

## VOLUME II. SUBJECT REPORTS

### Series PC(2) Final Reports

- 1A Nativity and Parentage
- 1B Persons of Spanish Surname
- 1C Nonwhite Population by Race
- 1D Puerto Ricans in the United States
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# U.S. CENSUS OF POPULATION: 1960

Final Report PC(2)-3C

## SUBJECT REPORTS

# Women by Children Under 5 Years Old

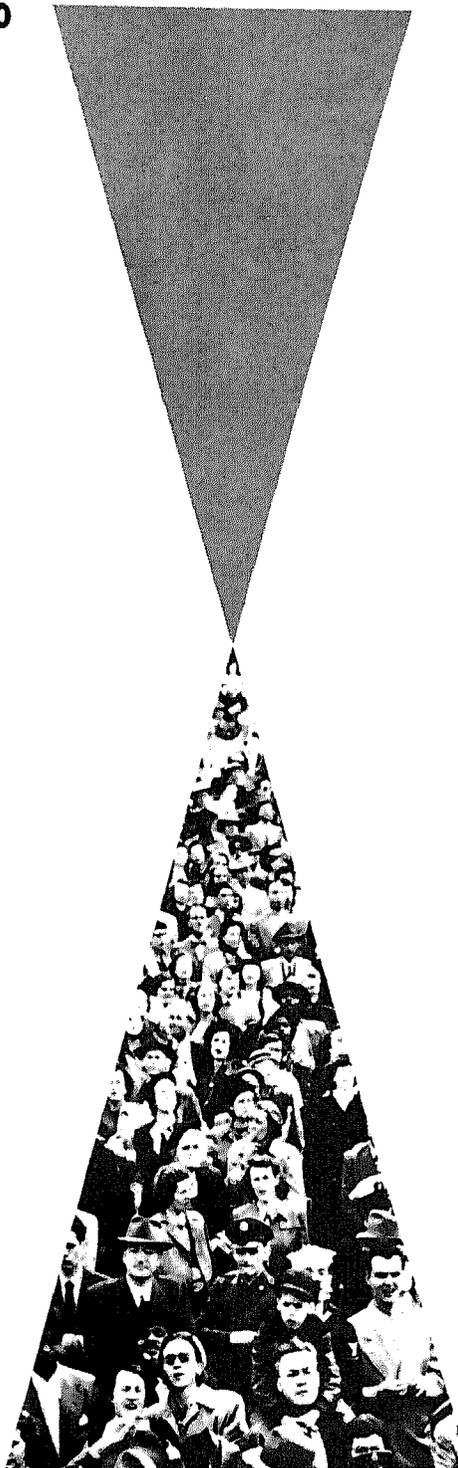
*Current Fertility by Social and  
Economic Characteristics of Women  
and Their Families*

*Prepared under the supervision of  
HERMAN P. MILLER, Chief  
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Issued December 1968

Library of Congress Card Number: A61-9570

### SUGGESTED CITATION

U.S. Bureau of the Census. *U.S. Census of Population: 1960.  
Subject Reports. Women by Children Under 5 Years Old.*  
Final Report PC(2)-3C.  
U.S. Government Printing Office, Washington, D.C., 1968.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 or any of the  
Field Offices of the Department of Commerce — Price \$1.50

## PREFACE

This report presents statistics from the 1960 Census of Population on the fertility of women in the United States as measured by the number of their children under 5 years old, classified by demographic, social, economic, and housing characteristics of the women and their families. The statistics provide a basis for the study of the contributions of different groups to population growth. Legal provision for this census, which was conducted as of April 1, 1960, was made in the Act of Congress of August 31, 1954 (amended August 1957), which codified Title 13 United States Code.

The major portion of the information compiled from the 1960 Census of Population appears in Volume I, Characteristics of the Population, which contains data for the United States, States and counties and their urban and rural parts, cities, minor civil divisions, etc. The present report is part of Volume II, Subject Reports, and is designated as PC(2)-3C. A list of the Volume II Subject Reports appears on the inside of the front cover. A summary description of all the final reports of the 1960 Population Census appears on page IV.

## ACKNOWLEDGMENTS

Wilson H. Grabill, Chief, and Maria Davidson of the Fertility Statistics Branch planned this report and developed its content under the general direction of Paul C. Glick, Assistant Chief (Social Statistics Programs), Population Division. Henry S. Shryock, Assistant Chief (Program development), and David L. Kaplan, Assistant Chief (Methods Development) made important contributions in the planning and development of the entire series of Subject Reports. For the present report, Elizabeth A. Larmon assisted in the preparation of the introductory text, and Louise L. Douglas performed the technical editorial work. The procedures for compiling the data were devised by Jervis Braunstein, Catherine M. Neafsey, and Harry I. North of the Systems Division. The sampling materials were prepared by Robert Hanson and Elmore Seraile of the Statistical Methods Division.

The census program was designed in consultation with a number of advisory committees and many individuals in order to maximize the usefulness of the data. Among the groups organized for this purpose were the Technical Advisory Committee for the 1960 Population Census, the Council of Population and Housing Census Users, and the Federal Agency Population and Housing Census Council (sponsored by the U.S. Bureau of the Budget). The persons who served with these groups represented a wide range of interest in the census program; their affiliations included universities, private industry, research organizations, labor groups, Federal agencies, State and local governments, and professional associations.

Preparation of the data in this report was made possible, in part, by funds provided by the U.S. Public Health Service (Research Grant HD 01591-01) to the Community and Family Study Center of the University of Chicago. These tabulations were made as part of research for a monograph on fertility sponsored by that Center; this monograph is being prepared by Donald J. Bogue and Lee Jay Cho of the University of Chicago (who made substantial contributions to the planning of the present report) and Wilson H. Grabill and Maria Davidson of the Bureau of the Census.

November 1968.

# FINAL REPORTS OF THE 1960 CENSUS OF POPULATION

The final reports of the 1960 Population Census are arranged in three volumes and a joint Population-Housing series of census tract reports. The 1960 Population Census publication program also includes preliminary, advance, and supplementary reports, certain evaluation, procedural, and administrative reports, and graphic summaries. After publication, copies of all reports are available for examination or purchase at any U.S. Department of Commerce Field Office.

Certain types of unpublished statistics are available for the cost of preparing a copy of the data. Also, under certain conditions, special tabulations of the 1960 Census data can be prepared on a reimbursable basis. In addition, there are available for purchase magnetic tapes and punchcards containing 1960 Census information on the characteristics on a one-in-a-thousand and a one-in-ten-thousand sample of the population of the United States. Confidentiality of the information, as required by law, has been maintained by the omission of certain identification items. Further information about any of these materials can be obtained by writing to the Chief, Population Division, Bureau of the Census, Washington, D.C., 20233.

Volume I. Characteristics of the Population. This volume consists of separate reports for the United States, each of the 50 States, the District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and Canal Zone. For each of these 57 areas, the data were first issued in four separate paper-bound "chapters," designated as PC(1)-A, B, C, and D. (For Guam, Virgin Islands, American Samoa, and Canal Zone, the material normally contained in chapters B, C, and D are included in chapter B.) For library and general reference use, the paper-bound reports have been assembled and reissued in buckram-bound books identified as Parts A and 1 to 57 of Volume I.

Series PC(1)-1A to 57A: Chapter A. Number of Inhabitants. These reports contain final population counts for States and counties and their urban and rural parts, and for standard metropolitan statistical areas, urbanized areas, all incorporated places, unincorporated places of 1,000 inhabitants or more, and minor civil divisions.

Series PC(1)-1B to 57B: Chapter B. General Population Characteristics. These reports present statistics on sex, age, marital status, color or race, and relationship to head of household for States and counties and their urban and rural parts, and for standard metropolitan statistical areas, urbanized areas, places of 1,000 inhabitants or more, and minor civil divisions.

Series PC(1)-1C to 57C: Chapter C. General Social and Economic Characteristics. These reports cover the subjects of nativity and parentage, State of birth, country of origin of the foreign stock, mother tongue, place of residence in 1955, year moved into present house, school enrollment by level and type, years of school completed, families and their composition, fertility, veteran status, employment status, weeks worked in 1959, year last worked, occupation group, industry group, class of worker, place of work, means of transportation to work, and income of persons and families. Each subject is shown for some or all of the following areas: States and counties and their urban, rural-nonfarm, and rural-farm parts, standard metropolitan statistical areas, urbanized areas, and urban places.

Series PC(1)-1D to 57D: Chapter D. Detailed Characteristics. These reports present most of the subjects covered in chapter C, above, cross-classified by age, color, and other characteristics. There is also included additional information on families, as well as data on single years of age, detailed occupation, and detailed industry. Each subject is shown for some or all of the following areas: States and their urban, rural-nonfarm, and rural-farm parts; and large counties, cities, and standard metropolitan statistical areas.

Volume I, Part A: Number of Inhabitants. This is a compendium of the 57 chapter A reports, i.e., PC(1)-1A to 57A.

Volume I, Parts 1 to 57: Characteristics of the Population. The 57 parts relate respectively to the United States, each of the 50 States, District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and Canal Zone. Each part contains the data previously published in the four chapters A, B, C, and D, and is in the form of a separate, buckram-bound book. Parts 54, 55, 56, and 57--for Guam, Virgin Islands, American Samoa, and Canal Zone, respectively--are bound in a single book.

Volume II (Series PC(2) reports). Subject Reports. Each report in this volume concentrates on a particular subject. Detailed information and cross-relationships are generally provided on a national and regional level; in a few reports data for States or standard metropolitan statistical areas are also shown. Among the characteristics covered are ethnic origin and race, fertility, families, migration, education, employment, unemployment, occupation, industry, and income. There is also a report on the geographic distribution and characteristics of inmates of institutions. A list of reports is given on the inside of the front cover.

Volume III (Series PC(3) reports). Selected Area Reports. Four of the reports in this volume present selected characteristics of the population for State economic areas, for standard metropolitan statistical areas, and according to the size and type of place where the individual resided. A fifth report provides data on the social and economic characteristics of Americans overseas.

Series PHC(1). Census Tract Reports. These reports present information on both population and housing subjects. There is one report for each of 180 tracted areas in the United States and Puerto Rico. The population subjects include age, race, marital status, country of origin of the foreign stock, relationship to head of household, school enrollment, years of school completed, place of residence in 1955, employment status, occupation group, industry group, place of work, means of transportation to work, and income of families, as well as certain characteristics of the nonwhite population in selected tracts. The housing subjects include tenure, color of head of household, vacancy status, condition and plumbing facilities, number of rooms, number of bathrooms, number of housing units in structure, year structure built, basement, heating equipment, number of persons in unit, persons per room, year household head moved into unit, automobiles available, value of property, and gross and contract rent, as well as certain characteristics of housing units with nonwhite household head for selected tracts. In addition, for selected tracts these reports contain data on certain population and housing subjects for persons of Puerto Rican birth or parentage and for white persons with Spanish surname. (This series is the same as the tract reports listed in the publication program for the 1960 Census of Housing.)

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# Women by Children Under 5 Years Old

## GENERAL

This report presents statistics on the fertility of women in the United States as measured by the number of their own children under 5 years old present in the household and also some data on own children 5 to 9 years old. The data are shown by demographic, social, and economic characteristics of the women and their families. Among the characteristics shown are: age, race, nativity, country of origin, education, marital status, age at first marriage, occupation, income in 1959, and housing characteristics. Most of the statistics are based on a 5-percent sample of the population enumerated in the Eighteenth Decennial Census of Population, taken as of April 1, 1960. Some data on characteristics of housing are based on a 4-percent sample, as specified in the headnotes of the tables.

### RELATED MATERIALS

1960 Census reports.--Statistics on women by number of own children under 5 years old, by age, color, and marital status of women, are presented in chapter D of 1960 Census of Population, Volume I, Characteristics of the Population, for States and their urban and rural parts and for standard metropolitan statistical areas (SMSA's) of 250,000 or more. Ratios of population under 5 to the total female population 15 to 49 years old are shown in summary tables in chapter B, for SMSA's urbanized areas, urban places and counties.

Data on women by number of children ever born are presented in chapters C and D of Volume I and in the Volume II report Women by Number of Children Ever Born, and will appear in the forthcoming Volume II report Childspacing. Other Volume II reports with some data on fertility presented in relation to the main subject are the reports on socioeconomic status, the labor reserve, and employment status and work experience. Volume III reports with some data on fertility are those on State economic areas, size of place, standard metropolitan statistical areas, and type of place.

Data on households and families appear in chapters B, C, and D of Volume I, and in the Volume II reports on families and on persons by family characteristics.

1950 Census reports.--The report 1950 Census of Population, Volume IV, Special Reports, Part 5, chapter C, Fertility, presented national statistics on number of own children under 5 years old and on number of children ever born, for women by age, color, marital status, and urban-rural residence, in relation

to duration of marriage, labor force status of the woman, years of school completed by the woman, and major occupation group of husband in the experienced labor force. The report also presented data on own children under 5 years old for women with Spanish surname in five Southwestern States.

Current Population Reports.--Data on women by number of own children under 5 years old, by social and economic characteristics, were published from surveys made in June 1946, April 1947, and April 1952. Beginning in 1968, the Bureau of the Census plans to publish annual data of this type. Other information on fertility has also been published in current population reports. Data on women by number of children ever born have been published at two- or three-year intervals since 1954. Data on childspacing based on birth dates of children ever born have been published from the August 1959 survey.

### AVAILABILITY OF UNPUBLISHED DATA

No data other than those shown were prepared for the present report. However, the data represent consolidations of detailed tallies that are still stored on magnetic tapes. The detailed tallies were prepared as an intermediate step for further electronic computer processing, mainly for a monograph in preparation under the sponsorship of the Community and Family Study Center, University of Chicago. The detailed tallies involved such simultaneous cross-classification as numbers of women and of their own children under 5 and 5 to 9 years old for 4 regions by 5 urban-rural residence groups by 4 race-nativity groups of women by 8 age groups of women by 7 educational groups of women by 3 marital status groups of women. The specifications of the detailed tally tapes can be made available on request, and tabulations of these tapes can be made on a reimbursable basis. Inquiries concerning unpublished data should be transmitted to the Bureau as soon as possible because tape records are not maintained indefinitely. Request 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.

Some of the tables in the present report show data only for the United States, urbanized areas, and the South. Data for that part of the Nation outside urbanized areas and for the North and West (combined) can be derived by subtraction.

## 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, and in 1960 Census of Housing, Volume I, States and Small Areas.

## OWN CHILDREN UNDER 5 AND 5 TO 9 YEARS OLD

## Definition

In the 1960 Census, the classification of women by number of own children under 5 years old and 5 to 9 years old was based on information on the relationship and age of each person in the household.

The category "child" includes not only natural sons and daughters but also stepchildren and adopted children of the women featured in this report. An examination of data from other reports suggests that stepchildren and adopted children comprise a very small proportion, perhaps less than two or three percent, of own children under 5 years old, so that nearly all of the own children are the women's natural children.<sup>1</sup> The data are also affected by a relatively few errors of response; for example, the relationship of a grandchild, nephew, or niece is sometimes misreported as "child". Evidence of this type of error is the fact that the present report shows relatively more own children under 5 years old for women at ages 40 and over than would be expected from birth registration data, especially for nonwhites.

Women ever married who were not heads or wives in families or subfamilies were classified as having no own children under 5 or 5 to 9 years old; the rules used for family and subfamily coding would have made

<sup>1</sup> Indirect data on stepchildren appear in Current Population Reports, Series P-20, No. 23, table 6, which shows the number of men in a remarriage less than one year by presence of own children under 6 years old. Some of these children would be stepchildren of the husband and some would be stepchildren of the new wife, of course. Data on the annual numbers of legal petitions for adoptions of children appear in Statistical Abstract of the United States: 1967, table 441. Some of these may be cases when a woman has remarried and her new husband had legally adopted her children by her former spouse.

them either a head or a wife if any own children had been present in a household. However, the family and subfamily coding was limited to persons in households. A few of the 151,952 ever married women 15 to 49 years old living in group quarters undoubtedly had children present, but the number could not be determined from the available information. In group quarters, the sample consisted of every fourth person, so that when a woman was in the sample her children usually were not in the sample. The loss to the count of own children was quite trivial, however, because women in group quarters comprised only 0.5 percent of all women ever married 15 to 49 years old in the United States.

Women who were single (never married) were classified as having no own children under 5 or 5 to 9 years old for purposes of the present report. It is thought that most women who had an illegitimate child living with them were reported in the census as separated, widowed, or divorced and hence were included in the data for women classified as ever married. According to a 1960 Census report on families,<sup>2</sup> only 105,541 single women were enumerated as heads of families or subfamilies with at least one own child under 18 years old present. It is unlikely that the 105,541 single women with own children under 18 years old had as many as 100,000 children under 5 years old, but even a figure of 100,000 would be relatively small (0.5 percent) when compared with the 19.6 million own children under 5 years old whose mother was reported as married, widowed, divorced, or separated.

## Comparability

Previous censuses.--The data on own children under 5 years old shown for 1960 have a high degree of comparability with similar data presented in the 1950 Census report P-E, No. 5C, Fertility, and also with the data in the 1940 Census series of special reports on Differential Fertility, 1940 and 1910. Inclusion of the new States of Alaska and Hawaii in 1960 has little effect on the magnitudes of national ratios of own children under 5 per 1,000 women, as can be seen by comparing tables 192 and 193 in Volume I, Part 1, of the 1960 Census of Population. The 1950, 1940, and 1910 data include own children of the relatively few women ever married who lived in group quarters, whereas in the 1960 Census such women are treated as having no own children present. The 1950, 1940, and 1910 Censuses exclude the relatively few stepchildren and adopted children who could be distinguished from natural sons and daughters of a woman, but such children are included in 1960.

In the 1960 Census, there was less tendency than in previous censuses for a relatively few children almost 5 years old to be misreported as age 5 and hence lost to the count of children under 5.<sup>3</sup> In the

<sup>2</sup> U.S. Bureau of the Census, 1960 Census of Population, Final Report PC(2)-4A, Families, tables 6 and 21.

<sup>3</sup> In 1960, the count of population under 5 years old was about 98 percent complete for whites and 93 percent for nonwhites; in 1950 the corresponding figures were 96 percent for whites and 91 percent for nonwhites.

1960 Census a question was asked on date of birth, and the answers were used to compute the age, whereas in previous censuses the corresponding question related to age at the last birthday.

Relation to data on population under 5 years old and 5 to 9 years old.--Table A presents data on the total number of persons counted in the 1960 Census as under 5 years old and as 5 to 9 years old and compares these with the numbers counted as own children of women ever married. To a large degree, the difference between population under 5 (or 5 to 9) and own children of this age represents young persons living apart from their mother. The difference also includes the relatively few children who were not counted as own children because they were living with a never-married mother, because the mother was outside the specified age range of 15 to 49 or 15 to 54, or because there was not sufficient information to identify them as own children of a woman in the same household. A very minor bias also arises from the fact that the color classification for the population under 5 is based on the race noted for the person under 5 years old, whereas that of the own child is based on the race noted for the mother; in the few cases where the mother is white, and the father is nonwhite, the person under 5 years old is classified as nonwhite in the population count but as an own child of a white mother in the tabulations of women by number of own children.

Table A shows that about 99 percent of the white population under 5 years old are classified as own children of women ever married, whereas only 86 percent of the nonwhite population are so classified. According to birth registration data for 1960, about 2 percent of white births and 22 percent of nonwhite births in that year were illegitimate. As noted above, the report PC(2)-4A, Families, identifies relatively few single women as having own children present. One may conjecture that in many such cases the children live with a grandmother or other person while the unwed mother works and lives elsewhere; and that in many cases where the children live with their mother, she is reported as having been married.

Table A.--ESTIMATED PROPORTION OF THE POPULATION UNDER 5 YEARS OLD AND 5 TO 9 YEARS OLD CLASSIFIED AS OWN CHILDREN OF WOMEN EVER MARRIED 15 TO 54 YEARS OLD, BY COLOR, FOR THE UNITED STATES: 1960  
(Population under 5, and 5 to 9 from 100-percent count. Own children from 5-percent sample)

| Subject                                 | White      | Nonwhite  |
|---|------------|-----------|
| Population under 5 years old.....       | 17,358,552 | 2,962,349 |
| Own children.....                       | 17,196,324 | 2,553,804 |
| Percent classified as own children..... | 99.1       | 86.2      |
| Population 5 to 9 years old.....        | 16,087,542 | 2,604,238 |
| Own children.....                       | 15,763,035 | 2,254,485 |
| Percent classified as own children..... | 98.0       | 86.6      |

Relation to vital statistics.--Own children under 5 years old and 5 to 9 years old are the survivors of births in the respective periods from April 1, 1955,

to March 31, 1960, and from April 1, 1950, to March 31, 1955. With the aid of various adjustments, described in the forthcoming monograph sponsored by the Community and Family Study Center of the University of Chicago, it is possible to use the data to derive average annual age-specific birth rates, total fertility rates, and other measures such as gross and net reproduction rates, for the birth periods. The adjustments make provision for children not living with their mother and for the effect of mortality on women and children between the time the children were born and the date of the census, and also include interpolation and combination of data. By use of these adjustments it is possible to derive birth rates by social and economic characteristics that are available from decennial censuses but not from birth registration data.

Illustrative materials appear in table B. The census data were not adjusted for any undercount of women and children under 5 because there is evidence that nearly equal proportions of women and children were missed in the 1960 Census.<sup>4</sup> Data by type of residence in the detail given in table B are not available from birth registration data.

Table B.--AVERAGE ANNUAL, AGE-SPECIFIC BIRTH RATES BY COLOR OF WOMAN, FOR THE UNITED STATES, AND BY TYPE OF RESIDENCE FOR NATIVE WHITE WOMEN: 1955-1960

| Color of woman, data source, and type of residence | Births per 1,000 women by age of woman |          |          |          |          | Total fertility rate | Net reproduction rate |
|--|--|----------|----------|----------|----------|----------------------|-----------------------|
|  | 15 to 19                               | 20 to 24 | 25 to 29 | 30 to 34 | 40 to 44 |                      |                       |
| <b>WHITE</b>                                       |  |          |          |          |          |                      |                       |
| Census data.....                                   | 83                                     | 232      | 193      | 112      | 16       | 3,477                | 1,630                 |
| Registration data:                                 |  |          |          |          |          |                      |                       |
| Bases adjusted <sup>1</sup> ....                   | 80                                     | 240      | 191      | 112      | 15       | 3,482                | 1,637                 |
| Not adjusted.....                                  | 82                                     | 246      | 194      | 113      | 15       | 3,542                | 1,665                 |
| <b>NONWHITE</b>                                    |  |          |          |          |          |                      |                       |
| Census data.....                                   | 152                                    | 271      | 201      | 128      | 23       | 4,266                | 1,952                 |
| Registration data:                                 |  |          |          |          |          |                      |                       |
| Bases adjusted <sup>1</sup> ....                   | 151                                    | 277      | 200      | 132      | 22       | 4,285                | 1,974                 |
| Not adjusted.....                                  | 167                                    | 300      | 223      | 142      | 22       | 4,709                | 2,169                 |
| <b>NATIVE WHITE (Census data)</b>                  |  |          |          |          |          |                      |                       |
| United States.....                                 | 84                                     | 234      | 195      | 113      | 17       | 3,508                | 1,642                 |
| Urbanized areas...                                 | 72                                     | 216      | 195      | 109      | 15       | 3,322                | 1,554                 |
| Central cities..                                   | 71                                     | 200      | 180      | 101      | 14       | 3,088                | 1,445                 |
| Urban fringe....                                   | 75                                     | 237      | 213      | 121      | 16       | 3,615                | 1,691                 |
| Other urban.....                                   | 89                                     | 237      | 190      | 107      | 15       | 3,455                | 1,617                 |
| Rural nonfarm....                                  | 111                                    | 270      | 195      | 118      | 20       | 3,881                | 1,816                 |
| Rural farm.....                                    | 82                                     | 261      | 210      | 137      | 25       | 3,941                | 1,844                 |

<sup>1</sup> Obtained by multiplying published rates (Vital Statistics of the United States, 1964, Volume I, Natality, tables 1-D and 1-E) by the relative completeness of the count of women by age and color as estimated from the 1960 Census. The published rates allowed for underregistration of births but not for any undercount of women in the bases.

Source: Monograph in preparation sponsored by the Community and Family Study Center of the University of Chicago.

<sup>4</sup> 1960 Census of Population, Vol. I, Characteristics of the Population, Part 1, U.S. Summary, page XXXIX.

## 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. The "nonfarm" population referred to in tables 64 and 65 comprises persons living in urban areas and rural persons not on farms. 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 AREA

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.

## METROPOLITAN-NONMETROPOLITAN RESIDENCE

In this report, women shown as residing in a "metropolitan area" are those living in a standard metropolitan statistical area (SMSA). Except in New England, an SMSA is a county or group of contiguous counties which contains at least one city of 50,000

inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's consist of towns and cities, rather than counties.

## 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 term "color" refers to the division of population into two groups, white and nonwhite. The color group designated as "nonwhite" consists of such races as the Negro, American Indian, Japanese, Chinese, Filipino, Korean, Hawaiian, Asian Indian, Eskimo, Aleut, and Malayan races. Persons of Mexican birth or ancestry who are not definitely of Indian or other nonwhite race are classified as white.

Negro.--In addition to persons of Negro and of mixed Negro and white descent, this classification includes persons of mixed Indian and Negro descent, unless the Indian ancestry predominates or unless the individual is regarded as an Indian in the community.

American Indian.--In addition to fullblooded Indians, persons of mixed white and Indian blood are included if the proportion of Indian blood is one-fourth or more, or if they are regarded as Indian in the community.

Other races.--Separate statistics are given in this report for Japanese, and Chinese. The category "other races" includes Filipinos, Koreans, Hawaiians, Asian Indians, Eskimos, Aleuts, Malaysians, etc.

Mixed parentage.--Persons of mixed racial parentage are classified according to the race of the nonwhite parent, and mixtures of nonwhite races are classified according to the race of the father, with the special exceptions noted above.

## NATIVITY AND PARENTAGE

Native.--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.--Includes all persons not classified as native.

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

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

Foreign stock.--Includes foreign-born persons and native persons of foreign or mixed parentage.

#### COUNTRY OF ORIGIN OF THE FOREIGN STOCK

Persons of foreign stock are classified according to their country of origin--country of birth for the foreign born and parents' country of birth for the native of foreign or mixed parentage. Natives of foreign parentage whose parents were born in different countries are classified according to the country of birth of the father. Natives of mixed parentage are classified according to the country of birth of the foreign-born parent. The classification by country of origin is based on international boundaries as recognized by the United States Government on April 1, 1960, although there may have been some deviation from the rules where respondents were unaware of changes in boundaries or jurisdiction.

#### REGION OF BIRTH OF THE NATIVE POPULATION

In this report, the native population is classified by region of birth. Included in the totals, but not shown separately, are native persons born in an outlying area of the United States, persons born abroad or at sea of American parents, and persons whose State of birth was not reported. The 1960 instructions specified that place of birth was to be reported in terms of the mother's usual State of residence at the time of the birth rather than in terms of the location of the hospital if the birth occurred in a hospital.

#### PERSONS OF SPANISH SURNAME

In order to obtain data on Spanish- and Mexican-Americans for areas of the United States where most of them live, white persons (and white heads of households) of Spanish surname were distinguished separately in five Southwestern States (Arizona, California, Colorado, New Mexico, and Texas).

#### PUERTO RICANS

Puerto Ricans comprise persons born in Puerto Rico and persons born in the United States or its possessions with one or both parents born in Puerto Rico.

#### YEAR MOVED INTO PRESENT HOUSE

The data on year moved into present house refer to the most recent move the person made. Thus, a person who had moved back into the same house (or apartment) in which he had previously lived was asked to give the date at which he began the present occupancy. If a person had moved from one apartment to another in the same building, he was expected to give the year when he moved into the present apartment. The category "always lived here" consists of persons who reported

that their residence on April 1, 1960, was the same as their residence at birth and who had never had any other place of residence.

#### RESIDENCE IN 1955

Residence on April 1, 1955, is the usual place of residence five years prior to enumeration. The category "In same house as in 1960" includes women 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" includes persons who, on April 1, 1955, lived in a different house from the one they occupied on April 1, 1960. This category was subdivided into four groups according to their 1955 residence, viz., "different house, same county," "different county, same State," "different State or abroad," and "moved, residence in 1955 not reported."

In the preparation of the record for the 5-percent sample, on which the present report is based, all movers from one borough to another within New York City were classified as movers within the "same county," whereas in reports based on the 25-percent record, persons who moved across borough lines were classified as movers between counties within the "same State." Hence, the 5-percent sample shows more movers within the same county than would be shown in corresponding figures from the 25-percent sample, and fewer migrants between counties within the same State. This difference should have little influence on the percent distributions by personal characteristics within the various mobility status classes.

#### 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.

The questions on educational attainment applied only to progress in "regular" schools. 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.

#### XIV

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.

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 AND WHETHER MARRIED MORE THAN ONCE

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 with spouse absent. 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.

A married woman with "husband present" is a woman whose husband was enumerated as a member of the same household even though he may have been temporarily absent on business or vacation, visiting, in a hospital, etc., at the time of enumeration. Women classified as "married, husband absent" include both those who are separated and those with their husband absent for other reasons.

Whether or not the woman was married more than once was determined by a direct question for all women ever married.

#### AGE AT FIRST MARRIAGE

In deriving age at first marriage, the year and quarter of the person's birth was subtracted from the year and quarter of the person's first marriage. Where the result of this subtraction included a fraction (e.g., age at marriage  $21 \frac{1}{4}$ ,  $21 \frac{1}{2}$ , or  $21 \frac{3}{4}$ ), the fraction was dropped, so as to express the result in completed years of age at first marriage. Where the result of the subtraction included no fraction, which was the case when the quarter of birth and first marriage were the same, the result was reduced by 1 year in approximately one-half the cases, namely, those in which the quarter was January to March or October to December. This adjustment was not made, however, when the result of the subtraction was 14 years. The adjustment was made in order to eliminate the upward bias in the distribution by age at marriage that would otherwise have occurred.

#### YEARS SINCE FIRST MARRIAGE

The number of years since the person's first marriage was derived by subtracting the date of first marriage from April 1, 1960, and represents the interval in completed years.

#### DIFFERENCE BETWEEN AGE OF HUSBAND AND AGE OF WIFE

The difference between age of husband and age of wife was obtained by subtraction of the age of the wife from the age of the husband, and represents the interval in completed years.

#### HOUSEHOLD AND FAMILY

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; that is, in living quarters 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.

Family.--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 together in one household who are related to each other are regarded as one family. For example, if the son of the head of the household and the son's wife are members of the household, they are treated as part of the head's family. A lodger and his wife who are not related to the head of the household, or a resident employee and his wife living in, are considered as a separate family, however. Thus, a household may contain more than one family. A household head living alone or with nonrelatives only is not regarded as a family. Some households, therefore, do not contain a family.

#### RELATIONSHIP OF WOMAN

The head of the household or family 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.

The wife of a head of a household or family is a woman married to and living with the head. This category includes women in common-law marriages as well as women in formal marriages.

A daughter of the head is a child, stepchild, or adopted child of the head. A daughter-in-law is the wife of the head's son, stepson, or adopted son.

An other relative of the head is a woman related to the head of the household by blood, marriage, or adoption, but not included specifically in another category.

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.).

#### 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.

#### EMPLOYMENT STATUS

The data on employment status relate 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.

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.

Persons are classified as unemployed if they were 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 but also if he had made such efforts recently (i.e., within the past 60 days) and was awaiting the results of these efforts. Persons waiting to be called back to a job from which they had been laid off or furloughed are also counted as unemployed.

The "civilian labor force" includes all persons classified as employed or unemployed, as described above. The "labor force" also includes members of the Armed Forces (persons on active duty with the United States Army, Air Force, Navy, Marine Corps, or Coast Guard).

Persons "not in the labor force" comprise all those 14 years old and over who are not classified as members of the "labor force, including persons doing only incidental unpaid family work (less than 15 hours during the week).

#### 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.

#### OCCUPATION

The data on occupation in this report are for employed persons and refer to the job held during the week for which employment status was reported. For persons employed at two or more jobs, the data refer to the job at which the person worked the greatest number of hours. The occupation statistics presented here are based on the detailed system developed for the 1960 Census; see 1960 Census of Population, Classified Index of Occupations and Industries, U.S. Government Printing Office, Washington, D.C., 1960.

#### 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.

## HOUSING CHARACTERISTICS

Tenure.--A housing unit is "owner occupied" if the owner or co-owner lives in the unit, even if it is mortgaged or not fully paid for. The head himself need not be the owner. All other occupied units are classified as "renter occupied," whether or not cash rent is paid. Examples of units for which no cash rent is paid include units occupied in exchange for services rendered, units owned by relatives and occupied without payment of rent, and units occupied by sharecroppers.

Units in structure.--In determining the number of units in the structure, the enumerator was instructed to count both occupied and vacant housing units but not to count business units or group quarters. A structure is defined as a separate building that either has open space on all four sides, or is separated from other structures by dividing walls that extend from ground to roof. Structures containing only one housing unit were further classified as detached or attached.

A 1-unit detached structure has open space on all four sides and contains only one housing unit. A 1-unit attached structure contains only one housing unit and has one or more walls extending from ground to roof separating it from adjoining structures. For row houses, double houses, or houses attached to nonresidential structures, each house is a separate attached structure if the dividing or common wall goes from ground to roof. In the present report, trailers are included with 1-unit structures, detached.

Condition.--The enumerator determined the condition of the housing unit by observation, on the basis of specified criteria related to the extent of degree of visible defects. Although detailed oral and written instructions and visual aids were provided, the application of the criteria involved some judgment on the part of the individual enumerator.

Sound housing is defined as that which has no defects, or only slight defects which are normally corrected during the course of regular maintenance. Deteriorating housing needs more repair than would be provided in the course of regular maintenance. Such housing has one or more defects of an intermediate nature that must be corrected if the unit is to continue to provide safe and adequate shelter.

Dilapidated housing does not provide safe and adequate shelter and in its present condition endangers the health, safety, or well-being of the occupants. Such housing has one or more critical defects, or has a combination of intermediate defects in sufficient number or extent to require considerable repair or rebuilding, or is of inadequate original construction. Critical defects result from continued neglect or lack of repair, or indicate serious damage to the structure.

Value.--Value is the respondent's estimate of how much the property would sell for on the current market (April 1960). Value data are restricted to owner-occupied units having only one housing unit in the property and no business. Units in multiunit structures and trailers were excluded from the tabulations, and in rural territory, units on farms and all units on places of 10 acres or more (whether farm or nonfarm) also were excluded.

Gross rent.--The present report shows data on gross rent, not on contract rent. Gross rent is based on the information reported for contract rent and the cost of utilities and fuel. Contract rent is the monthly rent agreed upon regardless of any furnishings, utilities, or services that may be included. The computed rent termed "gross rent" is the contract rent plus the average monthly cost of utilities (water, electricity, gas) and fuels such as wood, coal, and oil if these items are paid for by the renter. Thus, gross rent eliminates differentials which result from varying practices with respect to the inclusion of utilities and fuel as part of the rental payment. Rent data exclude rents for units in rural-farm territory.

## 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 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.

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.

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.

In printed tables produced by the computer, very small differences may sometimes occur between tables because of the nature of computer transfers of data. 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.

Evaluative material on accuracy of data contained in this report can be found in Evaluation and Research Program of the U.S. Censuses of Population and Housing, 1960, report No. 4. 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 included in the sample. In every group quarters, the sample consisted of every fourth person in the order listed. Most of the 1960 statistics in this report are based on a subsample of one-fifth of the original 25-percent sample schedules;<sup>5</sup> some, however, are based on a 4-percent sample (tables 64 and 65).<sup>6</sup> 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. Generally, for large areas, the deviation from the estimated sample size was found to be quite small. Biases may have arisen, however, when the enumerator failed to follow his listing and sampling instructions exactly.

Table C compares ratios of own children under 5 per 1,000 women, as presented in this report, based on the 5-percent sample, with corresponding statistics based on the 25-percent sample presented in Volume I of the 1960 Census of Population. Differences in this table reflect primarily sampling error.

Table C.--COMPARISONS OF NUMBERS OF WOMEN AND RATIOS OF OWN CHILDREN UNDER 5 YEARS OLD PER 1,000 WOMEN FROM 25-PERCENT AND 5-PERCENT SAMPLES, BY AGE, COLOR, AND MARITAL STATUS, FOR THE UNITED STATES: 1960

| Age of woman     | White             |                  |                    |                  |                            |                  |                              |                  | Nonwhite          |                  |                    |                  |                            |                  |                              |       |
|------------------|-------------------|------------------|--------------------|------------------|----------------------------|------------------|------------------------------|------------------|-------------------|------------------|--------------------|------------------|----------------------------|------------------|------------------------------|-------|
|                  | Total women       |                  | Women ever married |                  | Children under 5 years old |                  |                              |                  | Total women       |                  | Women ever married |                  | Children under 5 years old |                  |                              |       |
|                  |                   |                  |                    |                  | Per 1,000 women            |                  | Per 1,000 women ever married |                  |                   |                  |                    |                  | Per 1,000 women            |                  | Per 1,000 women ever married |       |
|                  | 25-percent sample | 5-percent sample | 25-percent sample  | 5-percent sample | 25-percent sample          | 5-percent sample | 25-percent sample            | 5-percent sample | 25-percent sample | 5-percent sample | 25-percent sample  | 5-percent sample | 25-percent sample          | 5-percent sample |                              |       |
| 15 to 19 yrs.... | 5,772,421         | 5,770,262        | 927,390            | 927,745          | 94                         | 94               | 535                          | 584              | 816,181           | 817,903          | 132,467            | 132,762          | 141                        | 144              | 868                          | 888   |
| 20 to 24 yrs.... | 4,822,377         | 4,817,117        | 3,501,515          | 3,490,391        | 826                        | 826              | 1,138                        | 1,140            | 697,560           | 689,395          | 450,800            | 444,037          | 861                        | 863              | 1,333                        | 1,340 |
| 25 to 29 yrs.... | 4,839,982         | 4,833,203        | 4,367,223          | 4,363,686        | 1,070                      | 1,074            | 1,186                        | 1,190            | 697,122           | 703,625          | 587,767            | 592,345          | 1,004                      | 1,002            | 1,191                        | 1,191 |
| 30 to 34 yrs.... | 5,379,640         | 5,372,270        | 5,027,100          | 5,023,418        | 726                        | 730              | 777                          | 781              | 731,782           | 727,655          | 661,407            | 657,789          | 748                        | 762              | 827                          | 843   |
| 35 to 39 yrs.... | 5,708,902         | 5,733,474        | 5,372,979          | 5,396,274        | 416                        | 417              | 442                          | 443              | 709,634           | 705,445          | 656,033            | 652,466          | 498                        | 504              | 539                          | 545   |
| 40 to 44 yrs.... | 5,298,273         | 5,279,545        | 4,972,718          | 4,959,437        | 171                        | 175              | 182                          | 186              | 619,532           | 618,028          | 579,845            | 578,236          | 249                        | 252              | 266                          | 270   |
| 45 to 49 yrs.... | 4,988,493         | 4,993,406        | 4,658,767          | 4,666,582        | 38                         | 41               | 41                           | 44               | 565,450           | 566,163          | 532,228            | 533,804          | 84                         | 92               | 89                           | 92    |

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:<sup>7</sup>

<sup>5</sup> For a detailed description of the sample design and the ratio estimation procedure for the 25-percent sample, see 1960 Census of Population, Volume I, Characteristics of the Population, Part 1, United States Summary.

<sup>6</sup> The 4-percent sample represents households in the 20-percent housing sample that fall into the 5-percent population sample. Statistics shown for this sample were produced by inflating tallies from the 5-percent population sample by a uniform factor of 1.25.

<sup>7</sup> 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.

| 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.

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 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 control a potential bias in the estimates, 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 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.

SAMPLING VARIABILITY

The figures from the sample tabulations are subject to sampling variability, which can be estimated roughly from the standard errors shown in tables D, E, and F.

These tables 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 are being published in reports in Series ER 60, Evaluation and Research Program of the U.S. Census of Population and Housing: 1960. 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 D 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 processing errors, may have an increasingly important effect on the total error. Table E shows rough standard errors of data in the form of percentages. Linear interpolation in tables D and E will provide approximate results that are satisfactory for most purposes.

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

(Range of 2 chances out of 3)

| Estimated number | Standard error   |                  |
|------------------|------------------|------------------|
|                  | 5-percent sample | 4-percent sample |
| 50.....          | 30               | 30               |
| 100.....         | 40               | 40               |
| 250.....         | 60               | 70               |
| 500.....         | 90               | 100              |
| 1,000.....       | 120              | 130              |
| 2,500.....       | 200              | 220              |
| 5,000.....       | 280              | 310              |
| 10,000.....      | 390              | 430              |
| 15,000.....      | 480              | 530              |
| 25,000.....      | 620              | 680              |
| 50,000.....      | 880              | 970              |

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

(Range of 2 chances out of 3)

| Sample size and estimated percentage | Base of percentage |       |        |        |         |
|--------------------------------------|--------------------|-------|--------|--------|---------|
|                                      | 1,000              | 2,500 | 10,000 | 25,000 | 100,000 |
| <b>5-PERCENT SAMPLE</b>              |                    |       |        |        |         |
| 2 or 98.....                         | 2.3                | 1.3   | 0.8    | 0.3    | 0.3     |
| 5 or 95.....                         | 4.0                | 2.3   | 1.0    | 0.5    | 0.3     |
| 10 or 90.....                        | 5.0                | 3.0   | 1.5    | 0.8    | 0.5     |
| 25 or 75.....                        | 6.8                | 3.8   | 1.8    | 1.0    | 0.5     |
| 50.....                              | 7.8                | 4.0   | 2.0    | 1.3    | 0.8     |
| <b>4-PERCENT SAMPLE</b>              |                    |       |        |        |         |
| 2 or 98.....                         | 2.5                | 1.4   | 0.9    | 0.3    | 0.3     |
| 5 or 95.....                         | 4.4                | 2.5   | 1.1    | 0.6    | 0.3     |
| 10 or 90.....                        | 5.5                | 3.3   | 1.6    | 0.9    | 0.6     |
| 25 or 75.....                        | 7.5                | 4.2   | 2.0    | 1.1    | 0.6     |
| 50.....                              | 8.6                | 4.4   | 2.2    | 1.4    | 0.9     |

The sampling variability of the number of own children under 5 years old per 1,000 women depends on the variability of the distribution on which the rate is based, the size of the sample, the sample design (for example, the use of households as the sampling unit) and the use of ratio estimates. Estimates of standard errors for ratios of children per 1,000 women are presented in table F. The estimates are approximations that involved a number of simplifying assumptions such as the use of regression equations. If a closer approximation to the standard error of the rate of children ever born is needed, it can be calculated using the following equation:

Where 
$$\sigma_{1,000 \bar{x}} = \frac{R}{N} \sqrt{\sum n^2 X_n - \frac{(\sum n X_n)^2}{N}}$$
  $\sigma_{1,000 \bar{x}}$  is the standard error of a fertility ratio per 1,000 women ( $1,000 \bar{x}$ ).

R is a constant which depends on the size of the sample. Thus, R=4,400 for 5-percent sample data and 4,900 for 4-percent sample data.  
n is specific number of children under 5 (n=0, 1, 2, 3+)  
 $X_n$  is number of women in inflated sample who have "n" children under 5.  
N is total number of women =  $\sum_{n=0}^{n=3+} X_n$

The use of the equation will provide a closer approximation to the standard error of a rate of children ever born than the use of table F. Table F was prepared using this formula and also a regression function relating the distribution of women with 0, 1, 2, etc., children to the total number of children ever born. In any specific case, this regression function is only an approximation.

Illustration: Table 10 shows that there were 22,466 nonwhite women 19 years old in the Northeast Region and that these women had a ratio of 336 children under 5 years old per 1,000 women. Table 10 is based on a 5-percent sample, and table F shows that for an

estimate of 336 children under 5 years old per 1,000 women, based on a 5-percent sample for 22,466 women, a rough approximation to the standard error is about 20. This means that the chances are about 2 out of 3 that a complete census result would not differ by more than 20 from the estimated ratio of 336 children under 5 years old per 1,000 women. It also follows that there is only about 1 chance in 100 that a complete count would differ by as much as 50, that is, by about 2½ times the number estimated from table F.

For a further discussion of the sampling variability and of the method for obtaining standard errors of differences between two estimates, see Volume I, Characteristics of the Population.

Table F.--STANDARD ERRORS OF FERTILITY RATIOS, FOR 5-PERCENT AND 4-PERCENT SAMPLES

| Sample size and number of women | Number of own children under 5 per 1,000 women |    |     |     |     |     |     |     |       |
|---------------------------------|--|----|-----|-----|-----|-----|-----|-----|-------|
|                                 | 25   | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1,000 |
| <b>5-PERCENT SAMPLE</b>         |  |    |     |     |     |     |     |     |       |
| 1,000.....                      | 25   | 35 | 51  | 74  | 89  | 99  | 120 | 129 | 137   |
| 2,500.....                      | 16   | 22 | 32  | 47  | 56  | 63  | 76  | 82  | 87    |
| 10,000.....                     | 8  | 11 | 16  | 24  | 28  | 31  | 38  | 41  | 43    |
| 25,000.....                     | 5  | 7  | 10  | 15  | 18  | 20  | 24  | 26  | 27    |
| 100,000.....                    | 2  | 3  | 5   | 7   | 9   | 10  | 12  | 13  | 14    |
| 500,000.....                    | 1  | 2  | 2   | 3   | 4   | 4   | 5   | 6   | 6     |
| 1,000,000.....                  | 1  | 1  | 2   | 2   | 3   | 3   | 4   | 4   | 4     |
| <b>4-PERCENT SAMPLE</b>         |  |    |     |     |     |     |     |     |       |
| 1,000.....                      | 27   | 39 | 57  | 83  | 99  | 110 | 133 | 144 | 153   |
| 2,500.....                      | 17   | 24 | 36  | 52  | 63  | 70  | 84  | 91  | 97    |
| 10,000.....                     | 9  | 12 | 18  | 26  | 31  | 35  | 42  | 46  | 48    |
| 25,000.....                     | 5  | 8  | 11  | 17  | 20  | 22  | 27  | 29  | 31    |
| 100,000.....                    | 3  | 4  | 6   | 8   | 10  | 11  | 13  | 14  | 15    |
| 500,000.....                    | 1  | 2  | 3   | 4   | 4   | 5   | 6   | 6   | 7     |
| 1,000,000.....                  | 1  | 1  | 2   | 3   | 3   | 3   | 4   | 5   | 5     |