

The American work force: 1992–2005

The U.S. economy: framework for BLS projections

*BLS projects a wide range for gross domestic product,
accompanied by several key shifts
in the composition of its demand components*

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The Bureau of Labor Statistics has prepared projections of the U.S. economy to the year 2005.¹ As with prior BLS aggregate economic projections, three alternatives have been developed: low growth, moderate growth, and high growth. These alternatives are designed to examine a range of production possibilities over the next 13 years, based on different assumptions regarding those factors most open to question in future periods.

The moderate-growth projection is characterized by a gross domestic product (GDP) influenced by a very modestly slower labor force growth than currently exists, an improved balance of foreign trade, some improvements in labor productivity, several key shifts in the distribution of the demand components of GDP, and a gradually improving Federal budget balance. In comparison, the high-growth model has higher population, labor force, and labor productivity growth; marked shifts in demand toward investment and exports; and more optimistic foreign trade balances. Finally, the low-growth version contains a lower estimate of labor force growth and a continuation of recent trends in demand shares and labor productivity growth.

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Under the assumptions used by BLS in developing these projections, by 2005, GDP is expected to range between \$6.0 trillion and \$7.3 trillion (in 1987 dollars). This translates to an average annual rate of growth for real GDP of 1.5 percent in the low-growth alternative, 2.2 percent in the moderate-growth scenario, and 3.0 percent in the high-growth alternative over the 1992 to 2005 period, contrasting with a historical rate of 2.5 percent between 1979 and 1989. Real disposable personal income ranges between \$4.5 trillion and \$5.5 trillion, and disposable income per capita, in nominal terms (that is, current dollars), is projected to range between \$35,000 and \$44,800, compared with the 1992 level of \$17,600.

Framework of the projections

More than 200 exogenous variables are provided to a macroeconomic model used to generate projections of the U.S. economy.² A relatively small number of the assumptions contained within the variables significantly affect the long-term projections of employment and major demand categories of GDP.³ These assumptions are summarized in table 1.

Table 1. Major assumptions affecting aggregate projections, 1979, 1989, 1992, and projected to 2005

Category	1979	1989	1992	2005		
				Low	Moderate	High
Total population (millions)	225.4	248.9	255.8	282.0	282.0	294.0
Civilian labor force (millions)	105.0	123.9	127.0	147.3	149.5	156.5
Households (millions)	78.9	93.2	96.4	111.6	111.6	117.3
Defense purchases (billions of 1987 dollars)	\$185.1	\$281.4	\$261.2	\$197.9	\$203.4	\$208.8
Nondefense purchases (billions of 1987 dollars)	86.6	94.8	111.8	122.2	133.6	141.7
Grants-in-aid to State and local governments (billions of 1987 dollars)	124.9	106.8	137.0	163.9	195.3	212.4
Federal transfers, base level (billions of 1987 dollars)	324.2	421.6	467.1	498.5	559.8	603.2
Federal corporate profits tax rate . . . . .	.45	.34	.34	.34	.34	.34
State and local corporate profits tax rate . . . . .	.051	.071	.071	.083	.083	.083
Federal personal taxes, marginal rate . . . . .	.26	.23	.24	.24	.24	.24
Social insurance tax rate . . . . .	.120	.162	.167	.170	.170	.170
	1979-89	1989-92	1979-92	1992-2005		
				Low	Moderate	High
Total population (millions)	1.0	0.9	1.0	0.8	0.8	1.1
Civilian labor force (millions)	1.7	.8	1.5	1.1	1.3	1.6
Households (millions)	1.7	1.1	1.6	1.1	1.1	1.5
Defense purchases (billions of 1987 dollars)	\$4.3	\$-2.5	\$2.7	\$-2.1	\$-1.9	\$-1.7
Nondefense purchases (billions of 1987 dollars) . . . . .	.9	5.7	2.0	.7	1.4	1.8
Grants-in-aid to State and local governments (billions of 1987 dollars)	-1.6	8.7	.7	1.4	2.8	3.4
Federal transfers, base level (billions of 1987 dollars)	2.7	3.5	2.8	.5	1.4	2.0

Source: Historical data, Bureau of Economic Analysis and Bureau of the Census; projected data, Bureau of Labor Statistics.

In addition, the projections are generally prepared with selected variables, such as the level of the unemployment rate, the rate of growth of labor productivity, the inflation rate, and the presence and severity of business cycle fluctuations, that are much more carefully evaluated than the other variables in the model. These target variables assist the Bureau in defining the important parameters for which alternatives are developed, but in no sense should they be considered fixed. Rather, they provide a test of reasonableness against which the overall projection results may be compared.

Major target assumptions were made regarding business cycle fluctuations in the 1990's. Critical reviews of past projection efforts have indicated that certain sectors of the economy, notably durable goods consumption and investment in equipment and structures, are overstated when no cycle is present. Consequently, to improve the accuracy of the projections, two recessions were assumed during the 1992-2005 period, in addition to the 1990-91 downturn. It is important that this assumption not be read as a prediction of recessions in any specific years, or even that there will be any

recessions during 1992-2005. Rather, it is a realistic nod to the seeming inevitability of business cycle fluctuations and the impact they have on the distribution and levels of demand GDP components. It is also important to note that neither a downturn nor a recovery period is projected for the year 2005. That year represents, in the BLS projections, a year on the long-term trend growth path for GDP. In addition to yielding slightly different results for the distribution of GDP, the assumption of recessions modestly lowers the overall rate of growth of GDP from what would have been projected in a straight-trend growth scenario.

Another major target assumption used in developing the projections was the general trend for the unemployment rate. In a business cycle, the percent of the labor force out of work can be expected to rise, sometimes dramatically; in a recovery period, it can be expected to fall. Through these fluctuations, a general trend in the underlying unemployment rate should be apparent in any set of projection scenarios. In the moderate-growth alternative, the unemployment rate is assumed to tend toward the level attained in 1990, a period following a long, sustained economic recovery and well-con-

trolled inflation. The unemployment rate targets are 4.0 percent in the high-growth projection, 7.0 percent in the low-growth scenario, and 5.5 percent in the moderate-growth alternative.

Assumptions of moderate growth

Many assumptions must be spelled out in very specific terms in order for an economic model to generate estimates of future growth paths. Numerous assumptions, although important to particular parts of the model and its results, have very little impact on those components of the projections used in subsequent stages of the BLS projections process. The following discussion focuses on the assumptions that have the greatest impact on GDP, on the demand components of GDP, and on employment and productivity.

Fiscal policy. Following the Vietnam War, real defense purchases declined steadily, reaching a low of \$180 billion in 1976. Between 1976 and 1987, there was a resurgence of spending on defense preparedness. Real defense purchases of goods and services grew at an annual rate of 4.5 percent. A large proportion of this growth was attributable to efforts to modernize and expand U.S. Armed Forces capabilities and included expenditures on such programs as the expansion of the Navy to a 600-ship fleet, the development of the B-1 bomber, increased air wing size, and more advanced rolling stock such as new tanks and troop carriers. More recently, increased pressure to trim the budget deficit has resulted in a \$31 billion cut in real defense spending between 1987 and 1992. A continued contraction in defense spending is assumed throughout the coming decade, with real spending on military goods and services dropping at an average annual rate of 1.9 percent between 1992 and 2005.

Federal spending on nondefense purchases of goods and services grew at a real rate of 1.9 percent a year between 1979 and 1992. As a result, such spending declined slightly as a share of GDP, from 2.3 percent in 1979 to 2.2 percent in 1992—a post-World War II historical low. Spending on many domestic Federal programs decreased during this period. Recently, pressure has been placed on the Federal Government to commit more resources to some of these programs. However, due to budget deficits, real nondefense spending is expected to grow only 1.4 percent each year between 1992 and 2005. This is a slower rate of growth than that projected for overall GDP. Thus, the decline in nondefense spending as a share of GDP is not reversed by such an assumption.

Federal transfer payments to persons are determined in the projections as a function of general economic conditions and a basic background level

of transfers, that is, the real level of transfer payments that would be expected during periods of sustained high employment. This background level is projected to grow at a real rate of 1.4 percent a year between 1992 and 2005, down from the 2.2-percent growth rate attained during the preceding 13 years. Transfer payments for Medicare are expected to increase at a real rate of 3.0 percent annually, while all other transfer payments are assumed to slow to a 1.0-percent annual rate of growth over the projection period.

Real grants-in-aid to State and local governments were cut relatively sharply during the 1970's, but grew strongly during the 1980's. The continued deterioration of the Nation's interstate highway system has stimulated some of these increases, but the strongest growth has been for Medicaid-related grants. Between 1979 and 1992, real grants-in-aid for non-Medicaid items grew by 5.4 percent each year. This category of grant spending is expected to decline in real terms over the projection period at a rate of -0.7 percent each year, reflecting the assumption that Federal aid programs will be far more tightly controlled during the coming 13 years than during the previous 13 years. In some cases, such control will result in actual declines in real spending.

Medicaid grants, on the other hand, increased at a real rate of almost 15 percent each year between 1979 and 1992. In the 1992-2005 period, this category of grants is assumed to continue to show strong real growth, but considerably slower, at 6.7 percent annually.

On the revenue side, most tax rates are specified as an exogenous variable to the macroeconomic model, as statutory rates or average marginal rates. The relevant effective rates for taxes on corporations and on personal income are then derived from the mandated rates, general business conditions, progressivity, surcharges, tax credits, and other tax law changes. It has been assumed that no major changes will affect the currently mandated tax rates for corporations or persons, or the rates for social insurance and indirect business taxes.

Taxation and spending assumptions in the moderate-growth alternative are generally consistent with the Clinton Administration's spending and revenue package passed earlier this year and lead to a balanced budget in the early years of the next decade. However, the general assumption is that the factors affecting the deficit will take a bit longer to get under control than just the next 4 years. The high-growth and low-growth alternatives embody fiscal assumptions that cover a much broader range of possibilities for the deficit—from a balancing of the budget by 1998 in the high projection to a deficit continuing to grow at current rates and reaching a level of almost \$600

billion by 2005 in the low scenario. Clearly, this is an area of great uncertainty, one that will still be with us in the years beyond 1996, even when the current budget program runs its course. This uncertainty is one of the major reasons the Bureau prepares alternative projections.

Monetary policy. The monetary sector of the economic model has been designed to determine the rate of growth of the money supply that is commensurate with long-term stable growth and to determine interest rates that are consistent with steady growth and controlled inflation. In short-run models, the monetary authority wields much more influence in determining the growth of the economy than is the case in the long-term formulation. There are only two critical monetary assumptions that need to be specified for the moderate-growth projection: the required reserve ratio on demand and time deposits and the nonborrowed reserves of member banks. Both of these are assumed to be set in a way best described as accommodative, maintaining a roughly constant rate of growth of velocity and stable interest rates.

Demographic assumptions. The population estimates underlying the low- and moderate-growth projections are the middle scenario developed by the Bureau of the Census.⁴ The Census Bureau's high-migration population projection underlies the BLS high-growth projections. The low, middle, and high civilian labor force projections, developed by BLS to be consistent with the Census Bureau population projections, are incorporated into the three aggregate scenarios in place of labor force estimates derived in the macroeconomic model.⁵ The only other major demographic assumption is new household formation rates, derived from earlier Census Bureau projections and modified by BLS to reflect the later population data.

General assumptions. It was further assumed that there would 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.

Moderate-growth alternative

As noted earlier, real GDP is expected to grow at an average annual rate of 2.2 percent between 1992 and 2005 in the moderate-growth scenario. This compares favorably with the rate of growth of 2.1 percent annually during the 1979–92 period, but is slower than the 1979–89 rate of growth of 2.5 percent. To understand why the GDP is expected to slow somewhat in the future, one must examine

the behavior of the major factors of production—labor and capital. The growth of the supply of labor, as represented by the civilian labor force, will slow to a 1.3-percent rate over the 1992–2005 period, down 0.2 percentage point from the 1979–92 growth rate of 1.5 percent. As population growth slows, so, too, will labor force growth, in spite of assumptions of higher immigration. Offsetting this decline in labor force growth to some extent is a higher utilization rate for labor. Real GDP per employee, estimated to increase at an annual rate of 0.8 percent between 1992 and 2005, will be unchanged from the growth experienced during the 1979–92 period.

The horizon for this latest set of BLS projections is 13 years, from the base year 1992 to the target year 2005. To compare a set of projections with what has happened in the past, it is helpful to present the preceding historical period of an equal number of years, in this case 1979 to 1992. That period is used in all of the major tables of this article. However, no one historical period can adequately describe the events shaping the behavior of all of the individual variables considered in the projections. For that reason, the text of the article may refer to other, more representative, historical periods.

A further difficulty results from the fact that a significant recession took place in the years 1990 and 1991. The first recovery year, 1992, saw almost *no* growth in production or employment at all. The year 1979, on the other hand, was a strong growth year, a high point on the long-term trend growth line of the 1970's. Thus, growth rates from 1979 to 1992 tend to be lower than a peak-to-peak rate of growth would be. For that reason, the year 1989 has also been added to all the tables, and growth rates between 1979 and 1989 have been computed as well, in order to allow the reader to judge the impact of the 1990–91 recession on long-term rates of growth. The following tabulation gives comparative rates of growth for selected variables for the two periods 1979–92 and 1979–89:

	<i>Percent increase</i>	
	<i>1979–92</i>	<i>1979–89</i>
Gross domestic product,		
1987 dollars	2.1	2.5
Civilian labor force	1.5	1.7
Unemployed	3.4	.6
Gross domestic product per		
employee . . . . .	.8	.7
Disposable income per capita,		
1987 dollars	1.3	1.5

Generally speaking, the reader should pay careful attention to the historical periods discussed in this article, to be aware of growth rate anomalies introduced because of the 1990–91 recession.

Table 2. **Gross domestic product by major demand category, 1979, 1989, 1992, and projected to 2005**

[Billions of 1987 dollars]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Gross domestic product	\$3,796.8	\$4,838.0	\$4,986.3	\$6,028.2	\$6,629.1	\$7,331.2
Personal consumption	2,448.3	3,223.3	3,341.8	4,104.6	4,426.5	4,699.0
Investment	669.8	784.1	732.9	929.0	1,043.2	1,376.2
Exports	293.6	471.8	578.0	940.7	1,088.4	1,264.7
Imports	-304.1	-545.4	-611.6	-955.6	-1,037.4	-1,182.6
National defense	185.1	281.4	261.2	197.9	203.4	208.8
Federal nondefense	86.6	94.8	111.8	122.2	133.6	141.7
State and local government	417.6	528.3	572.2	689.4	771.4	823.4
Percent distribution						
Gross domestic product	100.0	100.0	100.0	100.0	100.0	100.0
Personal consumption	64.5	66.6	67.0	68.1	66.8	64.1
Investment	17.6	13.7	14.7	15.4	15.7	18.8
Exports	7.7	11.2	11.6	15.6	16.4	17.3
Imports	-8.0	-11.6	-12.3	-15.9	-15.6	-16.1
National defense	4.9	5.9	5.2	3.3	3.1	2.8
Federal nondefense	2.3	2.2	2.2	2.0	2.0	1.9
State and local government	11.0	11.5	11.5	11.4	11.6	11.2
Average annual rates of change						
	1979-89	1989-92	1979-92	1992-2005		
				Low	Moderate	High
Gross domestic product	2.5	1.0	2.1	1.5	2.2	3.0
Personal consumption	2.8	1.2	2.4	1.6	2.2	2.7
Investment	1.6	-2.2	.7	1.8	2.8	5.0
Exports	4.9	7.0	5.3	3.8	5.0	6.2
Imports	6.0	3.9	5.5	3.5	4.1	5.2
National defense	4.3	-2.5	2.7	-2.1	-1.9	-1.7
Federal nondefense .....	.9	5.7	2.0	.7	1.4	1.8
State and local government	2.4	2.7	2.5	1.4	2.3	2.8

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

In the moderate-growth alternative, we are looking at an economy that shows long-term improvements, in that several of the economic ills which currently afflict the economy are less serious. Specifically, the Federal budget deficit is not going to be as large as it now is, the United States continues to improve its world trading position, and employment growth remains steady. The following discussion examines the moderate-growth scenario in more detail.

Personal consumption expenditures. Traditionally, personal consumption expenditures have accounted for the largest share of GDP. In 1968, such expenditures, in constant prices, accounted for 61 percent of final purchases. Their share increased over the 1970's, reaching almost 65 percent of GDP in 1979. This trend continued during the 1980's, as real consumer expenditures increased their share of GDP to 67 percent by 1992. Tax cuts instituted during the 1980's, accompanied by rapid increases in Medicare and Medicaid spending, were viewed by consumers as "found money." Virtu-

ally all of the increases in income were spent, with almost none flowing into personal savings.

The increasing share of GDP accounted for by consumption appears, for the most part, to have been at the expense of gross savings. The personal savings rate began a long, slow slide in the mid-1970's, declining from an average of 7.8 percent of disposable income for the 1970's to an average of just 6.5 percent during the 1980's. In a further erosion, the personal savings rate averaged only 4.5 percent over the 1987-92 period.

Accompanying the declining rate of personal savings was a Federal budget deficit⁶ (an important, albeit negative, component of gross savings) that grew from \$16 billion in 1979 to almost \$280 billion by 1992, lowering the gross savings rate from almost 19 percent in 1979 to 11.5 percent by 1992. The impact of these structural shifts in the gross savings rate, a key factor in the determination of funds available for investment growth in the U.S. economy, will be more fully covered in the discussion of investment spending, to follow. Suffice it to say here that the result has been a per-

sonal consumer spending surge focused on durable goods (notably automobiles and consumer electronics) and on a vast array of consumer services (primarily medical, but also with considerable growth in industries providing sophisticated financial services to consumers).

The Bureau's projections result in very little expected change in the share of GDP accounted for by personal spending. As noted, however, this clearly reverses the long-run historical trend. The moderate-growth projections show personal consumption expenditures accounting for 66.8 percent of GDP in 2005, virtually unchanged from the 1992 share of 67.0 percent. (See table 2.) This halting of the upward trend in the personal consumption expenditures share of GDP results primarily from the aging of the baby-boom population, a group that is expected to anticipate a need for retirement funds and that thus helps to arrest the long-term decline in savings. Some interesting shifts in the composition of personal consumption expenditures by major product categories, however, are expected. (See table 3.)

Current population projections published by the Bureau of the Census imply a marked slowdown in new entrants to the driving-age population, suggesting relatively flat new-car sales over the entire projection period. Sales of new cars are expected to rise from 8.7 million units in 1992 only to about 10.0 million units in 2005. The aging of the population, however, results in a tendency toward larger, higher valued cars, on average, thus allowing projected spending on new cars to outpace overall consumer spending slightly, while minimally raising the share of personal consumption expenditures going for new cars from 5.5 percent in 1992 to 5.8 percent by 2005.

Spending on furniture and other durable goods is expected to continue to grow much more rapidly than overall consumption between 1992 and 2005. The major growth component of this spending category is the "other consumer durables" group. This component comprises the burgeoning array of sophisticated electronic devices becoming increasingly available to consumer markets. The revolution in consumer electronics began as a spinoff from space and military research and development programs of the 1970's and 1980's, but has now evolved as a major research and development effort in its own right as the tremendous potential of the consumer electronics market becomes ever more appreciated by the electronics industry. In addition, growth in sporting goods and in apparel is expected throughout the projection period.

Consumer energy use—of gasoline and motor oil for our automobiles and of fuel oil, natural gas, and electricity for heating and air-conditioning our homes—has grown at a relatively slow pace since

1972, a reaction to higher energy costs and a reflection of the economywide moves toward energy conservation. More energy-efficient automobiles and appliances and better insulated homes have led to declining consumer energy use, from a 10.5-percent share of overall personal consumption expenditures in 1979 to 9.1 percent in 1992. The moderate-growth alternative assumes that many of these trends will continue, leading to energy use accounting for only 8.3 percent of spending on consumption by 2005.

Consumer spending on nondurables is generally made up of so-called subsistence items such as food, cleaning products, cosmetics, and other short-term consumables. As family incomes rise, expenditures on nondurables also rise, up to a point. After that point is reached, spending on these items, at the household level, tends to flatten out. There is, after all, a limit to how many calories one family can consume, be they of hamburgers, steak, or tofu. Generally, improving standards of living in the United States have led to this component of consumer spending accounting for smaller shares in overall consumption over time. Between 1979 and 1992, for example, consumption of nondurables fell from a 35-percent share of personal consumption expenditures to 32 percent. This is not to say that spending on these items declined numerically; rather, it simply grew at a significantly slower pace than did overall personal consumption expenditures. The Bureau projects that this trend will continue, with spending on food and other nondurables increasing 1.5 percent annually. The share of consumption of nondurables is projected to continue to decline, falling to 29 percent by 2005.

The Bureau of the Census population projections imply a noticeable slowdown in the net formation of new households. This is borne out in the BLS projections of consumer spending for housing. Some offsets to the slowdown are anticipated as consumers purchase new homes with rising average values, but this effect is expected to be relatively small. Thus, the share of consumer spending going for housing needs will continue to drop, falling to 12.7 percent of total personal consumption spending by 2005, down from 14.5 percent in 1992.

Spending on consumer services, in contrast, is expected to proceed at a slightly more rapid rate than overall consumer spending—2.4 percent annual growth between 1992 and 2005. The share of the consumer dollar allocated to services is projected to grow noticeably, reaching more than 56 percent in 2005, up from 53 percent in 1979 and 54.5 percent in 1992. As the population ages, and as medical technology advances, the demand for medical services will continue to grow disproportionately.⁷ As previously noted, however, the 1980's have seen major growth in new services

Table 3. **Personal consumption expenditures by type, 1979, 1989, 1992, and projected to 2005**

[Billions of 1987 dollars]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Personal consumption	\$2,448.3	\$3,223.3	\$3,341.8	\$4,104.6	\$4,426.5	\$4,699.0
Durables	289.0	440.7	456.6	573.7	649.4	696.7
Motor vehicles and parts	130.5	196.4	182.3	223.3	257.6	265.9
Furniture	101.3	165.8	194.8	252.2	277.0	304.5
Other durables	57.2	78.5	79.5	98.2	114.8	126.3
Nondurables	862.8	1,051.6	1,062.9	1,163.7	1,283.6	1,358.6
Food and beverages	448.0	515.0	520.5	562.1	608.0	638.4
Clothing and shoes	124.1	187.8	193.7	225.5	253.7	266.0
Gasoline and oil	76.4	87.3	83.9	80.7	86.3	87.9
Fuel oil and coal	18.1	11.4	11.9	8.1	9.0	9.2
Other nondurables	196.3	250.2	252.9	287.3	326.6	357.1
Services	1,296.5	1,731.0	1,822.3	2,367.2	2,493.5	2,643.7
Housing	387.9	469.2	484.2	558.6	560.3	622.3
Household operation	162.9	202.6	211.7	252.3	276.5	295.8
Transportation	96.1	123.8	122.7	151.5	170.0	187.6
Medical care	290.9	408.6	449.2	629.2	677.6	705.3
Other services	358.7	526.9	554.4	775.6	809.1	832.7
Percent distribution						
Personal consumption	100.0	100.0	100.0	100.0	100.0	100.0
Durables	11.8	13.7	13.7	14.0	14.7	14.9
Motor vehicles and parts	5.3	6.1	5.5	5.5	5.8	5.7
Furniture	4.1	5.1	5.8	6.2	6.3	6.5
Other durables	2.3	2.4	2.4	2.4	2.6	2.7
Nondurables	35.2	32.6	31.8	28.3	29.0	28.9
Food and beverages	18.3	16.0	15.6	13.7	13.7	13.6
Clothing and shoes	5.1	5.8	5.8	5.5	5.7	5.7
Gasoline and oil	3.1	2.7	2.5	2.0	1.9	1.9
Fuel oil and coal	.7	.4	.4	.2	.2	.2
Other nondurables	8.0	7.8	7.6	7.0	7.4	7.6
Services	53.0	53.7	54.5	57.8	56.3	56.2
Housing	15.8	14.6	14.5	13.6	12.7	13.2
Household operation	6.7	6.3	6.3	6.1	6.2	6.3
Transportation	3.9	3.8	3.7	3.7	3.8	4.0
Medical care	11.9	12.7	13.4	15.3	15.3	15.0
Other services	14.7	16.3	16.6	18.9	18.3	17.7
Average annual rates of change						
	1979-89	1989-92	1979-92	1992-2005		
				Low	Moderate	High
Personal consumption	2.8	1.2	2.4	1.6	2.2	2.7
Durables	4.3	1.2	3.6	1.8	2.7	3.3
Motor vehicles and parts	4.2	-2.5	2.6	1.6	2.7	2.9
Furniture	5.1	5.5	5.2	2.0	2.7	3.5
Other durables	3.2	.4	2.6	1.6	2.9	3.6
Nondurables	2.0	.4	1.6	.7	1.5	1.9
Food and beverages	1.4	.4	1.2	.6	1.2	1.6
Clothing and shoes	4.2	1.0	3.5	1.2	2.1	2.5
Gasoline and oil	1.3	-1.3	.7	-3	.2	.4
Fuel oil and coal	-4.5	1.4	-3.2	-2.9	-2.1	-2.0
Other nondurables	2.5	.4	2.0	1.0	2.0	2.7
Services	2.9	1.7	2.7	2.0	2.4	2.9
Housing	1.9	1.1	1.7	1.1	1.1	1.9
Household operation	2.2	1.5	2.0	1.4	2.1	2.6
Transportation	2.6	-3	1.8	1.6	2.5	3.3
Medical care	3.5	3.2	3.4	2.6	3.2	3.5
Other services	3.9	1.7	3.4	2.6	3.0	3.2

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

such as investment counseling and other professional services, and these trends are also expected to continue over the projection period. In addition, stronger than average growth is expected for some of the traditional service sectors, such as air travel and all of the recreation categories (for example, membership in health clubs and attendance at sporting events).

In sum, consumer spending during the 1992–2005 period is projected to be healthy, slowing with the slowing of overall GDP, but continuing to account for a major part of economic growth. Significant shifts in distribution are expected, but, for the most part, the trends exhibited in the 1970's and 1980's are projected to continue.

Gross private domestic investment. This component of GDP, hereinafter referred to as private investment, is comprised of business fixed investment, that is, purchases of nonresidential structures and purchases of producers' durable equipment; construction of residential buildings; and changes in business inventories. Over the historical period, private investment has accounted for a remarkably stable share of GDP—16.5 percent during the 1970's and 16.3 percent during the 1980's. (See table 4.) This seeming stability in the averages can be deceptive, however.

Business investment in the form of purchases of plant and equipment has traditionally been the

most volatile component of GDP, responding sharply and even wildly at times to swings in the business cycle. Equipment purchases, for example, ranged from a low of 4.7 percent of real GDP in 1961 to a high of 7.6 percent in 1988. Even more noteworthy is the spectacular range in annual changes over the post-World War II period, from a low of an 11.3-percent decline in 1975 to a high of 18-percent growth in 1984. Over the projection period, the Bureau expects producers' durable equipment purchases to continue to grow more rapidly than overall GDP, attaining a 9.6-percent share of GDP by 2005. What is notable, however, about producers' durable equipment growth in the 1980's and that growth projected to 2005 is the growing proportion accounted for by computers. Because of the enormous increases in the quality of business computing over the past 10 years, constant-dollar estimates of this commodity grew at a phenomenal pace during the 1980's. Many analysts of the computer industry expect this growth to continue almost unabated throughout the projection period.

Recent methodological improvements in data collection and processing have enabled analysts to take better account of the combination of explosive qualitative enhancements and very large price declines for computers due to technological innovation. For example, computing power equivalent to what may have cost \$1,000 in 1990 might well

Table 4. **Gross private domestic investment, 1979, 1989, 1992, and projected to 2005**

[Billions of 1987 dollars]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Gross private investment	\$669.7	\$784.0	\$732.9	\$929.0	\$1,043.5	\$1,376.2
Business fixed investment	448.8	540.1	529.2	699.0	808.4	1,042.7
Producers' durable equipment	285.5	362.5	378.6	538.3	637.4	807.1
Nonresidential construction	163.3	177.6	150.6	160.7	171.0	235.6
Residential construction	207.4	214.2	197.1	217.2	220.1	307.9
Change in business inventories	13.6	29.8	6.5	12.8	14.7	25.6
Percent distribution						
Gross private investment	100.0	100.0	100.0	100.0	100.0	100.0
Business fixed investment	67.0	68.9	72.2	75.2	77.5	75.8
Producers' durable equipment	42.6	46.2	51.7	57.9	61.1	58.6
Nonresidential construction	24.4	22.7	20.5	17.3	16.4	17.1
Residential construction	31.0	27.3	26.9	23.4	21.1	22.4
Change in business inventories	2.0	3.8	.9	1.4	1.4	1.9
Average annual rates of change						
Category	1979–89	1989–92	1979–92	1992–2005		
				Low	Moderate	High
Gross private investment	1.6	–2.2	.7	1.8	2.8	5.0
Business fixed investment	1.9	–.7	1.3	2.2	3.3	5.4
Producers' durable equipment	2.4	1.5	2.2	2.7	4.1	6.0
Nonresidential construction . . . . .	.8	–5.3	–.6	.5	1.0	3.5
Residential construction . . . . .	.3	–2.7	–.4	.7	.9	3.5

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

have cost as much as \$20,000 in the early 1980's. Because base-weighted price indexes are used for deflation purposes, the effect is to increase the real value of computers at a much more rapid rate than the real value of other components of producers' durable equipment increases. In fact, if the real rate of growth of computer purchases were extrapolated to 2005 at the same rate as was experienced during the 1980's, the result would reach a level of computer purchases accounting for a sizable portion of GDP.

Analyses using current or moving weights indicate that business purchases of computers, while still accounting for ever larger shares of equipment purchases, are not growing at the rate implied by the base-year-weighted price indexes used for deflation purposes. This pricing/quality phenomenon thus leads to an expected rate of growth in equipment purchases that, at first glance, seems consistent with a much higher rate of growth of labor productivity than is in fact implied by the moderate-growth projections. This is not to say that the computer revolution has not had an impact on productivity; rather, it is simply to note that the constant-dollar share of computers derived by using fixed-weight price indexes may well overstate the real, productive growth in capital in the U.S. economy.⁸

Between 1979 and 1989, equipment spending less computers grew by an average real rate of 1.2 percent each year. Between 1989 and 1992, which encompassed the recession of 1990-91, there was a real annual decline in equipment spending (less computers) of 1.7 percent. The moderate-growth scenario suggests a real annual rate of noncomputer equipment growth of 3.1 percent after 1992. On a peak-to-peak basis, this category of business investment is expected to increase by 2.2 percent each year between 1989 and 2005, a significant improvement from the comparative historical period because of assumptions regarding the ability of the U.S. manufacturing sector to compete more successfully in foreign markets during the next 13 years than was the case during the 1980's—particularly early in the decade. The ability to reenter former markets and develop new ones will spur demand and the attendant investment necessary to meet it.

Spending on computers grew at an average annual real rate of 17.2 percent each year between 1979 and 1992, a rate seemingly unabated by the 1990-91 recession. Expectations are that the demand for computers by businesses will continue to grow strongly over the projection period, but at a slower rate (8.3 percent each year from 1992 to 2005) than witnessed during the recent historical past.

Over that historical past, nonresidential construction growth has generally been slowing. Dur-

ing the 1960's, this category of investment accounted for almost 5 percent of GDP. However, its share fell to about 4 percent during the 1970's and 1980's. In spite of this slowdown, construction markets are currently glutted with an oversupply of office and commercial buildings. The working off of this glut is expected to last for an important part of the next 13 years, and nonresidential construction is projected to fall even further as a result, to a 2.6-percent share of GDP by 2005. Most of the slowdown can be accounted for by the rapid movement of the U.S. economy over the past two decades to a more service-oriented posture. As more employment has been found in service establishments, the industrial buildings component of nonresidential construction has slipped dramatically, leading to the declining shares noted above, in spite of the boom in office and commercial buildings seen during the late 1970's and early 1980's.

The market for residential construction was remarkably stable from 1960 to 1979, accounting for almost 5.5 percent of GDP each year during that period. However, as the baby-boom generation aged, and as baby-boomers moved away from the period of their lives when they were forming new households, the residential share of GDP began to decline, averaging 3.8 percent during the 1980's. Offsetting the slowdown somewhat is the wave of children of baby-boomers, who will be establishing households over the next 15 years. But this phenomenon is expected to do no more than hold the line, with residential construction's share of GDP projected to remain flat over the coming period, at about 3.8 percent.

In sum, private investment is expected to grow more rapidly than overall GDP during the 1992-2005 period, entirely as a result of strong growth in producers' durable equipment. Much of this strength is attributable to the increasing share of purchases of equipment—especially computers—which is expected to have a relatively minor impact on labor productivity because it is not readily apparent that a dollar spent on computers has nearly the same impact as a dollar spent on other types of equipment or on improvements to plants.

Exports and imports. It is safe to say that 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 30 years. In 1960, real gross exports accounted for 4.4 percent of GDP, while real gross imports tallied a 4.7-percent share. By 1992, the shares had risen to 11.6 percent for real gross exports and 12.3 percent for real gross imports. Until the early 1980's, growth in both categories of U.S. foreign trade had proceeded apace, with some years showing small real trade deficits and others small surpluses. In nomi-

nal terms, the U.S. economy had not experienced a trade deficit since 1945.

Between 1980 and 1985, in response to high interest rates, weak foreign markets, and a declining ability of U.S. businesses to compete effectively in those markets, the exchange value of the U.S. dollar began to increase at an unprecedented rate, as shown in table 5. The result was cheaper imports, more expensive exports, and, for the first time since World War II, massive and growing trade deficits (in nominal terms). As defense spending began to slow, and talk about balancing the Federal budget deficit accelerated, exchange rates began to fall dramatically. This decline initiated a process of making imported goods more expensive and imports less so. The process was aided by many domestic industries working hard to streamline their production processes, improve the quality of their goods, redevelop new markets abroad, and become more competitive in old markets. The restructuring of many of the Eastern Bloc economies in the past several years has also served to open up vast new markets to U.S. businesses, at least over the long run.

During the latter half of the 1980's, all categories of real exports grew at dramatic rates. Capital goods exports, which had declined 3.5 percent a year between 1980 and 1985, grew more than 14 percent each year, in real terms, between 1985 and 1990. This category was followed by real consumer goods exports, which grew 20.2 percent each year, on average, over the second half of the 1980's. Foods, feeds, and beverages exports and industrial supplies and materials exports both improved their growth, in real terms, to 6.2 percent and 7.2 percent, respectively, each year between 1985 and 1990, following sharp annual declines between 1980 and 1985.

Import growth, in contrast, slowed sharply for most categories during the last half of the decade.

Consumer goods imports increased 3.6 percent, on average, between 1985 and 1990, a reasonable rate of growth, but substantially below the hefty 13.7-percent growth rate during the 1980-85 period. Automotive imports grew by only 0.9 percent a year over the latter half of the 1980's, following almost 13-percent annual growth between 1980 and 1985. This decline was due to several factors: lowering exchange rates raised the price of imported automobiles, many cars that were formerly imported began to be produced domestically, and voluntary constraints were adopted that served to slow imports.

The result of all this growth, including the slower growth from 1985 to 1990, has been a major improvement in both the exchange rate and U.S. trade balances. (See table 5.) U.S. direct investment abroad grew from \$215 billion in 1980 to \$421 billion in 1990, an average annual rate of growth of almost 7 percent. Problems still exist, however. During the 1980's, the U.S. economy saw huge increases in foreign ownership of domestic industries: from 1980 to 1990, foreign direct investment in the United States grew from \$83 billion to \$404 billion, an average growth rate of more than 17 percent per year. The flow of income out of the country due to these investments will continue to be an important factor in U.S. foreign trade for the foreseeable future.

Nonetheless, BLS projections for foreign trade are not bleak. The largest drops in the value of the dollar appear to be behind the Nation, but the exchange rate is expected to continue to decline at a moderate pace, reaching a level of 65.3 by 2005, down from 83.5 in 1992 and representing an average annual decline of 1.9 percent. The exchange rate in the macroeconomic model is affected primarily by the real nonoil trade balance relative to overall exports and secondarily by relative wholesale prices and relative bond rates. As exports grow and trade balances improve as a result of, among other things, declining exchange rates, the exchange rate declines will moderate. In general, a healthy economy accompanied by growing world markets for the United States should keep the exchange rate trend flat or declining slightly. The real net balance on goods and services is projected to continue to improve, coming into balance sometime during the mid-1990's and attaining a net positive level of \$61 billion by 2005.

By end-use category, the major areas of growth in exports are expected to be capital goods, services, and consumer goods; all are projected to increase their share of gross exports by significant amounts in the next 13 years. (See table 6.) By contrast, import growth is expected to moderate somewhat, with dropoffs in the growth of capital goods and consumer goods. Other components of imports, including foods, feeds, and beverages and

Table 5. Value of the dollar and net export behavior, 1980-92

Year	Value of the dollar (1980-81 = 100.0)	Net exports (billions of dollars)	
		1987 dollars	Current dollars
1980	87.4	\$30.7	\$-14.7
1981	103.4	22.0	-14.7
1982	116.6	-7.4	-20.6
1983	125.3	-56.1	-51.4
1984	138.2	-122.0	102.7
1985	143.0	-145.3	-115.6
1986	112.2	-155.1	-132.5
1987	96.9	-143.1	143.1
1988	92.7	-104.0	-108.0
1989	98.6	-73.7	-79.7
1990	89.1	-51.8	-68.9
1991	88.2	-21.8	-21.8
1992	87.1	-41.8	-30.4

Table 6. Exports and imports of goods and services, 1979, 1989, 1992, and projected to 2005

[Billions of 1987 dollars]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Exports of goods and services	\$293.6	\$471.8	\$578.0	\$940.7	\$1,088.4	\$1,264.7
Foods, feeds, and beverages	25.7	30.0	35.7	53.5	58.3	62.1
Industrial supplies and materials	61.8	85.8	97.5	149.6	165.5	194.4
Capital goods	82.1	136.6	178.4	333.0	396.1	496.4
Computers	1.7	28.1	51.0	120.6	147.2	208.7
Other capital goods	80.4	108.5	127.4	212.4	248.9	287.7
Automobiles and parts	28.7	33.4	41.9	59.0	60.5	66.9
Consumer and other goods	27.5	58.1	69.1	111.6	115.4	129.9
Services	67.8	128.0	155.4	234.0	292.6	315.0
Imports of goods and services	304.1	545.4	611.6	955.6	1,037.4	1,182.6
Foods, feeds, and beverages	20.2	24.6	26.0	28.4	37.5	40.2
Industrial supplies and materials	105.9	116.7	123.2	175.1	180.3	204.2
Petroleum	55.7	51.3	51.2	81.1	82.1	78.9
Other supplies and materials	50.2	65.4	72.0	94.0	98.2	125.3
Capital goods	30.5	109.4	148.8	293.2	324.2	395.7
Computers	.4	25.4	59.7	116.2	137.5	195.4
Other capital goods	30.1	84.0	88.7	177.0	186.7	200.3
Automobiles and parts	42.7	80.7	79.7	99.8	112.1	115.1
Consumer and other goods	49.5	119.1	134.7	202.4	215.8	251.0
Services	55.3	95.1	99.7	156.7	167.5	176.4
Net foreign trade	-10.6	-73.6	-33.6	-14.9	51.0	82.1
Percent distribution						
Exports of goods and services	100.0	100.0	100.0	100.0	100.0	100.0
Foods, feeds, and beverages	8.8	6.4	6.2	5.6	5.4	4.9
Industrial supplies and materials	21.0	18.2	16.9	15.8	15.2	15.3
Capital goods	28.0	28.9	30.9	35.6	36.4	39.5
Computers	.6	6.0	8.8	12.8	13.5	16.5
Other capital goods	27.4	23.0	22.0	22.8	22.9	23.0
Automobiles and parts	9.8	7.1	7.2	6.3	5.6	5.3
Consumer and other goods	9.4	12.3	11.9	11.9	10.6	10.3
Services	23.1	27.1	26.9	24.7	26.9	24.7
Imports of goods and services	100.0	100.0	100.0	100.0	100.0	100.0
Foods, feeds, and beverages	6.6	4.5	4.3	3.0	3.6	3.4
Industrial supplies and materials	34.8	21.4	20.1	18.3	17.4	17.3
Petroleum	18.3	9.4	8.4	8.5	7.9	6.7
Other supplies and materials	16.5	12.0	11.8	9.8	9.5	10.6
Capital goods	10.0	20.1	24.3	30.6	31.3	33.1
Computers	.1	4.7	9.8	12.1	13.3	16.4
Other capital goods	9.9	15.4	14.5	18.5	18.0	17.0
Automobiles and parts	14.0	14.8	13.0	10.4	10.8	9.7
Consumer and other goods	16.3	21.8	22.0	21.2	20.8	21.6
Services	18.2	17.4	16.3	16.5	16.1	14.9
Average annual rates of change						
	1979-89	1989-92	1979-92	1992-2005		
				Low	Moderate	High
Exports of goods and services	4.9	7.0	5.3	3.8	5.0	6.2
Foods, feeds, and beverages	1.6	6.0	2.6	3.2	3.8	4.4
Industrial supplies and materials	3.3	4.4	3.6	3.3	4.2	5.5
Capital goods	5.2	9.3	6.2	4.9	6.3	8.2
Computers	32.3	22.1	29.9	6.8	8.5	11.4
Other capital goods	3.1	5.5	3.6	4.0	5.3	6.5
Automobiles and parts	1.5	7.9	3.0	2.7	2.9	3.7
Consumer and other goods	7.3	5.9	7.3	3.8	4.0	5.0
Services	6.6	6.7	6.6	3.2	5.0	5.6
Imports of goods and services	6.0	3.9	5.5	3.5	4.1	5.2
Foods, feeds, and beverages	2.0	1.9	2.0	.7	2.9	3.4
Industrial supplies and materials	1.0	1.9	1.2	2.7	3.0	4.0
Petroleum	-8	-1	-6	3.6	3.7	3.4
Other supplies and materials	2.7	3.3	2.8	2.1	2.4	4.4
Capital goods	13.6	10.8	13.0	5.4	6.2	7.8
Computers	51.4	33.1	47.0	5.3	6.6	9.5
Other capital goods	10.8	1.8	8.7	5.5	5.9	6.5
Automobiles and parts	6.6	-4	4.9	1.7	2.7	2.9
Consumer and other goods	9.2	4.2	8.0	3.2	3.7	4.9
Services	5.6	1.6	4.6	3.5	4.1	4.5

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

industrial supplies and materials, are expected to grow more rapidly during the coming decade.

In sum, the improvement in U.S. foreign trade seen during the latter half of the 1980's is expected to continue, albeit at a somewhat more moderate pace. However, this is perhaps one of the least understood areas of the projections and the area subject to the greatest uncertainty. For that reason, significantly different trends in foreign trade are examined more closely in the alternative projections presented later in this article.

Federal Government. During the past decade, the debate over the Federal budget has been dominated by one consideration: how to bring the growing deficit under control. On a national income accounting basis, the deficit grew from \$15.7 billion in 1979 to almost \$280 billion in 1992. Over this period, effective personal tax rates declined from 13.3 percent to 11.3 percent of personal income, while various expenditure categories continued to grow.

For example, expenditures on military research and development and on the acquisition of more sophisticated weapons systems raised the nominal defense share of Federal expenditures from 23.4 percent in 1979 to 27.4 percent in 1987. As the deficit expanded rapidly, this pushed net interest payments from an 8.1-percent to a 12.8-percent share of Federal expenditures during the same period. In contrast, losing ground as a share of Federal Government expenditures over the 1979-87 period were transfer programs (from 40.3 percent to 38.7 percent of expenditures), grants-in-aid to State and local governments (from 15.5 percent to 9.6 percent), and purchases of nondefense goods and services (from 11.1 percent to 8.7 percent). Between 1987 and 1992, some slowdowns in both defense and nondefense purchases of goods and services have been evident, but have been more than offset by surging expenditures on transfer and grant programs, leading to a deficit that has doubled in the 5 years between 1987 and 1992.

Taking into account the huge deficits of the mid-1980's, followed by startling worldwide political developments, the Bureau has assumed that between 1992 and 2000, real defense spending in the U.S. will decline 3.6 percent each year, dropping from \$261 billion in 1992 to \$197 billion in the year 2000, in 1987 dollars.⁹ Thereafter, it is assumed that some real defense spending growth will resume (an average annual rate of increase of 0.7 percent), leaving defense purchases at \$204 billion in 2005. In nominal terms, this results in an increase in defense spending of \$184 billion over the 1992-2005 period, compared with a like increase of \$194 billion in the prior 13-year period, and represents a defense share of Federal expend-

itures of 15 percent in 2005, down from 22 percent in 1992.

It is further assumed that both transfer programs and grants-in-aid will increase their share of Federal spending only slightly by 2005. Real transfers per recipient are expected to fall slightly over the projection period, reflecting the assumption that significant restructuring and streamlining of Federal transfer programs will affect spending, in spite of increasing client populations. The slowly growing share of transfers (from 43 percent in 1992 to 44.2 percent in 2005) is explained entirely by these rising client populations, notably in the older age groups seeking enhanced medical programs. Grants-in-aid are expected to rise not only as a share of expenditures (from 12 percent in 1992 to 18 percent in 2005), but also in real terms, in response to a growing concern that improvement and repair of the Nation's infrastructure can no longer be postponed and as a result of the very real impact of aging baby-boomers on Medicaid grants.

The effect of these assumptions is that the Federal deficit, which amounted to 5 percent of nominal GDP in 1992, is expected to decline over the projection period and will reach a virtual balance in 2005. (See table 7.) On the revenue side of the accounts, it has been assumed that effective tax rates will rise very slightly over the period. Constant or slowly falling tax rates could, therefore, result in significantly different estimates of the Federal deficit (or surplus, if that be the case).

State and local government. Real purchases of goods and services by State and local governments increased their share of GDP steadily throughout the 1960's and early 1970's, peaking at 12.4 percent of GDP in 1975, up from 11 percent in 1960. An important part of the increase was funded by increasing grants-in-aid from the Federal Government, both in earmarked funds, such as the Federal Highway Trust Fund, and in nonallocated monies from the general revenue-sharing program begun during the Nixon Administration.

From 1975 through the early 1980's, the general revenue-sharing program was phased out. The belief that the interstate highway system was completed led to further slowdowns in Federal grants. As a result, State and local purchases of goods and services receded again to a share of 11.5 percent of GDP by 1992, very close to the 1960 share.

During the 1980's, many State and local programs were cut, sometimes sharply, in response to general taxpayer dissatisfaction and to the needs of fiscal integrity. Offsetting the cuts, to some extent, was a resumption in the growth of Federal Highway Trust Fund monies, as it became apparent that even if the interstate highway system was complete, some significant maintenance and repair

Table 7. **Federal Government receipts and expenditures, 1979, 1989, 1992, and projected to 2005**

[Billions of current dollars]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Receipts	\$504.7	\$1,059.3	\$1,183.0	\$2,928.9	\$3,391.0	\$3,768.2
Personal taxes	229.7	461.9	490.8	1,201.3	1,347.5	1,484.3
Corporate profits taxes	74.4	117.1	120.2	347.1	483.7	489.5
Indirect business taxes	30.1	61.9	81.3	154.2	178.8	254.5
Social insurance contributions	170.4	418.5	490.7	1,226.3	1,381.0	1,539.9
Expenditures	520.3	1,181.6	1,459.3	3,315.8	3,392.2	3,366.2
Purchases of goods and services	179.3	401.6	448.8	704.8	834.5	927.2
Transfer payments	209.7	471.5	624.5	1,395.7	1,487.8	1,544.2
Grants-in-aid to						
State and local governments	80.5	118.2	171.4	594.9	620.2	654.3
Net interest paid	42.1	164.7	187.1	566.5	395.1	184.8
Subsidies less current surplus	8.6	25.5	27.5	53.9	54.6	55.7
Federal surplus	-15.7	-122.3	-276.3	-386.9	-1.2	402.0
Percent distribution						
Receipts	100.0	100.0	100.0	100.0	100.0	100.0
Personal taxes	45.5	43.6	41.5	41.0	39.7	39.4
Corporate profits taxes	14.7	11.1	10.2	11.9	14.3	13.0
Indirect business taxes	6.0	5.8	6.9	5.3	5.3	6.8
Social insurance contributions	33.8	39.5	41.5	41.9	40.7	40.9
Expenditures	100.0	100.0	100.0	100.0	100.0	100.0
Purchases of goods and services	34.5	34.0	30.8	21.3	24.6	27.5
Transfer payments	40.3	39.9	42.8	42.1	43.9	45.9
Grants-in-aid to						
State and local governments	15.5	10.0	11.7	17.9	18.3	19.4
Net interest paid	8.1	13.9	12.8	17.1	11.6	5.5
Subsidies less current surplus	1.7	2.0	1.9	1.6	1.6	1.7
Average annual rates of change						
	1979-89	1989-92	1979-92	1992-2005		
				Low	Moderate	High
Receipts	7.7	3.8	6.8	7.2	8.4	9.3
Personal taxes	7.2	2.0	6.0	7.1	8.1	8.9
Corporate profits taxes	4.6	.9	3.8	8.5	11.3	11.4
Indirect business taxes	7.5	9.5	7.9	5.0	6.3	9.2
Social insurance contributions	9.4	5.4	8.5	7.3	8.3	9.2
Expenditures	8.5	7.3	8.3	6.5	6.7	6.6
Purchases of goods and services	8.4	3.8	7.3	3.5	4.9	5.7
Transfer payments	8.4	9.8	8.8	6.4	6.9	7.2
Grants-in-aid to						
State and local governments	4.1	13.2	6.0	10.0	10.4	10.9
Net interest paid	14.6	4.3	12.2	8.9	5.9	-1
Subsidies less current surplus	11.5	2.5	9.4	5.3	5.4	5.6

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

expenditures would be required to keep it in working order.¹⁰

Both of these trends are expected to continue into the future. Fiscal belt tightening will remain a fact of life for State and local governments throughout the next 13 years, especially with regard to social programs. This will be necessary to maintain balanced budgets in the face of increasing needs for public safety expenditures and incarceration facilities. The Bureau has further as-

sumed that real grants-in-aid will grow at a rate of 2.8 percent over the next 13 years in response to infrastructure maintenance needs and expansion of the Medicaid program. As a result, State and local spending on goods and services are expected to maintain a constant share of GDP over the 13-year projection period—11.6 percent, in real terms. (Table 8 presents various aspects of State and local government receipts and expenditures since 1979 and projected to 2005.)

Income, employment, and productivity. Between 1979 and 1992, there was a shift away from labor income toward interest and dividend income. (See table 9.) In 1992, interest and dividends accounted for 16 percent of personal income, up from 13.5 percent in 1979, while labor income fell from a 67.9-percent share in 1979 to a 64.0-percent share in 1992. This implies that there was a relative shift in income growth. Families with high incomes (those most readily able to afford investment portfolios) appear to have gained income relative to moderate- and low-income earners during the same time frame. The Bureau projects a continuation of this trend in income disparity over the next 13 years, as labor-type income shares continue to decline in

relative importance, dropping to 62.2 percent by 2005.

Per capita disposable income is projected to increase at an average annual rate of 6.4 percent, reaching a level of almost \$39,000 by 2005, an increase of \$21,000 from 1992. In real terms, this translates to a 1.5-percent growth rate each year over the projection period, consistent with the expected growth in GDP of 2.2 percent annually. In short, the Bureau expects the moderate-growth projections to be characterized by moderate increases in the real standard of living, at least as depicted by growth in real per capita disposable income. These increases are roughly consistent with the overall growth in GDP and per capita real income between 1979 and 1989.

Table 8. State and local government receipts and expenditures, 1979, 1989, 1992, and projected to 2005

[Billions of current dollars]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Receipts	\$330.6	\$681.5	\$837.8	\$2,292.8	\$2,565.8	\$2,818.3
Personal taxes	50.5	131.5	154.0	461.0	526.2	591.1
Corporate profits taxes	13.6	24.2	26.0	75.5	130.5	187.6
Indirect business taxes	158.6	352.8	421.5	1,010.6	1,126.8	1,196.7
Social insurance contributions	27.4	54.8	64.9	150.8	162.1	188.6
Grants-in-aid from Federal Government	80.5	118.2	171.4	594.9	620.2	654.3
Expenditures	305.5	636.7	830.6	2,234.6	2,449.6	2,684.9
Purchases of goods and services	269.2	573.6	683.0	1,573.9	1,828.6	1,999.8
Transfer payments	57.2	143.6	228.6	851.1	823.8	928.0
Net interest paid	-13.3	-52.3	-46.0	-100.1	-121.3	-152.7
Subsidies less current surplus	-5.7	-20.1	-24.8	-59.2	-58.7	-59.2
State and local surplus	25.1	44.8	7.2	61.5	116.2	133.4
Percent distribution						
Receipts	100.0	100.0	100.0	100.0	100.0	100.0
Personal taxes	15.3	19.3	18.4	20.1	20.5	21.0
Corporate profits taxes	4.1	3.6	3.1	3.3	5.1	6.7
Indirect business taxes	48.0	51.8	50.3	44.1	43.9	42.5
Social insurance contributions	8.3	8.0	7.7	6.6	6.3	6.7
Grants-in-aid from Federal Government	24.3	17.3	20.5	25.9	24.2	23.2
Expenditures	100.0	100.0	100.0	100.0	100.0	100.0
Purchases of goods and services	88.1	90.1	82.2	70.4	74.6	74.5
Transfer payments	18.7	22.6	27.5	38.1	33.6	34.6
Net interest paid	-4.4	-8.2	-5.5	-4.5	-5.0	-5.7
Subsidies less current surplus	-1.9	-3.2	-3.0	-2.6	-2.4	-2.2
Average annual rates of change						
	1979-89	1989-92	1979-92	1992-2005		
				Low	Moderate	High
Receipts	7.5	7.1	7.4	8.1	9.0	9.8
Personal taxes	10.0	5.4	9.0	8.8	9.9	10.9
Corporate profits taxes	5.9	2.4	5.1	8.5	13.2	16.4
Indirect business taxes	8.3	6.1	7.8	7.0	7.9	8.4
Social insurance contributions	7.2	5.8	6.9	6.7	7.3	8.6
Grants-in-aid to Federal Government	3.9	13.2	6.0	10.0	10.4	10.9
Expenditures	7.6	9.3	8.0	7.9	8.7	9.4
Purchases of goods and services	7.9	6.0	7.4	6.6	7.9	8.6
Transfer payments	9.6	16.8	11.2	10.6	10.4	11.4

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

Although the unemployment rate will fluctuate with the business cycle over the next 13 years, the moderate-growth alternative projects that the unemployed will continue to account, on average, for a roughly constant share of the labor force. (See table 10.) This means that employment growth is expected to be 1.5 percent each year over the 1992–2005 period, an increase of 24.6 million employed persons, on a household basis. This implies an average of 1.9 million new jobs in the economy each year over the coming decade and a half.

As noted earlier, real GDP is expected to grow by 2.2 percent each year, on average, between 1992 and 2005. How can we account for this growth? In the simplest possible accounting scheme, the supply of labor, as represented by the civilian labor force, is projected to increase at a 1.3-percent annual rate, which leaves exactly 0.9 percent of the expected growth in GDP to be accounted for by other factors, such as changes in the quality of labor, changes in the quantity and quality of available capital, and changes in utilization rates of both labor and capital, all of which conveniently fall under the rubric of “labor productivity.” In fact, real GDP per employee, a very rough proxy for labor productivity, is expected to grow by 1.0 percent a year over the projection period, a small but noticeable improvement over the growth in GDP per employee during the 1979–92 period.¹¹

Also noted earlier was a shift toward investment during the projection period. In fact, this increasing share of current spending on capital goods is enough to generate a growth in real capital per employee of 1 percent annually, slightly lower than the growth in this factor noted during the prior 15-year period. The implication is clear: productivity growth is expected to improve somewhat not because of any boom in capital spending, but rather, because of an increase in quality—either the quality of available labor, the quality of available capital, or some mix of both factors.

Features of alternative projections

Attempts to look into the future are filled with uncertainty. The alternative projections prepared by BLS provide users with a range of results that encompasses reasonable economic futures, but that in no sense exhausts all possible variations. The potential GDP and employment growth are determined by many factors, all subject to a wide range of values that may be chosen. The BLS alternatives attempt to address the inherent uncertainty in the projections, at least for those variables deemed most critical in the process of determining GDP.¹²

As with the moderate-growth projections, a number of assumptions must be spelled out in order to generate alternative growth paths. Some of the more than 200 exogenous variables necessary

to generate a solution from the macroeconomic model are especially important in determining the level of GDP, the demand distribution of GDP, and the level of employment required to produce the given level of GDP. Following are the most important assumptions underlying the low- and high-growth alternative scenarios. (See table 1.)

Fiscal policy. In the low-growth alternative, real defense purchases of goods and services are assumed to decline over the entire projection period to \$198 billion, an average annual rate of decline of 2.1 percent and approximately \$6 billion lower than defense purchases in the moderate-growth alternative. Because the Federal deficit continues to be a chronic presence in the low-growth alternative, any tendency to turn around the annual declines in spending in the 2000–2005 period, as was assumed in the moderate-growth scenario, is absent from the low-growth alternative.

In contrast, in the high-growth alternative, stronger economic growth and increasing Federal surpluses near the end of the projection period allow for a shorter period of decline in real defense spending and a somewhat more marked turnaround after 2000. Here, the assumption is that defense spending will also decline in real terms, at an average annual rate of 1.7 percent, resulting in real defense purchases of \$209 billion in 2005, about \$6 billion higher than the moderate-growth projections, but still about \$47 billion lower than in 1992.

In a like manner, nondefense purchases of goods and services in the low-growth scenario are assumed to grow less rapidly than in the moderate-growth case—0.7-percent growth each year, compared with 1.4 percent—in response to continuing high deficits and the need to gain some control over Federal spending. That there is any real growth at all for this category of Federal spending is related almost entirely to the fact that client populations for many Federal transfer programs are expected to grow more rapidly in response to the more difficult economic conditions anticipated by the low-growth scenario, thus leading to some expansion in administrative needs for these programs.

In the high-growth alternative, growing surpluses are expected to result in more interest in federally funded programs to deal with a broad range of issues, from improving educational resources to promoting environmental awareness and amelioration. In this scenario, real nondefense purchases of goods and services are assumed to grow at an annual rate of 1.8 percent each year.

The high- and low-growth scenarios encompass an \$18 billion range in real nondefense purchases for 2005—from \$122 billion to \$140 billion. In both projections, nondefense purchases

account for sharply lower shares of GDP in 2005—2 percent for the low-growth alternative and 1.9 percent for the high-growth—than the 2.2 percent posted in 1992.

Federal grants-in-aid to State and local governments are also expected to range fairly widely in the alternative projections for the year 2005, from a real level of \$174 billion in the low-growth to \$223 billion in the high-growth scenario.

The Federal corporate profits tax rate, the marginal Federal personal tax rate, and the combined employer-employee social insurance contribution rate are all assumed to be the same across the three alternatives. Thus, differences in Federal revenues noted among the scenarios are attributable only to differences in economic activity.

Monetary policy. As in the moderate-growth alternative, monetary policy levers in the other two alternatives are set in the macroeconomic model to accommodate reasonably noninflationary growth. The high-growth scenario encompasses a somewhat less restrictive monetary policy and the low-growth a somewhat more restrictive one, but in neither case are the differences great enough to account for significant shares of the differences in real economic growth or inflation.

Demographic assumptions. The high-growth alternative is based on a higher net immigration scenario prepared by the Bureau of the Census. Significantly higher projections of labor force participation rates¹³ in the high-growth alternative

Table 9. **Personal Income by type and disposition, 1979, 1989, 1992, and projected to 2005**

[Billions of current dollars]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Personal Income	\$2,033.1	\$4,380.3	\$5,144.9	\$12,174.4	\$14,434.6	\$15,730.6
Wages and salaries	1,255.5	2,586.4	2,973.1	7,646.4	8,722.0	9,570.7
Other labor income	124.3	251.9	322.7	762.8	855.9	931.8
Proprietors' income	181.8	347.3	414.3	882.6	1,045.2	1,214.3
Rental income	8.4	-13.5	-8.9	-35.1	90.9	210.2
Personal dividend income	50.4	126.5	140.4	278.9	306.6	377.6
Personal interest income	223.2	668.2	694.3	1,676.9	1,571.2	1,350.5
Net transfer payments	264.8	609.3	609.1	1,520.1	1,842.8	2,075.5
Disposable personal income	1,753.0	3,787.0	4,500.2	10,512.1	12,558.1	13,764.3
Personal consumption	1,583.7	3,523.1	4,139.9	9,939.0	11,830.9	12,948.2
Interest and transfer payments	45.9	111.9	121.5	204.1	212.3	224.2
Personal savings	123.3	152.1	238.7	368.9	514.9	591.9
Disposable personal income (billions of 1987 dollars)	2,710.0	3,465.0	3,632.5	4,520.9	4,879.8	5,467.7
Per capita disposable personal income (1987 dollars)	12,023	13,922	14,219	16,032	17,304	18,598
Per capita disposable personal income (current dollars)	9,020	17,600	17,615	35,000	39,000	44,800
Personal savings rate (percent)	7.1	4.0	5.3	3.5	4.1	4.3
Average annual rates of change						
	1979-89	1989-92	1979-92	1992-2005		
				Low	Moderate	High
Personal Income	8.0	5.5	7.4	6.9	8.3	9.0
Wages and salaries	7.5	4.8	6.9	7.5	8.6	9.4
Other labor income	7.3	8.6	7.6	6.9	7.8	8.5
Proprietors' income	6.7	6.1	6.5	6.0	7.4	8.6
Personal dividend income	9.6	3.5	8.2	5.4	6.2	7.9
Personal interest income	11.6	1.3	9.1	7.0	6.5	5.3
Net transfer payments	8.7	.0	6.6	7.3	8.9	9.9
Disposable personal income	8.0	5.9	7.5	6.7	8.2	9.0
Personal consumption	8.3	5.5	7.7	7.0	8.4	9.2
Interest and transfer payments	9.3	32.8	7.8	4.1	4.4	4.8
Personal savings	2.1	16.2	5.2	3.4	6.1	7.2
Disposable personal income (billions of 1987 dollars)	2.5	1.6	2.3	1.7	2.3	3.2
Per capita disposable personal income (1987 dollars)	1.5	.7	1.3	.9	1.5	2.1
Per capita disposable personal income (current dollars)	6.9	.0	5.3	5.3	6.3	7.4

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

lead to a civilian labor force of 156.5 million in 2005, 6 million higher than in the moderate-growth projection. In the low-growth alternative, lower labor force participation rates, combined with the Census Bureau's midlevel population scenario, are projected to result in a civilian labor force of 147.3 million persons, 2 million lower than the moderate-growth assumption of 149.5 million. The low-growth labor force is much closer to that of the moderate-growth alternative than is the high-growth labor force because both the moderate- and low-growth scenarios are based on the same population projection from the Bureau of the Census, namely, the middle-growth set.

Household formation rates, based as well on the Census Bureau's population projections, are identical in the moderate- and low-growth alternatives—112 million in 2005—but are higher in the high-growth scenario, rising to 117 million in 2005 in response to the higher population projections assumed.

As noted earlier, projected unemployment rates range from 4 percent in the high-growth alternative—indicative of a healthy, dynamic economy—to 7 percent in the low-growth version—symptomatic of a more depressed and stagnant economic environment.

The assumed ranges for the civilian labor force and the civilian unemployment rate are the primary factors affecting the projected spread in GDP growth rates in the three BLS alternatives. Long-term demographic factors also have important impacts on the distribution of demand.

Other factors. As with the moderate-growth projection, two cyclical troughs have been imposed on each of the alternatives, falling in the mid-1990's and the early 2000's. In the low-growth scenario, the downturns are deep and relatively prolonged—true recessions. The high-growth alternative, in contrast, is characterized more by slowdowns in growth at these two points in time, rather than by real declines in GDP and employment. In both cases, the year 2005 should be considered to be on the long-term growth path—neither a downturn year nor the year following the trough of a recession.

The low-growth scenario was designed primarily to provide a look at what the projection period would be like if poorer economic conditions were to persist. Critical assumptions in this scenario include supply factors constraining the economy's ability to expand and below-trend growth in population, the labor force, capital stocks, and productivity. Further, in this alternative, inflation steadily regains momentum in the 1990's and remains above trend for almost all of the projection period. Combined with a presupposition of deeper recessions and relatively sluggish recoveries, this leads

to a real GDP approximately \$607 billion lower in 2005 in the low-growth projection than in the moderate-growth projection, with employment lower by more than 4 million.

The high-growth projection, by contrast, assumes somewhat stronger growth in labor force participation, a major shift toward the production of investment goods, and a moderate rate of inflation. The result is a GDP of \$7.3 trillion in 2005, \$687 billion higher than in the moderate projection. This sustained growth leads to an unemployment rate of 4.0 percent in 2005, adding more than 9 million employed persons to the labor force that year than the moderate-growth projection assumes.

The two alternatives to the moderate-growth projection encompass a \$1.3 trillion spread in real GDP in 2005 (a range of potential annual average growth from 1.5 percent to 3.0 percent), a 9.2 million person difference in the civilian labor force, and a 13 million person divergence in the numbers of employed.

Low-growth alternative

In the low-growth projection, the major factors affecting GDP growth include slower labor force growth (1.1 percent a year, attaining a level about 2.2 million fewer persons in 2005 than is projected in the moderate-growth projection) and slower growth in capital per employee (0.7 percent per year, well below the expected annual rate of 1 percent in the moderate-growth projection), as a result of investment slowdowns. Another significant factor lending itself to the sluggish economic performance in the low-growth projection is the inflation rate. Assumed to increase at an average annual rate of 4.7 percent between 1992 and 2005 in the moderate-growth alternative, the implicit GDP deflator grows at a much higher rate of 6.2 percent each year in the low-growth scenario, reminiscent of the high-inflation/low-growth phenomenon of the 1970's.

Over the projection period, real consumer spending is expected to grow at an average annual rate of 1.6 percent in the low-growth alternative, compared with 2.2 percent in the moderate-growth projection. Higher interest rates and lower income growth result in particularly adverse effects on durable goods spending, with autos and other durables leading the slowdowns. Purchases of motor vehicles and parts are projected to grow in real terms at a rate of 1.6 percent a year over the projection period, almost 50 percent less than in the moderate-growth scenario, and spending on other durable goods is projected to increase at a 1.9-percent annual pace, slower than the 3.1-percent annual rise in the moderate-growth alternative, due to expected cutbacks in purchases of furniture and consumer electronics. Slowdowns in

Table 10. Labor supply and factors affecting productivity, 1979, 1989, 1992, and projected to 2005

[Millions of persons]

Category	1979	1989	1992	2005		
				Low	Moderate	High
Total population	225.4	248.9	255.5	282.0	282.0	294.0
Civilian labor force	105.0	123.9	127.0	147.3	150.5	156.5
Civilian employment	98.8	117.3	117.6	136.9	142.2	150.2
Unemployed	6.1	6.5	9.4	10.4	8.3	6.3
Civilian unemployment rate (percent)	5.8	5.3	7.4	7.0	5.5	4.0
Gross domestic product per employee (1987 dollars)	38,420	41,240	42,401	44,100	47,040	48,820
Capital per employee (1987 dollars)	35,270	39,400	41,390	42,870	43,620	49,130
Average annual rates of change						
				1992-2005		
	1979-89	1989-92	1979-92	Low	Moderate	High
Total population	1.0	0.9	1.0	0.8	0.8	1.1
Civilian labor force	1.7	.8	1.5	1.1	1.3	1.6
Civilian employment	1.7	.1	1.3	1.2	1.5	1.9
Unemployed .....	.6	13.1	3.4	.8	-1.0	-3.0
Gross domestic product per employee (1987 dollars) .....	.7	.9	.8	.3	.8	1.1
Capital per employee (1987 dollars)	1.1	1.7	1.2	.7	1.0	1.3

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

these categories are offset slightly by less than average slowdowns in clothing purchases, one of the "subsistence" categories of consumer spending, typically the last expenditure items to be cut during slow economic periods.

In the low-growth alternative, purchases of food and beverages are projected to grow at an annual average rate of 0.6 percent over the 1992-2005 period, slower than in the moderate-growth scenario. This is almost as deep a slowdown as is projected for durable goods purchases in the low-growth alternative.

Expenditures on housing and electricity are projected to grow 1.1 percent and 1.6 percent, respectively, over the projection period, primarily in response to the overall climate of slower economic growth. By way of comparison, these two categories of consumer services grew at rates of 1.7 percent and 1.8 percent between 1979 and 1992, a period that saw much stronger growth in demand for housing and related services.

Finally, consumer services are projected to increase less rapidly in the low-growth alternative than in the moderate-growth scenario, but they still will account for almost 58 percent of overall consumption by 2005, even higher than the share of services in both of the other alternatives. This represents a continuation of the trend exhibited over the entire post-World War II period.

Despite the sharp reduction in overall growth

in the low-growth scenario, consumer spending is expected to maintain an even higher share of GDP than it had in the 1980's, increasing from 67.0 percent of GDP in 1992 to 68.1 percent by 2005, thus continuing to exacerbate the problem of low consumer savings and its ultimate effect on investment and productivity growth. Increases in share are projected for expenditures on housing, energy, food, and other nondurable items.

The less favorable economic conditions in the low-growth projection slow investment spending relative to the moderate-growth projection, but still leave overall investment growth at 1.8 percent per year between 1992 and 2005, a bit higher than the 1979-89 peak-to-peak rate of 1.6-percent annual growth. Buildings and other nonresidential construction are projected to grow at about the same rate as they did over the historical period, as lower rates of growth extend the time necessary to work off the glut of office buildings constructed in the 1980's.

Expenditures on producers' durable equipment are expected to increase at a rate of 2.7 percent annually in the low-growth alternative, leading to a projected rise in capital per employee of only 0.7 percent a year from 1992 to 2005. Residential construction is also projected to slow relative to its pace in the moderate-growth projection, but the category still accounts for a slightly larger share of gross investment in the low-growth (23.3 percent)

than in the moderate-growth (21 percent) scenario, as the other categories of investment are harder hit by slower economic growth.

In the area of foreign trade, a higher valued dollar in the low- than in the moderate-growth alternative is expected to disrupt the growth in exports that began to materialize in the late 1980's. Although all end-use categories of exports are projected to grow slightly less rapidly than in the moderate-growth scenario, foods, feeds, and beverages, industrial supplies and materials, and services are expected to increase their share of overall exports of goods and services somewhat relative to their share in the moderate-growth scenario, as spending on capital goods, automobiles and parts, and consumer goods slows more rapidly than overall export growth. This is a typical response to slower growth in foreign economies, caused at least in part by the economic slowdowns in the United States that are examined in the low-growth alternative.

Imports, by contrast, are only slightly lower in the low-growth than in the moderate-growth scenario, a result of the impact of cheaper prices due to exchange rate problems. Imports of consumer goods are actually projected to grow more rapidly than in the moderate-growth alternative, as high-demand consumer electronics items, supplied primarily from foreign sources, become cheaper with the rising value of the dollar. The result is a real net deficit in foreign trade of \$10 billion in 2005 on the goods and services account.

Slower economic growth in the low-growth alternative leads to much slower growth in Federal revenues—7.2 percent each year, on average, relative to the projected 8.4-percent growth each year in the moderate-growth scenario. Even with assumed offsets from slowdowns in Federal expenditure growth, the Federal budget deficit stays high over the entire projection period, reaching \$387 billion in nominal terms in 2005; at that level, the deficit accounts for only 2.5 percent of nominal GDP in the low-growth projection in 2005, still down appreciably from the 5 percent of nominal GDP accounted for by the deficit in 1992.

All of these factors, resulting from a continuation of many of the economic problems of the 1980's, lead to projected employment growth of 1.2 percent annually in the low-growth scenario, an increase of 19 million employed persons between 1992 and 2005, or 1.5 million per year, on average. This figure compares with an average projected growth of 1.8 million employed persons per year in the moderate-growth projection.

High-growth alternative

In the high-growth scenario, output growth is spurred by higher population estimates and higher labor force participation rates, resulting

in labor force growth of 1.6 percent annually between 1992 and 2005. A lower inflation rate in a dynamic, strengthened economy, stemming from both lower energy price increases and a better ability to respond to growing demand pressures, results in a much higher accumulation of capital per employee, through a 1.2-percent annual growth rate over the projection period, compared with 1-percent average growth in the moderate projection. Consequently, labor productivity is expected to grow by 1.1 percent a year, a pronounced pickup, compared with its 0.8-percent growth rate between 1979 and 1992.

Personal consumption spending is projected to grow at a more rapid rate—2.7 percent annually over the projection period—in the high-growth alternative than in the moderate-growth scenario, but the tendency to high consumption assumed in the low-growth alternative is not present in the high-growth scenario. Consumer spending accounts for a 64.1-percent share of GDP in 2005—an even lower share than in the moderate-growth projection—as income growth keeps pace with the consumer's desire to spend extra income. Overall, consumption is higher in all categories in the high-growth alternative, but the greatest impact of high income growth is in durable goods, primarily autos and housing. Spending on motor vehicles and parts is expected to increase at an average annual rate of 2.9 percent over the projection period and to increase its share of total consumption spending to 5.7 percent. As in the moderate-growth alternative, in the high-growth scenario a better-off population of those in their prime earning years (45 to 54 years of age) is projected to buy more expensive automobiles, thus sharply offsetting any slowdowns in unit sales due to slower growth in new entrants into the driving-age population.

Fuel oil, gasoline, and natural gas, food and other nondurables, and housing are all expected to account for slightly smaller shares of overall consumption in the high-growth than in the moderate-growth alternative, as higher income growth tends to go more toward luxury items than to basic subsistence items. Growth in consumer services is projected to be 0.5 percentage point higher in the high-growth than in the moderate-growth alternative, as past trends are continued into the future.

Projected investment growth in the high-growth alternative is 5.0 percent a year over the projection period, more than three times faster than during the 1979–89 period. However, a larger portion of this growth is focused on spending on equipment, whereas much of the growth during the former period was centered on investments in office buildings and other structures with a smaller potential impact on labor productivity. The strong growth in expenditures on equipment—6.0 percent each year, more than twice that projected in

the low-growth scenario—together with its impact on the productive capital stock, is attributable primarily to the lower inflation, lack of any Federal deficit, and lower interest rates that prevail in the high-growth scenario.

These same factors also have a significant impact on exchange rates and the consequent growth in demand for exports. Overall, exports of goods and services are projected to increase at an average annual rate of 6.2 percent in the high-growth scenario, 1.2 percentage points higher than in the moderate-growth alternative. Exceeding this average rate of growth are exports of foods, feeds, and beverages and exports of industrial supplies and materials, as major new markets for these traditionally favorite exports are expected to be opened in Eastern Europe, China, and other areas of the world.

Although domestic demand for imported goods continues at a brisk pace, export growth is still expected to outpace import growth over the projection period.

The lower value of the dollar results in sharply higher real export growth in the high-growth sce-

nario. Stronger than average growth is projected for exports of capital goods and industrial supplies and materials. Imports are expected to continue to grow strongly, buoyed by strong income growth and demand for many products not manufactured in the United States, but this growth is tempered, to a certain extent, by lower exchange rates and the consequent higher prices for imported goods.

The net effect of the high-growth alternative is a projected GDP growth of 3.0 percent per year from 1992 to 1995, exceeding that of the prior peak-to-peak period, and average annual increases in employed persons of 2.5 million per year.

IN SUM, BLS PROJECTIONS FOR THE 1992–2005 PERIOD encompass a \$1.3 trillion spread in real GDP, a 13 million person spread in employment, and some important differences in the potential distribution of GDP. The Bureau presents such a wide range of alternative projections to acquaint the public with the full potential of economic behavior over the coming 13-year period and to delineate those areas most subject to uncertainty. □

Footnotes

¹ Previously published projections to the year 2005 appeared as a series of five articles, entitled "Outlook: 1990–2005," in the *Monthly Labor Review*, November 1991.

² The current aggregate economic projections have been prepared using the Data Resources, Inc., Comprehensive Model of the U.S. Economy, a relatively small-scale model designed to generate long-term macroeconomic policy simulations. (See Data Resources, Inc., *Quarterly Model of the U.S. Economy, Version US89A: Model Documentation, Theory, Properties, and Coverage*, March 1990; and M. Lasky, Chris Probyn, and Joyce Yanchar, "Introducing the 92A Version of the DRI/McGraw-Hill Model of the U.S. Economy," *U.S. Review*, August 1992, pp. 34–40.)

³ For a detailed description of the analytical methodology used, see Norman C. Saunders, "Sensitivity of BLS economic projections to exogenous variables," *Monthly Labor Review*, December 1986, pp. 23–29. A like analysis has been carried out for the Data Resources, Inc., model, but the results have not been published.

⁴ See *Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1993 to 2050, Current Population Reports, Series P-25, No. 1104* (Bureau of the Census, 1993).

⁵ See the article by Howard N. Fullerton, Jr., on pages 31–40 in this issue.

⁶ All references to Federal budget deficits in this article refer to the National Income and Product Accounts concept of the deficit, formulated on a calendar-year basis.

⁷ As noted in Ronald E. Kutscher's article on pages 3–10 in this issue, spending on health care is one of the major areas of uncertainty in the coming decade. While major revisions in our health care system are being contemplated, no one is yet sure what form those changes will take or to what extent the changes will be effective in curtailing the spiraling costs of providing health care.

⁸ For a more detailed description of some of the problems associated with fixed-weight deflators and some possible alternatives, see the following two articles in the April 1992 issue of *Survey of Current Business*: Allan H. Young, "Alternative Measures of Change in Real Output and Prices," pp. 32–48; and Jack E. Triplett, "Economic Theory and BEA's Alternative Quantity and Price Indexes," pp. 49–52.

⁹ For a more complete discussion of the impacts of future defense spending cuts on employment by industry and occupation, see the following two *Monthly Labor Review* articles by Norman C. Saunders: "Defense spending in the 1990's—the effect of deeper cuts," October 1990, pp. 3–15; and "Employment effects of the rise and fall in defense spending," April 1993, pp. 3–10.

¹⁰ For two interesting discussions of the relationship between investment in the Nation's infrastructure and productivity growth, see David Alan Aschauer, "Is Public Expenditure Productive?" *Journal of Monetary Economics*, Vol. 23, No. 2, March 1989, pp. 177–200; and Alicia H. Munnell, "Why Has Productivity Growth Declined? Productivity and Public Investment," *New England Economic Review*, January/February 1990, pp. 3–22.

¹¹ Labor productivity, in these projections, is represented by real GDP per employee. Based on historical relationships between overall GDP per employee and private business productivity, the Office of Productivity and Technology of the Bureau of Labor Statistics has estimated that the 1.0-percent growth in GDP per employee between 1990 and 2005 adjusts to a 1.3- to 1.4-percent rate of growth in output per hour in the private business sector, the more traditional measure of labor productivity.

¹² For a fuller description of future uncertainties and how they might affect all aspects of the BLS projections, see Kutscher, pp. 3–10.

¹³ See Fullerton, pp. 31–40.