## **Projections 2000**

# Labor force projections: 1986 to 2000

According to BLS projections, there will be 139 million persons in the 2000 labor force, representing a slowdown in the rate of growth after 1986; because of population or participation growth rates, blacks, Hispanics, and Asians and others are expected to increase their representation in the labor pool

HOWARD N FULLERTON, JR.

The labor force is projected by the Bureau of Labor Statistics to be 139 million persons in the year 2000. This represents growth of 21 million persons between 1986 to 2000 in the moderate of three alternative labor force projections; well below the 31 million added to the labor force between 1972 and 1986. The projected growth rate of 1.2 percent annually is less than the 2.2-percent annual rate over the 1972–86 period. (See table 1.)

Some trends in the labor force projections—the expected growth in the share of women in the labor force and the drop in the share of workers 55 and older—are the result of anticipated changes in participation rates. Women were only 39 percent of the labor force as recently as 1972; by 2000, they are projected to be 47 percent. The older population, which is growing as a share of the overall population, is projected to have lower labor force participation rates in 2000 and, as a consequence, a smaller share of the labor force. (See table 2.)

Other changes expected between 1986 and 2000 reflect underlying population changes. The proportion of youths (those 16 to 24 years) dropped from 23 percent of the labor force in 1972 to 20 percent in 1986 and is projected to fall further to 16 percent by 2000. The drop in the youth share of the labor force for the 1972–86 period reflects the end of the entry of the baby-boomers, while the projected drop reflects the lower numbers of births in the 1970's. Blacks, who were 10 percent of the labor force in 1972 and 11 percent in 1986, are projected to be 12 percent by 2000. The increased share of the labor force for blacks results from their population growth. Hispanics also are projected to increase their share of the labor force from 7 percent in 1986 to 10 percent by 2000, reflecting both population and participation growth. Asians and others are projected to increase their labor force share from 3 percent in 1986 to 4 percent in 2000, as the result of rapid population increase.<sup>1</sup>

This article presents BLS' first look at the 2000 labor force.<sup>2</sup> The alternative labor force projections are presented by age, sex, race and Hispanic origin. They are based on the Bureau of Census middle population projection and BLS projections of future trends in labor force participation.<sup>3</sup>

### **Components of labor force projections**

*Population*. There are two major factors that determine labor force growth: changes in population and in labor force participation rates. The process of making projections is not exact; to indicate the possible range of uncertainty, BLS (and the Census Bureau) prepares alternative projections.<sup>4</sup> Labor

Howard N Fullerton, Jr. is a demographic statistician in the Office of Economic Growth and Employment Projections, Bureau of Labor Statistics.

force participation rate projections were prepared for three racial groups and independently for Hispanics by sex and age.<sup>5</sup>

To prepare population projections, assumptions about the future paths of births, deaths, and net migration must be made. The Bureau of Census new population projections used in the labor force projections (and in the other projection articles in this issue) are based on the following assumptions about these major elements needed to project population change:

*Net migration*. The Bureau of Census assumption for the middle scenario is that both immigration and emigration will be high. The higher immigration assumption reflects the inclusion of undocumented aliens who are added in the middle population projections for the first time. The higher emigration assumption reflects the greater return migration of foreign-born persons to their native countries. The net migration (immigration less emigration) scenario reflects an assumption that new immigration legislation, which will not be fully implemented until the end of 1988, will reduce the level of undocumented migration, but not entirely end it.

*Fertility*. In the long run, fertility changes are always most important for projecting the population. Between now and 2000, the fertility assumptions would not affect the size of the 2000 population over the age of 16.

There is no Hispanic population projection available that is consistent with the current Bureau of the Census population projection. BLS has decided to use the high migration scenario from the Census Bureau's most recent Hispanic population projection.<sup>6</sup> The assumptions for this projection are for Hispanics to have an ultimate cohort fertility rate of 1.9 children per woman, an ultimate life expectancy at birth of 81.0 years, and yearly net migration of 361,000.<sup>7</sup> The latter number is assumed to include 212,000 undocumented immigrants, consistent with the initial years, but not with the later years of the current overall projection. Future direction and magnitude of immigration, both documented and undocumented, is uncertain at this time. As a consequence, projections of the Hispanic population, because they are affected so much by immigration, are subject to more uncertainty than the overall population.

		Level (Ir	thousands)			Change (li	n thousands)		Percer	it change
Group	1972	1979	1986	Projected, 2000	1972–79	1979–86	19862000	1972–79	1979–86	1986-2000
Total, 16 and over	87,037	104,960	117,837	138,775	17,923	12,877	20,938	20.6	12.3	17.8
Men, 16 and over	53,556 11,243 33,133 9,180	60,727 13,645 37,926 9,156	65,423 12,251 44,406 8,766	73,136 11,506 53,024 8,606	7,171 2,402 4,793 24	4,696 -1,394 6,480 -390	7,713 745 8,618 160	13.4 21.4 14.5 3	7.7 -10.2 17.1 -4.3	11.8 6.1 19.4 1.8
Women, 16 and over  16 to 24    25 to 54  55 and over	33,481 8,943 19,192 5,346	44,233 11,760 26,594 5,879	52,414 11,117 35,159 6,138	65,639 11,125 47,756 6,758	10,752 2,817 7,402 533	8,181 643 8,565 259	13,225 8 12,597 620	32.1 31.5 38.6 10.0	18.5 5.5 32.2 4.4	25.2 .1 35.8 10.1
White, 16 and over	77,275 8,748 —	91,922 10,665 2,373 5,215	101,801 12,684 3,352 8,076	116,701 16,334 5,740 14,086	14,647 1,917 —	9,879 2,019 979 2,861	14,900 3,650 2,388 6,010	19.0 21.9 —	10.7 18.9 41.3 54.9	14.6 28.8 71.2 74.4
		-			Percent d	istribution	•		Growth rate	)
				1972	1979	1986	Projected, 2000	197279	1979-86	1986-2000
Total, 16 and over    Vlen, 16 and over    16 to 25    25 to 54    55 and over				100.0 61.5 12.9 38.1 10.5	100.0 57.9 13.0 36.1 8.7	100.0 55.5 10.4 37.7 7.4	100.0 52.7 8.3 38.2 6.2	2.7 1.8 2.8 1.9 (3)	1.7 1.1 -1.5 2.3 6	1.2 .8 4 1.3 1
Women, 16 and over					42.1 11.2 25.3 5.6	44.5 9.4 29.8 5.2	47.3 8.0 34.4 4.9	4.1 4.0 4.8 1.4	2.5 8 4.1 .6	1.6 (3) 2.2 .7
White, 16 and over . Black, 16 and over . Asian and other, <sup>1</sup> 16 and over . Hispanic, <sup>2</sup> 16 and over .					87.6 10.2 2.3 5.0	86.4 10.8 2.8 6.9	84.1 11.8 4.1 10.2	2.5 2.9 —	1.5 2.5 5.1 6.4	1.0 1.8 3.9 4.1
<sup>1</sup> The "Asian and other" group includes America	in Indians, Al	askan Natives,	Asians, and P	acific befo	re 1976.		L			L

Table 2.	Civilian labor force participation, by sex, age,
race, and	Hispanic origin, actual 1972, 1979, and 1986, and
moderate	growth projections 2000

		Actual		Projected,	Growth rate				
Group	1972 1979 1986		2000	1972–79	197986	1986-2000			
Total, 16 and over	60.4	63.7	65.3	67.8	0.8	0.4	0.3		
Men, 16 and over 16 to 24 25 to 54	79.0 71.3 95.1 53.3	77.8 75.0 94.4 46.6	76.3 73.0 93.8 40.4	74.7 74.3 92.6 34.1	2 .7 1 -1.9	3 4 1 -2.0	2 .1 1 -1.2		
Women, 16 and over 16 to 24 25 to 54 55 and over	43.9 53.0 51.0 24.5	50.9 62.5 62.3 23.2	55.3 64.3 70.8 22.1	61.5 69.5 80.8 21.4	2.1 2.4 2.9 8	1.2 .4 1.8 7	.8 .6 .9 2		
White, 16 and over Black, 16 and over Asian and other, <sup>1</sup>	60.4 60.2	63.9 61.4	65.5 63.5	68.2 66.0	.8 .3	.4 .5	.3 .3		
16 and over Hispanic, <sup>2</sup> 16 and over	-	65.9 63.5	64.9 65.4	65.8 68.7	_	2 .4	.1 .4		

Pacific Islanders. The historic data are derived by subtracting "Black" from the "Black and other" group; projections are made directly.

 $^2\,{\rm Persons}$  of Hispanic origin may be of any race. Labor force data for Hispanics are not available before 1976.

NOTE: Dash indicates data not available

Summary of population changes, 1986–2000. The overall U.S. population, which increased by 1 percent annually between 1972 and 1986, is projected to grow by 0.8 percent yearly to 2000. This slowing reflects the anticipated drop in births as well as the slight drop in net migration. The rate of increase will not be uniform across age, race, or Hispanic origin groups.

As the following tabulation indicates, over the 1972–86 period, the number of persons (ages 18 to 24) entering college or their first job rose, while the number of those (ages 14 to 17) in high school dropped slightly. The number of those (ages 5 to 13) in elementary school dropped more substantially, while the number of preschoolers increased. Over the 1986–2000 period, many of these younger age groups show a reversal of trend; the number of persons ages 18 to 24, which had been increasing during the 1972–86 period, is projected to drop through 2000:

	1972	1986	2000
Total population			
(millions)	209.9	241.6	268.3
White	183.3	204.7	221.5
Black	23.6	29.4	35.1
Asian and other	2.9	7.5	11.6
Hispanic	-	18.5	30.3
Years of age:			
0 to 4	17.1	18.1	16.9
5 to 13	39.9	34.2	33.5
14 to 17	16.6	14.8	15.3
18 to 24	26.1	28.0	25.2
65 and older	21.0	29.2	34.9
85 and older	1.5	2.8	4.6
Civilian noninstitutional population 16 and older			
(millions)	144.1	180.6	204.7

The number of persons ages 65 and older increased more than twice as fast as the overall population during the 1972– 86 period; those 85 and older increased more than four times as fast.

Changes in the total population are reflected in the civilian noninstitutional population 16 and older with a lag. Between 1972 and 1986, the civilian noninstitutional population grew by 1.6 percent annually, while over the 1986– 2000 horizon, the population is projected to grow significantly more slowly, by 0.9 percent. (See table 3.)

An important event of the post-World War II period is the great flows of migrants documented and undocumented, into and out of this country. In the future, according to these population projections, immigration would be an increasing share of population growth. Immigrants are generally of working age. There are slightly more women than men among the documented entrants. As a consequence of the projected overall decrease in births, net migration, even though declining somewhat, still is projected to continue to be an increasing share of population growth:

	197279	1979–84	1986–95	1995–2000
Percent of				
population	17.2	25.7	29.9	32.2

The effect of the higher net migration is an increase in the number of people of working age and a decrease in the number of older people. To the extent that immigrants have different age, educational, and occupational compositions than the resident population, this would affect the future work force. A summary of the Census Bureau's projections for 2000 and estimates for the 1986 and related earlier years population are displayed in table 4.<sup>8</sup>

Projections of labor force participation change. Trends in labor force participation rates-the second important factor affecting the size of the labor force of the future-were projected by BLS for 114 groups by age, sex, and race or ethnicity. After the rate of change for each sex and race group for the 1979-86 period was estimated, the labor force participation rate for the group was extrapolated by age. The resulting cross-sectional patterns for specific race-sex groups were examined for 2000 and, when these patterns were inconsistent with historical patterns, they were modified. The cohort participation rates were also plotted and, if inconsistent with historic patterns, the projected participation rates were modified. For these two reasons, adjustments mainly affected participation rates for women in the preretirement years. The projected pattern of participation for white women did not result in a drop in participation between ages 25 to 29 and 30 to 34 as it has in the past. However, this was accepted as consistent with developing patterns, though it has yet to manifest itself, reflecting primarily the fact that women increasingly are less likely to withdraw from the labor force after children are born.

The primary methodological change in this set of projections involved the development of projections for five-yearof-age groups for blacks. Participation rates were also calculated for the Asian and other labor force, but after examination of the historical data, there was so much yearto-year variation that the growth patterns in labor force participation of whites were used instead to project the Asian and other labor force.

Labor force participation rates for women of prime working age (25 to 54) and older ages were assumed not to exceed that of men. After examination of the preliminary employment projections, the assumed participation rate of young whites was adjusted upward to reflect anticipated growth in job opportunities for first-time jobseekers and the declining number of youth available for those jobs.

#### Compositional changes in the labor force

Age. By 2000, prime working-age persons would make up 73 percent of the labor force, up from 67 percent in 1986 (table 1). This reflects underlying demographic changes; the baby-boom generation will still be in the prime working ages, but between 1995 and 2000, the "echo" of the baby boom (their children) are projected to begin entering the labor force. Despite this, the youth in the labor force are still projected to account for a smaller share of the labor force in 2000 than in 1986, 16 percent, compared with 20 percentalthough their share is expected to be even lower in 1995. The share of older workers (55 and older) also is projected to shrink between 1986 and 2000 by about  $1\frac{1}{2}$  percentage points. The share of workers 55 and older is projected to be slightly lower in 1995, because that is when the group known as the "birth dearth of the 1930's" enters the retirement years. The following tabulation shows the number, in millions, of persons in each major age group for 1972-86 and the rate of growth for 1986-2000.

	Youth	Prime working age	Older
Period:			
1972	20.2	52.3	14.5
1986	23.4	79.6	14.9
2000	22.6	100.8	15.4
Growth rate:			
1972–86	1.1	3.0	.2
1986–2000	2	1.7	.2

The labor force group age 55 and older is projected to decrease between 1986 and 1995, but then increase between 1995 and 2000. During the latter period, this group would be the fastest growing component of the labor force. The youth labor force, which has been decreasing since 1980, is also projected to decline until 1995, before increasing more rapidly than the overall labor force. The prime working-age group is the only one that is projected to grow throughout the period, even though some age groups within this broader age group are expected to decline for at least part of the 1986–2000 period. The prime age work force grew by 3

percent annually between 1980 and 1986; this growth rate is projected to drop to 2.6 percent for the rest of this decade, 1.8 percent for the early 1990's, and less than 1 percent yearly until 2000.

The changes in such broad age groups are a reflection of the changing size of underlying finer age groups, which are, in turn, a reflection of past variability in births. To further explicate the process, we describe the changes in various detailed age groups.

After the baby boom (defined by the Census Bureau as starting in 1946 and ending in 1964), the number of births dropped until 1975, with a modest upswing in 1968-70. Since 1976, births have increased as the women of the baby boom became mothers, the "echo" to the baby boom. As a result of the drop in births that started in 1960, the number of 16-year-olds in the population and labor force began to decline about 1976 and is expected to continue to decline until 1992. (There was a short-lived "boomlet" between 1968 and 1970, resulting in an increase in the number of teenagers during 1986–88.) The number of 17-year-olds began to decline in 1977, 1 year after the number of 16-yearolds. The decline should end 1 year later than for 16-yearolds, or 1993. Looking at larger age groups which are less sensitive to yearly variations in births, we see that the number of 16- to 19-year-olds began dropping in the late 1970's and is projected to continue to do so until the mid-1990's. Thereafter, this age group is projected to increase as the larger number born after 1978-the echo to the baby boom-begins to enter the labor force. The teenage labor force is projected to drop by nearly 1.5 million between 1986 and 1992 and then to increase by 1.4 million between 1992 and 2000.

This effect—reversal in direction over the 1986 and 2000 period—also is projected to prevail for other age groups. Numbers of labor force participants 20 to 24 years of age began to drop in the early 1980's and are projected to decline by 2.4 million people between 1986 and 1997 before beginning to increase. The labor force ages 25 to 29, which has been growing rapidly, is projected to decline from the late 1980's until after 2000. The drop would be 2.9 million between 1986 and 2000. For those in the labor force who are 30 to 34 years old, the projected decline begins in the early 1990's. In the late 1990's, the next older group, ages 35 to 39 starts its decline in absolute numbers. The 30-to-34-yearolds are projected to increase by 2.1 million through the early 1990's and then decline by 2.2 million by 2000. The 35 to 39 group is projected to increase by 4.2 million between 1986 and the mid-1990's and then to decline only slightly by the year 2000.

*Race or ethnicity.* Blacks are projected to account for 18 percent of labor force growth between now and the end of the century. This would be significantly above their current share of the overall labor force. Blacks made up 11 percent of labor force growth between 1972 and 1979, 16 percent

	Level (in thousands)				Change (in thousands)			Growth rate		
Group	1972	1979	1986	Projected, 2000	1972-79	1979-86	1986-2000	1972–79	1979-86	1986-2000
Total, 16 and over	144,122	164,865	180,589	204,699	20,743	15,723	24,110	1.9	1.3	0.9
Men, 16 and over	67,835 15,768 34,840 17,227	78,021 18,184 40,184 19,653	85,799 16,773 47,343 21,683	97,962 15,489 57,250 25,223	10,186 2,416 5,344 2,426	7,778 1,411 7,159 2,030	12,163 1,284 9,907 3,540	2.0 2.1 2.1 1.9	1.4 1.1 2.4 1.4	1.0 6 1.4 1.1
Women, 16 and over  16 to 24    25 to 54  55 and over	76,287 16,887 37,595 21,805	86,844 18,827 42,692 25,325	94,790 17,293 49,672 27,825	106,737 15,999 59,094 31,644	10,557 1,940 5,097 3,520	7,946 -1,534 6,980 2,500	11,947 -1,294 9,422 3,819	1.9 1.6 1.8 2.2	1.3 -1.2 2.2 1.4	.9 6 1.2 .9
White, 16 and over	127,904	143,898	155,433	171,230	15,994	11,535	15,797	1.7	1.1	.7
Black, 16 and over	14,543	17,366	19,989	24,750	2,823	2,623	4,761	2.6	2.0	1.5
Asian and other, <sup>1</sup> 16 and over	-	3,601	5,164	8,719	-	1,562	3,555	-	5.3	3.8
Hispanic, <sup>2</sup> 16 and over	-	8,208	12,343	20,490	-	4,135	8,147	-	6.0	3.7
<sup>1</sup> The "Asian and other" group includes American Indians, Alasi Islanders. The historic data are derived by subtracting "Black" fro projections are made directly. 2 Persons of Hispanic origin may be of any race. Data for Hisp	an Natives, or the "Black	Asians, and I k and other" t available b	Pacific group;	1976. Note: Da	sh indicates	data not avail	able.	e" population	projections	L, <u>, , , , , , , , , , , , , , , , </u>

Table 3. Civilian noninstitutional population, by sex, age, race, and Hispanic origin, actual 1972, 1979, and 1986, and projected to 2000

between 1980 and 1986, and are projected to account for 17 percent between 1986 and 1990. The following tabulation shows the number, in millions, of persons in the labor force and the growth rate, in percent, by race or ethnic origin, 1972–86 and 1986–2000:

	L	abor for	ce	Growth rate			
Group	1972	1986	2000	1972-86	1986-2000		
Total	87.0	117.8	138.8	2.2	1.2		
White	77.3	101.8	116.7	2.0	1.0		
Black	8.7	12.7	16.3	2.7	1.8		
Asian and							
other	_	3.4	5.7	_	3.9		
Hispanic	_	8.1	14.1	_	4.1		

There are projected to be 16.3 million blacks in the labor force in 2000, up 3.7 million from 1986. This represents a higher annual growth rate, 1.8 percent, than those projected for whites and for the overall labor force. Black labor force participation is projected to grow 0.3 percent annually, as is that of whites. By 2000, blacks are projected to account for 12 percent of the labor force, up 1 percentage point from 1986.

The white labor force is projected to grow by 15 million between 1986 and 2000, reaching a level of 117 million. Whites have historically been the largest share of the labor force, but this share has been dropping and is projected to continue to do so—in 1972 it was 89 percent and by 2000, it should be 84 percent. Thus, the white labor force, which also includes nearly all of the Hispanics, is growing more slowly than the overall labor force, 0.2 percent per year less over both the historical period, 1972–86, and the projected period, 1986–2000. This slower growth reflects slower population increases (table 2), because labor force participation of whites is projected to grow at the same rate as the overall labor force. The Asian and other labor force is projected to increase 71 percent, or by 2.4 million persons, between 1986 and 2000. This increase reflects a high rate of population growth, which, in turn, reflects higher births and immigration of this group. By 2000, persons of Asian and other races would constitute 4 percent of the labor force, up from less than 3 percent in 1986. Over the 1986–2000 period, Asians and others account for 11 percent of the projected growth in the labor force. This represents a slowing in their growth rate from the 1979–86 period during which their population was increasing rapidly due to the entry of refugees. This entry of refugees has virtually stopped, and it is assumed not to occur again over the projection period.

Labor force participation of the Asian and other group is assumed to increase at the same rate as whites at the individual age-sex level. Their participation rate is projected to be lower than that of whites in 2000. This reflects their lower participation in 1986. The lower rate of increase for their overall labor force participation reflects the different age and sex composition of this population group.

The Hispanic labor force is projected to increase 74 percent between 1986 and 2000; among the largest increases projected for any group. By 2000, Hispanics are projected to be 10 percent of the labor force, up from 7 percent in 1986. This increase results in 6 million more Hispanics entering the labor force, for a total of 14 million in 2000.

Hispanic labor force participation, which increased 0.4 percent annually between 1979 and 1986, is projected to continue to increase at that rate over the next 14 years. This reflects the younger age of the Hispanic population—with more young women, overall participation rises as their participation is projected to rise. By contrast, whites and blacks are projected to have slower rates of increase in participation.

Hispanics' share of labor force growth was 22 percent between 1979 and 1986. Given their more rapid population growth, their share of the labor force increment between 1986 and 2000 is projected to be 29 percent. The size of the share is more impressive by subperiod—27 percent for the years 1986 to 1995 and 32 percent for 1995 to 2000. More than a third of population growth in the late 1990's is projected to be Hispanic. As noted earlier, the number of Hispanics is affected by the assumption made regarding future levels of immigration; projections of the share of Hispanics in the labor force could *vary considerably*.

Sex. As in the past, women are projected to account for more than 60 percent of the labor force growth. Over the past 16 years, women have also made up 60 percent of the additions to the labor force. This share is projected to be 64 percent between now and the end of the century. It may be more useful to indicate that since 1979, when the babyboom generation had almost completed their entry into the labor force, women accounted for 64 percent of labor force additions. For the rest of this decade, and in the early 1990's, women are projected also to make up 64 percent of the net growth in the labor force. In the late 1990's, as the "echo" to the baby boom reaches labor force age and begins entering the labor force, women's share of growth is projected to drop slightly to 62 percent.

These projections show 66 million women in the labor force in 2000, up 13.2 million from 1986 (table 1). This represents an annual rate of growth of 1.6 percent which is below the 3.3-percent rate of the 1972–86 period, during which young women of the baby boom were entering the labor force. With the growth shown in these projections, women would make up 47 percent of the labor force in 2000, up from 39 percent in 1972 and 45 percent in 1986.

Women's labor force participation is projected to increase by 0.8 percent annually—more than twice the overall rate of increase in participation, but half the rate of growth in women's participation over the 1972–86 period. The primary factor behind the slower rate of increase is the level of labor force participation already achieved by women; future increases above past rates are unlikely. The labor force participation rate of women ages 25 to 54, at 70.8 percent in 1986, is projected to reach 80.8 percent by 2000.

The labor force participation of black women has typically been greater than that of white women, except at the younger ages. This is projected to continue through 2000, but the difference is expected to diminish significantly. In 1972, the participation rate of black women—48.8 percent—was 4.6 percentage points above that of white women. By 2000, the difference would be 0.6 points. This reflects the somewhat slower growth in participation by black women and the greater number of young persons in the black female population. Because younger black women's participation is lower than that of white women, this also lowers the difference in participation.

Black women are projected to account for a tenth of labor force growth over the 1986–2000 period; their projected growth rate, 2.1 percent, is greater than that for white women. (See table 5.) For black women, the higher growth rate represents faster population growth as well as growing participation. Thus, the proportion of the labor force made up of black women would increase from 4.5 percent in 1972 to 6.1 percent in 2000.

	ĺ	Level (In	thousands)		Ch	ange (in thous	ands)		Growth rate	
Group	1972	1979	1986	Projected, 2000	1972–79	1979–86	1986–2000	1972–79	1979–86	1986-2000
Total	209,896	225,055	241,596	268,264	15,159	16,541	26,668	1.0	1.0	0.8
Years of age: 0 to 4 5 to 13 14 to 17 18 to 24 25 to 34	17,101 39,936 16,640 26,077 27,623	16,063 35,592 16,611 30,048 36,203	18,128 34,193 14,796 27,973 42,984	16,898 33,483 15,332 25,231 37,149	- 1,038 - 4,344 - 29 3,971 8,580	2,065 - 1,399 - 1,815 - 2,075 6,781	- 1,230 - 710 536 - 2,742 - 5,835	9 - 1.6 (1) 2.0 3.9	1.7 6 - 1.6 - 1.0 2.5	5 1 .3 7 - 1.0
35 to 44 45 to 54 55 to 64 65 to 74 75 to 84 85 and over	22,859 23,687 19,211 12,922 6,555 1,542	25,176 22,942 21,448 15,338 7,599 2,197	33,142 22,823 22,230 17,325 9,049 2,796	43,911 37,223 24,157 18,242 12,017 4,621	2,317 - 745 2,237 2,416 1,044 655	7,966 - 119 782 1,987 1,450 599	10,769 14,400 1,927 917 2,968 1,825	1.4 5 1.6 2.5 2.1 5.2	4.0 1 .5 1.8 2.5 3.5	2.0 3.6 .6 .4 2.0 3.7
Men	102,591 107,305	109,584 115,472	117,820 123,776	131,185 137,072	6,993 8,167	8,236 8,304	13,365 13,296	.9 1.1	1.0 1.0	.8 .7
White	183,326 23,646 2,924	194,098 26,417 4,540	204,671 29,427 7,498	221,512 35,122 11,630	10,772 2,771 1,616	10,573 3,010 2,958	16,841 5,695 4,132	.8 1.6 6.5	.8 1.6 7.4	.6 1.3 3.2

<sup>1</sup> The rate is -0.05 to 0.05

<sup>2</sup> The "Asian and other" group includes American Indians, Alaskan Natives, Asians, and Pacific Islanders.

SOURCE: U.S. Bureau of Census. For 1972 and 1979 data, Preliminary Estimates of the

Population of the United States, by Age, Sex, and Race: 1970 to 1981, Current Population Reports, Series P-25, No. 917; for 1986 data, Estimates of the Population of the United States, by Age, Sex, and Race: 1980 to 1986, Current Population Reports, Series P-25, No. 1000; and for 2000 data, Projections of the Population of the United States, by Age, Sex, and Race 1987 to 2080, Series No. 1018.

		Partic	ipation	rate		Level (in	thousand	5)	Change (ii	thousands)	Percer	it change	Grow	th rate
Group		Actual		Projected		Actual		Projected	1070.00					<b></b>
	1972	1979	1986	2000	1972	1979	1986	2000	1972-86 15	1986-2000	1972-86	1986-2000	1972-86	1986-200
Total, 16 and over	60.4	63.7	65.3	67.8	87,037	104,960	117,837	138,775	30,800	20,938	35.4	17.8	2.2	1.2
Men, 16 and over	79.0	77.8	76.3	74.7	53,556	60,727	65,423	73,136	11,867	7,713	22.2	11.8	1.4	.8
16 to 19	58.1	61.5	56.4	60.2	4,478	5,111	4,102	4,501	- 376	399	- 8.4	9.7	6	.7
20 to 24	83.9	86.4	85.8	87.5	6,765	8,534	8,149	7,005	1,384	1,144	20.5	14.0	1.3	- 1.1
25 to 34	95.7	95.3	94.6	93.6	12,349	16,386	19,383	16,559	7,034	- 2,824	57.0	14.6	3.3	- 1.1
35 to 44	96.4	95.7	94.8	93.9	10,372	11,532	15,029	20,133	4,657	5,104	44.9	34.0	2.7	2.1
45 to 54	93.2	91.4	91.0	90.1	10,412	10,008	9,994	16,332	- 418	6,338	- 4.0	63.4	~ .3	3.6
55 to 64	80.4	72.8	67.3	63.2	7,155	7,213	6,954	7,238	- 201	284	- 2.8	4.1	2	.3
65 and over	24.3	19.9	16.0	9.9	2,025	1,943	1,812	1,368	- 213	- 444	- 10.5	- 24.5	8	- 2.0
Women, 16 and over    16 to 19    20 to 24    25 to 34	43.9	50.9	55.3	61.5	33,481	44,233	52,414	65,639	18,933	13,225	56.5	25.2	3.3	1.6
	45.8	54.2	52.9	59.2	3,578	4,527	3,824	4,379	246	555	6.9	14.5	.5	1.0
	59.1	69.0	72.4	78.4	5,365	7,233	7,293	6,746	1,928	- 547	35.9	- 7.5	2.2	6
	47.8	63.9	71.6	82.3	6,609	11,550	15,209	15,098	8,600	- 111	130.1	7	6.1	1
35 to 44	52.0	63.6	73.1	84.2	6,028	8,153	12,204	18,438	6,176	6,234	102.5	51.1	5.2	3.0
45 to 54	53.9	58.4	65.9	75.4	6,555	6,891	7,746	14,220	1,191	6,474	18.2	83.6	1.2	4.4
55 to 64	42.1	41.7	42.3	45.8	4,257	4,718	4,940	5,732	683	792	16.0	16.0	1.1	1.1
65 and over	9.3	8.3	7.4	5.4	1,089	1,161	1,198	1,026	109	- 172	10.0	– 14.4	.7	- 1.1
Whites, 16 and over     Men     Women	60.4	63.9	65.5	68.2	77,275	91,922	101,801	116,701	24,526	14,900	31.7	14.6	2.0	1.0
	79.6	78.6	76.9	75.3	48,118	53,857	57,216	62,252	9,098	5,036	18.9	8.8	1.2	.6
	43.2	50.5	55.0	61.5	29,157	38,065	44,585	54,449	15,428	9,864	52.9	22.1	3.1	1.4
Blacks, 16 and over	60.2	61.4	63.5	66.0	8,748	10,665	12,684	16,334	3,936	3,650	45.0	28.8	2.7	1.8
Men	73.9	71.6	71.2	70.7	4,855	5,556	6,373	7,926	1,518	1,553	31.3	24.4	2.0	1.6
Women	48.8	53.2	57.2	62.1	3,893	5,109	6,311	8,408	2,418	2,097	62.1	33.2	3.5	2.1
Asian and other, <sup>1</sup> 16 and over Men Women		65.9 76.7 56.0	64.9 74.9 55.9	65.8 72.4 60.1	-	2,373 1,314 1,059	3,352 1,834 1,518	5,740 2,958 2,782		2,388 1,124 1,264	- -	71.2 61.3 83.3		3.9 3.5 4.5
Hispanics. <sup>2</sup> 16 and over Men		63.5 81.2 47.4	65.4 81.0 50.1	68.7 80.4 56.9	-	5,215 3,182 2,033	8,076 4,948 3,128	14,086 8,303 5,783		6,010 3,355 2,655		74.4 67.8 84.9		4.1 3.8 4.5

Table 5. Civilian labor force and participation rates by sex, age, race, and Hispanic origin, actual 1972, 1979, and 1986, and

NOTE: Dash indicates data not available

White women (including most of the Hispanic women), who accounted for half the labor force growth during the 1972-86 period, are projected to account for less than half of the projected labor force increase over the next 14 years. Their participation rate, which grew by 12 percentage points between 1972 and 1986, is projected to grow more slowly to the year 2000. During both periods, this was a greater increase than for black women, but by 2000, black women are projected to still have slightly greater participation.

The labor force of Hispanic women is projected to increase by 2.7 million to 5.8 million in 2000, an 85-percent increase. Numerically, this growth is projected to exceed that of black women, even though the female Hispanic labor force would still be smaller than that of black women. The growth reflects both population and participation rate increases.

Men have been and are projected to be a majority of the labor force; even though the number of men in the labor force is not changing as dynamically as that of women, it still is changing. It is projected to grow more slowly, by 7.7 million, or 12 percent, during the 1986-2000 period (this compares with 25 percent for women during the same period). Different components of the labor force are growing at different rates; both the older and younger male labor force are projected to drop in size between 1986 and 2000,

but both groups are projected to actually increase between 1995 and 2000.

The change in the size of the young male labor force represents the interplay of population dynamics-the echo of the baby boom and projected participation rate increases. The participation of young men is projected to increase modestly over the entire projection period. However, between 1986 and 1995, the number of young men is projected to drop by 1.1 percent yearly, more than offsetting the anticipated rise in participation. By 1995, however, the number of younger groups is projected to increase, and with an increase in participation rates, the number of those in the labor force would then rise.

The change in the number of the older men in the labor force also represents the interplay of population and participation. The 55 to 65 age group, whose population is projected to decrease over the 1986-95 period, is projected to grow more rapidly than the 65 and older group during the 1995–2000 period. Because the younger group has a higher participation rate and their participation is projected to drop more slowly than that of men over age 65, the entire older male labor force is projected to grow over the 1995-2000 period. However, this growth would not be enough to offset the earlier drop; over the 1986–2000 period, the older male labor force is projected to decline by 160,000.

Over the 1986-2000 period, the fastest growing group among men would be ages 45 to 54, the consequence of the aging of the baby-boom generation. This group is above the age of peak participation, but, because baby-boom men would still be in their prime working years in 2000, the prime age male labor force is projected to be a greater proportion of the labor force than in 1986, 1972, or 1979. The labor force of men ages 45 to 54 is projected to grow 6.3 million, and constitute 30 percent of the 1986–2000 labor force increment.

The labor force of black men is projected to grow more rapidly than the overall labor force (1.6 percent annually, compared with 1.2 percent), despite falling participation. This reflects their higher population growth rates. The number of white men in the labor force (including most Hispanics) is projected to grow at only half the rate of the overall labor force. Despite this, white men are projected to account for a quarter of labor force growth and are projected to be 45 percent of the 2000 labor force.

The number of Hispanic men in the labor force is projected to increase by 3.4 million between 1986 and 2000, a greater absolute change than for black men. Their growth rate would be three times that of the overall labor force and more than twice that of black men. By 2000, there are projected to be more Hispanic than black men in the labor force. Hispanic men would make up 6 percent of the 2000 labor force and 16 percent of the labor force growth over the rest of the century. Despite this increase, their participation is anticipated to drop slightly.

#### **Alternative scenarios**

The actual world of work in 2000 will certainly be different from that in 1986 in ways that we cannot anticipate. To give an idea of at least some of the uncertainty, two alternative projections of the labor force were prepared. (See table 6.) One assumes slower participation rate changes which is applied to the middle population series, and the other assumes a higher immigration rate and uses the middle participation rate series.

Under the low alternative, the overall 2000 labor force would be 135 million, an expansion of 14 percent over the 1986 level. This slow growth, 1.0 percent annually, is a consequence of the participation rate growing slowly or dropping rapidly. In the middle scenario, overall participation is projected to increase 0.3 percent annually. Under this scenario, it would drop at the same rate.

Also under the low alternative, labor force participation among women is projected to rise more slowly. This is consistent with the view that the rapid increases of the 1970's completed their increase in participation. The rapid rise of the past 2 years would be a cyclical response to the recession of the early 1980's—not a resumption of the high growth of the early and middle 1970's.

Using the participation rates of the middle scenario with the Census Bureau's high migration series, we find that the labor force increases to 141 million in 2000—2 million greater than the middle scenario. The only difference between the middle and the high migration population projections is in the net migration assumption. Despite the higher level of immigration, 160 percent greater, the resulting growth rate of the labor force is only 0.2 percent higher.

For the high migration scenario, it was assumed that Hispanics would be the same proportion of the civilian noninstitutional population in any new projection as they had been in the previous high migration projection. Under this assumption, this Hispanic labor force would grow at the same rate under both the middle and high scenarios and the Hispanic labor force would be the same share under both scenarios. Under the low participation scenario, Hispanics would initially account for 9.4 percent of the labor force and that share would grow by 3.3 percent yearly to 2000, compared with the 4.1-percent gain attained in the middle and high scenarios.

This analysis suggests that Asians and others are a more significant source of labor force growth in the high migration scenario; their share of the labor force would be the same under all three scenarios, but the growth rate is much higher under the high migration scenario—4.4 percent, compared with 3.9 percent in the middle growth scenario, and 3.7 percent in the low scenario.

#### Other insights

The median age of the labor force in the post-World War II era peaked in 1962, at 40.6 years. With the entry of the baby-boom generation into the labor force, the median age dropped, reaching a low in 1980 of 34.6 years. By 1986, the median age had risen to 35.3 years, an increase of less than 1 year. The median age of the labor force is projected to reach 38.9 years in 2000, 3.6 years above the 1986 level. Even though the age of the population is increasing rapidly, unless older workers remain in the labor force in greater numbers, the 1962 median is not likely to be attained again. As the population ages, more would be in the ages which had—and are projected to continue to have—declining labor force by race and Hispanic origin, for selected historical years and for projected years.

To reinforce the point about older workers, persons ages 55 and older constituted 16.7 percent of the labor force in 1972. With the entry of the baby-boom generation (and the continuing drop in participation of older men), workers 55 and over made up only 14.3 percent in 1979. In 1986, after the baby-boom generation had completed their entry, the older group was only 12.6 percent of the labor force.

#### Share of labor force growth

If we consider the components of labor force growth, starting in a year for which we have data for all groups, shares of labor force growth for 1976–86 can be compared with the projected share for 1986–2000. Women are pro-

Group	Pa	rticipation ra	ite	Level (in thousands)			
	High	Moderate	Low	High	Moderate	Low	
Total	68.0	67.8	65.7	141,107	138,775	134,517	
Men:	74.8	74,7	73.2	74,464	73,136	71,729	
16 to 24 years	74.4	74.3	72.7	11,811	11,506	11,261	
25 to 54 years	92.6	92.6	90.9	54,009	53,024	52,043	
55 years and over	34.2	34.1	33.4	8,644	8,606	8,425	
Women:	61.7	61.5	58.8	66,643	65,639	62,788	
16 to 24 years	69.6	69.5	68.1	11,365	11,125	10,898	
25 to 54 years	80.8	80.8	76.2	48,487	47,756	45,007	
55 years and over	21.4	21.4	21.8	6,791	6,758	6,883	
White	68.4	68.2	65.9	118,474	116,701	112,918	
Black	66.1	66.0	64.8	16,518	16,334	16,031	
Asian and other <sup>1</sup>	66.0	65.8	63.9	6,115	5,740	5,568	
Hispanic <sup>2</sup>	68.8	68.7	61.9	14,122	14,086	12,675	

jected to account for about the same share of labor force growth as they have in the past. The white share of labor force growth is projected to drop. The black, the Asian and other, and the Hispanic shares are each projected to increase, with the Hispanic share increasing the most. These calculations show that Hispanics, most of whom are white, are sustaining the white share of growth.<sup>9</sup> The non-Hispanic white share (43 percent) is projected to be 18 percentage points less than the 1976-86 share; however, the overall white share is projected to fall only by 7 percentage points. These projections show that non-Hispanic white men, who accounted for 18 percent of labor force growth from 1976 to 1986 when the baby-boom generation was completing its entry into the labor force, would drop to 8 percent of the 1986-2000 increase. This reflects the fact that most non-Hispanic white men are already in the labor force and a slight drop in the participation of older white men. The following tabulation shows the percentage distribution of the labor force by sex, race, and Hispanic origin, and by residency status, 1976-86, and projected, 1986-2000:

Group	1976–86	1986–2000	
Men	38.0	36.8	
Women	62.0	63.2	
White	78.6	71.2	
Black	14.5	17.4	
Asian and other	6.9	11.4	
Hispanic	17.5	28.7	
Non-Hispanic white	61.6	43.3	
Men	18.1	8.5	
Women	43.5	34.8	
Residents	-	76.6	
Net migrants	_	23.4	

Over the 1972–86 period, the white female labor force of prime working age grew by 12.2 million and that of their white counterparts, by 9.0 million, the second greatest increase. White persons of prime age are projected to have the greatest increment to the 1982–2000 labor force, with the number of women increasing by 9.8 million and men, 6.3 million. Because of the birth dearth, the number of younger white men in the labor force is projected to drop. Because of continuing decreases in participation, the number of older white men in the labor force is also expected to drop. These decreases in the number of younger and older white men offset the prime age white male growth in the labor force. One further refinement indicates that the number of non-Hispanic prime age white men would increase by 4.9 million or 23.4 percent of the 1986-2000 labor force growth.

Over the 1986–2000 period, net migration accounts for almost a fourth of labor force growth. Somewhat more men than women immigrants would join the labor force—the 23.4-percent net migration would be divided into 12.8 percent for men versus 10.6 for women. As the following tabulations shows, most migration is projected to be by whites, with Asians and others having a greater share than blacks (because the migration scenario used for Hispanics is not consistent with that for the main projection, it is not possible to provide a projection of the Hispanic share of labor force growth due to net migration):

	Migrant	Resident
Total	23.4	76.6
Men	12.8 10.6	24.0 52.6
White	14.4 2.3	56.8 15.1
Asian and other	6.7	4.7

*Dependency ratio.* With the baby-boom generation in their prime working years and with the small number of births projected between 1986 and 2000, persons who are working are expected to exceed those who do not:

	Economic dependency ratio (by age)			
	Total	Under 16	16–64	Age 65 and over
1972	134.6	62.3	54.1	18.2
1979	110.2	52.0	37.6	20.6
1986	101.2	46.5	32.9	21.8
1995	94.2	44.0	27.0	23.2
2000	89.8	40.8	26.0	23.0

The economic dependency ratio is the number of those in the total population (including Armed Forces overseas) who are not in the total labor force per 100 persons in the total labor force. This ratio declined steadily over the 1972–86 period as the baby-boom generation entered the labor force. The largest component of the dependency ratio is made up of persons under age 16. However, this ratio has been dropping and is expected to continue to do so throughout the

Table 7. Me	edian ages of the labor	r force, by sex, race, and
Hispanic ori	gin, selected historical	years and projected
years, 1995	and 2000	

Group	Historical				Projected	
	1962	1972	1979	1986	1995	2000
Total	40.5	37.7	34.7	35.3	37.6	38.9
Men	40.5	38.1	35.3	35.6	37.9	39.3
Women	40.4	37.0	33.9	34.9	37.1	38.6
White	40.9	38.0	34.9	35.5	37.9	39.2
Black	38.3	35.4	33.5	33.8	36.1	37.2
Asian and others	-		-	35.5	37.2	38.0
Hispanic	-	-	32.2	32.6	34.1	35.1

entire projection period. With the rising participation of women, the component of the dependency ratio attributed to those ages 16 to 64 has also declined steadily. The change between 1995 and 2000 is modest, reflecting slightly lower participation rates of the largest age group of men, those 45 to 54. The dependency ratio for all persons over 65 has been rising over the entire historical period, a trend projected to continue. The slight drop between 1995 and 2000 reflects the aging of the smaller birth cohort of the 1930's.

*Employment-population ratio*. WIth the rise in participation, the employment-population ratio is projected to rise. It has been growing over the last 14 years; like overall labor force participation, the rate of increase is projected to slow:<sup>10</sup>

*1972 1979 1986 2000* Employment-population ratio .... 57.0 59.9 60.7 63.7

Keeping in mind the 14-year span of the projections, we can look at 15-year cohorts—those 15 to 29, 30 to 44, 45 to 59, and 60 to 74. Each cohort in the labor force will be in the next older group by the end of each of the time intervals discussed here:

Year of birth	Labor force share			
	1972	1986	2000	
1955–69	_	34.9	39.9	
1940–54	35.2	37.4	28.3	
1925–39	28.6	21.2	4.5	
1910–24	27.2	6.2	0.3	
1895–1909	8.4	0.3	-	

The combination of cohort size and stage in the life cycle explain the share of labor force. When a cohort is large, but is at a stage in life when participation is low, such as when entering or leaving the labor force, their share will be small. Those born during 1895–1909 were in the retirement years in 1972, but still accounted for 8.4 percent of the labor force in that year. Those born 1910–24 who entered the labor force in the late 1920's and 1930's, were still almost the same share of the labor force in 1972 as the next generation, despite being in the preretirement years. Those born into this

group in the United States were joined by migrants from Europe at a level exceeding the immigration of the 1980's. By 1986, the group born during the 1910–24 period were 6 percent of the labor force and virtually all are projected to be out of the labor force in 2000. Those born during the 1925-39 period could be described as part of the 1930's birth dearth. Although in their prime working-age years in 1972, they made up less than a third of the work force; this share dropped to a fifth by 1986. As they retire, their share drops to less than 5 percent by 2000. Those born during 1940-55 are considered pre- and early baby-boom generation. They also were more than a third of the labor force when they entered the labor force (in 1972). Like the younger edge of the baby-boom generation, their share grew by 1986. However, as they continue to age, their share is projected to drop and in 2000, they are projected to make up less than a third of the labor force. Those born during the 1955-69 period entered the labor force between 1972 and 1986. Once this entry was complete, they accounted for more than a third of the labor force. They may be considered the last part of the baby-boom generation. Their labor force share is projected to increase between now and 2000 as the women in this group continue entering the labor force and as younger smaller cohorts reach working age.

#### Where are they now?

These changes projected in the labor force by age suggest that it would be interesting to look at some of the major cohorts of the past. Four groups are nominated: the birth dearth of the 1930's, the baby boom of the late 1940's, 1950's, and early 1960's, the birth dearth of the late 1960's and early 1970's, and the echo group of the late 1970's and the 1980's. The following tabulation illustrates the passage of these groups through the labor force:

	Percent of labor force			Growth rate (percent)		
	1972	1986	2000	197286	1986–2000	
1930's dearth	18.8	15.1	1.7	.6	-13.3	
Baby boom	-	55.5	49.8	_	0.4	
1970's dearth		6.7	22.8	_	10.4	
Echo	-		11.2			

The persons in the 1930's birth-dearth group are now in their preretirement years and are projected to be in their late sixties by 2000. The number of these persons in the labor force is projected to plunge in the next 14 years. Their share of the labor force—small in 1986 because of the size of the baby boom—is projected to diminish to near zero by 2000. The baby-boom generation, more than half of the labor force now, will begin shrinking as a share of the labor force as they move towards the years when some may be taking early retirement. Their 2000 labor force is projected to be slightly larger than now—although a smaller percent. The persons in the 1970's birth dearth group are in their teens and their share of labor force is projected to grow as they begin working; despite their relatively small size, they are expected to represent a fifth of the labor force in 2000. Not all the echo to the baby-boom group has been born as of 1986;

in 2000, they are projected to still be entering the labor force, of which they are projected to make up just over a tenth.

#### ----FOOTNOTES\_\_\_\_

<sup>1</sup> The Asian and other race group consists of American Indians, Native Alaskans, Asians, and Pacific Islanders.

<sup>2</sup> These projections replace those described by Howard N Fullerton, Jr. in "The 1995 labor force: BLS's latest projections," *Monthly Labor Review*, November 1985, pp. 17–26; and Howard N Fullerton, Jr. and John Tschetter, "The 1995 labor force: a second look," *Monthly Labor Review*, November 1983, pp. 3–10.

<sup>3</sup> Projections of the Population of the United States by Age, Sex and Race: 1987 to 2080, Current Population Reports, Series P-25, No. 1018 (Bureau of Census, forthcoming).

<sup>4</sup> For the most recent evaluation of BLS labor force projections, see Howard N Fullerton, Jr., "How accurate were the 1980 labor force projections?" *Monthly Labor Review*, July 1982, pp. 15–21. An evaluation of the labor force projections to 1985 is in progress. For a description of BLS's current projection methodology, see *Employment Projections for 1995*: *Data and Methods*, Bulletin 2253 (Bureau of Labor Statistics, 1986).

<sup>5</sup> Hispanics may be of any race; their population and labor force numbers are also included in those for whites, blacks, and Asians and others.

<sup>6</sup> Gregory Spencer, *Projections of the Hispanic Population*, 1983 to 2080, *Current Population Reports*, Series P-25, No. 995 (Bureau of Census, 1986).

 $^{7}$  A cohort is a group experiencing the same event during the same time period—for example, immigrants to the United States during the 1960–64 period or those born 1930–34. In this article, only birth cohorts are discussed.

<sup>8</sup> See the following articles in the *Monthly Labor Review*, September 1987: Ronald E. Kutscher, "Overview and implications of the projections to 2000," pp. 3–9; Norman C. Saunders, "Economic projections to the year 2000," pp. 10–18; Valerie A. Personick, "Industry output and employment through the end of the century," pp. 30–45; and George T. Silvestri and John M. Lukasiewicz, "A look at occupational employment trends to the year 2000," pp. 46–63.

 $^{9}$  For the purpose of deriving the share of non-Hispanic whites, it is assumed that 97 percent of Hispanics are white.

 $^{10}$  The employment for 2000 is projected to be 130.4 million, with an unemployment rate of 6.0 percent. See Norman C. Saunders, "Economic projections," pp. 10–18.

#### A note on communications

The Monthly Labor Review welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, Monthly Labor Review, Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC 20212.