

Employment outlook: 1998–2008

The U.S. economy to 2008: a decade of continued growth

Moderate growth, strong foreign markets, a healthy domestic economy, and improving productivity characterize the outlook for the coming decade

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Bureau of Labor Statistics (BLS) projections envision a moderately growing economy over the 1998–2008 decade, with gross domestic product (GDP) reaching \$9.5 trillion in chained 1992 dollars by the end of the decade, an increase of almost \$2 trillion over the period.¹ Rising by an average annual rate of 2.4 percent, GDP growth is projected to be somewhat slower than the 2.6-percent annual rate of growth over the preceding 10-year period, from 1988 to 1998. Slower growth of civilian household employment, from 1.3 percent a year during the 1988–98 period to 1.1 percent from 1998 to 2008, accompanies the slowdown in GDP growth. Civilian household employment is projected to increase by almost 16 million employees over the 1998–2008 period, slightly less than the increase of 16.5 million persons experienced between 1988 and 1998. The employment projection is accompanied by an assumed unemployment rate of 4.7 percent, only marginally higher than the 1998 annual average of 4.5 percent. To best understand what all this means for the U.S. economy, it is helpful to come to some understanding of the major economic events that took place during the decade of the 1980s and then, following the 1990–91 recession, over the remainder of the 1990s.

The 1980s were characterized by corporate downsizing and restructuring in an effort by businesses to become more competitive in an increasingly global economy. Productivity growth was low, increasing an average of only 0.9 percent a year between 1978 and 1988, compared with 2-percent annual growth for the 1968–78 decade, despite increasing investments in computer and other technologies designed to boost labor's productivity. The shift of employment away from manufacturing and into the burgeoning services sector was quite noticeable during the 1980s, and the Federal Government's books were characterized by small tax cuts, high deficits, strong growth in defense sector spending, and cuts in nondefense programs. Slow economic growth was recorded in the 1980s, culminating in the recession of 1990–91, which set the stage for a prolonged recovery, a return to higher rates of labor productivity growth, low inflation, and a Federal budget deficit that slowly disappeared during the 1990s.

As the economy moved into the recovery from the 1990–91 recession, it faced a \$196 billion Federal deficit in 1991 that increased to \$280 billion in 1992 and that was accompanied by relatively weak employment growth. Deficit control policies and selective economic stimulation in the 1990s resulted in a budget surplus in 1998 (the

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first since 1969), an unemployment rate of 4.5 percent (a rate not previously attained since 1969), and moderate inflation combined with productivity growth rising to 1.2 percent a year between 1988 and 1998 (a much more robust performance than during the previous 10 years). The strong growth in production, a maturing labor force, businesses becoming increasingly successful in the global marketplace, and relatively tight labor markets unaccompanied by inflationary pressures leave the U.S. economy poised to move confidently into the first decade of the next century.

The projections over the 1998–2008 period presented in this article include projections of demand, income growth, employment, and productivity; also discussed are the major assumptions underlying U.S. aggregate economic projections. Each section of the article that describes the projections does so in the context of trends over the previous 10-year period. The final section describes the model and its major assumptions.

Real demand GDP and its components

Personal consumption expenditures. Personal consumption expenditures account for the largest and most stable component of demand, almost two-thirds of real GDP. Affected by the wave of baby boomers moving through the population beginning in the 1960s, consumer spending increased as a share of GDP, rising from 64.7 percent in 1970 to 65.5 percent in 1978 and 67.7 percent in 1988. (See table 1.) 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 and more realized at the expense of the savings rate, which dropped from a high of 9.5 percent in 1973 and 1974, to 7.5 percent in 1978, and, further, to 5.4 percent by 1988.

From 1988 to 1995, consumer spending exhibited rather

stable growth, as consumer expenditures grew at 2.1 percent per year during this period, following the 3.0-percent annual growth rate over the 1978–88 period. Beginning in 1996, with consumers emboldened by a variety of factors, including plentiful jobs, rising wages, low interest rates, low inflation, and rising household wealth due to the soaring stock market and solid real-estate markets, spending once again accelerated to its fastest pace in more than a decade. Consumption expenditures grew by 4.1 percent yearly from 1996 to 1998, and the personal consumption expenditures share of GDP increased by 0.3 percentage point within just 2 years—from 67.9 percent in 1996 to 68.2 percent in 1998. Consumers continued to show great confidence in the economy by spending more and more; virtually all increases in income were spent for consumption, with almost none flowing into personal savings. The annual savings rate dopped to a new low of 0.5 percent in 1998, as wealth hit a new high. (See table 2.) The apparent spending at the expense of savings is explained by the fact that stock market capital gains are not captured by the traditional national income accounting identities. The strong growth in consumption in 1998 was based on capital gains realized from the booming stock profits of the past few years, rather than from a draw-down in personal savings.²

Consumer demand is projected to slow over the projection period, growing at an average annual rate of 2.4 percent from 1998 to 2008, matching the 2.4-percent growth rate of GDP. As a result, consumption expenditures will amount to 68.3 percent of GDP in 2008, virtually the same as in 1998. The projection for real disposable income is that it will grow at a 2.5-percent annual rate between 1998 and 2008, 0.4 percentage point higher than the rate during 1988–98. (See table 2.)

Consumer durable goods. Consumer durables—items with an expected life in excess of 3 years, such as motor vehicles, personal computers, and household furnishings—have a higher

Table 1. Gross domestic product by major demand category, 1978, 1988, 1998, and projected 2008

Category	Billions of chained 1992 dollars				Percent distribution				Average annual rate of change		
	1978	1988	1998	2008	1978	1988	1998	2008	1978–88	1988–98	1998–2008
Gross domestic product	\$4,503.0	\$5,865.2	\$7,551.9	\$9,534.6	100.0	100.0	100.0	100.0	2.7	2.6	2.4
Personal consumption expenditures	2,951.6	3,972.7	5,153.3	6,511.1	65.5	67.7	68.2	68.3	3.0	2.6	2.4
Gross private domestic investment	693.4	828.2	1,330.1	1,823.8	15.4	14.1	17.6	19.1	1.8	4.9	3.2
Exports	273.1	465.8	984.7	1,925.0	6.1	7.9	13.0	20.2	5.5	7.8	6.9
Imports	338.6	580.2	1,222.9	2,272.5	7.5	9.9	16.2	23.8	5.5	7.7	6.4
Federal defense consumption expenditures and gross investment	266.7	405.5	300.4	301.1	5.9	6.9	4.0	3.2	4.3	-3.0	.0
Federal nondefense consumption expenditures and gross investment	111.4	119.1	152.1	162.3	2.5	2.0	2.0	1.7	.7	2.5	.7
State and local consumption expenditures and gross investment	534.7	656.6	843.8	1,066.1	11.9	11.2	11.2	11.2	2.1	2.5	2.4
Residual ¹	10.7	-2.5	10.3	17.6	.2	.0	.1	.2	...	...	...

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

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

Table 2. Personal income, 1978, 1988, 1998, and projected 2008

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1978	1988	1998	2008	1978	1988	1998	2008	1978-88	1988-98	1998-2008
Sources											
Personal income	\$1,825.9	\$4,178.9	\$7,126.1	\$11,118.7	100.0	100.0	100.0	100.0	8.6	5.5	4.5
Labor income	1,230.9	2,705.3	4,556.8	7,200.8	67.4	64.7	63.9	64.8	8.2	5.4	4.7
Wage and salary disbursements	1,120.8	2,453.6	4,149.9	6,586.0	61.4	58.7	58.2	59.2	8.2	5.4	4.7
Private industries	901.3	2,003.2	3,460.5	5,516.4	49.4	47.9	48.6	49.6	8.3	5.6	4.8
Government	219.6	450.4	689.3	1,069.6	12.0	10.8	9.7	9.6	7.4	4.3	4.5
Other labor income	110.1	251.7	406.9	614.8	6.0	6.0	5.7	5.5	8.6	4.9	4.2
Group health contributions	46.0	147.1	269.2	402.8	2.5	3.5	3.8	3.6	12.3	6.2	4.1
Other	64.1	104.6	137.7	212.0	3.5	2.5	1.9	1.9	5.0	2.8	4.4
Business-related personal income	423.2	1,090.1	1,767.7	2,530.3	23.2	26.1	24.8	22.8	9.9	5.0	3.7
Proprietors' income	169.6	335.3	577.2	867.6	9.3	8.0	8.1	7.8	7.1	5.6	4.2
Rental income	24.8	55.1	162.6	291.5	1.4	1.3	2.3	2.6	8.3	11.4	6.0
Personal dividend income	44.3	104.2	263.1	364.0	2.4	2.5	3.7	3.3	8.9	9.7	3.3
Personal interest income	184.5	595.5	764.8	1,007.3	10.1	14.3	10.7	9.1	12.4	2.5	2.8
Transfer payments	241.6	577.6	1,149.0	1,929.1	13.2	13.8	16.1	17.3	9.1	7.1	5.3
Less social insurance contributions	-69.8	-194.2	-347.4	-541.5	-3.8	-4.6	-4.9	-4.9	10.8	6.0	4.5
Uses											
Personal income	1,825.9	4,178.9	7,126.1	11,118.7	100.0	100.0	100.0	100.0	8.6	5.5	4.5
Personal consumption	1,428.8	3,349.7	5,807.9	9,082.1	78.3	80.2	81.5	81.7	8.9	5.7	4.6
Tax and nontax payments	240.1	532.0	1,098.3	1,561.3	13.1	12.7	15.4	14.0	8.3	7.5	3.6
Personal interest payments	37.5	93.0	172.4	240.9	2.1	2.2	2.4	2.2	9.5	6.4	3.4
Transfers to foreigners	1.3	9.1	19.9	25.4	.1	.2	.3	.2	21.2	8.1	2.5
Personal savings	118.2	195.1	27.7	209.0	6.5	4.7	.4	1.9	5.1	-17.7	22.4
Addenda											
Disposable personal income	1,585.8	3,646.9	6,027.9	9,557.4	...	...	...	...	8.7	5.2	4.7
Disposable personal income, chained 1992 dollars	3,276.0	4,332.2	5,348.5	6,851.9	...	...	...	...	2.8	2.1	2.5
Per capita disposable income	7,100	14,900	22,300	32,400	...	...	...	...	7.7	4.1	3.8
Per capita disposable income, chained 1992 dollars	14,700	17,600	19,800	23,200	...	...	...	...	1.8	1.2	1.6
Savings rate	7.5	5.4	.5	2.2	...	...	...	...	-3.3	-21.9	17.1

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

income elasticity than does personal consumption spending on nondurables and services. Therefore, a growing income has a more favorable effect on such purchases. During the past two decades, as real family income rose, the growth of spending on durable goods has outpaced, by far, that of total consumption spending. The strong demand for durable goods also is stimulated by a substantially growing demand for personal computers. Over the next decade, with a projected rise in family income, the fastest growth sector still is expected to be durable goods, and the continued demand for computers will lead the way.

Personal computers. Real spending on personal computers grew sharply, at a 44.3-percent rate annually, from 1988 to 1998. (See table 3.) The continuing worldwide growth in the use of the Internet and interest in electronic commerce will fuel the demand for computers over the next decade. Expenditures on personal computers are expected to grow at a robust

rate of 26.9 percent throughout the projection period, with real consumption spending on computers expanding from \$158.4 billion in 1998 to \$1.7 trillion in 2008.

It is probably more proper to present personal computer sales in nominal terms because of their price behavior. Already on the decline for more than a decade, computer prices have plummeted even faster since 1995. Personal consumption expenditures on computers grew 13.1 percent annually in nominal terms between 1988 and 1998. In contrast, the projections anticipate a 7.5-percent average growth rate over the 1998-2008 period. As a result, nominal expenditures on computers are expected to reach \$57.6 billion by 2008, doubling from \$28.0 billion in 1998. The large discrepancy between the real (or chained 1992 dollars) and nominal expenditures on computers highlights the substantial price deflation experienced as computing power continues to increase and unit prices continue to decline. Market competition and technological im-

provements are both expected to cause a substantial reduction in computer prices in the coming decade.

Motor vehicles. In the long run, demographic changes play an important role in the demand for automobiles. Over the projection period, most of the growth in U.S. population will be in the 40- to 60-year-old age group. Because these individuals are already in the buying market, growth in this age group will not stimulate the number of new-vehicle sales, although it is likely to affect the types of vehicles purchased. Over the past 10 years, the U.S. automobile industry has witnessed a dramatic change in light-truck offerings (a category that includes sport-utility vehicles as well as the new, smaller pickup trucks) and a resulting jump in the demand for light trucks and in the industry's market share. The growth in light-truck sales also reflects the maturing age of the U.S. population. The trend is expected to continue in the next decade, with consumer spending on new light trucks anticipated to be well above spending on new cars. The increase in spending on new light trucks is projected to grow at a rate of 1.6 percent yearly between 1998 and 2008, but a further decline in spending on new autos is expected to continue over the same period, at a rate of about -0.8 percent annually.

Furniture and other durable goods. As with the category of automobiles, in the long run demographics also play an im-

portant role in the demand for household furniture. Consumer spending on furniture, a category that includes purchases of major appliances, china, video and audio products, and other durable house furnishings, is projected to show strong growth, but not as rapid as that experienced during the 1988-98 period. Since 1994, those in the 35-44 age group have become the largest segment of the population, and that age group tends to spend the most on home furnishings. The group will peak in the year 2000 and start to decline slightly; in 2008, it will continue to occupy its place as the largest 10-year age cohort.³

The household formation rate is expected to hold at 1.1 percent over the projection period, the same rate experienced in the 1988-98 period.⁴ For these reasons, an annual rate of growth of 4.6 percent is projected for spending on household furniture over the 1998-2008 period, compared with 5.6 percent during the 1988-98 period. Spending on other durable goods, such as jewelry and watches, ophthalmic goods, and sports equipment, is projected to grow at a rate of 2.9 percent yearly over the 1998-2008 period, compared with 3.9 percent and 3.8 percent during 1978-88 and 1988-98, respectively.

Consumer nondurable goods. During the past three decades, expenditures for nondurable goods, such as food, clothing, and gasoline, have increased at a significantly slower pace than has spending on durable goods and consumer services. As family income rises, spending on these short-term consumable

Table 3. Personal consumption expenditures, 1978, 1988, 1998, and projected 2008

Category	Billions of chained 1992 dollars				Average annual rate of change		
	1978	1988	1998	2008	1978-88	1988-98	1998-2008
Personal consumption expenditures	\$2,951.6	\$3,972.7	\$5,153.3	\$6,511.1	3.0	2.6	2.4
Durable goods	308.8	483.5	737.1	1,111.5	4.6	4.3	4.2
New autos	82.1	107.3	82.8	76.6	2.7	-2.6	-0.8
New light trucks	25.2	47.3	70.0	81.6	6.5	4.0	1.6
Other automotive	50.0	74.8	106.1	134.4	4.1	3.6	2.4
Personal computers .....	.0	4.1	158.4	1,713.5	...	44.3	26.9
Furniture	97.5	159.1	275.0	431.6	5.0	5.6	4.6
Other durable goods	65.0	95.2	138.5	184.7	3.9	3.8	2.9
Nondurable goods	1,045.7	1,274.4	1,544.1	1,785.0	2.0	1.9	1.5
Food and beverages	545.7	641.6	718.0	791.6	1.6	1.1	1.0
Clothing and shoes	139.9	210.0	310.3	393.6	4.1	4.0	2.4
Gasoline and motor oil	95.3	106.5	119.9	138.7	1.1	1.2	1.5
Fuel oil and coal	23.0	13.2	9.6	8.6	-5.4	-3.1	-1.1
Other nondurable goods	236.5	302.6	390.3	465.3	2.5	2.6	1.8
Services	1,589.3	2,212.4	2,879.5	3,657.1	3.4	2.7	2.4
Housing	454.5	600.9	735.0	878.9	2.8	2.0	1.8
Household operation	178.6	229.2	316.8	430.1	2.5	3.3	3.1
Electricity	57.2	74.5	87.8	102.0	2.7	1.7	1.5
Natural gas	29.6	28.9	28.7	34.0	-2	-1	1.7
Other	90.5	125.7	200.5	293.0	3.3	4.8	3.9
Transportation services	118.0	159.0	220.4	289.7	3.0	3.3	2.8
Medical services	385.7	561.3	723.2	910.4	3.8	2.6	2.3
Other services	443.2	661.6	886.0	1,155.7	4.1	3.0	2.7
Residual ¹	12.7	-0.8	-107.3	-1,572.8	...	...	...

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

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

necessities also rises, up to a point. After that point is reached, spending on such items tends to increase much more slowly than rises in income, although increases in income enhance the demand for higher quality products.

Food and beverages, and clothing. Expenditures on the largest nondurable category, food and beverages, are projected to increase 1.0 percent per year during 1998–2008, down slightly from a 1.1-percent annual growth rate for the 1988–98 period and much slower than the 1.6-percent rate of growth from 1978 to 1988. Similarly, spending on clothing, as well as on shoes, is expected to increase at a much slower rate over the projection period. A 2.4-percent annual rate of growth is projected during 1998–2008, compared with 4.1 percent and 4.0 percent in the 1978–88 and 1988–98 periods, respectively.

Gasoline and fuel oil. Spending on gasoline for automobiles and on fuel oil for home heating grew at a relatively slow pace during the 1970s and early 1980s, due to high energy costs. Those same high costs led the way, however, toward energy-conserving homes, appliances, and autos, further preserving our scarce energy resources. Nonetheless, demand for gasoline has been increasing during the past decade, spurred mainly by the rosy economy and the substantially low price for fuel and partly by the growing popularity of sport-utility vehicles with relatively poor gas efficiency. Consumer expenditures on gasoline and motor oil increased 1.2 percent between 1988 and 1998, a rise from 1.1 percent yearly between 1978 and 1988.

Despite the prolonged decline in gasoline prices, the BLS projection has assumed a moderate rise in both real and nominal imported oil prices over the 1998–2008 period. Oil prices are projected to climb from a nominal \$12 or a real \$11 per barrel in 1998 to a nominal \$27 or a real \$19 per barrel in 2008, still far below the earlier peak of a nominal \$56 or a real \$34 per barrel in 1980.⁵ As a result, personal consumption of gasoline and motor oil is projected to increase at a rate of 1.5 percent between 1998 and 2008, while expenditures for another energy-related item, fuel oil and coal, are expected to continue their long-term decrease over the projection period.

Consumer services. For the past 30 years, expenditures for consumer services, such as housing services and medical care, have represented the largest share of total consumption, and that share has been becoming larger and larger. For instance, the share of consumer spending allocated to services was about 54 percent in 1978 and 56 percent in 1988. Between 1988 and 1998, the housing share held constant at the 56-percent mark. With spending on consumer services projected to grow at a rate of 2.4 percent annually from 1998 to 2008, such spending is expected to reach 56.2 percent of total consumption in 2008, or more than one-third of total real GDP.

Housing and household operations. Historically, housing services⁶ represent the largest category of total expenditures for services. As the household formation rate slowed over the 1988–98 decade, spending on housing services also slowed, growing at a rate that was 0.8 percentage point slower during 1988–98 than during the 1978–88 period. Conversely, spending on household operations grew at a rate that was 0.8 percentage point *faster* from 1988 to 1998 than over the 1978–88 period. Among the categories of household operation, demand for electricity outpaced demand for natural gas during the past 10 years. This state of affairs is attributed to a significant jump in new homes equipped with central air-conditioning and heating, along with a relatively prolonged hiatus on new natural-gas installations during the 1980s. For nonenergy household operation services, expenditures on telephone services and on water and sanitary services both contributed to the strong growth over the past 10-year span.

Over the long run, demographics largely control the demand for housing services. The current population projections carried out by the U.S. Bureau of the Census imply that the number of households will grow at a rate of 1.1 percent from 1998 to 2008, the same rate of growth experienced during the 1988–98 period. As a result, only a small change in the rate of growth for housing services is foreseen over the projection horizon—about 1.8 percent per year between 1998 and 2008, compared with the 2.0 percent experienced in the 1988–98 period. Similar results are anticipated for the category of household operation, with a 3.1-percent annual rate of growth over the projection horizon, compared with 3.3 percent over the 1988–98 period.

Medical services. A major contributor to overall growth in consumer spending on services is the growth of expenditures on medical care. Consumption spending for medical services increased 3.8 percent per year during the 1978–88 period. Beginning in the 1990s, the rapid displacement of traditional fee-for-service payment plans by managed-care plans created a degree of price stability and slowed the cost of health care. On the other hand, the growing number of elderly in the population, together with advances in medical technology, has resulted in a greater demand for health services. Spending on medical services grew at a relatively slow, but still steady, rate of 2.6 percent per year between 1988 and 1998. By 2008, spending on medical services is expected to exceed spending on housing services and become the largest services category. A rate of growth of 2.3 percent per year is projected over the 1998–2008 period.

Other services. Within the miscellaneous category of “other services,” expenditures on investment counseling, legal services, and other business services have been increasing in importance. As larger segments of the population approach

retirement, these services become increasingly attractive. In addition, as incomes rise, spending on recreation and entertainment services also increases over time. In the next decade, spending on other services is expected to grow more rapidly than overall personal consumption, at a rate of 2.7 percent annually.

Gross private domestic (business) investment. This component of GDP consists of purchases of producers' durable equipment, investment in 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. The category declined from about 15.4 percent of GDP in 1978 to 14.1 percent in 1988 and to 12.1 percent in 1991, due to a major correction in the market for certain overbuilt commercial buildings. Nevertheless, a strong economy boosted investment's share of GDP to 17.6 percent by 1998, an average growth of 4.9 percent a year over the previous 10 years, compared with the earlier figure of 1.8 percent between 1978 and 1988. (See table 1.)

The BLS projections indicate that purchases of producers' durable equipment will grow at a robust rate of 5.2 percent per year from 1998 to 2008. (See table 4.) Purchases of nonresidential structures are expected to make a comeback, growing at 1.5 percent annually over the projection period, while purchases of residential structures are expected to retreat and settle down after mid-1998's record growth, to a 1.0-percent average annual growth rate, more in line with expectations of population growth. Business investment, in general, is expected to continue to be a great contributor to U.S. economic growth during the projection period.

Office equipment. Over the past 20 years, computers for business use were the most rapidly growing component of office equipment. Spending on office equipment (primarily computers) increased 27.7 percent per year from 1978 to 1988 and 27.3 percent over the 1988–98 period. This robust trend is expected to continue over the next 10 years. With declining prices, companies will replace existing computers with faster and more sophisticated models. More importantly, the development of global information infrastructures through the expansion of the Internet, of local area networks (LANs), and of "intranets" will be a powerful force fueling continuing growth for business computers. The growth in office equipment is projected to remain high by all standards, at a rate of 18.4 percent annually for the 1998–2008 period.

Automobiles. Between 1988 and 1998, business spending on new autos (made up of purchases of executive autos by businesses and purchases of fleets of vehicles by car rental companies) grew at an average annual rate of 2.9 percent. The figure is projected to climb to 3.7 percent over the 1998–2008 projection period. On the other hand, net sales of used autos (the opposite of purchases and thus represented by a minus sign) grew slowly, at an annual rate of 3.4 percent between 1988 and 1998, compared with 7.1 percent during the 1978–88 period. Net sales of autos are anticipated to continue the past trend with a 3.2-percent annual rate of growth during the projection period. With a relatively weak demand for used autos, a greater demand for new autos is expected.

Other equipment. This category of producers' durable equipment includes a variety of machinery, communications equipment, aircraft, ships and boats, office furnishings, engines, and tractors. During the past decade, the category posted a

Table 4. Gross private domestic investment, 1978, 1988, 1998, and projected 2008

Category	Billions of chained 1992 dollars				Average annual rate of change		
	1978	1988	1998	2008	1978–88	1988–98	1998–2008
Gross private domestic investment	\$693.4	\$828.2	\$1,330.1	\$1,823.8	1.8	4.9	3.2
Fixed nonresidential investment	422.6	566.0	960.7	1,463.5	3.0	5.4	4.3
Producers' durable equipment	259.6	369.2	770.2	1,283.4	3.6	7.6	5.2
New autos	37.2	53.9	71.4	103.0	3.8	2.9	3.7
Net used autos	-10.0	-19.8	-27.8	-37.9	7.1	3.4	3.2
Office equipment	2.6	30.1	336.4	1,823.3	27.7	27.3	18.4
Other equipment	279.9	309.3	508.3	698.8	1.0	5.1	3.2
Nonresidential structures	162.3	196.8	203.0	235.6	1.9	.3	1.5
Public utilities	40.0	30.0	29.5	38.8	-2.8	-2	2.8
Mining and exploration	20.0	15.8	16.7	18.0	-2.3	.5	.8
Buildings and other	99.3	151.1	156.7	179.2	4.3	.4	1.4
Fixed residential investment	245.0	252.5	312.0	345.0	.3	2.1	1.0
Residential structures	241.7	246.3	303.9	334.5	.2	2.1	1.0
Landlord durables	3.8	6.3	8.2	10.8	5.2	2.6	2.8
Change in business inventories	43.3	11.7	57.4	47.5	-12.3	17.2	-1.9
Residual ¹	-64.4	-6.5	-130.6	-1,392.2	...	...	...

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

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

banner performance, with a 5.1-percent rate of growth between 1988 and 1998. The growth was fairly broadly based, from communications equipment to office furnishings. Growth is projected to moderate to a rate of 3.2 percent per year over the 1998–2008 period; however, some high-tech items, such as communications equipment, are expected to continue to be the mainstay of the growth in this area.

Nonresidential structures. Between 1988 and 1998, non-residential building construction grew very slowly, reflecting overbuilding of office and commercial buildings during the latter half of the 1980s. For the most part, the oversupply has been worked off since 1988. In the next decade, nonresidential construction is expected to make a comeback to a 1.5-percent rate of growth for 1998–2008, compared with the 0.3-percent annual growth rate between 1988 and 1998. Spending on public utilities is slated to account for a larger share of total expenditures on nonresidential structures than it did during the previous 10 years, as electric utilities in particular increase their maintenance and repair expenditures substantially, resulting in a growth of 2.8 percent annually for 1998–2008. On the other hand, demand for buildings and other structures will represent a relatively smaller share of total nonresidential increases during the same period. The technological trends favoring telecommuting, electronic shopping, home offices, teleconferencing, and global information services will slow somewhat the demand for new office and commercial buildings.

Residential structures. Housing starts are components of investment that also have fluctuated quite widely over the long run. During the postwar period from 1959 through 1998, starts have varied from a high of 2.4 million to a low of 1.0 million. Over that period, however, they averaged almost exactly 1.5 million. The BLS projections assume that that average will likely hold over the 1998–2008 period: housing starts of 1.53 million are projected for 2008. In contrast to housing starts, growth in residential investment spending is expected to proceed at a steadier, though somewhat slower, pace. Whereas the fluctuations in the housing starts series are reproduced in the investment expenditure series, the spending data exhibit a definite growth component, implying that the average real value of a new residential unit has risen over time. In fact, the average real value of a new home has increased relatively smoothly, rising from \$86,000 (in 1992 chained dollars) in 1959 to \$193,000 in 1998. The Bureau has assumed that the trend will continue, with the average real value of a new home projected to reach \$225,000 by 2008. The result for residential expenditures is an annual average growth of 1 percent a year between 1998 and 2008, the average rate experienced for this variable over the entire 1959–98 period.

Exports and imports. As the world turns increasingly into a global marketplace, the issue of foreign trade becomes more

important and more complex. U.S. exports and imports of goods and services are the two components of GDP that have gained the most in importance over the past two decades. Exports grew at an average annual rate of 5.5 percent between 1978 and 1988, which increased to a 7.8-percent growth rate during the 1988–98 period. As a share of GDP, exports increased from 6.1 percent in 1978 to 7.9 percent in 1988 and 13.0 percent in 1998. Imports, growing as briskly as exports, grew 5.5 percent per year over the 1978–88 period and 7.7 percent annually in the 1988–98 period. Imports' share of GDP increased from 7.5 percent in 1978 to 9.9 percent in 1988 and jumped to 16.2 percent by 1998. (See table 1.)

For the past three decades, the Nation has experienced a trade deficit, which has worsened since mid-1997, not only because of a sharp drop in exports to Japan and other countries stricken by global financial crises, but also because of a huge increase in imports. During 1997–98, the strong value of the U.S. dollar resulted in steadily declining prices for imports. Combined with the strength of the U.S. economy, Americans' demands for goods were relentless, and many of those demands were satisfied by imports. In turn, the U.S. trade deficit climbed to a record \$151.2 billion in 1998 in nominal terms, or \$238.2 billion in real dollars. (See table 5.)

In any long-term projections program, the international trade sector is the most difficult to project. The key to the Bureau's 10-year outlook for U.S. trade is increasing global accessibility and international competition. As the world is assumed to become more open to trade, the share of GDP of both exports and imports is expected to grow apace. With these conditions in place, the dollar is expected to remain moderately strong throughout the projection period, but not so strong as to significantly weaken anticipated export growth.

Exports are expected to grow faster than imports between 1998 and 2008. Exports are projected to grow at a 6.9-percent annual rate over the period, with exports of goods leading the way with a 7.4-percent annual rate of growth. Exports of services are expected to grow at a rate of 5.9 percent. (See table 5.) Imports, on the other hand, are projected to grow at a relatively slower rate of 6.4 percent annually during 1998–2008, compared with the 7.7-percent annual rate of growth over the 1988–98 10-year span. Imports of goods are expected to grow at 7.0 percent annually, and a 3.0-percent annual rate of growth is projected for imports of services during the 1998–2008 period. These projections result in a trade deficit of \$347.5 billion in real terms by 2008, with both exports and imports increasing their share of GDP, the former from 13.0 percent in 1998 to 20.2 percent in 2008 and the latter from 16.2 percent to 23.8 percent. (See table 1.)

Exports of goods. Exports of capital goods, led by computers, are anticipated to show the largest growth in the 1998–2008 period. (See table 5.) As noted earlier, with the assumed favorable foreign trade conditions, combined with the more

Table 5. Exports and imports of goods and services, 1978, 1988, 1998, and projected 2008

Category	Billions of chained 1992 dollars				Average annual rate of change		
	1978	1988	1998	2008	1978-88	1988-98	1998-2008
Exports of goods and services ...	\$273.1	\$465.8	\$984.7	\$1,925.0	5.5	7.8	6.9
Goods	189.5	321.4	742.6	1,522.6	5.4	8.7	7.4
Foods, feeds, and beverages	29.2	32.4	43.1	57.2	1.0	2.9	2.9
Industrial supplies and materials	57.7	82.2	130.6	195.6	3.6	4.7	4.1
Capital goods, except autos	47.3	110.3	408.4	1,224.7	8.8	14.0	11.6
Computers .....	.6	15.1	153.5	1,314.1	38.1	26.1	24.0
Civilian aircraft and parts	15.2	26.3	45.7	44.5	5.6	5.7	-3
Other	44.3	69.2	241.4	715.9	4.6	13.3	11.5
Autos and parts	31.9	36.8	68.7	106.5	1.4	6.4	4.5
Consumer goods	18.9	30.5	75.8	112.8	4.9	9.5	4.0
Other merchandise exports	11.9	29.6	39.7	61.5	9.5	3.0	4.5
Services	83.0	145.0	246.4	436.0	5.7	5.4	5.9
Residual ¹	-19.6	-1.3	-60.3	-1,118.8	...	...	...
Imports of goods and services ...	338.6	580.2	1,222.9	2,272.5	5.5	7.7	6.4
Goods	274.8	463.2	1,054.4	2,076.2	5.4	8.6	7.0
Foods, feeds, and beverages	21.5	25.9	38.1	43.7	1.9	3.9	1.4
Industrial supplies and materials	128.0	125.3	210.4	282.6	-2	5.3	3.0
Petroleum and products	55.4	47.8	71.8	89.1	-1.5	4.1	2.2
Other	59.8	76.9	137.0	193.2	2.5	5.9	3.5
Capital goods, except autos	15.6	87.9	426.7	1,578.1	18.9	17.1	14.0
Computers .....	.2	12.4	202.5	1,672.5	51.1	32.2	23.5
Other	18.5	76.7	257.5	744.6	15.3	12.9	11.2
Autos and parts	50.5	95.6	138.0	197.3	6.6	3.7	3.6
Consumer goods	47.4	106.0	213.7	340.0	8.4	7.3	4.8
Other merchandise imports	9.1	25.7	57.3	99.6	10.9	8.3	5.7
Services	62.5	117.1	171.2	230.1	6.5	3.9	3.0
Residual ²	13.7	-3.9	-64.1	-1,337.6	...	...	...
Trade deficit	-65.5	-114.4	-238.2	-347.5	5.7	7.6	3.8

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

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

figures for those separate categories for imports of goods and services.

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

sophisticated global commercial and communications systems, the computer equipment market is expected to continue to register favorable growth through 2008. The world market for other high-tech products, such as telecommunications equipment, also is expected to remain strong in the projection period, as developing countries continue to build their telecommunication infrastructures and developed countries invest in new technologies. Through 2008, almost all export categories are projected to exhibit strong growth.

Exports of services. Exports of services have become increasingly important during the past two decades and have led to an increase in a real trade surplus in services from \$27.9 billion in 1988 to \$75.2 billion in 1998. The strong demand for U.S.-built communications equipment is mirrored by strong demand for communications services. In addition, insurance and financial markets have become increasingly sophisticated, in order to meet the needs of the business world emanating from increasing globalization. As a result, the Bureau projects a continued increase in the trade surplus in services, reaching \$205.9 billion in 2008. However, this surplus will still fail to offset the even larger deficit in exports of goods.

Imports of goods. Regarding imports of goods, as with exports, the strongest growth is expected in the category of capital goods. Imports of foreign-built computers are projected to expand at a 23.5-percent average annual rate from 1998 to 2008. These computers will retain a large share of the U.S. computer equipment market as foreign suppliers use aggressive pricing to compete with U.S. companies. Crude petroleum imports are projected to increase because of falling domestic production. The domestic share of crude oil production is expected to continue to decline over the projection period, from 59.9 percent of total U.S. demand in 1988 and 43.4 percent in 1998 to an anticipated 36.3 percent by 2008. In turn, petroleum imports are expected to increase from 10.9 million barrels per day in 1998 to 13.5 million barrels in 2008. A gradually rising real oil price also is assumed during the projection period, and demand for petroleum imports is expected to increase at a rate of 2.2 percent per year during 1998-2008.

Imports of services. Growth in imports of services is expected to continue its past trend, with a 3.0-percent rate annually over the 1998-2008 period. As business transac-

tions become more and more international, imported services will continue to grow in response to increasing demands by U.S. companies for management consulting services and professional business services in overseas markets.

Federal Government. During most of the 1980s and 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. The deficit (in nominal terms) grew from \$31.6 billion in 1978 to \$121.3 billion in 1988 and peaked at \$280.9 billion in 1992. Between 1993 and 1997, the deficit grew steadily smaller. In 1998, for the first time since 1969, the budget attained a substantial surplus of \$72.8 billion, and accounted for 0.9 percent of nominal GDP, its largest share of GDP in more than 40 years. This dramatic change is attributable to an increase in tax receipts from a healthy, growing economy and to a decline in expenditures due to the Balanced Budget Act of 1996.

The model assumes that the Federal budget surplus will remain through the projection period, accounting for just under 1 percent of GDP. (See table 6.) The BLS projection also anticipates shifts in the composition of Federal expenditures over the 1998–2008 period. Transfer payments are projected to increase to a 53.3-percent share of Federal expenditures by 2008. This rise continues a historical trend, with transfer pay-

ments having accounted for 39.1 percent of Federal expenditures in 1988 and 46.1 percent in 1998. The primary contributor underlying the growth of transfers is the combined effect of three major entitlement programs: medicare, medicaid, and Social Security. In recent years, the first two of these provided the largest single source of growth in mandatory spending, increasing from 10.5 percent of Federal expenditures in 1988 to almost 18 percent in 1998. Projections for the health care programs assume that the number of eligible people and the per person use of medical care services will continue to increase. Together, spending for the two programs is projected to overtake spending for Social Security by 2008, with medicare and medicaid spending accounting for a 24.5-percent share of Federal expenditures that year, while Social Security's share is projected to increase to 23.1 percent.

Defense. Real defense spending, which includes consumption expenditures and gross investment in defense capital goods,⁷ has drifted downward as a share of GDP over the past three decades. Whereas the category represented 13.2 percent of GDP in 1962, it totaled only 4.0 in 1998. (See table 1.) In addition, defense spending levels have declined absolutely over the past 10 years, as the number of military personnel has been reduced and purchases of weapons have been postponed. Cuts in forces also have entailed retiring some older equipment

Table 6. Federal Government receipts and expenditures, 1978, 1988, 1998, and projected 2008

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1978	1988	1998	2008	1978	1988	1998	2008	1978–88	1988–98	1998–2008
Receipts	\$446.5	\$997.2	\$1,844.2	\$2,651.0	100.0	100.0	100.0	100.0	8.4	6.3	3.7
Personal tax and nontax payments	193.8	414.4	858.0	1,205.5	43.4	41.6	46.5	45.5	7.9	7.5	3.5
Corporate profits tax	71.4	111.0	204.9	260.3	16.0	11.1	11.1	9.8	4.5	6.3	2.4
Contributions for social insurance	152.4	410.9	685.5	1,057.6	34.1	41.2	37.2	39.9	10.4	5.3	4.4
Indirect business tax	28.9	60.9	95.9	127.6	6.5	6.1	5.2	4.8	7.7	4.6	2.9
Expenditures	478.1	1,118.5	1,771.4	2,537.9	100.0	100.0	100.0	100.0	8.9	4.7	3.7
Defense consumption	118.4	297.9	301.5	389.3	24.8	26.6	17.0	15.3	9.7	.1	2.6
Nondefense consumption	50.4	89.9	159.6	232.1	10.5	8.0	9.0	9.1	6.0	5.9	3.8
Transfer payments	186.2	437.2	816.6	1,351.6	38.9	39.1	46.1	53.3	8.9	6.4	5.2
To persons	182.4	425.8	803.4	1,332.4	38.2	38.1	45.4	52.5	8.8	6.6	5.2
Social Security	91.4	213.9	369.6	587.3	19.1	19.1	20.9	23.1	8.9	5.6	4.7
Medicare	24.9	86.5	217.0	431.1	5.2	7.7	12.2	17.0	13.3	9.6	7.1
Federal retirement	20.7	48.1	75.2	111.5	4.3	4.3	4.2	4.4	8.8	4.6	4.0
Other	13.7	21.3	28.1	36.2	2.9	1.9	1.6	1.4	4.5	2.8	2.6
To foreigners	3.8	11.4	13.2	19.3	0.8	1.0	.7	.8	11.6	1.5	3.9
Grants-in-aid	77.3	111.2	231.1	380.3	16.2	9.9	13.0	15.0	3.7	7.6	5.1
Medicaid	11.0	31.5	101.8	189.2	2.3	2.8	5.7	7.5	11.1	12.5	6.4
Other	66.3	79.7	129.3	191.0	13.9	7.1	7.3	7.5	1.9	5.0	4.0
Net interest paid	34.6	148.4	226.1	149.7	7.2	13.3	12.8	5.9	15.7	4.3	-4.0
Net subsidies	11.4	33.9	36.6	34.9	2.4	3.0	2.1	1.4	11.5	.8	-5
Wage accruals less disbursements .....	.1	.0	.0	.0	.0	.0	.0	.0	...	...	...
Surplus/deficit	-31.6	-121.3	72.8	113.2	...	...	...	...	...	...	...
Surplus/deficit as percentage of gross domestic product	-1.4	-2.4	.9	.9	...	...	...	...	...	...	...

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

Table 7. Government consumption expenditures and gross investment, 1978, 1988, 1998, and projected 2008

Category	Billions of chained 1992 dollars				Average annual rate of change		
	1978	1988	1998	2008	1978-88	1988-98	1998-2008
Government consumption expenditures and gross investment	\$910.6	\$1,180.9	\$1,296.9	\$1,531.0	2.6	0.9	1.7
Federal Government consumption and investment	377.7	524.6	453.3	464.9	3.3	-1.4	.3
Defense consumption and investment	266.7	405.5	300.4	301.1	4.3	-3.0	.0
Consumption	244.7	345.3	264.1	261.4	3.5	-2.6	-1.1
Compensation	138.6	153.2	109.4	100.9	1.0	-3.3	-0.8
Capital consumption	42.0	50.2	49.1	40.8	1.8	-2	-1.8
Other	68.3	141.8	106.0	122.4	7.6	-2.9	1.4
Gross investment	26.2	60.3	36.3	40.1	8.7	-4.9	1.0
Nondefense consumption and investment	111.4	119.1	152.1	162.3	.7	2.5	.7
Consumption	98.1	104.8	131.5	139.8	.7	2.3	.6
Compensation	61.7	63.1	61.5	64.0	.2	-3	.4
Capital consumption	5.4	7.8	11.6	16.3	3.7	4.0	3.5
Change in inventories	-2	-7.9	.6	.0	44.4	...	-100.0
Other	34.9	43.2	59.0	62.0	2.2	3.2	.5
Gross investment	13.2	14.4	20.7	23.8	.9	3.7	1.4
State and local government consumption and investment	534.7	656.6	843.8	1,066.1	2.1	2.5	2.4
Consumption	448.1	545.3	689.3	854.3	2.0	2.4	2.2
Compensation	371.2	424.5	501.9	589.2	1.4	1.7	1.6
Capital consumption	29.8	39.9	57.0	82.3	3.0	3.6	3.7
Other	54.2	82.1	131.8	193.0	4.2	4.8	3.9
Gross investment	86.4	111.5	154.4	213.1	2.6	3.3	3.3
Residual ¹	-21.1	-3.2	-2.3	-16.9	...	...	...

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

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

without replacing it. Over the projection period, the Bureau has assumed that military force levels will decline through 2000 and remain essentially unchanged after that year.⁸ Also after 2000, spending on weapons procurement is expected to increase in order to refurbish and replace the large blocks of equipment initially acquired during the buildup of the 1980s. In addition, spending on research and development technology programs for future weapons is expected to rise over the projection period.⁹ As a result, real defense spending, at a projected \$301.1 billion in 2008, is assumed to remain close to the level of 1998. (See table 7.)

Nondefense. Real nondefense spending, which accounts for the spending on salaries and on administrative expenses of all Federal nondefense programs, is assumed to increase at a pace of 0.7 percent per year between 1998 and 2008, much slower compared with the category's 2.5-percent annual rate of growth between 1988 and 1998. (See table 7.) This assumption leads to a projected nominal growth averaging 3.6 percent per year for all nondefense spending between 1998 and 2008, well below the 5.7-percent annual growth attained between 1988 and 1998.

State and local governments. Real spending by State and local governments is projected to increase 2.4 percent annually from 1998 to 2008, only 0.1 percentage point below the annual growth posted for the 1988-98 period. As a percent-

age of real GDP, State and local government spending is expected to maintain the same share of 11.2 percent in 2008 as in 1998. (See table 1.) In nominal terms, consumption expenditures are expected to continue to account for the largest component of total State and local spending in 2008, but their share of total spending is projected to decline from 86.4 percent and 79.1 percent in 1988 and 1998, respectively, to 76.1 percent in 2008. (See table 8.) By contrast, an increased level of transfer payments due to increases in medical care services and retirement pensions is expected to keep transfer payments rising in share, from 24.0 percent in 1988 and 31.8 percent in 1998 to 34.7 percent in 2008.

Unlike the Federal Government, State and local governments cannot run budget deficits for any length of time, as their expenditures are tied closely to their available revenues. The BLS model has assumed that State and local government receipts of grants-in-aid from the Federal Government for the medicaid program will grow at a rate of 6.4 percent from 1998 to 2008, well above the growth rate of any other revenues during the same period. Still, the 6.4-percent figure represents a sizable decline from the category's rate of growth over the 1988-98 period, 12.5 percent annually.

Income

In the past two decades, labor income as a whole has continued to account for a smaller share of total personal income.

Wage and salary disbursements in the private sector, however, the largest segment of labor income, increased as a share of total personal income from 1988 to 1998. (See table 2.) The BLS projections anticipate that this historical trend will continue through the projection period. As a result, labor income as a whole will increase its share of total personal income to 64.8 percent in 2008, up from 63.9 percent in 1998. On the other hand, business-related personal income, another major component of personal income, has accounted for an ever smaller share of personal income over the past 10 years and is projected to continue to fall, to 22.8 percent, in 2008.

In contrast, personal income received from transfer payments has risen remarkably over the past two decades. Between 1988 and 1998, transfer payments rose as a share of personal income from 13.8 percent to 16.1 percent. The Bureau projects that the share will continue to rise until it accounts for 17.3 percent of personal income in 2008, reflecting both rising per capita medical costs and an increase in the older population, the most regular participants in medicare programs.

Looking at how people use their incomes, we see that personal consumption is the largest component and has accounted for larger shares over time. The BLS projections anticipate that the historical trend will continue and the share will rise to 81.7 percent of personal income in 2008, up from 80.2 percent in 1988 and 81.5 percent in 1998. As in recent years, people are expected to keep spending their incomes, resulting in a relatively low personal savings level in 2008, although still much higher than that in 1998.¹⁰

On a per capita basis, nominal disposable income is

anticipated to increase at an average annual rate of 3.8 percent from 1998 to 2008, reaching a level of \$32,400 in 2008, a gain of more than \$10,000 over the projection span. In real terms—that is, chained 1992 dollars—per capita income is projected to grow 1.6 percent per year from 1998 to 2008, up from a 1.2-percent rate of growth between 1988 and 1998. Thus, the Bureau expects its projections to be characterized by a long-term improvement in the real standard of living—at least, measured on the basis of growth in disposable personal income.

Employment and productivity

The unemployment rate fell for 6 straight years, from 7.5 percent in 1992 to 4.5 percent in 1998; the 4.5-percent figure was the lowest rate in three decades. Although it is difficult to predict whether the tight labor market of the recent past will persist, the BLS model has assumed an unemployment rate of 4.7 percent in 2008, virtually unchanged from the 1998 rate. (See table 9.) Overall, civilian household employment is projected to increase by 1.1 percent per year from 1998 to 2008, or 1.6 million persons per year. The result is that almost 16 million employed persons will be added to the economy over the 10-year projection period.¹¹ The civilian labor force is projected to grow at a rate of 1.2 percent per year from 1998 to 2008, the same rate it increased over the preceding 10-year period. This translates into an increase of almost 17 million over the projection period.¹²

Total population, as projected by the Bureau of the Census, will increase at a 0.9-percent rate of growth annually over

Table 8. State and local government receipts and expenditures, 1978, 1988, 1998, and projected 2008

Category	Billions of current dollars				Percent distribution				Average annual rate of change		
	1978	1988	1998	2008	1978	1988	1998	2008	1978-88	1988-98	1998-2008
Receipts	\$309.3	\$631.4	\$1,148.1	\$1,781.2	100.0	100.0	100.0	100.0	7.4	6.2	4.5
Personal taxes	46.3	117.6	240.3	355.7	15.0	18.6	20.9	20.0	9.8	7.4	4.0
Corporate profits taxes	12.1	26.0	35.2	46.9	3.9	4.1	3.1	2.6	7.9	3.1	2.9
Social insurance contributions	24.7	51.9	82.1	130.4	8.0	8.2	7.2	7.3	7.7	4.7	4.7
Indirect business taxes	148.9	324.6	559.5	867.9	48.1	51.4	48.7	48.7	8.1	5.6	4.5
Grants-in-aid from Federal											
Government	77.3	111.2	231.1	380.3	25.0	17.6	20.1	21.3	3.7	7.6	5.1
Medicaid	11.0	31.5	101.8	189.2	3.6	5.0	8.9	10.6	11.1	12.5	6.4
Other grants	66.2	79.7	129.3	191.0	21.4	12.6	11.3	10.7	1.9	5.0	4.0
Expenditures	256.7	545.5	997.9	1,615.3	100.0	100.0	100.0	100.0	7.8	6.2	4.9
Consumption	214.5	471.3	789.1	1,229.6	83.6	86.4	79.1	76.1	8.2	5.3	4.5
Transfer payments	52.4	131.0	317.4	560.2	20.4	24.0	31.8	34.7	9.6	9.3	5.8
Medical care	19.3	55.9	174.1	323.6	7.5	10.2	17.4	20.0	11.2	12.0	6.4
Social insurance	14.2	41.1	96.7	175.7	5.5	7.5	9.7	10.9	11.2	8.9	6.2
Other	18.9	34.0	46.6	60.9	7.4	6.2	4.7	3.8	6.0	3.2	2.7
Net interest paid	-8.1	-44.7	-83.0	-134.7	-3.2	-8.2	-8.3	-8.3	18.6	6.4	5.0
Subsidies less current surplus	-3	-5.3	-9.5	-13.2	-1	-1.0	-1.0	-8	33.3	6.0	3.3
Less dividends received	1.8	6.9	16.1	26.7	.7	1.3	1.6	1.7	14.4	8.8	5.2
State and local surplus	52.6	85.9	150.2	165.9	...	...	...	...	5.0	5.7	1.0

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

Table 9. Labor supply and factors affecting productivity, 1978, 1988, 1998, and projected 2008

Category	Level				Average annual rate of change		
	1978	1988	1998	2008	1978–88	1988–98	1998–2008
Labor supply (in millions, unless noted):							
Total population	222.9	245.3	270.6	295.2	1.0	1.0	0.9
Population aged 16 and older	166.8	189.4	208.6	232.0	1.3	1.0	1.1
Civilian labor force	102.2	121.7	137.7	154.6	1.8	1.2	1.2
Civilian household employment	96.1	115.0	131.5	147.3	1.8	1.3	1.1
Nonfarm wage and salary employment ..	86.7	105.2	125.8	145.7	2.0	1.8	1.5
Unemployment rate (percent)	6.1	5.5	4.5	4.7	-1.0	-2.0	.5
Productivity:							
Nonfarm labor productivity (1992 = 100)	86.90	95.30	107.25	123.81	.9	1.2	1.4

SOURCES: Historical data, Bureau of the Census, Bureau of Labor Statistics; projected data, Bureau of Labor Statistics.

the 1998–2008 period, 0.1 percentage point lower than the rate of growth between 1988 and 1998. From the same Census Bureau population projections, the population aged 16 years and older is estimated to increase at a rate of 1.1 percent over the projection period, 0.1 percentage point higher than its rate of growth in the earlier period.¹³

Productivity, measured by output per hour in the nonfarm business sector, is expected to increase robustly, at a 1.4-percent annual rate of growth over the 1998–2008 period. This represents an increase of 0.2 percentage point over the 1.2-percent average annual growth rate from 1988–98. Productivity growth in the aggregate economic projections stems in large part from the continued strong growth of capital stocks resulting from projected rates of investment, especially in producers' durable equipment.¹⁴

Sensitivity of BLS economic projections

While the use of a macroeconomic model to prepare projections may appear to be a precise and scientific operation, the development of an economic projection actually is filled with uncertainty. The assumptions made for this purpose cover a broad range, such as certain components of Federal expenditures, tax rates, transfer payments, population levels, oil prices, and other variables that influence the outcome of the projections. A divergent viewpoint about these assumptions would naturally lead to different economic projection paths. A sensitivity study examining the impact of changes in such "single-variable" assumptions can assist users in identifying results that are most likely to be affected by unexpected developments in key assumptions. The Bureau's latest sensitivity study accompanied the 1996–2006 aggregate economic projections. The methodology used and the results from that study are presented in the November 1997 issue of the *Monthly Labor Review*.¹⁵

Major assumptions

The aggregate economic projections presented in this article have been developed in the context of the macroeconomic model provided by Data Resources, Inc. (DRI), of Lexington, Massachusetts. DRI's Comprehensive Quarterly Model of the U.S. Economy comprises almost 1,300 variables descriptive of the economy, of which 283 are exogenous assumptions—that is, variables whose values must be provided to the model in order for it to calculate a solution for a given period of time. One of the purposes of the aforementioned sensitivity analyses is to identify that subset of the 283 exogenous assumptions which are the most important in the determination of GDP, of the demand makeup of GDP, and of the level of employment necessary to produce that GDP. These more critical exogenous assumptions are presented in table 10 for variables falling into three major categories: energy-related variables, tax variables, and other fiscal policy variables. A fourth category of assumptions affecting the results—demographics—is discussed shortly, but is not presented in table 10, because these assumptions have already appeared in table 9.

Among the energy-related assumptions, the most important is the refiners' acquisition price for crude oil, expressed in dollars per barrel. 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,¹⁶ which expects the dollar value of a barrel of crude oil to begin growing over the coming decade, following a long period of no change or actual declines in the acquisition price of oil. Also important to the determination of domestic fuel consumption is the fuel efficiency of the

Table 10. Major assumptions affecting aggregate projections, 1978, 1988, 1998, and projected 2008

Exogenous variables	Billions of chained 1992 dollars (unless noted)				Average annual rate of change		
	1978	1988	1998	2008	1978-88	1988-98	1998-08
Energy related:							
Refiners' crude oil acquisition cost (dollars per barrel)	\$14.56	\$14.62	\$12.24	\$26.55	0.0	-1.8	8.0
Electric utility fuel use—coal share (as percentage of total fuel use)	44.2	56.9	56.3	54.8	2.6	-.1	-.3
Fuel efficiency, all autos (miles per gallon) .....	...	17.1	18.5	19.5	...	.8	.5
Tax related:							
Effective Federal personal tax rate	17.6	16.6	20.3	18.2	-.6	2.1	-1.1
Effective Federal corporate tax rate	31.0	32.7	30.7	30.1	.5	-.6	-.2
Effective Federal social insurance tax rate	13.6	16.8	16.5	16.1	2.1	-.1	-.3
Federal gasoline tax (cents per gallon)	4.0	10.0	19.4	19.5	9.6	6.9	.0
Fiscal policy related:							
Defense compensation	138.6	153.2	109.4	100.9	1.0	-3.3	-.8
Other defense consumption expenditures	68.3	141.8	106.0	122.4	7.6	-2.9	1.4
Defense gross investment expenditures	26.2	60.3	36.3	40.1	8.7	-5.0	1.0
Nondefense compensation	61.7	63.1	61.5	64.0	.2	-.3	.4
Other nondefense consumption expenditures	34.9	43.2	59.0	62.0	2.2	3.2	.5
Nondefense gross investment expenditures	13.2	14.4	20.7	23.8	.9	3.7	1.4
Federal housing subsidies (current dollars)	4.2	14.3	22.5	31.0	13.0	4.7	3.2
Federal transfer payments, medicare	68.4	113.3	176.7	263.5	5.2	4.5	4.1
Federal grants-in-aid, medicaid	30.3	41.2	82.9	115.7	3.1	7.2	3.4
Federal grants-in-aid, other than medicaid	134.5	91.1	112.8	134.6	-3.8	2.2	1.8

SOURCES: Historical data, Bureau of Economic Analysis, U.S. Geological Survey, Energy Information Administration, Federal Highway Administration; projected data, Bureau of Labor Statistics.

Nation's automotive fleet,¹⁷ which is expected to increase slowly to an average of almost 20 miles per gallon by 2008, a rise of 0.5 percent each year over the coming decade.

Tax-related assumptions affect Federal Government revenues. Effective Federal personal tax rates increased significantly over the past decade, rising from 16.6 percent of personal income in 1988 to more than 20 percent by 1998. In the BLS projections, it is assumed that the effective personal tax rate will drop to 18.2 percent by 2008, noticeably lower than in 1998, but still higher than it was in either 1978 or 1988. The effective corporate profits tax rate, defined as tax revenues from corporate profits, divided by corporate pretax profits, is assumed to continue the decline that occurred between 1988 and 1998, but at a slightly slower rate—30.1 percent by 2008, compared with 30.7 percent in 1998 and 32.7 percent in 1988. Federal social insurance tax rates are based on mandated rates, which are slated to decline to 16.1 percent by 2008. Finally, the Federal gasoline tax, expressed in cents per gallon, has grown sharply from its 4-cent level in 1978 to 19.4 cents per gallon in 1998. The projections assume that after 1998 there will be virtually no increase in gasoline taxes, at least at the Federal level.

Turning to fiscal policy-related assumptions, we must note that defense compensation is expected to decline in real terms from its 1998 level, even though the Armed Forces are assumed to have stabilized at a fixed level by 2000. More than offsetting this decline are assumed real increases in other

defense consumption spending, as it becomes necessary to replace or improve the equipment available to our Armed Forces. The three categories of Federal spending on the nondefense side are all expected to undergo mild real increases over the 1998–2008 period as well, but well below rates of growth experienced over both the 1978–88 and 1988–98 periods.

Federal housing subsidies, transfer payments, and grants-in-aid to State and local governments are all assumed to slow their growth from levels of the last 10 years. The largest growth is expected to occur in the Federal Government's medicare and medicaid programs, reflecting the growth of the older population.

Demographic variables detailing the U.S. population are drawn from Census Bureau projections and have been described elsewhere in this article. Monetary policy levers are set in an accommodative fashion, allowing for ample growth in the money supply to fuel the expansion of the economy without getting in the way of that expansion. Finally, the assumption is made that there will be no major wars, oil embargoes, major price shocks, or serious natural catastrophes of a magnitude that would affect the long-term growth potential of the economy during the projection period. In sum, for the period from 1998 to 2008, the projection anticipates moderate growth in the U.S. economy, including a stable labor force whose productivity is high, continued low inflation, and jobs that are available to virtually all who seek them. □

Notes

¹ Real GDP and its components are stated in 1992 chain-weighted dollars. Chain weighting replaces the past practice of computing real GDP and its components by reference to fixed base-year prices with an averaging technique. The chain-weighted method calculates the prices of goods and services with 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 "Preview of the Comprehensive Revision of the National Income and Product Accounts: BEA's New Featured Measures of Output and Prices," *Survey of Current Business*, July 1995, pp. 31–38; and J. Steven Landefeld and Robert P. Parker, "BEA's Chain Indexes, Time Series, and Measures of Long-Term Economic Growth," *Survey of Current Business*, May 1997, pp. 58–68. In the current article, discussions of GDP and its final demand components are couched in terms of real values unless otherwise noted. Finally, all historical National Income and Product Account data presented in the article are consistent with data published through the July 1999 issue of the *Survey of Current Business*.

² The 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. In 1999, consumers actually spent more than they earned, resulting in a negative monthly savings rate. In fact, consumers are allowing stock market gains, which are not accounted for in the personal savings rate identity, to supplant more traditional forms of savings.

³ U.S. population assumptions are based on the Bureau of the Census' new middle-series, resident population projections from 1999 to 2100, adjusted for overseas Armed Forces personnel. The population projection data will be available on the Census website in late 1999, and a working paper will be prepared later.

⁴ See "Projections of the Number of Households and Families in the United States: 1995 to 2010," *Current Population Reports*, Series P25–1129 (Bureau of the Census, April 1996). By the end of 1999, the Census Bureau will release a new set of U.S. household projections consistent with its new population projections. (See also Standard and Poor's *DRI U.S. Quarterly Model (US98A)*, *TrendLong0599 Forecast* (Lexington, MA, May 1999).)

⁵ Since March 1999, consumers were already facing upward pressure on energy prices, as the Organization of Petroleum Exporting Countries decided to cut its output of crude petroleum. The Bureau's projection is based on the long-term trend instead of a short-run estimation. The Bureau's energy assumptions for nominal imported oil prices are based on Department of Energy projections. (See *Annual Outlook 1999 with Projections to 2020* (U.S. Department of Energy, Energy Information Administration, December 1998).) The real imported oil prices are derived from their nominal prices, deflated by the GDP chain-weighted deflators.

⁶ Expenditures for housing services include an imputed rental value of owner-occupied dwellings, rent from tenant-occupied dwellings, and the rental value of farm dwellings and other housing, such as hotels and motels.

⁷ 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 classification 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.

⁸ Estimates of Defense Department spending and force levels through the year 2000 are published in *National Defense Budget Estimates for FY2000* (Office of the Under Secretary of Defense (Comptroller), March 1999).

⁹ For a detailed discussion of defense spending, see "Chapter Two: Defense and International Discretionary Spending," *Reducing the Deficit: Spending and Revenue Options* (Congressional Budget Office, March 1997), pp. 9–13.

¹⁰ See note 2 for a discussion of personal savings and the savings rate.

¹¹ The concept of employment used in the aggregate economic projections discussed in this article is employment on a household basis—a count of persons who are working. 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 Census Bureau. The concept of employment on an industry level of detail, discussed elsewhere in this issue, is a count of *jobs* and is based on an establishment-level survey called the Current Employment Survey.

¹² For further discussion of the labor force, see Howard N Fullerton, Jr., "Labor force projections to 2008: steady growth and changing composition," this issue, pp. 19–32.

¹³ See note 3 regarding the U.S. population projection. The BLS labor force projections do not include the portion of persons residing in institutions and the Armed Forces overseas. Therefore, population figures noted in this article and in Fullerton's (pp. 19–32) will not be directly comparable.

¹⁴ For further detailed discussion of labor productivity and employment, see Allison Thomson, "Industry output and employment projections through 2008," this issue, pp. 33–50.

¹⁵ For a more complete discussion of the sensitivity of the aggregate economic projection, see Thomas Boustead, "The U.S. economy to 2006," *Monthly Labor Review*, November 1997, pp. 18–21. A like analysis has been carried out for the Data Resources, Inc., model the Bureau uses in its projections; see Roger E. Brinner and Mark J. Lasky, "Model Overview: Theory and Properties of the DRI Model of the U.S. Economy," *U.S. Quarterly Model Documentation, Version us97A*, pp. II13–II21.

¹⁶ Each year, the Energy Information Administration publishes a range of estimates regarding energy supply and demand over the coming 20 years. The Bureau's energy assumptions in projecting world oil prices are based on the Department of Energy's estimates. See note 5 for further discussion.

¹⁷ The automotive fleet includes automobiles, sport-utility vehicles, and other small trucks purchased for personal use.