

EVALUATING THE 1995 BLS LABOR FORCE PROJECTIONS

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1. Introduction

The Bureau of Labor Statistic (BLS) has made labor force projections since the late 1950s. They have generally been for a 10 to 20 time span. These projections by age and sex, since the late 1970s, by race, and since the late 1980s, by Hispanic origin. Beginning in 1968, the Bureau of Labor Statistics has not considered the projection process complete until it assesses the accuracy of its projections (Swerdloff 1969). Such evaluations help the developers of the projections to better understand the causes of projection errors and provide users with information on the accuracy of specific components of the projections.

This article examines the errors in the labor force projections to 1995 and the sources of the errors. The analysis compares projected and actual (most recent Current Population Survey estimate) levels of the labor force and the rates of labor force participation of specific age groups for men and women, and for whites and blacks and others. Where appropriate, the accuracy of the six 1995 labor force projections are compared with evaluations of BLS projections of the 1985 and 1990 labor force (Fullerton 1988 and 1992). Each of the six labor force projections to 1995 are identified by the year in which they were published.

One of the challenges in evaluating projections is that the actual data are not strictly comparable to that projected. For example, the projections to 1985 were different from the actual 1985 numbers because of changes in how undocumented workers were estimated. Generally, some changes in the Current Population Survey are introduced after each census. The redesign after the 1990 census, implemented in 1994, was particularly extensive (Polivka and Miller 1994). Some changes affected the number of persons counted in the labor force, by adjusting for the census undercount. Other changes affected the proportion of the population for some demographic groups counted in the labor force. It is estimated that a slightly greater proportion of women are and a higher proportion of older persons are now placed in the labor force. It is not possible to quantify the effect of these improvements in the survey, so it is not possible to know how much they affect projection accuracy.

2. Evaluation of the aggregate 1995 projections

Each of the six projections to 1995 had three alternatives: high, moderate, and low. This analysis, for the most part, focuses on the middle or “moderate” growth projection in each series (Fullerton and Tschetter 1983, and Fullerton 1980, 1985, 1987, 1989, and 1991). (See table 1.) The following tabulation shows the projections to 1995 (in millions) and the numerical and the percent error made in each year the projections were developed.

<i>Projection for 1995 made in:</i>	<i>Labor force</i>	<i>Error</i>	
		<i>Number</i>	<i>Percent</i>
		<i>(millions)</i>	
1980	127.5	-4.8	-3.6
1983	131.4	-0.9	-.7
1985	129.2	-3.1	-2.4
1987	131.6	-0.7	-.5
1989	133.2	0.9	.7
1991	134.1	1.8	1.3
1995	132.3		

The overall error was greatest in 1980 and 1985; the pattern of low but increasing error exhibited since 1987 is due to over projecting labor force participation slightly for most groups. In the past, BLS projected the male labor force too high and the female labor force too low. As table 1 indicates, in every year except 1991, men’s labor force was projected too low. Previous evaluations indicated that the error for women’s labor force was greater than that for men and that women’s labor force was projected too low. In contrast to previous evaluations, this analysis shows only the 1980 and 1985 projections had women’s labor force too low and only the 1991 labor force projection for women was worse than that for men. The two years with the largest errors were years in which the labor force for both men and women were too low.

Because whites make up about 85 percent of the labor force, the numerical errors for this group should be larger than for blacks and others; this was true for every projection except that made in 1983. However, because sampling variability, the relative error for blacks and others should be greater than their share of the labor force; this is also true.

Projections made for a longer time span should be less accurate than those made a shorter span. We adjust

for different time spans by using annual growth rates. The following tabulation displays the growth rates for the total civilian labor force historically with the projected annual rate and the actual annual rate of change. All three rates are measured over the same number of years. The historic rate is calculated over the same number of years *before* the date of the projection as 1995 is *after* the date of the projection:

<i>Projection for 1995 made in:</i>	<i>Historical rate</i>	<i>Projected rate</i>	<i>Actual rate</i>	<i>Error</i>
		<i>(in percent)</i>		
1980	2.40	1.23	1.46	-.23
1983	2.42	1.36	1.42	-.05
1985	2.19	1.18	1.40	-.22
1987	1.95	1.24	1.30	-.06
1989	1.63	1.30	1.20	.10
1991	1.57	1.45	1.18	.27

The first two columns indicate that the Bureau expected labor force growth to slow, especially in the earlier projections. For example, in 1980, the labor force growth was expected to drop from the historical rate of growth, 2.4 percent a year, to 1.2 percent and in 1985 to drop from 2.2 percent yearly to 1.2 percent. In fact, the labor force did slow dramatically, though not by as much as BLS anticipated. Between 1989 and 1995 and between 1991 and 1995 however, the labor force growth slowed even more than BLS anticipated.

3. Population projections

The two components of BLS labor force projections are 1) age-race-sex specific labor force participation rates, made by BLS, and 2) age-race-sex specific population projections prepared by the Bureau of the Census (U. S. Bureau of the Census 1977, 1982, 1984, 1989). Analysis indicates that population increase underlies most of the labor force increase. (See, for example, Fullerton 1993). The past two evaluations of the labor force projections indicate that a major source of error has been not accounting for undocumented immigration in the population projections. Once the Census Bureau began incorporating an estimate of undocumented immigration into their population projections, the labor force projection error dropped significantly (Fullerton 1988, 1992). For this evaluation, there is an additional complication, the Current Population Survey estimates are adjusted for the 1990 census undercount which none of the population projections anticipated.

The following tabulation shows 1995 projections for the civilian, noninstitutional population aged 16 and over for men and women (in millions) and the errors associated with the total population projections:

*Projection of Total Men Women Error of
1995 population made in:*

	<i>Total</i>	<i>Men</i>	<i>Women</i>	<i>Error of Total (percent)</i>
		<i>(in millions)</i>		
1980	186	88	98	-6.3
1983	194	92	102	-2.4
1985	194	92	102	-2.4
1987	196	93	102	-1.4
1989	196	93	102	-1.4
1991	198	95	103	-.4
1995	199	95	103	

The source of population projection error for the ages of interest, 16 to 64, and for the time-span of these projections is net immigration. For an analysis of the effect of different assumptions embodied in the population projections on various age groups in the population in different time periods, see Long (1991).

The errors in the population projection declined as the projection period gets shorter. For the projections to 1995, the errors attributed to the population projections are uniformly lower than in earlier evaluations. Until 1989, the Bureau of the Census did not incorporate estimates of undocumented immigrants into the middle population projection series because such persons were not included in current population estimates. Once this was done, errors in the labor force projections attributed to errors in population projections dropped. The following tabulation shows total labor force errors attributable to participation and population errors (in millions):

<i>Projection for 1995 made in:</i>	<i>Total labor force error</i>	<i>Error attributed to:</i>	
		<i>Participation</i>	<i>Population</i>
		<i>(in millions)</i>	
1980	-4.8	11.7	-16.4
1983	-.9	10.0	-10.9
1985	-3.1	6.9	-10.0
1987	-.7	8.2	-8.9
1989	.9	10.0	-9.1
1991	1.8	8.9	-7.1

The most remarkable aspect of this tabulation is that in each projection the participation rate and the population errors offset each other. (See tables 2 and 3). There is no intrinsic reason why this should be. In fact for some earlier projections, the errors did not offset. The errors in the participation rate were derived by multiplying the 1995 annual average civilian noninstitutional population by the projected participation rates. Any difference between the these

numbers and the 1995 annual average civilian labor force is due to labor force participation rate error. Comparing the error of the published projection with the errors attributable to participation rate projections yields the errors due to population projections. Not only do the errors in the population projection drop as the time horizon shortens, they shrink as a source of labor force projection error, becoming smaller than participation rate error by 1989.

Population projection errors were fairly evenly divided between men and women. If we expect more undocumented men than women, this is surprising. We would expect a greater error for men. It is also interesting to find that the number of those 60 to 69 were underprojected. Half the population error for white men was due to ages 55 and over for the 1980 projection. For the 1991 projection the errors for white men 60 and over exceeded the total error for white men. (There were small offsetting errors at the younger ages.) By race as a whole, the errors for whites were 80 percent of total error in the 1980 projection. This increased to 85 percent by the 1991 projection. Errors by race were in proportion to their population size.

4. Labor force participation rate error

Labor force participation rate error did not decrease as the projection period decreased. (See table 2.) Errors by race were roughly proportional to their share of the labor force. If anything, blacks and others error was slightly lower than their proportion of the labor force, especially for the earlier projections.

Projection errors by sex were not equally divided. Men accounted for 54 percent of the labor force, but from 38 to 45 percent of the error. Black and other men were accurately projected in the earlier projections to 1995. This may be attributed to chance. Because the labor force participation rates of men have not been changing as rapidly as that for women, it is easier to project their activity. Projections of the white women's labor force participation rates consisted of half the error in the 6 projections. Similarly, the projection for black and other women accounted for 10 percent of the error, almost twice their proportion of the labor force. Women's labor force was more dynamic and harder to project.

This analysis proceeded by multiplying the 1995 population estimate by the projected labor force participation rates for the six labor force projections and compare the resulting labor force with the actual level; another approach would be to compare the projected labor force participation rates with the 1995 Current Population Survey estimates. (See table 4.)

5. Measures of errors in labor force participation

The later labor force projections were made for more age groups and more race or Hispanic origin groups than the earlier ones. For this analysis, 13 age groups were reviewed for men and women, for whites and blacks and others. If projections were made for additional groups, the totals for those groups are shown in table 1. The analysis of labor force participation rates was conducted on sets of 52 detailed participation rates. The evaluation of the projections to 1990 only reviewed 20 sets of labor force participation rates. Much of the work of bettering the labor force projections has come by providing more detail by age and race or Hispanic origin, not by increasing the sophistication of the projection.

The median error in labor force participation for each of the 52 errors per projection period ranged from 0.3 percentage points for the 1983 projection to 2.0 in the 1987 projection. (See chart 1.) However, none of the medians were significantly different from zero. (A median error of zero indicates that half the errors were above and half were below zero.) The range of median errors was much greater than for the projections analyzed for 1990. This reflects the use of smaller age groups and accounting explicitly for race.

<i>Projection for 1995 made in:</i>	<i>Median of error</i>	<i>Mean absolute deviation</i>
1980	1.22	5.6
1983	0.33	4.7
1985	1.00	3.8
1987	2.05	3.6
1989	1.81	2.8
1991	1.67	2.0

Despite the greater median of the errors, the spread of the errors, the mean absolute deviation or MAD, was less. The greatest over projection for the 1995 labor force was 16.7 percentage points (for white women 18 and 19 years of age, made in 1980). The lowest under projection, 10.6 percentage points (white men 65 to 69, made in 1985), was less than half the comparable error made in 1990. Generally speaking, the more aggregated the groupings, the smaller error we would expect. This suggests that there may have been a modest improvement in the projections over those made for 1990.

Another summary of the error often given for a wide variety of projections and forecasts is the mean absolute percentage error or MAPE. This measure attaches more significance to errors in the smaller groups.

Projection for 1995 made in: *Mean absolute percentage error*

	<i>Level</i>	<i>Participation rates</i>
1980	11.6	11.7
1983	11.2	12.7
1985	10.2	14.3
1987	9.4	11.7
1989	6.4	6.4
1991	4.2	4.0

The MAPE's for the *level* or overall projections show a satisfying decrease through time. The errors due to the population projection display the same patter. These measures indicate the importance of the population projection to the overall labor force projection error and that as time passed, the projection of the smaller groups improved. This also confirms the impression of lower spread of errors that the analysis using the median and the box-plot presents.

The MAPE's for the labor force *participation rates* show errors rising through the 1985 projection and then declining, with the MAPE for participation rates less than the MAPE for the overall projection. This pattern gives weight to the errors in the groups with lower participation, younger and older segments of the population. The analysis of the labor force errors due to participation based on comparing the labor force derived by combining the projected labor force participation rates with the actual population gives different information on the errors. The overall projection was fairly good because those groups with high attachment to the labor force were accurately projected. The groups with low attachment to the labor force (with low participation rates) were less accurately projected.

6. Errors in participation by age, sex, and race

As the discussion above shows, we know that the errors in labor force participation were greatest for young and older persons. For the 1980 projections, errors tended to be higher for young women than young men, while for the remaining projections, errors were generally greater for young men. Errors for young white men tended to be greater than for young black men, but white rates were over projected and black rates under projected in the early years. After 1983, rates for both groups of men were over projected. For young women, white rates were generally less accurate than young black women. Rates for both groups of young were likely to be too high. Over projection of labor force participation in

the 1980 labor force projection extended into ages 25 to 29 for both groups of women.

The projected labor force participation for older people provided another source of error. Generally, the rates were projected too low. In part this error is due to the change in the CPS, which now counts more older persons in the labor force. However, for white men, this under projection of participation extended down to ages 50 to 54. The more recent labor force projections have had significantly lower errors for older people. The following tabulation shows the best and worst projection for each projection:

<i>Projection for 1995 made in:</i>	<i>Greatest over projection</i>	<i>Lowest under projection</i>
1980	16.7	-10.0
1983	12.6	-10.4
1985	9.3	-10.6
1987	7.8	-8.4
1989	6.5	-4.2
1991	4.8	-5.1

When the error in the participation rate is 5.1 percentage points and the participation rate for the group was 59 percent in 1995, the error is almost 9 percent. One may take the position that the percent error and not the percentage point error is a better measure of the accuracy. The 1980 labor force projection's greatest percent error was 34 percent, for white men ages 16 and 17. This was lower than the greatest percent error for other years. Generally, the 1980 projection was not the year with the lowest error. The projection for 1985 had the greatest percent error, 60 percent, for black men ages 70 and over. The groups that had the highest percent error had low labor force participation rates. So, they also have high percent errors. This set of projections had most of their errors in either the youngest or oldest members of the labor force.

Compared with the labor force projections to 1990, the relative errors are larger, the greatest relative error was 32 percent, made in 1973. The increase in relative errors may reflect the greater variability because of the smaller groups being projected. The error was for black women aged 65 to 69, such a small population group was not evaluated last time.

7. Composition errors

For some users of the projections, the key question is not "what is the level," or "how fast," but what proportion of the labor force is comprised of a particular group. This may be measured by the *index of dissimilarity* (White, 1986), which measures how much the projected distribution would have to change to be the actual

1980	1983	1985	1987	1989	1991
3.8	3.0	2.8	2.1	1.6	1.1

This measure indicates a steady improvement in projecting the labor force composition, by age, sex, and race. The greatest error (1980) is considerably lower than the greatest error in projections made to 1990. The least error is also smaller than the least error made in the projections to 1990. For those who rely of labor force projections to indicate the likely future composition of the labor force, these numbers offer reassurance. Increasing the number of groups evaluated may have reduced the size of this error. By looking at the projections made to both 1990 and 1995, it is possible to see if the improvement is due to more groups. For the projections made in 1980, 1983, and 1985, the errors are greater for the 1995 projections than the 1990 projections.

8. Alternative projections

For each projection, two alternative projections were made. Did the range from low-to-high alternatives span the actual? And, was the high or low alternative close to the 1995 actual? For evidence, we turn to chart 2, which shows the high and low alternatives for each of the six labor force projections to 1995. The actual is "covered" by the alternatives. The alternatives did function as confidence or credible intervals. Generally, the high projection was closer to the actual than the low projection. However, for the more recent projections, the low was closer.

The gap between high and low should narrow for the more recent projections. This happened, but the interval for the 1983 projection was wider than for the 1980 labor force projection. This reflects a decision made in 1983 that reflected the evaluation of the projections to 1980. The high alternative projection, beginning in 1987, has reflected higher net immigration. This implies higher labor force participation rates as well as higher population numbers. This is one reason the high alternative labor force projection increased between 1987 and 1989.

Summary

Overall Comparison. Ten measures of projection accuracy were made of the six labor force projections for 1995. Which projection was best? In considering this, there are several ways a projection can be best. For example, if the errors are offset, the projected level of the labor force would be very near the actual level, yet the participation rates and the projected population would be incorrectly projected. However, if the main use of the projected labor force was the level or growth of the labor force, the details would not matter. The following tabulation lists the number of times a projection of the 195 labor force was calculated to be best or worst:

<i>Projection</i>	<i>Best</i>	<i>Worst</i>
1980		6
1983	2	
1985	1	2
1987	1	1
1989	1	
1991	5	1

The tests described earlier help users evaluate the projections in terms of their own needs: for an accurate level of the total labor force, for accurate labor force participation rate projections, or for accurate projections of composition of the labor force. Different tests of the accuracy of the participation rate projections allow the user to focus on overall accuracy or accuracy of specific groups.

Earlier evaluations. Because the projections were evaluated at a greater level of detail than in the past, comparison with earlier projections is difficult. Evaluations of the accuracy of the level and of the growth rate are at the same level as in previous evaluations. Evaluations of the components, could look worse without being worse. An obvious questions is: Did the more detailed projections yield more accurate projections?

	<i>Projection to 1995</i>		<i>Projection to 1990</i>	
	<i>Error</i>	<i>Year</i>	<i>Error</i>	<i>Year</i>
Error level (in millions):				
Best	0.9	1989	.2	1980
Worst	-4.8	1980	-14.2	1970
Error in growth rate (percent):				
Best	-.05	1983	.02	1983
Worst	.27	1991	-.68	1973
Mean absolute percent error:				
Best	4.0	1991	6.8	1985
Worst	14.3	1985	10.8	1973
Index of dissimilarity:				
Best	1.1	1991	2.6	1985
Worst	3.8	1980	7.6	1973

The results are fascinating. In terms of the error in millions, for the projections made to 1990, those made in 1980 had the lowest error, but the 1980 projections were the worst (and longest) to 1995. The least error of the projections to 1995 was greater than the least error

to 1990, but the worst error to 1995 was almost a third the worst error to 1990. If the error is measured by the annual growth rate, once again, the best (least error) for the 1995 projection was greater than the best projection to 1990, but the worst 1995 error was significantly better than the worst 1990 error. The 1991 projection to 1995 was the worst, even though it was the shortest. Focusing on the best projections to 1990 and 1995, leads one to say that the 1995 projections were not as good as the 1990 ones. Looking at the worst errors (MINIMAX) leads to the opposite conclusion.

Looking at the two remaining measures, which do reflect the greater detail evaluated, one gets a mixed picture. The best 1995 projection was better than the best projection made to 1990, but the worst to 1995 had a greater error than the worst 1990 projection. For the three projections that were evaluated earlier to 1990, the MAPE's for 1995 are higher than for 1990. The additional 5 years has resulted in lower accuracy. The highest MAPE for the 1995 projections is the same as the highest for the 1990 projections, but the two most recent projections have lower MAPE's than any of the projections to 1990. This suggests that the errors for the groups with lower participation rates were improved in the 1995 projections.

For those interested in the composition of the labor force, the index of dissimilarity indicates that the best projection to 1995 had an error less than half the best projection to 1990 and that the worst projection to 1995 had half the error of the worst projection to 1990.

The projection for 1990 made in 1983 had a greatest relative error of 17 percent, for 1995, the greatest relative error for the projection to 1995 made in 1983 was 53 percent. The greatest MAD was less than the greatest for 1990 and the least was just less than the least for 1990. The median MAD for 1995 (3.7) was less than the median MAD for 1990 (4.05). Even though the groups being analyzed in 1995 are smaller and thus more variable than the groups for 1990, the spread of errors is smaller. The greater variability resulted in the extreme errors being greater than in 1990.

BLS labor force projections to 1995 were marginally better than the projections to 1990 because the Bureau of the Census is projecting the population more accurately, because BLS is not projecting as far forward as in the past, and because the labor force itself is not growing as rapidly. However, the most stable population groups, white, non-Hispanics, are expected to be a smaller portion of the future labor force. Thus, future labor force projections may not be as accurate. As the baby boom ages, projecting their

labor force activity at the older ages should also be more difficult.

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Table 1. The 1995 labor force, and labor force participation rates, actual and as projected in 1980, 1983, 1985, 1987, 1989, and 1991

Labor force group	Labor force (in thousands)							Participation rate (in percent)						
	As published in --						Actual	As published in --						Actual
	1980	1983	1985	1987	1989	1991	1995	1980	1983	1985	1987	1989	1991	1995
Total	127,542	131,387	129,168	131,598	133,215	134,085	132,304	68.6	67.8	66.6	67.2	68.1	67.8	66.6
Men, 16 and older	67,611	69,970	69,282	70,392	71,220	72,149	71,360	76.8	76.1	75.3	75.3	76.3	76.3	75.0
Women, 16 and older	59,931	61,417	59,886	61,206	61,995	61,936	60,944	61.2	60.3	58.9	59.8	60.6	60.1	58.9
White	109,292	112,393	110,086	111,686	113,300	113,883	111,950	68.8	68.1	66.8	67.5	68.5	68.3	67.1
Men	58,871	60,757	59,894	60,471	61,226	61,953	61,146	77.7	77.0	75.8	75.9	76.9	76.9	75.7
16 and 17 years	1,742	1,638	1,374	1,451	1,462	1,433	1,429	63.0	58.9	49.3	51.1	51.5	50.0	47.7
18 and 19 years	1,973	2,001	1,904	1,899	1,883	1,887	1,998	80.8	80.4	75.6	73.5	72.6	71.3	69.9
20 to 24 years	5,527	5,632	5,773	5,760	5,730	5,873	6,096	89.0	87.3	89.5	88.8	88.2	87.2	85.1
25 to 29 years	6,553	6,997	7,074	7,016	7,026	7,251	7,224	93.9	93.9	94.9	94.2	94.8	94.5	93.6
30 to 34 years	7,884	8,327	8,390	8,539	8,521	8,676	8,445	94.9	95.1	95.6	95.5	95.5	95.4	94.5
35 to 39 years	8,187	8,768	8,635	8,720	8,774	8,834	8,587	95.3	96.7	95.3	94.9	95.5	95.3	93.7
40 to 44 years	7,750	7,949	7,880	7,934	7,951	7,949	7,827	95.8	95.6	94.7	94.5	94.9	94.3	93.2
45 to 49 years	6,685	7,052	6,920	6,886	6,897	6,859	6,740	92.4	94.5	92.7	93.3	93.5	92.7	91.8
50 to 54 years	5,197	5,139	5,163	5,150	5,155	5,211	4,991	89.6	89.0	89.3	89.0	89.1	89.9	87.8
55 to 59 years	3,613	3,592	3,605	3,570	3,694	3,739	3,589	79.2	78.4	78.7	77.4	80.1	80.9	78.6
60 to 64 years	2,191	2,059	1,873	2,102	2,258	2,285	2,220	54.8	50.8	46.3	51.2	55.0	55.6	54.3
65 to 69 years	817	841	647	810	1,028	1,085	1,074	21.5	21.8	16.8	20.4	25.9	27.3	27.4
70 years and older	752	762	656	634	847	871	926	10.8	9.7	8.3	8.0	10.7	11.0	11.7
Women	50,421	51,636	50,192	51,215	52,074	51,930	50,804	60.7	60.0	58.4	59.7	60.7	60.2	59.0
16 and 17 years	1,663	1,406	1,201	1,420	1,409	1,326	1,320	62.5	52.6	44.9	52.4	52.0	48.5	46.7
18 and 19 years	2,051	1,912	1,668	1,839	1,856	1,756	1,798	81.2	74.4	64.8	69.9	70.5	66.0	64.5
20 to 24 years	5,739	5,707	5,306	5,381	5,399	5,269	5,170	87.8	84.9	79.0	78.6	78.8	75.6	72.3
25 to 29 years	6,419	6,215	6,136	6,066	6,096	6,010	5,890	89.4	82.7	81.7	79.9	80.3	77.7	75.9
30 to 34 years	6,625	7,150	7,166	7,157	7,065	6,906	6,766	78.1	81.1	81.4	80.2	79.2	76.6	75.7
35 to 39 years	7,377	7,511	7,439	7,468	7,475	7,334	7,024	83.1	82.0	81.2	81.4	81.5	79.6	76.5
40 to 44 years	6,669	7,032	6,679	6,832	6,916	6,926	6,674	80.5	83.5	79.3	80.9	81.9	81.8	78.8
45 to 49 years	5,206	5,449	5,646	5,833	5,931	6,026	5,856	69.9	71.4	74.0	77.5	78.8	79.9	78.2
50 to 54 years	3,756	4,076	4,024	4,027	4,189	4,294	4,218	61.9	67.5	66.7	66.9	69.6	71.2	71.5
55 to 59 years	2,420	2,562	2,525	2,646	2,854	2,927	2,908	50.0	51.9	51.3	53.6	57.8	59.2	60.0
60 to 64 years	1,459	1,442	1,460	1,521	1,608	1,753	1,714	33.3	31.7	32.2	33.5	35.4	38.6	38.2
65 to 69 years	619	686	563	598	753	861	837	13.4	14.7	12.1	12.8	16.1	18.4	18.1
70 years and older	418	488	379	427	523	542	629	3.8	4.0	3.1	3.6	4.4	4.6	5.4
Black and other	18,250	18,994	19,082	19,912	19,915	20,202	20,354	67.0	65.7	65.9	65.7	65.8	65.5	64.3
Men	8,740	9,213	9,388	9,921	9,994	10,196	10,215	71.3	70.6	71.7	71.8	72.5	72.4	70.7
16 and 17 years	159	152	171	242	250	242	239	24.8	24.7	27.7	33.2	34.2	32.7	29.9
18 and 19 years	270	252	301	385	363	365	370	48.8	46.7	54.5	59.6	56.0	55.0	51.8
20 to 24 years	970	898	1,017	1,144	1,107	1,185	1,243	70.8	68.3	76.6	78.0	75.5	77.7	74.3
25 to 29 years	1,174	1,265	1,265	1,308	1,318	1,375	1,428	88.1	84.1	84.2	87.6	88.6	88.8	86.9
30 to 34 years	1,418	1,516	1,518	1,523	1,524	1,578	1,573	94.6	87.6	87.2	89.3	90.0	90.1	88.2
35 to 39 years	1,247	1,485	1,468	1,482	1,480	1,486	1,497	91.6	90.8	89.5	90.9	91.2	89.6	85.0
40 to 44 years	1,113	1,244	1,249	1,258	1,238	1,266	1,277	93.1	90.1	90.3	90.1	88.7	89.5	86.8
45 to 49 years	878	935	975	967	983	980	932	88.2	84.2	87.3	87.1	88.6	87.3	82.5
50 to 54 years	672	681	663	705	708	709	759	83.6	84.3	81.7	81.9	82.1	81.5	79.6
55 to 59 years	412	414	412	521	525	511	427	65.9	64.8	64.4	71.6	72.1	69.5	66.4
60 to 64 years	263	246	229	245	304	298	268	47.8	48.2	44.8	40.3	50.0	48.5	47.9
65 to 69 years	96	68	71	96	122	118	124	18.5	15.6	16.5	17.6	22.3	21.4	26.0
70 years and older	68	57	49	45	72	83	77	8.3	6.9	6.0	5.1	8.1	9.3	9.2

Table 1. The 1995 labor force, and labor force participation rates, actual and as projected in 1980, 1983, 1985, 1987, 1989, and 1991—continued

Labor force group	Labor force (in thousands)							Participation rate (in percent)						
	As published in —						Actual	As published in —						Actual
	1980	1983	1985	1987	1989	1991	1995	1980	1983	1985	1987	1989	1991	1995
Women	9,510	9,781	9,694	9,991	9,921	10,006	10,140	63.5	61.7	61.1	60.5	60.1	59.7	58.9
16 and 17 years	245	175	167	234	231	223	237	38.8	28.4	27.0	32.9	32.4	30.9	30.1
18 and 19 years	300	268	271	356	361	344	374	49.6	45.0	45.5	52.5	53.2	49.9	50.2
20 to 24 years	1,207	1,089	1,010	1,147	1,106	1,136	1,179	75.4	69.8	64.5	67.6	65.2	65.4	62.7
25 to 29 years	1,373	1,367	1,304	1,288	1,268	1,297	1,369	85.3	80.1	76.5	73.1	72.0	71.6	70.7
30 to 34 years	1,554	1,568	1,562	1,510	1,506	1,492	1,502	86.7	82.0	81.5	77.0	76.9	74.3	72.2
35 to 39 years	1,435	1,523	1,513	1,536	1,532	1,489	1,545	83.7	82.5	81.9	81.2	81.1	77.6	74.7
40 to 44 years	1,170	1,361	1,312	1,313	1,318	1,341	1,320	77.5	83.9	80.9	79.6	79.9	80.5	76.2
45 to 49 years	853	941	1,044	1,018	1,004	1,008	997	70.6	70.5	78.0	75.9	74.8	74.4	73.5
50 to 54 years	584	659	694	711	695	742	731	60.3	65.7	69.1	67.5	65.9	69.7	65.5
55 to 59 years	379	423	449	487	480	477	485	50.4	51.6	54.7	55.7	54.9	54.0	59.1
60 to 64 years	244	244	261	261	243	258	249	36.5	34.6	36.8	34.6	32.2	33.7	34.3
65 to 69 years	112	122	75	74	117	122	82	16.2	18.8	11.6	10.5	16.5	17.0	12.3
70 years and older	54	41	32	56	60	77	70	4.4	2.8	2.2	3.5	4.2	5.4	5.4
Black	—	—	14,796	15,058	15,120	15,102	14,817	—	—	65.3	65.6	65.9	65.3	63.7
Asian and other	—	—	—	4,854	4,795	5,100	5,539	—	—	—	65.8	65.3	66.1	65.8
Hispanic	—	—	—	11,787	11,939	11,900	12,267	—	—	—	66.7	68.7	68.5	65.8

Note: Dash indicates data not available

Labor force group	Labor force (in thousands)													
	Using rates published in --						Actual	Errors due to participation rate projections ¹						
	1980	1983	1985	1987	1989	1991	1995	1980	1983	1985	1987	1989	1991	
Total	143,975	142,311	139,175	140,526	142,276	141,228	132,305	11,671	10,007	6,871	8,222	9,972	8,924	
Men, 16 and older	75,833	75,197	74,293	74,759	75,566	75,367	71,361	4,472	3,836	2,933	3,398	4,206	4,007	
Women, 16 and older	68,143	67,114	64,882	65,768	66,709	65,860	60,944	7,199	6,171	3,939	4,824	5,766	4,917	
White	122,129	121,203	117,980	119,061	120,807	119,956	111,950	10,179	9,253	6,031	7,111	8,857	8,006	
Men	65,340	65,089	63,908	64,082	64,855	64,703	61,146	4,193	3,943	2,762	2,936	3,709	3,557	
16 and 17 years	2,327	2,306	2,270	2,273	2,303	2,303	1,429	898	877	841	844	874	874	
18 and 19 years	1,801	1,684	1,409	1,461	1,472	1,430	1,998	-196	-314	-588	-537	-525	-568	
20 to 24 years	5,788	5,759	5,415	5,265	5,200	5,107	6,096	-308	-337	-681	-831	-896	-989	
25 to 29 years	6,872	6,740	6,910	6,856	6,810	6,733	7,224	-353	-484	-314	-368	-414	-492	
30 to 34 years	8,387	8,387	8,476	8,414	8,468	8,441	8,445	-58	-58	32	-31	23	-4	
35 to 39 years	8,699	8,718	8,764	8,754	8,754	8,745	8,587	112	131	176	167	167	158	
40 to 44 years	8,005	8,123	8,005	7,972	8,022	8,005	7,827	178	296	178	145	195	178	
45 to 49 years	7,037	7,022	6,956	6,941	6,970	6,926	6,740	297	282	216	201	231	187	
50 to 54 years	5,251	5,370	5,268	5,302	5,314	5,268	4,991	261	380	278	312	323	278	
55 to 59 years	4,090	4,063	4,077	4,063	4,067	4,104	3,589	501	474	488	474	478	515	
60 to 64 years	3,237	3,204	3,216	3,163	3,274	3,306	2,220	1,017	984	996	943	1,054	1,086	
65 to 69 years	2,148	1,991	1,814	2,007	2,155	2,179	1,074	1,073	917	740	932	1,081	1,105	
70 years and older	1,698	1,721	1,327	1,611	2,045	2,156	926	772	795	401	685	1,119	1,230	
Women	56,789	56,114	54,072	54,979	55,952	55,253	50,804	5,986	5,310	3,268	4,175	5,148	4,449	
16 and 17 years	1,716	1,696	1,651	1,688	1,716	1,702	1,320	396	376	331	368	396	382	
18 and 19 years	1,742	1,466	1,251	1,460	1,449	1,352	1,798	-56	-332	-547	-338	-349	-447	
20 to 24 years	5,806	5,319	4,633	4,998	5,041	4,719	5,170	636	149	-537	-172	-129	-451	
25 to 29 years	6,814	6,589	6,131	6,100	6,116	5,867	5,890	925	700	242	211	226	-22	
30 to 34 years	7,993	7,394	7,305	7,144	7,180	6,947	6,766	1,227	628	538	377	413	181	
35 to 39 years	7,174	7,450	7,477	7,367	7,275	7,036	7,024	151	426	454	344	252	13	
40 to 44 years	7,037	6,944	6,876	6,893	6,901	6,741	6,674	363	270	202	219	228	67	
45 to 49 years	6,029	6,253	5,939	6,059	6,133	6,126	5,856	173	397	83	203	278	270	
50 to 54 years	4,125	4,213	4,367	4,573	4,650	4,715	4,218	-93	-4	149	356	432	497	
55 to 59 years	2,999	3,270	3,232	3,241	3,372	3,450	2,908	91	362	323	333	464	541	
60 to 64 years	2,244	2,329	2,302	2,406	2,594	2,657	1,714	530	615	588	692	880	943	
65 to 69 years	1,542	1,468	1,491	1,551	1,639	1,788	837	705	631	654	714	802	951	
70 years and older	1,569	1,721	1,417	1,498	1,885	2,154	629	939	1,092	787	869	1,256	1,525	
Black and other	21,846	21,109	21,195	21,466	21,469	21,272	20,354	1,492	754	841	1,111	1,114	917	
Men	10,493	10,108	10,385	10,677	10,711	10,664	10,215	278	-107	170	462	496	450	
16 and 17 years	570	564	573	574	579	579	239	331	325	334	335	340	340	
18 and 19 years	177	176	198	237	244	233	370	-193	-194	-172	-133	-126	-137	
20 to 24 years	816	781	911	997	936	920	1,243	-427	-462	-332	-246	-306	-323	
25 to 29 years	1,163	1,122	1,259	1,282	1,241	1,277	1,428	-265	-306	-170	-147	-188	-152	
30 to 34 years	1,571	1,499	1,501	1,562	1,580	1,583	1,573	-2	-73	-71	-11	7	11	
35 to 39 years	1,666	1,543	1,536	1,573	1,585	1,587	1,497	169	46	39	76	88	90	
40 to 44 years	1,348	1,336	1,317	1,338	1,342	1,319	1,277	71	59	40	60	65	41	
45 to 49 years	1,052	1,018	1,020	1,018	1,002	1,011	932	120	86	88	86	70	79	
50 to 54 years	840	802	832	830	844	832	759	82	44	73	71	86	73	
55 to 59 years	537	542	525	526	528	524	427	110	115	98	100	101	97	
60 to 64 years	369	363	361	401	404	389	268	101	95	93	133	136	121	
65 to 69 years	228	230	213	192	238	231	124	104	106	90	68	114	107	
70 years and older	155	131	138	148	187	180	77	78	54	61	70	110	102	

Labor force group	Characteristics of the 1995 labor force, actual and as projected using the participation rates projected in 1980, 1983, 1985, 1987, 1989, and 1991, with the actual 1995 population and associated errors— continued													
	Labor force (in thousands)													
	Using rates published in --						Actual	Errors due to participation rate projections ¹						
	1980	1983	1985	1987	1989	1991	1995	1980	1983	1985	1987	1989	1991	
Women	11,353	11,001	10,810	10,789	10,758	10,607	10,140	1,213	861	670	649	618	468	
16 and 17 years	499	485	480	476	472	469	237	262	248	243	239	236	232	
18 and 19 years	289	211	201	245	241	230	374	-85	-163	-173	-129	-133	-144	
20 to 24 years	932	846	855	987	1000	938	1,179	-247	-333	-324	-192	-179	-241	
25 to 29 years	1,460	1,352	1,249	1,309	1,263	1,267	1,369	91	-18	-120	-60	-107	-103	
30 to 34 years	1,775	1,666	1,592	1,521	1,498	1,490	1,502	272	164	89	19	-4	-13	
35 to 39 years	1,793	1,696	1,686	1,593	1,591	1,537	1,545	248	151	141	48	46	-8	
40 to 44 years	1,449	1,428	1,418	1,406	1,404	1,344	1,320	129	108	98	86	84	24	
45 to 49 years	1,051	1,138	1,097	1,080	1,084	1,092	,997	54	141	100	82	87	95	
50 to 54 years	788	787	870	847	835	830	731	57	56	140	116	104	99	
55 to 59 years	495	539	567	554	541	572	485	10	54	82	69	56	87	
60 to 64 years	366	374	397	404	398	392	249	117	125	148	155	149	143	
65 to 69 years	244	231	246	231	215	225	82	162	149	164	149	133	143	
70 years and older	213	247	152	138	217	223	70	142	176	82	67	146	153	
Black			15,180	15,249	15,319	15,180	14,817			363	432	502	363	
Asian and other				5,537	5,495	5,563	5,539				-1	-43	24	
Hispanic				12,426	12,798	12,761	12,267				159	531	494	

¹ Difference from actual 1995 values

Table 3. Difference between the projected and actual labor force, and between the original labor force and one using the actual 1995 population, by characteristic, 1980, 1983, 1985, 1987, 1989, and 1991 [Numbers in thousands]												
Labor force group	Difference between the projected and the actual 1995 labor force based on projections made in ¼						Errors due to population projections ¹					
	1980	1983	1985	1987	1989	1991	1980	1983	1985	1987	1989	1991
Total	-4,762	-917	-3,136	-706	911	1,781	-	-	-	-8,928	-9,061	-7,143
Men, 16 and older	-3,750	-1,391	-2,079	-969	-141	788	-8,222	-5,227	-5,011	-4,367	-4,346	-3,218
Women, 16 and older	-1,013	474	-1,058	263	1,052	993	-8,212	-5,697	-4,996	-4,562	-4,714	-3,924
White	-2,658	443	-1,864	-264	1,350	1,933	-	-8,810	-7,894	-7,375	-7,507	-6,073
Men	-2,275	-389	-1,252	-675	80	807	-6,469	-4,332	-4,014	-3,611	-3,629	-2,750
16 and 17 years	313	209	-55	22	33	4	-585	-668	-896	-822	-841	-870
18 and 19 years	-25	3	-94	-99	-115	-111	172	317	495	438	411	458
20 to 24 years	-569	-464	-323	-336	-366	-223	-261	-127	358	495	530	766
25 to 29 years	-671	-227	-150	-208	-198	27	-319	257	164	160	216	518
30 to 34 years	-561	-118	-55	94	76	231	-503	-60	-86	125	53	235
35 to 39 years	-400	181	48	133	187	247	-512	50	-129	-34	20	89
40 to 44 years	-77	122	53	107	124	122	-255	-174	-125	-38	-71	-56
45 to 49 years	-55	312	180	146	157	119	-352	30	-36	-55	-73	-67
50 to 54 years	206	148	172	159	164	220	-54	-231	-105	-152	-159	-57
55 to 59 years	24	3	16	-19	105	150	-477	-471	-472	-493	-373	-365
60 to 64 years	-29	-161	-347	-118	38	65	-1,046	-1,145	-1,343	-1,061	-1,016	-1,021
65 to 69 years	-257	-233	-427	-264	-46	11	-1,331	-1,150	-1,167	-1,197	-1,127	-1,094
70 years and older	-174	-164	-270	-292	-79	-55	-946	-959	-671	-977	-1,198	-1,285
Women	-383	832	-612	411	1,270	1,126	-6,368	-4,478	-3,880	-3,764	-3,878	-3,323
16 and 17 years	343	86	-119	100	89	6	-53	-290	-450	-268	-307	-376
18 and 19 years	253	114	-130	41	58	-42	309	446	417	379	407	404
20 to 24 years	569	537	136	211	229	99	-67	388	673	383	358	550
25 to 29 years	529	325	246	176	206	120	-395	-374	5	-34	-20	143
30 to 34 years	-141	384	400	391	299	140	-1,368	-244	-139	13	-115	-41
35 to 39 years	353	487	415	444	451	310	203	61	-38	101	200	298
40 to 44 years	-5	358	5	158	242	252	-368	88	-197	-61	15	185
45 to 49 years	-650	-407	-210	-23	75	170	-823	-804	-293	-226	-202	-100
50 to 54 years	-462	-142	-194	-191	-29	76	-369	-137	-343	-546	-461	-421
55 to 59 years	-488	-346	-383	-262	-54	19	-579	-708	-707	-595	-518	-523
60 to 64 years	-255	-272	-254	-193	-106	39	-785	-887	-842	-885	-986	-904
65 to 69 years	-218	-151	-274	-239	-84	24	-923	-782	-928	-953	-886	-927
70 years and older	-211	-141	-250	-202	-106	-87	-1,151	-1,233	-1,038	-1,071	-1,362	-1,612

Table 3. Difference between the projected and actual labor force, and between the original labor force and one using the actual 1995 population, by characteristic, 1980, 1983, 1985, 1987, 1989, and 1991— continued

[Numbers in thousands]

Labor force group	Difference between the projected and the actual 1995 labor force based on projections made in $\frac{3}{4}$						Errors due to population projections ¹					
	1980	1983	1985	1987	1989	1991	1980	1983	1985	1987	1989	1991
Black and other	-2,104	-1,360	-1,272	-442	-439	-152	-3,596	-2,115	-2,113	-1,554	-1,554	-1,070
Men	-1,475	-1,002	-827	-294	-221	-19	-1,753	-895	-997	-756	-717	-468
16 and 17 years	-80	-87	-68	3	11	3	-411	-412	-402	-332	-329	-337
18 and 19 years	-100	-118	-69	15	-7	-5	93	76	103	148	119	132
20 to 24 years	-273	-345	-226	-99	-136	-58	154	117	106	147	171	265
25 to 29 years	-254	-163	-163	-120	-110	-53	11	143	6	26	77	98
30 to 34 years	-155	-57	-55	-50	-49	5	-153	17	17	-39	-56	-5
35 to 39 years	-250	-12	-29	-15	-17	-11	-419	-58	-68	-91	-105	-101
40 to 44 years	-164	-33	-28	-19	-39	-11	-235	-92	-68	-80	-104	-53
45 to 49 years	-54	3	43	35	51	48	-174	-83	-45	-51	-19	-31
50 to 54 years	-87	-78	-96	-54	-51	-50	-168	-121	-169	-125	-136	-123
55 to 59 years	-15	-13	-15	94	98	84	-125	-128	-113	-5	-3	-13
60 to 64 years	-5	-22	-39	-23	36	30	-106	-117	-132	-156	-100	-91
65 to 69 years	-28	-56	-53	-28	-2	-6	-132	-162	-142	-96	-116	-113
70 years and older	-9	-20	-28	-32	-5	6	-87	-74	-89	-103	-115	-97
Women	-630	-359	-446	-149	-219	-134	-1,843	-1,220	-1,116	-798	-837	-601
16 and 17 years	8	-62	-70	-3	-6	-14	-254	-310	-313	-242	-241	-246
18 and 19 years	-74	-106	-103	-18	-13	-30	11	57	70	111	120	114
20 to 24 years	28	-90	-169	-32	-73	-43	275	243	155	160	106	198
25 to 29 years	4	-2	-65	-81	-101	-72	-87	15	55	-21	5	30
30 to 34 years	52	66	60	8	4	-10	-221	-98	-30	-11	8	2
35 to 39 years	-110	-22	-32	-9	-13	-56	-358	-173	-173	-57	-59	-48
40 to 44 years	-150	41	-8	-7	-2	21	-279	-67	-106	-93	-86	-3
45 to 49 years	-144	-56	47	21	7	11	-198	-197	-53	-62	-80	-84
50 to 54 years	-147	-72	-37	-20	-36	11	-204	-128	-176	-136	-140	-88
55 to 59 years	-106	-62	-36	2	-5	-8	-116	-116	-118	-67	-61	-95
60 to 64 years	-5	-5	12	12	-6	9	-122	-130	-136	-143	-155	-134
65 to 69 years	30	40	-7	-8	35	40	-132	-109	-171	-157	-98	-103
70 years and older	-16	-29	-38	-14	-10	7	-159	-206	-120	-82	-157	-146
Black	NA	NA	-21	241	303	285	NA	NA	-384	-191	-199	-78
Asian and other	NA	NA	NA	-685	-744	-439	NA	NA	NA	-683	-700	-463
Hispanic	NA	NA	NA	-480	-328	-367	NA	NA	NA	-639	-859	-861

Table 4. Difference between the 1995 labor force and the projections made in 1980, 1983, 1985, 1987, 1989, and 1991												
Labor force group	Percentage point difference						Absolute relative error					
	1980	1983	1985	1987	1989	1991	1980	1983	1985	1987	1989	1991
Total	2.0	1.2	0.0	0.6	1.5	1.2	3.0	1.8	0.0	0.9	2.2	1.8
Men, 16 and older	1.8	1.1	0.3	0.3	1.3	1.3	2.4	1.5	0.4	0.4	1.8	1.8
Women, 16 and older	2.3	1.4	0.0	0.9	1.7	1.2	3.8	2.3	0.1	1.5	2.8	2.0
White	1.7	1.0	-0.3	0.4	1.4	1.2	2.6	1.5	0.4	0.6	2.1	1.8
Men	2.0	1.3	0.1	0.2	1.2	1.2	2.6	1.7	0.1	0.2	1.5	1.5
16 and 17 years	15.3	11.2	1.6	3.4	3.8	2.3	32.0	23.4	3.3	7.1	7.9	4.8
18 and 19 years	10.9	10.5	5.7	3.6	2.7	1.4	15.6	15.1	8.2	5.2	3.9	2.0
20 to 24 years	3.9	2.2	4.4	3.7	3.1	2.1	4.6	2.6	5.2	4.3	3.6	2.5
25 to 29 years	0.3	0.3	1.3	0.6	1.2	0.9	0.4	0.4	1.4	0.7	1.3	1.0
30 to 34 years	0.4	0.6	1.1	1.0	1.0	0.9	0.4	0.6	1.1	1.0	1.0	0.9
35 to 39 years	1.6	3.0	1.6	1.2	1.8	1.6	1.7	3.2	1.7	1.3	1.9	1.7
40 to 44 years	2.6	2.4	1.5	1.3	1.7	1.1	2.8	2.6	1.6	1.4	1.8	1.2
45 to 49 years	0.6	2.7	0.9	1.5	1.7	0.9	0.7	3.0	1.0	1.7	1.9	1.0
50 to 54 years	1.8	1.2	1.5	1.2	1.3	2.1	2.0	1.3	1.7	1.3	1.5	2.4
55 to 59 years	0.6	-0.2	0.1	-1.2	1.5	2.3	0.7	0.3	0.1	1.6	1.9	2.9
60 to 64 years	0.5	-3.5	-8.0	-3.1	0.7	1.3	0.9	6.5	14.8	5.7	1.3	2.4
65 to 69 years	-5.9	-5.6	-10.6	-7.0	-1.5	-0.1	21.6	20.5	38.7	25.6	5.5	0.4
70 years and older	-1.0	-2.0	-3.4	-3.7	-1.0	-0.7	8.1	17.4	29.1	31.9	8.8	6.2
Women	1.7	1.0	-0.6	0.7	1.7	1.2	3.0	1.8	0.9	1.3	3.0	2.1
16 and 17 years	15.8	5.9	-1.8	5.7	5.3	1.8	33.9	12.7	3.8	12.2	11.4	3.9
18 and 19 years	16.7	9.9	0.3	5.4	6.0	1.5	25.8	15.3	0.4	8.3	9.3	2.3
20 to 24 years	15.5	12.6	6.7	6.3	6.5	3.3	21.4	17.4	9.3	8.7	9.0	4.6
25 to 29 years	13.5	6.8	5.8	4.0	4.4	1.8	17.8	9.0	7.7	5.3	5.8	2.4
30 to 34 years	2.4	5.4	5.7	4.5	3.5	0.9	3.2	7.2	7.6	6.0	4.7	1.2
35 to 39 years	6.6	5.5	4.7	4.9	5.0	3.1	8.7	7.2	6.2	6.5	6.6	4.1
40 to 44 years	1.7	4.7	0.5	2.1	3.1	3.0	2.1	6.0	0.6	2.7	3.9	3.8
45 to 49 years	-8.3	-6.8	-4.2	-0.7	0.6	1.7	10.6	8.7	5.4	0.9	0.8	2.2
50 to 54 years	-9.6	-4.0	-4.8	-4.6	-1.9	-0.3	13.4	5.6	6.7	6.4	2.6	0.4
55 to 59 years	-10.0	-8.1	-8.7	-6.4	-2.2	-0.8	16.7	13.5	14.5	10.7	3.7	1.4
60 to 64 years	-4.9	-6.5	-6.0	-4.7	-2.8	0.4	12.8	17.0	15.7	12.3	7.3	1.1
65 to 69 years	-4.7	-3.4	-6.0	-5.3	-2.0	0.3	25.9	18.7	33.1	29.2	10.9	1.8
70 years and older	-1.6	-1.4	-2.3	-1.8	-1.0	-0.8	30.0	26.4	42.4	32.7	18.1	14.4

Table 4. Difference between the 1995 labor force and the projections made in 1980, 1983, 1985, 1987, 1989, and 1991—continued												
Labor force group	Percentage point difference						Absolute relative error					
	1980	1983	1985	1987	1989	1991	1980	1983	1985	1987	1989	1991
Black and other	2.7	1.4	1.6	1.4	1.5	1.2	4.2	2.2	2.5	2.2	2.4	1.9
Men	0.6	-0.1	1.0	1.1	1.8	1.7	0.8	0.2	1.4	1.5	2.5	2.4
16 and 17 years	-5.1	-5.2	-2.2	3.3	4.3	2.8	17.1	17.4	7.4	11.0	14.3	9.3
18 and 19 years	-3.0	-5.1	2.7	7.8	4.2	3.2	5.8	9.9	5.2	15.0	8.1	6.1
20 to 24 years	-3.5	-6.0	2.3	3.7	1.2	3.4	4.7	8.1	3.1	4.9	1.6	4.5
25 to 29 years	1.2	-2.8	-2.7	0.7	1.7	1.9	1.4	3.2	3.1	0.8	1.9	2.2
30 to 34 years	6.4	-0.6	-1.0	1.1	1.8	1.9	7.3	0.7	1.1	1.2	2.0	2.2
35 to 39 years	6.6	5.8	4.5	5.9	6.2	4.6	7.7	6.8	5.3	6.9	7.3	5.4
40 to 44 years	6.3	3.3	3.5	3.3	1.9	2.7	7.3	3.8	4.0	3.8	2.2	3.1
45 to 49 years	5.7	1.7	4.8	4.6	6.1	4.8	6.9	2.0	5.8	5.6	7.4	5.8
50 to 54 years	4.0	4.7	2.1	2.3	2.5	1.9	5.0	5.9	2.6	2.9	3.1	2.4
55 to 59 years	-0.5	-1.6	-2.0	5.2	5.7	3.1	0.8	2.4	3.0	7.8	8.6	4.6
60 to 64 years	-0.1	0.3	-3.1	-7.6	2.1	0.6	0.1	0.7	6.4	15.8	4.4	1.3
65 to 69 years	-7.5	-10.4	-9.5	-8.4	-3.7	-4.6	28.9	40.0	36.5	32.3	14.2	17.7
70 years and older	-0.9	-2.3	-3.2	-4.1	-1.1	0.1	9.4	24.9	34.7	44.9	12.1	1.0
Women	4.6	2.8	2.2	1.6	1.2	0.8	7.9	4.8	3.8	2.8	2.1	1.4
16 and 17 years	8.7	-1.7	-3.1	2.8	2.3	0.8	28.8	5.7	10.4	9.2	7.6	2.6
18 and 19 years	-0.6	-5.2	-4.7	2.3	3.0	-0.3	1.3	10.4	9.4	4.5	5.9	0.7
20 to 24 years	12.7	7.1	1.8	4.9	2.5	2.7	20.2	11.3	2.8	7.8	3.9	4.3
25 to 29 years	14.6	9.4	5.8	2.4	1.3	0.9	20.6	13.3	8.2	3.4	1.8	1.3
30 to 34 years	14.5	9.8	9.3	4.8	4.7	2.1	20.1	13.6	12.9	6.6	6.5	2.9
35 to 39 years	9.0	7.8	7.2	6.5	6.4	2.9	12.1	10.5	9.7	8.7	8.6	3.9
40 to 44 years	1.3	7.7	4.7	3.4	3.7	4.3	1.7	10.1	6.1	4.4	4.8	5.6
45 to 49 years	-2.9	-3.0	4.5	2.4	1.3	0.9	4.0	4.1	6.1	3.2	1.7	1.2
50 to 54 years	-5.2	0.2	3.6	2.0	0.4	4.2	7.9	0.3	5.5	3.1	0.6	6.4
55 to 59 years	-8.7	-7.5	-4.4	-3.4	-4.2	-5.1	14.7	12.6	7.4	5.7	7.1	8.6
60 to 64 years	2.2	0.3	2.5	0.3	-2.1	-0.6	6.4	0.8	7.2	0.8	6.2	1.8
65 to 69 years	3.9	6.5	-0.7	-1.8	4.2	4.7	32.2	53.4	5.3	14.3	34.7	38.7
70 years and older	-1.0	-2.6	-3.2	-1.8	-1.2	0.0	18.3	48.2	59.6	33.9	21.7	0.7
Median	1.2	0.3	1.0	2.0	1.8	1.7						
Mean absolute percent error							11.6	11.2	10.2	9.4	6.4	4.2

Chart 1. Errors in the participation rate projections to 1995

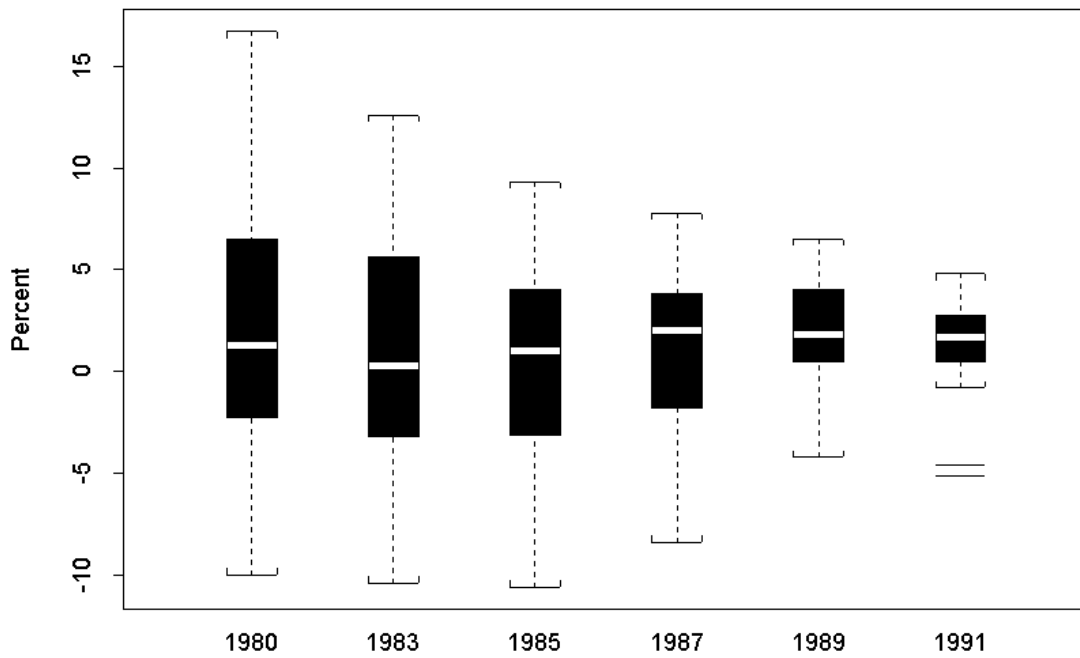


Chart 2. Range of labor force projections to 1995

