

Nonfarm Housing Characteristics

GENERAL

CONTENT

Volume II of the Housing reports presents statistics on occupied nonfarm housing based on information collected in the Censuses of Housing and Population taken as of April 1, 1950. The dwelling units for which statistics are provided in this volume consist of all units in urban areas and all units not on farms in rural areas.

This volume is arranged by chapters and is bound in five parts. Part 1 consists of the 10 chapters presenting statistics for the United States and the 9 geographic divisions. Parts 2 to 5 contain the separate chapters for the 152 standard metropolitan areas of 100,000 inhabitants or more, arranged alphabetically. The chapters for the standard metropolitan areas include the statistics for the 106 cities of 100,000 inhabitants or more. The tables for each city appear as a part of the chapter for the standard metropolitan area in which the city is located. In the chapters for the divisions and for the United States, the data are presented separately for dwelling units inside standard metropolitan areas, urban dwelling units outside standard metropolitan areas, and rural dwelling units outside standard metropolitan areas.

The basic purpose of the volume is to provide cross-classifications of housing and household characteristics for analytical uses. For example, information on the number of dwelling units in an area for which a low rent is paid and which lack a private toilet or bath describes the quality of the housing in the area more specifically than separate distributions of units, one by rent and the other by condition and plumbing. The subjects which are covered in the cross-classifications include:

Occupancy characteristics	Financial characteristics
Tenure	Contract monthly rent
Number of persons	Gross monthly rent
Persons per room	Gross rent as percentage of income
Structural characteristics	Value
Number of rooms	Value-income ratio
Type of structure	Household characteristics
Year built	Type of household
Condition and plumbing facilities	Sex and age of head
Equipment	Income in 1949
Heating equipment	
Television	

For most of the cross-classifications, statistics are presented separately for owner-occupied units and renter-occupied units. In general, these statistics are presented in the same table, and comparable cross-classifications are available for both classes of tenure where applicable.

A series of 10 standard tables are presented for each standard metropolitan area, city, division, and for the United States. The same series was used for dwelling units inside standard metropolitan areas, urban dwelling units outside standard metropolitan areas, and rural dwelling units outside standard metropolitan areas. The subjects are the same in tables having the same basic number.

The statistics in this report are based on information from a sample of nonfarm occupied dwelling units. Most of the statistics are based on a sample of approximately 20 percent of the occupied nonfarm dwelling units inside standard metropolitan areas, 1 1/9 percent in selected areas outside standard metropolitan areas, and 3 1/3 percent in the remainder of the United States. However, the data for year built, television, and heating equipment are based on reports from about one-fifth of these units. Because of the methods used in inflating the data, the figures for year built, television, and heating equipment will occasionally not add to the total for a category and corresponding statistics may differ somewhat from one table to another. For a description of the sample and estimates of sampling variability, see the section on "Reliability of data."

COMPARABILITY WITH 1940 CENSUS OF HOUSING

In general, the scope of the subject matter covered in the 1950 Census of Housing with respect to nonfarm housing is the same as in the 1940 Census. Some items, however, were not enumerated in both 1940 and 1950. Information on kitchen sink and on television was collected in 1950, but not in 1940. On the other hand, information was collected in 1940 on conversion, exterior material, and estimated rentals of owner-occupied homes, but was not collected in 1950. Moreover, some information for structures was included in the 1940 Housing reports, while the 1950 data have been tabulated only for dwelling units.

Besides these modifications in scope, there have been several changes in concepts and definitions from the 1940 Census. Departures from the 1940 procedures were adopted after consultation with users of housing census data in order to increase the usefulness of the statistics, even though it was recognized that comparability might be adversely affected in some cases. Changes in definitions and procedures are described in the section on "Definitions and explanations."

There are differences also in the areas for which cross-classifications are available in 1950 and 1940. In 1940, cross-classifications generally were available for the United States, regions, divisions, States, the principal metropolitan districts, cities of 100,000 inhabitants or more, and to a limited extent for cities of 50,000 to 100,000 inhabitants. The metropolitan district used in 1940 is not comparable with the standard metropolitan area of 1950.

Some of the subjects which were cross-classified are not the same in the 1940 and 1950 Censuses. Because of differences in some definitions and subject categories, the cross-classifications appearing in both censuses may not be precisely comparable. Somewhat more extensive cross-classifications of data appear in this report than were published in 1940; specifically, they include such items as total family income, ratios of value or rent to income, and sex and age of the head of the household cross-classified with various physical characteristics of dwelling units. In addition, year built, condition and plumbing facilities, number of rooms, number of persons, rents, and values have been cross-classified with other housing or household characteristics in more detail than in 1940. In the 1940 Housing reports, the principal subjects used in cross-classifications were contract or estimated rent, type of structure, type and size of household, and wage or salary income.

HOUSING REPORTS

The principal findings of the 1950 Census of Housing are published in five volumes:

Volume I, General Characteristics, is the basic publication. This volume contains data on practically all items enumerated in the census, presented as a separate chapter for the United States, each State and the District of Columbia, Alaska, Hawaii, Puerto Rico, and the Virgin Islands of the United States. In the State chapters, statistics are presented for the State by residence (urban, rural nonfarm, and rural farm), standard metropolitan areas, urbanized areas, counties, urban places, places of 1,000 to 2,500 inhabitants, and rural-nonfarm and rural-farm portions of counties. The United States Summary presents data for the United States, regions, and geographic divisions, as well as summaries of the statistics for the States and the District of Columbia, standard metropolitan areas, cities of 100,000 inhabitants or more, and urbanized areas; the statistics are summarizations or compilations of data from the individual State chapters. Each of the chapters is available as a separate bulletin, Series H-A, "General Characteristics."

Volume II, Nonfarm Housing Characteristics, presents analytical data for nonfarm occupied dwelling units. Each chapter is available as a separate bulletin, Series H-B.

Volume III, Farm Housing Characteristics, contains analytical data for occupied dwelling units in the rural-farm segment of the dwelling unit inventory. The tables present interrelationships of number of rooms and condition and plumbing facilities with selected housing and household characteristics. These statistics are provided for the United States and for each of the 119 economic subregions. Subregions usually are combinations of two or more counties having relatively homogeneous agricultural conditions. A subregion need not lie entirely within a State or within region or division boundaries.

Volume IV, Residential Financing, presents statistics relating to the characteristics of the financing of residential nonfarm properties. Data are presented in terms of mortgaged properties, first and junior mortgages, and outstanding mortgage debt for both owner-occupied and rental properties. Items presented include: type of mortgage holder, characteristics of first and junior mortgages, purpose of financing and refinancing, characteristics of the owner-occupant and his household, and the physical and financial characteristics of the property. These statistics are provided for the United States, for each of the 4 regions, and for each of the 25 largest standard metropolitan areas according to the 1940 population.

Volume V, Block Statistics, comprises the Block Statistics bulletins (Series H-E). Separate bulletins were issued for the 209 cities in the United States which had 50,000 inhabitants or more in 1940, or in a subsequent special census prior to 1950. These bulletins will not be assembled into a bound volume. Each report presents for the city, by blocks, tabulations of dwelling units for the following subjects: occupancy and tenure, condition and plumbing facilities, persons per room, color of occupants, average contract monthly rent of renter-occupied and selected vacant units, and the average value of 1-dwelling-unit owner-occupied and selected vacant structures. Statistics are summarized for census tracts or--in the absence of tracts--for wards.

These bulletins contain the only statistics for wards that will be published from the 1950 Census of Housing.

Detailed housing data, as well as population data, for each of the census tracts in tracted areas are contained in Volume III of the Population reports, comprising the Census Tract bulletins (Series P-D). These bulletins will not be assembled into a bound volume. The housing subjects presented include: occupancy and tenure, color of occupants, type of structure, condition and plumbing facilities, year built, number of persons, persons per room, heating fuel, refrigeration equipment, television, contract monthly rent of renter-occupied and selected vacant units, and value of 1-dwelling-unit owner-occupied and selected vacant structures.

POPULATION REPORTS

The major portion of the information compiled from the Census of Population of 1950 is contained in Volume II, Characteristics of the Population. Reports for each State are bound as a part with three chapters: "Number of Inhabitants," "General Characteristics," and "Detailed Characteristics." Each of the chapters is available as a separate bulletin.

AVAILABILITY OF UNPUBLISHED DATA

Some of the statistics that were tabulated in the Nonfarm Housing Characteristics program are not being published; for example, selected characteristics were tabulated for dwelling units which were dilapidated or lacked hot running water and private bath. A description of the unpublished data can be obtained upon request. These statistics can be made available for the cost of transcription or reproduction. Requests should be made to the Director, Bureau of the Census, Washington 25, D. C.

MAPS

A map of the United States showing the outlines of the geographic divisions is included in this report. In addition, there is included a map showing all the standard metropolitan areas in the United States. Those standard metropolitan areas for which separate statistics are published in Parts 2 to 5 of Volume II (or in individual bulletins) are identified on the map.

SCHEDULES AND INSTRUCTIONS

An illustrative example of the housing schedule used in the enumeration is reproduced in Housing Volume I in the appendix of the United States Summary. The same schedule was used for enumerating both occupied and vacant dwelling units, and the enumerators were instructed to omit inapplicable items.

The census enumerators were supplied with written instructions as to the method of canvassing their districts and filling out the schedule. These instructions included the Enumerator's Reference Manual, 1950 Census of the United States, which contains detailed operational definitions and illustrations of the classifications presented in the Housing volumes, and the Enumerator's Workbook, which contains condensed instructions and practice exercises for training purposes. Film strips with accompanying narratives also were among the principal materials used in the training of the enumerators. Instructions from the Enumerator's Reference Manual are reproduced in Volume I in the appendix of the United States Summary, following the illustration of the housing schedule.

DEFINITIONS AND EXPLANATIONS

STANDARD METROPOLITAN AREAS

Origin and purpose.--It has long been recognized that, for many types of social and economic analyses, it is necessary to consider the city and its surrounding area in which the activities form an integrated social and economic system. Prior to the 1950 Census, areas of this type had been defined in somewhat different ways by various agencies. Leading examples were the metropolitan districts of the 1940 Censuses of Housing and Population, the

industrial areas of the Census of Manufactures, and the labor market areas of the Bureau of Employment Security. The usefulness of data published for any of these areas was limited by this lack of comparability.

Accordingly, the Bureau of the Census in cooperation with a number of other Federal agencies, under the leadership of the Bureau of the Budget, established the "standard metropolitan area" so that a wide variety of statistical data might be presented on

a uniform basis. Since counties instead of minor civil divisions are used as the basic component of standard metropolitan areas except in the New England States, it was felt that many more kinds of statistics could be compiled for them than for metropolitan districts.

Definition.--Except in New England, a standard metropolitan area is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more. Counties contiguous to the one containing such a city are included in a standard metropolitan area if according to certain criteria they are essentially metropolitan in character and socially and economically integrated with the central city. Standard metropolitan areas are not confined within State boundaries nor within region or division boundaries. The constituent parts of a standard metropolitan area are listed on page 2 of the chapter for that area.

Criteria of metropolitan character relate primarily to the character of the county as a place of work or as a home for concentrations of nonagricultural workers and their dependents. Specifically, these criteria are:

1. The county must (a) contain 10,000 nonagricultural workers, or (b) contain 10 percent of the nonagricultural workers working in the standard metropolitan area, or (c) have at least one-half of its population residing in minor civil divisions with a population density of 150 or more per square mile and contiguous to the central city.

2. Nonagricultural workers must constitute at least two-thirds of the total number of employed persons of the county.

The criteria of integration relate primarily to the extent of economic and social communication between the outlying counties and the central county as indicated by such items as the following:

1. Fifteen percent or more of the workers residing in the contiguous county work in the county containing the largest city in the standard metropolitan area, or

2. Twenty-five percent or more of the persons working in the contiguous county reside in the county containing the largest city in the standard metropolitan area, or

3. The number of telephone calls per month to the county containing the largest city of the standard metropolitan area from the contiguous county is four or more times the number of subscribers in the contiguous county.

Standard metropolitan areas in New England.--In New England, the city and town are administratively more important than the county, and data are compiled locally for such minor civil divisions. Here, towns and cities were the units used in defining standard metropolitan areas, and the criteria relating to metropolitan character set forth above could not be applied. In their place, a population density criterion of 150 persons or more per square mile, or 100 persons or more per square mile where strong integration was evident, has been used.

Difference between standard metropolitan areas and metropolitan districts.--Since the metropolitan district (used in the 1940 Census) was built up from densely populated minor civil divisions and since the standard metropolitan area is usually composed of whole counties, the standard metropolitan area ordinarily includes a larger territory than the corresponding metropolitan district. In general, the two types of areas are not strictly comparable. Metropolitan districts were defined almost wholly in terms of density, whereas standard metropolitan areas include whole counties selected on the basis of more complicated criteria, so that population and housing densities in the standard metropolitan areas are considerably lower on the average and show more variation from one area to another.

Inside and outside standard metropolitan areas.--In the United States report, the summary tables referred to as "inside standard

metropolitan areas" (tables with prefix letter B in the table number) present statistics for the total of all of the 168 standard metropolitan areas, including the 16 that have less than 100,000 inhabitants as well as the 152 larger areas for which separate statistics are presented in Parts 2 to 5. Similarly, the tables for dwelling units inside standard metropolitan areas for each of the nine geographic divisions present statistics for the total of the standard metropolitan areas, or parts of areas, within each division.

Summary statistics also are presented for all urban occupied dwelling units outside standard metropolitan areas (tables with prefix letter C) and for all rural-nonfarm occupied dwelling units outside standard metropolitan areas (tables with prefix letter D). Each of these two classifications contains many types of dwelling units. In the urban group, the units are located in urban places practically all of which have less than 50,000 inhabitants. The rural classification includes isolated nonfarm dwelling units in open country, those in small villages, and those in built-up rural areas around cities of less than 50,000 inhabitants.

NONFARM RESIDENCE

Nonfarm dwelling units are defined to include all units not on farms and the relatively few units on farms in urban areas. Thus, "nonfarm" as used in this report is equivalent to the category "Urban and rural nonfarm" in Housing Volume I.

Urban housing comprises all dwelling units in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, and villages, (b) incorporated towns of 2,500 inhabitants or more except in New England, New York, and Wisconsin, where "towns" are simply minor civil divisions of counties, (c) the densely settled urban fringe around cities of 50,000 inhabitants or more, including both incorporated and unincorporated areas, and (d) unincorporated places of 2,500 inhabitants or more outside any urban fringe. The remaining dwelling units are classified as rural.

In rural areas, the enumerators were specifically instructed to base the farm-nonfarm classification of a dwelling unit on the respondent's answer to the question, "Is this house on a farm?" Farm residence is therefore determined without regard to the occupation of the members of the household. The classification depends upon the respondent's conception of what is meant by the word "farm," and consequently reflects local usage rather than the uniform application of an objective definition. For this reason, there is considerable variability of response among families living in areas where farm operation is part-time or incidental to other activities.

Dwelling units located on farm land for which cash rent was paid for the house and yard only, and dwelling units on institutional grounds and in summer camps and tourist courts, were classified as nonfarm, regardless of the answer to the above question.

The definition of nonfarm residence in 1950 represents a change from 1940 in procedure and classification. In 1940, the enumerator was not specifically instructed to ask the respondent whether the house was on a farm, although he may have asked rather than have made the decision himself; moreover, there was no specific inclusion of dwelling units for which cash rent was paid for the house and yard only, nor of institutions, summer camps, and tourist courts. The actual difference in count resulting from this change in procedure cannot be measured, but it is believed to be small.

The classification of nonfarm residence is affected slightly by the change in the urban-rural definition. In 1940, dwelling units on farms in the thickly settled areas around cities of 50,000 inhabitants or more were reported as rural-farm units. In 1950, dwelling units in the urban fringe were classified as urban and all such units are included as nonfarm. While the effect on the total nonfarm dwelling units is negligible, this change in definition has contributed to the increase in the number of non-farm units.

DWELLING UNIT

In general, a dwelling unit is a group of rooms or a single room occupied or intended for occupancy as separate living quarters by a family or other group of persons living together or by a person living alone.

Ordinarily, a dwelling unit is a house, an apartment, or a flat. A dwelling unit may be located in a structure devoted to business or other nonresidential use, such as quarters in a warehouse where the watchman lives or a merchant's quarters in back of his shop. Trailers, boats, tents, and railroad cars, when occupied as living quarters, are included in the dwelling unit inventory.

A group of rooms, occupied or intended for occupancy as separate living quarters, is a dwelling unit if it has separate cooking equipment or a separate entrance. A single room, occupied or intended for occupancy as separate living quarters, is a dwelling unit if it has separate cooking equipment or if it constitutes the only living quarters in the structure. Each apartment in a regular apartment house is a dwelling unit even though it may not have separate cooking equipment. Apartments in residential hotels are dwelling units if they have separate cooking equipment or consist of two rooms or more.

The basis for the 1950 definition is the concept of "separateness" and "self-containment," and the criteria include qualifications relating both to physical space and its use by the occupants. There is no problem in identifying as a separate dwelling unit a whole house which is occupied by only one family or a person living alone. Objective criteria were developed for identifying separate quarters in structures occupied by more than one family or other group of persons living together; field tests in such structures disclosed that the one characteristic most often associated with separate living arrangements was the presence of "separate cooking equipment." This criterion, therefore, formed the nucleus for the 1950 definition. The criteria, "group of rooms with separate entrance" and "each apartment in a regular apartment house," were added to the definition to bring into the dwelling unit inventory other types of living quarters whose occupants maintained separate living arrangements; even though the occupants shared or lacked cooking equipment, it was felt that their quarters were sufficiently separate and self-contained to be considered separate dwelling units. By these criteria, therefore, individual sleeping rooms were not identified as separate dwelling units.

Living quarters of the following types are not included in the dwelling unit inventory: rooming houses with five lodgers or more, transient accommodations (tourist courts, hotels, etc., predominantly for transients), and barracks for workers (railroad, construction, etc.). Living quarters in institutions (for delinquent or dependent children, for handicapped persons, for the aged, for prisoners, etc.), general hospitals, and military installations are likewise excluded from the dwelling unit inventory except for dwelling units in buildings containing only family quarters for staff members. According to the results of the 1950 Census of Population, approximately 5,700,000 people, or 3.8 percent of the total population, lived in rooming houses, institutions, transient accommodations, and other quarters not defined as dwelling units.

The count of dwelling units in the 1950 Census may be considered comparable with the count in the 1940 Census although the dwelling unit definitions differed. The purpose of revising the 1940 definition was to keep the same general concept but make it more objective and thereby yield more uniform results in a large-scale enumeration. In the 1940 Census, a dwelling unit was defined as the living quarters occupied, or intended for occupancy, by one household. A household consisted of a family or other group of persons living together with common housekeeping arrangements, or a person living entirely alone. The enumerator was not explicitly instructed to define living quarters as dwelling units on the basis of cooking equipment or separate entrance. Further, in 1940, living quarters with five lodgers or more were tabulated

as dwelling units, whereas in 1950 such living quarters were not included in the dwelling unit count. Even though some living quarters which were classified as separate dwelling units by one definition would not have been separate dwelling units by the other definition, the over-all effect of the differences is believed to be small for a city, county, or larger area.

OCCUPANCY CHARACTERISTICS

Occupied dwelling units.--A dwelling unit is occupied if a person or group of persons was living in it at the time of enumeration or if the occupants were only temporarily absent, as for example, on vacation. However, a dwelling unit occupied at the time of enumeration by nonresidents is not classified as occupied but as a "nonresident" dwelling unit.

Occupied dwelling units and households.--A household consists of those persons who live in a dwelling unit; by definition, therefore, the count of occupied dwelling units is the same as the count of households. However, there may be small differences between these counts in the Housing and the Population reports because the data were processed independently.

Tenure.--A dwelling unit is "owner-occupied" if the owner was one of the persons living in the unit even if the dwelling unit was not fully paid for or had a mortgage on it. If the owner of the unit was a member of the household but was temporarily away from home, as in the case of military service or temporary employment away from home, the unit still was classified as "owner-occupied."

All occupied dwelling units that are not "owner-occupied" were classified as "renter-occupied" whether or not any money rent was paid for the living quarters. Rent-free units and units received in payment for services performed are thus included with the renter-occupied units.

Number of persons.--All persons enumerated in the population census as members of the household were counted in determining the number of persons who live in the dwelling unit. Lodgers, foster children, wards, and resident employees who share the living quarters of the household head are included in the household in addition to family members.

The median number of persons for occupied dwelling units is the theoretical value which divides the dwelling units equally, one-half having more persons and one-half having fewer persons than the median. In the computation of the median, a continuous distribution was assumed. For example, when the median was in the 3-person group, the lower and upper limits of the group were assumed to be 2.5 and 3.5, respectively. Tenths were used in the computation of the median to permit refined comparisons.

Persons per room.--The number of persons per room was computed by dividing the number of persons by the number of rooms in the dwelling unit. The ratio was computed separately for each occupied dwelling unit.

STRUCTURAL CHARACTERISTICS

Type of structure.--A structure either stands by itself with open space on all sides or has vertical walls dividing it from all other structures. A "1-dwelling-unit, detached" structure has open space on all four sides and contains only one dwelling unit. Units in the "Other 1, and 2-dwelling-unit" category are a combination of the "1-dwelling-unit, attached," "1- and 2-dwelling-unit, semidetached," and "2-dwelling-unit, other" categories, which are shown separately in Housing Volume I. A "1-dwelling-unit, attached" structure contains only one dwelling unit, and is one of a row of three or more adjoining structures, or is a structure attached to a nonresidential structure. A semidetached structure is one of two adjoining residential structures, each with open space on the remaining three sides; such a structure containing one or two dwelling units is included in the category "1- and 2-dwelling-unit, semidetached." Units were combined in this latter category because there is evidence that some enumerators misunderstood the instructions regarding semidetached

structures. A "2-dwelling-unit, other" structure is a detached or attached structure containing two dwelling units.

In the tables providing a distribution by value, the "1-dwelling-unit, other" group consists of units in 1-dwelling-unit attached and semidetached structures which have only 1 dwelling unit in the property.

Dwelling units in structures containing three units or more are classified only in terms of the number of dwelling units in the structure. In apartment developments, each building with open space on all sides is considered a separate structure.

Statistics are based on the number of dwelling units classified by the type of structure in which they are located rather than on the number of residential structures. For the "1-dwelling-unit, detached" category, the number of units equals the number of structures. A close approximation of the total number of 1-dwelling-unit structures in an area can be made from the more detailed classifications in Volume I, particularly if the number of units in either type of semidetached structures is known to be small.

Although there are some differences between the 1950 and 1940 definitions of type of structure, a direct comparison can be made for the categories presented in this report. One of the differences is the treatment of structures with a business unit in the structure. In the 1950 tabulations, structures with business were not distinguished from structures without business. In 1940, such distinction was made for units in structures with one to four dwelling units. The number of structures with business is generally small, so that for most practical purposes this difference does not affect the comparability of the data. The term "family" in the 1940 type-of-structure categories is equivalent to "dwelling unit" in the 1950 categories.

Number of rooms.--All rooms which are used, or are suitable for use, as living quarters were counted in determining the number of rooms in the dwelling unit. Included are kitchens, bedrooms, dining rooms, living rooms, and permanently enclosed sunporches of substantial size; finished basement or attic rooms, recreation rooms, or other rooms used or suitable for use as living quarters; and rooms used for office purposes by a person living in the dwelling unit. A kitchenette or "half-room" which is partitioned off from floor to ceiling was counted as a separate room, but a combined kitchenette and dinette separated only by shelves or cabinets was counted as only one room. Not counted as rooms were bathrooms, strip or pullman kitchens, halls or foyers, alcoves, pantries, laundries, closets or storage space, unused basement or attic rooms not suitable for living quarters, and rooms subleased for office or business purposes by a person or persons not living in the dwelling unit.

Year built.--The year the structure was built refers to the year in which the original construction was completed, not to the year in which any later remodeling, addition, reconstruction, or conversion may have taken place. "Year built" statistics are based on dwelling units classified by the date of the original construction of the structure in which they are located. The figures do not represent the number of dwelling units added to the inventory during a given period. They represent the number of units constructed during a given period plus the number created by conversions in structures originally built during the same period, minus the number destroyed in structures built during the period. Losses occur through demolition, fire, flood, disaster, and conversion to nonresidential use or to fewer dwelling units.

Data on year built are subject to some inaccuracy because of errors of response and nonreporting. In most cases, the information is based not on records but on the respondent's knowledge of the facts and his ability to remember the year of construction.

Statistics on year built published by the Bureau of the Census differ in several respects from statistics on new construction published by the Bureau of Labor Statistics. In partic-

ular, the census data include all types of dwelling units. For example, they include trailers and tourist cabins which were occupied as dwelling units, some seasonal homes, and temporary public housing units; whereas, the Bureau of Labor Statistics data are limited to new permanent dwelling units. Further, the census data reflect units gained or lost since the date of original construction, while the Bureau of Labor Statistics counts only the units in the structure as originally built; thus, a unit built in 1941, for example, and later converted to several units would cause the census count to be higher than the Bureau of Labor Statistics count for units constructed in 1941. Finally, the definition of "nonfarm" as used in the Bureau of Labor Statistics reports is based on the concept formerly used by the Bureau of the Census and does not correspond to that used in the 1950 Census.

CONDITION AND PLUMBING FACILITIES

Condition and plumbing facilities as a combined item.--Both the structural condition of a dwelling unit and the type of plumbing facilities are considered measures of the quality of housing. These items have been combined into categories representing various levels of housing quality as measured by condition and plumbing facilities. Such comprehensive categories provide a more feasible means of evaluating quality than is possible by the use of the individual items. The statistics on the combination of condition and plumbing facilities are limited to dwelling units for which reports were made on all of these items.

In 1940, data for state of repair (condition) and plumbing facilities were presented in combination. Because of differences in the enumeration of condition and water supply, these data are not comparable with the 1950 data.

Condition.--To measure condition, dwelling units were classified as "not dilapidated" or "dilapidated." A dwelling unit was reported as dilapidated when it had serious deficiencies, was rundown or neglected, or was of inadequate original construction, so that it did not provide adequate shelter or protection against the elements or endangered the safety of the occupants. A dwelling unit was reported as dilapidated if, because of either deterioration or inadequate original construction, it was below the generally accepted minimum standard for housing and should be torn down or extensively repaired or rebuilt.

The enumerator determined the condition of the dwelling unit on the basis of his own observation. He was instructed to appraise the condition of units uniformly, regardless of neighborhood or race of occupant. The enumerator was provided with detailed written instructions and with pictures illustrating the concepts "deterioration" and "inadequate original construction." In addition, a film strip accompanied by a recorded narrative was shown the enumerator. Photographs of houses and parts of houses depicted various levels of deterioration or inadequate construction, while the narrative informed the enumerator as to which were to be classified as "dilapidated" or "not dilapidated."

The types of deficiencies used in determining condition relate to weather tightness, extent of disrepair, hazards to safety, and inadequate or makeshift construction. Deficiencies which could be revealed only by an engineering survey, or such deficiencies as inadequate light or ventilation, or the presence of dampness or infestation, were not included among the criteria for determining condition of a dwelling unit.

Specifically, a dwelling unit was to be reported as dilapidated if--

1. It had one or more critical deficiencies, as for example--
 - a. Holes, open cracks, rotted, loose, or missing materials over a considerable area of the foundation, outside walls, roof, or inside walls, floors, or ceilings.
 - b. Substantial sagging of floors, walls, or roof.
 - c. Extensive damage by storm, flood, or fire;

or

2. It had a combination of minor deficiencies which were present in sufficient number and extent to give evidence that the unit did not provide adequate shelter or protection against the elements or was physically unsafe. Examples of these deficiencies are--

- a. Holes, open cracks, rotted, loose, or missing materials over a small area.
- b. Shaky or unsafe porch, steps, or railings.
- c. Broken or missing window panes.
- d. Rotted or loose window frames which are no longer rainproof or windproof.
- e. Damaged, unsafe, or makeshift chimney.
- f. Broken, loose, or missing inside stair treads or risers, balusters, or railings.
- g. Deep wear on doorsills, doorframes, outside or inside steps, or floors;

or

3. It was of inadequate original construction. Examples of inadequate original construction are--

- a. Makeshift walls.
- b. Lack of foundation.
- c. Dirt floors.
- d. Inadequately converted cellars, garages, barns, and similar places.

Although the enumerator was provided with detailed oral and written instructions and with visual aids, it was not possible to eliminate completely the element of judgment in the enumeration of this item. There is evidence that some enumerators obtained too large or too small a count of dilapidated units. Consequently, data on condition for small areas, which depend on the work of one or two enumerators, are subject to a wider margin of error than is to be expected for larger areas, where the data represent the returns made by several enumerators.

In the 1940 Census, "dilapidation" was not enumerated; the concept "needing major repairs" was used to provide information about the condition of housing. A dwelling unit was classified as "needing major repairs" when parts of the structure such as floors, roof, plaster, walls, or foundation required major repairs or replacements. A repair was "major" when its continued neglect would have seriously impaired the soundness of the structure and created a safety hazard to the residents. The training program for this item in 1940 did not provide any visual aids or detailed oral and written instructions.

The 1940 Census concept of "major repairs" was replaced by the concept of "dilapidation" for the 1950 Census at the recommendation of a Federal interagency committee on housing adequacy. After a lengthy investigation including field tests of several concepts, the committee reported that "major repairs" was not always a reliable index of housing quality. There was evidence that the enumerator tended to use the cost of the repair in judging between major and minor repairs. Further, "major repairs" measures only the condition of the structure, not the structural level nor the ability of the house to provide adequate shelter. For example, a new house, constructed so that it does not provide adequate protection against the elements, might not technically be in need of "major repairs." Likewise, a unit might have a number of minor deficiencies, none of which technically constitutes a "major repair," but which, when combined, indicate that the unit was inadequate. The committee recommended that the level of quality to be measured, fundamentally, was whether or not the dwelling unit was capable of providing adequate shelter or protection against the elements, and sufficient safeguards for the safety of the occupants. The committee concluded that the term "dilapidated" most accurately described the concept it had recommended for measurement.

No reliable data have been obtained to compare the relationship between the "major repairs" category and the "dilapidated" category. However, it is the opinion of a number of qualified housing economists that if the two definitions were applied in the same census, the count of "dilapidated" units would be smaller than the count of units "needing major repairs." The two terms

differ significantly, and the 1940 and 1950 results on condition are not comparable.

Plumbing facilities.--The category "With private toilet and bath and hot running water" includes those dwelling units with hot running water and with both a flush toilet and a bathtub or shower inside the structure for the exclusive use of the occupants of the unit. "With running water, lacking private toilet or bath" includes those dwelling units having running water in the structure, but lacking a flush toilet or lacking a bathtub or shower for the exclusive use of the occupants of the unit. "No running water" includes units with only piped running water outside the structure or with only other sources of water supply, such as a hand pump.

In table 10, the category "Cold water; lacking hot water, private toilet or bath" consists of units having cold running water inside the structure but lacking one or more of the other facilities. This category is equivalent to "With private toilet and bath, and only cold water" plus "With running water, lacking private toilet or bath" shown in other tables.

A dwelling unit has "running water" if water is piped to it from a pressure or gravity system. A dwelling unit is counted as having hot piped running water whether it is available the year round or only part of the time. For example, hot running water may be available only during the heating season or at various times during the week. The enumeration of water supply in 1950 differed slightly from the 1940 procedure. The 1950 data were collected in terms of location inside or outside the structure, whereas the 1940 data distinguished between location inside or outside the dwelling unit.

A dwelling unit is reported as having a flush toilet if the toilet is inside the structure and is operated by means of water piped to it. A dwelling unit has a bathtub or shower if either type of equipment, supplied with piped running water (not necessarily hot water), is available inside the structure for the use of the occupants of the dwelling unit. An installed bathtub or shower located outside the structure was enumerated as "no bathtub or shower."

Facilities are for exclusive use when the occupants of only one dwelling unit use them. If there are lodgers in the dwelling unit who also use the facilities, the facilities are still reported as for the exclusive use of occupants of the dwelling unit, provided they are not used by occupants of another dwelling unit. A dwelling unit without a flush toilet inside the structure for the exclusive use of the occupants was counted as lacking a private flush toilet; similarly, a dwelling unit without a bathtub or shower inside the structure for the exclusive use of the occupants was counted as lacking a private bath.

Facilities are considered "inside the structure" if they are located within the dwelling unit or elsewhere in the structure, such as in a common hallway, or in a room used by several dwelling units. Facilities or equipment on an open porch are considered to be outside the structure. Those located in an enclosed porch are considered to be inside the structure, even though it may be necessary to go outside the structure to reach them.

EQUIPMENT

Heating equipment.--Heating equipment represents the equipment available for heating the dwelling unit during the winter months. A usable heating system or furnace was reported, even though it may have been temporarily out of order or not in operation at the time of enumeration.

Central heating equipment comprises the categories "Piped steam or hot water" and "Warm air furnace." Other means of heating, with or without flue, are considered to be noncentral heating.

The number of units with central heating equipment is considerably larger than the number of central heating installations.

The majority of multi-unit structures have only one central heating system to service all of the units in the structure.

"Piped steam or hot water" includes radiant, panel, and baseboard heating systems, and radiation. "Warm air furnace" includes piped and pipeless warm air furnaces, as well as floor and wall furnaces. "Noncentral heating, with flue" includes fireplaces and flue-connected heating stoves. A flue is a pipe or enclosed passage, either connected to a chimney or leading directly to the outside of the structure, which carries the smoke or fumes to the outside. All other types of heating equipment, such as electric heaters and portable kerosene heaters, are classified as "noncentral heating, without flue." Stoves and ranges used primarily for cooking were enumerated as heating equipment when they were also the major source of heating.

The 1950 data on heating equipment may be compared with the 1940 data when certain combinations are made. The 1950 category "Warm air furnace" is comparable with the combination of the 1940 groups "Piped warm air system" and "Pipeless warm air furnace." The 1950 classification combining "Noncentral heating, with flue" and "Noncentral heating, without flue" is roughly comparable with the category "Without central heating" in 1940.

Television.--Data on television represent the number of dwelling units which have a television set, even though the set was temporarily out of order or being repaired at the time of enumeration.

FINANCIAL CHARACTERISTICS

Contract monthly rent.--Contract monthly rent is the rent at the time of enumeration contracted for by the renter, regardless of whether it includes furniture, heating fuel, electricity, cooking fuel, water, or other services sometimes supplied. The rental amount was reported to the nearest dollar.

The contract monthly rent data for renter-occupied nonfarm units are considered comparable for the 1950 and the 1940 Censuses, although in 1950 no dollar estimates were made for rent-free units, whereas in 1940 estimates made for rent-free units were included in the distribution of renter units. In 1940, estimates of monthly rent were obtained for owner-occupied and for farm units; in 1950, such data were not collected.

The 1950 rent data indicate rent levels in 1950 and do not reflect changes since 1940 in rents for identical units. In addition to units coming on the market through new construction and conversion, there was a considerable withdrawal of existing rental units through purchase for owner occupancy. Further, there was some shifting of rental units between farm and nonfarm residence. Therefore, the 1950 data apply to a largely different group of rental units.

Changes reflected by the 1940 and 1950 Census data are not comparable with changes in rents obtained by the Bureau of Labor Statistics for its Consumers' Price Index. The data compiled by the Bureau of Labor Statistics represent changes in rent charged for essentially identical units with identical services and facilities.

Gross monthly rent.--The computed rental termed "gross rent" eliminates rent differentials which result from varying practices with respect to the inclusion of heat, utilities, and furniture as part of the contract rent. Gross monthly rent is contract monthly rent plus the reported average monthly cost of utilities (water, electricity, gas) and fuels such as wood, coal, and oil, if these items were paid for by the renter in addition to contract monthly rent. If furniture was included in the contract rent, the reported estimated rent of the dwelling unit without furniture was used in the computation rather than the contract rent.

Gross rent as percentage of income.--Gross rent as percentage of income is the percent of the income which is paid for gross rent. The yearly gross rent (gross monthly rent multiplied

by 12) is expressed as a percentage of the total income in 1949 of the primary family or the primary individual. The percentage was computed separately for each unit. The category "Not available" includes all dwelling units for which gross rent as a percentage of income was not computed because rent or income or both were not reported, because the unit was reported as being occupied rent-free, or because extremes of either rent or income would have resulted in relatively meaningless ratios. In processing, rents of \$999 or more and incomes of less than \$100 or \$10,000 or more were considered as extremes.

Value of 1-dwelling-unit structures.--Value represents the amount which the owner-occupant estimates that the property, including the structure and its land, would sell for under ordinary conditions and not at forced sale. Value data are limited to nonfarm units in 1-dwelling-unit structures without business and with only one dwelling unit included in the property. Values for other owner-occupied dwelling units are not provided because they would reflect varying amounts for business uses or for more than one dwelling unit in the property. Value was tabulated to the nearest hundred dollars.

In 1940, the value data were presented for owner-occupied units in both multi-dwelling-unit structures and 1-dwelling-unit structures. If the owner occupied one of the dwelling units in a structure containing two dwelling units or more, or if a part of the structure was used for business purposes, the value reported in 1940 represented an estimate for that portion occupied by the owner and his household. Thus, the data on value of owner-occupied units are not strictly comparable for the two censuses because of differences in the types of units for which value was reported. However, 1940 value statistics for 1-dwelling-unit structures without business, which are roughly comparable with the 1950 data, are presented in Volume III of the 1940 Housing reports for the United States, States, and cities of 100,000 inhabitants or more.

Value-income ratio.--The value-income ratio is the quotient of the value of the owner-occupied dwelling unit divided by the total income in 1949 of the primary family or the primary individual. The ratio was computed separately for each unit. The category "Not available" includes all dwelling units for which the value-income ratios were not computed because either value or income, or both, were not reported or because extremes of either value or income would have resulted in relatively meaningless ratios. In processing, values less than \$100 or \$99,900 or more and incomes less than \$100 or \$10,000 or more were considered as extremes.

HOUSEHOLD CHARACTERISTICS

Household.--A household consists of all persons who occupy a dwelling unit. Included are the related family members and also the unrelated persons, if any, such as lodgers or employees, who share the dwelling unit. A person living alone in a dwelling unit, or a group of unrelated persons sharing a dwelling unit as partners, is considered a household. The data on households in this report are expressed in terms of occupied dwelling units.

Each household consists of a primary family, or a primary individual, and nonrelatives, if any.

Despite minor differences between the criteria used in 1950 and 1940 to identify a household, the number of occupied dwelling units (households) as shown in this report may be regarded as comparable with the number of "private households" shown in the Population reports published by the Bureau of the Census on the basis of the 1940 Census.

Primary family.--A primary family consists of the household head and all persons in the household related to him by blood, marriage, or adoption.

Primary individual.--A household head living alone or with nonrelatives only is a primary individual. He is not regarded as a family. In 1940, the term "family" included both "primary family" and "primary individual."

Head of household.--One person in each household is designated as "head." He is usually the person regarded as the head by the members of the household. Married women are not classified as heads if their husbands were living with them at the time of the census.

Sex and age of head.--The category "Male head, wife present, no nonrelatives" is identical with "Husband-wife families, no nonrelatives" in the tabulations by type of household. A household was classified in these categories if both the husband and wife were reported as members of the household even though one or the other may have been temporarily absent on business or vacation, visiting, in a hospital, etc., at the time of the enumeration. From the viewpoint of housing analysis, this group is the most important since about 75 percent of all nonfarm occupied dwelling units contain this type of family. The category "Other male head" includes those dwelling units occupied by households with male heads, wife present, with nonrelatives living with them; male heads who are married, but with wife absent because of separation, divorce, or other reason where husband and wife maintain separate residences for several months or more; and male heads who are widowed or single. "Female head" comprises all female heads of households regardless of their marital status. The age classification is based on the age of the head as of his last birthday.

Type of household.--Each household in the group "Husband-wife families, no nonrelatives" consists of the head, his wife, and other persons, if any, who are related to him. In the Housing reports, this group is considered the normal family group. "Other family groups, no nonrelatives" consist of the head without a spouse, and one or more persons related to the head. A person who occupies a dwelling unit alone constitutes a "1-person household." All households containing one or more nonrelatives are included in the group "Households with nonrelatives."

A nonrelative is a lodger, partner, foster child, ward, resident employee, or other household member who is not related to the head.

Income in 1949.--Income is the sum of the money received by the primary family or primary individual, less losses, from the following sources: wages or salary; net income (or loss) from the operation of a farm, ranch, business, or profession; net income (or loss) from rents or receipts from roomers or boarders; royalties; interest, dividends, and periodic income from estates and trust funds; pensions; veterans' payments, armed-forces allotments for dependents, and other governmental payments or assistance; and other income such as contributions for support from persons who are not members of the household, alimony, and periodic receipts from insurance policies or annuities. The figures in this report represent the amount of income received before deductions for personal income taxes, social security, bond purchases, union dues, etc.

Receipts from the following sources were not included as income: 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," such as food produced and consumed in the home, or free living quarters; withdrawals of bank deposits; money borrowed; tax refunds; gifts; and lump-sum inheritances or insurance payments.

Since the unit of tabulation in this report is an occupied dwelling unit, statistics on income relate to the income of the primary family, or primary individual, occupying the dwelling unit; that is, the sum of the income of the head of the primary family and the incomes of all persons in the household related to the head, or simply the income of the primary individual where no related persons occupy the unit. Incomes of persons living in the unit but not related to the head of the household are not included in this sum.

The figures in all field surveys of income are subject to errors of response and nonreporting. In most cases, the schedule entries for income are based not on records but on memory, usually that of the housewife. The memory factor in data derived from field surveys of income probably produces underestimates, because the tendency is to forget minor or irregular sources of income. Other errors of reporting are due to misrepresentation or misunderstanding of the income questions.

Another possible source of understatement in the figures on family income was the assumption that there was no other income in the family when only the head's income was reported. It is estimated that this editing assumption was made for about 5 percent of the families. This procedure was adopted in order to make maximum use of the information obtained. In the large majority of the fully reported cases, the head's income constituted all or most of the total family income.

In the 1950 Census, family income is the sum of the incomes of all family members 14 years of age and over. For each member, information was requested on the following income categories: (a) The amount of money wages or salary received in 1949; (b) the amount of net money income received from self-employment in 1949; and (c) the amount of other money income received in 1949, e.g., interest, dividends, veterans' allowances, pensions, or net income from rents. The family income data in this report are more inclusive than the data from the 1940 Census and therefore are not comparable. In 1940, information was collected on the amount of money wages or salary income of each private family. If more than \$50, the receipt, but not the amount, of income from other sources was reported.

The income data in this report also differ from income data for families and unrelated individuals in the 1950 Population reports. "Families" and "unrelated individuals" as used in the Population reports refer to both primary and secondary families and primary and secondary individuals.

RELIABILITY OF DATA

CONSISTENCY

Comparability of subjects.--Because of the methods by which the data were compiled, cells within a table may not add to the total for a category, and corresponding statistics may not agree precisely from one table to another. The differences usually are small and should not affect the validity of the cross-classifications.

There are variations also between the figures in this report and those for corresponding subjects in Volume I (H-A bulletins) of the Housing reports and in the Population reports. Comparability is affected by differences in the method of processing and sampling.

Comparability with Housing Volume I.--Figures in Housing Volume II generally are lower than those in Housing Volume I for several reasons. The two sets of data were prepared from separate

tabulations and processing differences were not adjusted. In the processing for Volume II, a small proportion of tabulation cards was excluded because identification as to owner- or renter-occupancy did not register on the cards. Furthermore, the figures in Volume II were obtained from representative samples of dwelling units, and occasional failure by the enumerator to follow the sampling instructions precisely tended to produce an additional undercount of household heads which formed the basis for the sample. The effect of this undercount may be eliminated by means of ratio estimates. (See section on "Ratio estimates.")

In Volume I, statistics for all subjects except year built and equipment and fuels were obtained from complete counts of dwelling units. To obtain comparable data for standard metropolitan areas from Volume I, data for rural-farm units in the constituent counties (towns in New England) must be subtracted from the area totals, since Volume II is restricted to data for non-farm housing.

Relationship between the volumes in the counts of owner- and renter-occupied units for the United States and estimates of types of units not published in either volume are presented in table A. Similar comparisons of published figures can be made for each of the geographic divisions. Estimates of unpublished figures are not available for the divisions.

The first two columns of table A contain the published figures for selected types of occupied dwelling units; they indicate which classifications are available in each volume and reflect the extent to which the figures in Volume II are lower than the complete counts in Volume I. For example, the figure for renter-occupied dwelling units in Volume II is 16,918,760 as compared with 17,303,613 in Volume I. The differences, which are due to processing and sampling procedures, are proportionately small, and for most analytical purposes are not significant.

In addition to differences arising from processing and sampling procedures, differences in concepts used for selected data are reflected in table A. In analyzing the data in a particular table, the type of units on which the data are based should be taken into consideration. This caution applies especially to the tables relating to value of property and value-income ratios. Statistics on value, in both Volumes I and II, are restricted to owner-occupied units in "1-dwelling-unit structures without business and with only 1 dwelling unit on the property"; therefore, counts of such units are necessarily lower than the counts of total owner-occupied dwelling units. For example, tables on value data in Volume II relate to 15,298,250 owner-occupied dwelling units in 1-dwelling-unit structures without business and with only one dwelling unit on the property, while tables on other characteristics of owner units relate to 19,014,765 total owner-occupied units.

The third column of table A is a combination of complete-count and estimated figures to provide a more complete distribution of owner-occupied dwelling units than is available in either Volume I or II. The complete-count figures in this column are from Volume I.

Table A.--RELATIONSHIP BETWEEN VOLUME I AND VOLUME II, AND ESTIMATES OF SELECTED TYPE-OF-STRUCTURE COMPONENTS, FOR THE UNITED STATES

Subject	Published in--		Total (complete count or estimate ²)
	Volume I	Volume II	
ALL OCCUPIED DWELLING UNITS			
Total.....	37,105,259	35,933,525	37,105,259
Renter-occupied units.....	17,303,613	16,918,760	17,303,613
Owner-occupied units.....	19,801,646	19,014,765	19,801,646
In 1-dwelling-unit structures.....	...	...	17,124,000
Detached (including trailers).....	16,084,611	15,456,955	16,084,611
Attached.....	664,191	...	664,191
Semidetached.....	...	...	2375,000
In 2-or-more-dwelling-unit structures.....	...	...	2,678,000
OWNER-OCCUPIED UNITS IN 1-DWELLING-UNIT STRUCTURES			
Total.....	...	...	17,124,000
In 1-dwelling-unit structures without business.....	...	...	16,371,000
On 1-dwelling-unit properties.....	15,878,421	15,298,250	15,878,421
Detached.....	...	14,440,570	14,988,000
Attached or semidetached.....	...	857,680	890,000
On 2-or-more-dwelling-unit properties.....	...	...	493,000
In 1-dwelling-unit structures with business.....	...	...	250,000
Trailers.....	241,312	...	241,312
Tents, boats.....	...	...	212,000

¹ Figures rounded to nearest thousand are estimates.

² Based on special tabulation of approximately 1/10 of 1 percent of the dwelling units.

³ Ratio estimate.

SAMPLE DESIGN

Statistics on all subjects except year built, television, and heating equipment are based on a representative sample of approximately 20 percent of the occupied nonfarm dwelling units inside standard metropolitan areas, 1 1/9 percent of the occupied nonfarm dwelling units in selected territory outside standard metropolitan areas, and 3 1/3 percent of the occupied nonfarm dwelling units in the remaining territory.

The 20-percent sample used inside standard metropolitan areas was selected in the following manner. In the 1950 Census, a separate line was provided on the population schedule for each person enumerated, with every fifth line designated as a sample line. Five versions of the schedule were designed, and within each enumeration district the schedules were divided approximately equally among the five versions. On each version, the sample constituted a different set of lines; as a result, each line on the schedule was in the sample on one of the five versions. The 20-percent sample of dwelling units used in this report comprises those units for which the head of the household was enumerated on a sample line of the population schedule.¹

Since separate statistics are published for each standard metropolitan area, the higher rate of sampling (20 percent) was needed inside standard metropolitan areas. For territory outside standard metropolitan areas, a 3 1/3-percent sample was used in most of the States. This sample was obtained by selecting approximately every sixth household in the 20-percent sample. In six of the more populous States, however, a 1 1/9-percent sample was used in all territory outside standard metropolitan areas; and, in another six States, a 1 1/9-percent sample was used in urban territory outside standard metropolitan areas, with a 3 1/3-percent sample in the rural territory. The 1 1/9-percent sample consisted of approximately every 18th household in the 20-percent sample. The over-all proportions of dwelling units in the sample for the United States, by geographic division and part of division, are summarized in table B.

Table B.--PERCENTAGE OF DWELLING UNITS IN SAMPLE

(In those areas in which a constant sampling rate was used, the percentages are either 20.0 or 3.3; in other territory, the percentages are the weighted averages of the rates in the parts covered by 20-, 3 1/3-, and 1 1/9-percent samples)

Division	Owner-occupied dwelling units				Renter-occupied dwelling units			
	Total	Inside standard metropolitan areas	Outside standard metropolitan areas		Total	Inside standard metropolitan areas	Outside standard metropolitan areas	
			Urban	Rural			Urban	Rural
United States.....	13.0	20.0	2.4	2.8	14.4	20.0	2.5	2.8
New England.....	13.7	20.0	2.6	3.3	15.2	20.0	2.7	3.3
Middle Atlantic.....	16.4	20.0	2.0	2.4	18.0	20.0	2.0	2.4
East North Central..	13.4	20.0	1.6	1.6	15.2	20.0	1.6	1.6
West North Central..	10.4	20.0	2.4	3.3	11.6	20.0	2.5	3.3
South Atlantic.....	11.7	20.0	3.3	3.3	11.7	20.0	3.3	3.3
East South Central..	10.1	20.0	2.8	2.6	10.2	20.0	2.8	2.7
West South Central..	10.3	20.0	2.2	2.3	11.0	20.0	2.3	2.3
Mountain.....	9.2	20.0	3.3	3.3	9.0	20.0	3.3	3.3
Pacific.....	15.7	20.0	2.2	3.3	16.0	20.0	2.1	3.3

Statistics covering year built, television, and heating equipment are based on reports from about one-fifth of the number of households indicated above, i.e., from a 4-percent sample inside standard metropolitan areas, a 2/3 of 1-percent sample in most of the territory outside standard metropolitan areas, and a 2/9 of 1-percent sample in the rest of the territory. In all cases, the dwelling units for which information on these subjects was obtained consisted of subsamples of units in the larger sample. The subsamples were selected as follows. In the 1950 Census of Housing, there were nine subjects obtained on a sample basis. These nine subjects were arranged in five groups which were listed in sequence on the housing schedules so that, for each dwelling unit, information was requested for only one or two of the subjects. The group appearing first in the sequence was varied to obtain five versions of the schedule; and within each enumeration district, the schedules were divided approximately equally among the five versions.² Year built, television, and heating equipment appeared in three different groups. For this report, data on the three subjects were obtained from those units for which the particular information was obtained and which were also in either the 20-, 3 1/3-, or 1 1/9-percent samples of household heads.

¹ In 19 counties of Michigan and Ohio, a different sampling procedure was used and the sample consisted basically of every fifth household.

² A slightly different procedure was used in 19 counties of Ohio and Michigan.

Although the procedure established for the selection of the samples did not automatically insure that the number of dwelling units for each sample would be precisely the proportion of the total indicated by the sampling rate, the procedure was unbiased, and for large areas the deviation from these rates was expected to be quite small. However, in most areas, there was a slight undersample which arose when the enumerator failed to follow his instructions exactly; another slight bias resulted from the fact that a small proportion of tabulation cards was omitted from the processing because identification as to tenure did not register on the cards. The processing and enumeration errors have had the effect of consistently reducing the size of the samples. These biases have relatively little effect on the distributions, although they result in the number of dwelling units in most categories being slightly understated. For example, they result in estimates of the total owner-occupied and renter-occupied nonfarm dwelling units in the United States of 19,014,765 and 16,918,760, respectively, as compared to complete counts of 19,801,646 and 17,303,613.

For the United States tables presenting characteristics of dwelling units inside standard metropolitan areas, estimates based on the 20-percent sample were obtained by multiplying by five the number of dwelling units in the sample with the specified characteristic; estimates based on the 4-percent samples were obtained by inflating the sample results by the factors necessary to make the total in each column agree with estimates based on the 20-percent sample, except for differences due to rounding. For dwelling units outside standard metropolitan areas, estimates for all items except year built, television, and heating equipment were obtained by inflating the sample results by the factors necessary to make the total owner-occupied and renter-occupied dwelling units agree closely with estimates based on a 20-percent sample; for year built, television, and heating equip-

ment, the sample results were inflated so that their column totals agreed with the column totals for the other items. The same procedure was followed in the tables for the geographic divisions except that tabulation discrepancies were not adjusted.

SAMPLING VARIABILITY

Since the data are based on samples, they are subject to sampling variability, which can be determined from the standard errors shown in tables C and D and the information supplied in table E. These tables do not reflect the effects of the biases mentioned above. Table C presents the approximate standard errors of sample estimates of selected size inside standard metropolitan areas. Table D shows the approximate standard errors of percentages when computed by using data from this report for both numerator and denominator. Table D relates only to estimates of standard errors for dwelling units inside standard metropolitan areas. In order to derive the standard errors for statistics referring to dwelling units outside standard metropolitan areas, or to total dwelling units in a division or the United States, it is necessary to multiply the standard errors shown in tables C and D by the appropriate factors in table E. Linear interpolation can be used for values not shown.

The standard error is a measure of sampling variability. The chances are about 2 out of 3 that the difference due to sampling variability between an estimate and the figure that would have been obtained from a complete count of the dwelling units is less than the standard error. The amount by which the standard error must be multiplied to obtain other odds deemed more appropriate can be found in most statistical textbooks. For example, the chances are about 19 out of 20 that the difference is less than twice the standard error, and 99 out of 100 that it is less than 2½ times the standard error.

Table C.--STANDARD ERROR OF ESTIMATED NUMBER FOR DWELLING UNITS INSIDE STANDARD METROPOLITAN AREAS

(Range of 2 chances out of 3. Multiplication of the standard errors in table C by the factors in table E will yield the standard errors of estimates for total dwelling units and for dwelling units outside standard metropolitan areas)

Estimated number	Standard error of estimate relating to year built, television, and heating equipment, if number of owner-occupied or renter-occupied dwelling units in column ¹ is:								Standard error of estimate relating to all other items if number of owner-occupied or renter-occupied dwelling units in area ¹ is:							
	1,000	5,000	25,000	100,000	250,000	1,000,000	5,000,000	20,000,000	1,000	5,000	25,000	100,000	250,000	1,000,000	5,000,000	20,000,000
100.....	50	50	50	50	50	50	50	50	20	20	20	20	20	20	20	20
250.....	70	80	80	80	80	80	80	80	30	30	30	30	30	30	30	30
500.....	90	110	110	110	110	110	110	110	30	40	50	50	50	50	50	50
1,000.....	70	140	150	150	160	160	160	160	...	60	60	70	70	70	70	70
2,500.....	...	190	240	240	240	250	250	250	...	70	100	100	100	100	100	100
5,000.....	...	160	320	340	340	350	350	350	...	...	130	140	150	150	150	150
10,000.....	...	...	410	470	480	490	490	490	...	...	160	200	200	210	210	210
25,000.....	...	...	360	690	740	770	770	770	...	...	...	290	310	330	330	330
50,000.....	...	...	...	850	1,010	1,070	1,090	1,100	...	...	...	330	420	450	460	470
100,000.....	...	...	...	710	1,280	1,490	1,540	1,550	...	...	...	...	510	620	650	660
250,000.....	...	...	...	...	1,120	2,200	2,400	2,440	...	...	...	...	...	900	1,010	1,030
500,000.....	...	...	...	...	...	2,700	3,330	3,430	...	...	...	...	...	1,040	1,400	1,450
1,000,000.....	...	...	...	...	...	2,240	4,500	4,800	...	...	...	...	...	...	1,860	2,030
5,000,000.....	...	...	...	...	...	...	5,020	9,830	...	...	...	...	...	...	...	4,030
10,000,000.....	...	...	...	...	...	...	...	12,050	...	...	...	...	...	...	...	4,650

¹ For estimates relating to year built, television, and heating equipment, the total number of dwelling units in the column in which the estimate under consideration appears determines the column of table C to be used; that is, in table 1, it is the number of dwelling units in the value class of which the estimate is a subclass; in table 2, it is the number in the rental class; etc. For estimates relating to other items, the total number of owner-occupied or renter-occupied units in the area determines the column to be used; for example, for a statistic relating to renter-occupied units, the column to be used is the one whose heading most closely corresponds to the total number of renter-occupied units in the area.

Table D.--STANDARD ERROR OF ESTIMATED PERCENTAGE FOR DWELLING UNITS INSIDE STANDARD METROPOLITAN AREAS

(Range of 2 chances out of 3. Multiplication of the standard errors in table D by the factors in table E will yield the standard errors of estimates for total dwelling units and for dwelling units outside standard metropolitan areas)

Estimated percentage	Base of percentage for--															
	Estimates relating to year built, television, and heating equipment								Estimates relating to all other items							
	1,000	2,500	5,000	10,000	50,000	100,000	500,000	5,000,000	1,000	2,500	5,000	10,000	50,000	100,000	500,000	5,000,000
2 or 98.....	2.2	1.4	0.9	0.7	0.3	0.2	0.1	...	0.9	0.6	0.4	0.3	0.1	0.1	...	...
5 or 95.....	3.4	2.1	1.5	1.1	0.5	0.3	0.2	0.1	1.4	0.9	0.6	0.5	0.2	0.1	0.1	...
10 or 90.....	4.6	2.9	2.1	1.5	0.7	0.5	0.2	0.1	2.0	1.2	0.9	0.6	0.3	0.2	0.1	...
25 or 75.....	6.7	4.2	3.0	2.1	0.9	0.7	0.3	0.1	2.8	1.8	1.3	0.9	0.4	0.3	0.1	...
50.....	7.7	4.9	3.5	2.4	1.1	0.8	0.3	0.1	3.3	2.1	1.5	1.0	0.5	0.3	0.1	...

Table E.—FACTORS TO APPLY TO TABLES C AND D TO DERIVE STANDARD ERRORS OF ESTIMATES FOR TOTAL DWELLING UNITS AND FOR DWELLING UNITS OUTSIDE STANDARD METROPOLITAN AREAS

Area	Factors for estimates relating to year built, television, and heating equipment			Factors for estimates relating to all other items		
	Total ¹	Outside standard metropolitan areas		Total ¹	Outside standard metropolitan areas	
		Urban ²	Rural ³		Urban ²	Rural ³
United States.....	1.9	2.9	2.6	2.0	3.2	2.9
New England.....	1.7	2.7	2.2	1.8	3.0	2.5
Middle Atlantic.....	1.6	3.2	2.9	1.7	3.5	3.2
East North Central.....	2.1	3.5	3.3	2.2	3.8	3.6
West North Central.....	2.0	2.9	2.2	2.2	3.2	2.5
South Atlantic.....	1.7	2.2	2.2	1.9	2.5	2.5
East South Central.....	2.1	2.6	2.7	2.4	2.9	3.1
West South Central.....	2.3	3.0	3.0	2.5	3.3	3.3
Mountain.....	1.9	2.2	2.2	2.1	2.5	2.5
Pacific.....	1.6	3.1	2.2	1.7	3.4	2.5

¹ Use with detailed tables having prefix A.

² Use with detailed tables having prefix C.

³ Use with detailed tables having prefix D.

Illustration: Table 5 for the total United States shows that, in rural territory outside standard metropolitan areas, there were an estimated 155,090 renter-occupied dwelling units with 4 rooms containing 3 persons (24 percent of the 649,595 total renter-occupied dwelling units with 4 rooms). From table E, it can be determined that the factor to apply for estimates of this item for rural dwelling units outside standard metropolitan areas is 2.9. The total number of rural renter-occupied dwelling units outside standard metropolitan areas is 2,423,680, and, interpolating for an estimate of 155,090 between the columns headed 1,000,000 and 5,000,000 in table C, results in a standard error of about 750. The standard error of the estimate of 155,090 is therefore the product of 750 and 2.9, or approximately 2,200. Consequently, the chances are about 2 out of 3 that the figure which would have been obtained from a complete count of the rural renter-occupied dwelling units outside standard metropolitan areas, with 4 rooms and 3 persons, differs by less than 2,200 from the sample estimate of 155,090. It also follows that there is only about 1 chance in 100 that a complete census result would differ by as much as 5,500, that is, by about 2½ times the standard error.

The standard error of the percentage estimate for this same item may be obtained by multiplying the entry for 24 percent on a base of 649,595 in table D by the factor in table E, which is equal to the product of 0.1 and 2.9, or 0.3 percent.

The standard errors derived in the manner described above were computed on the assumption that if a characteristic represents a particular proportion of all dwelling units in an area, it represents the same proportion in each part of the area that was sampled at a different rate. However, the standard error will change only slightly even with fairly large deviations in these proportions.³

The standard errors derived by the use of tables C and E do not apply to estimates which are close to the total number of

³ The estimates of the standard errors derived from tables C through E will deviate significantly from the true values when the proportions of dwelling units having a specific characteristic are drastically different inside standard metropolitan areas from those outside. In this case, a better approximation of a standard error relating to total dwelling units in a division or in the United States may be computed as follows: Determine separately the standard error of that part of the total estimate which is for dwelling units inside standard metropolitan areas, that part which is for rural dwelling units outside standard metropolitan areas, and that part which is for urban dwelling units outside standard metropolitan areas; then obtain the square root of the sum of the squares of these standard errors.

owner-occupied or renter-occupied units in an area. In this case, the standard error is approximately equal to $2\sqrt{X}$, where X is the size of the estimate. This applies both to estimates of year built, television, and heating equipment, and to estimates of other items.

The standard errors obtained above are not directly applicable to differences between two sample estimates. The standard error of a difference is approximately the square root of the sum of the squares of each standard error considered separately. This formula will represent the actual standard error quite accurately for the difference between separate and uncorrelated characteristics, although it is only a rough approximation in most other cases.

Some of the tables present estimates of the median number of persons as well as the corresponding distributions. The sampling variability of estimates of medians depends on the distributions upon which the medians are based.⁴

The smaller figures and small differences between figures should be used with particular care because they are subject to larger relative error arising from processing and enumeration bias and larger relative sampling variability. These figures permit analysis of broader groups with smaller relative bias and sampling variability.

RATIO ESTIMATES

It is possible to make an improved estimate of an absolute number (improved in the sense that the standard error is smaller) whenever the class in question forms a part of a larger group for which both a sample estimate and a complete count are available. This alternative estimate is particularly useful when the characteristic being estimated is a substantial part of the larger group; when the proportion is small, the improvement will be relatively minor. The improved estimate (usually referred to as a ratio estimate) may be obtained by multiplying the estimate shown in this report by the ratio of the complete count of the larger group to the sample estimate of this larger group. Complete counts for many of the items can be derived from Housing Volume I. Ratio estimates may be applied to statistics based on any of the samples. The effect of using ratio estimates of this type is, in general, to reduce the relative sampling variability from that indicated for an estimate of a given size in table C to that shown for the corresponding percentage in table D, or less. Estimates of these types are not published in this report.

⁴ The standard error of a median inside standard metropolitan areas for an item other than year built, television, or heating equipment may be estimated as follows: If the estimated total number reporting the characteristic is N, compute the number $N/2 - \sqrt{N}$. Cumulate the frequencies in the table until the class interval which contains this number $N/2 - \sqrt{N}$ cases lie. In a similar manner, obtain the value below which $N/2 + \sqrt{N}$ cases lie. If information on the characteristic had been obtained from a complete count of dwelling units, the chances are about 2 out of 3 that the median would lie between these two values. The chances are about 19 out of 20 that the median would lie in the interval computed similarly but using $N/2 \pm 2\sqrt{N}$, and about 99 in 100 that it would be in the interval obtained by using $N/2 \pm 2.5\sqrt{N}$. For total dwelling units and for dwelling units outside standard metropolitan areas, the standard error of a median may be obtained by using $N/2 \pm F\sqrt{N}$, where F represents the factor shown in table E; twice the standard error may be obtained by using $N/2 \pm 2F\sqrt{N}$; etc. For estimates relating to year built, television, and heating equipment, the same procedure may be used; but the range for the standard error inside standard metropolitan areas is $N/2 \pm 2.5\sqrt{N}$, and the ranges in other areas can be obtained by using $N/2 \pm 2.5F\sqrt{N}$.