Employment outlook: 1994–2005

Summary of BLS projections to 2005

The labor force of blacks, Hispanics, and Asian and other groups will expand rapidly; the share of administrative support occupations is expected to decline, as are jobs in the good-producing sector; the services industry will account for 12 million of the increase in jobs by 2005

Ronald E. Kutscher

For several decades, the Bureau of Labor Statistics has prepared projections of the U.S. economy. Since 1983, the projections have been completed on a regular 2-year cycle. This issue of the *Monthly Labor Review* presents the latest projections covering the labor force, the economic framework for subsequent stages of the projections, and employment by industry and occupation. The projections use three alternative scenarios (high, low, and moderate) for the 1994–2005 period. The scenarios highlight some of the uncertainties concerning the future and a possible range of some of the more critical factors, particularly factors which may have a significant impact on the labor market. This article summarizes the moderate projection results. The details of all of the alternatives are discussed in each of the accompanying articles.

The articles compare the 1994–2005 projections with the 11-year 1983–94 historical period. However, projections of the labor force use the 1982–93 period for purposes of comparison, because changes in the questionnaire of the Current Population Survey (from which labor force data are derived) in January 1994 affected comparability between 1994 and earlier years. The labor force projections, however, use 1994 as the base year.

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The labor force

Since the very large baby-boom group completed their entry into the labor force in the late 1970's and early 1980's, the labor force has continued to grow, but at a markedly slower rate. The 1994–2005 labor force is projected to continue that pattern. The change over this period is expected to be slightly more than 12 percent, or a growth rate of 1.1 percent a year. (See table 1.) This change is compared with the 16-percent expansion, or a 1.4-percent growth rate per year over the 1982–93 period.

Two primary factors are important to labor force changes—population and participation in the labor force. Most of the change in the labor force growth results from population growth. However, the rapid entry of women into the labor force in the past indicates that labor force participation has also been an important contributing factor to labor force growth. Such changes are expected to be much less of a factor in the future because the rate of increase in labor force participation is expected to slow for women and to decline somewhat faster for men. Participation is projected to increase for both men and women aged 55 and older. That increase results from a larger proportion of this age group being in the 55 to 64 age group with their higher participation. The fol-

lowing tabulation shows average annual rates of change of men and women in the labor force over the 1982–93 and 1994–2005 periods:

Change in—	*Total, 16 years and older*	*Men*	*Women*
Labor force participation:			
1982–93	0.31	–0.17	0.87
1994–2005	.07	–.26	.45
Population:			
1982–93	1.06	1.17	.97
1994–2005	.98	1.01	.96
Labor force:			
1982–93	1.37	.99	1.85
1994–2005	1.06	.75	1.41

In the past, several other changes in the composition of the labor force have marked labor force growth. One change has been the relatively rapid growth of blacks, Hispanics, and Asian and others[1] in the labor force. Over the 1982–93 period, the rate of labor force growth for these groups increased at rates consistently higher than those for whites; the difference is very pronounced for Hispanics and Asian and others. Over the projected period, 1994–2005, the rate of labor force growth is projected to be faster for each of these groups than for whites; thus an increase in their share of the labor force. Still, the rate of growth is expected to be slower for each of these demographic groups over the 1994–2005 period than over the 1982–93 period, reflecting a general slowing of labor force growth as new entrants are drawn from smaller birth cohorts.

Another widely discussed phenomenon of the past has been women's very rapid entry rate into the labor force. While the projected 1994–2005 labor force growth continues at a notably faster rate for women than for men, it is also much slower than the increases for women in earlier periods. This is true for a number of women's age groups, but is most noticeable for women in the 20–39 years age group. The projected slowdown reflects an expected continuation of the very noticeable slowing in the rate of increase of women's labor force participation, particularly younger women, since 1989. In part, the slower growth may reflect that their participation rate had already reached relatively high levels, and may also reflect other factors such as no longer postponing childbirth, longer school attendance, or job availability factors.

The rapid rate of increase of women and minority groups into the labor force has been widely discussed. But, another important change in labor force activity has continued for a very long period and has received much less attention: the long-term decline in labor force participation rates of virtually all age groups of men. The following tabulation shows the percentage point change in the labor force participation rates of men by age group over the 1973–93 period:

Age group	*1973–83*	*1983–93*
25 to 29	–1.0	–0.6
30 to 34	–2.0	–1.1
35 to 39	–1.1	–1.8
40 to 44	– .9	–1.7
45 to 49	–1.0	–1.6
50 to 54	–2.6	–1.0

In the 1973–83 period, the decline was most pronounced among the older men, as they moved toward earlier retirement. In the 1983–93 period, the decline in men's labor force participation was no longer primarily among older groups.

Reasons behind this trend have not been fully explored, but a contributing factor includes the increase in the number of men who report in the household survey that they are unable to work. Also, the structural changes in the U.S. economy have clearly left many men ill-prepared for the direction job growth has taken during the last two decades, particularly men with the least education or training who worked in manufacturing or mining industries. Consequently, many men displaced by structural adjustments in the economy left the labor force permanently if they had in-

Table 1. Civilian labor force by sex, age, race, and Hispanic origin, 1982, 1993, and 1994, and moderate growth projection to 2005

[Numbers in thousands]

Group	Level				Change		Percent change	
	1982	1993	1994	2005, moderate scenario	1982–93	1994–2005	1982–93	1994–2005
Total, 16 years and older	110,204	126,040	131,056	147,106	17,836	16,050	16.2	12.2
Men	62,450	69,633	70,817	76,842	7,183	6,025	11.5	8.5
Women	47,755	58,407	60,239	70,263	10,652	10,024	22.3	16.6
White	96,143	109,359	111,082	122,867	13,216	11,785	13.7	10.6
Black	11,331	13,943	14,502	16,619	2,612	2,116	23.1	14.6
Asian and other	2,729	4,742	5,474	7,632	2,013	2,158	73.8	39.4
Hispanic	6,734	10,377	11,975	16,330	3,643	4,355	54.1	36.4

NOTE: Data for 1994 are not directly comparable with data for 1993 and 1982 because of the redesign of the Current Population Survey questionnaire and collection methodology and the introduction in January 1994 of 1990 census-based population controls, adjusted for the estimated undercount.

The "Asian and other" group includes (1) Asians and Pacific Islanders and (2) American Indians and Alaska Natives. The historic data are derived by subtracting "black" from the "black and other" group; projections are made directly, not by subtraction.

Table 2. **Gross domestic product, 1983–94, and projected 1994–2005**

Population	Average	
	1983–94	1994–2005, moderate scenario
Population, aged 16 and older	1.0	1.0
Civilian labor force	1.5	1.1
Nonfarm labor productivity	1.2	1.4
Civilian employment, household basis	1.8	1.1
Nonfarm wage and salary jobs	2.1	1.3
Unemployment	-2.6	.4
Capital per employee, 1987 dollars	.6	1.7
GDP per employee, 1987 dollars	1.0	1.2
GDP, 1987 dollars	2.9	2.3

SOURCE: Data for 1983–94 are from the Bureau of the Census, Bureau of Economic Analysis, and the Bureau of Labor Statistics; projected data (1994–2005) are from the Bureau of Labor Statistics.

sufficient education or training for the available jobs. Further, the latest projections show a continuation of the compositional changes in employment by industry and occupation, which implies continued difficulty for those with the least training or education to find a job.[2]

Major economic trends

The U.S. economy's real gross domestic product (GDP) is projected to increase at 2.3 percent per year over the 1994–2005 period, according to the moderate scenario. This is slower than the 2.9-percent annual growth rate of the previous 11-year period, 1983–94.[3] (See table 2.) Several factors contribute to this slower growth. Over the 1983–94 period, economic growth was boosted by a lowering of the unemployment rate, from 9.6 percent in 1983 to 6.1 in 1994. In the projected period, the unemployment rate is projected to decline to only 5.7 percent in 2005, providing significantly less impetus to the overall economic growth rate. In addition, the labor force is expected to increase 1.1 percent per year in the projected period, compared with 1.4 percent per year over the 1983–94 period. The only factor, important to the overall economic growth rate, projected to be somewhat higher in the projected period (1.4 percent per year) than in the past (1.2 percent), is labor productivity.

When the composition of real GDP is examined, several changes can be noted. Over the 1983–94 period, the share of GDP was relatively constant for personal consumption expenditures, Federal nondefense, and State and local government purchases of goods and services. (See table 3.) Changes were more pronounced for the other demand components of GDP: investment, exports, and imports all expanded significantly, while Federal defense declined appreciably. Over the projected period, the components of GDP with relatively constant shares are personal consumption expenditures and gross private domestic investment; the components of demand projected to increase their share are exports and imports, and the components projected to decrease modestly are Federal defense and nondefense and State and local government.

The consumption and investment components of demand GDP assumes that factors such as taxes and the savings rate will hold consumption and investment relatively constant. Foreign trade is expected to continue to play an increasing role in the U.S. economy. The share of U.S. produced goods and services exported will expand from slightly more than 7 percent in 1983 to nearly 18 percent in 2005, under these projections. An equally dramatic increase has occurred in the share of GDP devoted to imports, and the increase is projected to continue. Government is projected to account for a somewhat smaller share of GDP, not only for nondefense pur-

Table 3. **Gross domestic product by major demand category, 1983, 1994, and projected to 2005**

[Billions of 1987 dollars]

Category	1983	1994	Projected 2005, moderate scenario	Average annual rate of growth	
				1983–94	1994–2005, moderate scenario
Gross domestic product	3,906.6	5,343.1	6,829.7	2.9	2.3
Share of gross domestic product (in percent):					
Personal consumption expenditures	67.1	67.0	66.7	2.9	2.2
Gross private domestic investment	15.3	17.8	18.0	4.3	2.4
Exports	7.3	12.3	17.9	7.9	5.8
Imports	8.8	14.4	18.1	7.6	4.4
National defense purchases	6.0	4.2	3.2	-.3	-.4
Federal nondefense purchases	2.2	2.1	1.7	2.3	.6
State and local purchases	10.8	11.0	10.6	3.0	1.9

SOURCE: Historical data, Bureau of Economic Analysis, U.S. Department of Commerce; projected data, Bureau of Labor Statistics.

poses at the Federal and State and local levels, but also the share devoted to defense expenditures is projected to continue to decline.

Employment by industry

Employment shows a slower growth rate per year over the 1994–2005 period than over the 1983–94 period. The slowdown reflects the factors noted earlier: slower labor force growth and less unemployment reduction in the projected period than in the historical period. However, employment is still projected to expand by 17.7 million by 2005, of which 16.8 million are nonfarm wage and salary jobs. (See table 4.)

In the past, the sectoral composition of employment has undergone considerable shifts. The 1994–2005 projections continue many of those shifts as well as other shifts. For

Table 4. Employment by major industry division, 1983, 1994, and projected to 2005

[Numbers in thousands]

Industry	Employment level			Change	
	1983	1994	2005, moderate scenario	1983–94	1994–2005, moderate scenario
Nonfarm wage and salary[1]	89,734	113,340	130,185	23,605	16,846
Goods producing	23,328	23,914	22,930	587	–985
Mining	952	601	439	–351	–162
Construction	3,946	5,010	5,500	1,064	490
Manufacturing	18,430	18,304	16,991	–126	–1,313
Service producing	66,407	89,425	107,256	23,019	17,803
Transportation, communications, utilities	4,958	6,006	6,431	1,048	425
Wholesale trade	5,283	6,140	6,559	857	419
Retail trade	15,587	20,438	23,094	4,850	2,657
Finance, insurance, and real estate	5,466	6,933	7,373	1,468	439
Services[1]	19,242	30,792	42,810	11,550	12,018
Government	15,870	19,117	20,990	3,247	1,873
Agriculture[2]	3,508	3,623	3,399	115	–224
Private household wage and salary	1,247	966	800	–281	–166
Nonagricultural self-employed and unpaid family workers[3]	7,914	9,085	10,324	1,171	1,239
Total[4]	102,404	127,014	144,708	24,610	17,694
	Percent distribution of wage and salary employment			**Annual rate of change**	
	1983	1994	2005, moderate scenario	1983–94	1994–2005, moderate scenario
Nonfarm wage and salary[1]	100.0	100.0	100.0	2.1	1.3
Goods producing	26.0	21.1	17.6	.2	–.4
Mining	1.1	.5	.3	–4.1	–2.8
Construction	4.4	4.4	4.2	2.2	.9
Manufacturing	20.5	16.1	13.1	–.1	–.7
Service producing	74.0	78.9	82.5	2.7	1.7
Transportation, communications, utilities	5.5	5.3	4.9	1.8	.6
Wholesale trade	5.9	5.4	5.0	1.4	.6
Retail trade	17.4	18.0	17.7	2.5	1.1
Finance, insurance, and real estate	6.1	6.1	5.7	2.2	.6
Services[1]	21.4	27.2	32.9	4.4	3.0
Government	17.7	16.9	16.1	1.7	.9
Agriculture[2]	—	—	—	.3	–.6
Private households	—	—	—	–2.3	–1.7
Nonagricultural self-employed and unpaid family workers[3]	—	—	—	1.3	1.2
Total[4]	—	—	—	2.0	1.2

[1] Excludes SIC 074,5,8 (agricultural services) and 99 (nonclassifiable establishments), and is therefore not directly comparable with data published in the Bureau of Labor Statistics *Employment and Earnings*.

[2] Excludes government wage and salary workers, and includes private sector SIC 08, 09 (forestry and fisheries).

[3] Excludes SIC 08, 09 (forestry and fisheries).

[4] Wage and salary data are from the BLS Current Employmnet Statistics (payroll) survey, which counts jobs, whereas self-employed, unpaid family worker, agricultural, and private household data are from the Current Population (household) Survey which counts workers.

Table 5. **Employment by major occupational group, 1983, 1994, and projected 2005, moderate scenario**

[Number of thousands]

Occupation	1983		1994		2005, moderate scenario		Employment change			
							1983–94		1994–2005	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total, all occupations	102,404	100.0	127,014	100.0	144,708	100.0	24,610	24.0	17,694	13.9
Executive, administrative, and managerial occupations	9,591	9.4	12,903	10.2	15,071	10.4	3,312	34.5	2,168	16.8
Professional specialty occupations	12,639	12.3	17,314	13.6	22,387	15.5	4,675	37.0	5,073	29.3
Technicians and related support occupations	3,409	3.3	4,439	3.5	5,316	3.7	1,030	30.2	876	19.7
Marketing and sales occupations	10,497	10.3	13,990	11.0	16,502	11.4	3,493	33.3	2,512	18.0
Administrative support occupations, including clerical	18,874	18.4	23,178	18.2	24,172	16.7	4,304	22.8	994	4.3
Service occupations	15,577	15.2	20,239	15.9	24,832	17.2	4,662	29.9	4,593	22.7
Agriculture, forestry, fishing, and related occupations	3,712	3.6	3,762	3.0	3,650	2.5	50	1.3	–112	–3.0
Precision production, craft, and repair occupations	12,731	12.4	14,047	11.1	14,880	10.3	1,316	10.3	833	5.9
Operators, fabricators, and laborers	15,374	15.0	17,142	13.5	17,898	12.4	1,768	11.5	757	4.4

decades, employment in the goods-producing portion of the U.S. economy—while increasing in absolute terms—has been declining in relative terms. From 1983 to 1994, the goods-producing sector, in absolute terms, added just 0.6 million jobs, as increases in construction offset modest employment declines in manufacturing and mining. However, reviewing only 1983 and 1994 gives a somewhat false picture, because the long-run trend in manufacturing has been for more pronounced employment declines, with cyclical ups and downs, after peaking in 1979.

In the 1994–2005 projections, the goods-producing sector's share of nonfarm wage and salary jobs declines in absolute as well as in relative terms. The 0.5 million growth projected for construction jobs is not enough to offset a modest employment decline in mining, and a 1.3 million decline projected in manufacturing jobs—thus also a loss in share. This decline in manufacturing jobs is particularly concentrated in durable goods manufacturing. Significant employment declines are projected for fabricated metal, industrial machinery and equipment, electronic and other electrical equipment, and transportation equipment. The declines result from a projected rate of productivity growth that more than offsets projected gains in real output.

A somewhat different or contrasting picture emerges in the service-producing sector. Over the 1983–94 period, all major service-producing sectors gained employment in absolute terms. However, the picture was somewhat mixed in relative terms. Transportation, communications and utilities, wholesale trade, and government lost employment share in the historical period. Retail trade gained share, while the services industry group gained considerably. In the 1994–2005 projections, all service-producing sectors are expected to increase in absolute terms, but only the service industry division is projected to increase its share of employment. Thus, the services industry (primarily the medical, personal, professional, and business services) is extremely important in the job picture of the future. This broad grouping of services industries accounts for nearly 12.0 million of the job growth projected over the 1994–2005 period. Individual industries important to job growth in these sectors are business services, such as personnel supply and computer and data processing services. In the health services sector, physician offices , nursing and personal care facilities, and home health services are important to the economy's job growth.

Employment by occupation

A review of the patterns of occupational change over the 1983–94 and projected change over the 1994–2005 periods reveals several noteworthy developments. Over the historical period, significantly faster growth and a resulting increase in the share of employment is noted for the executive, administrative, and managerial occupations, professional specialty occupations, marketing and sales occupations, and service occupations. (See table 5.) In contrast, several occupational categories increased very slowly and, as a consequence, their share of employment declined. Included were agriculture, forestry, fishing and related occupations; precision production and craft occupations; and operators, fabricators, and laborers occupations.

Two groups—technicians and related support occupations and the administrative support occupations, including clerical—increased at a rate about equal to that of the overall economy; as a consequence, their share of employment increased only modestly. An important element of the composition of changes by major occupations over the historical

Fiscal uncertainties

As the Bureau of Labor Statistics was preparing this set of economic and employment projections, the uncertainties were increasing regarding the level and makeup of Federal spending and revenue-gathering programs. One topic engendering considerable debate is the intent to balance the Federal budget by the early years of the coming decade. Clearly, many Federal spending programs will be cut, the extent of which is now being discussed. Federal employment levels very likely will continue to decline, and new programs, if any, instituted in the future will be subject to greater scrutiny at the time of their authorization and over the course of their life. In addition to broad proposals for cutting back on Federal regulation, Federal spending programs, and Federal subsidy programs, there is a growing sentiment among many lawmakers that a tax cut is desirable.

It is probably safe to say that the results of this session of the Congress will probably not be the same as those assumed in the preparation of these projections to 2005. We did not attempt to incorporate a specific tax or expenditure proposal of the Administration or the Congress into these latest projections. Instead, we prepared projections based on a broad range of assumptions, which are incorporated into three alternatives:

The *low-growth* scenario embodies continued growth on Federal health care and welfare programs, accompanied by sluggish growth in tax revenues, as the economy grows more slowly. This scenario results in an increasing Federal deficit, reaching 2.6 percent of gross domestic product (GDP) by 2005, up slightly from the 2.3-percent share of GDP the deficit accounted for in 1994.

The *moderate-growth* scenario embodies assumptions of slower growth in health care spending and transfer payments, as well as higher tax revenues due to generally more robust economic growth, resulting in a Federal deficit of $105 billion in 2005. This accounts, however, for only 0.8 percent of GDP, a significant reduction in the drag the deficit induces on the economy.

The *high-growth* scenario assumes a much stronger economic growth and results in the Federal budget reaching a balance a few years after 2000, with a slight budget surplus by 2005.

We believe that the projections presented in this issue of the *Monthly Labor Review* offer a broad band which will cover the outcome of the debate in the Congress, particularly regarding the impact of the outcome on labor market trends of the future.

period was the increase of occupations requiring post-secondary education or training, except for service occupations. Further, occupations requiring the least education and/or training had significant declines in their shares of overall employment.

One perspective on the projected 1994–2005 employment change by major occupational group is to review those groups whose changes mirror their 1983–94 pattern and those whose changes significantly depart from that pattern. When this is done, three groups show important changes from their most recent past. The group with the most significant change is administrative support occupations, including clerical; its employment shares increased very modestly over the 1983–94 period, but is expected to decline 1.7 percentage points over the 1994–2005 period, despite a projected slight increase in employment. This important change reflects the expected impact of office automation on many clerical occupations. A modest departure from past trend is projected for the executive, administrative and managerial occupations. While this group's employment share will increase in the 1994–2005 period, the increase is projected to be much smaller than that of 1983–94. This slowing reflects that an important segment of downsizing has been and is expected to continue to be directed at managerial occupations—offset in part by the shift in employment to services where smaller establishments require relatively more managers than do larger enterprises.

Another occupational group with a notable departure from its 1983–94 trend is the professional specialty group. This group gained employment share over the 1983–94 period, but its projected growth over the 1994–2005 period is twice as fast as that in the overall economy; as a result, its share of employment will increase more rapidly than in the past. The growth reflects, in particular, expected employment increases in the teaching occupations and professional health care occupations, a result of expected increases in school age and in older populations that demand these services.

Projected changes in the other major occupational groups are expected to more closely mirror their 1983–94 pattern. Only one group—agriculture, forestry, fishing, and related occupations—is projected to decline absolutely, attributable to a very modest decline among self-employed farmers. This affirms that the fastest growing occupational group (except for service occupations) are those requiring more education. Note also that the two occupational groups projected to have the largest absolute increases in employment are professional specialty and service occupations, groups at the opposite ends of the spectrum in terms of educational requirements and earnings. □

Footnotes

[1] The "Asian and other" group includes Asians, Pacific Islanders, Native Americans, and Alaskan Natives.

[2] This issue of the *Monthly Labor Review* is the initial publication of the 1994–2005 set of projections. Two related publications are planned: the fall *Occupational Outlook Quarterly* will summarize the projections; and *Employment Outlook: 1994–2005, Job Quality and Other Aspects of Projected Employment Growth* (Bulletin 2472). This bulletin explores the implications of the projections in terms of their educational requirements and earnings, groups educational requirements of current jobs into categories and examines the changes in those requirements over the 1994–2005 period, analyzes occupational employment to determine if growth is concentrated in occupations with high, low, or average earnings, and looks at the implication of employment growth, occupational change, earnings, and education on the job market for women, Hispanics, and other groups in the labor force. Other planned publications based on the projections are the *Occupational Outlook Handbook, 1996–97 Edition,* and *Occupational Pojections and Training Data.*

[3] As these projections were being prepared, the Bureau of Economic Analysis (BEA) announced plans to revise the methods used in developing constant-dollar GDP. These projections and the historical comparison are consistent with the BEA method where base-weighted price indexes are used rather than the chain-weighted indexes, which BEA is planning to develop. This also affects the measurement of labor productivity, because BLS uses constant-dollar GDP as the output measure in its measures of productivity change in the nonfarm economy and for major sectors. It is very likely a major element in what appears in these projections as an acceleration in projection of capital stock per employee is more than likely just part of the broad index-number problem. Norman Saunders explores this issue in the article beginning on page10, this issue.

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