

Employment Status and Work Experience

GENERAL

This report presents detailed national statistics on employment status in 1960 and work experience in 1959 in relation to various social and economic characteristics. The statistics in this report are based on a 5-percent sample of the population enumerated in the Eighteenth Decennial Census of Population, taken as of April 1, 1960.

To describe the demographic and social composition of the labor force, data on such personal characteristics as age, race, nativity and parentage, marital status, household relationship, school enrollment, number and age of related children, number of children ever borne by women ever married, and residence in 1955 are cross-classified by employment status and number of weeks worked in 1959. Also presented are statistics on the characteristics of families, such as number of family members in the labor force by income of head, and type and size of family. In addition, statistics on the number of hours worked for employed persons by their marital status and household relationship are included in this report. Most of these data are shown by urban and rural residence.

In addition to describing the labor force participation of various groups in the population, both during a calendar week and over the course of a year (1959), this report provides a basis for analyzing many of the factors affecting labor force growth. Data on the personal characteristics of persons not in the labor force and on their work experience in 1959 are useful in estimating the size and characteristics of the groups that constituted a reserve of manpower in early 1960.

RELATED MATERIALS

1960 Census reports.--The present report supplements the reports for individual States and for the United States originally published in the 1960 Census of Population, Series PC(1)-C reports, "General Social and Economic Characteristics," and the Series PC(1)-D reports, "Detailed Characteristics." These reports form two of the four chapters of 1960 Census of Population, Volume I, Characteristics of the Population. Part 1 of Volume I presents data originally published in the four separate United States Summary reports; the remainder of the volume is divided into a part for each State and for the outlying areas, containing the data originally published in the separate paper-bound series.

In Volume I, data on employment status and weeks worked in 1959 are presented for the population as a whole, for each State, standard metropolitan statis-

tical area, urban place,¹ and county. Also shown are cross-classifications of employment status with age, marital status, income, and school enrollment; and weeks worked in 1959 cross-classified with age and income. Data on the number of hours worked during the reference week, cross-classified by age and school enrollment, are also presented in Volume I. The tables in the present report provide greater detail at the national level.

Several of the Series PC(2) reports include data classifying labor force status by various characteristics. The report PC(2)-7C, Occupation by Industry, covers detailed national statistics cross-classifying occupation by industry for employed men and women. The report PC(2)-7A, Occupational Characteristics, covers such subjects as urban-rural residence, sex, age, race, size of family, marital status, mobility, years of school completed, hours worked, class of worker, weeks worked in 1959, and income received in 1959, for persons in each of approximately 500 detailed occupational categories. Other related PC(2) reports, either published or in planning, contain employment status and work experience data in relation to the subject of the report. Subjects covered in these reports are fertility, mobility, school enrollment, educational attainment, characteristics of families, nonwhite population by race, Puerto Ricans, and persons of Spanish surname.

The PC(3)-1A report, State Economic Areas, includes data on employment status for State economic areas by urban and rural residence.

1950 Census reports.--Data for 1950 on employment status and work experience similar to those shown here were presented in the report entitled 1950 Census of Population, Volume IV, Special Reports, Part 1, chapter A, Employment and Personal Characteristics. (For a discussion of 1950-1960 comparisons, see section on "Comparability.")

Current Population Survey.--Data on employment status and number of hours worked are also collected by the Bureau of the Census in the Current Population Survey (CPS) and published monthly by the Bureau of Labor Statistics, U.S. Department of Labor, in Employment and Earnings. CPS data are also collected yearly on annual work experience and published annually by the Bureau of Labor Statistics in the Monthly Labor Review. In April 1960, the data for this survey were

¹ For employment status, data are shown for urban places of 2,500 or more; for weeks worked in 1959, data are shown for urban places of 10,000 or more.

VIII

collected from a sample of approximately 35,000 households in 333 areas throughout the country. In addition, data are collected in the CPS on personal characteristics of the labor force, such as marital status, school enrollment, income, and mobility, and published annually in the Series P-20 and P-60 Current Population Reports. The statistics provided by the Current Population Survey are, in general, designed to be comparable with the decennial census statistics. There are, however, certain elements of difference, as explained in the section on "Comparability."

DEFINITIONS AND EXPLANATIONS

Some of the definitions used in 1960 differ from those used in 1950. These changes were made after consultation with users of census data in order to improve the statistics, even though it was recognized that comparability would be affected. The definitions and explanations should be interpreted in the context of the 1960 Censuses, in which data were collected by a combination of self-enumeration, direct interview, and observation by the enumerator.

The definitions below are consistent with the instructions given to the enumerator. As in all surveys, there were some failures to execute the instructions exactly. Through the forms distributed to households, the respondents were given explanations of some of the questions more uniformly than would have been given in direct interviews. Nevertheless, it was not feasible to give the full instructions to the respondents, and some erroneous replies have undoubtedly gone undetected.

More complete discussions of the definitions of population items are given in 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary, and in each of the State parts.

EMPLOYMENT STATUS

The data on employment status were derived from answers to the following questions on the Household Questionnaire, shown in the next column.

The series of questions on employment status are designed to identify, in this sequence: (a) Persons who worked at all during the reference week; (b) those who did not work but were looking for work or were on layoff; and (c) those who neither worked nor looked for work but had jobs or businesses from which they were temporarily absent. For those who worked during the reference week, a question was asked on hours of work.

Reference week.--In the 1960 Census, the data on employment refer to the calendar week prior to the date on which the respondents filled their Household Questionnaires or were interviewed by enumerators. This week is not the same for all respondents because not all persons were enumerated during the same week. The majority of the population was enumerated during the first half of April. The employment status data for the 1950 Census refer to the approximately corresponding period in 1950. The 1940 Census data, how-

AVAILABILITY OF UNPUBLISHED DATA

Data shown in this report can also be obtained for central cities of urbanized areas, urban fringe, other urban, rural-nonfarm, and rural-farm areas, on a reimbursable basis. Requests for unpublished data, giving a specific description of the figures desired, may be made by writing to the Chief, Population Division, Bureau of the Census, Washington, D.C., 20233. Inquiries concerning unpublished data should be transmitted to the Bureau as soon as possible because tape files are not maintained indefinitely.

ever, refer to a fixed week, March 24 to 30, 1940, regardless of the date of enumeration.

<p>P22. Did this person work at any time last week? Include part-time work such as a Saturday job, delivering papers, or helping without pay in a family business or farm. Do not count own housework.</p> <p>Yes..... <input type="checkbox"/> No..... <input type="checkbox"/></p>	
<p>P23. How many hours did he work last week (at all jobs)? (If exact figure not known, give best estimate)</p> <p>1 to 14 hours..... <input type="checkbox"/> 40 hours..... <input type="checkbox"/> 15 to 29 hours..... <input type="checkbox"/> 41 to 48 hours..... <input type="checkbox"/> 30 to 34 hours..... <input type="checkbox"/> 49 to 59 hours..... <input type="checkbox"/> 35 to 39 hours..... <input type="checkbox"/> 60 hours or more..... <input type="checkbox"/></p>	
<p>P24. Was this person looking for work, or on layoff from a job?</p> <p>Yes..... <input type="checkbox"/> No..... <input type="checkbox"/></p>	
<p>P25. Does he have a job or business from which he was temporarily absent all last week because of illness, vacation, or other reasons?</p> <p>Yes..... <input type="checkbox"/> No..... <input type="checkbox"/></p>	

Employed.--Employed persons comprise all civilians 14 years old and over who were either (a) "at work"--those who did any work for pay or profit, or worked without pay for 15 hours or more on a family farm or in a family business; or (b) were "with a job but not at work"--those who did not work and were not looking for work but had a job or business from which they were temporarily absent because of bad weather, industrial dispute, vacation, illness, or other personal reasons. There appears to have been a tendency for seasonal workers, particularly nonwhite women in the rural South, to report themselves as "with a job but not at work" during the off-season.

Unemployed.--Persons are classified as unemployed if they were civilians 14 years old and over and not "at work" but looking for work. A person is considered as looking for work not only if he actually tried to find work during the reference week but also if he had made such efforts recently (i.e., within the past 60 days) and was awaiting the results of these efforts. Examples of looking for work are:

1. Registration at a public or private employment office.

2. Meeting with or telephoning prospective employers.

3. Being on call at a personnel office, at a union hall, or from a nurses' register or other similar professional register.

4. Placing or answering advertisements.

5. Writing letters of application.

Persons waiting to be called back to a job from which they had been laid off or furloughed were also counted as unemployed.

Labor force.--The labor force includes all persons classified as employed or unemployed, as described above, and also members of the Armed Forces (persons on active duty with the U.S. Army, Air Force, Navy, Marine Corps, or Coast Guard). The "civilian labor force" comprises only the employed and unemployed components of the labor force.

Not in labor force.--This category consists of all persons 14 years old and over who are not classified as members of the labor force and includes persons doing only incidental unpaid work in a family farm or business (less than 15 hours during the week). Most of the persons in this category are students, housewives, retired workers, seasonal workers enumerated in an "off" season who were not looking for work, inmates of institutions, or persons who cannot work because of long-term physical or mental illness or disability.

Problems in Classification

Although the classification of the population by employment status is correct for most regular full-time workers, it is subject to error in marginal cases. Some of the concepts are difficult to apply; more important, for certain groups, the complete information needed is not always obtained. For example, students or housewives may not consider themselves as working if their job required only a few hours of work a week. As a result, the statistics will understate the size of the labor force and overstate the number of persons not in the labor force. (See paragraph below on Current Population Survey and also section "Quality of data on employment status and work experience.")

Comparability

Statistics on gainful workers.--The data on the labor force for 1940, 1950, and 1960 are not entirely comparable with the statistics for gainful workers for years prior to 1940 because of differences in definition. "Gainful workers" were persons reported as having a gainful occupation, that is, an occupation in which they earned money or a money equivalent, or in which they assisted in the production of marketable goods, regardless of whether they were working or seeking work at the time of the census. A person was not considered to have had a gainful occupation if his activity was of limited extent.

In contrast, the labor force is defined on the basis of activity during the reference week only and includes all persons who were employed, unemployed, or in the Armed Forces during the week. Certain classes of persons, such as retired workers, and seasonal workers neither working nor seeking work at the time

of the census, were frequently included among gainful workers; but in general, such persons are not included in the labor force. On the other hand, the census included in the labor force for 1940, 1950, and 1960 persons without previous work experience who were seeking work, that is, new workers. Such new workers were not reported as gainful workers in the Censuses of 1920 and 1930.

1940 and 1950 Censuses.--The 1940 and 1950 Census questionnaires, interviewing techniques, and tabulation procedures differed somewhat from each other and from those used in the 1960 Census. These changes may have affected comparability; for example, a person may have reported on his own job activities differently in self-enumeration wherein a person was given the opportunity to report for himself, as contrasted to the direct enumeration procedures used in earlier censuses, where job information was normally obtained in an interview with a member of the worker's family (usually his wife). In addition, modification in wording and some simplification in concepts were introduced in the 1960 Census, instead of using the Current Population Survey questions and concepts almost unchanged as was done in the 1950 Census. These changes were made in recognition of the different tasks and training of the enumerators in the CPS and the Census.

The so-called "main activity" question of 1950--"What was this person doing most of last week--working, keeping house, or something else?"--was omitted from the 1960 schedule on the assumption that the information obtained in that item (e.g., the knowledge that a person was primarily a housewife or a student) might induce enumerators, in direct interview situations, to omit the follow-up questions on work activity, job seeking, etc. It was felt that the loss of the classification of nonworkers (keeping house, in school, unable to work, and "other") shown in 1950 would not be serious. Actually the only group that cannot be approximated by means of data on marital status and school enrollment is the "unable to work" category.

The question on unemployment was revised in conformity with the classification under the 1957 CPS revision of the definition of persons on temporary (less than 30-day) layoff as unemployed, as well as with the previous implicit inclusion with the unemployed of those on "indefinite" layoff. Formerly, such persons were included among the employed. However, no mention was made either on the schedule or in instructions to enumerators of the other small categories of "inactive" unemployed covered under CPS concepts and in the 1950 and 1940 Censuses, that is, those who would have been looking for work except for temporary illness or belief that no suitable work was available in their community. The definition of "unpaid family work" was simplified to include any work done without pay in an enterprise operated by a relative, without further specifying (as in CPS and in the 1950 Census) that this relative had to be a member of the same household. In 1940, this relative had to be a member of the same family.

The 1940 Census data for the employed and unemployed in this report differ in some cases from figures published for that census. Members of the Armed

Forces in 1940 were originally included among employed persons. In this report, the figures for 1940 on employed persons have been adjusted to exclude the estimated number of men in the Armed Forces. Similarly, statistics for persons on public emergency work in 1940 were originally published separately, but in this report they have been combined with those for persons classified as unemployed.

Current Population Survey.--There are differences between the national data from the Population Census and the CPS that are due to a number of factors. Among these are the more extensive training, control, and experience of the CPS enumerators than of the census enumerators; differences in the time period to which the labor force data apply (the CPS covering the week containing the 12th of the month; the census, the week prior to the date the respondent filled his questionnaire or was interviewed); differences in question wording and format of the schedules; differences in coverage (the CPS including in the total labor force members of the Armed Forces overseas, excluding inmates of institutions from the population covered, and excluding members of the Armed Forces from the annual work experience data); enumeration of unmarried college students in the CPS at their parental home but in the census at their residence while attending college; differences in the methods used to process the original data into statistical tables; differences in weighting procedure and in the population controls;

differences in the extent and allocation of noninter-view cases; and in the sampling variability in the CPS and in the 5-percent sample used in this report.

Table A presents a comparison of data on employment status as shown by the 25-percent sample and the April 1960 CPS. The size of the civilian labor force, as measured in the census, was 1.7 million, or 2 percent, below the corresponding CPS figure. Most of this deficit occurred among persons employed in agriculture, where the census figure was 1.1 million, or 21 percent, below the CPS figure. Differences in labor force data from the two sources were relatively greater for females than males and also greater for youths (14 to 24 years old) than for other age groups. (For further discussion of differences between the two sources, see "Quality of data.")

Differences between employment status data from the decennial census and the CPS in 1960 were less than those in 1950, as is shown in table A. The size of the civilian labor force in the census in 1960 was 2 percent below the CPS figure as compared to 5 percent below in 1950. Closer agreement in employment status data was noted in most groups by age, color, and sex. The narrowing of the difference presumably resulted from the combined effects of changes in enumeration procedures and in questionnaire design for the 1960 Census.

Other data.--Because the 1960 Census employment data were obtained from respondents in households,

Table A.--COMPARISON OF EMPLOYMENT STATUS, BY SEX, FOR THE CENSUS AND APRIL CURRENT POPULATION SURVEY: 1960 AND 1950
(Civilian noninstitutional population in thousands)

Employment status and sex	1960						1950					
	Census (25-percent sample)		April CPS		Difference of census from CPS	Difference as percent of CPS	Census		April CPS		Difference of census from CPS	Difference as percent of CPS
	Number	Per-cent	Number	Per-cent			Number	Per-cent	Number	Per-cent		
BOTH SEXES												
Total, 14 years and over..	122,783	100.0	122,406	100.0	+377	+0.3	109,928	100.0	109,207	100.0	+721	+0.7
Labor force.....	68,144	55.5	69,819	57.0	-1,675	-2.4	59,072	53.7	62,183	56.9	-3,111	-5.0
Employed.....	64,639	94.9	66,159	94.8	-1,520	-2.3	56,239	95.2	58,668	94.3	-2,429	-4.1
Agriculture.....	4,256	6.6	5,393	8.2	-1,137	-21.1	6,876	12.2	7,195	12.3	-319	-4.4
Nonagriculture.....	60,383	93.4	60,766	91.8	-383	-0.6	49,363	87.8	51,473	87.7	-2,110	-4.1
Unemployed.....	3,505	5.1	3,660	5.2	-155	-4.2	2,832	4.8	3,515	5.7	-683	-19.4
Not in labor force.....	54,639	44.5	52,587	43.0	+2,052	+3.9	50,856	46.3	47,024	43.1	+3,832	+8.1
MALE												
Total, 14 years and over..	58,570	100.0	58,310	100.0	+260	+0.4	53,478	100.0	52,971	100.0	+507	+1.0
Labor force.....	45,763	78.1	46,580	79.9	-817	-1.8	42,599	79.7	44,120	83.3	-1,521	-3.4
Employed.....	43,467	95.0	44,149	94.8	-682	-1.5	40,519	95.1	41,492	94.0	-973	-2.3
Agriculture.....	3,846	8.8	4,575	10.4	-729	-15.9	6,292	15.5	6,272	15.1	+20	+0.3
Nonagriculture.....	39,621	91.2	39,574	89.6	+47	+0.1	34,227	84.5	35,220	84.9	-993	-2.8
Unemployed.....	2,296	5.0	2,431	5.2	-135	-5.6	2,079	4.9	2,628	6.0	-549	-20.9
Not in labor force.....	12,807	21.9	11,730	20.1	+1,077	+9.2	10,879	20.3	8,851	16.7	+2,028	+22.9
FEMALE												
Total, 14 years and over..	64,213	100.0	64,096	100.0	+117	+0.2	56,450	100.0	56,236	100.0	+214	+0.4
Labor force.....	22,381	34.9	23,239	36.3	-858	-3.7	16,473	29.2	18,063	32.1	-1,590	-8.8
Employed.....	21,172	94.6	22,010	94.7	-838	-3.8	15,720	95.4	17,176	95.1	-1,456	-8.5
Agriculture.....	410	1.9	819	3.7	-409	-49.9	584	3.7	923	5.4	-339	-36.7
Nonagriculture.....	20,762	98.1	21,191	96.3	-429	-2.0	15,136	96.3	16,253	94.6	-1,117	-6.9
Unemployed.....	1,209	5.4	1,229	5.3	-20	-1.6	753	4.6	887	4.9	-134	-15.1
Not in labor force.....	41,832	65.1	40,857	63.7	+975	+2.4	39,977	70.8	38,173	67.9	+1,804	+4.7

NOTE.--Census data excludes inmates of institutions and members of Armed Forces for purposes of direct comparability with CPS data.

they differ from statistics based on reports from individual business establishments, farm enterprises, and certain government programs. The data obtained from households provide information about the work status of the whole population without duplication. Persons employed at more than one job are counted only once in the census. In statistics based on reports from business and farm establishments, on the other hand, persons who work for more than one establishment may be counted more than once. Moreover, other series, unlike those presented here, may exclude private household workers, unpaid family workers, and self-employed persons, but may include workers less than 14 years of age.

An additional difference between the two kinds of data arises from the fact that persons who had a job but were not at work are included with the employed in the statistics shown here, whereas many of the persons are likely to be excluded from employment figures based on establishment payroll reports. Furthermore, the household reports include persons on the basis of their place of residence regardless of where they work, whereas establishment data report persons at their place of work regardless of where they live.

For a number of reasons, the unemployment figures of the Bureau of the Census are not comparable with published figures on unemployment compensation claims. Generally, persons such as private household workers, agricultural workers, State and local government workers, the self-employed, new workers, and workers whose rights to unemployment benefits have expired, are not eligible for unemployment compensation. Further, many employees of small firms are not covered by unemployment insurance. In addition, the qualifications for drawing unemployment compensation differ from the definition of unemployment used by the Bureau of the Census. Persons working only a few hours during the week and persons classified as "with a job but not at work" are sometimes eligible for unemployment compensation but are classified as "employed" in the census reports.

HOURS WORKED

The statistics on hours worked pertain to the number of hours actually worked, and not necessarily to the number usually worked or the scheduled number of hours. For persons working at more than one job, the figures reflect the combined number of hours worked at all jobs during the week. The data on hours worked presented here provide a broad classification of persons at work into full-time and part-time workers. Persons are considered to be working full time if they worked 35 hours or more during the reference week and part time if they worked less than 35 hours. The proportion of persons who worked only a small number of hours is probably understated because such persons were omitted from the labor force count more frequently than were full-time workers. The comparability of data for 1960 and 1950 on hours worked may be affected by the fact that in 1950 a precise answer on number of hours was requested, whereas in 1960 check boxes were provided as shown in item P23.

WEEKS WORKED IN 1959

The data on weeks worked in 1959 were derived from answers to the following two questions on the Household Questionnaire:

P30. Last year (1959), did this person work at all, even for a few days?

Yes -- No --

P31. How many weeks did he work in 1959, either full-time or part-time? Count paid vacation, paid sick leave, and military service as weeks worked.
(If exact figure not known, give best estimate)

13 weeks or less .. <input type="checkbox"/>	40 to 47 weeks... <input type="checkbox"/>
14 to 26 weeks .. <input type="checkbox"/>	48 to 49 weeks... <input type="checkbox"/>
27 to 39 weeks .. <input type="checkbox"/>	50 to 52 weeks... <input type="checkbox"/>

The data pertain to the number of different weeks during 1959 in which a person did any work for pay or profit (including paid vacation and sick leave) or worked without pay on a family farm or in a family business. Weeks of active service in the Armed Forces are also included. It is probable that the number of persons who worked in 1959 and the number of weeks they worked are understated, because there is some tendency for respondents to forget intermittent or short periods of employment, or they may have a tendency not to report weeks worked without pay.

Comparability

The comparability of data on weeks worked collected in the 1940 and 1950 Censuses with data collected in the 1960 Census may be affected by certain changes in the questionnaires. In the 1960 questionnaire, two separate questions were used to obtain this information. The first was used to identify persons with any work experience in 1959 and thus to indicate those for whom the questions on number of weeks worked and earned income were applicable. This procedure differs from that used in 1940 and 1950, when the schedules contained a single question regarding the number of weeks worked.

In 1940, the enumerator was instructed to convert part-time work to equivalent full-time weeks, whereas in 1950 and 1960 no distinction was made between a part-time and full-time work week. The 1940 procedure was to define as a full-time week the number of hours locally regarded as full time for the given occupation and industry. Furthermore, in the 1940 Census reports, the data were shown for wage and salary workers only and were published in terms of months rather than weeks.

Current Population Survey.---Many of the differences between the Population Census and the CPS previously mentioned in the discussion of employment status also apply to the work experience data. Most noteworthy is the fact that the CPS data on weeks worked in 1959 exclude members of the Armed Forces whereas the census data include this group. The data from the census showed 61.3 percent of the population 14 years

old and over as having worked in the previous year compared to 64.0 percent in the CPS. This difference compares quite favorably with that in 1950 when the census found 54.1 percent of the population with work

experience and the CPS, 62.1 percent. Table B presents data on work experience from the 1960 Census and 1960 CPS and also from the 1950 Census and 1950 CPS.

Table B.--COMPARISON OF WORK EXPERIENCE IN PREVIOUS YEAR, FOR THE CENSUS AND CURRENT POPULATION SURVEY: 1960 AND 1950
(Numbers in thousands)

Work experience in previous year	1960						1950					
	Census ¹ (25-percent sample)		CPS ²		Difference of census from CPS	Difference as percent of CPS	Census ^{1 3}		CPS ^{2 4}		Difference of census from CPS	Difference as percent of CPS
	Number	Per-cent	Number	Per-cent			Number	Per-cent	Number	Per-cent		
Total, 14 years and over....	126,277	100.0	122,195	100.0	+4,082	+3.3	111,703	100.0	108,739	100.0	+2,964	+2.7
Worked in previous year.....	77,368	61.3	78,162	64.0	-794	-1.0	60,469	54.1	67,520	62.1	-7,051	-10.4
Did not work in previous year...	48,908	38.7	44,033	36.0	+4,875	+11.1	43,644	39.1	41,219	37.9	+2,425	+5.9
Work in previous year not reported.....	...	...	...	...	...	...	7,590	6.8	...	...	...	...

¹ Includes inmates of institutions and members of the Armed Forces residing in the United States.

² Civilian noninstitutional population only.

³ Based on a 20-percent sample.

⁴ Work in 1949 defined as "work for pay or profit."

QUALITY OF DATA ON EMPLOYMENT STATUS AND WORK EXPERIENCE

As part of the overall 1960 Decennial Census evaluation program, a Census-Current Population Survey matching project, similar to the 1950 project, was carried out. Among other things, this study permitted an examination of labor force entries on the POSTDIC schedules (see "Collection and processing of data") in the 1960 Census and in the April 1960 CPS for identical persons and the derivation of indices of net and gross shift, by demographic and other characteristics. The study entailed matching the CPS household to the census household and then determining whether the matched CPS household was in the census 25-percent sample for which labor force and work experience data were collected.

Employment status and work experience data were then tabulated for identical persons as reported by the census and by the CPS and weighted to national totals by the CPS two-stage ratio estimation procedure. Much of the extensive editing for nonreporting and inconsistencies in the 1960 Census was not introduced in the transcribed census match data in these tabulations.

Tables C and D present figures indicating how the CPS and census data from the matched sample correspond to comparable published percentage distributions from the full CPS and census samples. In interpreting differences between the CPS and census data, it is helpful to be aware of possible biases in the matched sample. For example, census data in the matched sample closely resemble the published census data in most categories but have a somewhat higher proportion classified as employed in agriculture.

Tables E and F present indices of gross and net shift for employment status and weeks worked in 1959 items for identical persons. The index of net shift represents the difference between the number found in

a particular category in the census and the number found in the CPS expressed as a percentage of the number in the CPS category. (The CPS has been used as

Table C.--COMPARISON OF PUBLISHED LABOR FORCE DISTRIBUTIONS FOR THE CENSUS AND APRIL CPS WITH THEIR RESPECTIVE "MATCH" STUDY DISTRIBUTIONS, BY SEX: 1960

(Civilian noninstitutional population)

Employment status and sex	1960 Census		April 1960 CPS	
	Published data (25-percent sample)	Census-CPS match (matched persons ¹)	Published data	Census-CPS match (matched persons)
BOTH SEXES				
Civilian labor force..	100.0	100.0	100.0	100.0
Employed.....	94.9	95.3	94.8	95.7
Agriculture.....	6.2	7.1	7.7	7.8
Nonagricultural industries.....	88.6	88.2	87.0	86.9
Unemployed.....	5.1	4.7	5.2	5.3
MALE				
Civilian labor force..	100.0	100.0	100.0	100.0
Employed.....	95.0	95.5	94.8	94.9
Agriculture.....	8.4	9.0	9.8	10.1
Nonagricultural industries.....	86.6	86.4	85.0	84.8
Unemployed.....	5.0	4.5	5.2	5.0
FEMALE				
Civilian labor force..	100.0	100.0	100.0	100.0
Employed.....	94.6	95.0	94.7	94.2
Agriculture.....	1.8	3.2	3.5	3.1
Nonagricultural industries.....	92.8	91.8	91.2	91.1
Unemployed.....	5.4	5.0	5.3	5.8

¹ Excludes cases with employment status not reported.

the standard for such measures.²⁾ The index of net shift may be considered as an estimate of the bias of the census data according to the CPS.

Table D.--COMPARISON OF PUBLISHED DISTRIBUTIONS OF WEEKS WORKED IN 1959 FOR THE CENSUS AND CPS WITH THEIR RESPECTIVE "MATCH" STUDY DISTRIBUTIONS, BY SEX: 1960

Work experience and sex	1960 Census		1960 CPS	
	Published data (25-percent sample)	Census-CPS match (matched persons ¹)	Published data	Census-CPS match (matched persons)
BOTH SEXES				
Total, 14 years old and over.....	100.0	100.0	100.0	100.0
Worked in 1959.....	61.3	61.4	64.0	64.2
Did not work in 1959.....	38.7	38.6	36.0	35.8
Worked in 1959.....	100.0	100.0	100.0	100.0
50 to 52 weeks.....	56.8	58.0	60.4	59.8
48 to 49 weeks.....	5.6	5.2	3.8	3.8
40 to 47 weeks.....	8.9	9.4	7.7	7.6
27 to 39 weeks.....	9.3	9.1	8.5	8.5
14 to 26 weeks.....	8.4	7.6	8.7	8.6
13 weeks or less.....	11.0	10.6	10.9	11.7
MALE				
Total, 14 years old and over.....	100.0	100.0	100.0	100.0
Worked in 1959.....	82.0	83.0	84.1	84.9
Did not work in 1959.....	18.0	17.0	15.9	15.1
Worked in 1959.....	100.0	100.0	100.0	100.0
50 to 52 weeks.....	64.9	66.6	68.8	67.9
48 to 49 weeks.....	5.8	5.4	3.9	3.9
40 to 47 weeks.....	8.5	9.0	7.3	7.3
27 to 39 weeks.....	7.7	7.4	7.2	7.3
14 to 26 weeks.....	6.0	5.3	6.1	6.2
13 weeks or less.....	6.9	6.2	6.6	7.4
FEMALE				
Total, 14 years old and over.....	100.0	100.0	100.0	100.0
Worked in 1959.....	41.7	41.3	45.6	45.5
Did not work in 1959.....	58.3	58.7	54.4	54.5
Worked in 1959.....	100.0	100.0	100.0	100.0
50 to 52 weeks.....	41.8	41.9	46.2	46.0
48 to 49 weeks.....	5.1	4.9	3.5	3.7
40 to 47 weeks.....	9.6	10.2	8.3	8.1
27 to 39 weeks.....	12.2	12.2	10.7	10.6
14 to 26 weeks.....	12.8	11.9	13.1	12.7
13 weeks or less.....	18.5	18.8	18.2	18.9

¹ Excludes cases not reporting on work experience in 1959 and weeks worked in 1959.

The index of gross shift represents the sum of the cases in a particular category in one enumeration (CPS or census) but not in the other expressed as a percentage of the total cases in that category according to the CPS. Thus, the index of gross shift covers the cases presumably improperly included or excluded from the category according to the CPS and is a measure of the combined effect of response variability in the

² See A. Ross Eckler and William N. Hurwitz, "Response Variance and Biases in Censuses and Surveys," Bureau of the Census, June 1957.

census and in the CPS. For comparison the table also shows similar measures for the same employment status categories from the 1950 match study. A general factor to consider in interpreting the differences between CPS and census data is the time period of enumeration. (See section "Comparability," paragraph on Current Population Survey.) Thus, some proportion of the differences is explained by real changes in status over a period of time.

Table E.--INDICES OF NET AND GROSS SHIFT FOR MATCHED PERSONS IN CENSUS-CPS "MATCH" STUDY, BY EMPLOYMENT STATUS AND SEX: 1960 AND 1950

(Civilian noninstitutional population)

Employment status and sex	Index of net shift		Index of gross shift	
	1960	1950	1960	1950
BOTH SEXES				
Civilian labor force.....	-2.6	-3.5	12.8	12.4
Employed.....	-2.4	-2.7	13.0	12.9
Agriculture.....	-12.7	-10.7	45.7	33.9
Nonagricultural industries.....	-1.5	-1.5	12.7	12.7
Unemployed.....	-6.5	-18.3	105.5	90.8
Not in labor force.....	+3.6	+4.7	17.4	16.6
MALE				
Civilian labor force.....	-2.6	-2.2	7.2	7.2
Employed.....	-2.6	-1.2	8.2	8.4
Agriculture.....	-13.6	-5.5	35.8	24.0
Nonagricultural industries.....	-1.2	-0.4	8.4	9.4
Unemployed.....	-4.4	-18.1	92.9	80.7
Not in labor force.....	+11.8	+11.5	31.2	37.5
FEMALE				
Civilian labor force.....	-2.7	-6.8	24.2	25.6
Employed.....	-2.2	-6.2	22.8	24.2
Agriculture.....	-7.3	-46.4	107.7	101.6
Nonagricultural industries.....	-2.0	-3.8	20.8	20.2
Unemployed.....	-10.3	-18.9	127.3	120.3
Not in labor force.....	+1.5	+3.2	13.7	11.9

NOTE.--Excludes cases with employment status not reported.

The indices of net shift show that, in general, the 1960 Census employment status data have lower net shifts or estimates of bias than those observed for 1950. This situation supports the findings stated in the section on "Comparability," which compared published census data with published CPS data. For the civilian labor force, the employed, the unemployed, and those not in the labor force, the indices of net shift in 1960 were lower than in 1950.

Most of the reductions in the indices of net shift occurred among females. In contrast to 1950, the net shifts for women in 1960 were no longer materially greater than those for men. Among the unemployed, the index of net shift fell from 18.3 percent to 6.6 percent, with substantial reductions for both males and females.

Indices of gross shift in 1960 for employment status are about as high as or higher than those in 1950 for most categories. This generalization applies to both males and females. A somewhat different conclusion, however, is reached on the basis of another index, as described below.

XIV

Table F presents indices of net and gross shift for weeks worked in 1959 for identical persons from the matched study. Largest relative differences occur in the "40 to 47 weeks" and "48 to 49 weeks" categories for both sexes. Both net and gross shifts for males were lower than those for females in most of the weeks worked categories. This differential is probably due to the predominance of part-time work among females, which results in a greater degree of response variance for this item for females than males.

Table F.--INDICES OF NET AND GROSS SHIFT FOR MATCHED PERSONS IN CENSUS-CPS "MATCH" STUDY, BY WEEKS WORKED IN 1959, COLOR, AND SEX: 1960

Weeks worked in 1959 and sex	Index of net shift			Index of gross shift		
	Total	White	Non-white	Total	White	Non-white
BOTH SEXES						
Worked in 1959.....	-4.4	-3.9	-9.7	12.7	11.8	21.1
50 to 52 weeks.....	-9.1	-9.0	-10.1	29.5	27.7	50.5
48 to 49 weeks.....	+24.0	+28.1	-9.3	177.6	180.3	155.6
40 to 47 weeks.....	+23.2	+19.2	+60.8	146.4	143.6	172.6
27 to 39 weeks.....	+4.3	+4.1	+5.9	116.0	111.9	144.7
14 to 26 weeks.....	-16.4	-13.3	-35.1	102.9	100.4	118.4
13 weeks or less.....	-7.3	-2.5	-34.4	96.7	96.6	97.1
Did not work in 1959...	+7.9	+6.8	+21.2	22.9	20.8	46.1
MALE						
Worked in 1959.....	-2.2	-1.7	-7.5	6.8	6.2	13.0
50 to 52 weeks.....	-5.7	-6.0	-1.4	24.8	23.4	42.6
48 to 49 weeks.....	+32.9	+38.4	-16.0	189.8	194.4	148.7
40 to 47 weeks.....	+21.4	+17.9	+64.5	151.1	148.6	182.5
27 to 39 weeks.....	+3.4	+1.7	+15.4	116.9	114.7	132.6
14 to 26 weeks.....	-15.3	-6.2	-56.7	107.4	106.5	111.8
13 weeks or less.....	-7.3	-0.7	-44.3	106.9	106.8	107.2
Did not work in 1959...	+12.5	+9.8	+33.3	38.9	36.5	58.0
FEMALE						
Worked in 1959.....	-8.3	-7.7	-12.6	22.9	21.8	30.4
50 to 52 weeks.....	-17.8	-16.9	-25.6	41.6	39.1	64.7
48 to 49 weeks.....	+8.9	+10.1	0.0	156.8	155.6	165.1
40 to 47 weeks.....	+26.1	+21.4	+57.5	139.1	135.5	162.9
27 to 39 weeks.....	+5.4	+7.0	-5.9	114.9	108.5	159.7
14 to 26 weeks.....	-17.3	-18.5	-6.8	99.3	95.9	127.1
13 weeks or less.....	-7.2	-3.6	-28.3	90.5	90.5	90.9
Did not work in 1959...	+6.8	+6.0	+16.7	18.9	17.1	41.6

NOTE.--Excludes cases not reporting on work experience in 1959 and weeks worked in 1959.

Table G presents indices of net and gross shifts for the labor force by age and sex for 1960. Inconsistent reporting appears most serious for the young and old among both males and females. However, job volatility for these groups is quite high; and therefore these rates may be reflecting true changes in job status to some extent. The tenuous nature of their job attachments also makes for great difficulty in consistent reporting.

The index of gross shift shown here has been the traditional measure used in evaluation studies. It was sometimes referred to as simply the gross difference rate, but this term is not used here to avoid confusion with another measure. Recent research in this field has led to the development of an improved index. This measure is called the "index of inconsistency" and is formulated in such a way as to make these estimates of inconsistency of response more comparable from one item to another and from one time to another.

Table G.--INDICES OF NET AND GROSS SHIFT FOR MATCHED PERSONS IN CENSUS-CPS "MATCH" STUDY, FOR THE CIVILIAN LABOR FORCE, BY AGE, COLOR, AND SEX: 1960

(Civilian noninstitutional population)

Age and sex	Index of net shift			Index of gross shift		
	Total	White	Non-white	Total	White	Non-white
Total, 14 and over.....	-2.7	-2.2	-7.2	12.9	11.8	22.3
14 to 17 years.....	-14.2	-12.1	-33.5	59.7	56.3	92.7
18 and 19 years.....	-5.1	-4.2	-12.6	21.8	18.6	50.2
20 to 24 years.....	-2.7	-1.9	-9.1	11.8	10.5	21.2
25 to 34 years.....	-0.3	-0.1	-2.7	8.0	7.2	14.5
35 to 44 years.....	-0.6	+0.2	-7.3	7.5	6.5	16.4
45 to 54 years.....	-2.0	-1.7	-1.5	8.9	8.2	16.3
55 to 64 years.....	-5.8	-5.4	-10.0	12.9	12.1	22.5
65 years and over.....	-6.9	-5.7	-20.5	34.8	33.7	47.5
Male, 14 and over....						
14 to 17 years.....	-16.5	-14.3	-36.4	48.9	45.1	83.3
18 and 19 years.....	-6.4	-3.7	-23.3	18.3	15.4	35.8
20 to 24 years.....	-2.5	-1.8	-7.9	7.5	6.9	11.2
25 to 34 years.....	-1.0	-0.6	-5.4	2.5	2.1	6.5
35 to 44 years.....	-1.0	-0.7	-4.0	2.2	1.8	5.9
45 to 54 years.....	-1.0	-0.8	-2.8	3.0	3.0	2.8
55 to 64 years.....	-3.5	-3.5	-3.3	7.8	7.6	10.7
65 years and over.....	-9.1	-8.8	-13.5	28.9	28.2	38.1
Female, 14 and over..						
14 to 17 years.....	-9.4	-7.7	-26.8	81.7	78.6	114.0
18 and 19 years.....	-3.4	-4.8	+22.9	25.9	22.1	97.9
20 to 24 years.....	-3.0	-2.0	-10.9	18.5	16.0	37.1
25 to 34 years.....	+1.3	+1.3	+1.4	21.5	20.6	26.3
35 to 44 years.....	+0.3	+2.2	-11.6	19.0	17.2	30.3
45 to 54 years.....	-2.9	-3.3	+0.4	19.7	17.9	35.2
55 to 64 years.....	-10.7	-9.6	-20.4	23.9	22.0	40.9
65 years and over.....	-1.5	+1.8	-32.6	48.9	47.3	64.0

NOTE.--Excludes cases with employment status not reported.

If the entries off the main diagonal in a 2 x 2 table, i.e., the cases in a particular category in one enumeration (CPS or census) but not in the other, are identified as d, the sum of all entries in the table as n (the universe), the proportion having the

Table H.--INDEX OF INCONSISTENCY FOR MATCHED PERSONS IN CENSUS-CPS "MATCH" STUDY, BY EMPLOYMENT STATUS AND SEX: 1960 AND 1950

(Minus sign (-) indicates greater unreliability in 1960 Census than in 1950 Census; plus sign (+) indicates greater unreliability in 1950 Census)

Employment status and sex	Index of inconsistency (I)		Difference
	1960	1950	
MALE			
Civilian labor force.....	.18	.21	+0.03
Employed.....	.17	.20	+0.03
Agriculture.....	.22	.14	-0.08
Nonagricultural industries..	.13	.14	+0.01
Unemployed.....	.50	.51	+0.01
Not in labor force.....	.18	.21	+0.03
FEMALE			
Civilian labor force.....	.19	.19	...
Employed.....	.17	.18	...
Agriculture.....	.59	.96	+0.36
Nonagricultural industries..	.16	.14	-0.01
Unemployed.....	.72	.75	+0.03
Not in labor force.....	.18	.19	...

characteristic in the census as p , then the index of inconsistency can be defined as

$$I = \frac{d}{2np(1-p)}$$

The $p(1-p)$ in the denominator of I is taken from the census because most of the response variability arises in the census.

Illustration: Table H presents the index of inconsistency for the labor force items from the 1950 and 1960 Censuses and indicates differences in the respective indexes of inconsistency, most of which are about the same although they are slightly favorable to the 1960 Census.

CONTERMINOUS UNITED STATES

The term "United States" refers to the 50 States and the District of Columbia. The term "conterminous United States" refers to the United States exclusive of Alaska and Hawaii.

URBAN-RURAL RESIDENCE

In general, the urban population comprises all persons living in urbanized areas and in places of 2,500 inhabitants or more outside urbanized areas. More specifically, according to the definition adopted for use in the 1960 Census, the urban population comprises all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages, and towns (except towns in New England, New York, and Wisconsin); (b) the densely settled urban fringe, whether incorporated or unincorporated, of urbanized areas; (c) towns in New England and townships in New Jersey and Pennsylvania which contain no incorporated municipalities as subdivisions and have either 25,000 inhabitants or more or a population of 2,500 to 25,000 and a density of 1,500 persons or more per square mile; (d) counties in States other than the New England States, New Jersey, and Pennsylvania that have no incorporated municipalities within their boundaries and have a density of 1,500 persons or more per square mile; and (e) unincorporated places of 2,500 inhabitants or more. The population not classified as urban constitutes the rural population.

FARM-NONFARM RESIDENCE

The rural population is subdivided into the rural-farm population, which comprises all rural residents living on farms, and the rural-nonfarm population, which comprises the remaining rural population. In the 1960 Census, the farm population consists of persons living in rural territory on places of 10 or more acres from which sales of farm products amounted to \$50 or more in 1959 or on places of less than 10 acres from which sales of farm products amounted to \$250 or more in 1959. All persons living in group quarters are classified as nonfarm except the relatively few living in workers' quarters (including quarters for migratory agricultural workers) that are located on a farm or ranch.

URBANIZED AREAS

An urbanized area contains at least one city of 50,000 inhabitants or more in 1960 and the surrounding closely settled incorporated places and unincorporated areas that meet certain criteria relating to population density or land use. An urbanized area may be thought of as divided into the central city, or cities, and the remainder of the area, or the urban fringe. All persons residing in an urbanized area are included in the urban population.

AGE

The age classification is based on the age of the person in completed years as of April 1, 1960, as determined from the reply to a question on month and year of birth.

RACE AND COLOR

The three major race categories distinguished in this report are white, Negro, and other races. Among persons of "other races" are American Indians, Japanese, Chinese, Filipinos, Koreans, Hawaiians, Asian Indians, Eskimos, Aleuts, and Malaysians. Negroes and persons of "other races" taken together constitute "nonwhite" persons. Persons of Mexican birth or descent who are not definitely of Indian or other nonwhite race are classified as white. In addition to persons of Negro and of mixed Negro and white descent, the category "Negro" includes persons of mixed Indian and Negro descent unless the Indian ancestry very definitely predominates or unless the person is regarded as an Indian in the community.

NATIVITY AND PARENTAGE

Native.--This category comprises persons born in the United States, the Commonwealth of Puerto Rico, or a possession of the United States; persons born in a foreign country or at sea who have at least one native American parent; and persons whose place of birth was not reported and whose census report contained no contradictory information, such as an entry of a language spoken prior to coming to the United States.

Foreign born.--This category includes all persons not classified as native.

Native of native parentage.--This category consists of native persons both of whose parents are also natives of the United States.

Native of foreign or mixed parentage.--This category includes native persons one or both of whose parents are foreign born.

RESIDENCE IN 1955

Residence on April 1, 1955, is the usual place of residence five years prior to enumeration. The category "same house as in 1960" includes all persons 5 years old and over who were reported as living in the

same house on the date of enumeration in 1960 and five years prior to enumeration. Included in the group are persons who had never moved during the five years as well as those who had moved but by 1960 had returned to their 1955 residence. The category "different house in the U.S." includes persons who, on April 1, 1955, lived in the United States in a different house from the one they occupied on April 1, 1960. This category was subdivided into three groups according to their 1955 residence, viz., "different house, same county," "different county, same State," and "different State." The category "different State" was further divided into "contiguous State" and "noncontiguous State." States are classified as contiguous if their boundaries touch at any point. The category "abroad" includes those with residence in a foreign country or an outlying area of the United States in 1955. (In the coding of this item, persons who lived in Alaska or Hawaii in 1955 but in other States in 1960 were classified as living in a different State in 1955.) Persons 5 years old and over who had indicated they had moved into their present residence after April 1, 1955, but for whom sufficiently complete and consistent information regarding residence on April 1, 1955, was not collected are included in the group "moved, place of residence in 1955 not reported."

SCHOOL ENROLLMENT

School enrollment is shown for persons 5 to 34 years old. Persons were included as enrolled in school if they were reported as attending or enrolled in a "regular" school or college at any time between February 1, 1960, and the time of enumeration. Regular schooling is that which may advance a person toward an elementary school certificate or high school diploma, or a college, university, or professional degree. Schooling that was not obtained in a regular school and schooling from a tutor or through correspondence courses were counted only if the credits obtained were regarded as transferable to a school in the regular school system. Schooling which is generally regarded as not regular includes that which is given in nursery schools, in specialized vocational, trade, or business schools; in on-the-job training; and through correspondence courses.

YEARS OF SCHOOL COMPLETED

The data on years of school completed were derived from the answers to the two questions: (a) "What is the highest grade (or year) of regular school he has ever attended?" and (b) "Did he finish this grade (or year)?" Enumerators were instructed to obtain the approximate equivalent grade in the American school system for persons whose highest grade of attendance was in a foreign school system, whose highest level of attendance was in an ungraded school, whose highest level of schooling was measured by "readers," or whose training by a tutor was regarded as qualifying under the "regular" school definition. Persons were to answer "No" to the second question if they were attending school, had completed only part of a grade before they dropped out, or failed to pass the last grade attended.

The number in each category of highest grade of school completed represents the combination of (a) persons who reported that they had attended the indicated grade and finished it, and (b) those who had attended the next higher grade but had not finished it.

Elementary school, as defined here, includes grades 1 to 8, and high school includes grades 9 to 12. College includes junior or community colleges, regular 4-year colleges, and graduate or professional schools.

MARITAL STATUS

This classification refers to the marital status of the person at the time of enumeration. Persons classified as "married" comprise, therefore, both those who have been married only once and those who remarried after having been widowed or divorced. Persons reported as separated (either legally separated or otherwise absent from the spouse because of marital discord) are classified as a subcategory of married persons. The enumerators were instructed to report persons in common-law marriages as married and persons whose only marriage had been annulled as single. Persons "ever married" are those in the categories married (including separated), widowed, and divorced.

The number of married men may be different from the number of married women for an area because of the absence of husbands or wives from the country, because the husband and wife have different places of residence, because of the methods used to inflate the sample data, or for other reasons.

A married person with "spouse present" is a man or woman whose spouse was enumerated as a member of the same household even though he or she may have been temporarily absent on business or vacation, visiting, in a hospital, etc., at the time of enumeration. Persons classified as "married, spouse absent" include both those who are separated because of marital discord and those whose spouse is absent for other reasons, such as service in the Armed Forces or employment at a considerable distance from home.

HOUSEHOLD, GROUP QUARTERS, AND RELATIONSHIP TO HEAD OF HOUSEHOLD

A household consists of all the persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is either (1) direct access from the outside or through a common hall or (2) a kitchen or cooking equipment for the exclusive use of the occupants.

All persons who are not members of households are regarded as living in group quarters. Group quarters are living arrangements for institutional inmates or for other groups containing five or more persons unrelated to the person in charge. Most of the persons in group quarters live in rooming houses, college dormitories, military barracks, or institutions. Inmates of institutions are persons for whom care or custody is provided in such places as homes for delinquent

or dependent children; homes and schools for the mentally or physically handicapped; places providing specialized medical care for persons with mental disorders, tuberculosis, or other chronic disease; nursing and domiciliary homes for the aged and dependent; prisons; and jails.

For persons in households, several categories of relationship to head of household are recognized in this report:

1. The head of the household is the member reported as the head by the household respondent. However, if a married woman living with her husband is reported as the head, her husband is classified as the head for the purpose of census tabulations.
2. The wife of a head of a household is a woman married to and living with a household head. This category includes women in common-law marriages as well as women in formal marriages.
3. An other relative of the head is a person related to the head of the household by blood, marriage, or adoption, but not included specifically in another category.
4. A nonrelative of the head is any member of the household who is not related to the household head. This category includes lodgers (roomers and partners, relatives of such persons, and foster children) and resident employees (maids, hired farm hands, etc.).

FAMILY AND OWN CHILD

A family consists of two or more persons in the same household who are related to each other by blood, marriage, or adoption; all persons living in one household who are related to each other are regarded as one family. In a primary family, the head of the family is the head of the household. Other families are secondary families. A "husband-wife" family is a family in which the head and his wife are enumerated as members of the same household.

An own child is defined here as a single (never married) son, daughter, stepchild, or adopted child of the person in question. Only those children who are present in the home are included in the count of women by number of own children.

CHILDREN EVER BORN

The number of children ever born includes children born to the woman before her present marriage, children no longer living, and children away from home, as well as children borne by the woman who were still living in the home. Although the question on children ever born was asked only of women reported as having been married, the data are not limited to legitimate births.

INCOME IN 1959

Information on income for the calendar year 1959 was requested from all persons 14 years old and over in the sample. "Total income" is the sum of amounts reported separately for wage or salary income, self-employment income, and other income. Wage or salary income is defined as the total money earnings received for work performed as an employee. It represents the amount received before deductions for personal income taxes, Social Security, bond purchases, union dues, etc. Self-employment income is defined as net money income (gross receipts minus operating expenses) from a business, farm, or professional enterprise in which the person was engaged on his own account. Other income includes money income received from such sources as net rents, interest, dividends, Social Security benefits, pensions, veterans' payments, unemployment insurance, and public assistance or other governmental payments, and periodic receipts from insurance policies or annuities. Not included as income are money received from the sale of property (unless the recipient was engaged in the business of selling such property), the value of income "in kind," withdrawals of bank deposits, money borrowed, tax refunds, and gifts and lump-sum inheritances or insurance payments.

In the statistics on family income, the combined incomes of all members of each family are treated as a single amount. Although the time period covered by the income statistics is the calendar year 1959, the composition of families refers to the time of enumeration. For most of the families, however, the income reported was received by persons who were members of the family throughout 1959.

COLLECTION AND PROCESSING OF DATA

COLLECTION OF DATA

Several enumeration forms were used to collect the information for the 1960 Census of Population. A few days before the census date, the Post Office Department delivered an Advance Census Report (ACR) to households on postal delivery routes. This form contained questions which were to be answered for every person and every housing unit. Household members were requested to fill the ACR and have it ready for the enumerator. The census enumerator recorded this information on a form specially designed for electronic data processing by FOSDIC (Film Optical Sensing Device for Input to Computer). The information was either transcribed from the ACR to the complete-count FOSDIC schedule or entered on this schedule during direct interview.

In the densely populated areas, the enumerator left a Household Questionnaire to be completed by each household (or person) in the sample and mailed to the local census office. The population and housing information was transcribed from the Household Questionnaire to a sample FOSDIC schedule. When the Household Questionnaire was not returned or was returned without having been completed, the enumerator collected the missing information by personal visit or by telephone and entered it directly on the sample FOSDIC schedule. In the remaining areas, when the enumerator picked up the ACR, he obtained all the information by direct interview and recorded it directly on the sample FOSDIC schedule.

Soon after the enumerator started work, his schedules were examined in a formal field review. This operation was designed to assure at an early stage of

XVIII

the work that the enumerator was performing his duties properly and had corrected any errors he had made.

More detailed descriptions of the 1960 Census procedures in the collection and processing of the data are given in reports entitled United States Censuses of Population and Housing, 1960: Principal Data Collection Forms and Procedures, 1961; and Processing the Data, 1962, U.S. Government Printing Office, Washington, D.C., 20402.

MANUAL EDITING AND CODING

After the FOSDIC forms had been checked for completeness in the field, they were sent to a central processing office for manual editing and coding and for microfilming. Except where some special problems arose, there was no manual coding of the FOSDIC forms for complete-count data. On the sample forms, the manual operation was limited to those items where coding required the reading of written entries and therefore could not be done effectively by machine. The coding clerks converted the written entries to codes by marking the appropriate circles on the FOSDIC schedules and at the same time were able to correct obviously wrong entries and sometimes supply missing information.

ELECTRONIC PROCESSING

After the enumerators and coders recorded the information by marking the appropriate circles, the schedules were microfilmed. The information on the microfilm was then read by FOSDIC, which converted the markings to signals on magnetic tape. The tape, in turn, was processed in an electronic computer, which was used extensively to edit and tabulate the data and to produce the publication tables.

EDITING

For a majority of items, nonresponses and inconsistencies were eliminated by using the computer to assign entries and correct inconsistencies. In general, few assignments or corrections were required, although the amount varied by subject and by enumerator.

The assignment of an acceptable entry by machine was based on related information reported for the person or on information reported for a similar person in the immediate neighborhood. For example, in the assignment of age in the complete-count tabulations, the computer stored reported ages of persons by sex, color or race, household relationship, and marital status; each stored age was retained in the computer only until a succeeding person having the same characteristics and having age reported was processed through the computer; this stored age was assigned to the next person whose age was unknown and who otherwise had the same characteristics. This procedure insured that the distribution of ages assigned by the computer for persons of a given set of characteristics would correspond closely to the reported age distribution of such persons as obtained in the current census.

For about 1,150 members of the Armed Forces in Maine, most of whom were under 30 years of age and single, the complete-count items were not transcribed to the State II schedules. In the editing of the data for the reports based on sample data, the age and marital status of these persons were obtained by allocation. The age assigned by the computer program was 80, and the marital status assigned was widowed. This error was found too late for a correction to be made. As a result, there is an overstatement of the number of widowed males 80 years of age and an understatement of single males 15 to 29 years of age for members of the Armed Forces.

The extent of the allocations for nonresponse or for inconsistency is shown for the United States and for States, places of 10,000 inhabitants or more, and other areas in appendix tables in chapters B, C, and D of 1960 Census of Population, Volume I, Characteristics of the Population.

Tables A-1 and A-2 of this report present data on the number of persons allocated for nonresponse on employment status questions, by various demographic, social, and economic characteristics. Data are based on final weighted sample figures after all replications.

When the proportion of sample households in a "work unit" (group of enumeration districts) with little or no sample information exceeded certain tolerance limits, households of the same size in the same general area that did have the sample information were replicated to replace the ones that were canceled. For persons in replicated households, the values shown represent those of the persons in the substituted households.

The term "nonresponse" denotes a lack of sufficient information for determination of the item, or the absence of an entry or entries on the schedule because of never being made, poor marking, or otherwise not being readable by the mechanical equipment, or because one entry was inconsistent with another. The term "allocation" means that a characteristic was assigned during tabulation because of nonresponse. Age, color, sex, and residence refer to classifications after allocations were made.

Specific tolerances were established for the number of computer allocations acceptable for a given area. If the number was beyond tolerance, the data were rejected and the original schedules were re-examined to determine the source of the error. Correction and reprocessing were undertaken as necessary and feasible.

ACCURACY OF THE DATA

Human and mechanical errors occur in any mass statistical operation such as a decennial census. Such errors include failure to obtain required information from respondents, obtaining inconsistent information, recording information in the wrong place or incorrectly, or otherwise producing inconsistencies between entries on interrelated items on the field documents. Sampling biases occur because some of the enumerators fail to follow the sampling instructions. Clerical coding and editing errors occur, as well as errors in the electronic processing operation.

Careful efforts are made in every census to keep the errors in each step at an acceptably low level. Review of the enumerator's work, verification of manual coding and editing, checking of tabulated figures, and ratio estimation of sample data to control totals from the complete count reduce the effects of the errors in the census data.

Very minor differences between tables in this report or between corresponding data in this report and chapters C and D of Volume I, Characteristics of the Population, result from imperfections in the electronic equipment. No attempt has been made to reconcile these minor discrepancies.

Some innovations in the 1960 Censuses reduced errors in processing and others produced a more consistent quality of editing. The elimination of the

card-punching operation removed one important source of error. The extensive use of electronic equipment insured a more uniform and more flexible edit than could have been accomplished manually or by less intricate mechanical equipment. It is believed that the use of electronic equipment in the 1960 Censuses has improved the quality of the editing compared with that of earlier censuses but, at the same time, it has introduced an element of difference in the statistics.

A group of reports designated "Evaluation and Research Series" will deal with the methods, results, and interpretation of a group of evaluation and research studies of the 1960 Censuses of Population and Housing. A report entitled The Post-Enumeration Survey: 1950, Technical Paper No. 4, presents evaluative material on the 1950 Census.

SAMPLE DESIGN AND SAMPLING VARIABILITY

SAMPLE DESIGN

For persons in housing units at the time of the 1960 Census, the sampling unit was the housing unit and all its occupants; for persons in group quarters, it was the person. On the first visit to an address, the enumerator assigned a sample key letter (A, B, C, or D) to each housing unit sequentially in the order in which he first visited the units, whether or not he completed an interview. Each enumerator was given a random key letter to start his assignment, and the order of canvassing was indicated in advance, although these instructions allowed some latitude in the order of visiting addresses. Each housing unit to which the key letter "A" was assigned was designated as a sample unit, and all persons enumerated in the unit were in-

cluded in the sample. In every group quarters, the sample consisted of every fourth person in the order listed. The 1960 statistics in this report are based on a subsample of one-fifth of the original 25-percent sample schedules. The subsample was selected on the computer, using a stratified systematic sample design. The strata were made up as follows: For persons in regular housing units there were 36 strata, i.e., 9 household size groups by 2 tenure groups by 2 color groups; for persons in group quarters, there were 2 strata, i.e., the 2 color groups.

Although the sampling procedure did not automatically insure an exact 5-percent sample of persons, the sample design was unbiased if carried through according to instructions. Generally, for large areas, the deviation from the estimated sample size was found to

Table J.--COMPARISON OF 25-PERCENT AND 5-PERCENT SAMPLE DATA ON EMPLOYMENT STATUS, BY SEX, FOR THE UNITED STATES: 1960

Employment status and sex	25-percent sample	5-percent sample	Percent distribution		Ratio of 25-percent sample number to 5-percent sample number
			25-percent sample	5-percent sample	
Total, 14 years old and over.....	126,276,548	126,266,620	100.0	100.0	1.000
Labor force.....	69,877,481	69,905,256	55.3	55.4	1.000
Armed Forces.....	1,733,402	1,745,148	1.4	1.4	0.993
Civilian labor force.....	68,144,079	68,160,108	54.0	54.0	1.000
Employed.....	64,639,252	64,646,563	51.2	51.2	1.000
Unemployed.....	3,504,827	3,513,545	2.8	2.8	0.998
Not in labor force.....	56,399,067	56,361,364	44.7	44.6	1.001
Male, 14 years old and over.....	61,315,294	61,353,999	100.0	100.0	0.999
Labor force.....	47,467,721	47,506,690	77.4	77.4	0.999
Armed Forces.....	1,705,052	1,715,924	2.9	2.8	0.994
Civilian labor force.....	45,762,669	45,790,766	74.6	74.6	0.999
Employed.....	43,466,951	43,490,888	70.9	70.9	0.999
Unemployed.....	2,295,718	2,299,878	3.7	3.7	0.998
Not in labor force.....	13,847,573	13,847,309	22.6	22.6	1.000
Female, 14 years old and over.....	64,961,254	64,912,621	100.0	100.0	1.001
Labor force.....	22,409,760	22,398,566	34.5	34.5	1.000
Armed Forces.....	28,350	29,224	..	..	0.970
Civilian labor force.....	22,381,410	22,369,342	34.5	34.5	1.001
Employed.....	21,172,301	21,155,675	32.6	32.6	1.001
Unemployed.....	1,209,109	1,213,667	1.9	1.9	0.996
Not in labor force.....	42,551,494	42,514,055	65.5	65.5	1.001

be quite small. Biases may have arisen, however, when the enumerator failed to follow his listing and sampling instructions exactly.

Table J compares the distribution by employment status, as presented in this report, based upon the

5-percent sample with the corresponding distribution based upon the 25-percent sample. Table K presents a similar comparison for distributions by weeks worked in 1959. Differences shown in each of these tables reflect primarily sampling error.

Table K.--COMPARISON OF 25-PERCENT AND 5-PERCENT SAMPLE DATA ON WEEKS WORKED IN 1959, BY SEX, FOR THE UNITED STATES: 1960

Weeks worked in 1959 and sex	25-percent sample	5-percent sample	Percent distribution		Ratio of 25-percent sample number to 5-percent sample number
			25-percent sample	5-percent sample	
Total, 14 years old and over.....	126,276,556	126,266,620	100.0	100.0	1.000
Worked in 1959.....	77,368,085	77,388,902	61.3	61.3	1.000
50 to 52 weeks.....	43,972,721	44,018,949	34.8	34.9	0.999
48 to 49 weeks.....	4,329,913	4,332,436	3.4	3.4	0.999
40 to 47 weeks.....	6,899,064	6,915,876	5.5	5.5	0.998
27 to 39 weeks.....	7,189,760	7,169,828	5.7	5.7	1.003
14 to 26 weeks.....	6,498,414	6,478,103	5.1	5.1	1.003
13 weeks or less.....	8,478,213	8,473,710	6.7	6.7	1.001
Did not work in 1959.....	48,908,471	48,877,718	38.7	38.7	1.001
Male, 14 years old and over.....	61,315,362	61,353,999	100.0	100.0	0.999
Worked in 1959.....	50,301,864	50,339,915	82.0	82.0	0.999
50 to 52 weeks.....	32,666,364	32,723,510	53.3	53.3	0.998
48 to 49 weeks.....	2,941,460	2,943,619	4.8	4.8	0.999
40 to 47 weeks.....	4,297,265	4,306,101	7.0	7.0	0.998
27 to 39 weeks.....	3,890,819	3,877,637	6.3	6.3	1.003
14 to 26 weeks.....	3,034,008	3,019,240	4.9	4.9	1.005
13 weeks or less.....	3,471,948	3,469,808	5.7	5.7	1.001
Did not work in 1959.....	11,013,498	11,014,084	18.0	18.0	1.000
Female, 14 years old and over.....	64,961,194	64,912,621	100.0	100.0	1.001
Worked in 1959.....	27,066,221	27,048,987	41.7	41.7	1.001
50 to 52 weeks.....	11,306,357	11,295,439	17.4	17.4	1.001
48 to 49 weeks.....	1,388,453	1,388,817	2.1	2.1	1.000
40 to 47 weeks.....	2,601,799	2,609,775	4.0	4.0	0.997
27 to 39 weeks.....	3,298,941	3,292,191	5.1	5.1	1.002
14 to 26 weeks.....	3,464,406	3,458,863	5.3	5.3	1.002
13 weeks or less.....	5,006,265	5,003,902	7.8	7.7	1.000
Did not work in 1959.....	37,894,973	37,863,634	58.3	58.3	1.001

RATIO ESTIMATION

The statistics based on the 5-percent sample of the 1960 Census returns are estimates that have been developed through the use of a ratio estimation procedure. This procedure was carried out for each of the following 44 groups of persons in each of the sample weighting areas:³

Group	Sex, color, and age	Relationship and tenure
Male white:		
1	Under 5	
2	5 to 13	
3	14 to 24	Head of owner household
4	14 to 24	Head of renter household
5	14 to 24	Not head of household
6-8	25 to 44	Same groups as age group 14 to 24
9-11	45 and over	Same groups as age group 14 to 24
Male nonwhite:		
12-22	Same groups as male white	
Female white:		
23-33	Same groups as male white	
Female nonwhite:		
34-44	Same groups as male white	

The sample weighting areas were defined as those areas within a State consisting of central cities of urbanized areas, the remaining portion of urbanized areas not in central cities, urban places not in urbanized areas, or rural areas.⁴

For each of the 44 groups, the ratio of the complete count to the sample count of the population in the group was determined. Each specific sample person in the group was assigned an integral weight so that the sum of the weights would equal the complete count for the group. For example, if the ratio for a group

³ Estimates of characteristics from the sample for a given area are produced using the formula:

$$x' = \sum_{i=1}^{44} \frac{x_i}{y_i} Y_i$$

where x' is the estimate of the characteristic for the area obtained through the use of the ratio estimation procedure, x_i is the count of sample persons with the characteristic for the area in one (i) of the 44 groups, y_i is the count of all sample persons for the area in the same one of the 44 groups, and Y_i is the count of persons in the complete count for the area in the same one of the 44 groups.

⁴ For the definitions of urbanized area and urban place, see 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary.

was 20.1, one-tenth of the persons (selected at random) within the group were assigned a weight of 21, and the remaining nine-tenths a weight of 20. The use of such a combination of integral weights rather than a single fractional weight was adopted to avoid the complications involved in rounding in the final tables. In order to increase the reliability, where there were fewer than 275 persons in the complete count in a group, or where the resulting weight was over 80, groups were combined in a specific order to satisfy both of these two conditions.

These ratio estimates reduce the component of sampling error arising from the variation in the size of household and achieve some of the gains of stratification in the selection of the sample, with the strata being the groups for which separate ratio estimates are computed. The net effect is a reduction in the sampling error and bias of most statistics below what would be obtained by weighting the results of the 5-percent sample by a uniform factor of twenty. The reduction in sampling error will be trivial for some items and substantial for others. A byproduct of this estimation procedure, in general, is that estimates for this sample are generally consistent with the complete count with respect to the total population and for the subdivisions used as groups in the estimation procedure. A more complete discussion of the technical aspects of these ratio estimates will be presented in another report.

SAMPLING VARIABILITY

The figures from the 5-percent sample tabulations are subject to sampling variability, which can be estimated roughly from the standard errors shown in tables L and M. Somewhat more precise estimates of sampling error may be obtained by using the factors shown in table N in conjunction with table M for percentages and table L for absolute numbers. These tables⁵ do not reflect the effect of response variance, processing variance, or bias arising in the collection, processing, and estimation steps. Estimates of the magnitude of some of these factors in the total error are being evaluated and will be published at a later date. The chances are about two out of three that the difference due to sampling variability between an estimate and the figure that would have been obtained from a complete count of the population is less than the standard error. The chances are about 19 out of 20 that the difference is less than twice the standard error and about 99 out of 100 that it is less than 2½ times the standard error. The amount by which the estimated standard error must be multiplied to obtain other odds deemed more appropriate can be found in most statistical textbooks.

Table L shows rough standard errors of estimated numbers up to 50,000. The relative sampling errors of larger estimated numbers are somewhat smaller than for 50,000. For estimated numbers above 50,000, however, the nonsampling errors, e.g., response errors and

⁵ The estimates of sampling variability are based on calculations from a preliminary sample of the 1960 Census results. Further estimates are being calculated and will be made available at a later date.

processing errors, may have an increasingly important effect on the total error. Table M shows rough standard errors of data in the form of percentages. Linear interpolation in tables L and M will provide approximate results that are satisfactory for most purposes.

Table L.--ROUGH APPROXIMATION TO STANDARD ERROR
OF ESTIMATED NUMBER

(Range of 2 chances out of 3)

Estimated number	Standard error	Estimated number	Standard error
50.....	30	5,000.....	280
100.....	40	10,000.....	390
250.....	60	15,000.....	480
500.....	90	25,000.....	620
1,000.....	120	50,000.....	880
2,500.....	200		

Table M.--ROUGH APPROXIMATION TO STANDARD ERROR
OF ESTIMATED PERCENTAGE

(Range of 2 chances out of 3)

Estimated percentage	Base of percentage					
	500	1,000	2,500	10,000	25,000	100,000
2 or 98.....	3.3	2.3	1.3	0.8	0.3	0.3
5 or 95.....	5.0	4.0	2.3	1.0	0.5	0.3
10 or 90.....	7.0	5.0	3.0	1.5	0.8	0.5
25 or 75.....	10.0	6.8	3.8	1.8	1.0	0.5
50.....	11.0	7.8	4.0	2.0	1.3	0.8

For a discussion of the sampling variability of medians and means and of the method for obtaining standard errors of differences between two estimates, see 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary.

Table N provides a factor by which the standard errors shown in table L should be multiplied to adjust for the combined effect of the sample design and the estimation procedure.

Table N.--FACTOR TO BE APPLIED TO STANDARD ERRORS

Characteristic ¹	Factor
Nativity and parentage.....	1.4
Household relationship.....	0.8
School enrollment, by age.....	0.8
Residence in 1955.....	1.8

¹ All characteristics not appearing in this table have a factor of 1.0 to be applied to the standard errors.

To estimate a somewhat more precise standard error for a given characteristic, locate in table N the factor applying to the characteristic. Multiply the standard error given for the size of the estimate as shown in table L by this factor from table N. The result of this multiplication is the approximate standard error. Similarly, to obtain a somewhat more precise estimate of the standard error of a percentage, multiply the standard error as shown in table M by the factor from table N.

Illustration: Table 3 shows that there are 33,307 unemployed males of foreign or mixed parentage in the age group 30-34 years. Table N shows that for data on parentage the appropriate standard error in table L should be multiplied by a factor of 1.4. Table L shows that a rough approximation to the standard error for an estimate of 33,307 is 706. The factor of 1.4

times 706 is 988, which means that the chances are approximately 2 out of 3 that the results of a complete census will not differ by more than 988 from this estimated 33,307. It also follows that there is only about 1 chance in 100 that a complete census result would differ by as much as 2,470, that is, by about $2\frac{1}{2}$ times the number estimated from tables L and N.