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Comparing Employment, Income, and Poverty: Census 2000 and the Current Population Survey

All statements in this report have undergone statistical testing, and all comparisons are significant at the 90-percent confidence level. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/prod/cen2000/doc/sf3.pdf. Data are subject to change in the quality assurance process.

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EXECUTIVE SUMMARY

Censuses and surveys often attempt to measure the same concepts, and comparing results across data collection efforts is a traditional way of assessing the consistency and reliability (and thus quality) of statistics from the Census Bureau. This report compares labor force data from Census 2000 and the Current Population Survey, income reported in Census 2000 and the Current Population Survey, and poverty measured in Census 2000, the Current Population Survey, and the Census 2000 Supplementary Survey. Such comparisons cannot always control for how various data collection efforts differ in the wording of questions, the collection and processing procedures, and other ways that may impair comparability.

Some highlights of these comparisons are:

- Lower counts of employed people (and the civilian labor force) in censuses than in the Current Population Survey extend back to 1950, but in 2000 the differences between the census and the Current Population Survey were larger than in the past. The 2000 employment data may be influenced by anomalous data for individuals in group quarters.

- The Census 2000 estimate of the number of employed people was about 5 percent lower than the Current Population Survey estimate. But the Census 2000 estimate of the number of unemployed people was over 50 percent higher than the Current Population Survey estimate.

- The Census 2000 estimate of the labor force participation rate was 2.1 percentage points lower than the Current Population Survey estimate. The census unemployment rate was 2.1 percentage points higher than the Current Population Survey rate.

- Until 1990, censuses undercounted unemployed people relative to the Current Population Survey. The gap reversed direction in 1990, as the census overcounted unemployed relative to the Current Population Survey, and grew much larger in 2000. The widening gaps in 2000 were surprising because the census questions were changed somewhat to make them closer to the Current Population Survey, with the expectation that differences would decline. The 2000 unemployment data may also be affected by anomalies in the data for people in group quarters, but the gaps between the census and the Current Population Survey in numbers and rates of jobless people at the national level are still very large, even when people in group quarters are taken out of the comparisons.

- The differences between the census and the Current Population Survey noted above generally persist across demographic categories of sex, age, and race and Hispanic origin.

- An important purpose of censuses is to produce data for states and small areas, but these estimates are difficult to compare to the Current Population Survey because of the relatively large sampling error in the Current Population Survey at the state level. That constraint

necessitates using annual averages from the CPS. Still, the higher counts of unemployed people in the census than in the Current Population Survey persist across three-fourths of the states (those with statistically significant differences), and unemployment rates for most states are higher in the census than the Current Population Survey.

- One might expect the Current Population Survey to report higher income than the census because the Current Population Survey asks more questions about sources of income, presumably prompting people to more fully report their income from all sources. Census 2000, however, produced a median household income of $41,994, compared with the Current Population Survey estimate of $40,696.

- In three of the four major regions (the Northeast, the South, and the West), median household income was higher in the census than in the Current Population Survey. In the Midwest, median household income from the census and the Current Population Survey did not differ by a statistically significant amount.

- The difference between the census and the Current Population Survey in median family income was not statistically significant. For married couples, however, median family income was higher in the census than in the Current Population Survey. In contrast, the estimates of median income for (a) families with a female householder (no husband present) and (b) families with a male householder (no wife present) were lower in the census than the Current Population Survey.

- Census 2000 and the Current Population Survey both asked about income during the preceding calendar year (1999), but the Census 2000 Supplementary Survey was conducted monthly and each month asked respondents about income in the preceding 12 months. The Census 2000 estimate of the poverty rate was 12.4 percent–moderately higher than the Current Population Survey estimate of 11.9, though not statistically different from the Census 2000 Supplementary Survey (12.2 percent).

- At the state level, Census 2000 poverty estimates are neither consistently higher nor lower than estimates from the Current Population Survey and the Census 2000 Supplementary Survey.

- An issue in comparing estimates of poverty from the Current Population Survey and Census 2000 is that the census records household relationships only with respect to the householder, whereas more detailed questions in the Current Population Survey can identify relationships among household members who are related to each other but not to the householder. That is, the Current Population Survey identifies unrelated subfamilies within households. However, recoding the Current Population Survey to use the procedures followed in the census generally has little effect on the Current Population Survey estimates of poverty.

- A comprehensive explanation for the differences noted above is not now available. A

promising opportunity for better understanding of the differences between the census and the Current Population Survey is provided by another project that involves an exact match of individuals in the census and the Current Population Survey. This approach is really the only way to compare values for the same individuals in different data collection activities.

1. EMPLOYMENT STATUS IN CENSUS 2000

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Census 2000 information on the employment status of the population can be compared with information collected in the Current Population Survey (CPS), the nation's official source of current estimates of employment and unemployment at the national and state levels. This type of census-CPS comparison dates back to 1950.

Since 1947, the Census Bureau has conducted the CPS for the Bureau of Labor Statistics (BLS), which uses the data to provide direct monthly estimates of the nation's employed and unemployed, and direct annual-average estimates of employment and unemployment for states and large metropolitan areas.[1] In contrast, the primary purpose of the census is to produce reliable employment and unemployment estimates for geographic areas smaller than those available from the CPS or from the BLS Local Area Unemployment Statistics Program (LAUS), which estimates monthly employment and unemployment for counties and other sub-state areas through indirect estimation techniques.[2]

Aggregate-level comparisons of census data with CPS data provide a valuable way to evaluate the quality of the census data. While the census and the CPS figures use the same employment-classification concepts (see the box "Employment Status Concepts"), considerable differences in enumeration and processing techniques lead to variations in how these concepts are applied and the comparability of the two sets of estimates.[3] Appendix 1 describes the chief potential sources of differences between the census and the CPS estimates that complicate, but do not invalidate, interpretations of comparisons. Two of the most important survey differences are worth mentioning.

First, the CPS is an employment-focused, enumerator-conducted, and continuously-fielded survey. These characteristics allow collecting more detailed information on employment status

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[1]The Current Population Survey is described at the following web site: http://www.bls.gov/cps/home.htm.

[2]The LAUS program is described at http://www.bls.gov/laus/home.htm. Also see the section " Explanatory Notes and Estimates of Error" in the January 2002 edition of the Employment and Earnings publication of the Bureau of Labor Statistics.

[3]For a description of the CPS questionnaire concepts and definitions, including a facsimile of the CPS employment and unemployment questions, see chapter 5 in the publication, Current Population Survey, Design and Methodology, Technical Paper 63, found at www.census.gov/cps/tp/tp63.htm.

and lead to an expectation that the CPS estimates are more accurate.[4] The census, in comparison, is very large, serves multiple purposes, relies mostly on self-enumeration, and is a once-a-decade operation involving quick implementation and closure of field offices.[5]

Second, the CPS and census also differ in the nature of their time-reference periods. The CPS is a monthly survey for which the reference period for the employment questions is the calendar week containing the 12th day of the month. The census is taken in years ending in "0," and the reference period for the employment items is the full calendar week prior to when the respondent answers the questions. Since the census enumeration period generally extends from late March to well beyond the official April 1 date, and since not everyone answers the census questions in the same week, the census reference period for employment data is not uniform, but varies considerably over a time of potentially changing economic conditions. A first requirement of census-CPS comparison studies, then, is to choose, among many possibilities, the time period for the CPS estimates in the comparison. At the national level, this study of employment status uses the CPS estimates for April of the census year as benchmarks for the census data. This period was selected because it represents something of a mid-point for the census enumeration, and census population figures represent the population as of April 1 of the census year; at the state level, CPS annual averages (weighted mean of the monthly estimates for the 12 months in the census year) are compared with the census estimates.[6]

This study focuses on census-CPS comparisons of employment and unemployment estimates at the national and state level. The analysis is primarily descriptive but mentions some possible sources of differences in the comparison data. The detailed tables for the analysis appear at the end of this chapter.

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[4]See Appendix 1 for a listing of the employment and unemployment questions used by the CPS.

[5]Major changes were made to both the census and the CPS instruments between 1990 and 2000. In 1994, major changes were introduced into the CPS, including a complete redesign of the questionnaire and the use of computer-assisted interviewing for the entire survey. The census questions were redesigned for 2000 to conform, as much as practical, with the corresponding questions in the redesigned CPS. A primary goal of the census revisions was to enhance the comparability of the census and CPS unemployment estimates. Appendix 2 discusses how Census 2000 employment questions differed from those for the 1990 census.

[6]Techniques are available to put the census and CPS on a comparable reference-period footing, but they are beyond the scope or purpose of this present study. In addition, April CPS data were used in all previous Census-CPS historical evaluations at the aggregate level.

TEXT BOX: Employment Status Concepts.
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Beginning in 1970, the census has used the following definitions of employment status concepts, which are the same official concepts also used in the Current Population Survey. In the census, these concepts are applied through a series of questions (see Appendixes 1 and 2) to identify, in this sequence: (1) people who worked at any time during the reference week; (2) people who did not work during the reference week, but who had jobs or businesses from which they were temporarily absent (excluding people on layoff); (3) people on temporary layoff who expected to be recalled to work within the next six months or who had been given a date to return to work, and who were available for work during the reference week; and (4) people who did not work during the reference week, who had looked for work during the reference week or the three previous weeks, and who were available for work during the reference week.

Employed. All civilians 16 years old and over who were either (1) "at work" — those who did any work at all during the reference week as paid employees, worked in their own business or profession, worked on their own farm, or worked 15 hours or more as unpaid workers on a family farm or in a family business; or (2) were "with a job but not at work" — those who did not work during the reference week, but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, industrial dispute, vacation, or other personal reasons. Excluded from the employed are people whose only activity consisted of work around their own house (painting, repairing, or own home housework) or unpaid volunteer work for religious, charitable, and similar organizations. Also excluded are all institutionalized people and people on active duty in the United States Armed Forces.

Unemployed. All civilians 16 years old and over were classified as unemployed if they were neither "at work" nor "with a job but not at work" during the reference week, were looking for work during the last four weeks, and were available to start a job. Also included as unemployed were civilians 16 years old and over who: did not work at all during the reference week, were on temporary layoff from a job, had been informed that they would be recalled to work within the next six months or had been given a date to return to work, and were available to return to work during the reference week, except for temporary illness. Examples of job seeking activities were:

- Registering at a public or private employment office
- Meeting with prospective employers
- Investigating possibilities for starting a professional practice or opening a business
- Placing or answering advertisements
- Writing letters of application
- Being on a union or professional register

Civilian labor force. Consists of people classified as employed or unemployed in accordance with the criteria described above.

Not in labor force. All people 16 years old and over who are not classified as members of the

labor force. This category consists mainly of students, individuals taking care of home or family, retired workers, seasonal workers enumerated in an off-season who were not looking for work, institutionalized people (all institutionalized people are placed in this category regardless of any work activities they may have done in the reference week), and people doing only incidental unpaid family work (fewer than 15 hours during the reference week).

Reference week. In the census, the data on employment status related to a one-week time period, known as the reference week. For each person, this week is the full calendar week, Sunday through Saturday, preceding the date the questionnaire was completed. This calendar week is not the same for all people since the enumeration was not completed in one week. The occurrence of holidays during the enumeration period probably had no effect on the overall measurement of employment status. The CPS data relate to the calendar week during the month that contains the 12th day of the month.

Unemployment Rate. The unemployment rate represents the number of unemployed as a percentage of the civilian labor force. (For example, if the civilian labor force equals 100 people and 7 people are unemployed, then the unemployment rate would equal 7 percent.)

Labor Force Participation Rate. The labor force participation rate is the proportion of the age-eligible civilian population that is in the civilian labor force. (For example, if the 16 years and over population equals 100 and 64 people are in the civilian labor force, then the labor force participation rate would equal 64 percent.)

Employment/Population (E/P) Ratio. The E/P ratio represents the proportion of the age-eligible civilian population that is employed. (For example, if the 16-years- and-over population equals 100 and 55 people are employed, then the E/P ratio would equal 55 percent.)

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1.1 Employment status differences between Census 2000 and the April 2000 CPS

Table 1 places comparisons of census 2000 and CPS employment and unemployment data in a historical context, beginning with the 1950 census. The 1950 census is the first one for which there are comparable results from the CPS, which began in 1947.

(Table 1 shown at end of employment section)

For purposes of historical comparison, the post-1960 comparisons in the table are most relevant. To conform with the official government concepts of employment and unemployment instituted in January 1967,[7] the census introduced new employment questions and employment concepts in the 1970 census which differed considerably from those associated with the 1950 and 1960 censuses. The 1970 and later censuses (including 2000) used virtually the same concepts, but there have been some changes to both the CPS and census questions, particularly between 1990 and 2000.[8] The considerable differences observed between the post-1960 and 1950/1960 data in the table illustrate the potential sensitivity of the census-CPS relationships to revisions in questions and concepts. See the box, "Census Questionnaire Changes: 1950-2000," for more information.

The key observations from Table 1 for 2000 are:

- The Census 2000 estimate of the number of employed people, 129.7 million, was about 7.2 million, or about 5 percent lower than the April 2000 CPS estimate of 136.9 million.

- In contrast, the Census 2000 estimate of the number of unemployed persons, 7.9 million, was about 2.7 million, or over 50 percent, higher than the CPS estimate of 5.2 million.

- The "civilian labor force" is the sum of the "employed" and the "unemployed" estimates. The opposing signs of the differences noted above for these components mean that they somewhat offset each other. Hence, the Census 2000 count for the civilian labor force, 137.7 million, was about 4.5 million, or 3.1 percent, below the CPS

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[7]For a brief discussion of the changes introduced into the census in 1970, see U.S. Bureau of the Census, Census of Population:1970, SUBJECT REPORTS, Final Report PC(2)-6A, Employment Status and Work Experience, page IX.

[8]Appendix 2 highlights the differences between the 1990 and 2000 Census questionnaires. Several minor revisions in the 1980s to the CPS questionnaire may have had the effect of inflating the survey's unemployment estimates. An extensive revision to the CPS questions was implemented in 1994, when the survey replaced its paper-based collection instrument with a computer-assisted personal interviewing (CAPI) instrument.

count of 142.1 million. This difference in the civilian labor force category was reflected in its obverse "not in labor force" category, for which the census count was 4.5 million higher than the CPS (6.4 percent of the CPS estimate), perhaps a consequence of the greater ability of the CPS than of the census to probe for evidence of labor force attachment.

- The labor force participation rate, the employment/population (E/P) ratio, and the unemployment rate are well-known relative measures of employment status (see definitions in the box "Employment-Status Concepts"). How the census and the CPS compare in these measures is at least as important for an understanding of the quality of the data as the absolute measures in the above observations.

For 2000, the census labor force participation rate (64.9 percent) was 2.1 percentage points below the CPS rate (67.0 percent); the census unemployment rate (5.8 percent) was 2.1 percentage points higher than the CPS rate (3.7 percent); and the census E/P ratio (61.2 percent) was 3.4 percentage points below the CPS ratio (64.6 percent). Thus, even in relative measures, Census 2000 fell short of the CPS in measures of labor force and employment, and above the CPS in measures of unemployment. The relatively high level of the census unemployment rate is particularly noteworthy because the Census 2000 was conducted near the peak of the economic expansion of the latter half of the 1990s, when one would expect unemployment rates to be low.

The Census 2000 data in Table 1 may be influenced by the anomalies in the employment data for individuals in group quarters, as discussed in Appendix 3. The data for these individuals may have incorrectly inflated the overall number of census unemployed people by around 500,000 and incorrectly deflated the counts of people in the unemployed category and the not-in-labor-force category by 250,000 each. The phenomenon had severe impacts on the labor force data--particularly the unemployment rate--for some places, and it may account for as much as one-fifth of the difference between the national census and CPS counts of unemployed.

Restricting the data for 2000 to people in households (see Table 1 in Appendix 3) overcompensates by eliminating group quarters but shows that:

- The census unemployment rate drops to 5.2 percent (from 5.8 percent), while the CPS rate stays at 3.7 percent, meaning that the gap in census-CPS unemployment rates for people in households is 1.6 percentage points, compared with 2.1 percentage points for all people.

- The labor force participation rates, the employment/population ratios, and their respective census-CPS gaps were virtually the same for the household-only population and for all people.

1.2 Historical comparisons of labor force and employment

The historical data in Table 1 help to put the previous observations in perspective. The Census 2000 undercounts in the "civilian labor force" and "employed" categories relative to CPS have a long-standing history. This same relationship has been seen in the census back to 1950 (see Figure 1, at end of the section on employment status). What is new for 2000 is the size of the gaps (the differences between the census and the CPS as a percentage of the CPS), which are larger than those for any post-1950 census. The Census 2000 employed gap is more than double that of any post-1950 one, and the Census 2000 civilian labor force gap is nearly three times greater than those in 1990 and 1980, but still smaller than the gap in 1950.

The census-CPS employed gap decreased from 4.2 percent of the CPS count in 1950 to 0.9 percent in 1980, then increased in both 1990 (to 2.1 percent) and 2000 to its largest size of 5.3 percent. However, their series of employment/population ratios remained relatively similar to each other until 2000, when they diverged, indicating that Census 2000 found a smaller proportion of the population working than did CPS (see Figure 2).

The census-CPS civilian labor force gap was approximately 5 percent in 1950, decreased to 2.3 percent in both 1960 and 1970, then to 1.1 percent in 1980 and 1990, but then jumped to 3.1 percent in 2000.

The data in Tables 2 and 3 are extracted from the historical data in Table 1 to provide another perspective on the census-CPS differences in civilian labor force and employment estimates in 2000. Table 2 shows that, until 2000, the census and CPS were fairly consistent in showing faster growth of the civilian labor force than population. From 1990 to 2000 the CPS showed continued faster growth of the civilian labor force (13.9 percent) than population (12.3 percent), but the census showed faster growth in population (13.5 percent) than in the civilian labor force (11.5 percent). This change reflects an increase in the census population growth rate between 1990 and 2000 (11.8 percent to 13.5 percent) and a slight decline in the corresponding CPS rate (12.9 percent to 12.3 percent).[9]

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[9]The comparability of the 1990-2000 and 1980-1990 census-CPS differences in Table 2 is affected by the fact that the 1990 CPS figures reflect an adjustment for the estimated 1990 census undercount that is not present in the 1990 census figures. This one-sided adjustment explains, for instance, why the 1990 CPS count of people 16 and over is about two million higher than the census count, even though the 1990 CPS data are based on 1990 census-based population controls; the opposite directions taken by the respective 1990-2000 population growth rates result in part from this disparity in 1990 population estimates.

TEXT BOX: Census Questionnaire Changes: 1950-2000
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The census introduced new employment questions and concepts in the 1970 census to conform with the official government concepts of employment and unemployment instituted in January 1967. The 1970 and 1980 censuses used similar questions and concepts, which differ considerably from those associated with the 1950 and 1960 census.

For the 1990 census, the major change was the addition of the phrase "if one had been offered?" at the end of the question, "Could this person have taken a job last week?." The change was made to conform with a change in the corresponding CPS question. The CPS found that, without this phrase, people who were available to take a job often mistakenly answered "no" to the question because they assumed that they needed a job offer to answer "yes." The effect of this change in question wording in both the census and the CPS may have been to increase the number of unemployed people at the expense of the "not in labor force" category. The 1990 census also added two new questions to the journey-to-work suite of questions ("What time did this person usually leave home to go to work last week?", and " How many minutes did it usually take this person to get from home to work last week?") that indirectly increased the potential amount of information available to the employment-classification process.

For Census 2000, several important changes in the labor force questions brought them into conformity with the CPS, which was revised in 1994. The Census 2000 changes included:

(a) There was a substantial wording change in the initial labor force question that had been the same since 1970. The 1990 census question, "Did this person work at any time last week?" was changed in 2000 to read "Last week, did this person do any work for either pay or profit?" The change was intended to elicit a "no" response from people whose only work consisted of unpaid volunteer activities.

(b) The question "How many hours did this person work last week at all jobs? " was dropped from the census. It had been used in previous censuses to classify people as employed even if they answered "no" to the "(did this person) work last week" question.

(c) Respondents who did not work in the reference week were sent through a five-part question concerning their attachment to the labor force; this series was expanded from a three-part item in the 1990 census. The expansion was intended to gather more details about the recall-to-work expectations of people on layoff from a job.

See Appendix 2 for more information about changes to the Census 2000 employment questions.
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Not surprisingly, given the relationship between the "civilian labor force" and the "employed" categories, the observations made for the data in Table 2 are true for their counterparts in Table 3, which shows the trends in (working-age) population versus employment growth.

Table 2. Comparison of Census and CPS Percent Changes in Population 16 Years Old and Over and in Civilian Labor Force: 1960-2000

Year	Census		CPS	
	Percent change in population 16+ from previous decade	Percent change in civilian labor force from previous decade	Percent change in population 16+ from previous decade	Percent change in civilian labor force from previous decade
2000	13.5	11.5	12.3	13.9
1990	11.8	18.2	12.9	18.2
1980	21.9	30.5	22.6	28.8
1970	17.0	18.6	16.7	18.7
1960	11.6	16.0	11.4	12.3

Source: U.S. Bureau of the Census.

Table 3. Comparison of Census and CPS Percent Changes in Population 16 Years Old and Over and in Employment: 1960-2000

Year	Census		CPS	
	Percent change in population 16+ from previous decade	Percent change in employment from previous decade	Percent change in population 16+ from previous decade	Percent change in employment from previous decade
2000	13.5	12.1	12.3	15.8
1990	11.8	18.5	12.9	19.9
1980	21.9	27.5	22.6	25.7
1970	17.0	19.5	16.7	19.8
1960	11.6	15.7	11.4	13.2

Source: U.S. Bureau of the Census.

1.3 Historical comparisons of unemployment

Prior to 1990, the census undercounted unemployed people relative to the CPS (See Figure 3). The count of unemployed in the census began considerably below the CPS estimate in 1950 (22.8 percent), and remained below, though much closer, in the 1960, 1970, and 1980 censuses (gaps

of -4.2 percent, -1.5 percent, and -3.0 percent, respectively).[10] In 1990, however, the census unemployed count surpassed the CPS count by 17.7 percent, and in 2000 by a very large 52.5 percent. An overview of unemployment rates from 1950-2000 reveals considerable between-survey variations, especially in 1950 and 1990-2000 (see Figure 4).

Between 1990 and 2000, changes in the census labor force participation rate (Table 4) and the employment/population ratio (Table 5) departed from historical trends, both within the census itself and in relation to CPS. Since 1950, both measures have increased decade by decade until 2000, when the census measures fell and those of the CPS continued to rise.

Table 4. Comparison of Census and CPS Percentage-Point Changes in Labor Force Participation Rates: 1950-2000

Year	Census		CPS	
	Labor Force Participation Rate	Percentage point change from prior decade	Labor Force Participation Rate	Percentage point change from prior decade
2000	64.9	-1.2	67.0	0.9
1990	66.1	3.6	66.1	2.9
1980	62.5	4.1	63.2	3.1
1970	58.4	0.8	60.1	1.0
1960	57.6	2.2	59.1	0.5
1950	55.4	NA	58.6	NA

Source: U.S. Bureau of the Census.

Table 5. Comparison of Census and CPS Percentage-Point Changes in Employment/Population Ratios: 1950-2000

Year	Census		CPS	
	E/P Ratio	Percentage point change from prior decade	E/P Ratio	Percentage point change from prior decade
2000	61.2	-0.7	64.6	2.0

[10]The estimates of unemployed are not statistically different between the census and CPS from 1960-1980.

1990	61.9	3.5	62.6	3.6
1980	58.4	2.6	59.0	1.5
1970	55.8	1.2	57.5	1.5
1960	54.6	1.9	56.0	0.9
1950	52.7	NA	55.1	NA

Source: U.S. Bureau of the Census.

1.4 Comparisons by Sex

Table 1 also shows the employment status comparisons by sex. For the most part, the observations made previously for the total population apply to men and to women. For each sex, Census 2000 overestimated unemployment and underestimated the numbers employed and in the civilian labor force relative to CPS. The size of the gaps between the census and CPS measures were similar regardless of sex.

Since 1970, with a few exceptions, the census-CPS gaps for the civilian labor force, employed, and unemployed categories have not differed notably by sex (see Figures 1 and 3). In 1950 and 1960, the women's differences in the civilian labor force and employed categories were considerably larger than the men's, but the disparities narrowed considerably with time, almost vanishing in 1970, fluctuating somewhat in 1980 and 1990, and disappearing again in 2000.

Tables 6 and 7 show decade-by-decade changes in labor force participation rates for men and women, for the census and the CPS. The direction of the trends in participation within each group is the same in both surveys: the rates have steadily risen for women and fallen for men. The magnitude of the changes are fairly consistent across surveys, although in 2000, the CPS rate for women increased about four times the census rate.

Table 6. Comparison of Census and CPS Percentage-Point Changes in Female Labor Force Participation Rates: 1950-2000

Year	Census		CPS	
	Female Labor Force Participation Rate	Percentage point change from prior decade	Female Labor Force Participation Rate	Percentage point change from prior decade
2000	58.3	0.7	60.1	2.9
1990	57.6	7.1	57.2	6.2

1980	50.5	8.6	51.0	7.8
1970	41.9	5.8	43.2	5.8
1960	36.1	5.9	37.4	4.4
1950	30.2	NA	33.0	NA

Source: U.S. Bureau of the Census.

Table 7. Comparison of Census and CPS Percentage-Point Changes in Male Labor Force Participation Rates: 1950-2000

Year	Census		CPS	
	Male Labor Force Participation Rate	Percentage point change from prior decade	Male Labor Force Participation Rate	Percentage point change from prior decade
2000	72.2	-3.3	74.5	-1.4
1990	75.5	-0.3	75.9	-0.8
1980	75.8	-1.3	76.7	-2.5
1970	77.1	-4.2	79.2	-3.8
1960	81.3	-1.3	83.0	-2.8
1950	82.6	NA	85.8	NA

Source: U.S. Bureau of the Census.

Tables 8 and 9 show employment/population ratios and decade-by-decade changes in the ratio since 1950 for men and women. The within-sex trends in the ratios compare favorably across surveys (see Figure 2) . The magnitudes of the changes were also similar across surveys, except for the 1990-2000 change for women (3.6 percent in CPS and 0.9 percent in census) and the 1980-1990 and 1990-2000 changes for men (slight positive changes in CPS and negative changes in census).

Table 8. Comparison of Census and CPS Percentage-Point Changes in Female Employment/Population Ratios: 1950-2000

Year	Census		CPS	
	Female E/P Ratio	Percentage point change from prior decade	Female E/P Ratio	Percentage point change from prior decade

2000	54.9	0.9	57.9	3.6
1990	54.0	6.7	54.3	6.7
1980	47.3	7.6	47.6	6.6
1970	39.7	5.6	41.0	5.5
1960	34.1	5.3	35.5	4.2
1950	28.8	NA	31.3	NA

Source: U.S. Bureau of the Census.

Table 9. Comparison of Census and CPS Percentage-Point Changes in Male Employment/Population Ratios: 1950-2000

Year	Census		CPS	
	Male E/P Ratio	Percentage point change from prior decade	Male E/P Ratio	Percentage point change from prior decade
2000	68.1	-2.5	71.8	0.1
1990	70.6	-0.2	71.7	0.1
1980	70.8	-3.3	71.6	-4.5
1970	74.1	-3.1	76.1	-2.6
1960	77.2	-1.3	78.7	-1.7
1950	78.5	NA	80.4	NA

Source: U.S. Bureau of the Census.

1.5 Unemployment: A demographic perspective on CPS-census comparisons

Tables 10 through 13 focus on differences between the census and the CPS unemployment estimates in 1990 and 2000, by demographic characteristics (sex, age, race/Hispanic origin, and educational attainment) of the population.

(Tables 10 through 21 are shown at end of the employment section)

Table 10 looks at differences in counts of unemployed in 2000. Overall, as described above, the census counted about 2.7 million more unemployed people than the CPS. Whatever the source of this difference, its influence was not confined to any particular demographic group: the census counts exceeded those for the CPS for all the categories of the demographic variables shown in

the table. Table 11 shows data for 1990 corresponding to those in Table 10. Similar to the case in 2000, most of the 1990 census unemployment estimates by demographic category were higher than those from the CPS.

Table 12 shows how the relative sizes of the census-CPS gaps displayed in Table 10 for 2000 by demographic group compare with those for the 1990 census. Overall, the census 2000 unemployment estimate was about 53 percent higher than that for the CPS. Within the demographic categories, the relative differences were also, with few exceptions, very high. Even more disappointing, the rightmost column in Table 12 reveals that the census-CPS gaps widened considerably for many demographic categories between the 1990 and 2000 censuses.

It is difficult to see any obvious patterns in the data in Table 12 that might point to a source for the wide census-CPS differences. By race, the gap for Whites was about half of that for Blacks and Hispanics. One thing that is clear is that most demographic groups saw large increases in the gap between censuses.

Table 13 compares census and CPS unemployment rates. Here again, the census rates were higher, overall, and throughout the demographic groups, than the CPS rates. One encouraging observation, however, does emerge from the data in the table: the patterns of the distribution of census rates across the categories of each demographic variable are quite similar in shape to the CPS patterns (see Figure 5). For example, the unemployment rates in both the census and the CPS are highest for the youngest age group, fall steadily as the age of the group increases, then rise slightly for the oldest age group. The census rate, however, at every step of its pattern is higher than the corresponding step of the CPS pattern. The similarities of these patterns may be a further indication that the forces at work in creating the census-CPS differences acted rather uniformly throughout the population, so that levels were affected more than the inter-relationships, which can be more critical.[11]

1.6 Employment: CPS-census comparisons

Tables 14 and 15 use the same framework discussed in the above section on “unemployment” to look at census-CPS comparisons of employment estimates by demographic groups.

Table 14 shows that, unlike the census–CPS unemployment comparisons, where the census estimates for all the demographic categories were higher than the CPS, the census employment counts were usually well below their CPS counterparts. Overall, the CPS estimate was about 7 million persons greater than the census estimate. Except for the demographic group “65 years and older,” and two of the education groups, the census employment figures were consistently, and often considerably, lower than the CPS estimates.

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[11]The tide, so to speak, affected all the census boats to the same degree, so that their heights remained the same relative to one another, if not with the CPS “dock.”

The overall census estimate of employment in the 1990 census, like that in 2000, was lower than the CPS estimate, but the difference was much less – about 2.5 million (see Table 15). The 1990 census-CPS employment differences also had a different pattern across demographic groups than that in 2000. In 1990, the census undercounts occurred primarily among men, and among the 16-44 population.

The data in Table 16 show how the relative differences between the census and the CPS employment counts have changed between 1990 and 2000. Overall, the census-relative-to-CPS underestimate of employment doubled from 2.1 percent of the CPS count in1990 to 5.3 percent in 2000. With a few exceptions, the relative size of the census difference increased for the demographic groups shown in the table. By sex, the difference for both sexes increased: 4 percentage points for women and 2.4 percentage points for men. Large changes occurred within the racial and ethnic groupings: the Black undercount increased by 7.5 percentage points, the Hispanic count by 6.5 points, and the White by 5.3 points.

Table 17 is the counterpart of Table 13, with data for the employment/population ratio replacing the unemployment rate. Overall, the Census 2000 E/P ratio was 3.4 percentage points below the CPS: 61.2 percent versus 64.6 percent. Throughout the age-race-sex-education categories, the census ratio was, with only very minor exceptions, below the CPS ratio. For the age variable, the census E/P ratios ranged from 0.6 percentage points for the 65-and-older population to 6.2 points for people aged 25-34. For the race/Hispanic-origin categories, the census ratio for Blacks was about 6 points below the CPS ratio, the Hispanic ratio about 10 percentage points below, and the White ratio 3 points below. The educational-attainment categories do not seem to show any obvious pattern, except that the census ratios were all lower than the CPS ones, mostly by around 2 percentage points.

Figure 6 contrasts the census and CPS patterns of E/P ratios across the categories of the demographic variables in Table 17. What was true in Figure 5 for unemployment rates is also revealed in Figure 6 for E/P ratios: the shapes of the census and CPS distributions are remarkably similar, though their absolute levels differ.

1.7 State-level comparisons of unemployment in Census 2000 and the CPS

Employment and unemployment estimates for states and local areas are key indicators of local economic conditions. Beginning in 1995, the CPS sample was redesigned to be a state-based design from which it was possible to make direct estimates of the annual-average employment and unemployment estimates for states.[12] The underlying concepts and definitions of all labor

[12]Under a Federal-state cooperative program, the Bureau of Labor Statistics makes monthly estimates of the civilian labor force and unemployment for 6,950 areas, including states, counties, metropolitan areas, and cities of 25,000 or more. While the CPS is not large enough to produce reliable state monthly estimates, the estimates are produced using signal-plus-noise time series models that combine current and historical data from the CPS, the Current Employment

force data for the states are consistent with those used at the national level. This section compares census 2000 data for states with estimates from the CPS. These comparisons suffer, probably to a much greater extent than the national-level estimates, from the differences in the time frames of the comparison surveys. The census, as mentioned above, reflects economic conditions that prevailed in the first half of 2000 (especially the months of March, April, and May), while the annual-average data in this section reflect an average of conditions prevailing over the course of the entire year. The difference in time frames for the estimates introduces uncertainty in the interpretation of the results and puts a cautionary shadow on any indications or observations based on the analysis in this section.

Table 18 compares the census and the CPS counts of unemployed people by state. For many states, the census counts are greater than the CPS counts (for 12 states there was no statistically significant difference between the census and CPS number of unemployed). For the larger states, the absolute differences are substantial. For example, the census found 275,000 more unemployed people in California than the CPS did; other large differences were seen for Florida (131,000), Michigan (102,000), New York (221,000), and Texas (155,000) . The relative size of the differences (that is, the differences as percentages of the CPS estimates) are also large: the census estimates are generally a third to a half larger than the CPS estimates. (For example, the census figure for Connecticut is more than double the CPS figure.)

Table 19 compares unemployment rates by state. The census rates, not surprisingly given the data above, tend to be higher than the CPS rates (although 12 states were not statistically different). The average difference between the two is 2.1 percentage points. Figure 7 shows the census and CPS differences in unemployment rates by state. The census rate is always above the CPS rate, with greater differences for states with smaller populations.

1.8 State-level comparisons of employment in Census 2000 and the CPS

Table 20 compares the census and the CPS counts of employed people by state. The census counts are lower than the CPS counts primarily in larger states (although the table shows all states with more CPS employed people than census, for 32 states the two estimates were not statistically different). For example, the census found 1.3 million fewer employed in California than the CPS did; other large differences occurred for Florida (525,000), Illinois (411,000), Michigan (351,000), and Texas (716,000) . Most of the relative differences are also large: on average, the census figures are about 5 percent below the CPS figures. (For California, the census figure was 8 percent below the CPS estimate.)

Table 21 compares E/P ratios by state. The census ratios tend to be lower than the CPS ratios (although for 21 states there was not statistically significant difference). The average difference was 3.2 percentage points. Again, the census and CPS distributions of E/P ratios are generally

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Statistics Program, and data from state unemployment insurance systems. That method assists in producing estimates that reflect each state's individual economy.

similar, with the census profile below the CPS profile at corresponding points (see Figure 8).

1.9 Conclusions

At the national and state levels, Census 2000 estimates of employment and unemployment differed substantially from comparable estimates from the Current Population Survey. In a historical context, the gap in 2000 between census and CPS unemployment estimates represents a continuation and enlargement of a development that began in the 1990 census; the 2000 gap in employment estimates stands out as the largest since the 1950 census. The Census 2000-CPS differences were spread widely across the categories of the age-race-sex-educational groups examined here. The employment and unemployment census-CPS gaps at the national level were reflected at the state level, for both absolute and relative measures (unemployment rates and E/P ratios). One encouraging finding is that the census-CPS differences in 2000 appear to be more in levels than in the internal demographic or geographic relationships of each.

The previous discussion presented the results of a descriptive analysis of census and CPS data. To understand the factors behind these results, more penetrating kinds of analysis, particularly studies at the micro level, are needed. Understanding why the census-CPS differences in 2000 exist is especially important, as is knowing why they stand out so starkly from historical precedents. Studies are underway to examine and quantify the contributions of some of the many factors that could have produced them.[13]

The following lists the kinds of research that will continue, or may be pursued as funding and staff resources are available.

- Use of the 2000 CPS-census match file, and investigation of whether matching to Internal Revenue Service tax returns is feasible, in order to do exact-match studies;
- Use of modeling techniques to explore the potential impacts of changes to the census questions or procedures on gaps between census and CPS estimates;
- Research into the impact of errors in the CPS or population-coverage differences between the census and the CPS;
- Research into how methods used to weight the census and CPS data to population totals may affect observed differences between the two estimates;
- Research into how differences in editing and imputation procedures may contribute to the CPS-census differences;
- Assessment of census estimates for geographic areas below the state level by comparing with small-area estimates from BLS;
- Research into new census edit and imputation procedures;

[13] Preliminary results from research using the 2000 CPS-Census match file suggests that refining the employment questions and editing and imputation procedures may significantly improve the employment data collected in a census-like context, but producing accurate unemployment data in the context will likely remain a challenge.

- Research into the anomalies in the Census 2000 data for people who lived in group quarters (a) by analyzing data for the household population only; and (b) by inspecting the OCR (Optical Character Recognition) images of the filled-out ICR forms that will become available in 2006 after the archiving process in completed.

A compelling reason for pursuing this research is that employment data in the American Community Survey (ACS) are collected using the same questions and processing methods that were used in Census 2000. A better understanding of factors that may have contributed to possible census biases can help to remove potential sources of bias in the ACS.

Detailed tables for Employment Status

Table 1. Comparison of Employment Status by Sex Between the Census and the Current Population Survey: 1950-2000, United States, Total
(Civilian noninstitutional population)

Characteristic	Census Estimate		April CPS Estimate		Difference of census from CPS (thous)	Difference as a percent of CPS	Percentage point difference
	Number (thous)	Percent	Number (thous)	Percent			
2000							
Population 16 years and over	212,034	100.0	212,018	100.0	16	0.0	0.0
Civilian Labor Force	137,669	64.9	142,138	67.0	-4469	-3.1	-2.1
Employed	129,722	61.2	136,927	64.6	-7205	-5.3	-3.4
Unemployed	7,947	3.7	5,212	2.5	2735	52.5	1.3
Percent of Civilian Labor Force	5.8		3.7		2.1		
Not in labor force	74,365	35.1	69,879	33.0	4486	6.4	2.1
Males 16 years and over	101,512	100.0	101,667	100.0	-155	-0.2	0.0
Civilian Labor Force	73,285	72.2	75,781	74.5	-2496	-3.3	-2.3
Employed	69,091	68.1	73,006	71.8	-3915	-5.4	-3.7
Unemployed	4,194	4.1	2,776	2.7	1418	51.1	1.4
Percent of Civilian Labor Force	5.7		3.7		2.0		
Not in labor force	28,226	27.8	25,886	25.5	2340	9.0	2.3
Females 16 years and over	110,522	100.0	110,351	100.0	171	0.2	0.0
Civilian Labor Force	64,383	58.3	66,357	60.1	-1974	-3.0	-1.9
Employed	60,630	54.9	63,921	57.9	-3291	-5.1	-3.1
Unemployed	3,753	3.4	2,436	2.2	1317	54.1	1.2
Percent of Civilian Labor Force	5.8		3.7		2.1		
Not in labor force	46,139	41.7	43,994	39.9	2145	4.9	1.9
1990							
Population 16 years and over	186,888	100.0	188,778	100.0	-1890	-1.0	0.0
Civilian Labor Force	123,475	66.1	124,837	66.1	-1362	-1.1	-0.1
Employed	115,682	61.9	118,218	62.6	-2536	-2.1	-0.7
Unemployed	7,793	4.2	6,620	3.5	1173	17.7	0.7
Percent of Civilian Labor Force	6.3		5.3		1.0		
Not in labor force	63,413	33.9	63,941	33.9	-528	-0.8	0.1
Males 16 years and over	88,757	100.0	90,181	100.0	-1424	-1.6	0.0
Civilian Labor Force	66,987	75.5	68,423	75.9	-1436	-2.1	-0.4
Employed	62,705	70.6	64,651	71.7	-1946	-3.0	-1.0
Unemployed	4,282	4.8	3,772	4.2	510	13.5	0.6
Percent of Civilian Labor Force	6.4		5.5		0.9		
Not in labor force	21,770	24.5	21,758	24.1	12	0.1	0.4
Females 16 years and over	98,131	100.0	98,597	100.0	-466	-0.5	0.0
Civilian Labor Force	56,488	57.6	56,414	57.2	74	0.1	0.3
Employed	52,977	54.0	53,567	54.3	-590	-1.1	-0.3
Unemployed	3,511	3.6	2,847	2.9	664	23.3	0.7
Percent of Civilian Labor Force	6.2		5.0		1.2		
Not in labor force	41,643	42.4	42,183	42.8	-540	-1.3	-0.3
1980							
Population 16 years and over	167,190	100.0	167,197	100.0	-7	0.0	0.0
Civilian Labor Force	104,450	62.5	105,592	63.2	-1142	-1.1	-0.7
Employed	97,639	58.4	98,569	59.0	-930	-0.9	-0.6
Unemployed	6,810	4.1	7,023	4.2	-213	-3.0	-0.1
Percent of Civilian Labor Force	6.5		6.7		-0.2		
Not in labor force	62,740	37.5	61,604	36.8	1136	1.8	0.7
Males 16 years and over	79,080	100.0	79,140	100.0	-60	-0.1	0.0
Civilian Labor Force	59,926	75.8	60,678	76.7	-752	-1.2	-0.9
Employed	56,005	70.8	56,636	71.6	-631	-1.1	-0.7
Unemployed	3,922	5.0	4,043	5.1	-121	-3.0	-0.1
Percent of Civilian Labor Force	6.5		6.7		-0.2		
Not in labor force	19,153	24.2	18,462	23.3	691	3.7	0.9
Females 16 years and over	88,110	100.0	88,056	100.0	54	0.1	0.0
Civilian Labor Force	44,523	50.5	44,914	51.0	-391	-0.9	-0.5
Employed	41,635	47.3	41,933	47.6	-298	-0.7	-0.4
Unemployed	2,889	3.3	2,980	3.4	-91	-3.1	-0.1
Percent of Civilian Labor Force	6.5		6.6		-0.1		
Not in labor force	43,587	49.5	43,142	49.0	445	1.0	0.5

Source: U.S. Bureau of the Census.

Table 1 (continued) Comparison of Employment Status by Sex Between the Census and the Current Population Survey: 1950-2000, United States, Total
(Civilian noninstitutional population)

Characteristic	Census Estimate		April CPS Estimate		Difference of census from CPS (thous)	Difference as a percent of CPS	Percentage point difference
	Number (thous)	Percent	Number (thous)	Percent			
1970							
Population 16 years and over	137,133	100.0	136,416	100.0	717	0.5	0.0
Civilian Labor Force	80,051	58.4	81,960	60.1	-1909	-2.3	-1.7
Employed	76,554	55.8	78,408	57.5	-1854	-2.4	-1.7
Unemployed	3,497	2.6	3,552	2.6	-55	-1.5	-0.1
Percent of Civilian Labor Force	4.4		4.3		0.1		
Not in labor force	57,082	41.6	54,456	39.9	2626	4.8	1.7
Males 16 years and over	64,265	100.0	63,951	100.0	314	0.5	0.0
Civilian Labor Force	49,549	77.1	50,667	79.2	-1118	-2.2	-2.1
Employed	47,624	74.1	48,686	76.1	-1062	-2.2	-2.0
Unemployed	1,926	3.0	1,981	3.1	-55	-2.8	-0.1
Percent of Civilian Labor Force	3.9		3.9		0.0		
Not in labor force	14,716	22.9	13,284	20.8	1432	10.8	2.1
Females 16 years and over	72,868	100.0	72,465	100.0	403	0.6	0.0
Civilian Labor Force	30,502	41.9	31,293	43.2	-791	-2.5	-1.3
Employed	28,930	39.7	29,722	41.0	-792	-2.7	-1.3
Unemployed	1,572	2.2	1,571	2.2	1	0.1	0.0
Percent of Civilian Labor Force	5.2		5.0		0.2		
Not in labor force	42,366	58.1	41,172	56.8	1194	2.9	1.3
1960 *							
Population 16 years and over	117,257	100.0	116,910	100.0	347	0.3	0.0
Civilian Labor Force	67,502	57.6	69,057	59.1	-1555	-2.3	-1.5
Employed	64,047	54.6	65,450	56.0	-1403	-2.1	-1.4
Unemployed	3,455	2.9	3,607	3.1	-152	-4.2	-0.1
Percent of Civilian Labor Force	5.1		5.2		-0.1		
Not in labor force	49,755	42.4	47,853	40.9	1902	4.0	1.5
Males 16 years and over	55,747	100.0	55,512	100.0	235	0.4	0.0
Civilian Labor Force	45,309	81.3	46,072	83.0	-763	-1.7	-1.7
Employed	43,046	77.2	43,680	78.7	-634	-1.5	-1.5
Unemployed	2,263	4.1	2,392	4.3	-129	-5.4	-0.2
Percent of Civilian Labor Force	5.0		5.2		-0.2		
Not in labor force	10,439	18.7	9,440	17.0	999	10.6	1.7
Females 16 years and over	61,510	100.0	61,398	100.0	112	0.2	0.0
Civilian Labor Force	22,193	36.1	22,985	37.4	-792	-3.4	-1.4
Employed	21,001	34.1	21,770	35.5	-769	-3.5	-1.3
Unemployed	1,192	1.9	1,215	2.0	-23	-1.9	0.0
Percent of Civilian Labor Force	5.4		5.3		0.1		
Not in labor force	39,317	63.9	38,413	62.6	904	2.4	1.4
1950							
Population 16 years and over	105,038	100.0	104,943	100.0	95	0.1	0.0
Civilian Labor Force	58,201	55.4	61,477	58.6	-3276	-5.3	-3.2
Employed	55,374	52.7	57,812	55.1	-2438	-4.2	-2.4
Unemployed	2,828	2.7	3,665	3.5	-837	-22.8	-0.8
Percent of Civilian Labor Force	4.9		6.0		-1.1		
Not in labor force	46,836	44.6	43,466	41.4	3370	7.8	3.2
Males 16 years and over	50,615	100.0	50,808	100.0	-193	-0.4	0.0
Civilian Labor Force	41,789	82.6	43,593	85.8	-1804	-4.1	-3.2
Employed	39,720	78.5	40,873	80.4	-1153	-2.8	-2.0
Unemployed	2,070	4.1	2,720	5.4	-650	-23.9	-1.3
Percent of Civilian Labor Force	5.0		6.2		-1.2		
Not in labor force	8,825	17.4	7,215	14.2	1610	22.3	3.2
Females 16 years and over	54,423	100.0	54,135	100.0	288	0.5	0.0
Civilian Labor Force	16,412	30.2	17,884	33.0	-1472	-8.2	-2.9
Employed	15,654	28.8	16,939	31.3	-1285	-7.6	-2.5
Unemployed	758	1.4	945	1.7	-187	-19.8	-0.4
Percent of Civilian Labor Force	4.6		5.3		-0.7		
Not in labor force	38,011	69.8	36,251	67.0	1760	4.9	2.9

* The 1960 Census estimates include the 15 year-old institutional pop. Source: U.S. Bureau of the Census.

Table 10. Comparison of Census 2000 and April 2000 CPS Unemployment Counts by Selected Characteristics: United States, Total

(Civilian non-institutional population)
Numbers in thousands

Characteristic	Census 2000 Estimate		April 2000 CPS Estimate		Difference (Census 2000 minus CPS)
	Number	90-percent confidence interval (+/-)	Number	90-percent confidence interval (+/-)	
UNEMPLOYED POPULATION 16 YEARS AND OVER Total	7,947	10	5,212	203	2,735
Sex					
Male	4,194	7	2,776	146	1,418
Female	3,753	7	2,436	131	1,317
Age					
16 to 19	1,475	4	946	84	529
20 to 24	1,467	4	944	87	523
25 to 34	1,624	5	1,124	95	500
35 to 44	1,552	5	1,136	96	416
45 to 54	1,075	4	649	73	426
55 to 64	485	3	297	49	188
65 years and over	270	2	116	31	154
Race and Hispanic Origin					
White	4,943	8	3,844	175	1,099
Black	1,698	5	1,052	94	646
Hispanic origin	1,372	4	873	86	499
UNEMPLOYED POPULATION 25 YEARS AND OVER Total	5,006	8	3,323	163	1,683
EDUCATIONAL ATTAINMENT					
Less than high school diploma	1,434	4	736	77	698
High school graduates, no college	1,576	5	1,238	100	338
Less than a bachelor's degree	1,293	4	847	83	446
College graduates	703	3	502	64	201

Source: U.S. Bureau of the Census.

Table 11. Comparison of Census 1990 and April 1990 CPS Unemployment Counts by Selected Characteristics: United States, Total

(Civilian non-institutional population)
Numbers in thousands

Characteristic	1990 Census Estimate		April 1990 CPS Estimate		Difference
	Number	90-percent confidence interval (+/-)	Number	90-percent confidence interval (+/-)	(Census 2000 minus CPS)
UNEMPLOYED POPULATION 16 YEARS AND OVER Total	7,792	10	6,620	218	1,172
Sex					
Male	4,282	8	3,772	162	510
Female	3,511	7	2,847	136	664
Age					
16 to 19	1,212	4	1,042	84	170
20 to 24	1,374	4	1,316	99	58
25 to 34	2,204	5	1,865	117	339
35 to 44	1,473	4	1,243	96	230
45 to 54	853	3	671	71	182
55 to 64	494	3	373	53	121
65 years and over	181	2	110	29	71
Race and Hispanic Origin					
White	5,288	8	4,995	191	293
Black	1,687	5	1,395	103	292
Hispanic origin	1,040	4	875	78	165
UNEMPLOYED POPULATION 25 YEARS AND OVER Total	5,206	8	NA	NA	NA
EDUCATIONAL ATTAINMENT					
Less than high school diploma	1,650	5	NA	NA	NA
High school graduates, no colleg	1,733	5	NA	NA	NA
Less than a bachelor's degree	1,237	4	NA	NA	NA
College graduates	587	3	NA	NA	NA

Source: U.S. Bureau of the Census.

Table 12. Comparison of Census 2000 / April 2000 CPS Percent Differences and 1990 Census/ 1990 CPS Percent Differences in Unemployment Counts by Selected Characteristics: United States, Total

(Civilian non-institutional population)

Characteristic	Census 2000/ April 2000 CPS Unemployment Estimates		1990 Census/ April 1990 CPS Unemployment Estimates		Difference (a-b)
	Difference as a percent of CPS estimate (a)	90-percent confidence interval	Difference as a percent of CPS estimate (b)	90-percent confidence interval	
UNEMPLOYED POPULATION 16 YEARS AND OVER					
Total	52.5	46.9-58.5	17.7	14.1-21.6	34.8
Sex					
Male	51.1	43.8-59.2	13.5	9.0-18.4	37.6
Female	54.1	46.5-62.5	23.3	17.9-29.3	30.7
Age					
16 to 19	55.9	43.6-70.6	16.3	8.0-26.1	39.6
20 to 24	55.4	42.7-70.7	4.4	(2.6)-12.6	51.0
25 to 34	44.5	33.6-57.3	18.2	11.5-25.8	26.3
35 to 44	36.6	26.4-48.8	18.5	10.3-28.1	18.1
45 to 54	65.6	49.4-85.9	27.1	15.4-41.7	38.5
55 to 64	63.3	41.0-94.4	32.4	16.7-53.4	30.9
65 years and over	132.8	85.0-215.3	64.5	31.7-121.0	68.2
Race and Hispanic Origin					
White	28.6	23.2-34.5	5.9	2.1-9.9	22.7
Black	61.4	48.6-76.7	20.9	13.0-30.2	40.5
Hispanic origin	57.2	43.5-73.8	18.9	9.5-30.0	38.3
UNEMPLOYED POPULATION 25 YEARS AND OVER					
Total	50.6	43.8-58.2	NA	NA	NA
EDUCATIONAL ATTAINMENT					
Less than high school diploma	94.8	76.9-117.0	NA	NA	NA
High school graduates, no colleg	27.3	18.2-38.0	NA	NA	NA
Less than a bachelor's degree	52.7	39.5-68.7	NA	NA	NA
College graduates	40.0	24.7-59.8	NA	NA	NA

Source: U.S. Bureau of the Census.

Table 13. Comparison of Census 2000 and April 2000 CPS Unemployment Rates by Selected Characteristics: United States, Total

(Civilian non-institutional population)

Characteristic	Census 2000 Estimate		April 2000 CPS Estimate		Percentage-point Difference
	Unemployment Rate (a)	90-percent confidence interval (+/-)	Unemployment Rate (b)	90-percent confidence interval (+/-)	(a-b)
POPULATION 16 YEARS AND OVER					
Total	5.8	0.01	3.7	0.14	2.1
Sex					
Male	5.7	0.01	3.7	0.19	2.0
Female	5.8	0.01	3.7	0.20	2.1
Age					
16 to 19	18.6	0.05	12.0	1.04	6.6
20 to 24	10.6	0.03	6.7	0.60	3.9
25 to 34	5.2	0.01	3.4	0.28	1.8
35 to 44	4.3	0.01	3.0	0.25	1.3
45 to 54	3.6	0.01	2.1	0.23	1.5
55 to 64	3.5	0.02	2.1	0.34	1.4
65 years and over	5.8	0.04	2.7	0.70	3.1
Race and Hispanic Origin					
White	4.6	0.01	3.2	0.15	1.4
Black	11.6	0.03	6.5	0.58	5.1
Hispanic origin	9.3	0.03	5.3	0.52	4.0
POPULATION 25 YEARS AND OVER					
Total	4.3	0.01	2.8	0.14	1.5
EDUCATIONAL ATTAINMENT					
Less than high school diploma	9.9	0.03	5.9	0.60	4.0
High school graduates, no college	5.0	0.01	3.2	0.26	1.8
Less than a bachelor's degree	3.6	0.01	2.6	0.25	1.0
College graduates	2.0	0.01	1.4	0.17	0.6

Source: U.S. Bureau of the Census.

Table 14. Comparison of Census 2000 and April 2000 CPS Employed Counts by Selected Characteristics: United States, Total

(Civilian non-institutional population)
Numbers in thousands

Characteristic	Census 2000 Estimate		April 2000 CPS Estimate		Difference
	Number	90-percent confidence interval (+/-)	Number	90-percent confidence interval (+/-)	(Census 2000 minus CPS)
EMPLOYED POPULATION 16 YEARS AND OVER Total	129,722	31	136,927	426	-7205
Sex					
Male	69,091	27	73,006	271	-3915
Female	60,630	25	63,921	318	-3291
Age					
16 to 19	6,455	9	6,965	157	-510
20 to 24	12,434	13	13,067	229	-633
25 to 34	29,316	19	31,963	339	-2647
35 to 44	34,962	20	36,514	358	-1552
45 to 54	28,672	19	30,231	332	-1559
55 to 64	13,513	13	13,997	236	-484
65 years and over	4,369	8	4,190	133	179
Race and Hispanic Origin					
White	102,325	30	114,567	456	-12242
Black	13,002	13	15,100	199	-2098
Hispanic origin	13,348	13	15,667	125	-2319
EMPLOYED POPULATION 25 YEARS AND OVER Total	110,832	30	116,895	454	-6063
EDUCATIONAL ATTAINMENT					
Less than high school diploma	13,033	13	11,674	217	1359
High school graduates, no college	29,651	19	37,026	359	-7375
Less than a bachelor's degree	34,387	20	32,033	340	2354
College graduates	33,761	20	36,162	356	-2401

Source: U.S. Bureau of the Census.

Table 15. Comparison of 1990 Census and April 1990 CPS Employed Counts by Selected Characteristics: United States

(Civilian non-institutional population)

Characteristic	1990 Census Estimate		April 1990 CPS Estimate		Difference
	Number (thous)	90-percent confidence interval (+/-)	Number (thous)	90-percent confidence interval (+/-)	(Census 2000 minus CPS)
EMPLOYED POPULATION 16 YEARS AND OVER Total	115,681	30	118,218	434	-2537
Sex					
Male	62,705	26	64,651	327	-1946
Female	52,977	24	53,567	351	-590
Age					
16 to 19	5,843	9	6,408	152	-565
20 to 24	12,367	13	13,155	220	-788
25 to 34	33,071	20	34,049	334	-978
35 to 44	29,966	19	30,685	320	-719
45 to 54	19,567	16	19,385	263	182
55 to 64	11,272	12	11,079	203	193
65 years and over	3,595	7	3,456	116	139
Race and Hispanic Origin					
White	96,238	29	101,710	442	-5472
Black	11,408	12	12,186	208	-778
Hispanic origin	8,982	11	9,796	178	-814
EMPLOYED POPULATION 25 YEARS AND OVER Total	97,472	31	NA	NA	NA
EDUCATIONAL ATTAINMENT					
Less than high school diploma	14,759	14	NA	NA	NA
High school graduates, no college	28,934	19	NA	NA	NA
Less than a bachelor's degree	28,268	19	NA	NA	NA
College graduates	25,511	18	NA	NA	NA

Source: U.S. Bureau of the Census.

Table 16. Comparison of Census 2000 / April 2000 CPS Percent Differences and 1990 Census / 1990 CPS Percent Differences in Employed Counts by Selected Characteristics: United States, Total

(Civilian non-institutional population)

Characteristic	Census 2000/ April 2000 CPS Employment Estimates		1990 Census/ April 1990 CPS Employment Estimates		Difference (a-b)
	Difference as a percent of CPS estimate (a)	90-percent confidence interval	Difference as a percent of CPS estimate (b)	90-percent confidence interval	
POPULATION 16 YEARS AND OVER					
Total	-5.3	-5.5, -5.0	-2.1	-2.5, -1.8	-3.2
Sex					
Male	-5.4	-5.7, -5.0	-3.0	-3.5, -2.6	-2.4
Female	-5.1	-5.6, -4.7	-1.1	-1.7, -0.5	-4.0
Age					
16 to 19	-7.3	-9.2, -5.3	-8.8	-10.8, -6.7	1.5
20 to 24	-4.8	-6.4, -3.2	-6.0	-7.4, -4.5	1.1
25 to 34	-8.3	-9.2, -7.4	-2.9	-3.8, -2.0	-5.4
35 to 44	-4.3	-5.1, -3.4	-2.3	-3.3, -1.4	-2.0
45 to 54	-5.2	-6.1, -4.2	0.9	-0.3, 2.2	-6.1
55 to 64	-3.5	-5.0, -1.9	1.7	0.0, 3.5	-5.2
65 years and over	4.3	1.2, 7.5	4.0	0.8, 7.4	-0.3
Race and Hispanic Origin					
White	-10.7	-11.0, -10.4	-5.4	-5.8, -5.0	-5.3
Black	-13.9	-14.9, -12.8	-6.4	-7.9, -4.9	-7.5
Hispanic origin	-14.8	-15.4, -14.2	-8.3	-9.8, -6.7	-6.5
POPULATION 25 YEARS AND OVER					
Total	-5.2	-5.5, -4.8	NA	NA	NA
EDUCATIONAL ATTAINMENT					
Less than high school diploma	11.6	9.7, 13.6	NA	NA	NA
High school graduates, no college	-19.9	-20.6, -19.2	NA	NA	NA
Less than a bachelor's degree	7.3	6.3, 8.4	NA	NA	NA
College graduates	-6.6	-7.5, -5.8	NA	NA	NA

Source: U.S. Bureau of the Census.

Table 17. Comparison of Census 2000 and April 2000 CPS Employment/Population Ratios by Selected Characteristics: United States

(Civilian non-institutional population)

Characteristic	Census 2000 Estimate		April 2000 CPS Estimate		Percentage-point Difference (a-b)
	Employment/ Population Ratio (a)	90-percent confidence interval (+/-)	Employment/ Population Ratio (b)	90-percent confidence interval (+/-)	
EMPLOYMENT/POPULATION RATIOS POPULATION 16 YEARS AND OVER					
Total	61.2	0.01	64.6	0.22	-3.4
Sex					
Male	68.1	0.02	71.8	0.40	-3.7
Female	54.9	0.02	57.9	0.40	-3.1
Age					
16 to 19	41.2	0.05	43.6	1.12	-2.3
20 to 24	67.9	0.04	72.0	0.69	-4.1
25 to 34	76.2	0.03	82.4	0.40	-6.2
35 to 44	77.7	0.02	82.5	0.37	-4.8
45 to 54	77.0	0.03	81.1	0.42	-4.1
55 to 64	56.3	0.04	58.0	0.66	-1.7
65 years and over	13.1	0.02	12.5	0.38	0.6
Race and Hispanic Origin					
White	62.4	0.01	65.1	0.32	-2.7
Black	55.5	0.04	61.4	0.93	-5.9
Hispanic origin	56.4	0.00	66.1	0.92	-9.7
EMPLOYMENT/POPULATION RATIOS POPULATION 25 YEARS AND OVER					
Total	62.2	0.01	65.7	0.23	-3.5
EDUCATIONAL ATTAINMENT					
Less than high school diploma	38.1	0.03	40.6	0.60	-2.4
High school graduates, no college	58.2	0.03	62.7	0.41	-4.6
Less than a bachelor's degree	70.3	0.02	72.1	0.44	-1.8
College graduates	76.8	0.02	79.2	0.39	-2.4

Source: U.S. Bureau of the Census.

Table 18. Comparison of Census 2000 and 2000 CPS Unemployment Counts by State

(Civilian non-institutional population)
Numbers in thousands

State	Census 2000 Estimate		2000 CPS Estimate		Difference	Difference
	Number (thous)	90-percent confidence interval (+/-)	Number (thous)	90-percent confidence interval (+/-)	(Census 2000 minus CPS) (thous)	as a percent of CPS
United States	7,947	10.2	5,693	137.2	2254	39.6
Alabama	127	1.3	97	18.2	30	30.9
Alaska	28	0.6	21	8.5	7	33.3
Arizona	133	1.5	98	18.3	35	35.7
Arkansas	76	1.0	55	13.7	21	38.2
California	1,110	4.4	835	53.3	275	32.9
Colorado	99	1.2	65	14.9	34	52.3
Connecticut	93	1.2	40	11.7	53	132.5
Delaware	21	0.6	16	7.4	5	31.3
District of Columbia	32	0.8	17	7.6	15	88.2
Florida	412	2.5	281	31.0	131	46.6
Georgia	223	1.9	156	23.1	67	42.9
Hawaii	36	0.8	25	9.2	11	44.0
Idaho	37	0.7	32	10.5	5	15.6
Illinois	375	2.3	281	31.0	94	33.5
Indiana	153	1.6	100	18.5	53	53.0
Iowa	65	0.9	41	11.8	24	58.5
Kansas	58	0.9	52	13.3	6	11.5
Kentucky	109	1.2	81	16.6	28	34.6
Louisiana	146	1.4	111	19.5	35	31.5
Maine	31	0.6	24	9.1	7	29.2
Maryland	129	1.4	107	19.1	22	20.6
Massachusetts	151	1.6	88	17.3	63	71.6
Michigan	285	2.0	183	25.0	102	55.7
Minnesota	109	1.2	91	17.6	18	19.8
Mississippi	94	1.1	74	15.9	20	27.0
Missouri	149	1.4	102	18.7	47	46.1
Montana	29	0.6	24	9.1	5	20.8
Nebraska	32	0.7	28	9.8	4	14.3
Nevada	62	1.0	42	12.0	20	47.6
New Hampshire	26	0.6	19	8.1	7	36.8
New Jersey	243	2.0	160	23.4	83	51.9
New Mexico	60	0.9	42	12.0	18	42.9
New York	640	3.2	419	37.8	221	52.7
North Carolina	215	1.7	150	22.6	65	43.3
North Dakota	15	0.4	11	6.1	4	36.4
Ohio	283	2.0	233	28.2	50	21.5
Oklahoma	87	1.1	51	13.2	36	70.6
Oregon	113	1.2	88	17.3	25	28.4
Pennsylvania	339	2.1	251	29.3	88	35.1
Rhode Island	30	0.7	22	8.7	8	36.4
South Carolina	113	1.4	75	16.0	38	50.7
South Dakota	17	0.5	9	5.5	8	88.9
Tennessee	154	1.6	110	19.4	44	40.0
Texas	596	3.1	441	38.8	155	35.1
Utah	55	0.9	37	11.2	18	48.6
Vermont	14	0.4	10	5.8	4	40.0
Virginia	151	1.6	79	16.4	72	91.1
Washington	186	1.7	159	23.3	27	17.0
West Virginia	58	0.9	45	12.4	13	28.9
Wisconsin	134	1.3	105	18.9	29	27.6
Wyoming	13	0.4	10	5.8	3	30.0

Source: U.S. Bureau of the Census.

Table 19. Comparison of Census 2000 and 2000 CPS Unemployment Rates by State

(Civilian non-institutional population)

State	Census 2000 Estimate		2000 CPS Estimate		Difference
	Unemployment Rate	90-percent confidence interval (+/-)	Unemployment Rate	90-percent confidence interval (+/-)	(Census 2000 minus CPS)
United States	5.8	0.01	3.7	0.09	2.1
Alabama	6.2	0.06	4.5	0.83	1.7
Alaska	9.0	0.19	6.7	2.59	2.3
Arizona	5.6	0.06	4.0	0.73	1.6
Arkansas	6.1	0.08	4.4	1.07	1.7
California	7.0	0.03	4.9	0.31	2.1
Colorado	4.3	0.05	2.8	0.63	1.5
Connecticut	5.3	0.07	2.2	0.64	3.1
Delaware	5.2	0.14	3.9	1.75	1.3
District of Columbia	10.8	0.24	5.7	2.43	5.1
Florida	5.6	0.03	3.6	0.39	2.0
Georgia	5.5	0.05	3.7	0.54	1.8
Hawaii	6.3	0.13	4.3	1.54	2.0
Idaho	5.8	0.11	4.9	1.56	0.9
Illinois	6.0	0.04	4.3	0.46	1.7
Indiana	4.9	0.05	3.2	0.58	1.7
Iowa	4.2	0.06	2.6	0.74	1.6
Kansas	4.2	0.06	3.7	0.93	0.5
Kentucky	5.7	0.06	4.1	0.82	1.6
Louisiana	7.3	0.07	5.4	0.93	1.9
Maine	4.8	0.09	3.5	1.29	1.3
Maryland	4.7	0.05	3.8	0.67	0.9
Massachusetts	4.6	0.05	2.6	0.51	2.0
Michigan	5.8	0.04	3.5	0.47	2.3
Minnesota	4.1	0.04	3.3	0.62	0.8
Mississippi	7.4	0.09	5.6	1.16	1.8
Missouri	5.3	0.05	3.4	0.61	1.9
Montana	6.3	0.13	5.0	1.85	1.3
Nebraska	3.6	0.07	3.0	1.03	0.6
Nevada	6.2	0.10	4.0	1.11	2.2
New Hampshire	3.8	0.08	2.8	1.16	1.0
New Jersey	5.8	0.05	3.7	0.53	2.1
New Mexico	7.3	0.11	5.0	1.38	2.3
New York	7.1	0.03	4.6	0.40	2.5
North Carolina	5.3	0.04	3.6	0.53	1.7
North Dakota	4.6	0.11	3.0	1.70	1.6
Ohio	5.0	0.03	4.0	0.48	1.0
Oklahoma	5.3	0.06	3.1	0.79	2.2
Oregon	6.5	0.07	4.9	0.93	1.6
Pennsylvania	5.7	0.03	4.1	0.47	1.6
Rhode Island	5.6	0.13	4.1	1.57	1.5
South Carolina	5.9	0.07	3.8	0.79	2.1
South Dakota	4.4	0.13	2.3	1.37	2.1
Tennessee	5.5	0.05	3.9	0.67	1.6
Texas	6.1	0.03	4.2	0.36	1.9
Utah	5.0	0.08	3.3	0.98	1.7
Vermont	4.2	0.11	2.9	1.70	1.3
Virginia	4.2	0.04	2.2	0.45	2.0
Washington	6.2	0.06	5.2	0.74	1.0
West Virginia	7.3	0.11	5.5	1.48	1.8
Wisconsin	4.7	0.05	3.6	0.63	1.1
Wyoming	5.3	0.16	3.9	2.19	1.4

Source: U.S. Bureau of the Census.

Table 20. Comparison of Census 2000 and 2000 CPS Employed Counts by State

(Civilian non-institutional population)

State	Census 2000 Estimate		2000 CPS Estimate		Difference (Census 2000 minus CPS) (thous)	Difference as a percent of CPS
	Number (thous)	90-percent confidence interval (+/-)	Number (thous)	90-percent confidence interval (+/-)		
United States	129,722	31	136,926	413	-7204	-5.3
Alabama	1,920	5	2,043	106	-123	-6.0
Alaska	282	2	297	40	-15	-5.1
Arizona	2,233	6	2,382	114	-149	-6.3
Arkansas	1,173	4	1,207	81	-34	-2.8
California	14,719	16	16,049	284	-1330	-8.3
Colorado	2,205	5	2,286	112	-81	-3.5
Connecticut	1,664	5	1,744	98	-80	-4.6
Delaware	377	2	400	47	-23	-5.8
District of Columbia	263	2	293	40	-30	-10.2
Florida	6,995	10	7,520	200	-525	-7.0
Georgia	3,840	8	4,095	149	-255	-6.2
Hawaii	538	3	566	56	-28	-4.9
Idaho	599	3	625	59	-26	-4.2
Illinois	5,833	9	6,244	183	-411	-6.6
Indiana	2,965	7	3,020	128	-55	-1.8
Iowa	1,490	4	1,548	92	-58	-3.7
Kansas	1,316	4	1,357	86	-41	-3.0
Kentucky	1,798	5	1,907	102	-109	-5.7
Louisiana	1,852	5	1,919	102	-67	-3.5
Maine	624	3	664	60	-40	-6.0
Maryland	2,608	6	2,683	121	-75	-2.8
Massachusetts	3,161	7	3,230	132	-69	-2.1
Michigan	4,638	8	4,989	164	-351	-7.0
Minnesota	2,580	6	2,705	121	-125	-4.6
Mississippi	1,173	4	1,260	83	-87	-6.9
Missouri	2,658	6	2,868	125	-210	-7.3
Montana	426	2	453	50	-27	-6.0
Nebraska	877	3	917	71	-40	-4.4
Nevada	933	4	1,016	75	-83	-8.2
New Hampshire	651	3	672	61	-21	-3.1
New Jersey	3,950	8	4,129	149	-179	-4.3
New Mexico	763	3	812	67	-49	-6.0
New York	8,383	11	8,776	215	-393	-4.5
North Carolina	3,825	7	3,995	147	-170	-4.3
North Dakota	317	2	335	43	-18	-5.4
Ohio	5,402	8	5,530	172	-128	-2.3
Oklahoma	1,545	5	1,601	94	-56	-3.5
Oregon	1,628	5	1,733	97	-105	-6.1
Pennsylvania	5,654	9	5,833	177	-179	-3.1
Rhode Island	501	3	521	54	-20	-3.8
South Carolina	1,825	5	1,901	102	-76	-4.0
South Dakota	374	2	398	47	-24	-6.0
Tennessee	2,652	7	2,721	122	-69	-2.5
Texas	9,234	12	9,950	228	-716	-7.2
Utah	1,044	4	1,106	78	-62	-5.6
Vermont	317	2	324	42	-7	-2.2
Virginia	3,413	7	3,525	138	-112	-3.2
Washington	2,794	7	2,891	125	-97	-3.4
West Virginia	733	3	765	65	-32	-4.2
Wisconsin	2,735	6	2,863	125	-128	-4.5
Wyoming	241	2	258	38	-17	-6.6

Source: U.S. Bureau of the Census.

Table 21. Comparison of Census 2000 and 2000 CPS Employment Population (E/P) Ratios by State
(Civilian non-institutional population)

State	Census 2000 Estimate		2000 CPS Estimate		Difference
	E/P Ratio	90-percent confidence interval (+/-)	E/P Ratio	90-percent confidence interval (+/-)	(Census 2000 minus CPS)
United States	61.2	0.01	64.4	0.24	-3.2
Alabama	57.0	0.10	60.3	1.98	-2.8
Alaska	64.6	0.27	68.4	5.24	-3.6
Arizona	58.4	0.10	62.2	1.84	-3.8
Arkansas	58.1	0.13	59.5	2.56	-1.4
California	58.8	0.04	63.9	0.71	-5.0
Colorado	68.0	0.10	70.3	1.88	-2.3
Connecticut	64.3	0.12	67.3	2.17	-3.0
Delaware	63.3	0.25	66.8	4.53	-3.5
District of Columbia	57.5	0.31	63.8	5.28	-6.3
Florida	56.3	0.05	60.4	1.03	-4.4
Georgia	63.4	0.08	67.3	1.41	-3.9
Hawaii	59.5	0.21	64.1	3.80	-4.5
Idaho	63.3	0.18	65.8	3.62	-2.5
Illinois	62.5	0.06	66.7	1.15	-4.1
Indiana	64.6	0.09	65.7	1.65	-1.1
Iowa	66.8	0.12	69.1	2.30	-2.3
Kansas	65.9	0.12	67.7	2.46	-1.8
Kentucky	58.4	0.10	61.5	2.05	-3.3
Louisiana	56.3	0.10	58.2	2.02	-1.9
Maine	62.8	0.17	66.4	3.51	-3.6
Maryland	65.5	0.10	67.1	1.75	-1.9
Massachusetts	64.3	0.09	65.4	1.59	-1.4
Michigan	61.8	0.07	66.3	1.28	-4.5
Minnesota	69.4	0.09	72.4	1.72	-3.0
Mississippi	56.1	0.13	59.9	2.51	-3.8
Missouri	62.9	0.09	67.6	1.69	-4.7
Montana	62.1	0.20	65.6	4.25	-3.5
Nebraska	68.4	0.15	71.3	2.97	-2.4
Nevada	61.9	0.17	67.3	2.84	-5.0
New Hampshire	68.8	0.17	70.7	3.47	-1.9
New Jersey	61.5	0.08	64.1	1.41	-2.6
New Mexico	57.0	0.16	60.4	3.14	-3.4
New York	57.7	0.05	60.2	0.95	-2.5
North Carolina	62.8	0.07	65.5	1.43	-2.7
North Dakota	65.2	0.21	68.5	4.94	-3.3
Ohio	62.8	0.06	64.1	1.21	-1.3
Oklahoma	60.0	0.11	62.1	2.25	-2.2
Oregon	61.8	0.11	65.7	2.17	-3.9
Pennsylvania	59.7	0.06	61.4	1.17	-1.7
Rhode Island	61.8	0.22	63.9	3.96	-2.1
South Carolina	60.5	0.11	62.5	2.06	-2.0
South Dakota	66.9	0.24	70.7	4.51	-4.2
Tennessee	61.0	0.09	62.4	1.72	-1.4
Texas	61.0	0.05	65.5	0.91	-4.5
Utah	66.3	0.14	69.8	2.71	-3.5
Vermont	67.1	0.21	68.1	5.02	-1.0
Virginia	64.5	0.08	66.6	1.52	-2.0
Washington	62.8	0.09	64.9	1.68	-2.1
West Virginia	51.3	0.15	53.4	3.10	-2.1
Wisconsin	67.1	0.09	70.0	1.69	-2.9
Wyoming	65.0	0.29	68.9	5.63	-3.9

Source: U.S. Bureau of the Census.

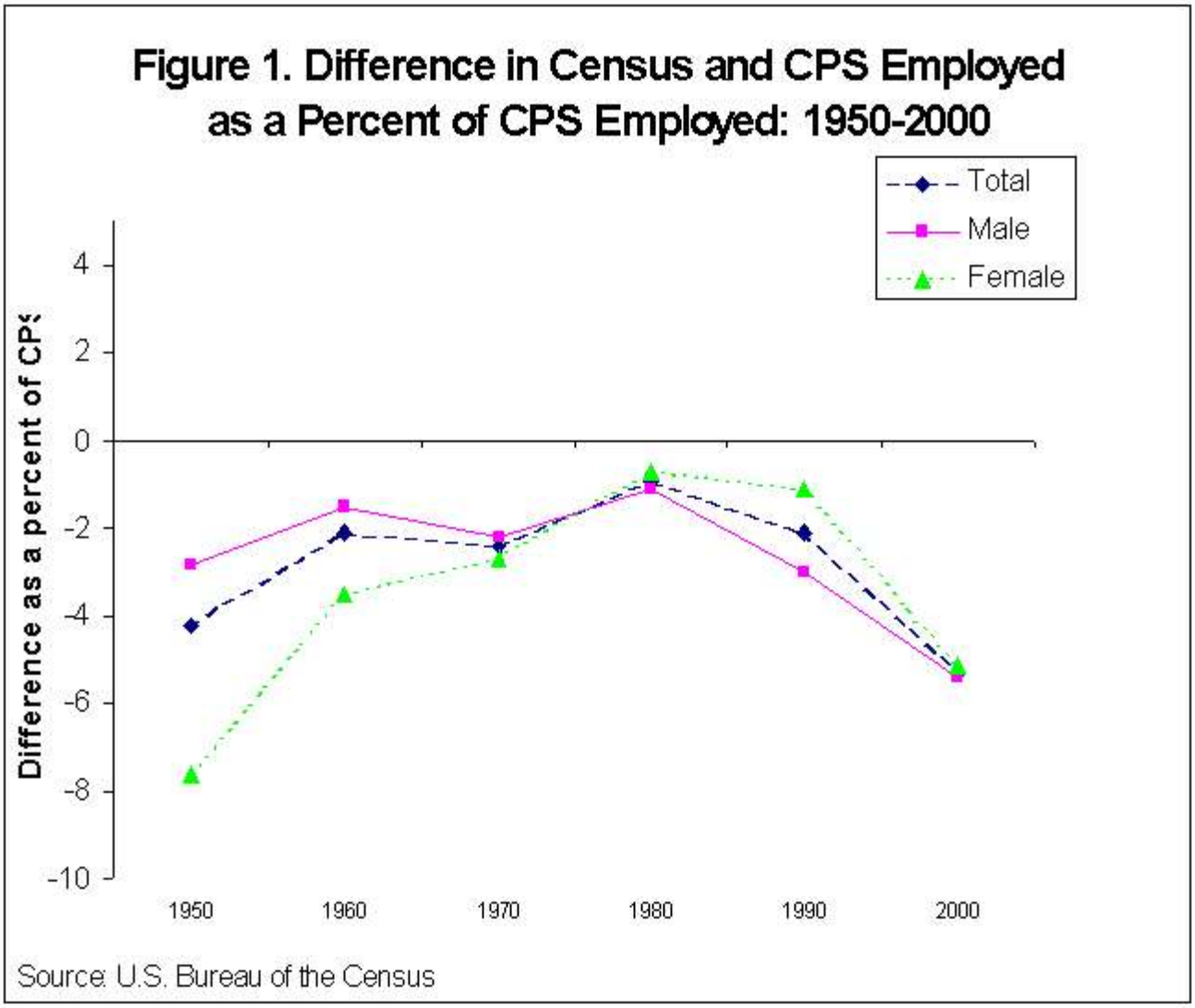
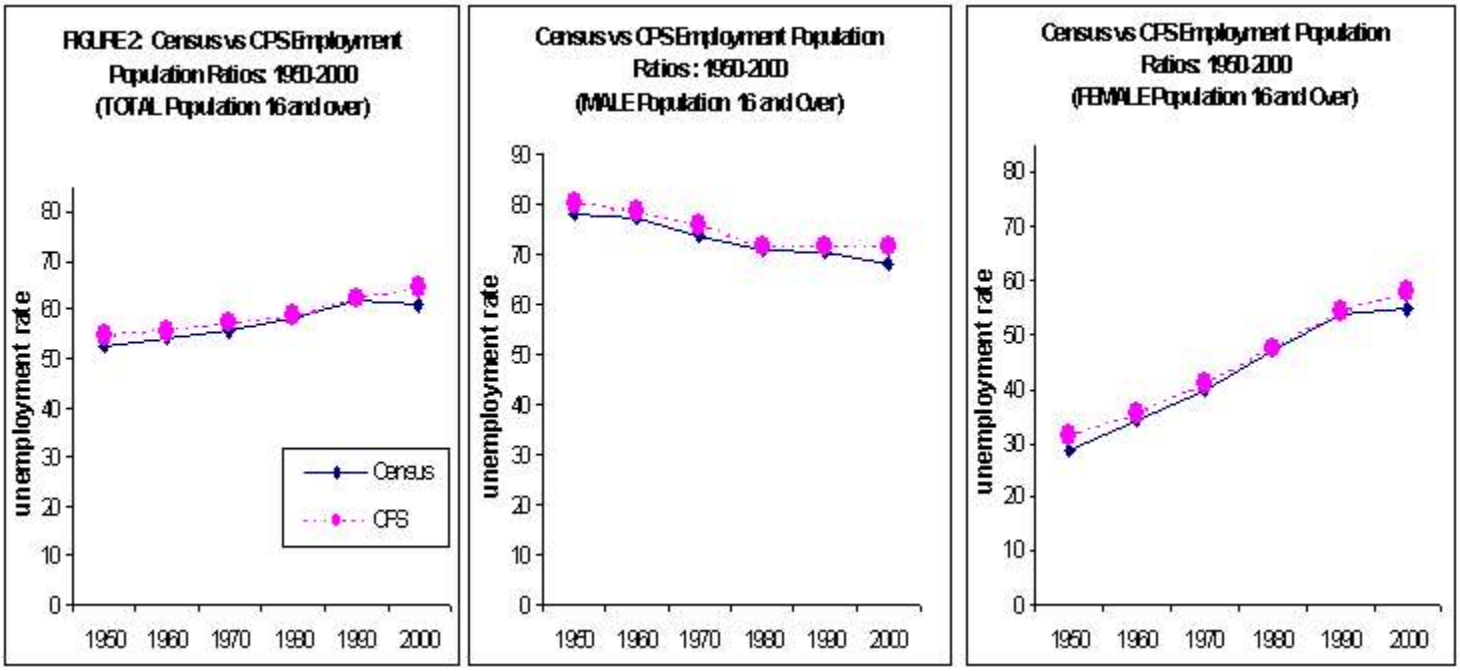


Figure 1. Difference in Census and CPS Employed as a Percent of CPS Employed: 1950-2000
Total
Male
Female
Difference as a percent of CPS
4
2
0
-2
-4
-6
-8
-10
1950
1960
1970
1980
1990
2000
Source: U.S. Bureau of the Census



Source: U.S. Bureau of the Census

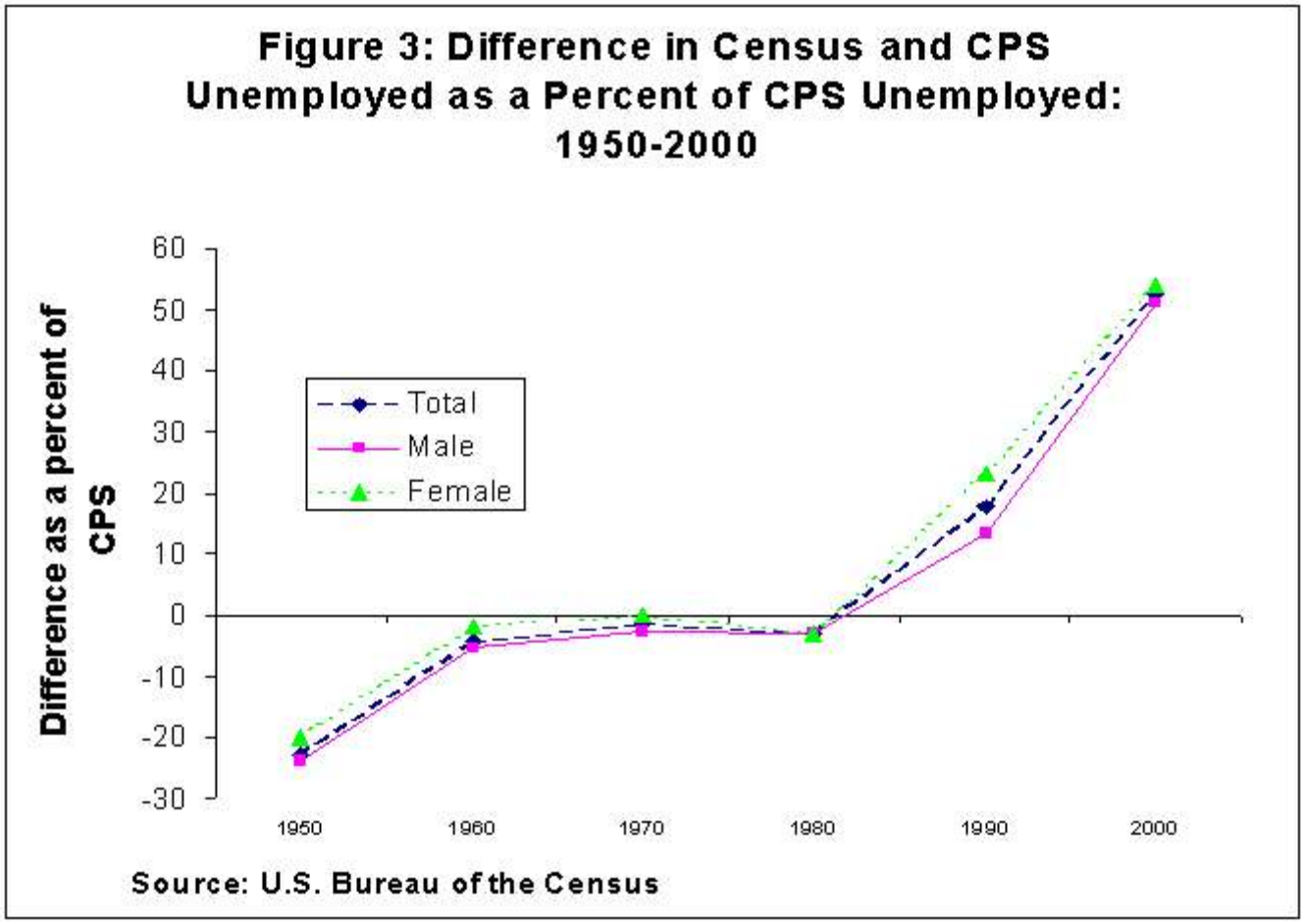
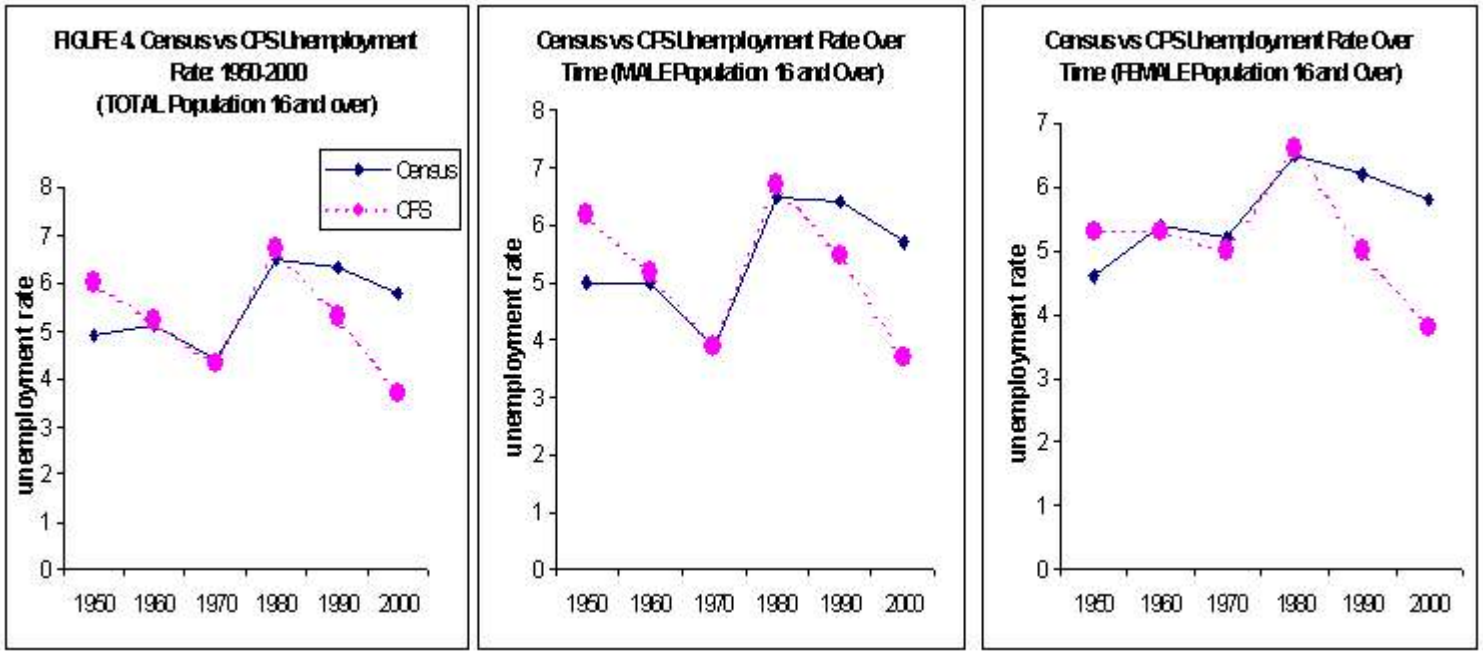
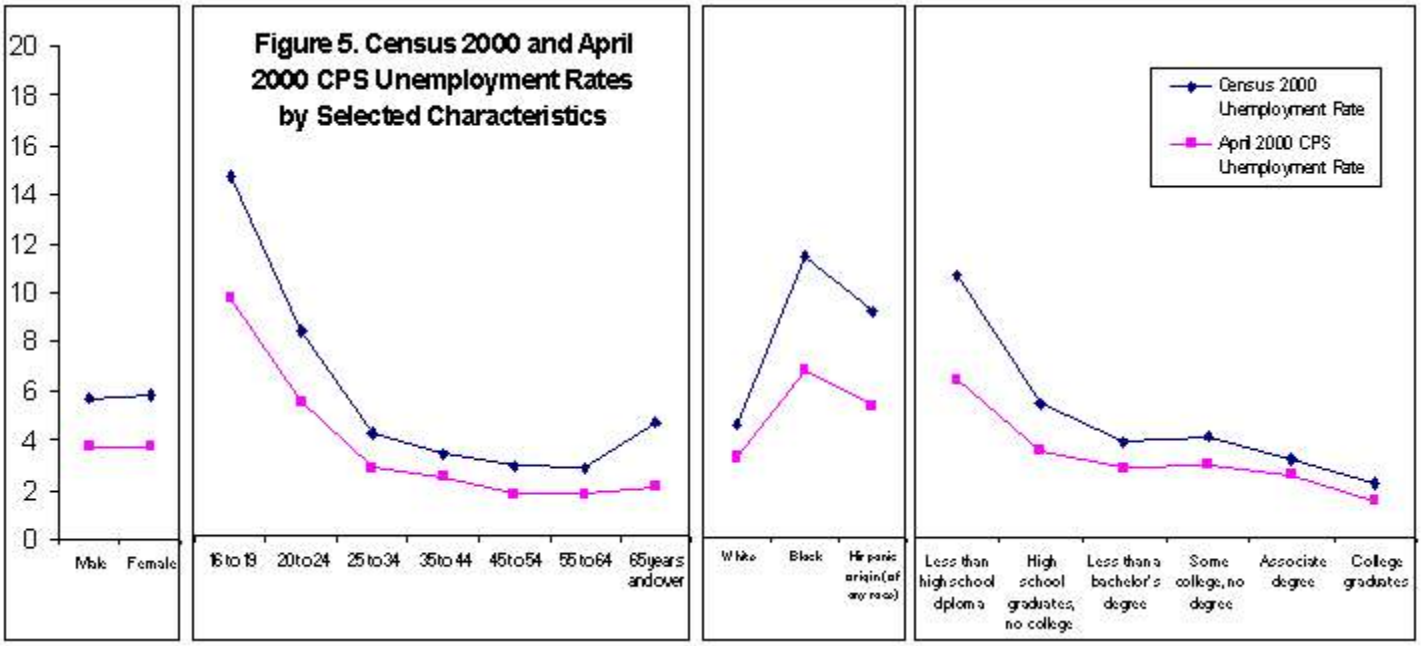


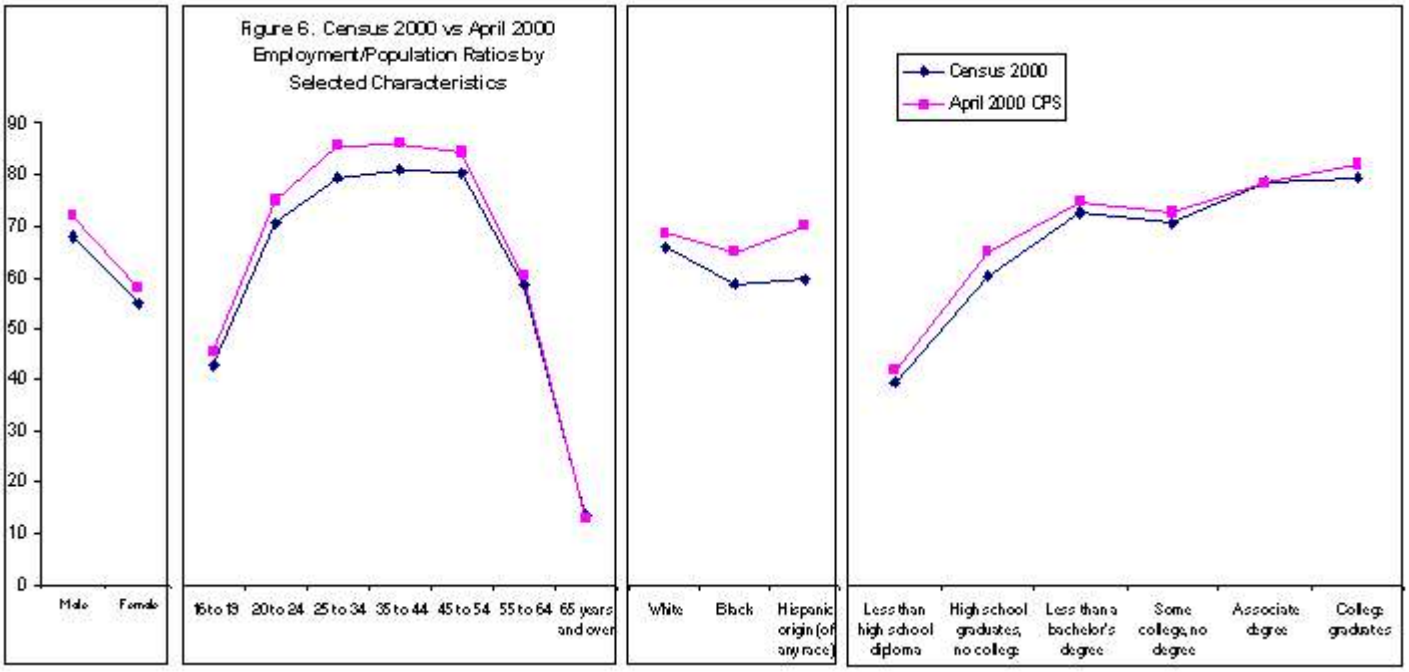
Figure 3: Difference in Census and CPS Unemployed as a Percent of CPS Unemployed: 1950-2000
Difference as a percent of CPS
60
50
40
30
20
10
0
-10
-20
-30
Total
Male
Female
1950
1960
1970
1980
1990
2000
Source: U.S. Bureau of the Census



Source: U.S. Bureau of the Census



Source: U.S. Bureau of the Census



Source: U.S. Bureau of the Census

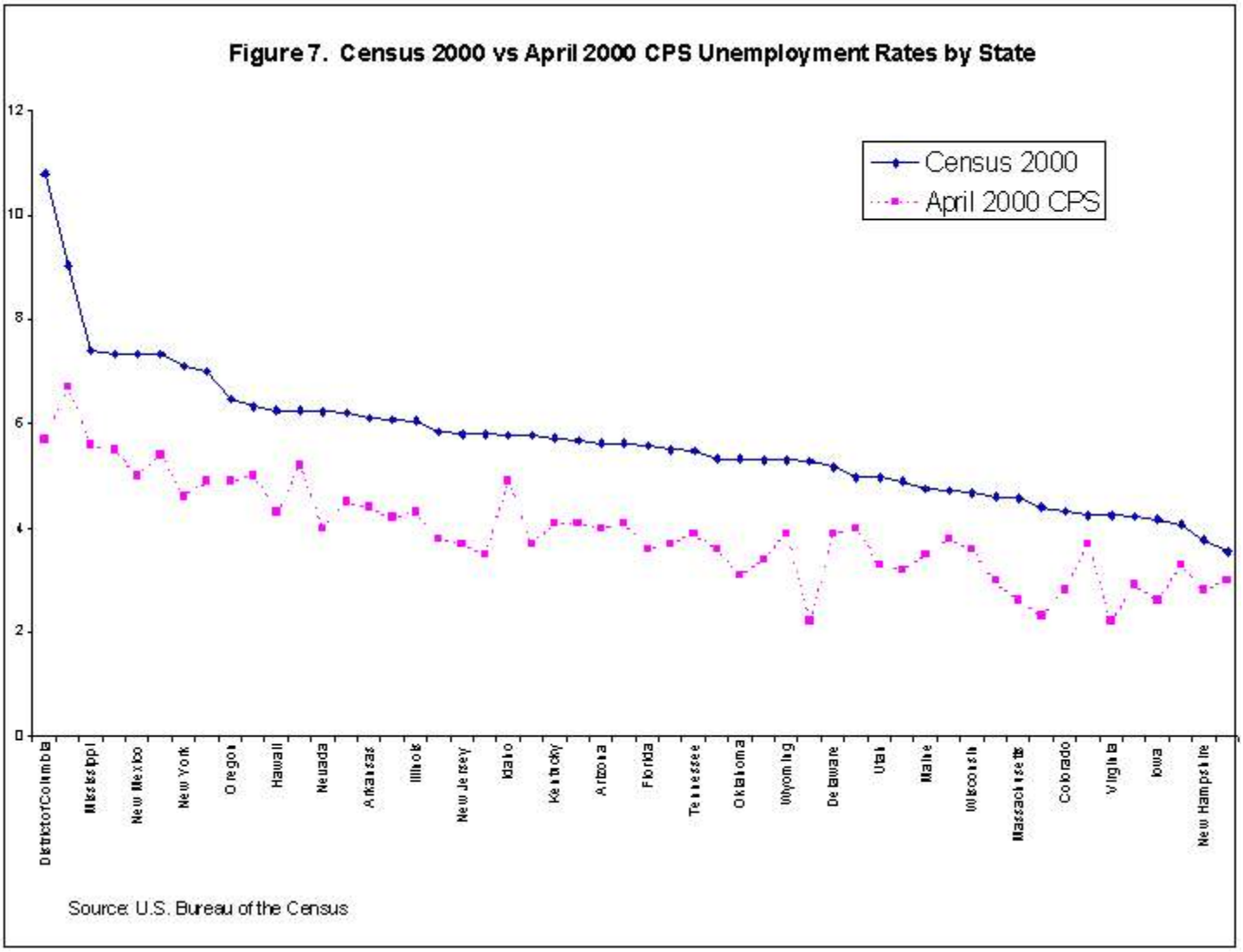


Figure 7. Census 2000 vs April 2000 CPS Unemployment Rates by State
Census 2000
April 2000 CPS
12
10
8
6
4
2
0
District of Columbia
Mississippi
New Mexico
New York
Oregon
Hawaii
Nevada
Arkansas
Illinois
New Jersey
Idaho
Kentucky
Arizona
Florida
Tennessee
Oklahoma
Wyoming
Delaware
Utah
Maine
Wisconsin
Massachusetts
Colorado
Virginia
Iowa
New Hampshire
Source: U.S. Bureau of the Census

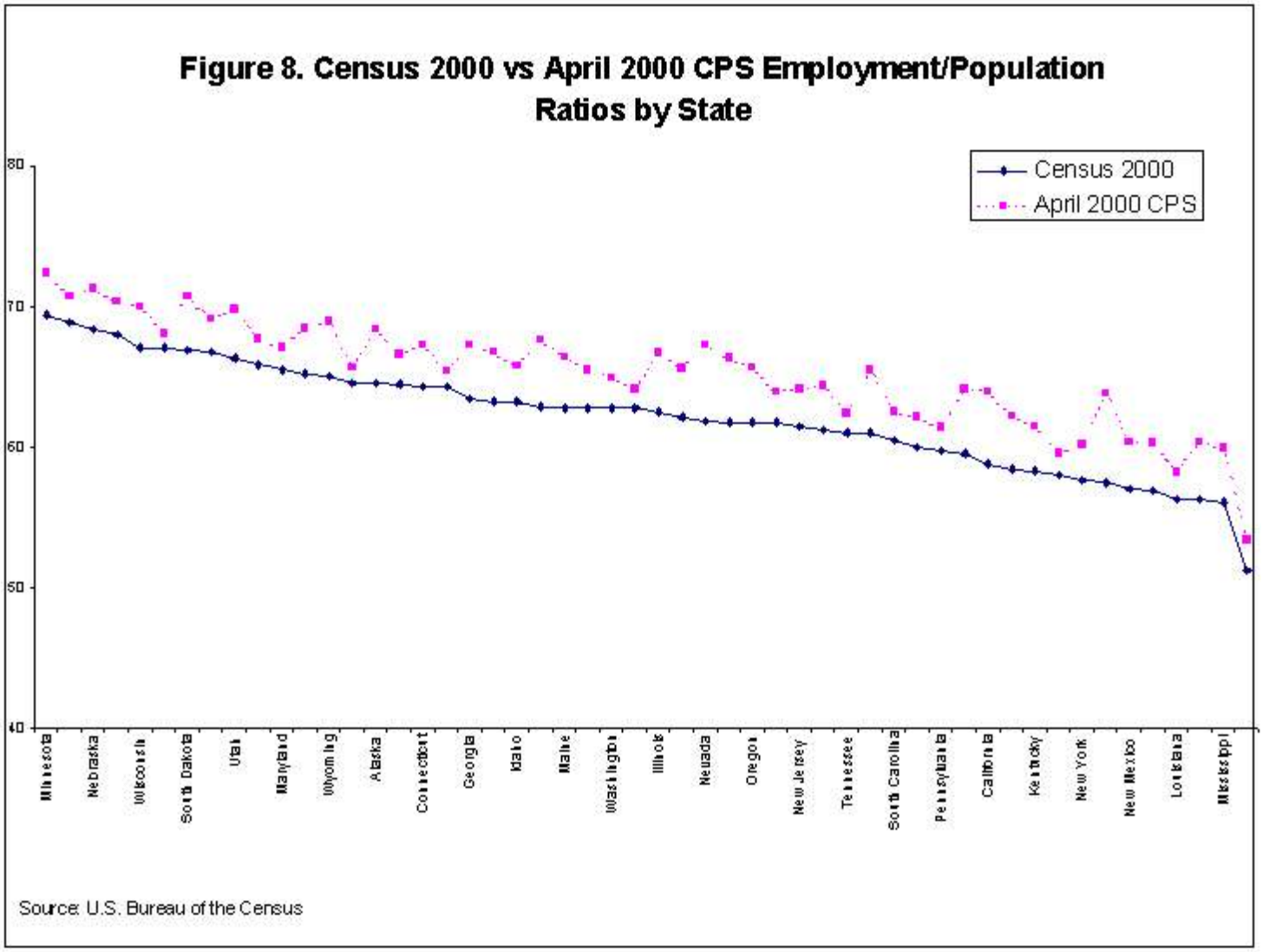


Figure 8. Census 2000 vs April 2000 CPS Employment/Population Ratios by State
Census 2000
April 2000 CPS
80
70
60
50
40
Minnesota
Nebraska
Wisconsin
South Dakota
Utah
Maryland
Wyoming
Alaska
Connecticut
Georgia
Idaho
Maine
Washington
Illinois
Nevada
Oregon
New Jersey
Tennessee
South Carolina
Pennsylvania
California
Kentucky
New York
New Mexico
Louisiana
Mississippi
Source: U.S. Bureau of the Census

2. INCOME DATA FROM CENSUS 2000

2. INCOME DATA FROM CENSUS 2000

The Census 2000 long form included eight detailed income questions on sources of income and a question on total income (from all sources). The eight types of income were (1) wage or salary income; (2) self-employment income; (3) interest, dividends, or net rental income; (4) Social Security; (5) Supplemental Security Income (SSI); (6) cash public assistance income; (7) retirement; and (8) other sources of income, which covered unemployment compensation, Veterans Administration (VA) payments, alimony and child support, contributions received periodically from people not living in the household, military allotments, and other regular sources of income. The total income and each of the sources refer to income received during the preceding calendar year. Here are the questions from Census 2000:

31. INCOME IN 1999 — *Mark ☒ the "Yes" box for each income source received during 1999 and enter the total amount received during 1999 to a maximum of $999,999. Mark ☒ the "No" box if the income source was not received. If net income was a loss, enter the amount and mark ☒ the "Loss" box next to the dollar amount.*

For income received jointly, report, if possible, the appropriate share for each person; otherwise, report the whole amount for only one person and mark the "No" box for the other person. If exact amount is not known, please give best estimate.

a. Wages, salary, commissions, bonuses, or tips from all jobs — *Report amount before deductions for taxes, bonds, dues, or other items.*

❑ Yes Annual amount — *Dollars*

$❑❑❑,❑❑❑.00

❑ No

b. Self-employment income from own nonfarm businesses or farm businesses, including proprietorships and partnerships — *Report NET income after business expenses.*

❑Yes Annual amount — *Dollars*

$❑❑❑,❑❑❑.00 ❑ Loss

❑No

c. Interest, dividends, net rental income, royalty income, or income from estates and trusts— *Report even small amounts credited to an account.*

❑Yes Annual amount — *Dollars*

$❑❑❑,❑❑❑.00 ❑ Loss

❑No

d. Social Security or Railroad Retirement

❑Yes Annual amount — *Dollars*

$❑❑,❑❑❑.00

❑ No

e. Supplemental Security Income (SSI)

❑ Yes Annual amount — *Dollars*

$❑❑,❑❑❑.00

❑ No

f. Any public assistance or welfare payments from the state or local welfare office

❑ Yes Annual amount — *Dollars*

$❑❑,❑❑❑.00

❑ No

g. Retirement, survivor, or disability pensions — *Do NOT include Social Security.*

❑ Yes Annual amount — *Dollars*

$❑❑,❑❑❑.00

❑ No

h. Any other sources of income received regularly such as Veterans' (VA) payments, unemployment compensation, child support, or alimony — *Do NOT include lump-sum payments such as money from an inheritance or sale of a home.*

❑ Yes Annual amount — *Dollars*

$❑❑,❑❑❑.00

❑ No

32. What was this person's total income in 1999? *Add entries in questions 31a—31h; subtract any losses. If net income was a loss, enter the amount and mark ☒ the "Loss" box next to the dollar amount.*

Annual amount — *Dollars*

❑ None OR $❑❑❑,❑❑❑.00 ❑ Loss

Every household was asked the questions on the short-form questionnaire during the Census 2000 data collection phase. The short-form questions on sex, age, Hispanic origin, race, and household relationship were asked of everyone living in housing units or other housing arrangements that included group quarters situations, such as nursing homes and college dormitories; people living in migrant farm worker camps, on boats, on military installations; federal employees living overseas; and transient people living a mobile lifestyle. The long form, which was sent to about one in every six households nationwide, consisted of these short form questions plus additional sample questions.

Approximately 95 percent of the nation's population was enumerated by the mail-out / mail-back procedure. The Census Bureau used the "Decennial Master Address File" (DMAF) to electronically select a probability sample for the long form. Questionnaires were mailed to selected addresses, if possible, with instructions to mail back a completed form. Enumerators delivered, by hand, questionnaires to housing units with no street names or house numbers, mainly in rural areas. Every address was enumerated in sparsely populated areas.

During the data capture operations, information on the census questionnaires generally was not edited. Census clerks reviewed enumerator-filled questionnaires as part of the data capture operation to identify and correct discrepancies. Mail-return forms were not subjected to the same clerical review. Addresses that did not respond at all were sent follow-up questionnaires or visited by an enumerator. There was no follow-up for incomplete forms.

Most of the enumerator-filled and mail-return questionnaires were processed using Optical Character Recognition, or OCR, an image scanning system. This system had its own data quality checks that helped ensure a previously defined level of accuracy. The machine interpreted numeric handwritten income entries then performed a data quality check to help ensure that the number read was accurate. If the entry failed to meet an accuracy threshold, an image of the item in question was displayed to a clerk who then edited the response.

After the income data were captured electronically, the data underwent another series of edits and allocations designed by income subject matter analysts. For example, consistency edits checked for mistakes like the reporting of monthly amounts for income sources such as Social Security, Supplemental Security Income, public assistance income, and retirement income. Edits checked for other common respondent errors as well such as a misplaced decimal point or identically reported amounts in the wage/salary question and the total income question. Many times respondents confused the first income item (wages) for the total income field and reported their

total income twice. Edits used the total income field to resolve differences in reporting of the individual components when possible. Edits performed these checks and many others to help ensure data quality.

Subject matter analysts also designed a complex allocation process for completing missing data. For example, a respondent who failed to report wage or salary information--but provided answers to other items such as occupation, class of worker, weeks worked, and age–was matched their reported data to that of another respondent (donor) who fully reported all items and substituted the fully reported earnings data for the missing information. The donor file was sorted by sex so that missing economic characteristics were allocated to a male only from another male and never from a female and vise versa. In addition to sex, variables like race and ethnicity, educational attainment, living arrangements (that is, husband or wife, other family reference person, other family members and unrelated individuals), and residence (such as whether a respondent lived inside a metropolitan area) were also considered.

2.1 Income in the Current Population Survey (CPS)

About 50,000 households were interviewed in the March 2000 Annual Social and Economic Supplement to the CPS, which collected income data for 1999. The census sample consisted of about 19 million households. The larger census sample allows for (1) much lower sampling errors and (2) the ability to present income data for much smaller geographic areas. The CPS is designed primarily to give national-level income data annually. Yearly estimates of household income at the state level are also possible. The census provides income data for many more geographic areas, from the national and state level all the way down to the census tract and block group level.

An advantage of the CPS relative to the census is that the CPS collects much more detailed income data. While the census long form questionnaire asked eight income items, the CPS identified over 50 different sources of income. Like the census, the CPS income questions refer to income received during the preceding calendar year.

The difference in data collection methodology between the two surveys was substantial. Experienced interviewers collected CPS income data via personal visits using Computer Assisted Personal Interviewing (CAPI) or Computer Assisted Telephone Interviewing (CATI). There were no mail-out/mail-back forms. Census enumerators were much less experienced than CPS field representatives.

Like census data, CPS income data were collected and then underwent close scrutiny by subject matter analysts. The CPS data went through a complex edit and allocation process much like that of the census. Because the number of records in the census was so much greater than the CPS, the searching algorithm used to look for a potential “donor” during the allocation phase of the process was vastly different. The CPS algorithm searched the whole file for a donor, whereas the census relied more on the “nearest neighbor” to act as a donor, staying within state boundaries. Which approach is better in not always clear. The CPS approach, by going beyond state boundaries,

could sometimes act to lower incomes in high-income states. The larger sample size of the census may also mean that the search for a donor need not be so wide-ranging. Because of these differences, some discrepancies will invariably exist in the income estimates produced in the census and the CPS.

2.2 Comparing Census 2000 and the Current Population Survey

Household income is defined as the income of the householder and all other individuals 15 years old and over living in the household, whether they are related to the householder or not. Family income is defined as the incomes of all members 15 years old and over related to the householder by blood, marriage, or adoption. Income for individuals is obtained by summing the different types of income for each person 15 years old and over. The median divides the income distribution into two equal parts, one-half of the cases falling below the median income and one-half above the median. For households and families, the median income is based on the distribution of the total number of households and families including those with no income. The median income for individuals is based on individuals 15 years and over with income. The median earnings for individuals is based on individuals 16 years and over with earnings in the census and 15 years and over in the CPS. The remainder of this section focuses primarily on these income measures. All measures of income presented are in 1999 dollars.

Census 2000 produced a median household income of $41,994, significantly higher than the CPS estimate of $40,696. Because the CPS asked more detailed income questions, one might expect respondents to remember and report smaller sources of income than did the respondents in the census. Therefore, one might expect income to be higher in the CPS than the census. The explanation for this unexpected finding is unknown and merits further investigation.

Among the 50 states and the District of Columbia, the census estimate of median household income was significantly higher than the CPS estimate in 14 states: Arizona, Arkansas, California, Florida, Georgia, Hawaii, Massachusetts, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, and Pennsylvania. In only two states, Alabama and Missouri, was the census estimate lower than the CPS estimate (see Table 22).

According to the census and the CPS, the highest median household incomes were in New Jersey, Connecticut, Maryland, and Alaska. The census found New Jersey to have the highest median household income at $55,146. This figure was statistically higher than the remaining 49 states and the District of Columbia. New Jersey was followed by Connecticut ($53,935), Maryland ($52,868), and Alaska ($51,571). The relative standing of these states in the CPS is less clear because of higher sampling variability surrounding the estimates. The CPS showed that the median household income for Alaska, although not statistically different from the median income for Maryland, New Jersey, and Connecticut, was higher than for the remaining 46 states and the District of Columbia. The census showed West Virginia to have the lowest median household income, $29,696--significantly lower than the remaining 49 states and the District of Columbia. The CPS showed the median household income of Arkansas, although not statistically different from the median for West Virginia, was lower than that of the remaining 48 states and the District

of Columbia. The CPS ranking of states is based on 3-year average medians for 1997-1999 rather than the single year estimates shown in Table 22.

Every region of the United States with the exception of the Midwest showed median household income significantly higher in the census than in the CPS (see Table 23). The difference in median household income in the Midwest was not statistically different for the census and the CPS. The census showed that the Northeast had the highest median household income at $45,481 and the South had the lowest at $38,790. Relative rankings of CPS medians by region are again less clear because of higher sampling variability. The CPS estimate for the South was statistically lower than estimates for the other regions. However, the CPS showed the Northeast, Midwest, and West not to be statistically different in terms of median household income.

For younger householders, Census 2000 estimates of median household income were lower than estimates from the CPS, but for older householders, the Census 2000 estimates were higher than the CPS estimates. The median household income for householders under 25 years old was $22,679 in the census and $25,148 in the CPS. For householders 25 to 34 years old, the median household income was also lower in the census than the CPS ($41,414 in the census and $42,090 in the CPS). For householders 35 to 54 years old, the census and CPS estimates of median household income were not statistically different. At ages 55 to 64, the census estimate of median household income was higher in the census than the CPS ($47,447 in the census and $44,464 in the CPS). For householders 65 to 74 years old, the estimated median household income was again higher in the census than the CPS ($31,368 in the census and $27,351 in the CPS). Among householders 75 and over, median household income was also higher in the census than the CPS ($22,259 in the census and $19,152 in the CPS).

Median family income in the census ($50,946) exceeded the CPS estimate ($48,831). Likewise, median family income for married-couple families was higher in the census ($57,345) than in the CPS ($56,501). For families with a female household with no husband present, the census estimate ($25,458) exceeded the CPS estimate ($23,762). In contrast, the census estimate of median income for families with a male householder and no wife present was lower than the CPS estimate ($35,141 in the census and $37,339 in the CPS).

The median earnings of men who worked full-time, year-round was $37,057 in the census–statistically lower than the CPS estimate of $37,450. Median earnings of women who worked full-time, year-round was $27,194 according to Census 2000–not statistically different from the CPS estimate of $27,366.

National per capita income derived from the census ($21,587) was higher than the CPS estimate of $21,239.

2.3 Future Research

Posey, Welniak, and Nelson[1] found that median incomes from Census 2000 were not only higher than CPS estimates, but also higher than comparable estimates from the Census 2000 Supplementary Survey (C2SS). This somewhat puzzling finding is another indication that much remains to be learned about survey-to-survey comparisons of income data. As noted above, comparisons of income data from Census 2000, the CPS, and the C2SS are affected by methodological differences that include different reference periods, data capture/processing systems, and weighting procedures. These issues will have to be examined more closely in order to ascertain which, if any, affected incomes.

Also, income differences between the C2SS and Census 2000 need to be examined by the types of income (wages, Social Security income, etc.) that are collected on both surveys (the C2SS and Census 2000 used the same set of income questions, and the CPS used a more detailed set of questions). Examining how each type of income differed among the three sources may shed light on the factor or factors that led to the differences in median household income.

Finally, another avenue of research will shed some light on the somewhat puzzling differences between Census 2000 and CPS income estimates and may in turn shed light on Census 2000/C2SS differences. That avenue of research is another Census 2000 evaluation project, the Census 2000/CPS Exact Match Project. For this project, households in the March 2000 CPS were matched to Census 2000 long-form households. With this file, researchers will be able to examine how the same individuals reported in Census 2000 and according to the more detailed income questions in the CPS. Such an analysis should shed light on how a less detailed income questionnaire yielded higher median incomes. It is clear that we are just at the beginning stages of understanding why Census 2000, CPS, and C2SS income figures differ.

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[1] Kirby Posey, Edward Welniak, and Charles Nelson, "Income in the American Community Survey: Comparisons to Census 2000," paper presented at the annual meeting of the American Statistical Association, San Francisco, CA, August 3-7, 2003.

Table 22. Median Household Income in 1999: Census 2000 and the Current Population Survey

State	Census 2000			March 2000 CPS - Annual Social and Economic Supplement			Percent difference in median household income (Census - CPS/Census)
		Median income			Median income		
	Number (thousands)	Value (dollars)	Standard Error (dollars)	Number (thousands)	Value (dollars)	Standard Error (dollars)	
United States	105,539	$41,994	11	106,434	$40,696	190	* 3.1
Alabama	1,737	$34,135	70	1,733	$36,251	1189	* (6.2)
Alaska	222	$51,571	245	221	$51,396	2226	0.3
Arizona	1,902	$40,558	89	1,901	$36,995	1133	* 8.8
Arkansas	1,043	$32,182	75	1,070	$29,682	1026	* 7.8
California	11,512	$47,493	47	11,840	$43,629	703	* 8.1
Colorado	1,659	$47,203	92	1,658	$48,177	1483	(2.1)
Connecticut	1,302	$53,935	135	1,346	$50,593	2296	6.2
Delaware	299	$47,381	205	294	$46,628	2281	1.6
District of Columbia	249	$40,127	264	254	$38,670	1599	3.6
Florida	6,341	$38,819	46	6,331	$35,831	627	* 7.7
Georgia	3,008	$42,433	72	3,007	$39,425	1355	* 7.1
Hawaii	404	$49,820	198	411	$44,504	1832	* 10.7
Idaho	470	$37,572	118	479	$35,800	1413	4.7
Illinois	4,593	$46,590	53	4,643	$46,330	1028	0.6
Indiana	2,337	$41,567	78	2,349	$40,838	1719	1.8
Iowa	1,150	$39,469	77	1,171	$41,098	1130	(4.1)
Kansas	1,039	$40,624	89	1,049	$37,348	2078	8.1
Kentucky	1,592	$33,672	67	1,559	$33,738	1484	(0.2)
Louisiana	1,657	$32,566	74	1,619	$32,654	1244	(0.3)
Maine	518	$37,240	118	502	$38,862	1319	(4.4)
Maryland	1,982	$52,868	110	1,997	$52,205	2217	1.3
Massachusetts	2,445	$50,502	96	2,538	$44,005	2023	* 12.9
Michigan	3,789	$44,667	51	3,734	$46,089	1026	(3.2)
Minnesota	1,896	$47,111	77	1,911	$47,038	1527	0.2
Mississippi	1,048	$31,330	79	1,048	$32,478	1408	(3.7)
Missouri	2,197	$37,934	60	2,223	$41,383	1191	* (9.1)
Montana	359	$33,024	123	359	$31,038	966	* 6.0
Nebraska	667	$39,250	105	675	$38,626	1366	1.6
Nevada	752	$44,581	133	737	$41,461	1764	* 7.0
New Hampshire	475	$49,467	150	477	$46,055	1952	* 6.9
New Jersey	3,066	$55,146	90	3,124	$49,734	1405	* 9.8
New Mexico	678	$34,133	107	670	$32,574	1746	4.6
New York	7,061	$43,393	42	7,218	$39,989	879	* 7.8
North Carolina	3,133	$39,184	55	3,090	$37,254	960	* 4.9
North Dakota	257	$34,604	119	263	$32,663	1383	5.6
Ohio	4,447	$40,956	49	4,553	$39,489	989	3.6
Oklahoma	1,344	$33,400	66	1,363	$32,683	1491	2.1
Oregon	1,335	$40,916	87	1,359	$40,619	1252	0.7
Pennsylvania	4,779	$40,106	45	4,820	$37,758	1141	* 5.9
Rhode Island	408	$42,090	194	418	$42,719	1980	(1.5)
South Carolina	1,534	$37,082	78	1,556	$36,462	1728	1.7
South Dakota	290	$35,282	124	290	$35,828	944	(1.5)
Tennessee	2,234	$36,360	71	2,181	$36,522	1310	(0.4)
Texas	7,397	$39,927	38	7,433	$38,688	1020	3.1
Utah	702	$45,726	127	710	$46,050	1615	(0.7)
Vermont	241	$40,856	145	242	$41,584	1407	(1.8)
Virginia	2,700	$46,677	80	2,673	$45,693	1770	2.1
Washington	2,272	$45,776	91	2,331	$45,473	2080	0.7
West Virginia	737	$29,696	86	757	$29,297	1149	1.3
Wisconsin	2,086	$43,791	69	2,051	$45,667	1878	(4.3)
Wyoming	194	$37,892	218	196	$37,248	1285	1.7

* Statistically significant difference at the 90-percent confidence level.

Source: U.S. Census Bureau.

Table 23. Comparison of 1999 Median Income from Census 2000 and the Current Population Survey by Selected Characteristics

Characteristics	Census 2000			March 2000 CPS - Annual Social and Economic Supplement			Percent difference in median household income (Census - CPS/Census)
		Median income			Median income		
	Number (thousands)	Value (dollars)	Standard Error (dollars)	Number (thousands)	Value (dollars)	Standard Error (dollars)	
HOUSEHOLDS							
All households	105,539	41,994	11	106,434	40,696	190	* 3.1
Age of Householder							
15 to 24 years	5,435	22,679	25	5,844	25,148	426	* (10.9)
25 to 34 years	18,138	41,414	21	18,987	42,090	386	* (1.6)
35 to 44 years	24,276	50,654	24	24,025	50,809	398	(0.3)
45 to 54 years	21,212	56,300	27	21,212	56,901	529	(1.1)
55 to 64 years	14,202	47,447	34	13,888	44,664	640	* 5.9
65 to 74 years	11,618	31,368	25	11,641	27,351	437	* 12.8
75 years and over	10,657	22,259	19	10,837	19,152	261	* 14.0
Region							
Northeast	20,295	45,481	23	20,684	41,822	417	* 8.0
Midwest	24,749	42,414	21	24,913	42,512	479	(0.2)
South	38,035	38,790	16	37,966	37,345	307	* 3.7
West	22,461	45,084	27	22,871	42,565	463	* 5.6
FAMILIES							
Total	72,262	50,046	14	73,206	48,831	297	* 2.4
Married-couple families	55,458	57,345	15	56,290	56,501	300	* 1.5
Female householder, no husband present	12,501	25,458	20	12,818	23,762	368	* 6.7
Male householder, no wife present	4,303	35,141	40	4,099	37,339	801	* (6.3)
EARNINGS OF FULL-TIME YEAR-ROUND WORKERS							
Male	52,468	37,057	10	58,307	37,450	202	* (1.1)
Female	35,470	27,194	8	40,890	27,366	120	(0.6)
PER CAPITA INCOME	281,422	21,587	3	276,804	21,239	126	* 1.6

* Statistically significant change at the 90-percent confidence level.
Source: U.S. Census Bureau.

3. POVERTY DATA FROM CENSUS 2000

3. POVERTY DATA FROM CENSUS 2000

Poverty estimates may differ among data collection efforts because of different questions used to gather information on income, different methods of fielding the surveys, and different procedures in processing the data. The goal here is to compare poverty estimates in Census 2000 with those in the Current Population Survey (CPS) and the Census 2000 Supplementary Survey (C2SS). Special attention will also be given to how differences in the coding of family relationships in Census 2000 and the CPS may help explain differences in poverty rates in the two surveys.

The current official poverty measure has two components: poverty thresholds and the family income that is compared to these thresholds. The official poverty definition uses 48 thresholds that take into account family size (from one person to nine or more), the number of family members under 18 years old, and the age of the householder. If the total family income is less than the family's threshold, then the family is poor as is every person in the family.

One difference across the three surveys is that while both the Census 2000 and CPS income questions asked people to report their income in the 1999 calendar year, the C2SS asked for people's income in the previous 12 months, regardless of when during 2000 the respondents were contacted (C2SS interviews took place in every month). Another difference is that the CPS contains more detailed questions about income sources than either Census 2000 or the C2SS. Third, the definition of the family differs in the CPS as compared with the other two surveys; the CPS contains questions that detect the presence of unrelated subfamilies in households while the latter two do not. The effect of this difference on poverty estimates is discussed in more detail in a section below.

Overall, despite the various differences in the surveys, the national poverty rate estimate from Census 2000, 12.4 percent, is only moderately higher than the Current Population Survey (CPS) poverty rate (11.9 percent) and not significantly different from the Census 2000 Supplementary Survey (C2SS) poverty rate (12.2 percent) in 1999 (see Table 24). Poverty rates for demographic subgroups tend to follow the same pattern as the national rate; estimates tend to be highest in Census 2000 and lowest in the CPS, with a few exceptions.

3.1 State-level comparisons of poverty estimates

Table 25 shows state-level poverty estimates. Census 2000 and C2SS estimates are generally similar and often not significantly different, varying by plus or minus 1.9 percentage points (2.7 percentage points in the District of Columbia is included in the comparison). Differences in poverty rates between Census 2000 and CPS are sometimes larger, although state-level CPS estimates have relatively large standard errors due to the smaller sample size. Census 2000 poverty estimates are neither consistently higher nor lower than the estimates from the other surveys, though, as mentioned above, the national Census 2000 estimate is a little higher than the others.

Table 24. Poverty Rate Comparison: Census 2000, Current Population Survey (CPS), and Census 2000 Supplementary Survey (C2SS)

Characteristics	Census 2000				CPS 1999 /1				C2SS			
		Below poverty level				Below poverty level				Below poverty level		
	Total	Number	%	90% C.I. (+/-) %	Total	Number	%	90% C.I. (+/-) %	Total	Number	%	90% C.I. (+/-) %
Total	273,882,232	33,899,812	12.4	0.01	276,207,756	32,791,272	11.9	0.33	272,451,619	33,311,473	12.2	0.16
People in families	231,874,934	25,158,289	10.8	0.01	230,789,183	23,830,069	10.3	0.33	224,350,000	24,453,080	10.9	N/A
Related children under 18 years	70,505,715	11,386,031	16.1	0.02	70,424,446	11,678,027	16.6	0.66	70,164,395	11,801,857	16.8	0.30
Unrelated individuals	47,140,624	10,721,935	22.7	0.03	43,977,047	8,400,339	19.1	0.66	46,970,412	10,084,801	21.5	0.32
Age												
Under 18 years	70,925,261	11,746,858	16.6	0.02	71,684,956	12,280,321	17.1	0.66	70,644,620	12,208,555	17.3	0.71
18 to 64 years	169,610,423	18,865,180	11.1	0.01	171,145,587	17,289,263	10.1	0.33	168,807,291	17,906,839	10.6	0.09
65 years and older	33,346,548	3,287,774	9.9	0.02	33,377,213	32,221,688	9.7	0.49	32,999,708	3,196,079	9.7	0.20
Race and Hispanic Origin												
White	206,259,768	18,847,674	9.1	0.01	225,360,580	22,168,868	9.8	0.33	210,735,489	20,283,424	9.6	0.16
Non-Hispanic	189,785,997	15,414,119	8.1	0.01	192,565,088	14,734,987	7.7	0.33	189,312,214	15,565,331	8.2	0.14
Black	32,714,224	8,146,146	24.9	0.04	35,756,381	8,440,941	23.6	1.15	32,454,134	7,877,443	24.3	0.48
Asian and Pacific Islander /2	10,344,872	1,321,795	12.8	0.05	11,955,317	1,284,676	10.7	1.48	10,687,248	1,331,862	12.5	4.42
Hispanic /3	34,450,868	7,797,874	22.6	0.03	34,631,683	7,875,678	22.7	1.15	34,236,278	7,570,978	22.1	0.48
Families												
All Families	72,261,780	6,620,945	9.2	0.01	73,206,413	6,791,775	9.3	0.33	70,975,913	6,614,923	9.3	0.14
Married couples	55,458,451	2,719,059	4.9	0.01	56,289,736	2,747,853	4.9	0.33	53,145,587	2,453,801	4.6	0.11
Male householder, no wife present	4,302,568	585,970	13.6	0.06	4,098,751	484,674	11.8	1.48	4,601,831	550,693	12.0	0.59
Female householder, no husband present	12,500,761	3,315,916	26.5	0.05	12,817,926	3,559,247	27.8	1.48	13,228,495	3,610,429	27.3	0.41

N/A - Not available.

1/ Revised implementation of Census 2000-based population controls and a 28,000 household sample expansion.

2/ Census 2000 and C2SS identify Asians separately from Pacific Islanders. This comparison, however, merges all Asians with Hawaiian Natives and Other Pacific Islande

3/ Hispanics may be of any race.

Source: U.S. Census Bureau.

Table 25. Poverty Rate of Individuals by State: Census 2000, Current Population Survey, and Census 2000 Supplementary Survey

State	Census 2000				CPS 1999 /1				C2SS				Census 2000 minus CPS	Census 2000 minus C2SS
		Below poverty level				Below poverty level				Below poverty level			Percent difference	
	Total	Number	Percent	90-percent C.I. (+/-)	Total	Number	Percent	90-percent C.I. (+/-)	Total	Number	Percent	90-percent C.I. (+/-)		
UNITED STATES	278,332,282	33,398,312	12.4	0.0	276,207,766	32,781,270	11.8	0.3	272,461,818	33,311,473	12.2	0.18	0.6	0.2
Alabama	4,334,919	698,097	16.1	0.1	4,387,601	667,943	15.2	2.9	4,313,269	672,034	15.6	0.96	0.9	0.5
Alaska	612,961	57,602	9.4	0.2	630,134	48,113	7.6	2.2	603,015	54,831	9.1	0.86	1.8	0.3
Arizona	5,021,238	698,669	13.9	0.1	5,096,805	616,425	12.2	2.4	4,963,581	779,680	15.6	0.97	1.7	-1.7
Arkansas	2,600,117	411,777	15.8	0.1	2,615,874	384,301	14.7	2.8	2,591,521	439,300	17.0	1.09	1.1	-1.1
California	33,100,044	4,706,130	14.2	0.0	33,704,891	4,732,657	14.0	1.1	32,898,126	4,519,876	13.7	0.50	0.2	0.5
Colorado	4,202,140	388,962	9.3	0.1	4,319,040	395,842	8.5	2.2	4,186,370	363,399	8.7	0.79	0.8	0.6
Connecticut	3,300,416	299,514	7.9	0.1	3,417,974	246,343	7.2	2.4	3,288,996	253,687	7.7	0.85	0.7	0.1
Delaware	759,117	69,901	9.2	0.2	768,036	80,100	10.4	2.7	756,329	70,136	9.3	1.02	-1.2	-0.1
District of Columbia	541,857	109,500	20.2	0.3	545,218	80,322	14.7	3.2	535,491	93,840	17.5	1.52	5.5	2.7
Florida	15,605,367	1,952,629	12.5	0.0	15,995,964	1,937,396	12.4	1.4	15,517,315	1,986,652	12.8	0.50	0.1	-0.3
Georgia	7,959,649	1,033,793	13.0	0.1	7,876,833	1,011,396	12.8	2.4	7,921,459	999,020	12.6	0.83	0.1	0.4
Hawaii	1,178,795	126,154	10.7	0.1	1,225,240	132,781	10.8	2.8	1,173,038	103,396	8.8	0.87	-0.1	1.9
Idaho	1,263,205	148,732	11.8	0.1	1,239,635	174,581	14.1	2.7	1,256,092	143,538	11.4	1.37	-2.3	0.3
Illinois	12,086,961	1,291,958	10.7	0.0	12,247,832	1,215,435	9.9	1.4	12,042,918	1,334,589	11.1	0.63	0.8	-0.4
Indiana	5,894,296	559,484	9.5	0.1	5,914,347	395,819	6.7	2.0	5,871,890	591,836	10.1	0.97	2.8	-0.6
Iowa	2,824,435	258,008	9.1	0.1	2,896,120	210,489	7.4	2.2	2,810,381	281,208	10.0	0.73	1.8	-0.9
Kansas	2,605,429	257,829	9.9	0.1	2,604,836	320,105	12.3	2.7	2,596,696	247,443	9.5	0.76	-2.4	0.4
Kentucky	3,927,047	621,096	15.8	0.1	3,959,320	467,326	12.1	2.7	3,886,535	639,514	16.4	1.21	3.7	-0.6
Louisiana	4,334,094	851,113	19.6	0.1	4,289,200	822,884	19.2	3.1	4,312,964	862,215	20.0	1.03	0.5	-0.4
Maine	1,240,893	135,501	10.9	0.1	1,259,967	133,603	10.6	2.8	1,234,473	124,464	10.1	1.23	0.3	0.8
Maryland	5,164,376	438,676	8.5	0.1	5,048,571	367,340	7.3	2.3	5,136,661	476,890	9.3	0.77	1.2	-0.8
Massachusetts	6,138,444	573,421	9.3	0.1	6,262,419	738,214	11.8	1.9	6,110,310	585,934	9.6	0.66	-2.4	-0.2
Michigan	9,700,622	1,021,605	10.5	0.0	10,052,360	977,820	9.7	1.5	9,630,253	975,044	10.1	0.54	0.8	0.4
Minnesota	4,794,144	380,476	7.9	0.1	4,867,514	353,591	7.3	2.1	4,775,503	328,096	6.9	0.61	0.7	1.1
Mississippi	2,750,677	548,079	19.9	0.1	2,754,974	445,971	16.2	3.0	2,732,009	498,396	18.2	1.00	3.7	1.7
Missouri	5,433,293	637,891	11.7	0.1	5,511,385	646,838	11.7	2.7	5,405,561	605,924	11.2	0.70	0.0	0.5
Montana	878,789	128,395	14.6	0.2	891,396	140,509	15.8	2.9	875,090	117,262	13.4	1.33	-1.2	1.2
Nebraska	1,660,527	161,269	9.7	0.1	1,682,953	184,313	11.0	2.6	1,650,745	158,436	9.6	0.70	-1.2	0.1
Nevada	1,962,948	205,685	10.5	0.1	2,033,274	229,368	11.3	2.5	1,954,468	193,685	9.9	1.22	-0.8	0.6
New Hampshire	1,199,322	78,530	6.6	0.1	1,254,995	95,916	7.6	2.5	1,193,845	63,296	5.3	0.80	-1.0	1.3
New Jersey	8,232,988	699,668	8.5	0.1	8,232,410	645,708	7.8	1.4	8,193,834	651,031	7.9	0.59	0.7	0.6
New Mexico	1,783,907	328,933	18.4	0.1	1,830,671	383,090	20.9	3.2	1,777,317	319,722	18.0	1.71	-2.5	0.4
New York	18,449,899	2,692,202	14.6	0.0	18,854,506	2,676,407	14.2	1.3	18,317,684	2,391,054	13.1	0.48	0.4	1.5
North Carolina	7,805,328	958,667	12.3	0.1	7,766,009	1,068,817	13.8	2.0	7,758,340	1,017,654	13.1	0.63	-1.5	-0.8
North Dakota	619,197	73,457	11.9	0.1	620,781	81,320	13.1	2.9	614,515	71,466	11.6	1.76	-1.2	0.2
Ohio	11,046,987	1,170,698	10.6	0.0	11,222,714	1,343,478	12.0	1.6	10,996,155	1,215,503	11.1	0.79	-1.4	-0.5
Oklahoma	3,336,224	491,235	14.7	0.1	3,298,670	423,652	12.8	2.6	3,325,344	458,960	13.8	0.87	1.9	0.9
Oregon	3,347,667	388,740	11.6	0.1	3,421,340	431,665	12.6	2.8	3,323,428	439,298	13.2	1.41	-1.0	-1.6
Pennsylvania	11,879,960	1,304,117	11.0	0.0	11,948,291	1,116,997	9.3	1.4	11,808,305	1,239,857	10.5	0.57	1.6	0.5
Rhode Island	1,010,000	120,548	11.9	0.2	1,032,727	103,363	10.0	2.7	1,007,180	107,692	10.7	1.11	1.9	1.2
South Carolina	3,883,329	547,369	14.1	0.1	3,800,186	444,630	11.7	2.8	3,868,847	557,271	14.4	0.81	2.4	-0.3
South Dakota	727,425	96,900	13.2	0.2	708,971	54,624	7.7	2.2	724,084	82,961	11.5	0.82	5.5	1.7
Tennessee	5,539,896	746,789	13.5	0.1	5,582,961	661,637	11.9	2.6	5,518,400	745,449	13.5	0.91	1.6	0.0
Texas	20,287,300	3,117,609	15.4	0.0	20,173,069	3,072,124	15.2	1.5	20,205,537	3,056,244	15.1	0.56	0.1	0.2
Utah	2,196,034	206,328	9.4	0.1	2,194,278	126,048	5.7	1.7	2,189,471	192,100	8.8	1.19	3.7	0.6
Vermont	588,053	55,506	9.4	0.1	599,178	57,737	9.6	2.7	585,427	62,876	10.7	1.15	-0.2	-1.3
Virginia	6,844,372	656,641	9.6	0.1	6,830,782	536,720	7.9	2.1	6,820,001	629,513	9.2	0.74	1.7	0.4
Washington	5,765,201	612,370	10.6	0.1	5,858,076	544,664	9.6	2.5	5,741,419	666,848	11.6	1.13	1.1	-1.0
West Virginia	1,763,896	315,794	17.9	0.1	1,734,155	271,993	15.7	2.9	1,759,896	326,822	18.6	1.29	2.2	-0.7
Wisconsin	5,211,603	451,538	8.7	0.1	5,428,864	466,173	8.6	2.2	5,174,844	461,469	8.9	1.15	0.1	-0.3
Wyoming	479,485	54,777	11.4	0.2	484,368	56,582	11.6	2.7	477,729	54,506	11.4	1.59	-0.1	0.0

1/ Revised implementation of Census 2000-based population controls and a 28,000 household sample expansion.

Source: U.S. Census Bureau.

3.2 The effect of family relationship coding on poverty estimates

Census 2000 recorded the relationship between each person in a household and the householder. Thus, according to Census 2000, a person is either a member of the householder's family, or an unrelated individual (anyone not related to the householder by birth, marriage, or adoption). In contrast, the CPS, which contains more detailed demographic questions, can detect the presence of unrelated subfamilies within households–that is, people who are related to each other but not to the householder.[1]

Treating an unrelated subfamily member as an unrelated individual can affect his or her poverty status in three ways: (1) by changing whether poverty status can be determined for that person at all (if he or she is under age 15), (2) by separating him or her from the other family members' income, and (3) by lowering his or her poverty threshold.

First, poverty tabulations exclude unrelated individuals under the age of 15. Because income questions were asked only of people age 15 and over, if a child under 15 has no other family members present (or if we cannot tell who they are), we do not know the child's income. Thus, we cannot tell whether they are poor, and they are omitted from the poverty universe. Because Census 2000 recorded a person's relationship only with respect to the householder, all the people whom the CPS would treat as unrelated subfamily members would have been counted as unrelated individuals in Census 2000. Since some of those unrelated subfamily members are under age 15, we would expect the universe totals for Census 2000 to be smaller than the CPS, other things being equal. If children in unrelated subfamilies were more likely to be poor than their counterparts in householders' families, their exclusion would lower the overall poverty rate.

The remaining two effects of treating family members as individuals–considering only their own income to determine their poverty status and lowering the poverty threshold to the level of individuals–can work together to either raise or lower their poverty status, depending on the family composition and the distribution of income across family members.

Examining the data from the CPS and Census 2000 shows that family relationship codes accounted for *very little* of the difference between poverty rates in the two surveys. Table 26 shows poverty data by family structure, sex, age, race and Hispanic origin using two methods: first, with family relationships reported as is typically done with CPS data, and second, with the family relationships recoded in a manner consistent with Census 2000 family relationship coding.

[1] The CPS can only detect parent-child or husband-wife relationships among people not related to the householder; thus other extended relatives such as cousins would not be counted as unrelated subfamily members. Even so, the CPS family relationship codes still offer more detail than Census 2000.

The recoded data exhibited a poverty rate only 0.1 percentage points lower than the rate obtained by typical CPS methodology (11.8 percent compared with 11.9 percent). Most of the difference occurred among people under age 18: under the Census 2000 method for identifying families, 700,000 more children were excluded from the universe than under the CPS method. These were children the CPS identified as unrelated subfamily members under age 15. According to the CPS methodology, further analyses indicated that their poverty rate was 44.2 percent, considerably higher than the 17.1 percent for all people under age 18. Since children in unrelated subfamilies were more likely to be poor than their counterparts in householders' families, excluding these children from the universe lowered the overall poverty rate.

Among people 18 to 64, the poverty rate remained unchanged at 10.1 percent, although there was a net drop of 10,000 in the number poor in that age group. People 65 years and over were unaffected by the changes in family coding. The exclusion of children from the poverty universe thus had a larger effect on the data than did lowering the thresholds and using person-based income for poverty computation.

Among all ages, the poverty rate for unrelated individuals increased from 19.1 percent to 19.5 percent after recoding. Under traditional CPS family coding procedures, people in unrelated subfamilies had a higher poverty rate than unrelated individuals (38.9 percent compared with 19.1 percent), therefore when those two groups were combined, the poverty rate for unrelated individuals rose. Among the remaining demographic groups, there was little difference in poverty rates using the alternative methods of coding people in unrelated subfamilies.

Table 26. Poverty by Selected Demographic Characteristics: Current Population Survey Recoded to Reflect Census 2000 Relationship Codes

[Numbers in thousands]

Characteristics	Poverty data using CPS family codes					Poverty data with unrelated subfamilies recoded as unrelated individuals /1				
		Below poverty level					Below poverty level			
	Total	Number	90-percent C.I. (+/-)	Percent	90-percent C.I. (+/-)	Total	Number	90-percent C.I. (+/-)	Percent	90-percent C.I. (+/-)
PEOPLE										
Total	276,208	32,791	900	11.9	0.3	275,501	32,556	897	11.8	0.3
Sex										
Male	134,823	14,079	595	10.4	0.4	134,460	13,960	593	10.4	0.4
Female	141,385	18,712	675	13.2	0.5	141,041	18,596	673	13.2	0.5
Age										
Under 18 years	71,685	12,280	470	17.1	0.7	70,978	12,055	466	17.0	0.7
18 to 64 years	171,146	17,289	668	10.1	0.4	171,146	17,279	668	10.1	0.4
65 years and over	33,377	3,222	176	9.7	0.5	33,377	3,222	176	9.7	0.5
Race										
White	225,361	22,169	756	9.8	0.3	224,841	22,015	754	9.8	0.3
Black	35,756	8,441	426	23.6	1.2	35,603	8,365	424	23.5	1.2
American Indian and Alaska Native	3,135	897	154	28.6	4.3	3,109	884	153	28.4	4.3
Asian and Pacific Islander	11,955	1,285	182	10.7	1.5	11,949	1,292	182	10.8	1.5
Ethnicity										
Hispanic /2	34,632	7,876	414	22.7	1.2	34,492	7,835	413	22.7	1.2
White non-Hispanic	192,565	14,735	626	7.7	0.3	192,174	14,612	623	7.6	0.3
Other non-Hispanic	49,011	10,181	525	20.8	1.0	48,836	10,109	523	20.7	1.0
Family structure										
People in married-couple family	180,800	10,673	537	5.9	0.3	180,800	10,673	537	5.9	0.3
People in families with a female householder no spouse present	38,580	11,764	562	30.5	1.2	38,580	11,764	562	30.5	1.2
People in families with a male householder no wife present	11,410	1,394	197	12.2	1.6	11,410	1,394	197	12.2	1.6
People in unrelated subfamilies	1,442	561	62	38.9	3.3	735	326	47	44.4	4.7
Unrelated subfamily members under age 15	707	312	46	44.2	4.8	NIU	NIU	X	X	X
Unrelated individuals	43,977	8,400	274	19.1	0.5	43,977	8,400	274	19.1	0.5
Unrelated individuals under Census 2000 method	NA	NA	X	X	X	44,712	8,726	280	19.5	0.5

NA - Not applicable.
NIU - Not in universe.
X - Measure cannot be computed because the category does not exist.
For explanation of confidence intervals (C.I.), see "Standard errors and their use" at *www.census.gov/hhes/poverty/poverty01/pov01src.pdf*.
1/ In these columns, people in unrelated subfamilies were recoded so that their poverty threshold was set to the appropriate one-person threshold, based on the person's age. For those people, poverty status was computed by comparing person income with the recoded threshold. Unrelated subfamily members under age 15--recoded here as unrelated individuals--were excluded from the universe.
2/ Hispanics may be of any race.

Source: U.S. Census Bureau, Current Population Survey, 2000 Annual Demographic Supplement.

D. APPENDIXES

Appendix 1–Supporting Studies.

This appendix presents three studies supporting the previous presentation of results. The first study looks at potential sources of differences between census and CPS employment status estimates. The second considers the effect of the use of the MESRB (defined below) in Census 2000. The third examines unemployment estimates.

Supporting Study 1. Potential Sources of Differences between Census and Current Population Survey (CPS) Employment-status Estimates

Measurements of similar phenomena from two surveys, such as the census and the Current Population Survey (CPS), may differ for many specific reasons, which fall into the following general categories:

1. imperfect measurements by each of the object under study, and

2. differences between them in the object under study itself.

The first category represents measurement errors, of which there are two kinds: sampling and non-sampling. The second category represents measurement-objective differences. For a variable that can change over time, the sources of estimation differences that fall in this second category result from the two surveys measuring the same phenomenon at different times, different phenomena at the same time, or different phenomena at different times.[2] The Census and the CPS attempt to measure the same concepts, so measurement-objective differences between them result only from measures of the same phenomenon at different times, as will be explained below.

This appendix describes some of the potential sources of the census-CPS differences in the measurement of the employment status variable within this framework of measurement errors and measurement-object differences. The CPS is considered the standard for comparison because it is thought to be more accurate than the census, since it utilizes a permanent staff of full-time, experienced interviewers (in contrast to the temporary, ad hoc, census staff) and is conducted under more extensive and intensive controls and training procedures than the census. No effort is made here to quantify the effects of these potential sources of differences on the actual census-CPS estimate differences.

[2]Measurement-objective differences can be characterized as errors in either survey only if it is regarded as having attempted, but failed, to measure the same objective as the other survey.

Measurement Errors

The employment estimates in Census 2000 are based on the Census 2000 sample, which includes about one in six housing units in the country. The CPS estimates are also based on a sample of about 50,000 U.S. households per month (this sample increased to about 60,000 eligible households in July 2001). In both cases, the data are estimates of the actual figures that would have been obtained from complete counts of the population. Estimates based on samples differ from complete-count figures because of both sampling and non-sampling errors.

Sampling Errors

Sampling error occurs by chance and arise because the people selected for the sample may not fully represent the entire population from which they are drawn. The extent of this variability is measured by the standard error of the estimate.

Non-sampling Errors

Non-sampling errors affect both sample and complete-count estimates, and are introduced by data collection or processing errors. Non-sampling errors in surveys can be attributed to many sources, such as the inability to obtain information from all persons in the sample, differences in the interpretation of questions, inability or unwillingness of respondents to provide correct information or to recall information, errors made in collecting and capturing responses or in estimating values for missing data, and failure to represent all sample households and all persons within sample households (undercoverage).

There are six specific potential sources that may lead to a greater degree of non-sampling errors in census employment measures than in CPS measures.

1. Questionnaire Differences.

The employment-classification concept used in both the CPS and the census is defined operationally in terms of a set of criteria for deciding which of three categories--employed, unemployed, not in labor force--best characterizes the respondent's relationship to the labor market during a particular week. Since, even within a week, this relationship can vary, the criteria assign priorities among categories so that each respondent is classified in one and only category: "employed" takes precedence over "unemployed," which takes precedence over "not in labor force." To apply these criteria, both the CPS and the census obtain employment information from a battery of questions. Each question obtains a piece of evidence required by one of the criteria; the role, if any, of a given piece of evidence in the final classification decision depends upon the other pieces of evidence collected.

The census is a general purpose survey: employment is only one among a variety of topics on which it collects data. The number of employment questions in the census is severely limited because of intense competition from other topics, so the number of census questions--six--is fewer than the number required to make a definitive employment-classification decision in all cases. Therefore, even if a complete set of answers to the census questions is obtained for a case, an arbitrary decision sometimes must be made about its appropriate employment classification.[3] The CPS, however is specifically intended to collect labor force data. The CPS currently uses nine specific, detailed questions to determine a respondent's employment status. The enhanced specificity in the CPS is designed to avoid mis-classifications and the kind of arbitrary decisions required in the census; for example, census cannot exclude persons who are passively searching for work from the count of unemployed, while the CPS can and does.

The number of questions is only one difference between the CPS and census collection instruments. Another difference is that, even when a question in the CPS and census address the same issue, the wording of their questions may not be identical. Also, the position of a question within the sequence of questions may differ, as may the placement of the entire battery within the overall interview, a factor related to issues of respondent fatigue.

Here is the employment and unemployment questions asked in Census 2000, and following them are the CPS employment and unemployment questions.

Questions on Employment Status From Census 2000

21. LAST WEEK, did this person do ANY work for either pay or profit? *Mark the "Yes" box even if the person worked only 1 hour, or helped without pay in a family business or farm for 15 hours or more, or was on active duty in the Armed Forces.*
❑Yes
❑No ➞ *Skip to 25a*

25.a. LAST WEEK, was this person on layoff from a job?
❑Yes ➞ *Skip to 25c*
❑ No

[3] The census employment classification criteria are hierarchical and the data elements they require to make a classification decision vary by employment category. For example, the criteria first see whether the person worked or not in the reference period; if so, then this one piece of data is sufficient by itself, then and there, to classify the person as "employed"; however, to classify someone as "unemployed" rather than as "not in labor force" may require as many as 13 pieces of detailed information.

b. LAST WEEK, was this person TEMPORARILY absent from a job or business?
❑Yes, on vacation, temporary illness, labor dispute, etc. ➞*Skip to 26*
❑ No ➞ *Skip to 25d*
c. Has this person been informed that he or she will be recalled to work within the next 6 months OR been given a date to return to work?
❑Yes ➞ *Skip to 25e*
❑ No
d. Has this person been looking for work during the last 4 weeks?
❑Yes
❑ No ➞ Skip to 26
e. LAST WEEK, could this person have started a job if offered one, or returned to work if recalled?
❑ Yes, could have gone to work
❑ No, because of own temporary illness
❑ No, because of all other reasons *(in school, etc.)*

CPS Employment Questions (Extracted from Figure 5-1, page 5-6, of Current Population Survey Technical Paper 63RV (TP63RV) :

1. Does anyone in the household have a business or a farm?

2. LAST WEEK, did you do ANY work for (either) pay (or profit)? *Parenthetical filled in if there is a business or farm in the household. If 1 is "yes" and 2 is "no," ask 3. If 1 is "no" and 2 is "no," ask 4.*

3. LAST WEEK, did you do any unpaid work in the family business or farm? *If 2 and 3 are both "no, " ask 4.*

4. LAST WEEK, (in addition to the business,) did you have a job, either full or part time? Include any job from which you were temporarily absent. *Parenthetical filled in if there is a business or farm in the household. If 4 is "no," ask 5.*

5. LAST WEEK, were you on layoff from a job? *If 5 is "yes," ask 6. If 5 is "no," ask 8.*

6. Has your employer given you a date to return to work? *If "no," ask 7.*

7. Have you been given any indication that you will be recalled to work within the next 6 months? *If "no," ask 8.*

8. Have you been doing anything to find work during the last 4 weeks? *If "yes," ask 9.*

9. What are all of the things you have done to find work during the last 4 weeks?

Individuals are classified as employed if they say "yes" to questions 2, 3 (and work 15 hours or more in the reference week or receive profits from the business/farm), or 4. Individuals who are available to work are classified as unemployed if they say "yes" to 5 and either 6 or 7, or if they say "yes" to 8 and provide a job search method that could have brought them into contact with a potential employer in 9.

2. Collection Methods.

All data from the CPS are gathered by trained field interviewers through personal visits and telephone interviews. In the census, a large percentage of the sample individuals fill out a questionnaire by themselves, with only brief instructions embedded in the questions themselves.[4] In the census, there are generally no interviewers to clarify survey questions and to probe for more accurate and detailed responses, as is the case in the CPS.

3. Quality Control.

CPS interviewers are trained extensively before going out into the field, and their proficiency is checked regularly. In addition, each month, a portion of the households in the sample are reinterviewed, and the results are used to control and measure the quality of the data. In the census, the extent to which the quality of the data can be controlled or evaluated is much more limited.

4. Edit/Imputation Differences.

The large-proportion of self-reported responses in the census means that a significant proportion of the census cases have completely or partially missing responses to the employment questions. Furthermore, as described above, the inadequate number of census questions relative to the classification criteria means that, even for complete census responses, it is sometimes necessary

[4]In Census 2000, 63 percent of long forms were completed by respondent self-reporting in the mail portion of census operations.

to impute a final classification -- as opposed to determining it by mechanically applying the classification criteria--based upon circumstantial logic involving a varying number of assumptions about the likely nature of the missing information, given the reported information. Imputations are made in the case of completely missing information by statistical-match methods, in which a value is assigned based upon a respondent's demographic characteristics, or, in the case of partial information, by assigning the most likely final value from among the set of values that are possible, given the reported information. Regardless, an imputation represents an educated opinion as to the correct classification, which may be valid on average, but completely wrong in any particular case. The fact that the census contains a substantial proportion of such decisions could be a factor in producing differences between census and CPS estimates.[5]

5. CPS Initial Interview Effects.

In the CPS, households are in the sample for four consecutive months, out of the sample for the following eight months, and then interviewed again for four months. There is a tendency among households surveyed for the very first time (first month in sample) and among those surveyed after the eight-month intermission (fifth month in sample) to report higher levels of unemployment than those who have been in the survey for several consecutive months. This phenomenon affects one-fourth of the CPS sample. In the census, virtually every household is reporting for the first time. Thus, any upward bias in unemployment associated with first interview could conceivably affect the entire census, but only a portion of the CPS.

6. Likely Reporting Errors in Census 2000 for the Group Quarters Population.

In Census 2000 , the labor force data for some places with relatively large numbers of people living in civilian non-institutional group quarters, such as college dormitories, worker dormitories, and group homes (for the mentally ill or physically handicapped), appear to overstate considerably the number in the labor force, the number unemployed, and the percent unemployed (and, conversely, to understate the number not in the labor force), probably because

[5] In the context of imputations, there was a major change in census imputation scheme between the 1990 and 2000 censuses that may have affected the census 2000 employment-status estimates, the sizes of 1990-2000 census differences, and 2000 CPS-census differences. For census 2000, the rules for the employment status classification imputed a value to persons who reported (in long-form question 21) that they did **not** work last week, but who gave little or no other information about their economic activity in the census reference week. The imputation was made, for the most part, in a statistical-match imputation matrix (called MESRB) that limited donors to persons who reported that they **too** did not work last week. This limitation effectively restricted the values that could be imputed mostly to "unemployed" and "not in labor force". In the 1990 census, there was no such restriction, so such cases could be imputed to the "employed" category, as well as to "unemployed" and "not in labor force" categories. This change reduced the number of employed and increased the numbers in the latter two categories in census 2000, relative to what they would otherwise have been.

of reporting or processing errors. The problem directly affected about 15 percent of the civilian non-institutional, group quarters population 16 years of age and over in the United States, or around 500,000 people. However, through them, it had an impact on the overall Census 2000 labor force statistics for the country in general. The problem stems from the tendency of many people in the group quarters population to exhibit a suspect pattern of entries to the employment questions in Census 2000. Census 2000 SF3 Data User Note 4 describes this pattern, and provides strong circumstantial evidence for why it likely represents a reporting error. The problem did not occur for the household population. Preliminary estimates at the national level are that the problem may have incorrectly decreased the number of employed persons by about 235,000 (the Summary File 3--SF3--number of employed was 129.7 million), reduced the number of people not in the labor force by 285,000 (SF3 figure of 78.3 million), increased the number of unemployed by 519,000 (SF3 figure of 7.9 million), and raised the unemployment rate by 0.4 percentage point (SF3 figure was 5.8 percent). The full extent and the potential ramifications of the problem are unknown as of this writing.

Measurement-Objective Differences

As emphasized above, the census and the CPS attempt to measure the same object--the number of people in the three employment-status categories--using identical criteria and definitions. As pointed out, their respective tools are not of equal potency or accuracy, but they do attempt to focus these tools on the same object. Nevertheless, differences in the time-reference periods associated with this object give rise to a measurement-objective difference that is a potential source of differences in their estimates.

Briefly, the CPS questions for determining current employment status relate to a specific reference week, the week including the 12th of the month (or, in the case of job search, the four weeks preceding the survey week). The census questions relate to the calendar week preceding the date that the questionnaires were completed (in the case of job search, the four weeks preceding the date of reporting). This difference in reference periods means that differences in the census-CPS estimates may be the result of real changes--from changing economic conditions--from what the census would have measured if the CPS and census reference periods coincided exactly.

It is not possible to determine the exact calendar week for any given respondent in the census since the census does not collect information about the date the form was filled out, nor about the identity of the respondent's reference period. The best one can do is estimate the dates of the reference period using the census check-in date (from administrative data) and a number of assumptions about the relationship between the check-in date and the respondent's reference period. A study will be done using such techniques to measure the effect of the differences between the CPS and the census in their reference weeks on the differences in their employment estimates.

Supporting Study 2. Effect of Use of MESRB (Matrix of Employment Status Recode B)

During the census enumeration, some people do not respond to a census question or respond inadequately. When this happens, the census imputes a value for the missing or insufficient response. A major change in the imputation process for the employment item in Census 2000 affected the Census 2000 employment-status estimates, the sizes of 1990-2000 census differences, and 2000 CPS-census differences. The change and the results of an effort to quantify its impact are discussed next.

First, some background of the decennial census employment-status classification process is needed. The census classifies a person's employment status by applying the criteria of the official (Department of Labor) employment-status definition to the person's pattern of responses to a battery of questions (see Appendix 2). Hence, the employment-status variable is technically a recode, which is why it is referred to as the "Employment Status Recode" (ESR). This recode has six categories or "values,"[6] called ESR values. People whose reported information is sufficient to classify them straightforwardly to a particular category are given the so-called "reported" ESR value of that category. People whose reported information is such that the likelihood that they belong in a particular category is beyond an acceptable threshold receive an "assigned" ESR value of the category. People who do not report enough information to be classified (all other people) receive "imputed" ESR values, by a statistical-match method known as a "hot-deck "imputation procedure. For purposes of the imputation process, the people with "reported" or "assigned" values are known as "donors"; those with "imputed" values as "recipients."[7] The hot-deck procedure matches, on a case by case basis, each recipient with a donor who is identical in demographic characteristics--such as age, race, and sex--that are known to be related to employment status for the population in general. The matching occurs in a framework called an "imputation matrix," which is simply a sorting device for grouping people with like characteristics, much like a statistical table. Within this context, the employment value for the recipient is set equal to that of the donor, the rationale being that, on average, the donor's value represents the most likely "true" value of the recipient (that is, the one that would have been made had perfect knowledge been available), so that the resulting distribution of all imputed cases by employment status will best reflect their "true" distribution.

In Census 2000, two matrixes were used to impute a person's ESR value. The first, called MESRA, was used when the recipient did not provide any information to the central employment inquiry (question 21) about whether they worked in the reference week. The donors to MESRA consisted of all people who had a "reported" ESR value, regardless of the nature of the value. The donor-recipient relationship in MESRA meant that the recipient was able to receive any one

[6] These categories/values (employed, at work; employed, not at work; unemployed; Armed Force, at work; Armed Forces, not at work; not in labor force) are collapsed into four major ones for most purposes (Employed, unemployed, armed forces, and not in the labor force).

[7] The entire set of donors is known as the "donor pool"; the set of recipients as "imputed cases."

of the six ESR values in the imputation process. The second matrix, MESRB, was used for recipients who reported that they did **not** work in the census reference week, but who gave little or no other information to the other employment questions. Donors to MESRB were restricted to people who reported that they **too** did not work last week. This restriction effectively limited the recipients in MESRB to being imputed ESR values for the unemployed and not-in-labor-force categories.

In the 1990 census, there was only one imputation matrix for employment status, and it corresponds to MESRA in Census 2000. There is no 1990 counterpart to 2000's MESRB. Hence there was no automatic restriction of a portion of the imputed cases in 1990 to the unemployed or not-in-labor-force categories. Other things being equal, the 1990 census should have imputed a greater proportion of people to the employed category, and a smaller proportion to the unemployed and not-in-labor-force categories, than census 2000 did. More to the point, the change to the imputation scheme in 2000 reduced the number of employed people while coincidently increasing the number of people in the unemployed and not-in-labor-force categories in Census 2000, relative to what these numbers would have been had the 1990 system been used. For this latter reason, the change in the imputation scheme has the potential to significantly affect comparisons of census employment data between 1990 and 2000.

Some measure of the effect of the introduction of the MESRB scheme in Census 2000 can be obtained by simulating what the results from the imputation process would have been in 2000 if the 1990 procedure had been used, and then comparing these simulated results with the actual 2000 results. This following describes the methodology and results of the research performed to make this measurement:

Methodology:

The research used observations from the full census sample. A table showing the detailed calculations involved in the steps below is available at (web address of the publication).

Step 1: These observations were first separated into ESR recipients and donors. Step 2: Recipients who had received an ESR value from MESRA were sorted into 36 sub-groups by sex (two categories: male; female), age (six categories: 16-19; 20-24; 25-44; 45-54; 55-64; 65 and over), race/Hispanic origin(3 categories: not-Black not-Hispanic; Black not-Hispanic; Hispanic); recipients who had received an ESR value from MESRB were sorted into 36 corresponding subgroups. Step 3: The percent distribution by ESR value of the people in each MESRA subgroup was obtained. It was then was used to make a proportionate distribution of the number of people in the corresponding MESRB subgroup. This step assumed that the distribution of the ESR values of the people in a MESRB subgroup would have been the same as those of the people in its corresponding MESRA subgroup, if their values were imputed from MESRA.

Results:

After the above steps were completed, the sum over the 36 revised MESRB subgroups of the number in each ESR category was obtained. These sums (weighted) are shown in the "Simulated MESRB Distribution"column of the following table, where they are compared with the actual MESRB distribution:

Employment status Category (ESR)	**Simulated MESRB Distribution**	**Actual MESRB Distribution**	**Difference (Simulated-Actual)**
Employed, at work (ESR=1)	2,610, 247	7,810	2,602,437
Employed, at work (ESR=2)	58,971	171,955	-112,984
Unemployed (ESR=3)	227,002	502,121	-275,119
Armed Forces (ESR=4,5)	11,960	0	11960
Not in Labor Force (ESR=6)	3,842,131	6,068,425	-2,226,294
Total	6,750,311	6,750,311	0

They show that, if the Census 2000 imputation procedure had been conducted under 1990 rules, the number of employed people (ESR=1, 2) in Census 2000 would have been about 2.5 million higher (than the actual figure of 129.7 million); the number of unemployed people (ESR=3) would have been about 275,000 less; and the number of people not in the labor force would have been 2.2 million less.

The above results have further implications for differences between the 1990 census figures and census 2000 ones, as shown below:

ESR Category	Census 2000 (Actual)	1990 Census	Percent Change: Actual Census 2000 vs 1990	Hypothetical Census 2000 (using simulated MESRB results)	Percent Change: Hypothetical Census 2000 vs 1990
Employed	129,721,512	115,681,202	12.1%	132,210,965	14.3%
In Labor Force	138,820,935	125,182,378	10.9%	141,047,229	12.7%
Not in Labor Force	78,347,142	66,646,893	17.6%	76,120,848	14.2%
Total Population 16 years and over	217,168,077	191,829,271	13.2%	217,168,077	13.2%

Supporting Study 3. Unemployment Estimates.

The Census 2000 count of unemployed people was considerably higher than the CPS count for either March 2000 or April 2000, or for a modeled "average" of CPS March through August data (created based on the Census 2000 collection rates during that period). These difference are shown in the following table:

Type of CPS estimate	**Number (thousands)**	**Difference from Census 2000 estimate (= 7,947 in thousands)**
March 2000	6,069	-1,878
April 2000	5,212	-2,735
Modeled average estimate for census collection months	5,759	-2,188

To classify a person 16 years or older as "unemployed," the official criteria used by both the CPS and the census require that the person meets **all three** of the following tests:

Test 1: (no job test) the person did not work, and did not have a job from which they were temporarily absent, in the reference week; AND

Test 2: the person either: (temporary-layoff test) was on temporary layoff from a job, or (active job-search test) actively searched for a job at any time in the reference week or the three prior weeks;[8] AND

Test 3: (available-to-work test) the person was available to go to work in the reference, except for reasons of temporary illness.

These tests contain a series of decision points, each of which presents an occasion for the census to make a classification error, generally because of inadequate information. Two important ways that the census could mis-classify people as "unemployed" in applying these tests are if it classifies as unemployed (1) someone whose job loss situation qualifies as a "permanent" layoff rather than a "temporary" layoff; or (2) someone who conducted a "passive" rather than an "active" job search. This study looks at the potential contributions of these sources of

[8]Active methods are those which have the potential to result in a job offer without further action on the part of the job seeker. Examples include contacting employers directly or interviewing, contacting public employment agency programs/courses, contacting a private employment agency, contacting friends or relatives, contacting a school/university employment center, sending out resumes/filling out applications, checking union/professional registers, or placing or answering ads. Passive methods include looking at ads, attending job training, or doing nothing.

classification errors to the census-CPS differences noted above.

Layoff

A primary goal of redesigning the battery of employment questions for Census 2000 was to obtain a more accurate estimate than that of the 1990 census, of the number of people who could be classified as unemployed because they were on layoff from a job in the reference week (even if they had not recently searched actively for work). It was thought that the way that information about "layoff" was obtained in the 1990 census contributed to an overestimate of the number of unemployed in 1990 compared with the CPS.

The problem arises because the general population often uses the term "layoff" to cover a variety of situations involving the loss of a job. The official employment statistics, on the other hand, require a clear distinction between "permanent" and "temporary" job loss, and only give weight to "temporary layoff" when classifying someone as unemployed. To be considered on "temporary layoff" by the official criteria, a person (1) must not have a job; (2) must have lost a job; and (3) must have a reasonable expectation of returning to the lost job within a definite period of time. This last criterion regarding "reasonable expectation of return" is defined operationally as (1) at the time of job loss, the person was informed by the employer that he or she would be recalled to work within the next six months, or (2) the person was given a specific date to return to work. "Permanent" layoff refers to the situation of a job loss for which neither of these two conditions applies. Persons on temporary layoff can, by that fact alone, be classified as "unemployed"; persons on permanent layoff, on the other hand, must pass the active job-search test before they can be classified as unemployed.[9]

The 1990 census asked people whether they were on layoff from a job, without asking whether the layoff was temporary or permanent. It apparently assumed that people who reported that they were on layoff were invariably on "temporary layoff" for it treated such reports as evidence that the person met the "temporary layoff" test for the unemployed category.[10] Anecdotal evidence suggests that this assumption was not warranted, and that many respondents used the term "layoff" to describe situations of permanent job loss, even permanent job loss for cause (firings). This anecdotal evidence is supported by the finding that in the CPS, which did obtain and use information from laid-off respondents regarding the nature of the layoff, the proportion of unemployed people on temporary layoff was considerably smaller than the corresponding census

[9]To be on layoff, a person must, in addition to being on temporary layoff or having conducted an active job search, be available to start a job or return to work during the reference week, except for reasons of temporary illness.

[10]The treatment of the term "layoff" in the 1990 census may have been a reflection of an earlier and widespread restriction in the common parlance of the word "layoff" to situations involving temporary job loss with at least a vague expectation of being recalled to work.

estimate.[11]
In an effort to preclude semantical issues about "layoff" from being a source of census employment mis-classifications, the Census 2000 added a followup question for all persons who indicated that they did not work in the census reference week and that they were on layoff from a job. This additional question asked: "Has this person been informed that he or she will be recalled to work within the next 6 months OR been given a date to return to work?" People who answered "no" to this question could not be classified as unemployed unless they met the job-search test. Endnote 1 discusses the effectiveness of adding this followup question to Census 2000.

To see whether, in spite of the revision made to the Census 2000 questionnaire, errors involving temporary layoff contributed to census-CPS unemployment differences in 2000, data on census unemployed people by the two reasons for unemployment (temporary layoff or actively looking for work) were tabulated.[12] The numbers and percentages of people on temporary layoff from this tabulation are shown in Tables A and B, where they are compared with CPS figures. The data in Tables A and B indicate that issues about the nature of layoff likely did not contribute a positive amount to the difference between the census and CPS unemployment counts in 2000. In fact, Census 2000 estimated a lower number of those on temporary layoff than CPS.

[11]The April 1990 CPS, for example, estimated that 14.4% percent of unemployed persons were on temporary layoff; for the 1990 census the proportion of unemployed people who reported they were on layoff was 32 percent.

[12]The tabulation was based on a 1/500 sample of the Census 2000 sample population. People who had been imputed to the unemployed category were distributed by reason for unemployment in the same proportions as unemployed people whose status was not imputed.

Table A. Estimated number of unemployed who were on temporary layoff

Age and Sex	Census 2000	CPS		
		March 2000	April 2000	Modeled average for census collection period**
Total, 16 years and over	688,951	995,000	698,000	844,000
Both sexes, 16-19	41,529	50,000	46,000	NA
Men, 20 years and over	450,207	666,000	408,000	NA
Women, 20 years and over	201,468	279,000	243,000	NA

** Based on Mar. - Aug. 2000 CPS modeled average used in Study 3 Appendix 2

Table B. Percent of Unemployed who were on temporary layoff

Age and Sex	Census 2000-based modeled estimates	CPS		
		March 2000	April 2000	Modeled average for census collection period**
Total, 16 years and over	8.7%	16.4%	13.4%	14.6%
Both sexes, 16-19	2.8%	4.7%	4.9%	NA
Men, 20 years and over	13.2%	24.9%	18.2%	NA
Women, 20 years and over	6.6%	12.0%	12.0%	NA

** Based on Mar. - Aug. 2000 CPS modeled average used in Study 3 Appendix 2

Passive Search for Work

For operational and practical reasons, the census question that addresses the active job-search test of the unemployed criteria merely asks whether the person "has been looking for work during the last 4 weeks (that is, the reference week and the three prior weeks)." The census does not obtain information whether a reported search used active or passive methods, so it is vulnerable to making an employment-category mis-classification at this juncture. The CPS does obtain such information, so it is theoretically much less susceptible than the census to employment mis-classifications because of job-search methods. The census is forced to assume that anyone who answers "yes" to the question was engaged in an active job search and therefore meets the active-search test.

It is not known how many people in the census were mis-classified as unemployed because of census errors regarding job search methods, but the number is likely to be substantial. Census 2000 (unlike 1990) did not provide the respondent with instructions regarding what kinds of activities it meant by the expression "looking for work", so many respondents likely mistook the expression to include passive methods of looking for a job.

The above study of the "layoff" issue, however, does offer an opportunity to estimate how many people may have been misclassified as unemployed in the census because of misinterpreting the job search question. By removing from the Census 2000 unemployed figure the estimated 689,000 people who were on temporary layoff, we are left with approximately 7,258,000 who were classified as unemployed because they were assumed to have engaged in an active job search. CPS data on active/passive job-search status of unemployed people show that 7.5 percent of all people in the CPS (March - May 2000) who report that they searched for work indicate that they used passive methods. If this proportion is true as well of people in the census, then 544,350 people--or 7.5 percent of the 7,258,000 people who were classified in the census as unemployed because they looked for work–used **passive** methods only, and were therefore mis-classified as unemployed.[13]

Research into the effectiveness of this additional question, which was intended to filter out of the unemployed category people on permanent layoff who did not search for work, revealed that it potentially averted a conservatively estimated number of about 500,000 people from being mis-classified as unemployed in Census 2000. This estimate is based on a tabulation of a 1/500 sample of the census records for the U.S. of people with the following characteristics: (a) they did not work in the census reference week; (b) they answered that they were on layoff from a job in the reference week; (c) they answered no to the filter question about expectation of being recalled to work; and (d) they answered that they did not look for work in the required time frame. In the 1990 census, people with such a pattern of responses had the potential to be classified as unemployed; if such people indicated that they were available to take a job in the

[13]The total number of job seekers who used passive methods may actually be more than this because some people may have been excluded from the unemployment category because they said they were not available to take a job.

census reference week, they would have been mis-classified, according to the official criteria, as unemployed, because the 1990 census did not know that they had no expectation of returning to work. People who had the specified pattern in Census 2000 were not asked the question about availability to start a job, so it is not known how many of them would not have been classified as unemployed even if they had said “yes” to the recall expectation question. Nevertheless, it cannot be ruled out that the presence of the question in Census 2000 prevented as many as 500,000 mis-classifications to the unemployed category; a significant proportion of the number actually classified as unemployed. It would seem that the question was a success and is probably a necessary component of any inquiry into the true nature of a person’s job-loss situation.

Appendix 2. Comparison of Employment Questions in the 1990 census and Census 2000

Questions on Employment Status From Census 2000

21. **LAST WEEK, did this person do ANY work for either pay or profit?** *Mark the "Yes" box even if the person worked only 1 hour, or helped without pay in a family business or farm for 15 hours or more, or was on active duty in the Armed Forces.*
❑Yes
❑No ➞ *Skip to 25a*

25. **a. LAST WEEK**, was this person on layoff from a job?
❑Yes ➞ *Skip to 25c*
❑ No
b. LAST WEEK, was this person TEMPORARILY absent from a job or business?
❑Yes, on vacation, temporary illness, labor dispute, etc. ➞*Skip to 26*
❑ No ➞ *Skip to 25d*
c. Has this person been informed that he or she will be recalled to work within the next 6 months OR been given a date to return to work?
❑Yes ➞ *Skip to 25e*
❑ No
d. Has this person been looking for work during the last 4 weeks?
❑Yes
❑ No ➞ Skip to 26
e. LAST WEEK, could this person have started a job if offered one, or returned to work if recalled?
❑ Yes, could have gone to work
❑ No, because of own temporary illness
❑ No, because of all other reasons *(in school, etc.)*

Questions on Employment Status from the 1990 Census

21a. Did this person work at any time LAST WEEK?

F Yes — Fill this circle if this person worked full time or part time. (Count part-time work such as delivering papers, or helping without pay in a family business or farm. Also count active duty in the Armed Forces.)

F No — Fill this circle if this person did not work, or did only own housework, school work, or volunteer work. — *Skip to 25*

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b. How many hours did this person work LAST WEEK (at all jobs)? Subtract any time off; add overtime or extra hours worked.

[ ] Hours

25. Was this person TEMPORARILY absent or on layoff from a job or business LAST WEEK?

F Yes, on layoff
F Yes, on vacation, temporary illness, labor dispute, etc.
F No

26a. Has this person been looking for work during the last 4 weeks?

\+ F Yes
* F No — *Skip to 27*
*

26b. Could this person have taken a job LAST WEEK if one had been offered?

F No, already has a job
F No, temporarily ill
F No, other reasons (in school, etc.)
F Yes, could have taken a job

27. When did this person last work, even for a few days?

F 1990	| Go	F 1980 to 1984	| Skip
F 1989	| to	F 1979 or earlier	| to
F 1988	| 28	F Never worked	| 32
F 1885 to 1987	|		

B. Correspondence between Census 2000 and 1990 Census Question Numbers

Employment Questions in the censuses of 1990 and 2000:

1990 Census Number	Census 2000 Number	Name of Question
21a	21	Work Last Week
21b	Not Applicable	Hours Worked Last Week
25	25a	Layoff
25	25b	Temporary Absence
Not Applicable	25c	Recall
26a	25d	Looking for Work
26b	25e	Availability for Work
27	26	Year Last Worked

C. Discussion of differences between employment questions for the 1990 and 2000 censuses

1.WORK LAST WEEK

The 2000 question asks whether the person worked for pay or profit last week; the 1990 question asked only whether the person worked, leaving "pay or profit" as implied. The 2000 instruction is attached to the question; in 1990, the instructions were part of the response fields. The 2000 instruction is a simplified version of the 1990 one.

2. HOURS WORKED LAST WEEK

The 1990 question was dropped from the Census 2000 questionnaire.

3. ABSENCE FROM WORK

The three Census 2000 questions -- 25a, 25b, 25c – replaced the 1990 question 25.

The three Census 2000 questions are part of the battery of census questions that collect employment status. Within the battery of census employment questions, these questions are particularly useful for identifying persons who are considered "unemployed." The expansion from one question in 1990 to three in 2000 was made to conform the census with the CPS. The CPS instrument underwent significant revisions after 1990. In particular, the CPS introduced new questions about kinds of work absences and expectations for returning to work, primarily to be able to classify persons on layoff more accurately. Testing in the 1996 National Content Survey showed that the Census 2000 battery could successfully incorporate these revisions into the census framework. The differences between the 2000 and 1990 questions on absence from work last week reflect this incorporation.

4. LOOKING FOR WORK

The 2000 and 1990 questions are identical.

5. AVAILABILITY FOR WORK

The Census 2000 question replaces the 1990 question's concept of "taking a job" with that of "starting a job"; and it expands the meaning of being available for a job to include "returning to work if recalled". The response fields have been reworded for 2000; and the 1990 field " No, already has a job" has been deleted.

6. YEAR LAST WORKED

The seven response fields for the 1990 version of this question were collapsed to two for Census 2000. The purpose of the question changed radically from 1990. In 1990, it both collected detailed data and served as a screening question for the industry, occupation, and class of worker questions. For Census 2000, it has only a screening function, which requires only two response fields.

Appendix 3. Problem in Employment Estimates for Population in Group Quarters

In the clearance-review process for the data in Census 2000 Summary File 3, the Census Bureau became aware that the employment-status data from Census 2000 (including those shown in SF 3 tables P38, P43-46, PCT35, P149A-1,P150A-I, PCT35, PCT69A-1, and PCT 70A-1) for some places where colleges are located appear to overstate the number in the labor force, the number unemployed, and the percent unemployed, probably because of reporting or processing errors.

Further research into this "college-town" issue indicated that the problem extended beyond places with colleges to the country in general. The Census Bureau learned that it stems from the tendency of many working-age people living in civilian non-institutional group quarters (GQ), such as college dormitories, worker dormitories, and group homes (for the mentally ill or physically handicapped), to exhibit a particular pattern of entries to the employment questions in Census 2000.[14] The Census Bureau estimates that the pattern affected the employment data for about 15 percent of the civilian non-institutional GQ population 16 years of age and over in the United States, or around 500,000 people. It had an impact on the Census 2000 labor force statistics for the entire country, but its effects were most visible and substantial for places, such as college towns, with high concentrations of people living in civilian non-institutional group quarters.

In Census 2000, the majority of people in the GQ population were enumerated by the Individual Census Report (ICR) form, which collected employment data in a battery of six questions (questions 23, 27a-e). The responses to these questions were captured and fed into a set of rules (called the Employment Status Recode -- ESR -- edit) that used the combined information from all six questions to assign each person to one of the following four employment-status categories: not in universe (all people less than 16 years old); employed; unemployed; not in labor force.

For a significant segment of the GQ population, a so-called "3/3" response pattern was entered into the ESR edit.[15] This pattern is shown in the following table:

[14] The pattern also appeared frequently for people in institutional group quarters, such as prisons and juvenile institutions, but, because of the way employment categories are defined, it had no impact on the employment data for these people.

[15] "3/3" refers to the fact that the responses to the first three questions, which appeared on page 4 of the ICR, are all missing; and those to the last three questions, which were on page 5 of the ICR, are all "yes."

3/3 Input Pattern from ICR forms

Question Number on ICR	Question Wording	Entry
23	LAST WEEK, did you do ANY work for either pay or profit?	Missing
27a	LAST WEEK, were you on layoff from a job?	Missing
27b	LAST WEEK, were you TEMPORARILY absent from a job or business?	Missing
27c	(For people on layoff) Have you been informed that you will be recalled to work within the next 6 months OR been given a date to return to work?	Yes
27d	Have you been looking for work during the last four weeks?	Yes
27e	Could you have started a job last week if offered one, or returned to work if recalled ?	Yes

The 3/3 pattern represents an incomplete set of information, since entries to the first three questions are missing. The ESR edit assigned people with this pattern to the "unemployed" category, because the edit had three built-in assumptions:

1) the respondents saw and reacted to each and every question in the employment series;
2) the 3/3 pattern represented the faithful recording of actual responses (or non-responses) to the questions; and
3) people who responded in this manner were more likely to meet the official criteria for the "unemployed" category than for any other category.[16]

Census Bureau research revealed that most of the GQ cases with the 3/3 pattern may not have met one of the first two assumptions. Preliminary investigations suggest that, in most cases, the pattern resulted from anomalies in the data collection or processing systems. Unfortunately, this hypothesis cannot immediately be tested by comparing the 3/3 pattern with actual reports from the respondents. The images of the filled-out ICR's will not be accessible until the completion, in 2006 at the earliest, of the Census Bureau's project to image the forms for delivery to the National Archives.

[16] They reported that they were looking for work and could have started a job last week. Because they did not report whether they had a job last week (persons with a job are classified as "employed"), it is reasonable to classify them as "unemployed."

The potential effect of the ESR outcome for the 3/3 pattern is to increase the count of unemployed people at the expense of the counts of the employed and the not-in-labor-force groups. Preliminary research to estimate the potential impact of the phenomenon on the labor force data for the nation as a whole indicates that it may have incorrectly decreased the number of employed people by about 235,000 (the Summary File 3 -- SF3 -- number of employed was 129.7 million), reduced the number of people not in the labor force by 285,000 (SF3 figure of 78.3 million), increased the number of unemployed by 519,000 (SF3 figure of 7.9 million), and raised the unemployment rate by 0.4 percentage point (SF3 figure was 5.8 percent).

Comparatively, the impact of the phenomenon on areas below the national level may be much greater, depending upon the relative size of the GQ population within the given area. The Census 2000 unemployment rate for the city of Williamsburg, Virginia, for example, was 41.7 percent. Research indicated that this rate resulted primarily from the prevalence of the 3/3 pattern among residents of college dormitories, who make up a large percentage of the city's population.

The table below is restricted to people living in households. This restriction eliminates the influence of the group quarters people with the 3/3 pattern but also eliminates the influence of all other group quarters people. For a brief discussion of the data in the table, see section 1.1 of the main text.

Appendix 3, Table 1. Comparison of Employment Status by Sex Between the Census and the Current Population Survey: 2000, United States, Total

(Civilian Household population; No Armed Forces or Group Quarters)

Characteristic	Census Estimate		April CPS Estimate		Difference of census from CPS (thous)	Difference as a percent of CPS	Percentage point difference
	Number (thous)	Percent	Number (thous)	Percent			
2000							
Population 16 years and over	208,755	100.0	211,863	100.0	-3108	-1.5	0.0
Civilian Labor Force	135,780	65.0	142,075	67.1	-6295	-4.4	-2.0
Employed	128,663	61.6	136,870	64.6	-8207	-6.0	-3.0
Unemployed	7,118	3.4	5,205	2.5	1913	36.8	1.0
Percent of Civilian Labor Force	5.2		3.7		1.6		
Not in labor force	72,974	35.0	69,788	32.9	3186	4.6	2.0
Males 16 years and over	99,910	100.0	101,572	100.0	-1662	-1.6	0.0
Civilian Labor Force	72,354	72.4	75,739	74.6	-3385	-4.5	-2.1
Employed	68,597	68.7	72,970	71.8	-4373	-6.0	-3.2
Unemployed	3,758	3.8	2,769	2.7	989	35.7	1.0
Percent of Civilian Labor Force	5.2		3.7		1.5		
Not in labor force	27,556	27.6	25,833	25.4	1723	6.7	2.1
Females 16 years and over	108,844	100.0	110,291	100.0	-1447	-1.3	0.0
Civilian Labor Force	63,426	58.3	66,336	60.1	-2910	-4.4	-1.9
Employed	60,066	55.2	63,900	57.9	-3834	-6.0	-2.8
Unemployed	3,360	3.1	2,436	2.2	924	37.9	0.9
Percent of Civilian Labor Force	5.3		3.7		1.6		
Not in labor force	45,419	41.7	43,955	39.9	1464	3.3	1.9

Source: U.S. Bureau of the Census.