Meeting 21st Century Demographic Data Needs—Implementing the American Community Survey

Issued May 2004

Report 5: Comparing Economic Characteristics With Census 2000

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This report was prepared by **Theresa F. Leslie**, **Joan K. Broadwater**, **Deborah H. Griffin**, **Susan P. Love**, and **David A. Raglin**.

Members of the American Community Survey Research and Evaluation Steering Committee who sponsored and reviewed this report include: **Preston J. Waite, Chair**, **William R. Bell**, **Cynthia Z.F. Clark**, **Robert E. Fay, III**, **Nancy M. Gordon**, **Deborah H. Griffin**, **David L. Hubble**, **Ruth Ann Killion**, **John F. Long**, **Elizabeth A. Martin**, **Lawrence S. McGinn**, **Rajendra P. Singh**, **Carol M. Van Horn**, **Daniel H. Weinberg**, and **Tommy Wright**.

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U.S. Department of Commerce
Donald L. Evans,
Secretary

Vacant,
Deputy Secretary

Economics and Statistics Administration
Kathleen B. Cooper,
Under Secretary
for Economic Affairs

U.S. CENSUS BUREAU
Charles Louis Kincannon,
Director

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Kathleen B. Cooper,
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for Economic Affairs

U.S. CENSUS BUREAU

Charles Louis Kincannon,
Director

Hermann Habermann,
Deputy Director and Chief Operating Officer

Preston J. Waite,
Associate Director for Decennial Census

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EXECUTIVE SUMMARY

The American Community Survey (ACS) is one of three program components required to achieve the 2010 Census reengineering strategy goals. The ACS replaces the Census Sample, also known as the census long form, the once-a-decade collection of detailed demographic, housing, and socioeconomic data, that occurs as part of the decennial census, with an ongoing survey that produces annual and multi-year estimates of these same characteristics. The Census 2000 Supplementary Survey (C2SS) was conducted as part of Census 2000 to demonstrate the operational feasibility of ACS methods. To date reports have been issued addressing questions of conducting the ACS coincident with the decennial census, technical performance, and the implications of changing the ACS to a voluntary survey. In this report, we compare Census 2000 Sample estimates to those produced by the C2SS to look for substantive differences, possible explanations, and supporting evidence about which is likely to be better in the event we find differences. Specifically, the report includes comparisons of the economic profile characteristics for:

- Employment Status;
- Commuting to Work;
- Occupation, Industry, and Class of Worker; and
- Income and Poverty.

We produced this report to educate users of these economic data and ease the transition from the decennial census sample estimates to the ACS estimates.

Major Findings

At the national level, distributions of economic profile estimates from the C2SS were very similar to those produced from the Census 2000 Sample. Although three-fourths of the economic profile estimates differ significantly between the C2SS and the Census 2000 Sample at the 90 percent confidence limit, in most cases the differences were not substantive differences. While about one-third of all the estimates differ by more than 0.5 percentage points, less than one-tenth differ by one or more percentage points. Thus, published C2SS data were very consistent with the Census 2000 Sample estimates.

A review of selected sub-national results identified few substantive differences. A review of data for 18 selected counties suggests few substantive differences for subnational levels. Less than 30 percent of the county-level estimate differences were statistically significant and only 8 percent of these differences varied by 2 or more percentage points. This is important to understand as data users begin to move from the decennial census sample to the ACS for the collection of the selected economic items discussed in this report. Data users would in general come to similar conclusions, implement similar programs, and allocate funds in a similar way regardless of which data set they used. For example, analysis of data for the 18 selected counties confirms that if the Census 2000 Sample said a county had a high employment rate, the C2SS

also said this. However, more analysis is needed to understand the findings at the subnational level; for example, analysis should be conducted of state-level data.

This analysis provided an opportunity to identify a few minor differences that may exist in ACS estimates relative to decennial census sample estimates that data users should be aware of when transitioning from the Census 2000 Sample to the ACS. These differences likely result from differences in the reference periods for the C2SS and the Census 2000 Sample that result from differences in the timing of data collection for these two surveys (see pages 20 and 37). Employment Status was collected in the Census 2000 Sample and the C2SS using the reference period "last week". The results refer to the period of time before the date on which the data were collected. Census 2000 data collection covered a period from March until August 2000. In contrast, C2SS data collection was continuous throughout the year. A person's response to employment status determined if they were asked the commuting to work, occupation, industry, and class of worker questions; thus, these items were also affected.

The Census 2000 Sample collected income data for calendar year 1999 while the C2SS collected these data for the "last 12 months". Thus, the difference in the timing of data collection for these two surveys also affected the income and poverty estimates; the Census 2000 Sample produced income estimates for 1999 and the C2SS, after adjusting the 12-monthly samples of data for inflation, produced income data for a different period, reported in 2000 dollars. Users of these income data need to understand this difference.

The well-trained interviewers and automated instruments used for the C2SS Computer-Assisted Telephone Interviewing (CATI) and Computer-Assisted Personal Interviewing (CAPI) operations appear to have had a positive effect on the level of data completeness for the economic characteristics examined in this report (See Appendix A). While the national-level distributions were very similar, some statistically significant differences did exist. One possible explanation was the differing levels of item nonresponse for data collected in the Census 2000 Sample and the C2SS nonresponse followup operations. For some items such as Wages and Salary Income, almost 33 percent of followup responses in the Census 2000 Sample were missing compared with 22 percent of C2SS responses. Some of this difference may be the result of well-trained interviewers and quality control in the automated data collection instruments used for followup in the C2SS, minimizing the possibility of questions being overlooked by the interviewer. Range checks in the instruments also guarded against interviewer and response error.

Additional research is recommended to further our understanding of current ACS methods. This report looks at differences for items and categories in the economic characteristics profile table between Census 2000 Sample and the C2SS at the national level and for 18 counties across the country. Given that we find few substantive differences between the Census 2000 Sample and the C2SS at either the national or county level, additional analysis should focus on developing a further understanding of all methodological aspects of the ACS including such things as the effect of using multiple modes for data collection. Similarly, data should be examined by sex, age, race, Hispanic origin, and other key demographic items.

1. OVERVIEW AND PURPOSE

This report is one in a series of reports designed to document the differences that exist between the C2SS and the Census 2000 estimates. The first report, Comparing General Demographic and Housing Characteristics, compared results for sex, age, relationship, Hispanic origin, race, tenure, and housing occupancy status (U.S. Census Bureau, 2004). This report focuses on the comparison of distributions for selected economic characteristics such as Employment status and Income for the C2SS and the Census 2000 Sample. In this analysis we compare the C2SS distributions to the Census 2000 Sample distributions, look for substantive differences, and for those found, look for possible explanations and supporting evidence. This report also helps educate users of these economic data to make the transition from the decennial census sample estimates to the ACS estimates.

This report compares tables in the Census 2000 Sample Profile of Selected Economic Characteristics (Table DP-3) with the comparable C2SS data profile tables. The analysis is restricted to data for the household population; excluding the group quarters population. Some derived measures such as means and per-capita income were not calculated for this comparison study although they appear in the individual profile reports. Comparisons include single-year (2000) estimates at the national level and for selected counties. The county-level analysis was done in an effort to begin to understand what happens to economic data at sub-national levels. We describe the methods used for this analysis in detail in Section 4 of this report.

Data on economic characteristics such as the employment status of working-age people, the jobs they have, how they commute to work, and their income provide critical information needed by federal, state, and local planners. Federal budget formulation and fund allocation require these data. State and local governments, non-profit organizations, and businesses use data about these items to plan, budget, and pay benefits. Corporations and individuals use data on occupation, industry, and class of worker to develop business plans and to determine the demographic characteristics of areas where they might want to expand or start businesses. In addition, local business proprietors use income data to determine demographic and economic trends in their service areas and to adjust their product lines or services to meet the current economic conditions. It is therefore important for users of these economic data to understand how the ACS data might differ from the data historically produced from the decennial census sample.

In 2004, the Census Bureau will release these additional comparison reports:

- A detailed comparison of the Census 2000 General Demographic and Housing Characteristics (Table DP-1) with the C2SS at the national level. This profile includes such items as sex, age, relationship, Hispanic origin, race, and tenure (See U.S. Census Bureau, 2004).

- A detailed comparison of the Census 2000 Sample Profile of Selected Social Characteristics (Table DP-2) with the C2SS at the national level. This profile includes such items as school enrollment and disability status.

- A detailed comparison of the Census 2000 Sample Profile of Selected Physical and Financial Characteristics of Housing (Table DP-4) with the C2SS at the national level. This profile includes such items as units in structure and mortgage status.

- A detailed comparison of all Census 2000 Profile Table estimates with three-year ACS estimates for the 36 ACS test counties and their tracts.

- A detailed comparison of quality measures between Census 2000 Sample estimates and three-year ACS estimates for the 36 test counties. It includes estimates of self-response, unit and item nonresponse, and sample completion.

See U.S. Census Bureau (2004) for a complete explanation of the comparison studies project.

2. BACKGROUND

The ACS replaces the decennial census national sample survey that evolved over many decades for collection of general demographic and housing data and more detailed social, economic, and housing data from selected people and housing units across the nation. The decennial census sample has been in existence for seven censuses and for each of these decennial censuses has had unique questionnaires, data collection procedures, and sampling and estimation methods.

In the 1940 Census, a 5 percent probability sample of the population was introduced in an effort to collect more information without a noticeable increase in respondent burden. Since the census contacted the entire population one time every 10 years, it provided the perfect opportunity to introduce sampling and conduct a large national survey. The modern decennial census sample was introduced in 1960, when the primary sampling unit was changed to the housing unit and the sample increased to 25 percent. Data from these samples were provided for areas as small as tracts, and the more extensive use of sampling introduced moderate amounts of sampling error into the estimates. In an attempt to control the variance, ratio estimation of the sample data to the full census counts was introduced instead of the simple weighting by probabilities of selection used previously.

Interpenetrating samples of 15 and 5 percent were used in the 1970 census but have not been used since. Differential sampling was introduced in 1980, selecting 1 in 2 units in sparsely populated areas instead of 1 in 6 to produce more reliable estimates. A third rate of 1 in 8 was introduced in the 1990 census and a fourth rate of 1 in 4 was added in 2000 (See Griffin, Love, and Obenski, 2003 for more details).

The ACS is the next chapter of this 70-year history of census samples. It represents a major innovative step in meeting the nation's need for the kind of information that has only been available through the decennial census samples. The ACS will produce estimates of social, economic, and housing characteristics of the Nation annually by adopting the concept of continuous measurement and spreading a sample of about 3 million housing units every year

over twelve months. The ACS will use the best mail survey techniques combined with computer-assisted technology and a permanent interviewing staff.

The C2SS and Census 2000 used similar methods of data collection but adapted them to meet their unique goals and very different environments. Census 2000 relied heavily on the mail to enumerate the population in housing units. Followup interviews were conducted by personal visit to complete the enumeration of unresponsive households and vacant housing units. The mailout and enumerator delivery of pre-addressed short and long form questionnaires occurred in March of 2000, and field followup operations took place from the end of April through August. All mailed-back questionnaires were returned to one of four processing centers for data capture, and raw data files were sent to Census Bureau headquarters for post-capture processing. The general demographic and housing characteristics, or "100 percent" data, derived from responses found on both short form and long form questionnaires, were captured and processed first to meet the legal deadlines for providing apportionment and redistricting counts to Congress and the states. The capture of "sample" data collected on Census long form questionnaires was completed once the "100 percent" capture was finished.

The C2SS used the following ACS methods: questionnaire mailout, telephone, and personal visit data collection methods over a rolling three-month time period, collecting data from twelve independent monthly samples of addresses every year. Each month a unique national sample of addresses receives an ACS questionnaire. Addresses that do not respond are telephoned during the second month of collection when a phone number is available, and personal visits are conducted during the third and last month of data collection for a subsample of nonresponding units. Data are collected and captured continuously throughout the year, and data products are released every year, including single-year, 3-year, and 5-year accumulations of survey estimates, depending on the size of geographic areas.

The distributions shown in this report come from information collected in the year 2000. Two distinct ACS data collection activities took place during this time: (1) a national sample of 1,203 counties was selected and surveyed using ACS methods, and (2) the ongoing collection from 36 ACS test counties. Together, these data for an initial sample of almost 900,000 households produced the C2SS estimates compared with the Census 2000 Sample estimates in this report.

3. INTRODUCTION

This report documents the comparison of the C2SS and the Census 2000 Sample, also know as the census long form, estimates for selected economic characteristics for the household population of the Nation in 2000.

3.1 Economic characteristics from the Census 2000 Sample provide vital information about the economic status of our Nation

The economic questions included in the Census 2000 Sample provide a vital measure of general economic circumstances in the United States. For example, these data are used to determine poverty status and to assess the need for various types of assistance. In addition, these data are used in federal allocation formulas. At the community level, these data guide funding for social services distributed to local agencies, identify local areas eligible for grants to run job training and other employment programs, and are used to allocate funds to areas requiring housing assistance and home energy aid. These data are also used at the local level to distribute funds to improve the education of economically disadvantaged children. Currently this information is only available every 10 years.

3.2 ACS estimates of selected economic characteristics will provide critical information throughout the decade

Having annual data on economic characteristics from the ACS will give federal, state, and local planners more current data for monitoring the economic situation in their jurisdiction over time. This will enable them to use resources more effectively and secure adequate funding for federal, state, and local projects, better assisting those most in need. For example, the ACS will provide estimates of the number of elderly in poverty, data on levels and types of occupations by race, and information on the economic characteristics of state and local areas on a yearly basis. Collecting these data continuously throughout the decade will allow planners in all jurisdictions to track changes in these and other important socioeconomic distributions.

3.3 Some differences are expected between the Census 2000 Sample and the C2SS

An enumeration of the entire population and housing which includes a large survey for one-sixth of the units is very different from a stand-alone sample survey of detailed housing, and socioeconomic characteristics. The different purposes and relative sizes of the undertakings guided the methodologies used to collect and process data. Before discussing differences, we should say here that both the decennial census and the ACS serve similar purposes of providing data to meet legal and programmatic needs. It is important to note that both the Census 2000 Sample and the C2SS were quite successful. The Census 2000 Sample achieved higher mail return rates (Stackhouse and Brady, 2003) than the C2SS but the unit nonresponse, item allocation, and completeness rates were better in the C2SS than those achieved by the Census 2000 Sample (U.S. Census Bureau, 2001).

Census 2000 officially enumerated the Nation's entire population as directed by the Constitution. The results are used for apportionment, redistricting, and to support important legislation such as the Civil Rights Act and the Voting Rights Act. Securing a complete count as of Census Day (April 1 in 2000) is the primary goal of the decennial census and priority is given to designing a census that facilitates this count and ensures that key data are produced by the legal deadlines. At the same time, the decennial census also collected detailed social, economic, and housing characteristics for a sample of households to provide legally-mandated data needed for federal

programs. While Census 2000 benefitted from the publicity and perceived importance of a decennial census which is often described as the "census environment", it's design had to accommodate the tremendous workload and tight operational scheduling constraints; for example, paper questionnaires were used for almost all Census 2000 data collection operations and all data were collected between March and August 2000. As a last resort, Census 2000 allowed proxy responses from people who were not members of the household, such as neighbors, to collect critical count data by the required deadlines.

In contrast, the ACS is designed to collect these same detailed economic, social and housing data to measure the characteristics of all areas as a yearly average. The C2SS was based on an initial housing unit sample of approximately 900,000 and used ACS methods and residence rules to collect data throughout the year using a combination of mail-out/mail-back questionnaires, Computer-Assisted Telephone Interviewing (CATI), and Computer-Assisted Personal Interviewing (CAPI). The large yearly sample size was broken down into manageable monthly workload assignments that could be completed by our permanent field staff. The ACS uses a unique concept of "current residence"given the monthly samples distributed throughout the year, rather than the census concept of "usual residence" as of April 1.

ACS methods require that information collected from sample households must come from a household member. Unlike the decennial census, no proxy respondents, such as neighbors, are allowed to answer for a sample household. However, like the decennial census, one household member (called a within-household proxy respondent) could answer the survey for all household members in the ACS. The use of within-household proxy respondents may contribute to differences in Census 2000 Sample and C2SS estimates of economic characteristics when the respondent answers in error for others in the household.

The Census 2000 Sample and the C2SS data have levels of both sampling and nonsampling error associated with them. The following section describes the methods used to conduct this comparison study, and how different designs and methods may explain observed differences between C2SS and the Census 2000 Sample estimates.

4. METHODOLOGY

This section describes the methods used to compare the C2SS and the Census 2000 Sample estimates. The tables included in this report compare final published C2SS estimates with final Census 2000 Sample estimates for the household population only. The final published C2SS estimates were controlled to the Census 2000 counts of population and housing at the county and sampling stratum levels. Specifically, population controls increased the national C2SS survey estimate of the household population by about 3.2 percent and the estimate of total housing by about 0.4 percent. See U.S. Census Bureau (2000) for a more detailed discussion of the use of population and housing controls in the C2SS.

Comparisons consist of percentage point differences between the two distributions. Differences are displayed, along with margins of error representing the 90 percent confidence interval of the

differences. C2SS estimates that differ from the Census 2000 Sample estimates beyond sampling error are identified. Although only national data tables are included, selected sub-national comparisons are geographically displayed for 18 of the 36 counties included in the ACS test sites for the past several years. We examined these data to start looking at how C2SS and Census 2000 Sample estimates compare at lower geographic levels.

We examined C2SS and Census 2000 methods to assess the potential effects of nonsampling error on either the Census 2000 Sample estimates or the C2SS estimates. Coverage, nonresponse, processing, and measurement errors were studied to learn if observed differences reflect problems inherent in the design of the ACS. In addition, the effect of methodological differences such as residence rules, reference periods, and the time frame for data collection were considered. However, because of the interdependencies among types of errors and methods, the relative effects of these differences cannot be determined. Consequently, this report does not definitively attribute identified differences to specific methods or practices.

4.1 Methods were developed to identify differences

This report contains tables comparing the C2SS and the Census 2000 Sample estimates for:

- Employment Status;
- Commuting to Work;
- Occupation, Industry, and Class of Worker; and
- Income and Poverty.

Before conducting this comparison, we considered two factors. First, unlike Census 2000, the C2SS did not include interviews of the group quarters population.[1] To make appropriate comparisons, the group quarters population data were removed from the Census 2000 files resulting in tables that included only the household population. Second, since the Census 2000 Sample and the C2SS, as surveys, were subject to sampling error, comparisons using these estimates had to take into account sampling variability. Tests for statistical significance of the differences in the estimates were conducted and the results are shown in the tables. At the national level, the Census 2000 Sample and C2SS variances were quite small, resulting in many statistically significant differences between the Census 2000 Sample and the C2SS profile distributions, although most differences are not substantive (See Section 4.1.1 for more details).

4.1.1 National distributions of characteristics from the C2SS and the Census 2000 Sample were compared

The scope of this report is a comparison between tables in the Census 2000 Sample Profile of Selected Economic Characteristics (Table DP-3) and the comparable C2SS data profile tables.

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[1] In general, all people are classified as living either in housing units or in group quarters. A housing unit is defined as a house, apartment, a mobile home or trailer, a group of rooms or a single room occupied as a separate living quarters or, if vacant, intended for occupancy as a separate living quarters. While the C2SS did not collect data from group quarters, the ACS will when the survey moves to full implementation.

The analysis includes data for the household population and excludes data for the group quarters population. Some derived measures such as means and per-capita income were not calculated for this comparison study although they appear in the individual profile reports. The table stubs are reproduced as they appear in the C2SS Profile tables. This section describes the contents of those tables, how they were produced, and how they should be interpreted.

An example of the table for commuting to work follows. The first row of the table, which is shaded, shows the target populations rounded to the nearest 100,000. This is the universe used to calculate the percentages in the other rows. The distribution of the various groups or categories across this target population fall down the columns. The "Census 2000 Sample Estimate" column is the distribution for each specified group based on the Census 2000 household population. In the sample table that follows, 2.5 percent of workers 16 or older in the household population reported walking as their primary means of transportation to work in the Census 2000 Sample. The "C2SS Estimate" column contains the same information from the C2SS; in this case, 2.7 percent. The "C2SS-Census 2000 Sample" column is the difference between the C2SS and the Census 2000 Sample percent distributions for that row. After calculating these differences, the percentages were rounded to avoid over emphasizing very small and insignificant differences in these distributions and for this reason the "Difference" shown may not always be the same as "C2SS Estimate" minus "Census 2000 Sample Estimate". A difference of 0.0 does not necessarily mean there was no difference–it means that the difference was less than 0.05 percent.

Example Table. Commuting to Work, National-Level Distributions (C2SS compared with the Census 2000 Sample)

Commuting to Work	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Workers 16 years and over	126,900,000	127,700,000			
Car, truck, or van - - drove alone	76.2	76.3	0.1	± 0.3	No
Car, truck, or van - - carpooled	12.2	11.2	-1.0	± 0.1	Yes
Public transportation (including taxicab)	4.7	5.2	0.5	± 0.1	Yes
Walked	2.5	2.7	0.2	± 0.1	Yes
Other means	1.2	1.4	0.3	±0.0	Yes
Worked at home	3.2	3.2	-0.0	± 0.1	No

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

To determine if differences were statistically significant, variances were estimated using methods designed for a complex sample design, and statistical tests were conducted. The ACS uses replication methods to compute direct estimates of the standard error and controls are used in calculating these estimates. For Census 2000, the generalized variance formula, a simple

random sample formula multiplied by a design effect, was used for all proportions. In this report we use a confidence level of 90 percent as the dividing line for statistical significance, and show the resulting margins of error of the differences. A margin of error of the difference of 0.0 indicates that the actual margin of error was less than 0.05 with a negative value indicating a larger Census 2000 Sample estimate. In the last column of the table, we identify when the measured percentage point difference was not within the margin of error.

While three-fourths of differences in this report were statistically significant, not all differences that are statistically significant, especially at the 90 percent level, are important or even substantive. Since the two samples responsible for producing the estimates being analyzed in this report are extremely large and therefore likely produce significantly differences, we developed a yardstick to use in determining if the differences are also substantive. In this report, we focus the analysis of one or more percentage point differences when discussing national-level comparisons and we consider significant differences of 0.5 percentage points or less as not important since this small amount of difference should not effect funding or programmatic decisions. We developed and used this yardstick to help focus our analysis. This tool, however, is subjective and users can apply their own standards to interpret the data presented in this report.

4.1.2 County-Level data were analyzed to assess sub-national results

In an attempt to make a preliminary assessment of what national findings might imply for lower levels of geography, we selected a subset of 36 counties where ACS methods have been tested since 1999 and for which the sample design is consistent with the design planned for full implementation. These counties represent a diverse set of areas that vary in size geographically and demographically, reflecting both urban and rural areas. We selected 18 of the 36 ACS test counties for inclusion because they contain sufficient sample sizes for producing reliable single-year estimates. Details of these 18 counties can be found in Appendix D. For this analysis, an attempt was made to determine if national findings held at the county level for these selected counties or if national-level results masked important county-level results. National findings of no major differences could mean that some counties differed in one direction while others differed in the opposite direction, netting to no difference at the national level. We also expected that minor differences at the national level could mean that some counties had no differences while others had very large differences.

Methods used to produce the national summary tables were also used to produce comparison data for these 18 counties. We calculated county-level Census 2000 Sample and C2SS distributions for housing units only and conducted statistical testing to identify significant differences at the county level. To summarize county-level results, we produced detailed tables for all items and a series of graphs to highlight a subset of the major findings; summary tables are in Appendix E and some graphs are presented in the results section.

The graphs included in the results section depict both the degree of differences between the Census 2000 Sample and C2SS estimates and the specific values of the differences. The counties are ordered on the y-axis, by population size. Sevier, TN, the smallest county, is the closest to the origin and Broward, FL, the largest county, is the farthest from the origin. A "•"

symbol marks the Census 2000 Sample value and a "▲" marks the C2SS value. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 Sample and the C2SS estimates are bolded. All graphs show a range of 50 percentage points, from zero to 50 percent, unless otherwise noted in the report. We should note here that the larger sample sizes in the largest counties make it more likely that differences could be identified as statistically significant than the differences in the smaller counties. Using a slightly modified yardstick to determine if statistically significant differences are substantive, county-level differences of less than 2 percentage points are not considered substantive in this analysis (See Salvo, Lobo and Calabrese, 2004). We used this yardstick as an analysis tool; users may develop their own standards for evaluating the data.

Appendix E includes county-level tables similar to the profile tables in the results section. The C2SS and the Census 2000 Sample estimates however, are not provided. The difference between the two estimates (C2SS-Census 2000 Sample) was determined and only the statistically significant differences are displayed. A positive value indicates that the C2SS estimate was greater than the Census 2000 Sample estimate while a negative value means that the C2SS has a lower estimate for this item than the Census 2000 Sample estimate.

4.2 The design and implementation of the C2SS and the Census 2000 Sample methods were examined

This report systematically reviews C2SS and Census 2000 methods to assess whether these methods may have led to differences in results. The fundamentally different purposes of the ACS and Census 2000 led to critical differences in the choice of methods. For example, since the ACS is an on-going monthly survey that has a manageable workload, the Census Bureau uses experienced permanent interviewers, equipped with automated data collection instruments, to collect information from nonresponding units. This was not practical in a decennial census given the need to hire hundreds of thousands of temporary staff to complete this one-time data collection effort in a very short time period. This report considers how well data collection and processing activities were implemented. Nonsampling error (coverage, nonresponse, measurement, and processing errors) and methodological differences such as reference periods may explain some C2SS and Census 2000 Sample differences and are discussed below.

4.2.1 Coverage error was considered

Coverage error--excluding or duplicating a certain group of people or housing units from the survey--is addressed by measures known as completeness rates. These rates indicate the overall adjustments that were needed to bring Census 2000 Sample enumerations placed in the Census 2000 Sample and successful C2SS interviews to the level of the full Census 2000 counts.

Completeness rates have been calculated for the total household population count and for the total housing unit count. The Census 2000 Sample housing unit completeness rate is the ratio of the total housing units placed in the census sample (those meeting the minimal data requirement), weighted by the inverse of their expected probability of selection, to the total Census 2000 housing unit count. Similarly, the Census 2000 Sample household population

completeness rate is the ratio of the number of people enumerated in the housing units placed in the census sample, weighted by the inverse of the housing unit's expected probability of selection, to the total Census 2000 household population count. The housing unit completeness rate for the C2SS is the ratio of the survey's interviewed units, weighted by the inverse of their initial probability of selection and subsampling factor if applicable, to the full Census 2000 total housing unit count, while the C2SS household population completeness rate is the ratio of the survey's population in interviewed housing units, weighted by the inverse of the inverse of the housing unit's probability of selection and subsampling factor if applicable, to the full Census 2000 household population count.

The total housing unit completeness rate for the Census 2000 Sample was estimated to be 91.2 percent. The C2SS rate was 93.4 percent. The household population completeness rate for the Census 2000 Sample was estimated to be 91.4 percent, and the comparable C2SS rate was 91.2 percent. These measures show very similar levels of estimated coverage and thus we do not see evidence that coverage error played a role in the differences between the C2SS and Census 2000 Sample estimates examined in this report.

4.2.2 Levels and treatment of unit nonresponse were considered

Unit nonresponse is the failure to obtain sufficient information from a sample unit for it to be considered an interview–a responding unit. Noninterviews are the most commonly recognized form of unit nonresponse. Sample units were not interviewed for reasons ranging from a household's absence during the interview period to its refusal to participate or to provide answers to sample questions.

The level and treatment of unit nonresponse differed between the Census 2000 Sample and the C2SS. The C2SS national weighted unit nonresponse rate was 4.9 percent, which translates into a survey response rate of 95.1 percent. The comparable rate for the Census 2000 Sample was a unit nonresponse rate of 8.8 percent, or a survey response rate of 91.2 percent (Griffin, Love, and Obenski, 2003). To reduce the amount of nonresponse bias introduced into C2SS estimates, sample units that were not successfully interviewed after all three phases of data collection were adjusted for by a series of weighting factors in the estimation process. These adjustments took into account geography and mode of collection. The Census 2000 Sample estimation process did not use a separate weighting step to adjust for noninterview units as was used in the C2SS.

Subsampling for nonresponse is used in the final personal interviewing stage of data collection for the ACS. A sample of about one-third of the C2SS units that did not respond by mail or CATI were selected for personal visit interviewing. Units were systematically selected and removed from the sample as an operational design to reduce costs. This subsampling resulted in larger variances on survey estimates, especially of the population and housing characteristics heavily represented in the final data collection stage, but it does not introduce a potential bias into the overall results. Research is planned to assess the effect of this subsampling on important survey estimates (Love and Griffin, 2003).

4.2.3 The completeness of data collected at the item level was considered

Item nonresponse is the failure of a responding unit to provide complete and usable information for a data item. It occurs in all types of data collection modes and often for very different reasons. A respondent may omit specific questions or entire sections of the questionnaire, intentionally or unintentionally, resulting in an incomplete mail form. Followup interviewers may find an otherwise cooperative respondent unwilling to provide them with sensitive information, such as income. Both the C2SS and the Census 2000 Sample defined item nonresponse in the same way.

Item allocation rates are often used as a measure of the level of item nonresponse, and are included in this report (see Attachment A). These rates are computed as the ratio of the number of eligible people or housing units for which a value was allocated for a specific item to the number of people or housing units eligible to have responded to that item. Only the response records that were considered "interviews" -- those that meet the minimal data criteria -- participated in the edit and allocation process and contributed to the item allocation rates. Both the C2SS and Census 2000 sample data files included an allocation variable for every item that reported the type of edit actions taken on each item and how often they were taken. The information provided by this variable indicated whether the answer to the item was used "as reported," was assigned based on other information on the same record, or was allocated from another record.

Allocation rates were computed for each of the economic items discussed in this report for the C2SS and Census 2000 Sample. These rates are shown separately by mode of data collection in Appendix A. As a rule of thumb when judging levels of item imputation, this analysis considers allocation rates of less than 5 percent as having little influence on final estimates, rates from 5 percent to 10 percent as possibly but not probably influencing final estimates, and rates higher than 10 percent as likely influencing the results (See Schneider, 2004 for details). Appendix A contains tables of item allocation rates related to each profile table. As these data show, item allocation rates were consistently lower in the C2SS than in the Census 2000 Sample.

The C2SS used several specialized methods designed to reduce item nonresponse that were not used in Census 2000. These included the use of the telephone to follow up with households that returned their C2SS mail questionnaire with missing or inconsistent responses. In addition, current surveys like the ACS use computerized data collection instruments and experienced interviewers to conduct interviews. The C2SS interviewers were trained on techniques to help convince reticent respondents to cooperate with the survey, and used computer-assisted instruments (used for telephone and personal visit followup). These instruments were programmed with internal edits to assess consistency and reasonableness of responses and to automatically skip to the correct question based on answers provided during the actual interviews. These checks of related information during the interview process decreased the amount of inconsistent and missing data that the final content edit and allocation programs had to correct. For some items, the instruments were very successful in reducing the need for imputation in the C2SS CATI and CAPI modes (Love, 2004).

The Census Bureau's subject-matter experts designed the program edits for those instances in which allocation was required. While some of the edit and allocation methods used in the C2SS differed from those used in the Census 2000 Sample, the basic edits were very similar. For example, the edits used for income were the same for C2SS and the Census 2000 Sample; however, pre-edits were added for Census 2000 Sample income entries to ensure that the optical character recognition (OCR) equipment and the keyers interpreted responses similarly. These additional edits were not required for the C2SS as keyers completed all data capture activities (Posey, Welniak, and Nelson, 2003). Similarly, different methods were used to code industry and occupation entries for the C2SS and Census 2000 Sample. Details of these differences are discussed in the results section.

4.2.4 Measurement and processing errors may explain some observed differences

Measurement and processing errors can occur for a variety of reasons and are the consequence of errors during the data collection and data processing stages of the survey. Biemer et al. (1991) describe measurement error as having four primary sources: the questionnaire, the mode of data collection, the interviewer, and the respondent. This report considered each of these sources as possible explanatory information when differences were detected. Specifically, we considered different question wording, different interviewer training, and different respondent tools for completing a form or interview. For example, an instruction booklet was mailed with each C2SS mail questionnaire to help respondents answer the question but this booklet was not used for Census 2000.

Measurement error manifests itself in two broad ways–response and interviewer errors. Response error occurs if a respondent does not interpret the meaning of a question as intended, or fails to recall the information accurately. Interviewer error can also be a source of systematic measurement error if interviewers are not properly trained, if they misinterpret their procedures, or if they implement procedures incorrectly. Response error, in the form of variance or bias, can result because of questionnaire design or because respondents simply find the concepts complex and undefined. Questionnaire presentation, the way a question is asked, and the response categories provided can affect, either individually or in tandem, how a respondent answers a question. Differences in presentation and wording of some questions existed between the C2SS and the Census 2000 Sample, and may contribute to differences in estimates. For example, the format of the response categories for the commuting to work item differed for space reasons; we do not know for sure if this difference played a part in the differences seen in the distributions but they may have had an effect. Appendix B includes facsimiles of the economic questions as they appeared on the C2SS and Census 2000 Sample mail questionnaires, the Census 2000 Sample followup questionnaires, and the C2SS data collection instruments.

Response error can also occur when the person who provides the information is not the best source. There were two ways this error could have manifested itself. For Census 2000 nonresponse followup interviewers took responses from non-household members such as neighbors (referred to as "proxy" responses) as a last resort to complete data collection. In Census 2000, about 15 percent of the occupied Sample nonresponse followup enumerations were based on proxy respondents (Moul, 2002). The C2SS did not accept proxy interviews. For both

Census 2000 and C2SS, one household-member provided information for all household members. Error may occur if the person interviewed does not provide accurate information for each household member, whether done intentionally or unintentionally. Response error is of particular concern for this report given that data on employment and income may be more difficult for one person to answer for all household members.

Interviewer error is another source of measurement error that could have contributed to differences. Because of the on-going nature of the ACS, the C2SS interviewers were more intensively trained and generally have more experience than interviewers recruited for the decennial census. In addition, the C2SS interviewers also had the benefit of automated instruments that reduced the potential for interviewers to skip questions in error or to collect inconsistent data. Refer to Census Bureau (2004) for more details.

Processing error is recognized as a form of systematic error that can be introduced when systems or programs designed to capture, edit, and tabulate data induce error. Such errors can be attributed to problems in specifications, in programming, or in implementation. For example, the C2SS data were keyed from mail returns and into computer-assisted instruments and the Census 2000 Sample data were captured and interpreted using an Optical Mark Recognition (OMR) and OCR processes. Processing error can occur if the OCR equipment misreads Census 2000 Sample income entries or if a data entry clerk keyed the wrong information during data capture. Processing errors may be a factor to consider when analyzing income data as will be discussed in the results section. Similarly, since coding was used for the Census 2000 Sample and C2SS industry and occupation items, it is possible that coding errors were made. Errors introduced during the editing and file creation process are another possible source of processing error, which may be the result of errors in specification (e.g., incomplete, unclear, or incorrect specifications) or in programming. We reviewed processing methods and procedures as part of this analysis.

4.2.5 The effect of differing residence rules, reference periods, and data collection time frames were considered

Residence Rules

Differences in residence rules may have contributed to variation in the level of occupancy, household membership, and universes on which the economic characteristics depend. The Census 2000 residence rules count the population as of April 1, 2000, while the ACS residence rules collect representative information on a wide range of topics continuously over 12 months, and produce yearly average distributions of these characteristics for all kinds of areas. Census 2000 residence rules reflect the principle of usual residence as of April 1, 2000. These rules are premised on the need to establish one and only one residence for each respondent. Establishing one usual residence is critical to minimizing the chance that a respondent will be counted in more than one location. Additionally, the usual residence concept links to the Constitutional requirement of a census to support apportionment. In contrast, the ACS methods call for some mode of interviewing nearly every day of the year. Thus, the ACS adopted a

current residence rule. Using this residence rule approach produced data that ultimately provided an estimate of the average characteristic for every area in the nation each year.

The ACS "current residence" concept is based on a 2-month length of stay that includes the day that the unit is contacted. This rule recognizes that people can have more than one place where they live or stay over the course of a year, and that estimates of the characteristics of the population for some areas are affected by these people. Thus, a different set of residence rules was adopted.

The differences in C2SS and Census 2000 Sample estimates caused by the residence rules were most likely minimal for most of the economic data discussed in this report. However, for certain segments of the population the usual and current residence concepts can result in different residence decisions. Appreciable differences may occur in areas where large numbers of people spend several months of the year in what would not be considered their residences under the census usual residence concept. In particular, estimated distributions of certain characteristics for states like Florida and Arizona, and for areas like beach, lake, or mountain vacation spots may differ appreciably between the census and the ACS because of their large seasonal populations. Similarly, areas with large colleges or universities may see differences in household population distributions due to the more de facto nature of the ACS current residence rule.

Reference Dates and Periods

Reference date or period refers to the time frame about which the question asks for information. The decennial census centers its count and its age distribution on a reference date of April 1, the assumption being that the remaining "100 percent" items are also reflecting that date, regardless of whether the enumeration is conducted by mail in March and April or by followup operations in July. However, only one sample question on the Census 2000 Sample referenced this April 1, 2000 date.[2] The remaining sample questions either had no specific reference period or provided a specific reference period such as "last week" (for employment status), "Since February 1" (for school enrollment), "calendar year 1999", (for income questions), or 5 years ago (for person living in this house or apartment).[3] This implies that the decennial census sample estimates, with the exception of these items, primarily reflect status in the months of April, May, and tailing out into August. They could be influenced by delivery dates for the mail questionnaires and the length of time data are collected from followup operations.

The ACS estimates of characteristics reflect the conditions as of the day the data are collected, or they reflect a specific time period referenced in individual questions. The ACS data, except for income which is collected for the last 12 months, tend to be equally spread across each month of

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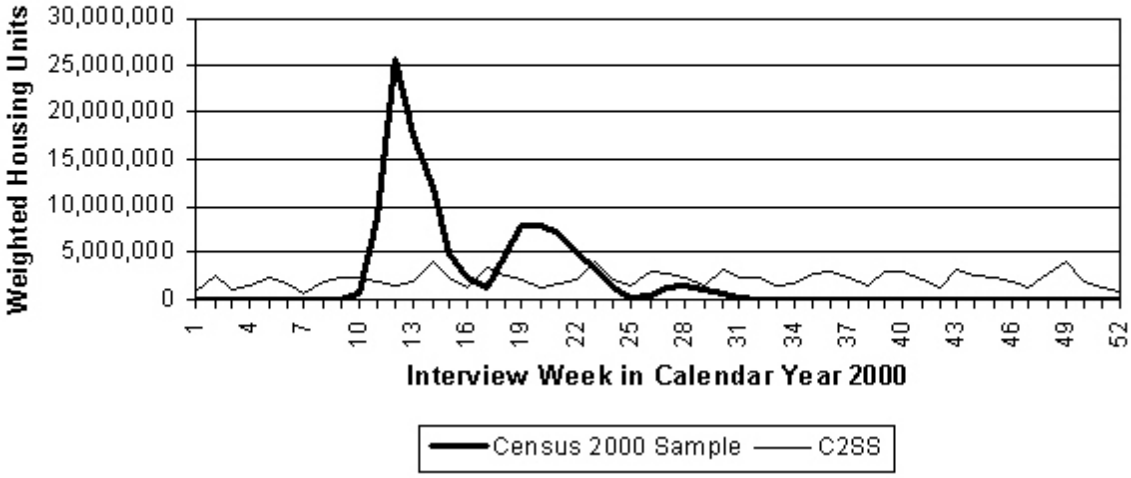
[2] The question on mobility asked "Did this person live in this house or apartment 5 years ago (on April 1, 1995)?

[3] The C2SS used the following specific reference periods: "last 3 months" for school enrollment, "last 12 months" for income, and "1 year ago" for whether the person was living in house or apartment.

the year, with peaks of information within each month that reflect the receipt of mail return questionnaires.

The figure below illustrates this diversity at the national level. The weighted estimate of total housing units in the Census 2000 Sample and the C2SS are graphed according to the week in which the data were collected. Census Day – April 1, 2000 – is the last day of week 13. As the figure shows, Census 2000 data collection occurred between weeks 10 and 32 while C2SS data collection occurred throughout the year.

Figure A. Distributions of Total Weighted Census 2000 Sample and C2SS Housing Unit Responses by Week



Several of the economic estimates would obviously be affected by the interview date and the distribution of the amount of data collected over the interview time frame. For example, the reference period for employment status is “last week” for both the Census 2000 Sample and the C2SS. However, since the timing of data collection for the Census 2000 Sample and the C2SS differed, “last week” had different meaning for the respondents to the two surveys. Since the answers to the employment status questions determine the universe for many other economic characteristics discussed in this paper including commuting to work, occupation, industry, and class of worker, this difference also affected differences in these estimates.

The reference period for the income questions also differed for the Census 2000 Sample and the C2SS. The Census 2000 Sample asks about income in “Calendar Year 1999" whereas the C2SS referenced “the last 12 months”. Again, since data collection for the C2SS is continuous through the year, the reference periods differ. For income estimates, C2SS estimates can be thought of as a 12-month estimate centered around December 15, 1999 while the Census 2000 Sample

estimate is a 12-month estimate centered around July 1, 1999.[4] As will be discussed in the results section, analysts believe many of the differences in the C2SS and Census 2000 Sample estimates discussed in this report are affected by the difference in the reference periods.

5. RESULTS

This section documents the comparison of C2SS and Census 2000 Sample distributions for the following items that appear in the economic profile:

- Employment Status,
- Commuting to Work,
- Occupation, Industry, and Class of Worker,
- Income and Poverty.

The C2SS estimates compared in this report reflect the use of final population and housing controls and are limited to the household population only (that is, they exclude the group quarters population). The Census 2000 Sample estimates are based on data from about 1 in 6 households nationally who completed Census 2000 Sample forms. For each of the economic items, this section provides background on the uses of the data and how the questions were asked. Two sets of data are provided - tables comparing the national-level C2SS and Census 2000 Sample estimates, and graphs showing selected county-level comparisons. This section identifies areas in which improvements in ACS methods or additional research are recommended as well as real differences that may exist in ACS estimates relative to those produced from the Census 2000 Sample. A complete summary of statistically significant sub-national results for 18 counties can be found in Appendix E.

5.1 Employment Status

5.1.1 Description of Item

The ACS includes a series of questions on employment status that classify the entire working-age population (those ages 16 and older) into categories to characterize the employment status of the American workforce. The categories make it possible to calculate important statistics about employment conditions, such as the unemployment rate and the ratio of those employed to the total working-age population of a state, county or local jurisdiction. These

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[4] ACS interviews in calendar year 2000 had income reference periods ranging from January through December 1999 (for those interviewed in January 2000) to December 1999 through November 2000 (for those interviewed in December 2000). The combined reference period for all 12 interviews is 23 months (January 1999 through November 2000). The midpoint of this period is 11 1/2 months after the starting date of January 1 (December 15, 1999). For Census 2000, the midpoint is July 1, 1999 since the reference period for everyone is calendar year 1999.

questions also identify specific segments of the population like the civilian labor force which is used to provide critical occupational data for equal employment opportunity programs. The Department of Health and Human Services uses these data in each state to allocate Community Food and Nutrition funds. The Civil Rights Act of 1964 and Work Investment Act of 1998 are just two examples of legal authorization for data about employment status. For a more complete list of federal uses, refer to Appendix C.

The official estimates of employment status are produced from the Current Population Survey (CPS). The C2SS and Census 2000 Sample provide estimates of employment status "last week". Although these are not the official estimates for employment status, these data are collected for important reasons. They provide estimates for places too small for reliable CPS estimates and the Bureau of Labor Statistics uses these estimates as benchmarks in the small-area estimates program. In addition, these data serve as the screener and universe-setting item for additional items including commuting to work, industry, occupation and class of worker, and veteran status. The collection of these data permits more detailed cross-tabulations of employment status by other characteristics than is possible in the CPS.

The wording of the questions used to collect data on employment status was identical in the C2SS and the Census 2000 Sample for the mail and nonresponse followup operations. Appendix B includes facsimiles of the Employment status questions asked on the C2SS and Census 2000 Sample mail questionnaires, the Census 2000 Sample nonresponse followup questionnaire, and the C2SS CATI and CAPI followup instruments.

5.1.2 National-Level Comparisons

Table 1 compares the distribution of the household population 16 years and older by employment status in the C2SS and the Census 2000 Sample. All estimates are in percentages. The national results presented in Table 1 show fairly consistent results when comparing the distributions. However, we see a higher rate of labor force participation and unemployment estimated by the C2SS when compared with the Census 2000 Sample. These differences appear when looking at the entire household population 16 years and older and the female household population 16 years and older. Both Census 2000 and the C2SS report the same percent of people in the Armed Forces.

The largest substantive difference was the difference for the percent of "own children under age six where all parents are in the labor force". This estimate is a measure of the proportion of pre-school age children who live with two parents (or their only parent for those who live with only one parent) in the labor force and indicates the potential demand for child-care in an area. The C2SS estimated that 60.7 percent of "own children under age six who had all parents in the labor force" compared with 58.6 percent in the Census 2000 Sample. This 2.2 percentage point difference may be a result of differences in the timing of data collection for the two surveys; that is, since the Census 2000 estimate covers the time period from March through August, it is possible that the labor force composition may vary for spring and summer compared to the entire year. Another possible concern is issues of coverage given that the relationship question, used to determine the universe, differed for the Census 2000 Sample and the C2SS. In the Census 2000

Sample, there was greater detail, providing more ways to determine the subfamily relationships in a household. More research is necessary to uncover the reasons.

Table 1. Employment Status, National-Level Distributions (C2SS compared with the Census 2000 Sample)

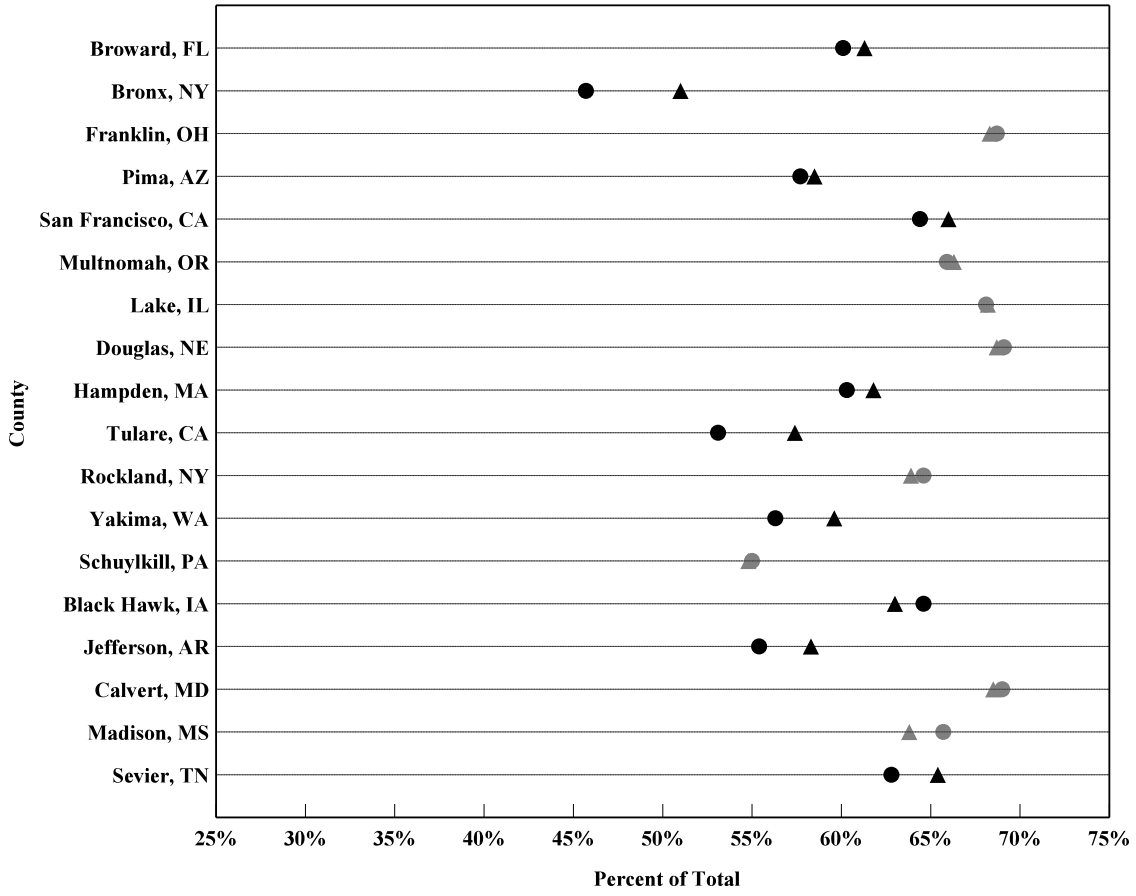
Employment Status	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Household Population 16 years and over	209,600,000	209,600,000			
In labor force	65.2	66.2	1.0	± 0.1	Yes
Civilian labor force	64.8	65.8	1.0	± 0.1	Yes
Employed	61.4	62.3	0.9	± 0.1	Yes
Unemployed	3.4	3.5	0.1	± 0.0	Yes
Percent unemployed	5.2	5.3	0.1	± 0.1	Yes
Armed Forces	0.4	0.4	-0.0	± 0.0	No
Not in labor force	34.8	33.8	-1.0	± 0.1	Yes
Universe: Females 16 years and older	109,000,000	108,900,000			
In labor force	58.3	59.1	0.8	± 0.1	Yes
Civilian labor force	58.2	59.0	0.8	± 0.1	Yes
Employed	55.1	55.7	0.6	± 0.2	Yes
Universe: Own children under 6 years	21,800,000	21,900,000			
All parents in family in labor force	58.6	60.7	2.2	± 0.5	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place. A value of 0.0 indicates an estimate is less than 0.05.

5.1.3 County-Level Comparisons

Sub-national data for a set of 18 counties were analyzed to give a preliminary indication of whether the national findings held at lower levels of geography. Figure 1 summarizes the percent of the household population ages 16 and older employed for these 18 counties. Note that the scale starts at 25 percent, not zero. This graph shows the same phenomenon observed nationally - the percent employed was slightly higher in the C2SS (shown as a triangle) than in the Census 2000 Sample (shown as a circle). Differences in 10 of the 18 counties were statistically significant although only five differences were substantive using the 2.0 percentage point difference yardstick. There was a higher rate of employment in the C2SS in Sevier, TN, Jefferson, AR, Yakima, WA, Tulare, CA, and Bronx, NY when compared with the Census 2000 Sample. Based on these results, we believe local planners in these 18 counties would implement programs in their areas in similar ways whether using the Census 2000 Sample or the C2SS data.

Figure 1. Percent of Household Population 16+ Employed
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 Sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 Sample and the C2SS estimates are bolded.

Appendix E, Table 1, displays the county-level data for the employment status categories shown in Table 1 above. Only the statistically significant differences are shown. The most variability in the selected county-level data examined for this report appears for this economic item, with over 20 percent of the estimates differing by at least 2 percentage points. The C2SS has a higher rate of labor force participation when looking at the county-level data for seven of the 18 counties. These include: Sevier, TN, Jefferson, AR, Black Hawk, IA, Yakima, WA, Tulare, CA, San Francisco, CA, and Bronx, NY. The variability is especially noticeable when looking at the statistics for females 16 years and over. As was the case with the national-level comparison, the greatest variability is for the percent of own children under 6 where all parents are in the labor force. The difference is substantive for seven counties including Calvert, MD, Jefferson, AR, Tulare, CA, Hampden, MA, Pima, AZ, Bronx, NY and Broward, FL. In all cases except Calvert, MD, the C2SS estimated a higher percentage than did the Census 2000 Sample.

5.1.4 Analysis

The official estimates of employment, including the critical economic measure of the unemployment rate, are produced by the CPS. The CPS estimates employment status each month for the week that includes the twelfth day and yearly estimates are also produced using these data. The 2000 estimate of civilian unemployment was 4.0 percent (Bureau of Labor Statistics, 2001). The Census 2000 Sample and C2SS estimates of the civilian unemployment rate (3.4 percent in the Census 2000 Sample and 3.5 percent in the C2SS) are fairly comparable with each other but Census Bureau analysts continue to conduct research to understand why these estimates differ from the official CPS estimate.

Limiting the analysis to the profile tables, as is done in this report, has limitations when looking at estimates of employment. Census Bureau analysts also examine data on work history in the past 12 months, weeks worked, and usual hours worked per week to help understand employment statistics. These items have not been analyzed in this report.

The comparison of the C2SS and the Census 2000 Sample national and sub-national employment status data indicate a slightly higher proportion of labor force participation and unemployment in the C2SS estimates. This difference may be the result of a number of factors. First, the timing of data collection differed for the Census 2000 Sample and the C2SS. While employment status was determined by a series of questions asking about "last week", data collection occurred at different times which makes the reference periods different. As discussed, Census 2000 Sample data collection occurred between March and August of 2000. This could lead to a different pattern of employment than estimated from the C2SS or CPS where data collection occurred constantly throughout the year and may more accurately affect cycles of employment through the entire year. Analysts continue to do research to understand this difference of timing of data collection on the employment estimates. Differences in item allocation may be a factor to consider. As Table 1 in Appendix A shows, the amount of item allocation for employment status is problematic for the Census 2000 Sample and moderate for the C2SS using our yardstick; the rate was 11.1 percent for the Census 2000 Sample compared with 6.0 percent for the C2SS. The largest difference in the amount of allocation appears in the interviewer-collected data (9.2 percent in the Census 2000 Sample compared with 2.6 percent in the C2SS).

5.2 Commuting to Work

5.2.1 Description of Item

Data on Commuting to Work describe the types of transportation commuters use to get from home to work and are used with data on Place of Work to describe key characteristics of commuter travel. These data are needed to design programs to conserve energy, reduce pollution, and ease traffic problems, including planning highway improvements and developing public transportation services. For a more complete list of federal uses, refer to Appendix C.

The wording of the questions used to collect data on Commuting to work was identical in the C2SS and Census 2000 Sample questionnaires although the format of the response categories differed on the paper forms. To reduce the number of pages of the C2SS mail questionnaire (which is 24 pages), the C2SS triple-banks questions for a person on a questionnaire page. Using this format, the response categories for this question are double banked and motorcycle, bicycle, walked, worked at home, and other method appear at the top of column 2. The Census 2000 Sample questionnaire booklets used for mail and followup (39 pages long) asked the detailed population questions in two columns on each page. Using this format, the Census 2000 Sample response categories for this questions are in one continuous list. Appendix B includes facsimiles of the Commuting to work questions discussed in this report as asked on C2SS and Census 2000 Sample mail questionnaires, the Census 2000 Sample nonresponse followup questionnaire, and the C2SS CATI and CAPI followup instruments.

5.2.2 National-Level Comparisons

Commuting to work includes questions about the means of transportation to work, carpool occupancy, and average travel time but the profile tables analyzed in this report include only information about the means of transportation to work and carpool occupancy (recoded to "drove alone" and "carpooled"). The national-level comparisons for these items appear in Table 2. The distributions look very similar and while there are statistically significant differences, they differed by less than one percentage point. The Census 2000 Sample and the C2SS estimated very similar percentages for every response category except the percent of workers who carpooled and the percent who used public transportation. The C2SS estimated about one percentage point fewer people who carpooled to work than the Census 2000 Sample.

Table 2. Commuting to Work, National-Level Distributions (C2SS compared with the Census 2000 Sample)

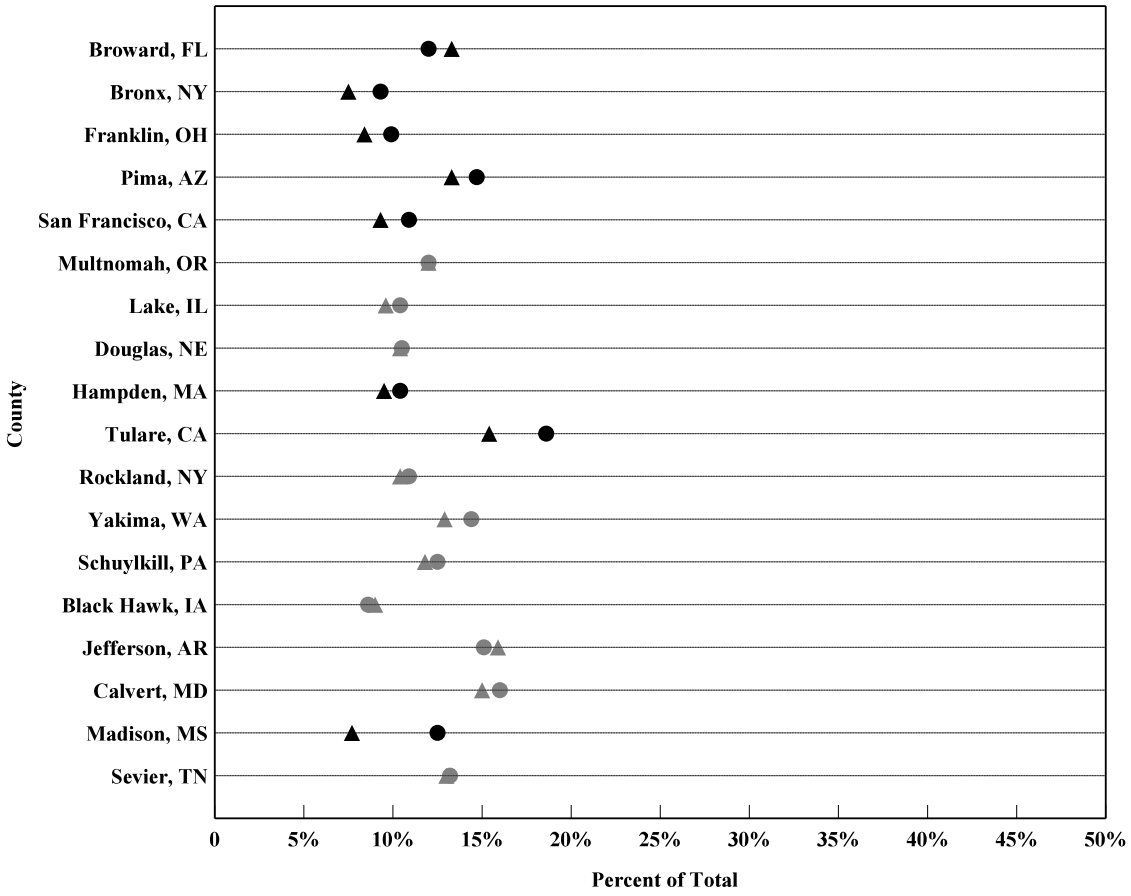
Commuting to Work	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Workers 16 years and over	126,900,000	127,700,000			
Car, truck, or van - - drove alone	76.2	76.3	0.1	± 0.3	No
Car, truck, or van - - carpooled	12.2	11.2	-1.0	± 0.1	Yes
Public transportation (including taxicab)	4.7	5.2	0.5	± 0.1	Yes
Walked	2.5	2.7	0.2	± 0.1	Yes
Other means	1.2	1.4	0.3	± 0.0	Yes
Worked at home	3.2	3.2	-0.0	± 0.1	No

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.2.3 County-Level Comparisons

Sub-national results are summarized in Figure 2 for the percent of workers 16 and older who carpooled. This was the means of transportation category with the greatest number of statistically significant differences at the county level. Eight of the 18 counties had significantly different proportions of workers in this category. In all instances except one, the C2SS estimate (shown as a triangle) was slightly lower than the Census 2000 Sample estimate (shown as a circle). In Tulare, CA the percent of workers who carpooled in the C2SS was over three percentage points lower than the Census 2000 Sample estimate and in Madison, MS, the percent of workers who carpooled in the C2SS was almost five percentage points lower than the Census 2000 estimate. Broward, FL was the only county where the C2SS had a higher proportion of people who carpooled when compared with the Census 2000 Sample.

Figure 2. Percent of Workers 16+ Who Carpooled
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 Sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 Sample and the C2SS estimates are bolded.

Appendix E, Table 2, displays the county-level data for all means of transportation categories. Only the statistically significant differences are shown. This table shows that many of the national findings hold when looking at the county-level data for these specific sites. The selected county-level data examined look fairly consistent with national data. In Madison, MS, Tulare, CA, and Franklin, OH, the C2SS estimated fewer people who carpooled and more who drove alone when compared with the Census 2000 Sample. In Bronx, NY, the C2SS estimated fewer people who drove, whether alone or in a carpool, and more people who used public transportation when compared with the Census 2000 Sample. In Broward, FL, there was a different phenomenon. In this county, the C2SS estimated fewer people who drove alone and more people who carpooled when compared with Census 2000 Sample estimates.

In general, the only national-level finding that does not hold up well is for driving alone. While nationally the differences were not significant, there were statistically significant differences for six of the 18 counties and these differences were not small. For example, the C2SS estimate was over five percentage points higher than the Census 2000 Sample estimate in Madison, MS. The C2SS estimate was also higher in Tulare, CA (3.1 percentage points) and Franklin, OH (2.5 percentage points). The Census 2000 Sample estimate was about two percentage points higher in Rockland, NY, Bronx, NY, and Broward, FL, than the C2SS estimate. This is an example of where differences may exist at the county level but net out at the national level. We need to look at this more closely, producing cross-tabulations or doing other analysis, to understand this difference.

5.2.4 Analysis

As the data in Table 2 show, the C2SS estimated that fewer workers carpooled and more workers used public transportation, walked, or used other means to get to work than did the Census 2000 Sample. The differences are small and may be a result of design differences, namely the reference period, for the two data collection efforts. This is probable given that answers to the employment status questions define the universe for the commuting to work questions. Allocation rates also may be a factor. As Tables 2a and 2b in Appendix A show, the allocation rates for mail returns were consistent for the Census 2000 Sample and the C2SS; however, the allocation rates for the Census 2000 Sample were higher, and more problematic using our yardstick, than the C2SS for interviewer-collected data. Thirteen percent of the Census 2000 data for means of transportation to work were allocated compared with about just over three percent of the C2SS data.

The slightly higher reporting of "Other" in the C2SS compared with the Census 2000 Sample may be the result of the formatting of the response categories; that is, Motorcycle, Bicycle, and Other may have been more visible at the top of the double-banked list on the C2SS form than at the bottom of the long list of Census 2000 Sample categories. This is just speculation on our part; there has been no formal testing of this hypothesis.

5.3 Occupation, Industry, and Class of Worker

5.3.1 Description of Item

Questions on Occupation, Industry, and Class of Worker describe the occupational skills and work activity of the American labor force. Occupation describes the kind of work people do and Industry provides information on the kinds of businesses where people work. Class of Worker identifies whether the worker is employed by a private or government agency, is self-employed, or working as an unpaid family worker. These data are used to formulate employment policy, programs, and training and are needed to measure compliance with anti-discrimination policies. The Department of Education uses these data to analyze career trends and options in the United States. For a more complete list of federal uses, refer to Appendix C.

The wording of the questions used to collect data on Occupation, Industry, and Class of Worker was identical in the C2SS and Census 2000 Sample paper questionnaires. The C2SS took advantage of the computer technology when asking these questions in the followup instruments, using branching techniques to ask the Class of Worker question. Respondents were given a limited number of response categories including government and self-employed. If the respondent chose one of those two categories, they were asked additional questions to identify the type of government employee–local, state or federal, and whether the worker's company was incorporated or not.

The one real difference was the order in which the questions were asked in the two surveys. On the Census 2000 Sample forms, Industry was asked first, followed by Occupation, and Class of Worker. In the C2SS, Class of Worker was asked first, before Industry. The order of questions used for the C2SS was mirrored after work done in the 1990's when the CPS CAPI instrument was developed. Analysts believed asking about Class of Worker first set the context for asking the Industry and Occupation questions and thus this sequence was used for all three modes of data collection in the C2SS. The decennial census has asked about Industry, Occupation, and Class of Worker questions in this order since the 1980 Census. Census Bureau analysts would like to do additional testing on the sequence of these questions before making a final recommendation on the sequence for use in the ACS. Appendix B includes facsimiles of the these questions asked on the C2SS and Census 2000 Sample mail questionnaires, the Census 2000 Sample nonresponse followup questionnaire, and the C2SS CATI and CAPI followup instruments.

5.3.2 National-Level Comparisons

Tables 3a, 3b, and 3c show the national-level comparisons for Occupation, Industry, and Class of Worker between the Census 2000 Sample and the C2SS. The Census 2000 Sample and C2SS distributions for these items are very comparable; all differences are quite small and not substantive. In terms of Occupation (Table 3a), there are no substantive differences. Table 3b shows data on the industry classification. Again, few differences are seen. The Census 2000 Sample reported about 0.5 percentage points more people working in educational, health, and

social services than did the C2SS. When analyzing the Class of Worker data (Table 3c) several small, meaningless differences are seen.

Table 3a. Occupation, National-Level Distributions (C2SS compared with the Census 2000 Sample)

Occupational Group	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Employed civilian population 16years and older	128,700,000	130,600,000			
Management, professional, and related occupations	33.7	33.3	-0.4	± 0.2	Yes
Service occupations	14.8	15.1	0.3	± 0.1	Yes
Sales and office occupations	26.6	26.6	-0.0	± 0.1	No
Farming, fishing, and forestry occupations	0.7	0.8	0.0	± 0.1	Yes
Construction, extraction, and maintenance occupations	9.5	9.5	-0.0	± 0.1	No
Production, transportation, and material moving occupations	14.7	14.7	0.0	± 0.1	No

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

Table 3b. Industry, National-Level Distributions (C2SS compared with the Census 2000 Sample)

Industry	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Employed civilian population 16 years and older	128,700,000	130,600,000			
Agriculture, forestry, fishing and hunting, and mining	1.9	1.9	0.0	± 0.1	No
Construction	6.8	6.8	-0.0	± 0.1	No
Manufacturing	14.2	14.2	0.0	± 0.2	No
Wholesale trade	3.6	3.8	0.2	± 0.1	Yes
Retail trade	11.7	11.9	0.2	± 0.1	Yes
Transportation and warehousing, and utilities	5.2	5.2	-0.0	± 0.1	No
Information	3.1	3.1	0.0	± 0.1	No
Finance, insurance, real estate, and rental and leasing	6.9	6.8	-0.1	± 0.1	Yes
Professional, scientific, management, administrative, and waste management services	9.3	9.3	-0.1	± 0.1	No
Educational, health and social services	19.7	19.3	-0.5	± 0.1	Yes
Arts, entertainment, recreation, accommodation, and food services	7.8	8.0	0.2	± 0.1	Yes
Other services (except public administration)	4.9	4.9	0.0	± 0.1	No
Public administration	4.8	4.8	-0.1	± 0.1	No

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place. A value of 0.0 indicates an estimate is less than 0.05.

Table 3c. Class of Worker, National-Level Distributions (C2SS compared with the Census 2000 Sample)

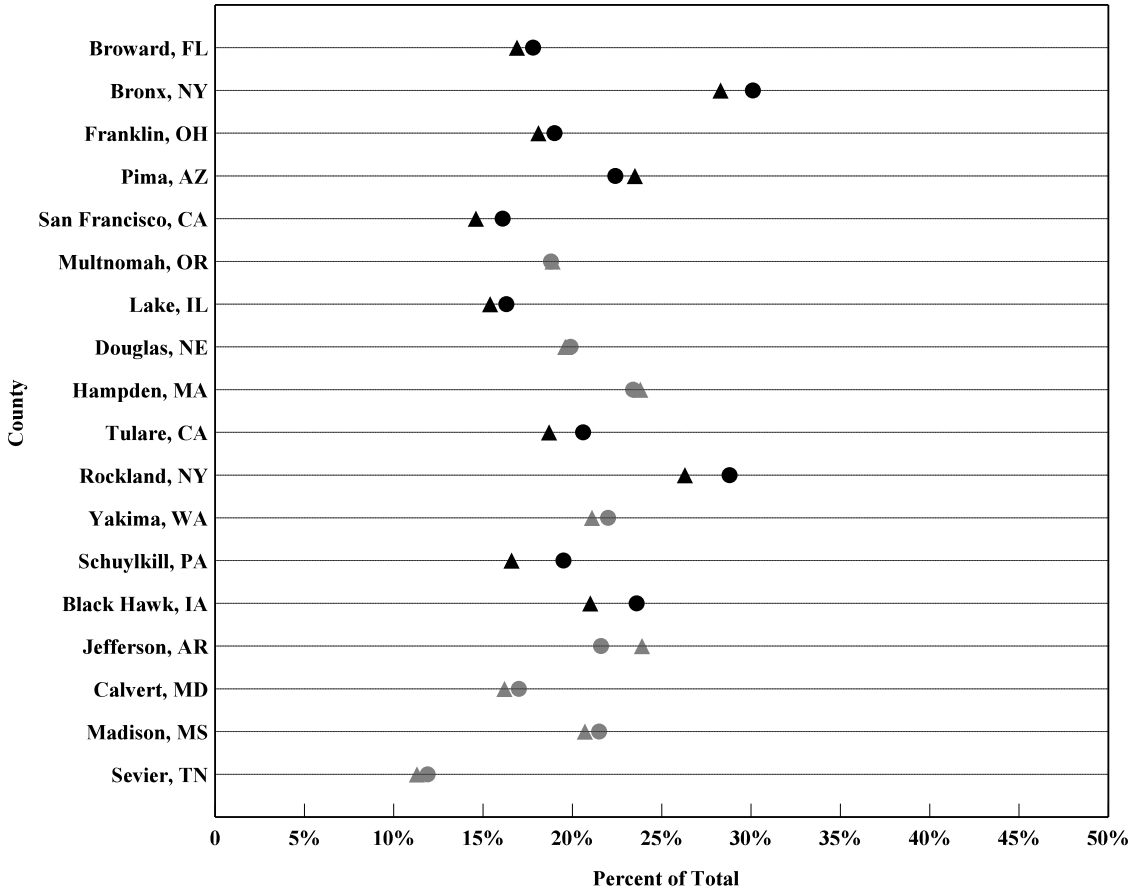
Class of Worker	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Employed civilian population 16 years and older	128,700,000	130,600,000			
Private wage and salary workers	78.5	78.5	0.0	± 0.2	No
Government workers	14.6	14.2	-0.3	± 0.1	Yes
Self-employed workers in own not incorporated business	6.7	6.9	0.3	± 0.1	Yes
Unpaid family workers	0.3	0.3	0.0	± 0.0	No

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

5.3.3 County-Level Comparisons

Sub-national data were analyzed to determine if the national findings held at lower levels of geography, which they generally did. Figure 3 summarizes the percent of workers employed in the educational, health, and social services industry. This is the response category that had the most variation at the national level. This graph confirms the national trend; there were statistically-significant differences for 10 of the 18 counties but there were only substantive differences in reporting of this industry in 4 of the 18 counties shown. In all four of these counties, the Census 2000 Sample reported slightly more people working in this industry than did the C2SS.

Figure 3. Percent of Workers Employed in the Educational, Health and Social Services Industry Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 Sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 Sample and the C2SS estimates are bolded.

Appendix E summarizes county-level results for all of the Occupation, Industry, and Class of Worker categories in Tables 3a, 3b, and 3c. Table 3a shows the statistically significant differences for Occupation categories. As this table shows, there were very few differences and most the differences follow the direction of the national comparison; that is, the C2SS has a slightly lower proportion of workers working in management, professional, and related occupations and higher proportion of workers working in services occupations when compared with the Census 2000 Sample. When looking at Table 3b we see only four counties where there seem to be any substantive differences–Black Hawk, IA, Schuylkill, PA, Rockland, NY, and Tulare, CA. In terms of Class of Worker, there are very few substantive differences at the county level, as we see in Table 3c.

5.3.4 Analysis

The Census 2000 Sample and C2SS had very comparable estimates for the Occupation, Industry, and Class of Worker items. Some of the differences seen may be the result of the different sequence in which the questions were asked in the Census 2000 Sample and the C2SS. The sequence used in the Census 2000 Sample (and the 1980 and 1990 censuses) was industry, occupation, and class of worker. Research conducted while developing the CPS CAPI instrument led analysts to recommend asking the Class of Worker question before the questions on Industry and Occupation as they felt that the Class of Worker question set the context of the next two questions. Analysts understand that there are some differences in the distributions and they would like to do additional testing to determine which sequence to use for the ACS; however, given that the distributions are so similar, this should only be considered if it can be added to a planned test and is not cost prohibitive.

There were some operational differences for these two surveys. The Industry and Occupation responses were coded differently for the Census 2000 Sample and the C2SS. The Census 2000 Sample Industry and Occupation responses were first coded using an automated coder and then clerical coding was used to code responses that could not be autocoded by a staff of temporary coders hired for Census 2000. This staff used the 2000 Standard Occupation Classification (SOC) code book, updated in 1998, for this operation. The C2SS Industry and Occupation responses were coded monthly by a small staff of permanent Census Bureau employees in Jeffersonville, IN who used the 1980 SOC code book to code these responses.[5] This staff coded CPS and C2SS responses each month using the 1980 SOC code book which was used for the 1990 Census.

Since responses to the employment status questions determined the universe for these questions, the differences in employment status universes discussed in the analysis of employment status (Section 5.1.4) may also affect these results.

5.4 Income and Poverty

5.4.1 Description of Item

Data on income provide vital measures of the general economic circumstances in the United States and determine poverty status. Questions on income have been asked in the census since the first sample introduced in 1940. The Department of Education uses these data to allocate grants in high poverty areas and Department of Housing and Urban Development uses these data to help allocate low-income housing assistance. For a more complete list of federal uses, refer to Appendix C.

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[5] The 1980 SOC was the only code book available when testing for ACS started in 1996. Starting in 2002, the ACS switched to the Census 2000 coding procedures.

The wording of the questions used to collect data on income was identical in the C2SS and Census 2000 Sample but the reference periods differed. The Census 2000 Sample and the C2SS split the income question into a series of questions on eight specific sources of income to help respondents remember all sources of income. The reference period for the C2SS was "during the past 12 months" while the reference period for the Census 2000 Sample was "calendar year 1999." The C2SS CATI and CAPI instruments included online edits to verify income values that seemed suspicious. These edits were not available on the Census 2000 Sample questionnaires or the C2SS mail questionnaire. Appendix B includes facsimiles of the income questions asked on the C2SS and Census 2000 Sample mail questionnaires, the Census 2000 Sample nonresponse followup questionnaire, and the C2SS CATI and CAPI followup instruments.

5.4.2 National-Level Comparisons

Tables 4a-4c show the national-level comparisons of household income, type of income, and family income in constant 1999 dollars. The C2SS collected data throughout the year on an on-going, monthly basis and asks for a respondent's income over the "past 12 months." To produce yearly estimates using C2SS data, the C2SS estimates were adjusted using the CPI-U inflation factor[6] to convert 12 monthly estimates into one yearly estimate in calendar-year 2000 dollars. The Census 2000, however, collected the income data for a fixed period of time--"during 1999" and no inflation adjustments were needed to compute an annual estimate. Thus, the Census 2000 income estimates were in calendar-year 1999 dollars while the C2SS income estimates were in calendar-year 2000 dollars. To make these two distributions comparable for this analysis, we deflated the C2SS estimates using the CPI-U inflation factor to produce two income distributions in calendar-year 1999 dollars.

Table 4a shows the comparison for household income and Table 4c shows the comparison for family income. Since the data in these two tables tell the same story, we will only discuss Table 4a. As these data show, the C2SS had higher percentage point estimates of income below $50,000 and lower percentage point estimates of income above $50,000 when compared with the Census 2000 Sample estimates. Median household income was $41,994 in the Census 2000 Sample compared with $40,137 in the C2SS. The percentage point differences were statistically significant for all categories and substantive for the $15,000-$24,999 category where the C2SS estimate was one percentage point higher than the Census 2000 Sample estimate.

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[6] The CPI-U stands for the Consumer Price Index for all Urban Consumers. It's the Bureau of Labor Statistic's basic cost of living measure and is used to produce a calendar-year estimate for income by adjusting monthly ACS data. The ACS data processing includes a step to convert all income dollar amounts from a 12-month reference period into a calendar-year estimate for the year of interview by using the difference between the average CPI-U for the household's 12-month reference period and the calendar year of the interview. For example, a C2SS household that was interviewed in July of 2000 had an income reference period of July 1999-June 2000. Income estimates for this household were expressed in calendar-year 2000 dollars, based on the difference between the average CPI-U for July 1999-June 2000 and January 2000-December 2000. For this analysis, the C2SS income estimates were converted to 1999 dollars based on the difference between the annual average CPI-U in 1999 and 2000.

Table 4b shows household income by type. As the table shows, 80.5 percent of the Census 2000 Sample and C2SS households had earnings income and close to 17 percent of these households had retirement income. In the C2SS, there was a slightly higher reporting of Social Security Income, and a slightly lower reporting of Supplemental Security Income and income from public assistance than in the Census 2000 Sample.

Poverty statistics are derived from income data. Table 4d shows the percent of families and individuals in poverty for the past 12 months. The top section of the table shows the comparison of poverty statistics for families while the bottom section shows the comparison of poverty statistics for individuals. When looking at the family-level poverty statistics, the C2SS reported higher rates of poverty (although differences are small) for all four measures. The largest difference is for the female-householder families with related children under 18 years. The C2SS reported 1.1 percentage points more "female-householder families with related children under 18 years" in poverty than did the Census 2000 Sample.

The C2SS and Census 2000 Sample estimated the same percent of individuals in poverty (see the bottom section of Table 4d). Small differences emerged when this category was sub-divided by demographic characteristics such as sex, age, and whether or not household members were related. The C2SS estimated a higher percent of individuals in poverty for all categories except individuals 18 years and over and unrelated individuals 15 years and older when compared with the Census 2000 Sample.

Table 4a. Household Income, National-Level Distributions (C2SS compared with the Census 2000 Sample) in 1999 Dollars

Income Groupings	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Households	105,500,000	104,800,000			
Less than $10,000	9.5	10.1	0.5	± 0.1	Yes
$10,000 to $14,999	6.3	6.9	0.6	± 0.1	Yes
$15,000 to $24,999	12.8	13.9	1.0	± 0.1	Yes
$25,000 to $34,999	12.8	13.1	0.3	± 0.1	Yes
$35,000 to $49,999	16.5	16.8	0.2	± 0.1	Yes
$50,000 to $74,999	19.5	18.6	-0.9	± 0.1	Yes
$75,000 to $99,999	10.2	9.7	-0.5	± 0.1	Yes
$100,000 to $149,000	7.7	7.1	-0.7	± 0.1	Yes
$150,000 to $199,999	2.2	2.0	-0.2	± 0.0	Yes
$200,000 or more	2.4	2.0	-0.4	± 0.0	Yes
Median Household Income (in dollars)	$41,994	$40,137	-$1,854	$178	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

Table 4b. Type of Income, National-Level Distributions (C2SS compared with the Census 2000 Sample) in 1999 Dollars

Percent of Households with Type of Income	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Households	105,500,000	104,800,000			
With earnings	80.5	80.5	-0.0	± 0.3	No
With Social Security Income	25.7	26.5	0.9	± 0.1	Yes
With Supplemental Security Income	4.4	3.8	-0.6	± 0.1	Yes
With public assistance Income	3.4	2.6	-0.8	± 0.0	Yes
With retirement Income	16.7	16.8	0.0	± 0.1	No

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

Table 4c. Family Income, National-Level Distributions (C2SS compared with the Census 2000 Sample) in 1999 Dollars

Income Groupings	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Families	72,300,000	71,000,000			
Less than $10,000	5.8	6.0	0.3	± 0.1	Yes
$10,000 to $14,999	4.3	4.8	0.5	± 0.1	Yes
$15,000 to $24,999	10.7	11.8	1.0	± 0.1	Yes
$25,000 to $34,999	12.0	12.4	0.4	± 0.1	Yes
$35,000 to $49,999	17.1	17.5	0.4	± 0.1	Yes
$50,000 to $74,999	22.3	21.6	-0.7	± 0.2	Yes
$75,000 to $99,999	12.5	12.0	-0.5	± 0.1	Yes
$100,000 to $149,000	9.6	8.9	-0.7	± 0.1	Yes
$150,000 to $199,999	2.7	2.6	-0.2	± 0.1	Yes
$200,000 or more	2.9	2.5	-0.5	± 0.1	Yes
Median Family Income (in dollars)	50,046	48,014	-2,032	275	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

Table 4d. Percent Below Poverty, National-Level Distributions (C2SS compared with the Census 2000 Sample)

Poverty Status	Census 2000 Sample Estimate (in percent)	C2SS Estimate (in percent)	Difference (C2SS-Census 2000 Sample in percentage points)	Margin of Error of Difference (in percentage points)	Is the Difference Statistically Significant?
Universe: Families	72,300,000	71,000,000			
Families in poverty	9.2	9.3	0.2	± 0.1	Yes
With related children under 18 years	13.6	14.3	0.7	± 0.2	Yes
Families with female householder, no husband present	26.5	27.3	0.8	± 0.4	Yes
With related children under 18 years	34.3	35.4	1.1	± 0.5	Yes
Universe: Individuals	272,700,000	272,500,000			
Individuals in poverty	12.2	12.2	0.0	± 0.2	No
18 years and over	10.7	10.5	-0.2	± 0.1	Yes
65 years and over	9.5	9.7	0.2	± 0.2	Yes
Related children under 18 years	16.1	16.8	0.7	± 0.3	Yes
Related children 5 to 17 years	15.4	15.9	0.5	± 0.3	Yes
Unrelated individuals 15 years and over	21.8	21.5	-0.4	± 0.3	Yes

KEY: The universes have been rounded to the nearest 100,000 and all estimates are rounded to one decimal place.
A value of 0.0 indicates an estimate is less than 0.05.

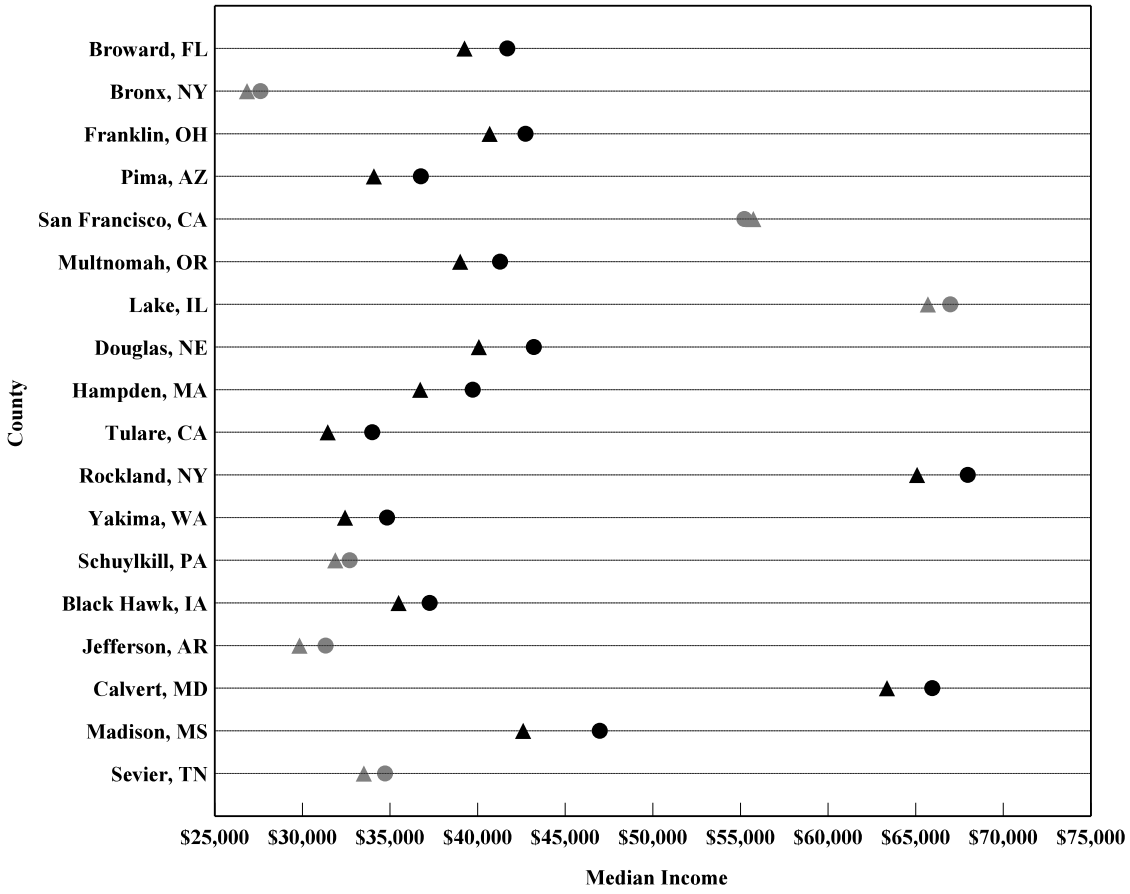
5.4.3 County-Level Comparisons

Sub-national data were analyzed to determine if the national findings held at lower levels of geography. Figure 4a shows the median household income for 18 counties. Note that the scale starts at 25,000 dollars, not zero. This graph shows that the national finding is also seen when we look at selected county-level data. There were statistically significant differences in 12 of the 18 counties and in all cases the C2SS estimate of median household income was significantly lower than the Census 2000 Sample estimate.

Figure 4b shows the percent of female-householder families with related children under 18 years in poverty for the 18 counties. Note that the scale starts at 10 percent, not zero. At the national level, the C2SS reported 1.1 percentage points more of these families in poverty than did the Census 2000 Sample. However, we see more variation when looking at the selected county-level data. While the differences are only statistically different for five of the 18 counties, these percentage point differences are large. In Tulare, CA, Douglas, NE, Lake, IL, and Franklin, OH, the C2SS estimated a higher percent in poverty (6.9, 4.6, 6.1, and

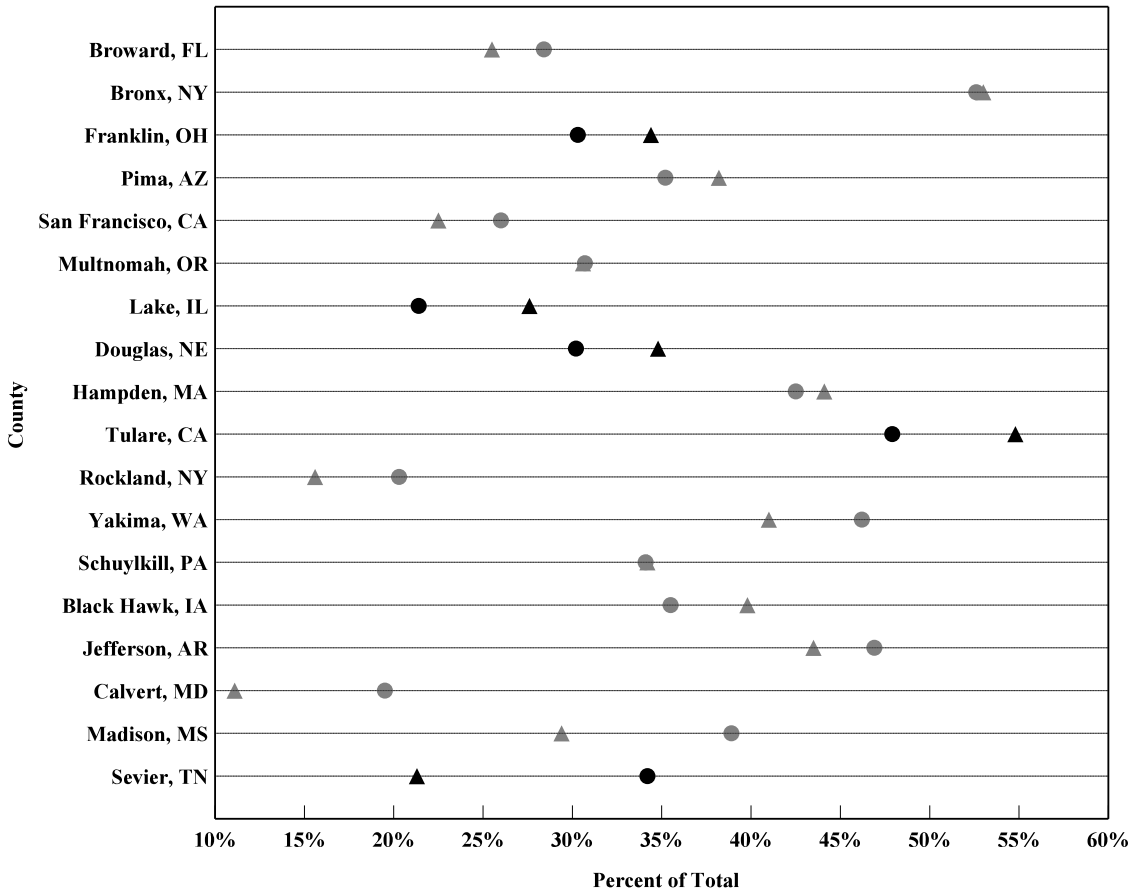
4.0 percentage points differences respectively) than did the Census 2000 Sample. In Sevier, TN the Census 2000 estimate was almost 13 percentage points higher than the C2SS estimate. These differences would not likely lead to different programmatic decisions.

Figure 4a. Median Household Income
Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 Sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 Sample and the C2SS estimates are bolded.

Figure 4b. Percent of Female-Householder Families with Related Children under 18 in Poverty Census 2000 Sample and C2SS County-Level Estimates



KEY: 1. The universe is restricted to the 2000 Household Population.
2. Census 2000 Sample county-level estimates are shown as circles; C2SS county-level estimates are shown as triangles.
3. Whenever the difference between the two estimates was determined to be statistically significant, the symbols for both the Census 2000 Sample and the C2SS estimates are bolded.

Appendix E, Tables 4a-4c, display the comparable county-level data for income. As the data show, the county-level comparisons tell the same story as the national-level comparisons. There are few substantive differences but when they exist, the C2SS estimate for income is slightly lower than the Census 2000 Sample estimate for these selected counties.

Table 4d in Appendix E shows the comparable county-level data for poverty for the family-level statistics only. The national-level differences are small but statistically significant. When we look at the county-level data, we see that there are no differences between the C2SS and Census 2000 poverty estimates in half of the counties analyzed. But, the differences that do exist are larger than we've seen when looking at the other items. For example, when we look at the percent of families with female-householders, differences are statistically different for 7 of the 18 counties and these differences are large. In Tulare, CA, Douglas, NE, Lake, IL, and Franklin, OH, the C2SS estimated a higher percent in poverty (6.0, 4.8, 4.7, and 3.1 percentage

points, respectively) than did the Census 2000 Sample. In Sevier, TN, Madison, MS, and Broward, FL, the Census 2000 Sample estimate was higher than the C2SS estimate.

5.4.4 Analysis

Official national estimates of income and poverty come from the Annual Social and Economic Supplement of the CPS. The 1999 CPS estimates for median household income was $40,816 and $49,940 for families (U.S. Department of Commerce, 2000). These estimates fall in between the Census 2000 Sample and C2SS estimates produced for this analysis. The C2SS estimates of median household income were generally lower than Census 2000 Sample estimates at the national level and these estimates matched up more closely with the CPS income estimates (Posey, Welniak, and Nelson, 2003). This could be a result of differences in the timing of data collection for the two surveys discussed earlier. Since ACS interviews in calendar year 2000 had income reference periods ranging from January through December 1999 (for those interviewed in January 2000) to December 1999 through November 2000 (for those interviewed in December 2000), the midpoint of this period would be December 15, 1999 compared with July 1, 1999 for the Census 2000 Sample. Thus, the C2SS estimates may more accurately reflect the economic change over 2000 that could not have been captured by Census 2000.

Posey, Welniak, and Nelson (2003), when comparing the Census 2000 Sample and C2SS income estimates identify the reference period, the Census 2000 data capture methodology, inflation-adjustment procedures, and allocation as possible reasons for the differences in the C2SS and the Census 2000 Sample income estimates. In addition, a fundamental difference between the two surveys was the method used for data capture. In Census 2000, optical character recognition, or OCR, was used to interpret the write-in entries. Edits were added for Census 2000 to ensure that OCR interpreted handwritten income entries accurately but errors may still exist. All C2SS write-in responses were keyed which also has error.

These analysts recommended looking at differences in allocation rates as a potential source of C2SS/Census 2000 Sample differences. Both surveys had high income allocation rates–around 30 percent in the Census 2000 Sample compared with 24 percent in the C2SS (Posey, Welniak, and Nelson, 2003). Appendix A, Tables 6a through 6h provides the item allocation rates for each C2SS and Census 2000 Sample income item. As these tables show, the item allocation rates are especially high and problematic for income data collected during nonresponse followup operations. Using our yardstick, this amount of item imputation may affect the final Census 2000 Sample and C2SS estimates.

Another possible explanation for the differences in the distributions seen is that the C2SS may in part reflect true economic change over 2000 that could not have been captured by Census 2000. This is speculation on our part and additional research is necessary to better understand these differences; although this is difficult given that these are both surveys and we do not have a measurement of "truth" for comparison.

Poverty statistics are derived from income data. Given the lower estimates of income in the C2SS, the increase in family-level poverty estimates seen in the C2SS seem reasonable. The

individual poverty estimates were the same. These results concur with additional findings from Census 2000 that showed that the number of families in poverty declined when compared with 1989 (Bishaw and Iceland, 2003). One possible explanation for differences may be the difference in the timing of data collection which has already been discussed at length in this report.

6. CONCLUSIONS

To understand the effect of replacing the decennial census sample data collection with the ACS, we would ideally compare ACS estimates, as measured by the C2SS in 2000, to measures of truth. However, since this was not possible, we compared the C2SS with the Census 2000 Sample distributions for the nation and a selected group of counties for several economic items.

The results of this analysis lead us to conclude that the C2SS national-level distributions of the selected economic characteristics examined in this report were fundamentally the same as those produced from the Census 2000 Sample. Published C2SS data were very consistent with the Census 2000 Sample results and a review of selected county-level data confirmed these findings. Less than 10 percent of the differences were deemed to be substantive at the county level. Given these results, data users would likely come to similar conclusions and therefore would be likely to implement support programs and allocate funds in a similar fashion, regardless of whether they used the Census 2000 Sample or the C2SS data. For example, if a program needed to allocate funds to support low-income families for these selected counties, planners would make similar decisions whether they used the Census 2000 Sample or the C2SS data.

Some differences were noted and this report concludes that the key methodological difference between the Census 2000 Sample and the C2SS that affects these selected economic items is the difference in the reference periods that results from the differences in the timing of data collection for the two surveys. As this report discusses, these differences particularly affect the employment status and the income and poverty estimates. Over three-fourths of the substantive national-level differences are for these items.

The sequence of the Occupation, Industry, and Class of Worker questions differed between the C2SS and Census 2000 Sample as was discussed in Section 5.3 of this report. Census Bureau analysts recommend conducting additional testing of the sequence of these questions to determine the optimal sequence to use in the ACS.

This report is a first step at understanding the differences in Census 2000 Sample and C2SS estimates for these selected economic items. As mentioned, at the national level and for the selected sub-national analysis done, the results are promising. Additional research is recommended to further our understanding of current ACS methods. Given that we find few substantive differences between the Census 2000 Sample and the C2SS at either the national or county level, additional analysis should focus on developing a further understanding of all methodological aspects of the ACS including such things as the effect of using multiple modes

for data collection. Similarly, data should be examined by sex, age, race, Hispanic origin, and other key demographic items.

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Appendix A. Item Allocation Rates by Data Collection Mode

Section 1. Employment Status

Table 1. Employment Status, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	11.1	6.0
Mail*	10.2	8.2
Interviewer	9.2	2.6
CATI	NA	2.5
CAPI	NA	2.6

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Section 2. Commuting to Work

Table 2a. Means of Transportation to Work, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	7.6	4.6
Mail*	5.4	5.5
Interviewer	13.0	3.3
CATI	NA	2.9
CAPI	NA	3.4

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 2b. Carpool Size, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	10.0	5.8
Mail*	8.4	7.0
Interviewer	14.1	4.0
CATI	NA	3.6
CAPI	NA	4.1

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Section 3. Occupation, Industry, and Class of Worker

Table 3a. Occupation, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	14.9	9.5
Mail*	13.2	11.1
Interviewer	19.2	7.1
CATI	NA	4.8
CAPI	NA	7.8

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 3b. Industry, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	14.9	9.4
Mail*	13.3	11.1
Interviewer	18.7	7.0
CATI	NA	4.5
CAPI	NA	7.7

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 3c. Class of Worker, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	17.0	8.3
Mail*	16.0	10.4
Interviewer	19.5	5.2
CATI	NA	4.0
CAPI	NA	5.5

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Section 4. Income

Table 4a. Wages and Salary Income, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	20.0	16.4
Mail*	15.0	13.0
Interviewer	32.6	21.4
CATI	NA	18.5
CAPI	NA	22.2

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 4b. Self-Employment Income, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	9.9	6.3
Mail*	8.0	7.3
Interviewer	14.5	4.9
CATI	NA	4.4
CAPI	NA	5.0

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 4c. Interest, Net Rental Income, etc, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	20.8	13.3
Mail*	19.1	15.5
Interviewer	25.1	9.8
CATI	NA	10.9
CAPI	NA	9.5

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Table 4d. Other Income, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	18.3	10.6
Mail*	16.4	13.9
Interviewer	23.2	5.6
CATI	NA	5.0
CAPI	NA	5.8

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 4e. Social Security or Railroad Income, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	8.7	11.7
Mail*	7.0	14.3
Interviewer	13.0	7.7
CATI	NA	7.9
CAPI	NA	7.6

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 4f. Supplemental Security Income, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	19.0	10.2
Mail*	17.4	13.5
Interviewer	23.0	5.2
CATI	NA	4.4
CAPI	NA	5.5

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Appendix A. Item Allocation Rates by Data Collection Mode

Table 4g. Public Assistance Income, Allocation Rates by Data Collection Mode

Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	18.2	10.5
Mail*	16.4	14.0
Interviewer	22.7	5.3
CATI	NA	4.5
CAPI	NA	5.6

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Table 4h. Retirement Income, Allocation Rates by Data Collection Mode

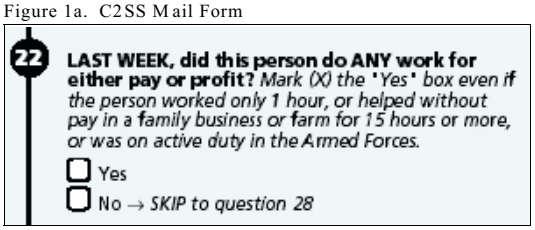
Mode	Census 2000 Sample (in percent)	C2SS (in percent)
All	18.8	11.0
Mail*	17.0	14.2
Interviewer	23.2	6.2
CATI	NA	5.8
CAPI	NA	6.3

KEY: *C2SS mail includes improvements due to content follow-up.
CATI - Computer Assisted Telephone Interviewing
CAPI - Computer Assisted Personal Visit Interviewing
NA - Not applicable
Values less than 0.05 appear as 0.0.

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Employment Status Questions

Figure 1a. C2SS Mail Form

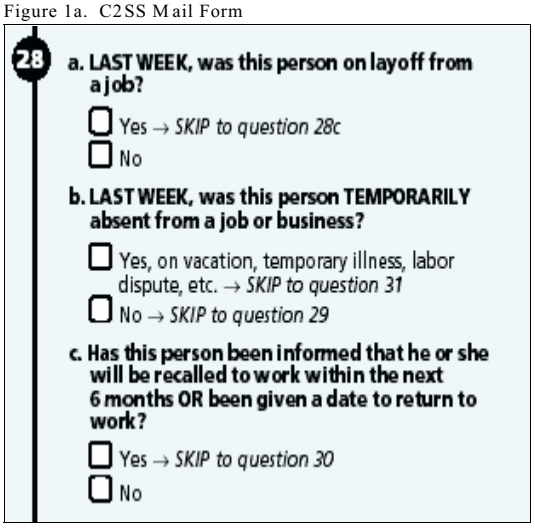


22 **LAST WEEK, did this person do ANY work for either pay or profit?** *Mark (X) the "Yes" box even if the person worked only 1 hour, or helped without pay in a family business or farm for 15 hours or more, or was on active duty in the Armed Forces.*

☐ Yes

☐ No → *SKIP to question 28*

Figure 1a. C2SS Mail Form



28 **a. LAST WEEK, was this person on layoff from a job?**

☐ Yes → *SKIP to question 28c*

☐ No

b. LAST WEEK, was this person TEMPORARILY absent from a job or business?

☐ Yes, on vacation, temporary illness, labor dispute, etc. → *SKIP to question 31*

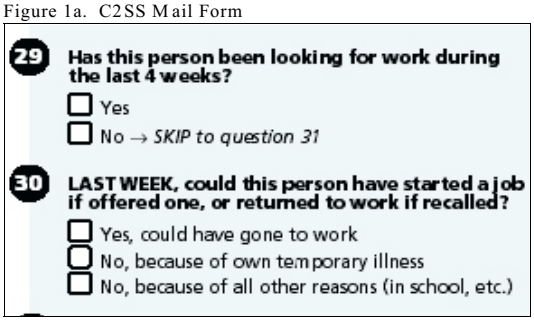
☐ No → *SKIP to question 29*

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 question 30*

☐ No

Figure 1a. C2SS Mail Form



29 **Has this person been looking for work during the last 4 weeks?**

☐ Yes

☐ No → *SKIP to question 31*

30 **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.)

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Employment Status Questions

Figure 1b. C2SS CATI/CAPI Instrument

Now, I am going to ask a series of questions about employment.

LAST WEEK, did (<Name>/you) do ANY work for either pay or profit?

READ IF NECESSARY:
Include any work even if {<he/she>/you} worked only 1 hour, or helped without pay in a family business or farm for 15 hours or more, or {was/were} on active duty in the Armed Forces.

IF THE PERSON DID NOT WORK ALL LAST WEEK BECAUSE HE/SHE WAS ON VACATION FROM HIS/HER JOB, ENTER 2

<1> Yes
<2> No

P22/S_P22

Figure 1b. C2SS CATI/CAPI Instrument

LAST WEEK, (was <Name>/were you) on layoff from a job?
<1> Yes
<2> No
P28a/ S_P28a

{Was <Name>/Were you} TEMPORARILY absent or on vacation from a job or business?
<1> Yes
<2> No
P28b/ S_P28b

{Has <Name>/Have you} been informed that <he/she/you> will be recalled to work within the next 6 months OR been given a date to return to work?
<1> Yes
<2> No
P28c/S_P28c

Figure 1b. C2SS CATI/CAPI Instrument

{Has <Name>/Have you} been looking for work during the last 4 weeks?

<1> Yes
<2> No
P29/ S_P29

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Employment Status Questions

Figure 1b. C2SS CATI/CAPI Instrument

LAST WEEK, could {<Name>/you} have started a job if offered one {Fill 1:, or returned to work if recalled}?

<1> Yes
<2> No
P30a/ S_P30a

Why was that?

<1> Temporary illness
<2> Going to school or some other reason
P30b/ S_P30b

Figure 1c. Census 2000 Mail Sample Form

21 **LAST WEEK, did this person do ANY work for either pay or profit?** *Mark [X] 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*

Figure 1c. Census 2000 Mail Sample Form

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*

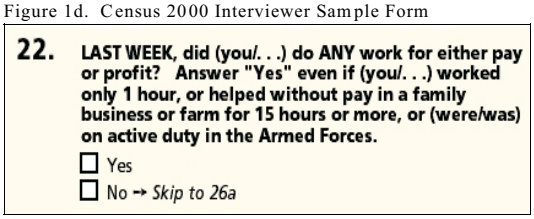
e. LAST WEEK, could this person have started a job if offered one, or returned to work if recalled?

☐ Yes, could have gone to work
☐ No, because of own temporary illness
☐ No, because of all other reasons *(in school, etc.)*

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Employment Status Questions

Figure 1d. Census 2000 Interviewer Sample Form

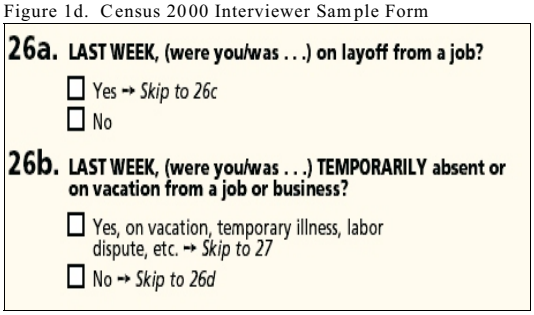


22. **LAST WEEK, did (you/. . .) do ANY work for either pay or profit? Answer "Yes" even if (you/. . .) worked only 1 hour, or helped without pay in a family business or farm for 15 hours or more, or (were/was) on active duty in the Armed Forces.**

☐ Yes

☐ No → *Skip to 26a*

Figure 1d. Census 2000 Interviewer Sample Form



26a. **LAST WEEK, (were you/was . . .) on layoff from a job?**

☐ Yes → *Skip to 26c*

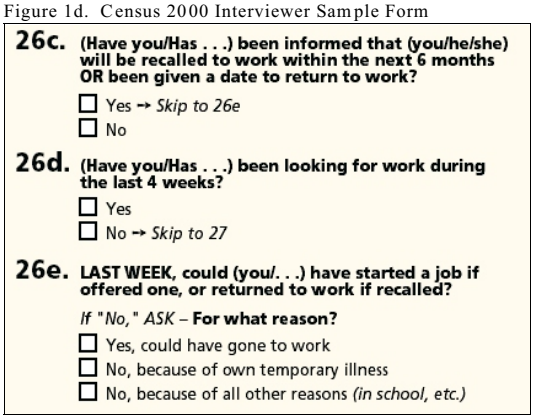
☐ No

26b. **LAST WEEK, (were you/was . . .) TEMPORARILY absent or on vacation from a job or business?**

☐ Yes, on vacation, temporary illness, labor dispute, etc. → *Skip to 27*

☐ No → *Skip to 26d*

Figure 1d. Census 2000 Interviewer Sample Form



26c. **(Have you/Has . . .) been informed that (you/he/she) will be recalled to work within the next 6 months OR been given a date to return to work?**

☐ Yes → *Skip to 26e*

☐ No

26d. **(Have you/Has . . .) been looking for work during the last 4 weeks?**

☐ Yes

☐ No → *Skip to 27*

26e. **LAST WEEK, could (you/. . .) have started a job if offered one, or returned to work if recalled?**

If "No," ASK – **For what reason?**

☐ Yes, could have gone to work

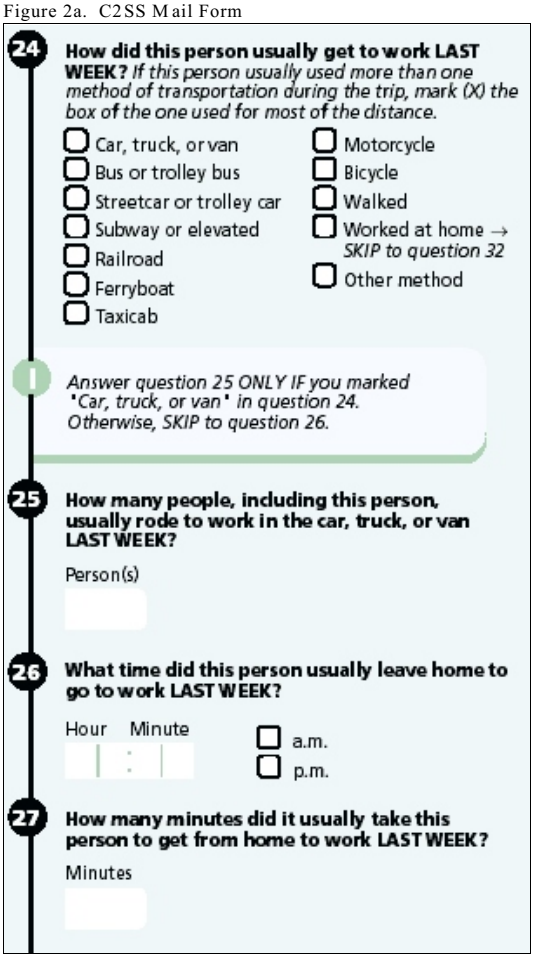
☐ No, because of own temporary illness

☐ No, because of all other reasons *(in school, etc.)*

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Commuting to Work Questions

Figure 2a. C2SS Mail Form



24 **How did this person usually get to work LAST WEEK?** *If this person usually used more than one method of transportation during the trip, mark (X) the box of the one used for most of the distance.*

- ☐ Car, truck, or van
- ☐ Bus or trolley bus
- ☐ Streetcar or trolley car
- ☐ Subway or elevated
- ☐ Railroad
- ☐ Ferryboat
- ☐ Taxicab
- ☐ Motorcycle
- ☐ Bicycle
- ☐ Walked
- ☐ Worked at home → *SKIP to question 32*
- ☐ Other method

Answer question 25 ONLY IF you marked "Car, truck, or van" in question 24. Otherwise, SKIP to question 26.

25 **How many people, including this person, usually rode to work in the car, truck, or van LAST WEEK?**

Person(s)

26 **What time did this person usually leave home to go to work LAST WEEK?**

Hour Minute

- ☐ a.m.
- ☐ p.m.

27 **How many minutes did it usually take this person to get from home to work LAST WEEK?**

Minutes

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Commuting to Work Questions

Figure 2b. C2SS CATI/CAPI Instrument

LAST WEEK, how did (<Name>/ you) USUALLY get to work?

(H) HELP

READ IF NECESSARY: If {he/she/you} usually used more than one method of transportation during the trip, report the one used for most of the distance.

{Fill 1: SHOW FLASHCARD F}

< 1>	Car, truck or van	< 7>	Taxicab
< 2>	Bus or trolley bus	< 8>	Motorcycle
< 3>	Streetcar or trolley car	< 9>	Bicycle
< 4>	Subway or elevated	<10>	Walked
< 5>	Railroad	<11>	Worked at home
< 6>	Ferryboat	<12>	Other method

P24/S_P24

Figure 2b. C2SS CATI/CAPI Instrument

LAST WEEK, how many people including (<Name>/yourself) usually rode to work together?

(H) HELP

P25/ S_P25

Figure 2b. C2SS CATI/CAPI Instrument

LAST WEEK, what time did (<Name>/you) usually leave home to go to work?

(H) HELP

P26@hr/S_P26@hr : P26@mn/ S_P26@mn
Hour : minutes

<A> AM
<P> PM
P26@1 / S_P26@1

LAST WEEK, how many minutes did it usually take (<Name>/you) to get from home to work?

(H) HELP

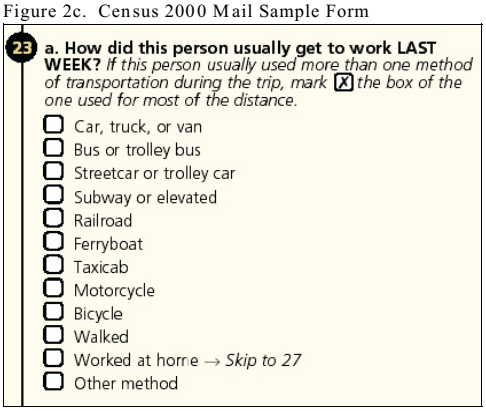
NOTE: MAX VALUE OF 240.

P26@2/ S_P26@2 Minutes

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Commuting to Work Questions

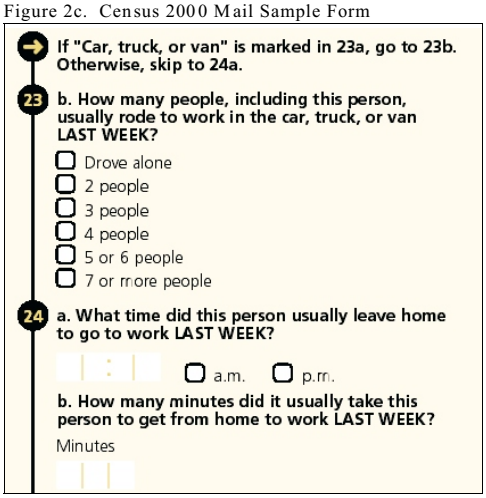
Figure 2c. Census 2000 Mail Sample Form



23 **a. How did this person usually get to work LAST WEEK?** *If this person usually used more than one method of transportation during the trip, mark ☒ the box of the one used for most of the distance.*

- ☐ Car, truck, or van
- ☐ Bus or trolley bus
- ☐ Streetcar or trolley car
- ☐ Subway or elevated
- ☐ Railroad
- ☐ Ferryboat
- ☐ Taxicab
- ☐ Motorcycle
- ☐ Bicycle
- ☐ Walked
- ☐ Worked at home → *Skip to 27*
- ☐ Other method

Figure 2c. Census 2000 Mail Sample Form



If "Car, truck, or van" is marked in 23a, go to 23b. Otherwise, skip to 24a.

23 **b. How many people, including this person, usually rode to work in the car, truck, or van LAST WEEK?**

- ☐ Drove alone
- ☐ 2 people
- ☐ 3 people
- ☐ 4 people
- ☐ 5 or 6 people
- ☐ 7 or more people

24 **a. What time did this person usually leave home to go to work LAST WEEK?**

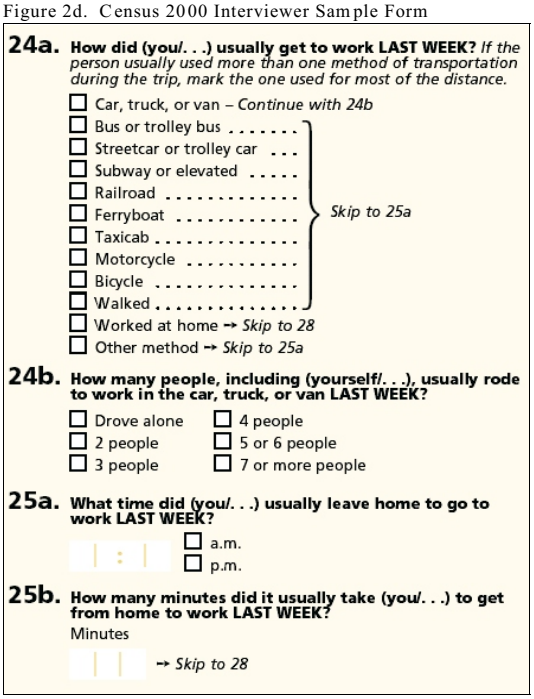
| | | | : | | ☐ a.m. ☐ p.m.

b. How many minutes did it usually take this person to get from home to work LAST WEEK?

Minutes

| | |

Figure 2d. Census 2000 Interviewer Sample Form



24a. **How did (you/. . .) usually get to work LAST WEEK?** *If the person usually used more than one method of transportation during the trip, mark the one used for most of the distance.*

- ☐ Car, truck, or van – *Continue with 24b*
- ☐ Bus or trolley bus . . . . . } *Skip to 25a*
- ☐ Streetcar or trolley car . . .
- ☐ Subway or elevated . . . . .
- ☐ Railroad . . . . . .
- ☐ Ferryboat . . . . . .
- ☐ Taxicab . . . . . .
- ☐ Motorcycle . . . . . .
- ☐ Bicycle . . . . . .
- ☐ Walked . . . . . .
- ☐ Worked at home → *Skip to 28*
- ☐ Other method → *Skip to 25a*

24b. **How many people, including (yourself/. . .), usually rode to work in the car, truck, or van LAST WEEK?**

- ☐ Drove alone
- ☐ 2 people
- ☐ 3 people
- ☐ 4 people
- ☐ 5 or 6 people
- ☐ 7 or more people

25a. **What time did (you/. . .) usually leave home to go to work LAST WEEK?**

| | | | : | | ☐ a.m. ☐ p.m.

25b. **How many minutes did it usually take (you/. . .) to get from home to work LAST WEEK?**

Minutes

| | | → *Skip to 28*

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Occupation, Industry, and Class of Worker Questions

Figure 3a. C2SS Mail Form

K *Answer questions 34–39 ONLY IF this person worked in the past 5 years. Otherwise, SKIP to question 40.*

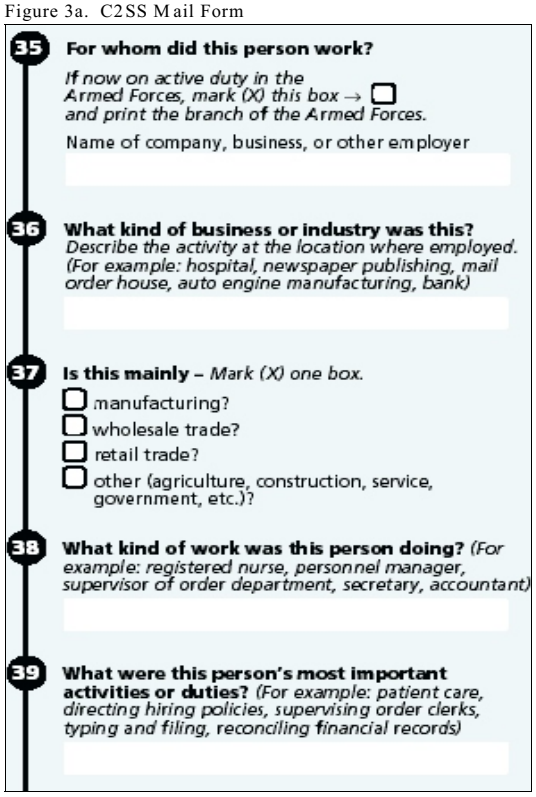
34–39 CURRENT OR MOST RECENT JOB ACTIVITY. *Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours. If this person had no job or business last week, give information for his/her last job or business.*

34 **Was this person –**

Mark (X) ONE box.

- ☐ an employee of a PRIVATE FOR PROFIT company or business, or of an individual, for wages, salary, or commissions?
- ☐ an employee of a PRIVATE NOT FOR PROFIT, tax-exempt, or charitable organization?
- ☐ a local GOVERNMENT employee (city, county, etc.)?
- ☐ a state GOVERNMENT employee?
- ☐ a Federal GOVERNMENT employee?
- ☐ SELF-EMPLOYED in own NOT INCORPORATED business, professional practice, or farm?
- ☐ SELF-EMPLOYED in own INCORPORATED business, professional practice, or farm?
- ☐ working WITHOUT PAY in family business or farm?

Figure 3a. C2SS Mail Form



35 **For whom did this person work?**

If now on active duty in the Armed Forces, mark (X) this box → ☐ *and print the branch of the Armed Forces.*

Name of company, business, or other employer

36 **What kind of business or industry was this?** *Describe the activity at the location where employed. (For example: hospital, newspaper publishing, mail order house, auto engine manufacturing, bank)*

37 **Is this mainly** – *Mark (X) one box.*

- ☐ manufacturing?
- ☐ wholesale trade?
- ☐ retail trade?
- ☐ other (agriculture, construction, service, government, etc.)?

38 **What kind of work was this person doing?** *(For example: registered nurse, personnel manager, supervisor of order department, secretary, accountant)*

39 **What were this person's most important activities or duties?** *(For example: patient care, directing hiring policies, supervising order clerks, typing and filing, reconciling financial records)*

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Occupation, Industry, and Class of Worker Questions

Figure 3b. C2SS CATI/CAPI Instrument

```
SHOW FLASHCARD G

{Fill 1: Is/Was} this person -

<1>  An employee of a PRIVATE FOR PROFIT company or business, or of
     an individual for wages, salary, or commissions?
<2>  An employee of a PRIVATE NOT-FOR-PROFIT, tax-exempt, or
     charitable organization?
<3>  A local GOVERNMENT employee (city, county, etc.)?
<4>  A state GOVERNMENT employee?
<5>  An active duty U.S. Armed Forces member?
<6>  A Federal GOVERNMENT employee (excluding active duty military)?
<7>  SELF-EMPLOYED in own NOT INCORPORATED business,
     professional practice, or farm?
<8>  SELF-EMPLOYED in own INCORPORATED business,
     professional practice, or farm?
<9>  Working WITHOUT PAY in family business or farm?

 P34_CP/ S_P34_CP
```

Figure 3b. C2SS CATI/CAPI Instrument

```
What {Fill 1: is/was} the name of (<Name>'s/your) company or employer?

____ P35a / S_P35a_____________________________________
```

Figure 3b. C2SS CATI/CAPI Instrument

```
Which branch of the Armed Forces (does <Name>/do you) work for?

   <1>  U.S. Army
   <2>  U.S. Navy
   <3>  U.S. Air Force
   <4>  U.S. Marine Corps
   <5>  U.S. Coast guard

   _P35b/ S_P35b__
```

Figure 3b. C2SS CATI/CAPI Instrument

```
What kind of business or industry {Fill 1: is/was} this?

   READ IF NECESSARY:
      For example, hospital, newspaper publishing, mail order house,
      repair shop, bank, auto engine manufacturing, public high school

____ P36 S_P36_____________________________________________________
```

Figure 3b. C2SS CATI/CAPI Instrument

```
Is this business mainly -- manufacturing, wholesale trade, retail trade
or some other kind of business?

   <1>  Manufacturing
   <2>  Wholesale trade
   <3>  Retail trade
   <4>  Other (agriculture, construction, service, government)

   P37/ S_P37
```

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Occupation, Industry, and Class of Worker Questions

Figure 3b. C2SS CATI/CAPI Instrument

What kind of work (was <Name>/ were you) doing at this job?

READ IF NECESSARY:
For example, registered nurse, personnel manager, supervisor of order department, auto mechanic, accountant, gasoline engine assembler, high school English teacher

____ P38/ S_P38_____

What (was <Name>'s/ were your) most important activities or duties?

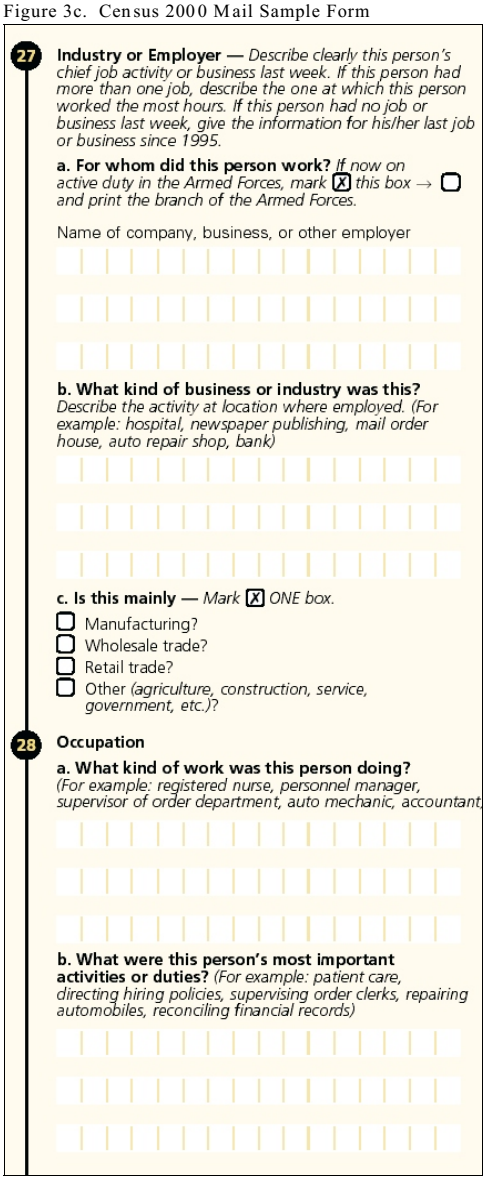
READ IF NECESSARY:
For example, patient care, directing hiring policies, supervising order clerks, repairing automobiles, reconciling financial records, assembling engines, teaching 9th grade biology

____ P39/ S_P39 _____

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Occupation, Industry, and Class of Worker Questions

Figure 3c. Census 2000 Mail Sample Form



27 **Industry or Employer** — *Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours. If this person had no job or business last week, give the information for his/her last job or business since 1995.*

a. For whom did this person work? *If now on active duty in the Armed Forces, mark* [X] *this box →* ☐ *and print the branch of the Armed Forces.*

Name of company, business, or other employer

b. What kind of business or industry was this? *Describe the activity at location where employed. (For example: hospital, newspaper publishing, mail order house, auto repair shop, bank)*

c. Is this mainly — *Mark* [X] *ONE box.*

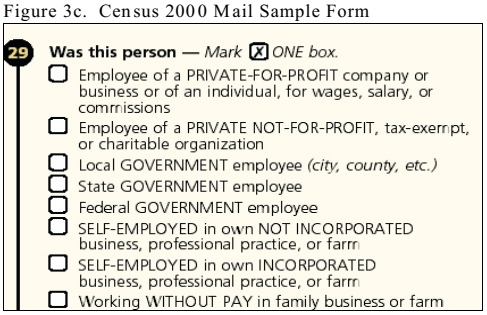
- ☐ Manufacturing?
- ☐ Wholesale trade?
- ☐ Retail trade?
- ☐ Other *(agriculture, construction, service, government, etc.)*?

28 **Occupation**

a. What kind of work was this person doing? *(For example: registered nurse, personnel manager, supervisor of order department, auto mechanic, accountant,*

b. What were this person's most important activities or duties? *(For example: patient care, directing hiring policies, supervising order clerks, repairing automobiles, reconciling financial records)*

Figure 3c. Census 2000 Mail Sample Form



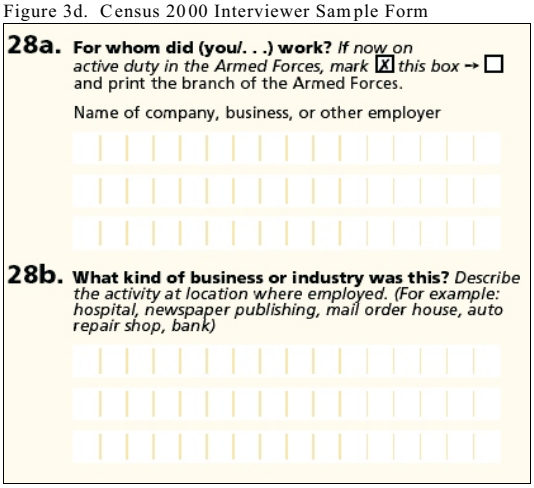
29 **Was this person** — *Mark* [X] *ONE box.*

- ☐ Employee of a PRIVATE-FOR-PROFIT company or business or of an individual, for wages, salary, or commissions
- ☐ Employee of a PRIVATE NOT-FOR-PROFIT, tax-exempt, or charitable organization
- ☐ Local GOVERNMENT employee *(city, county, etc.)*
- ☐ State GOVERNMENT employee
- ☐ Federal GOVERNMENT employee
- ☐ SELF-EMPLOYED in own NOT INCORPORATED business, professional practice, or farm
- ☐ SELF-EMPLOYED in own INCORPORATED business, professional practice, or farm
- ☐ Working WITHOUT PAY in family business or farm

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Occupation, Industry, and Class of Worker Questions

Figure 3d. Census 2000 Interviewer Sample Form

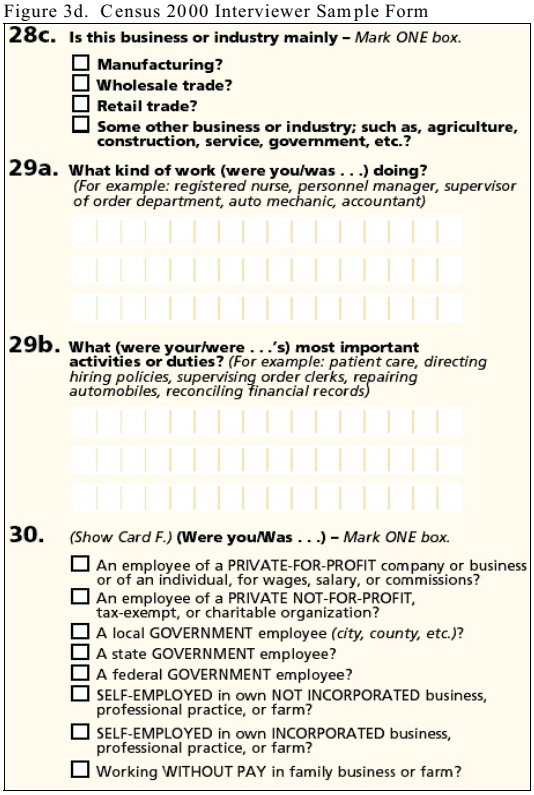


28a. **For whom did (you/. . .) work?** *If now on active duty in the Armed Forces, mark* [X] *this box* → ☐ and print the branch of the Armed Forces.

Name of company, business, or other employer

28b. **What kind of business or industry was this?** *Describe the activity at location where employed. (For example: hospital, newspaper publishing, mail order house, auto repair shop, bank)*

Figure 3d. Census 2000 Interviewer Sample Form



28c. **Is this business or industry mainly –** *Mark ONE box.*

- ☐ **Manufacturing?**
- ☐ **Wholesale trade?**
- ☐ **Retail trade?**
- ☐ **Some other business or industry; such as, agriculture, construction, service, government, etc.?**

29a. **What kind of work (were you/was . . .) doing?** *(For example: registered nurse, personnel manager, supervisor of order department, auto mechanic, accountant)*

29b. **What (were your/were . . .'s) most important activities or duties?** *(For example: patient care, directing hiring policies, supervising order clerks, repairing automobiles, reconciling financial records)*

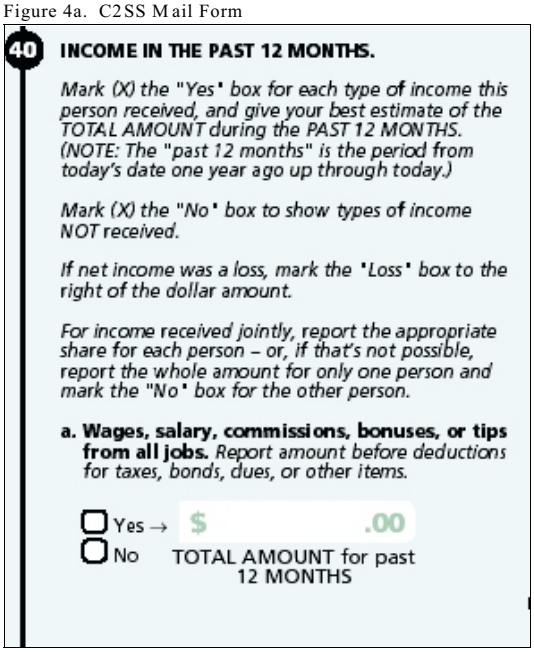
30. *(Show Card F.)* **(Were you/Was . . .) –** *Mark ONE box.*

- ☐ An employee of a PRIVATE-FOR-PROFIT company or business or of an individual, for wages, salary, or commissions?
- ☐ An employee of a PRIVATE NOT-FOR-PROFIT, tax-exempt, or charitable organization?
- ☐ A local GOVERNMENT employee *(city, county, etc.)*?
- ☐ A state GOVERNMENT employee?
- ☐ A federal GOVERNMENT employee?
- ☐ SELF-EMPLOYED in own NOT INCORPORATED business, professional practice, or farm?
- ☐ SELF-EMPLOYED in own INCORPORATED business, professional practice, or farm?
- ☐ Working WITHOUT PAY in family business or farm?

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Income (In 1999 Inflation-adjusted) Dollars Questions

Figure 4a. C2SS Mail Form



40 **INCOME IN THE PAST 12 MONTHS.**

Mark (X) the "Yes" box for each type of income this person received, and give your best estimate of the TOTAL AMOUNT during the PAST 12 MONTHS. (NOTE: The "past 12 months" is the period from today's date one year ago up through today.)

Mark (X) the "No" box to show types of income NOT received.

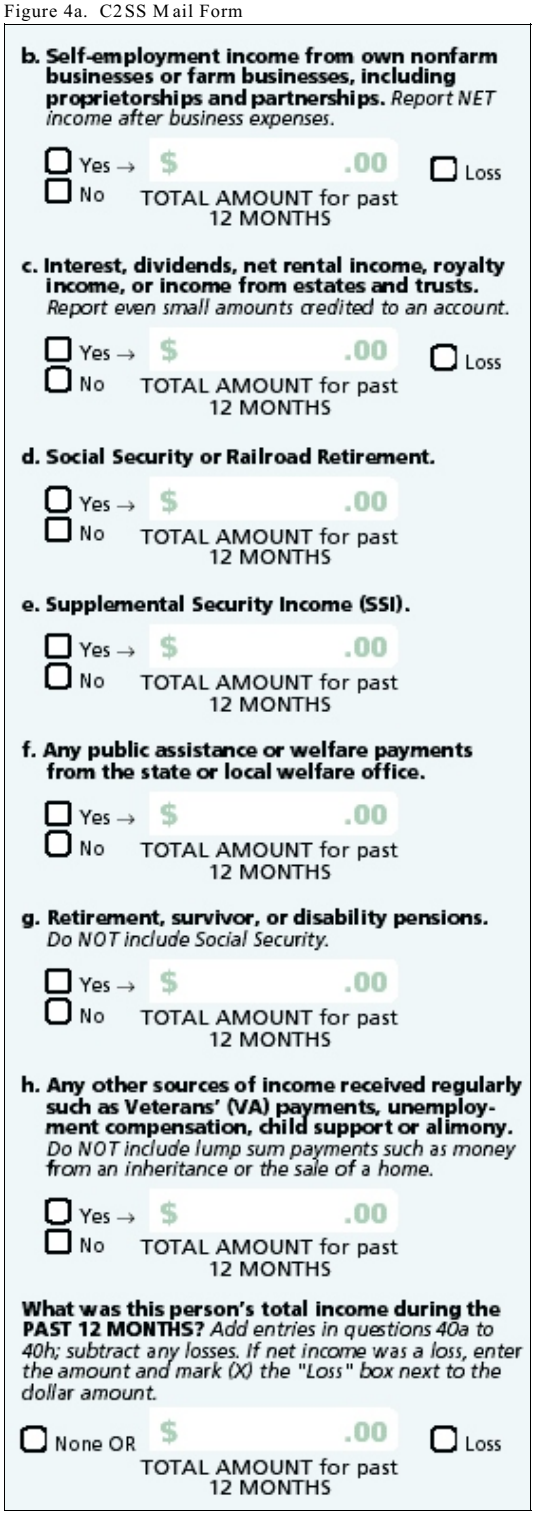
If net income was a loss, mark the "Loss" box to the right of the dollar amount.

For income received jointly, report the appropriate share for each person – or, if that's not possible, report the whole amount for only one person and mark the "No" box for the other person.

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

☐ Yes → $ .00
☐ No TOTAL AMOUNT for past 12 MONTHS

Figure 4a. C2SS Mail Form



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

☐ Yes → $ .00 ☐ Loss
☐ No TOTAL AMOUNT for past 12 MONTHS

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

☐ Yes → $ .00 ☐ Loss
☐ No TOTAL AMOUNT for past 12 MONTHS

d. Social Security or Railroad Retirement.

☐ Yes → $ .00
☐ No TOTAL AMOUNT for past 12 MONTHS

e. Supplemental Security Income (SSI).

☐ Yes → $ .00
☐ No TOTAL AMOUNT for past 12 MONTHS

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

☐ Yes → $ .00
☐ No TOTAL AMOUNT for past 12 MONTHS

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

☐ Yes → $ .00
☐ No TOTAL AMOUNT for past 12 MONTHS

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 the sale of a home.*

☐ Yes → $ .00
☐ No TOTAL AMOUNT for past 12 MONTHS

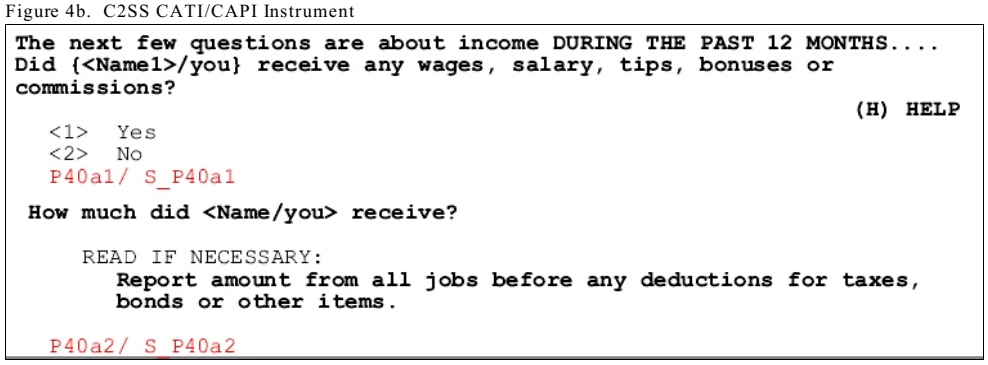
What was this person's total income during the PAST 12 MONTHS? *Add entries in questions 40a to 40h; subtract any losses. If net income was a loss, enter the amount and mark (X) the "Loss" box next to the dollar amount.*

☐ None OR $ .00 ☐ Loss
TOTAL AMOUNT for past 12 MONTHS

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Income (In 1999 Inflation-adjusted) Dollars Questions

Figure 4b. C2SS CATI/CAPI Instrument



The next few questions are about income DURING THE PAST 12 MONTHS....
Did {<Name1>/you} receive any wages, salary, tips, bonuses or commissions?

(H) HELP

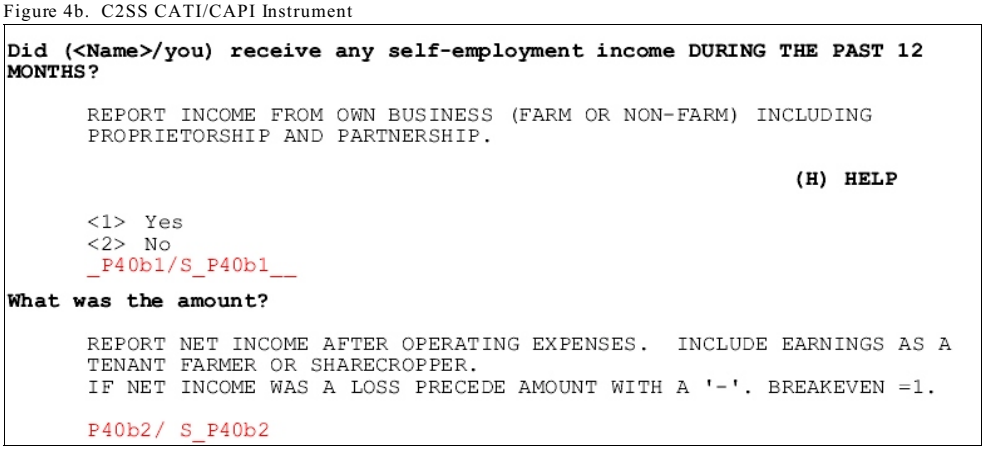
<1> Yes
<2> No
P40a1/ S_P40a1

How much did <Name/you> receive?

READ IF NECESSARY:
Report amount from all jobs before any deductions for taxes, bonds or other items.

P40a2/ S_P40a2

Figure 4b. C2SS CATI/CAPI Instrument



Did (<Name>/you) receive any self-employment income DURING THE PAST 12 MONTHS?

REPORT INCOME FROM OWN BUSINESS (FARM OR NON-FARM) INCLUDING PROPRIETORSHIP AND PARTNERSHIP.

(H) HELP

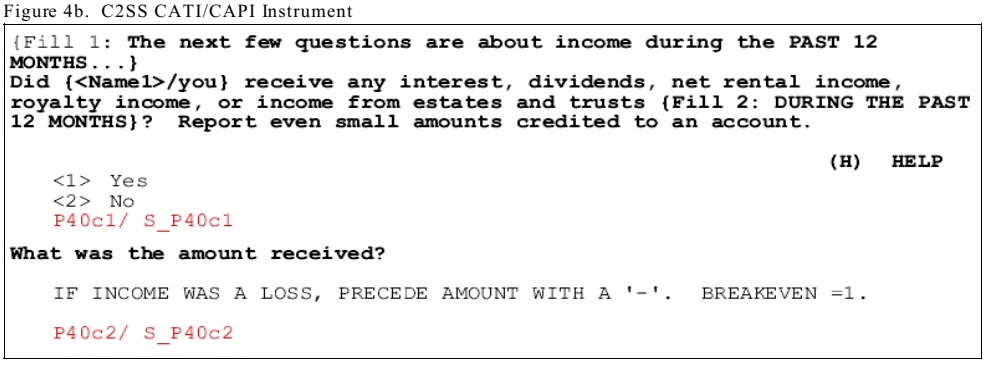
<1> Yes
<2> No
_P40b1/S_P40b1__

What was the amount?

REPORT NET INCOME AFTER OPERATING EXPENSES. INCLUDE EARNINGS AS A TENANT FARMER OR SHARECROPPER.
IF NET INCOME WAS A LOSS PRECEDE AMOUNT WITH A '-'. BREAKEVEN =1.

P40b2/ S_P40b2

Figure 4b. C2SS CATI/CAPI Instrument



{Fill 1: **The next few questions are about income during the PAST 12 MONTHS...**}
Did {<Name1>/you} receive any interest, dividends, net rental income, royalty income, or income from estates and trusts {Fill 2: DURING THE PAST 12 MONTHS}? Report even small amounts credited to an account.

(H) HELP

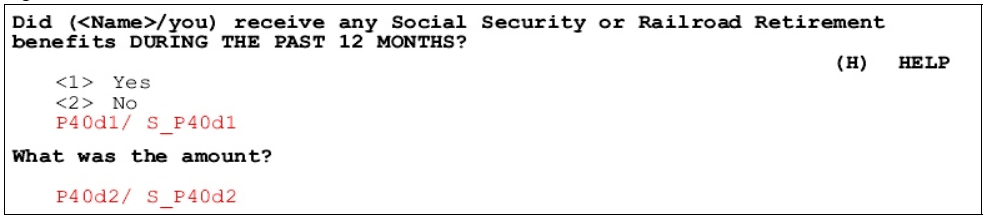
<1> Yes
<2> No
P40c1/ S_P40c1

What was the amount received?

IF INCOME WAS A LOSS, PRECEDE AMOUNT WITH A '-'. BREAKEVEN =1.

P40c2/ S_P40c2

Figure 4b. C2SS CATI/CAPI Instrument



Did (<Name>/you) receive any Social Security or Railroad Retirement benefits DURING THE PAST 12 MONTHS?

(H) HELP

<1> Yes
<2> No
P40d1/ S_P40d1

What was the amount?

P40d2/ S_P40d2

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Income (In 1999 Inflation-adjusted) Dollars Questions

Figure 4b. C2SS CATI/CAPI Instrument

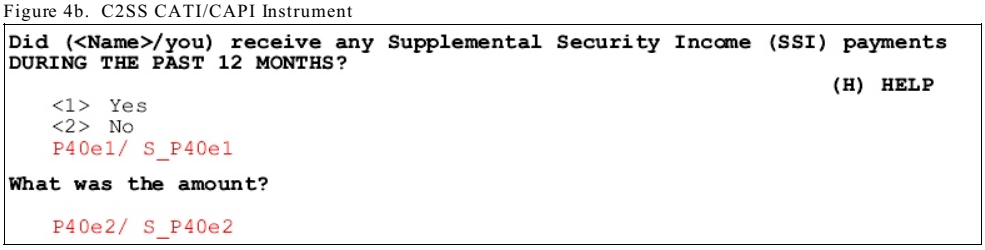


Figure 4b. C2SS CATI/CAPI Instrument

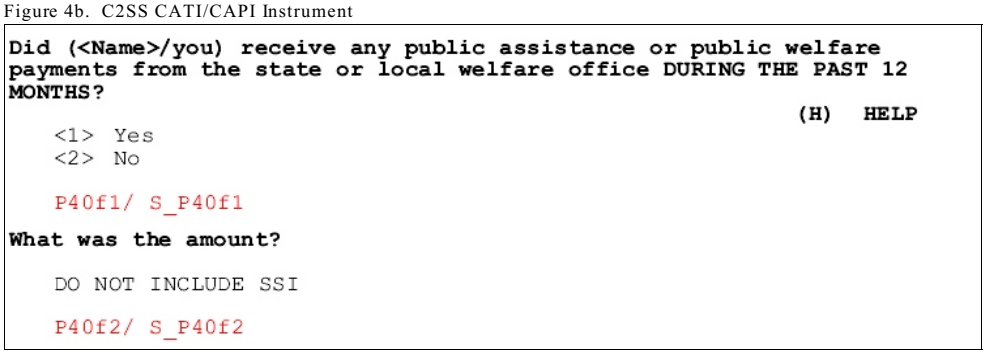


Figure 4b. C2SS CATI/CAPI Instrument

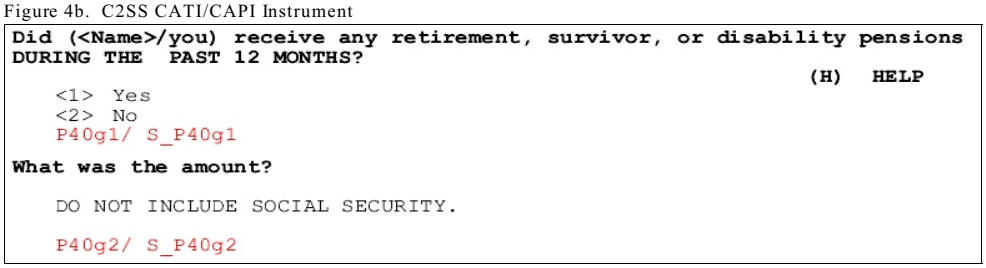
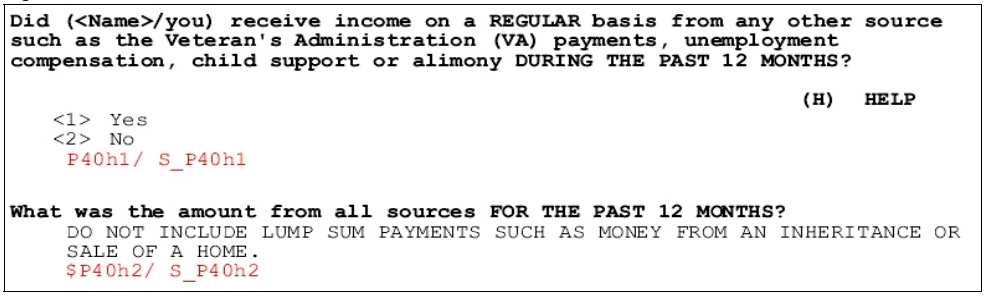


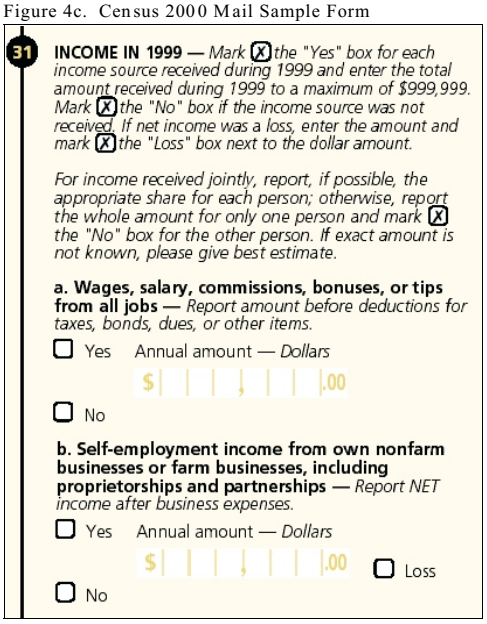
Figure 4b. C2SS CATI/CAPI Instrument



Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Income (In 1999 Inflation-adjusted) Dollars Questions

Figure 4c. Census 2000 Mail Sample Form



31 **INCOME IN 1999** — *Mark (X) 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 (X) the "No" box if the income source was not received. If net income was a loss, enter the amount and mark (X) 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 (X) 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

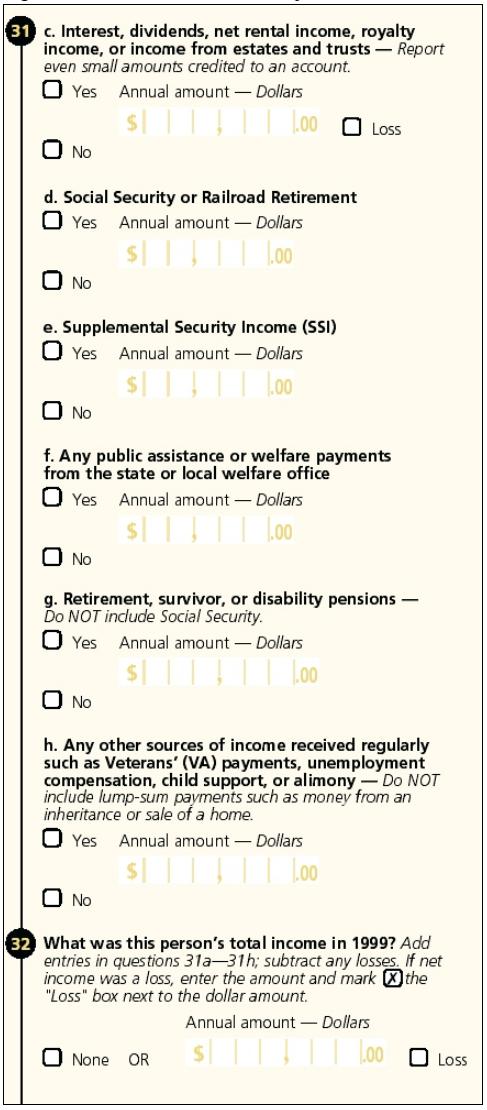
b. Self-employment income from own nonfarm businesses or farm businesses, including proprietorships and partnerships — *Report NET income after business expenses.*

☐ Yes Annual amount — *Dollars*

$, .00 ☐ Loss

☐ No

Figure 4c. Census 2000 Mail Sample Form



31 **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 (X) the "Loss" box next to the dollar amount.*

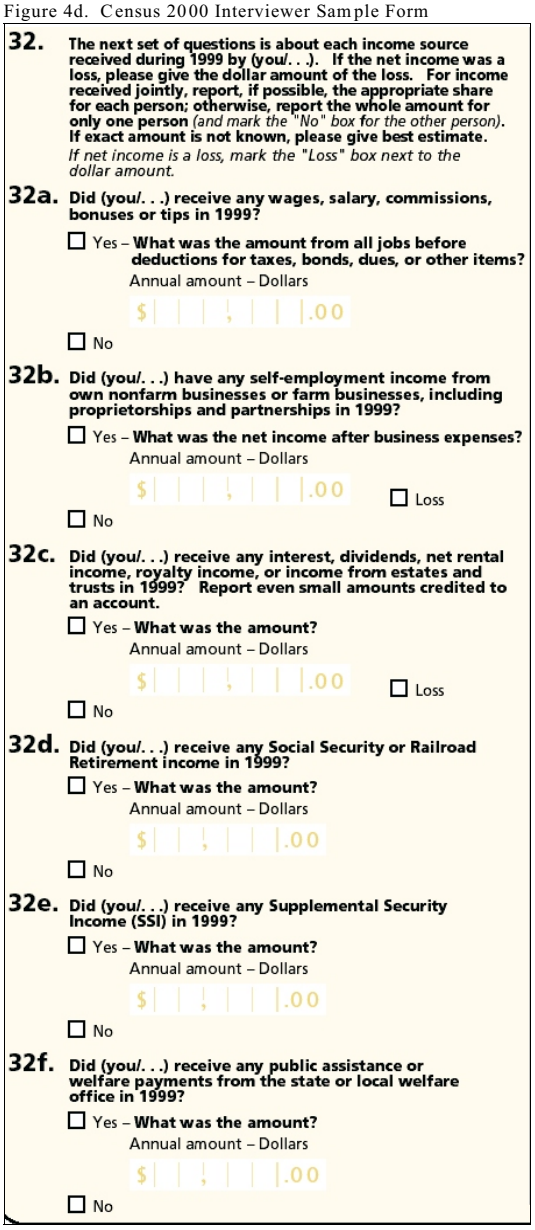
Annual amount — *Dollars*

☐ None OR $, .00 ☐ Loss

Appendix B. Facsimiles of C2SS and Census 2000 Sample Questions

Income (In 1999 Inflation-adjusted) Dollars Questions

Figure 4d. Census 2000 Interviewer Sample Form



32. **The next set of questions is about each income source received during 1999 by (you/. . .). If the net income was a loss, please give the dollar amount of the loss. 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.**

If net income is a loss, mark the "Loss" box next to the dollar amount.

32a. **Did (you/. . .) receive any wages, salary, commissions, bonuses or tips in 1999?**

☐ Yes – **What was the amount from all jobs before deductions for taxes, bonds, dues, or other items?**

Annual amount – Dollars

$| | | , | | | .00

☐ No

32b. **Did (you/. . .) have any self-employment income from own nonfarm businesses or farm businesses, including proprietorships and partnerships in 1999?**

☐ Yes – **What was the net income after business expenses?**

Annual amount – Dollars

$| | | , | | | .00 ☐ Loss

☐ No

32c. **Did (you/. . .) receive any interest, dividends, net rental income, royalty income, or income from estates and trusts in 1999? Report even small amounts credited to an account.**

☐ Yes – **What was the amount?**

Annual amount – Dollars

$| | | , | | | .00 ☐ Loss

☐ No

32d. **Did (you/. . .) receive any Social Security or Railroad Retirement income in 1999?**

☐ Yes – **What was the amount?**

Annual amount – Dollars

$| | , | | | .00

☐ No

32e. **Did (you/. . .) receive any Supplemental Security Income (SSI) in 1999?**

☐ Yes – **What was the amount?**

Annual amount – Dollars

$| | , | | | .00

☐ No

32f. **Did (you/. . .) receive any public assistance or welfare payments from the state or local welfare office in 1999?**

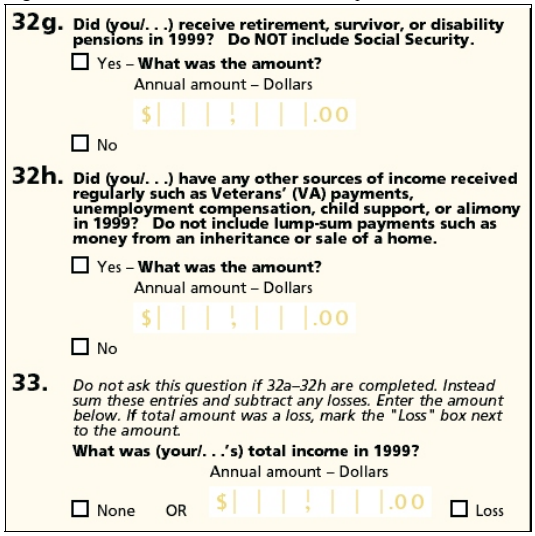
☐ Yes – **What was the amount?**

Annual amount – Dollars

$| | , | | | .00

☐ No

Figure 4d. Census 2000 Interviewer Sample Form



32g. **Did (you/. . .) receive retirement, survivor, or disability pensions in 1999? Do NOT include Social Security.**

☐ Yes – **What was the amount?**

Annual amount – Dollars

$| | | , | | | .00

☐ No

32h. **Did (you/. . .) have any other sources of income received regularly such as Veterans' (VA) payments, unemployment compensation, child support, or alimony in 1999? Do not include lump-sum payments such as money from an inheritance or sale of a home.**

☐ Yes – **What was the amount?**

Annual amount – Dollars

$| | | , | | | .00

☐ No

33. *Do not ask this question if 32a–32h are completed. Instead sum these entries and subtract any losses. Enter the amount below. If total amount was a loss, mark the "Loss" box next to the amount.*

What was (your/. . .'s) total income in 1999?

Annual amount – Dollars

☐ None OR $| | | , | | | .00 ☐ Loss

Appendix C. Federal Uses of Selected Economic Characteristics

Selected Economic Items	Federal Uses of the Data
Employment Status	■ Used by the Department of Justice to comply with provisions of the Civil Rights Act to determine the availability of individuals for work ■ Helps the Department of Labor to plan Federal farm worker programs and to construct the Consumer Price Index ■ Needed to provide reliable data to determine the employment resources available when considering government programs that provide Federal assistance to areas ■ Needed to characterize workers by full-time/part-time and full-year/part-year status ■ Used to collect accurate income data by defining the universe of persons who should have earnings as part of their total income
Commuting to Work	■ Needed to plan highway improvements, develop public transportation services, design programs to ease traffic problems, conserve energy, and reduce pollution ■ Needed to develop standards to reduce work-related vehicle trips and increase passenger occupancy during peak periods of travel ■ Used to forecast vehicle miles of travel in areas that are designated "non-attainment" with respect to ambient air quality standards under the Clean Air Act Amendments of 1990 ■ Used (place of work) by the Office of Management and Budget, under the authority of the Paperwork Reduction Act, as part of the criteria to define metropolitan areas

Appendix C. Federal Uses of Selected Economic Characteristics

Selected Economic Items	Federal Uses of the Data
Occupation, Industry, and Class of Worker	■ Used to formulate policy and programs for employment, career development, and training ■ Needed to measure compliance with anti-discrimination policies ■ Used in analysis for mandated Congressional reports on the labor force ■ Used by the National Center for Health Statistics to compute vital statistics ■ Required by the Bureau of Economic Analysis to develop its state per capita income estimates which are used in the allocation formulas or eligibility criteria of more than 20 Federal programs such as Medicaid ■ Used by the Equal Employment Opportunity Commission, under the Civil Rights and Equal Pay Acts, in litigation where employment discrimination is alleged ■ Helps the Environmental Protection Agency, under the Toxic Substances Control Act, to identify occupations and industries that expose people to harmful chemicals and that adversely affect the environment
Income	■ Provides a vital measure of general economic circumstances ■ Used to determine poverty status ■ Used to assess the need for various types of assistance ■ Included in Federal allocation formulas for nearly all governmental areas

Appendix D. Characteristics of Counties Used in Sub-National Comparisons

These counties represent areas with populations that meet the 65,000 minimum required for yearly data-release. They are a diverse set of areas that were chosen to be test sites because they vary geographically and demographically. They reflect both urban and rural areas and range in household population size from 70,533 in Sevier, TN to over 1.6 million in Broward, FL. Population density also varies from 20 persons per square kilometer in Yakima, WA to nearly 12,000 persons per square kilometers in Bronx, NY.

The table below summarizes geographic, demographic, and economic characteristics for the 18 counties used in this report. Geographic data are based on Census 2000 counts. The remaining data are based on the 2001 ACS. As the data show, between 57 and 72 percent of the population 16 and older are in the labor force in these sites. For most of these sites, public transportation is not the primary means used to get to work. The exceptions are Bronx, NY and San Francisco, CA. The median household income ranges from $27,000 in Bronx, NY to $71,000 in Calvert, MD. The percent of related children ages 5-18 in poverty ranges from 3 percent in Calvert, MD to 41 percent in Bronx, NY.

ACS Test Site	Square Kilometers	Census 2000 Household Population	Density[7]	Percent of population 16+ in labor force	Percent of labor force using public transportation to get to work	Median household income (in nearest thousand dollars)	Percent of related children in Poverty
Sevier TN	1534	70533	46	68	0	35,000	19
Madison, MS	1863	72615	39	70	1	47,000	15
Calvert MD	557	73982	133	72	2	71,000	3
Jefferson, AR	2292	78989	34	63	1	38,000	31
Black Hawk IA	1470	121535	83	68	1	36,000	17
Schuylkill PA	2017	143110	71	61	1	34,000	17
Yakima WA	11127	218844	20	66	0	33,000	29
Rockland NY	451	279104	619	67	10	69,000	12
Tulare CA	12495	361980	29	62	0	32,000	33
Hampden MA	1602	441799	276	66	2	40,000	21
Douglas NE	857	451878	527	72	1	43,000	12
Lake, IL	1160	623378	538	71	5	69,000	8
Multnomah OR	1127	643798	571	71	12	41,000	17
San Francisco CA	121	756976	6258	69	30	60,000	11
Pima AZ	23794	821712	35	62	2	36,000	21
Franklin OH	1399	1046872	749	72	3	44,000	15
Bronx NY	109	1285415	11793	57	57	27,000	41
Broward FL	3131	1603094	512	64	2	41,000	15

[7]Persons per square kilometer

Appendix E. Summary of County-Level Differences

The difference between the C2SS and Census 2000 Sample estimates was determined (C2SS minus Census 2000 Sample) and only the statistically significant differences are displayed in these tables. A positive value indicates the C2SS estimate was greater than the Census 2000 Sample estimate. A negative value indicates that the C2SS had a lower estimate for this characteristic than the Census 2000 Sample.

Table 1. Employment Status, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Household Population 16 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
In labor force				4.0			2.9			1.1				2.0	1.1		4.0	1.4
Civilian labor force				4.1			2.8			1.1				2.0	1.3		4.0	1.4
Employed	2.5			3.0	-1.6		3.3		4.2	1.6				1.6	0.8		5.3	1.3
Unemployed	-1.9		0.9	1.2	0.8				-3.4	-0.5	0.6			0.4	0.6	0.3	-1.3	
Armed Forces															-0.2			
Not in labor force				-4.0			-2.9			-1.1				-2.0	-1.1		-4.0	-1.4
Females 16 years and over																		
Civilian labor force				5.2	-2.3		2.7	-2.2						1.5	1.1		2.9	1.5
Employed	4.5			4.3	-2.6		4.0	-2.2	3.6	1.3							3.8	1.4
Own children under 6 years:																		
All parents in family in labor force			-9.2	11.5					5.7	6.1					6.4		4.6	3.8

Appendix E. Summary of County-Level Differences

Table 2. Commuting to Work, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Workers 16 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Car, truck, or van -- drove alone		5.2						-2.1	3.1							2.5	-1.9	-2.1
Car, truck, or van -- carpooled		-4.7							-3.2	-0.8				-1.6	-1.4	-1.5	-1.8	1.3
Public transportation (including taxicab)				1.0				1.5					0.8			-0.5	3.5	0.4
Walked																-0.5		
Other means	2.7						0.7	0.9					0.5		0.4			0.5
Worked at home		-1.4			-1.1													

Table 3a. Occupation, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Employed Civilian Population 16 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Management, professional, and related occupations									-2.5			-1.4					-1.3	
Service occupations	3.8			2.7							0.9		1.5					1.1
Sales and office occupations					2.0													
Farming, fishing, and forestry occupations						0.5	2.0		1.7									
Construction, extraction, and maintenance occupations					-1.7		-1.1							0.6			-0.9	-0.7
Production, transportation, and material moving occupations	-2.4							1.0				1.1					1.5	

Appendix E. Summary of County-Level Differences

Table 3b. Industry, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Employed Civilian Population 16 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Agriculture, forestry, fishing and hunting, and mining	-0.6		-0.6						2.0									-0.1
Construction					-1.0													
Manufacturing					2.2					1.5							0.8	
Wholesale trade											0.8		-0.5				-0.4	
Retail trade								1.7			-1.4				0.9	0.7		
Transportation and warehousing, and utilities										-1.1								
Information											0.8				-0.5			
Finance, insurance, real estate, and rental and leasing					1.2			-1.5				-1.1	0.6			1.0		
Professional, scientific, management, administrative, and waste management services						-1.0												
Educational, health, and social services					-2.7	-2.9		-2.5	-1.9			-0.9		-1.5	1.1	-0.9	-1.8	-0.9
Arts, entertainment, recreation, accommodation, and food services	-1.8						1.0									0.9	0.7	
Other services (except public administration)												0.5						
Public administration														0.7				

Appendix E. Summary of County-Level Differences

Table 3c. Class of Worker, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Employed Civilian Population 16 years and over	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Private wage and salary workers					2.0				1.9	2.0								
Government workers									-2.3	-1.7								-0.6
Self-employed workers in own not incorporated business					-1.2			1.0										
Unpaid family workers														-0.2			-0.2	

Table 4a. Household Income, D Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Total Households	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Less than $10,000	-2.0					1.4					2.1	0.6	1.0		1.4	1.1		0.6
$10,000 to $14,999		3.4	-1.0		1.6		1.6		2.8	1.2	1.1	0.7			1.6			1.0
$15,000 to $24,999								1.2		2.2	1.1		1.3	0.8	1.5			1.1
$25,000 to $34,999	2.8					-1.4										0.7		
$35,000 to $49,999					2.2						-1.0							
$50,000 to $74,999					-2.0				-1.8	-2.2	-1.7	-1.9	-1.7		-1.8	-1.2		-1.1
$75,000 to $99,999					-1.3						-0.9		-0.8		-0.6	-0.6		
$100,000 to $149,999				-1.2			-1.3	-2.3	-0.7				-0.5	-1.0	-0.8	-1.0	-0.7	-1.3
$150,000 to $199,999	-0.7	-1.5			-0.4		-0.5		-0.4						-0.3			
$200,000 or more					-0.7	-0.5	-0.5		-0.4						-0.5	-0.3	-0.5	-0.6
Median household income (in dollars)		-4,366	-2,578		-1,773		-2,395	-2,891	-2,532	-2,990	3,138		-2,268	-2,046			-2,441	-1,857

Appendix E. Summary of County-Level Differences

Table 4b. Type of Income, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Total Households	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
With Earnings				2.1											-1.1	-1.1		-0.8
With Social Security								1.5	1.3	-1.1				1.5			1.7	
With Supplemental Security Income		1.9		-1.5	-0.9			-1.0	-1.2			-0.6	-0.4	-1.1	-0.5	-0.8		-0.6
With Public Assistance Income	-2.3		-1.1	-1.8				-0.5				-0.6	-1.4	-1.1	-1.0	-0.5		-1.0
With Retirement Income					1.9								-0.7					

Table 4c. Family Income, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

Family Households	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Less than $10,000								-0.9			1.8	1.1			0.9	0.9		
$10,000 to $14,999		2.9					2.4	-0.6	2.4	1.3	0.9				0.7		1.3	1.3
$15,000 to $24,999					1.7	2.3				2.4			1.7		1.0			1.1
$25,000 to $34,999			-2.7	2.6								-0.8						0.9
$35,000 to $49,999					4.1			1.8					1.1			1.1		
$50,000 to $74,999					-2.9					-2.0	-1.4	-2.5	-1.9					-1.1
$75,000 to $99,999				-1.8							-1.4	1.2	-1.3		-0.8			
$100,000 to $149,999	-1.4			-1.9			-1.2	-2.0							-0.8	-1.3	-0.7	-1.5
$150,000 to $199,999	-0.6	-1.7			-0.6		-0.5		-0.6									
$200,000 or more					-0.8	-0.5			-0.5					-0.8	-0.6	-0.5	-0.6	-0.7
Median family income (in dollars)					-3,376				-2,650	-2,734	-2,478		-2,717		-2,122	-903	-2,785	-2,032

Appendix E. Summary of County-Level Differences

Table 4d. Poverty, Statistically Significant Differences in County-Level Estimates (C2SS minus Census 2000 Sample)

	Sevier, TN	Madison, MS	Calvert, MD	Jefferson, AR	Black Hawk, IA	Schuylkill, PA	Yakima, WA	Rockland, NY	Tulare, CA	Hampden, MA	Douglas, NE	Lake, IL	Multnomah, OR	San Francisco, CA	Pima, AZ	Franklin, OH	Bronx, NY	Broward, FL
Families								-1.8			1.8	1.0			1.0	0.9		
With related children under 18 years								-2.8	2.3		2.6	1.7			2.0	1.9		
Families with female householder, no husband present	-9.1	-8.5							6.0		4.8	4.7				3.1		-2.7
With related children under 18 years	-12.9								6.9		4.6	6.1				4.0		