners	6.5	12.6	32.3	54.7	.2	.2	.4	.4	6.8	9.9	5.4
Personal savings	262.2	413.7	285.8	304.0	9.5	7.7	3.2	2.0	4.7	-3.6	.6
Addenda											
Disposable personal income	2,406.8	4,754.6	7,810.3	13,049.2	-	-	-	-	7.0	5.1	5.3
Disposable personal income, chained 1996 dollars	3,791.6	5,189.3	7,032.1	9,131.5	-	-	-	-	3.2	3.1	2.6
Per capita disposable income	10,377	18,619	27,170	41,459	-	-	-	-	6.0	4.1	4.3
Per capita disposable income, chained 1996 dollars	16,349	20,320	24,463	29,012	-	-	-	-	2.2	2.1	1.7
Savings rate (percent)	10.9	8.7	3.7	2.3	-	-	-	-	-2.3	-8.3	-4.4

SOURCE: Historical data—Bureau of Economic Analysis; projected data—Bureau of Labor Statistics. NOTE: Dash indicates data not computable.

Beginning in 1996, with consumers buoyed by a number of factors, including the thriving job market, steady incomes, low interest rates, low inflation, and increased wealth from rising asset prices, spending accelerated to its fastest pace in more than a decade. Consumption expenditures grew by 4.4 percent yearly from 1996 to 2000. Mirroring the expansion in consumption, the annual savings rate dropped sharply to 2.8 percent in 2000.

Beginning in late 2000 and continuing until mid-2003 (a period including the 2001 recession and the war in Iraq), consumer purchases of goods and services still managed to remain at a rate of growth about 2.7 percent annually between 2000 and the second quarter of 2003. This divergent trend suggests that the uncertainties associated with the war may have put a dent in consumer spending, but only had a limited impact on spending. Gains from Federal tax cuts and mortgage refinancing probably remained key factors behind the willingness of consumers to continue spending.

Over the next decade, consumer demand is projected to grow at an average annual rate of 2.8 percent from 2002 to 2012, sliding down from the historical high of 3.7 percent rate posted during the preceding 10-year period. The 2.8 percent rate is in line with, but less than the projected 3.0 percent growth for GDP over the

same span. Real disposable income is projected to grow at a 2.6-percent annual rate between 2002 and 2012, 0.5 percentage point lower than the rate for 1992–2002.

At a finer level of detail, consumer spending on durable goods, especially for cars and light trucks, was most notable during the past 3 years. Sales of autos roared to a peak of 17.2 million units in 2000, as the value of sales incentives reached a new high and buyers responded eagerly to the incentives. The long-term outlook for motor vehicle sales will call for a slowdown in the rate of increase relative to past performances, and the solid gain in auto sales is expected to ease. Total light-vehicle sales are anticipated to stay at 16.6 million units in 2012. Although the number of vehicles per person has increased significantly in the past 20 years, the United States might be approaching a saturation point in the rate of vehicle ownership. Future growth in vehicle sales will be primarily driven by growth in population and demand for replacement vehicles. Demand for motor vehicles and parts is projected to grow at a rate of 2.0 percent yearly between 2002 and 2012, compared with 5.4 percent in the 1992–2002 period. (See table 4.)

Among consumer purchases of services, a major contributor to growth is health care expenditures. The growing

Table 4. Personal consumption expenditures, 1982, 1992, 2002, and projected 2012

Category	Billions of chained 1996 dollars				Average annual rate of change		
	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Personal consumption expenditures	\$3,275.5	\$4,594.5	\$6,576.0	\$8,673.3	3.4	3.7	2.8
Durable goods	283.5	479.0	999.9	1,473.5	5.4	7.6	4.0
Motor vehicles and parts	150.2	225.7	382.4	464.8	4.2	5.4	2.0
Other durable goods	137.0	255.0	620.3	1,048.0	6.4	9.3	5.4
Nondurable goods	1,088.8	1,389.7	1,929.5	2,448.4	2.5	3.3	2.4
Services	1,918.3	2,729.7	3,675.6	4,841.3	3.6	3.0	2.8
Housing services	555.3	719.3	880.1	1,097.3	2.6	2.0	2.2
Medical services	518.6	765.4	978.6	1,314.7	4.0	2.5	3.0
Other services	845.6	1,245.6	1,816.9	2,427.2	4.0	3.8	2.9
Residual ¹	-20.0	-6.3	-31.8	-127.1	-	-	-

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.
 NOTE: Dash indicates data not computable.

number of elderly in the population, as well as advances in medical technology, has resulted in a greater demand for health services. Spending on medical services increased 2.5 percent per year during the 1992–2002 period. Over the coming 10 years, due to the importance of the demographic factors, spending on medical services is expected to continue to post solid gains at a growth rate of 3.0 percent annually.

Gross private domestic (business) investment. This component of GDP consists of business spending for equipment and software,¹⁰ purchases of nonresidential structures, purchases of residential structures, and changes in business inventories. Historically, private business investment is one of the most volatile

elements of final output, responding to the business cycle and to shifting interest rates and inflation. During the recessions of the 1980s and 1990s, business investment experienced a sharp decline. Nevertheless, a strong economy boosted investment to a historical high in 2000, making an average growth of 8.8 percent per year since 1992, compared with a growth in investment of 3.9 percent between 1982 and 1992. (See table 5.)

However, during the 2000–02 period, nonresidential investment was one of the weakest segments of demand in part because of over-investment in Internet gear and other information-technology equipment during the boom of the late 1990s. Spending on equipment and software, the largest category of business investment, plummeted 8.0 percent between 2000

Table 5. Gross private domestic investment, 1982, 1992, 2002, and projected 2012

Category	Billions of chained 1996 dollars				Average annual rate of change		
	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Gross private domestic investment	\$615.3	\$899.8	\$1,589.6	\$2,728.1	3.9	5.9	5.5
Fixed nonresidential investment	474.3	630.6	1,183.4	2,233.5	2.9	6.5	6.6
Equipment and software	259.1	437.5	971.1	2,067.8	5.4	8.3	7.9
Computers and software	11.5	74.7	419.7	1,633.6	20.6	18.8	14.6
Other equipment	296.1	369.2	593.0	933.1	2.2	4.9	4.6
Structures	237.3	197.3	226.4	269.6	-1.8	1.4	1.8
Fixed residential structures	158.1	257.2	388.2	480.1	5.0	4.2	2.1
Single-family	62.0	135.7	200.5	245.0	8.1	4.0	2.0
Multifamily	22.1	14.2	26.3	27.4	-4.3	6.3	.4
Other	72.3	107.0	161.4	208.4	4.0	4.2	2.6
Change in business inventories	-15.6	17.1	5.2	59.0	-	-11.3	27.6
Residual ¹	-70.4	-15.5	-42.8	-647.9	-	-	-

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.
 NOTE: Dash indicates data not computable.

The U.S. Economy

and 2002. In contrast to the softness in nonresidential investment, residential investment grew briskly. Propelled by record low mortgage rates and also by the continued growth in housing demand, the housing market has been on a nearly unbroken upward trend for the 3 years ending in 2002. Residential construction rose 5.4 percent during the 1999–2002 period, while housing starts reached a 16-year high of 1.71 million units in 2002.

As already noted, the recent data show that beginning in the second half of 2003, the economy is showing signs of recovery, but in addition, capital spending is turning up. Over the next decade, with good profitability, technological innovation, and solid demand growth, the projections indicate nonresidential investment in equipment and software will grow at a robust rate of 7.9 percent per year from 2002 to 2012. Purchases of nonresidential structures are expected to grow slightly faster than the historical pace: 1.8 percent annually over the projection period, compared with a lackluster investment of 1.4 percent growth between 1992 and 2002.

Although interest rates clearly influence the short-term timing of home purchases, demographics are the primary determinant of long-term housing activities. As the 35- to 44-year-old population is estimated to decline by 2012, traditionally thought of as the prime home-buying age group, demand for fixed residential investment is projected to retreat and settle down after its 2002 record high. A still healthy 2.1-percent average annual growth rate is projected over the 2002–12 period, while housing starts are expected to rise modestly to 1.79 million units in 2012, from 1.71 million units in 2002. In sum, business investment as a whole is expected to be a great

contributor to U.S. economic growth over the next decade, at a rate of 5.5 percent per year for the 2002–12 period.

Exports and imports. Globalization and international competition have played an important role in U.S. economic activity. During the 1990s, increasing exports drove GDP growth. So did imports: The strong U.S. dollar and falling foreign commodity prices in emerging markets helped keep the Nation's inflation low and combined with other factors to trigger strong growth in consumer spending. However, increased globalization has also brought new challenges to the U.S. economy, including a widening of the trade deficit in total goods and services. The trade deficit ballooned to a record \$423.6 billion in 2002 in nominal terms, or \$488.5 billion in real dollars, up from the 1992 figure of \$27.8 billion in nominal terms, or \$19.8 billion in real dollars. In terms of growth rate, while exports increased at a 7.5-percent annual rate from 1982 to 1992, imports grew 7.4 percent. Over the 1992–2002 period, exports posted a 5.0-percent rate of growth annually and imports soared faster at 8.7 percent. (See table 6.)

In any long-term projection program, the international trade sector is the most difficult to predict. The key to the Bureau's 10-year outlook for U.S. trade is the increase in global accessibility and the rise in international competition. With the world assumed to become more open to trade, the share of GDP accounted for by both exports and imports is expected to grow apace. A continued decline in the exchange rate will stimulate U.S. exports abroad and increase international competitiveness. Real exports are expected to grow at a 5.7-percent annual rate between 2002 and 2012. Both exports of goods and services also are expected to

Table 6. Exports and imports of goods and services, 1982, 1992, 2002, and projected 2012

Category	Billions of chained 1996 dollars				Average annual rate of change		
	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Exports of goods and services	\$314.6	\$651.0	\$1,058.8	\$1,842.2	7.5	5.0	5.7
Goods	214.6	449.8	756.9	1,316.6	7.7	5.3	5.7
Nonagricultural	190.0	395.4	688.5	1,210.2	7.6	5.7	5.8
Agricultural	49.8	56.0	68.8	105.1	1.2	2.1	4.3
Services	100.5	201.7	301.5	525.4	7.2	4.1	5.7
Residual ¹	-25.6	-2.2	.1	1.6	-	-	-
Imports of goods and services	329.2	670.8	1,547.4	2,576.8	7.4	8.7	5.2
Goods	257.9	543.7	1,320.1	2,272.7	7.7	9.3	5.6
Nonpetroleum	211.5	487.4	1,229.8	2,141.7	8.7	9.7	5.7
Petroleum	38.8	58.6	86.7	128.2	4.2	4.0	4.0
Services	73.1	128.0	227.2	323.1	5.8	5.9	3.6
Residual ²	5.8	-3.2	3.7	-16.3	-	-	-
Trade surplus/deficit	-14.6	-19.8	-488.5	-734.6	3.1	37.8	4.2

¹ The residual following the detail categories for exports is the difference between the aggregate of "exports of goods and services" and the sum of the figures those separate categories for exports of goods and services.

² The residual following the detail categories for "imports is the difference between the aggregate of "imports of goods and services," and the sum of the

figures those separate categories for imports of goods and services.

NOTE: Dash indicates data not computable.

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

grow at the same rate of 5.7 percent annually per year during the projection period.

Imports are projected to grow at a rate of 5.2 percent annually over the 2002–12 projection period, much lower than the 8.7 percent annual rate of growth for imports over the 1992–2002 span. Imports of goods are expected to grow at 5.6 percent per year, and a 3.6-percent annual rate of growth is projected for imports of services during the 2002–12 period. As a result, net exports (exports minus imports) are projected to continue to make a negative contribution to the aggregate demand, reaching \$734.6 billion in real terms by 2012. Although the Bureau projects a continued increase in the trade surplus in services, the surplus in services still cannot offset the even larger deficit in goods.

The most troubling question, which arises from the foreign trade projections, is how long can the flow of funds out of the United States, to pay for high imports, continue until financial markets begin to feel the pinch? Clearly, increasing interest rates over the period will help slow domestic demands on financial markets, and the sustained Federal budget deficit will also help offset financial outflows to foreigners. Nonetheless, the share of nominal GDP accounted for by the current account deficit jumped sharply between 1999 and 2002, moving from a more traditional 2-percent share to a 5-percent share, in absolute terms.

Owing to steady pressure from the current account deficit, the dollar is projected to depreciate throughout the entire forecast period. However, the current account deficit will continue to grow, reaching just more than 7 percent of nominal GDP by 2012. With such a burden, presumably the U.S. current account deficit can be financed by large inflows of private capital, as investors find U.S. assets to be some of the most attractive in the world. In one sense, the widening deficit is a product of the desire of foreign investors to get in on the action in the U.S. economy. Nevertheless, the United States will have to face the risks that the stock of U.S. indebtedness to the rest of world will grow even more rapidly, and net factor payments from the United States to the rest will also increase rapidly.

Federal Government. During most of the 1980s and the 1990s, the Federal Government faced a large deficit. The question of how to reduce that deficit was a centerpiece of discussion among economists and policymakers for more than 20 years. In nominal terms, the deficit grew from \$132.6 billion in 1982 and peaked at \$297.6 billion in 1992. Between 1993 and 1997, the deficit grew steadily smaller. After 28 years of deficits, in 1998, the budget recorded a substantial surplus of \$43.8 billion as a result of a strong bipartisan effort to control spending by the Federal Government. The surplus increased further during the 1999–2001 period, from \$111.9 billion in 1999 up to \$206.9 billion in 2000, but declined to \$71.9 billion in 2001 as growth began to cool and the tax cuts of 2001 began to enact. The surplus accounted for 2.1 percent of nominal GDP in 2000, its largest share of GDP during the

past four decades. This dramatic change is attributable to an increase in tax receipts from an expanding economy, on the one hand, and a decline in expenditures due to the Balanced Budget Act of 1996, on the other.

However, since late 2001, as noted earlier, Federal defense spending has increased sharply in response to the terrorist attacks of September 11 and to military operations in Afghanistan and Iraq. On the revenues side, falling receipts from individual and corporate income taxes due to the recent economic slowdown as well as the result of tax policy, accounted for almost all the decline in total receipts over the 2000–02 period. In 2002, total receipts were 17.9 percent of GDP, down substantially from the post-World War II peak of 20.7 percent reached in 2000. The acceleration of defense spending and the reduction of Federal revenues have pushed the Federal budget to a deficit of \$202 billion in 2002 and an estimated deficit of \$400 billion in 2003.¹¹

The macroeconomic model assumes that Federal budget deficits will remain through the projection period, reaching \$164.1 billion by 2012, or accounting for 0.9 percent of GDP. The projections also anticipate shifts in the composition of Federal expenditures over the 2002–12 period. Transfer payments (primarily Medicare and Social Security) are projected to account for a 43.9-percent share of Federal expenditures by 2012, declining from 44.9 percent in 2002. Despite this deceleration, Medicare service will make up an increasingly larger proportion of Federal expenditures. Within the next 10 years, the large baby-boom generation will begin to reach retirement age and become eligible to receive Medicare benefits. In addition, advances in medical technology will probably keep pushing up the costs of providing health care. Underlying the demographic changes anticipated for the next decade, spending for Medicare and Social Security together will account for a 35.3-percent share of Federal expenditures by 2012, up rather substantially from 29.2 percent in 1992 and 33.7 percent in 2002. Similarly, the share of grants-in-aid (primarily Medicaid) is projected to increase to 15.8 percent, rising from 10.5 percent in 1992 and 14.7 percent in 2002. (See table 7.)

Real defense spending (which includes expenditures for military compensation, defense capital goods, and gross investment in equipment and in structures¹²) declined absolutely over the 1988–98 period, as the military's compensation was reduced and purchases of weapons were postponed. Cuts also entailed retiring some older equipment without replacing it. In 1999, however, real spending on defense reversed its 10-year trend and started to rise slightly, due mainly to increases in consumption of capital goods and investment in equipment and software. After the September 11 terrorist attacks, defense spending has expanded in response to the perceived threat of terrorism and homeland security protection. Clearly, the surge in military spending is

Table 7. Federal Government receipts and expenditures, 1982, 1992, 2002, and projected 2012

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1982	1992	2002	2012	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Receipts	\$599.5	\$1,121.3	\$1,873.3	\$3,429.0	100.0	100.0	100.0	100.0	6.5	5.3	6.2
Personal tax and nontax receipts ...	295.7	479.4	845.8	1,412.5	49.3	42.8	45.1	41.2	5.0	5.8	5.3
Corporate profits tax	49.1	118.8	179.8	477.4	8.2	10.6	9.6	13.9	9.2	4.2	10.3
Indirect business tax	49.9	81.3	110.6	170.9	8.3	7.3	5.9	5.0	5.0	3.1	4.4
Contributions for social insurance ..	204.9	441.8	737.1	1,368.2	34.2	39.4	39.3	39.9	8.0	5.3	6.4
Expenditures	732.1	1,418.9	2,075.4	3,593.1	100.0	100.0	100.0	100.0	6.8	3.9	5.6
Defense consumption	193.6	317.0	386.7	631.4	26.4	22.3	18.6	17.6	5.1	2.0	5.0
Nondefense consumption	71.7	128.8	199.9	299.0	9.8	9.1	9.6	8.3	6.0	4.5	4.1
Transfer payments	287.3	565.2	931.8	1,575.9	39.2	39.8	44.9	43.9	7.0	5.1	5.4
To persons	281.1	549.0	917.4	1,564.4	38.4	38.7	44.2	43.5	6.9	5.3	5.5
Unemployment	25.2	38.9	62.8	51.8	3.4	2.7	3.0	1.4	4.4	4.9	-1.9
Social Security	153.7	281.8	446.8	742.9	21.0	19.9	21.5	20.7	6.2	4.7	5.2
Medicare	50.8	132.2	252.9	526.2	6.9	9.3	12.2	14.6	10.0	6.7	7.6
Other	51.4	96.2	154.7	243.6	7.0	6.8	7.5	6.8	6.5	4.9	4.6
To foreigners	6.2	16.2	14.4	11.5	.8	1.1	.7	.3	10.2	-1.2	-2.2
Grants-in-aid to State and local governments	69.5	149.1	305.7	568.8	9.5	10.5	14.7	15.8	7.9	7.4	6.4
Net interest paid	93.9	229.1	207.8	472.3	12.8	16.2	10.0	13.1	9.3	-1.0	8.6
Subsidies less current surplus	16.1	28.3	44.6	45.4	2.2	2.0	2.1	1.3	5.8	4.7	.2
Less wage accruals .....	.0	.0	.0	.0	.0	.0	.0	.0	-	-	-
Surplus/deficit	-132.6	-297.6	-202.1	-164.1	-	-	-	-	-	-	-
Surplus/deficit as percentage of gross domestic product	-4.1	-4.7	-1.9	-0.9	-	-	-	-	-	-	-

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

NOTE: Dash indicates data not computable.

driven by the high costs of war with Iraq and post-war reconstruction. On the basis of Defense Department estimates, BLS has assumed that military force levels will remain fixed at 1.5 million troops through the projection period. The budget provides funds for programs that sustain high quality people and forces.¹³ As a result, real defense spending is projected to grow at an average annual rate of 2.5 percent from 2002 to 2012, reaching \$510.2 billion in the latter year. (See table 8.)

Real nondefense spending for government, which accounts for the spending on salaries of Government employees and on administrative expenses of all Federal nondefense programs, is assumed to increase at a slower pace of 1.1 percent per year between 2002 and 2012, compared with its 1.8 percent annual rate of growth between 1992 and 2002. (See table 8.) This assumption leads to a projected nominal growth, averaging 4.1 percent per year for all nondefense spending between 2002 and 2012, below the 4.5-percent annual growth from 1992 to 2002. (See table 7.)

State and local governments. Real spending by State and local governments is projected to increase 1.4 percent annually from 2002 to 2012—much lower than the 3.0-percent rate of growth posted for the 1992–2002 period. (See table 8.) In nominal terms, State and local government receipts of grants-in-aid from the Federal Government for Medicaid and other programs assume to reveal the same trend toward

increased levels, representing 24.9 percent of State and local revenues in 2012, up from 19.3 percent in 1992 and 23.4 percent in 2002. (See table 9.) This translates to an average annual rate of growth of 6.4 percent from 2002 to 2012, well above the growth for most of other categories of revenues during the same period. Still, the 6.4 percent figure represents a decline from the category's 7.4 percent annual rate of growth over the 1992–2002 period.

On the expenditures side, consumption expenditures are expected to continue to account for the largest component of total State and local spending in 2012, but their share of total spending is projected to decline from 77.4 percent in 1992, 76.3 percent in 2002, and to 69.8 percent in 2012. In contrast, an increased level of transfer payments, due to the increases in Medicaid services and retirement pensions, is expected to keep the share of transfer payments rising, from 23.2 percent in 1992 and 24.7 percent in 2002 to 31.1 percent in 2012. In sum, State and local governments will run surpluses throughout most of the projection period; statutorily, nearly every State is required to do so, as their expenditures are tied closely to their available revenues.

Income

From 1992 to 2002, the portion of labor income in total personal income declined slightly. However, wage and salary dis-

bursements in the private sector, the largest segment of labor income, increased noticeably as a share of total personal income, from 55.3 percent in 1992 to 56.0 percent in 2002. The projections anticipate that this increasing trend in wages and salaries will continue through the projection period, reaching 57.3 percent in 2012. (See table 3.)

Over the same period, another major component of personal income, business-related personal income, including proprietors' income, personal dividends, interest income, and rental income, increased moderately from a 26.6-percent share in 1992 to 27.0 percent in 2002. However, this type of income is projected to fall to a 24.4-percent share in 2012. Substituting the decline in importance of business-related personal income, transfer payments have become an increasingly substantial source of personal income over the past decade. Between 1992 and 2002, transfer payments rose as a share of personal income from 13.9 percent to 14.4 percent. The Bureau projects this category will continue to rise until it accounts for 15.6 percent in 2012, reflecting both rising per-capita medical costs and an increase in the older population, the most likely users of Medicare programs. In short, the share of labor income in total personal income is expected to increase substantially, from 62.8 percent in 2002 to 64.8 percent in 2012.

Traditionally, personal consumption is the largest component indicating how people spend their incomes, and

its share of income expenditures has increased over time. The projections anticipate that the historical trend will continue and the share will rise to 82.9 percent of personal income in 2012, up from 78.1 percent in 1992 and 81.9 percent in 2002. However, the trend of increased consumption is projected to result in a very low personal savings level in 2012.

Nevertheless, on a per capita basis, nominal disposable income is projected to increase at an average annual rate of 4.3 percent from 2002 to 2012, reaching a level of \$41,459 in the latter year; a gain of more than \$14,200 over the projection span. In real terms—that is, chained 1996 dollars—per capita income is projected to grow 1.7 percent per year from 2002 to 2012. Accordingly, real standard of living would rise over the projection period, at least measured on the basis of growth of disposable personal income.

Employment

After the 1990–91 recession, there followed 9 years of economic expansion, resulting in year-to-year decreases in unemployment and increases in employment; both of which occurred through the rest of that decade. Unemployment fell for 8 straight years, from 7.5 percent in 1992 to 4.0 percent in 2000, the lowest reading in 30 years. That trend expanded employment by 16.7 million people over the period. Conversely, even 2 years after the mild

Table 8. Government consumption expenditures and gross investment, 1982, 1992, 2002, and projected 2012

Category	Billions of chained 1996 dollars				Average annual rate of change		
	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Government consumption expenditures and gross investment	\$1,046.0	\$1,410.0	\$1,712.8	\$2,014.6	3.0	2.0	1.6
Federal Government consumption and investment .	463.2	595.1	613.3	748.2	2.5	.3	2.0
Defense consumption and investment	333.6	417.1	400.0	510.2	2.3	–.4	2.5
Compensation, civilian	61.5	59.9	39.9	40.8	–.3	–4.0	.2
Compensation, military	104.6	102.2	83.7	81.9	–.2	–2.0	–.2
Consumption of fixed capital	39.3	63.8	62.6	74.4	5.0	–.2	1.7
Other consumption	101.0	124.8	152.1	225.5	2.1	2.0	4.0
Gross investment	38.2	66.4	63.3	99.5	5.7	–.5	4.6
Nondefense consumption and investment	129.8	177.9	213.3	238.7	3.2	1.8	1.1
Compensation	75.7	84.5	80.7	84.1	1.1	–.5	.4
Consumption of fixed capital	7.8	14.6	30.1	44.7	6.5	7.5	4.1
Commodity credit corporation inventory change .	1.8	–1.3	–.1	.0	–	–23.5	–
Other consumption	36.9	52.4	58.3	60.4	3.6	1.1	.3
Gross investment	14.8	28.0	45.9	54.1	6.6	5.0	1.7
State and local government consumption and investment	584.6	815.3	1,099.7	1,267.2	3.4	3.0	1.4
Compensation	434.8	516.5	601.7	661.3	1.7	1.5	.9
Consumption of fixed capital	39.2	57.6	92.6	125.0	3.9	4.9	3.0
Other consumption	44.0	94.0	191.1	252.4	7.9	7.3	2.8
Gross investment	86.1	147.4	218.6	245.5	5.5	4.0	1.2
Residual ¹	–39.7	–1.0	–7.7	–35.1	–	–	–

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

NOTE: Dash indicates data not computable.

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

Table 9. State and local government receipts and expenditures, 1982, 1992, 2002, and projected 2012

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1982	1992	2002	2012	1982	1992	2002	2012	1982–92	1992–2002	2002–12
Receipts	\$360.3	\$772.2	\$1,304.4	\$2,288.9	100.0	100.0	100.0	100.0	7.9	5.4	5.8
Personal taxes	66.0	156.4	266.1	487.3	18.3	20.2	20.4	21.3	9.0	5.5	6.2
Corporate profits taxes	14.1	24.4	33.5	76.0	3.9	3.2	2.6	3.3	5.7	3.2	8.5
Indirect business taxes	206.8	429.2	689.8	1,142.3	57.4	55.6	52.9	49.9	7.6	4.9	5.2
Property taxes	85.3	182.8	267.8	463.0	23.7	23.7	20.5	20.2	7.9	3.9	5.6
Other	121.5	246.4	422.0	679.3	33.7	31.9	32.3	29.7	7.3	5.5	4.9
Contributions for social insurance ...	4.1	13.1	9.4	14.5	1.1	1.7	.7	.6	12.5	-3.3	4.4
Federal grants-in-aid	69.5	149.1	305.7	568.8	19.3	19.3	23.4	24.9	7.9	7.4	6.4
Expenditures	362.5	777.2	1,356.4	2,255.7	100.0	100.0	100.0	100.0	7.9	5.7	5.2
Consumption	306.8	601.7	1,034.5	1,575.0	84.6	77.4	76.3	69.8	7.0	5.6	4.3
Compensation	225.9	456.3	733.8	1,141.8	62.3	58.7	54.1	50.6	7.3	4.9	4.5
Consumption of fixed capital	30.4	53.5	99.9	169.8	8.4	6.9	7.4	7.5	5.8	6.5	5.4
Other	50.5	91.8	200.8	263.4	13.9	11.8	14.8	11.7	6.2	8.1	2.8
Transfer payments to persons	61.2	180.1	335.6	700.6	16.9	23.2	24.7	31.1	11.4	6.4	7.6
Medicaid	32.1	121.8	263.5	599.1	8.8	15.7	19.4	26.6	14.3	8.0	8.6
Other	29.1	58.3	72.0	101.5	8.0	7.5	5.3	4.5	7.2	2.1	3.5
Net interest paid	-7.3	2.8	-2.0	-2.7	-2.0	.4	-1	-1	-	-	3.2
Less dividends received	-2	-2	-5	-8	.0	.0	.0	.0	1.3	9.0	5.7
Subsidies less current surplus	2.0	-7.2	-11.2	-16.4	.6	-9	-8	-7	-	4.5	3.9
Less wage accruals .....	.0	.0	.0	.0	.0	.0	.0	.0	-	-	-
State and local deficit/surplus	-2.3	-4.9	-52.0	33.2	-	-	-	-	8.1	26.5	-

NOTE: Dash indicates data not computable.

Bureau of Labor Statistics.

SOURCE: Historical data—Bureau of Economic Analysis; projected data—

2001 recession, job growth showed very slow progress. However, the continued recovery in output and continued strong demand is expected to catch up with the robust growth in productivity and lead to sustained job growth. Under the assumption of long-term economic stability, the BLS model assumes a return to more normal levels of job creation in the future. In 2012, a 5.2-percent unemployment rate is projected. (See table 10.)

Overall, civilian household employment is projected to increase by 1.2 percent per year from 2002 to 2012. The result is that about 17.3 million employed persons will be added to the economy over the 10-year projection period. Total employment measured on a nonfarm establishment basis is projected to grow at a rate of 1.6 percent between 2002 to 2012, from 130.4 million to 152.1 million, an increase of 21.7 million jobs.¹⁴

The civilian labor force is projected to grow at a rate of 1.1 percent per year from 2002 to 2012; the same as that attained over the preceding 10-year period. This translates into an increase of 17.4 million over the projection span. The Census Bureau projects that the total U.S. population will increase at a 0.9-percent rate of growth annually over the 2002–12 period; the same rate of increase as that between 1992 and 2002. The Census Bureau also estimates that the population aged 16 and older will increase at a rate of 1.1 percent over the projection span; 0.1 percentage point higher than the rate of growth in the earlier period.¹⁵

Productivity

Productivity, measured as output per hour in the private nonfarm business sector, has demonstrated very strong gains since 1995. As mentioned earlier, even during the past 3 years of economic weakness (a period that included a recession and a recovery), labor productivity grew at an annual average rate of more than 3 percent between 2000 and 2002; somewhat higher than the annual rate of 2.5 percent from 1995 to 2000 and much higher than the 1.4 percent trend from 1973 to 1995. This growth, moreover, has occurred, despite a deep decline in nonresidential investment spending since 2001.¹⁶ In fact, economic data suggest that almost none of the acceleration in productivity after 1995 is due to adjustments for responses to the business cycle experienced in the historical period of 1973–95.

How is one to interpret this truly extraordinary performance since 1995? Cyclical forces probably played some role, but efficiency gains likely were facilitated by the best use of important new technologies. Adjusting to new technologies takes time, and it is plausible that the adjustment process has continued to boost productivity growth in recent years. More fundamentally, the trend in productivity growth has ratcheted up, and this development has been the driving force behind the recent exceptionally high rate of growth.¹⁷

Table 10. Labor supply and factors affecting productivity, 1982, 1992, 2002, and projected 2012

Category	Levels					Average annual rate of change		
	1982	1992	2002		2012	1982–92	1992–2002	2002–12
			1990 census weights	2000 Census weights				
Labor supply (in millions, unless noted):								
Total population	231.9	255.4	280.6	287.5	314.8	1.0	.9	.9
Population aged 16 and older	172.3	192.8	214.0	218.0	242.0	1.1	1.0	1.1
Civilian labor force	110.2	128.1	142.5	144.9	162.3	1.5	1.1	1.1
Civilian household employment	99.5	118.5	134.3	136.5	153.8	1.8	1.3	1.2
Nonfarm payroll employment	89.7	108.7	130.4	130.4	152.1	1.9	1.8	1.6
Unemployment rate (percent)	9.7	7.5	5.8	5.8	5.2	-2.6	-2.6	-1.0
Productivity:								
Private nonfarm business output per hour (billions of chained 1996 dollars)	26.3	31.9	39.1	39.1	47.9	2.0	2.0	2.1

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

Over the next 10 years, it is uncertain whether the structural productivity growth that emerged in the past will continue or if the late 1990's dramatic productivity surge will be repeated, but some high levels of productivity are foreseen. Over time, the faster productivity growth will mean a higher standard of living, with most of the productivity gain eventually taking the form of higher real wages. The Bureau anticipates that

productivity will grow at a rate of 2.1 percent per year over the 2002–12 period, virtually the same as that recorded between 1992 and 2002. This expected solid productivity growth in the aggregate economic projections is consistent with the strong growth of capital stocks, resulting from the projected rates of business investment, especially in efficiency-enhancing equipment and computer software.¹⁸ □

Notes

¹ In this article, discussions of GDP and its final demand components are couched in terms of real values unless otherwise noted. Real GDP and its components are stated in 1996 chain-weighted dollars. Chain weighting replaces the past practice of computing those indicators by reference to fixed base-year prices with an averaging technique. The chain-weighted methodology calculates the prices of goods and services in order to use weights that are appropriate for the specific periods or years being measured. As a result, for a particular year, the most detailed GDP components do not add up to their chain-weighted aggregates, and the chain-weighted aggregates do not add up to the chain-weighted real GDP. For more details, see J. Steven Landefeld, Brent R. Moulton, and Cindy M. Vojtech, "Chained-Dollar Indexes, Issues, Tips on Their Use, and Upcoming Changes," *Survey of Current Business*, November 2003, pp. 8–16. It should be noted that in the Bureau of Economic Analysis' latest released comprehensive revision of National Income and Product Accounts (NIPAs), the reference year has been changed from 1996 to 2000 for the chain-weighted-dollar estimates. All data presented in this article are still measured on a chained-1996 dollars basis because the BLS projections presented in this issue were completed prior to the NIPA revision.

² For the first time, the macroeconomic model developed by the Macroeconomic Advisers, LLC forecasting group, is used to prepare the 2002–12 aggregate economic projections. The Macroeconomic Advisers firm developed and supports the Washington University Macro Model, which the Macroeconomic Advisers team uses as a central analytical tool for the short-term and long-term forecasts of the U.S. economy. The macro model is a quarterly econometric system of 609 variables—440 equations and 169 exogenous variables. It

operates and simulates on a Windows-based software program called WUMMSIM.

³ The Business Cycle Dating Committee, National Bureau of Economic Research, determined in July 2003 that the 2001 recession began in March 2001 and ended in November 2001. This 8-month recession is slightly shorter than the average duration of recessions of 11 months since World War II.

⁴ The Federal Reserve cut the funds rate 11 times during the year 2001, from 6.50 percent to 1.75 percent. It then held the rates steady through most of 2002, until a half-percentage-point cut in November. A further reduction occurred in June 2003 that lowered the funds rate by another 25 basis point to 1.00 percent, the lowest rate since 1958.

⁵ The tax provisions of the "Economic Growth and Tax Relief Reconciliation Act of 2001" came just after the economy had entered into the 2001 recession. It lowered marginal tax rates for all taxpayers. Its immediate tax relief in the summer and the fall of 2001 boosted consumer demand and helped to ensure the recession was short and shallow. The major tax provisions will expire in 2010. The tax provisions of the "Job Creation and Worker Assistance Act of 2002" provided incentives for business investment to jump-start the recovery, along with extended unemployment benefits for individuals who remain unemployed as a result of the 2001 recession. The tax provisions of the "Jobs and Growth Tax Relief Reconciliation Act of 2003," enacted as an extended plan to speed up the 2001 tax cuts, strengthen the economic recovery, and accelerate job creation from its current slow pace. The Macroeconomic Advisers model, assumes

The U.S. Economy

that nearly all of the provisions of the Jobs and Growth Tax Relief Reconciliation Act and the Economic Growth and Tax Relief Reconciliation Act are permanent.

⁶ The Department of Defense spending and force-level estimates through the year 2009 are published in *National Defense Budget Estimates For FY 2004* (Office of the Under Secretary of Defense (Comptroller), March 2003). For a brief description of the budget, see, "Fiscal 2004 Department of Defense Budget Release," No. 044-03 (Department of Defense, February 03, 2003).

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 for nominal world oil prices are based on the Department of Energy results. See "*Annual Outlook 2003 with Projections to 2025*" (U.S. Department of Energy, Energy Information Administration, January 2003). The real imported oil prices are derived from their nominal prices, deflated by the GDP chain-weighted deflators.

⁸ For a further discussion of labor force projections, see Mitra Toossi's article in this issue, pp. 37-57.

⁹ In November 2003, the Department of Commerce reported that the economy grew at a robust 8.2-percent annual rate in the third quarter of 2003 as a result of strong increases in consumer spending, business investment, housing construction, and exports. It was the highest growth rate since the first quarter of 1984, but job creation continued to lag.

¹⁰ In December 1999, The National Income and Product Accounts recognized business expenditures for computer software as investment. Previously, only software embedded in equipment by the producer of that equipment was counted as investment. Business purchases for own-account production (that is, software produced by a business for its own use) were classified as inputs to production. For further reading and information, see "A Preview of the 1999 Comprehensive Revision of the National Income and Product Accounts: Definitional and Classification Changes," *Survey of Current Business*, August 1999, pp. 7-20, and "Improved Estimates of the National Income and Product Accounts for 1959-98, Results of the Comprehensive Revision," *Survey of Current Business*, December 1999, pp. 19-37.

¹¹ The Congressional Budget Office closed its books in the fiscal year 2003 that ended September 30. The deficit for fiscal 2003 was \$374 billion; \$27 billion less than the CBO forecast in August 2003. In this article, the budget surplus or deficit is measured in calendar year and on the National Income and Product Accounts basis.

¹² In January 1996, The National Income and Product Accounts recognized government expenditures on equipment and structures as investment. Accordingly, government purchases are now divided into consumption expenditures and gross investment. This approach treats government purchases of fixed assets in a manner more symmetric to the treatment of such assets in the private sector. For more details, see "Preview of the Comprehensive Revision of the National Income and Product Accounts: Recognition of Government Investment and Incorporation of a New Methodology for Calculating Depreciation," *Survey of Current Business*, September 1995, pp. 33-41. In December

1999, The National Income and Product Accounts reclassified government purchases of own-account production of software (that is, software produced by a government agency for its own use) from government consumption expenditures to gross government investment. This shift has no effect on GDP. (See footnote 10 for further readings.)

¹³ In November 2003, the U.S. Congress approved an \$87.5 billion spending package for U.S. military operations and aid in Iraq and Afghanistan. It is the second major special funding bill for Iraq and for combating terror that President Bush has requested and Congress has produced in less than 7 months. In April 2003, a \$78.5 billion package was enacted that included \$62.4 billion for war costs and \$7.5 billion for Iraqi relief and reconstruction. Also see footnote 6 for a discussion of defense spending and military force-level estimates.

¹⁴ Employment on a household basis, the concept of employment used in the aggregate economic projections discussed in this article, is a count of persons who are working or actively seeking work. The historical estimates for household employment are derived from the Current Population Survey, a survey carried out for the Bureau of Labor Statistics by the U.S. Bureau of the Census. The concept of employment on an industry level of detail, discussed elsewhere in this issue of the *Review*, is a count of jobs and is based on an establishment-level survey called the Current Employment Statistics survey. Since 1994, these two measures have diverged sharply. For an explanation of the increase in this employment gap, see Thomas Nardone, Mary Bowler, Jurgen Kropf, Katie Kirkland, and Signe Wetrogan, "Examining the Discrepancy in Employment Growth between the CPS and the CES," a paper prepared for the presentation to the Federal Economic Statistics Advisory Committee on October 17, 2003.

¹⁵ Population and labor force estimates from 2000 reflect the results of Census 2000 adjustments. The new weighting procedures resulted in the higher population estimates and higher civilian labor force figures due to a major reevaluation of the international migration estimate. Data from 2000 are not strictly comparable with prior years because the revisions did not weighted back to the previous years. For this reason, data before 2000 are still on the 1990-based estimates. For a further discussion of population and labor force projections, see Mitra Toossi's article in this issue, pp. 37-57.

¹⁶ Productivity, measured as output per hour in the private nonfarm business sector, increased by 5.4 percent annually from 2001 to 2002. In 2003, productivity growth registered 7.0 percent in the second quarter and 9.4 percent in the third quarter, the best performance in 20 years.

¹⁷ See "Productivity Growth: A Realistic Assessment," remarks by Vice Chairman Roger W. Ferguson, Jr. (The Federal Reserve Board, at the Stockton Lectures 2002, London Business School, London, U.K., Oct. 24, 2002); and "Recent Experience and Economic Outlook," remarks by Vice Chairman Roger W. Ferguson, Jr. (The Federal Reserve Board, at the 2003 Global Economic and Investment Outlook Conference, Carnegie Mellon University, Pittsburgh, Pennsylvania, Nov. 12, 2002).

¹⁸ For a further, detailed discussion of labor productivity and employment, see Jay M. Berman's article on industry output and employment in this issue, pp. 58-79.