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BUREAU OF THE CENSUS
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Roy V. Peel, Director (To Feb. 4, 1953)
BUREAU OF THE CENSUS

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Census of Housing: 1950

*(taken as part of the Seventeenth Decennial Census
of the United States)*

Volume I
GENERAL CHARACTERISTICS

Part 4
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Prepared under the supervision of
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This volume comprises Series H-A bulletins.

SUGGESTED IDENTIFICATION

U. S. Bureau of the Census. *U. S. Census of Housing: 1950.*

Vol. I, *General Characteristics, Part 4: Michigan—New York.*

U. S. Government Printing Office, Washington, D. C., 1953.

PREFACE

This part of Volume I presents statistics on the general characteristics of dwelling units for States, 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 data are based on tabulations from the 1950 Census of Housing, taken as of April 1, 1950. Authorization for the 1950 Census of Housing as part of the decennial census was provided by the Housing Act of 1949. This act, which was approved July 15, 1949, provided that "The Director of the Census is authorized and directed to take a census of housing in each State, the District of Columbia, Hawaii, Puerto Rico, the Virgin Islands, and Alaska, in the year 1950 and decennially thereafter in conjunction with, at the same time, and as a part of the population inquiry of the decennial census in order to provide information concerning the number, characteristics (including utilities and equipment), and geographical distribution of dwelling units in the United States. The Director of the Census is authorized to collect such supplementary statistics (either in advance of or after the taking of such census) as are necessary to the completion thereof."

Volume I, *General Characteristics*, contains data on practically all subjects enumerated in the 1950 Census of Housing. Chapters in this volume were published first as a series of bulletins, Series H-A. Bulletins were published for the United States, each State and the District of Columbia, Alaska, Hawaii, Puerto Rico, and the Virgin Islands of the United States.

Statistics in the United States Summary (Part 1 of Volume I) are summarizations or compilations of data from the individual State chapters; statistics are presented for continental United States, regions, and geographic divisions, as well as for the States and the District of Columbia, standard metropolitan areas, cities of 100,000 inhabitants or more, and urbanized areas.

The State chapters comprise Parts 2 to 6; and the chapters for Alaska, Hawaii, Puerto Rico, and the Virgin Islands, which present data for areas comparable to those for the States, comprise Part 7.

The materials and statistics in this volume were prepared under the direction of Howard G. Brunsman, Chief, Population and Housing Division, and Wayne F. Daugherty, Assistant Chief for Housing. Edwin D. Goldfield assisted in coordinating the census programs. The planning and development of the statistical content of the volume were under the supervision of Robert C. Hamer, assisted by Floyd D. McNaughton and Nathan Krevor; the text was prepared by Carl A. S. Coan and Beulah Washabaugh.

The compilation of the statistics was under the direction of Robert B. Voight and supervised by Morton A. Meyer and Milton D. Lieberman, assisted by Sigmund Schor, Percival J. Ableman, and Ruth T. Stanton. Sampling procedures were under the supervision of Joseph Steinberg, assisted by Joseph Waksberg and Albert Mindlin. The technical editorial work was under the supervision of Mildred M. Russell, assisted by Dorothy M. Belzer.

The collection of the information on which these statistics are based was under the direction of Lowell T. Galt, then Chief, Field Division. The organization and operation of the field service were under the supervision of John M. Bell, Assistant Chief for Operations, assisted by Charles F. Haas. The planning and procedures of the field program were under the supervision of Jack B. Robertson, then Assistant Chief for Programs, assisted by Leon S. Geoffrey and Harold Nisselson. Training materials, including visual aids, were prepared under the supervision of James G. Stockard, assisted by Elizabeth T. Gardiner.

Tabulations were under the direction of C. F. Van Aken, Chief, Machine Tabulation Division, and supervised by Morton Boisen, assisted by Ralph E. Mullendore, Betty S. Mitchell, and Maurice C. Fletcher. The geographic work, including the delineation of special types of urban territory and the preparation of maps, was under the direction of Clarence E. Batschelet, Chief, Geography Division. Robert H. Brooks of the Administrative Service Division was responsible for the printing arrangements. Other members of the staff have made significant contributions to the conduct of the housing census and to the materials presented in this volume.

The Technical Advisory Committee on Housing Statistics advised the Bureau on the selection of subjects, concepts, and definitions to be used in the housing census. The Bureau staff called upon members of the committee for advice throughout all the stages of planning, and their counsel and guidance have been invaluable in developing the census program. Those who served on the committee were: Ernest M. Fisher, Chairman, E. Everett Ashley, III, L. Durward Badgley, Lawrence N. Bloomberg, Roy J. Burroughs, Malcolm B. Catlin, Miles Colean, Donald R. G. Cowan, F. Stuart Fitzpatrick, Leo Goodman, Shirley K. Hart, Lyman Hill, Ethel D. Hoover, Paul F. Krueger, Richard U. Ratcliff, Bert Seidman, Allan F. Thornton, Allan A. Twichell, Warren J. Vinton, and Max S. Wehrly.

In addition to those of the present staff, important contributions to the general planning of the 1950 Census were made by the late J. C. Capt, Director of the Census until his retirement on August 17, 1949, and Dr. Philip M. Hauser, Acting Director until March 9, 1950.

U. S. CENSUS OF HOUSING: 1950

Volume

- I General Characteristics (comprising Series H-A bulletins)
- II Nonfarm Housing Characteristics (comprising Series H-B bulletins)
- III Farm Housing Characteristics
- IV Residential Financing
- V Block Statistics (comprising Series H-E bulletins)
Housing statistics for census tracts are included in Population Series P-D bulletins.

U. S. CENSUS OF POPULATION: 1950

Volume

- I Number of Inhabitants (comprising Series P-A bulletins)
- II Characteristics of the Population (comprising Series P-A, P-B, and P-C bulletins)
- III Census Tract Statistics (comprising Series P-D bulletins)
- IV Special Reports (comprising Series P-E bulletins): Employment Characteristics, Occupational and Industrial Characteristics, Characteristics of Families, Marital Status, Institutional Population, Nativity and Parentage, Nonwhite Population by Race, Persons of Spanish Surname, Puerto Ricans in Continental United States, State of Birth, Mobility of the Population, Characteristics by Size of Place, Education, Fertility.

HOUSING VOLUME I

This volume comprises 7 parts, with the States arranged alphabetically and followed by Alaska, Hawaii, Puerto Rico, and the Virgin Islands of the United States. Data for the United States and for each State (Territory or possession) are presented as separate chapters. The areas included in each part, by chapter number, are as follows:

- | | | |
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| Part 2 | 20. Maryland | 38. Pennsylvania |
| 2. Alabama | 21. Massachusetts | 39. Rhode Island |
| 3. Arizona | Part 4 | 40. South Carolina |
| 4. Arkansas | 22. Michigan | 41. South Dakota |
| 5. California | 23. Minnesota | 42. Tennessee |
| 6. Colorado | 24. Mississippi | Part 6 |
| 7. Connecticut | 25. Missouri | 43. Texas |
| 8. Delaware | 26. Montana | 44. Utah |
| 9. District of Columbia | 27. Nebraska | 45. Vermont |
| 10. Florida | 28. Nevada | 46. Virginia |
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| 12. Idaho | 31. New Mexico | 49. Wisconsin |
| 13. Illinois | 32. New York | 50. Wyoming |
| 14. Indiana | Part 5 | Part 7 |
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| 16. Kansas | 34. North Dakota | 52. Hawaii |
| 17. Kentucky | 35. Ohio | 53. Puerto Rico |
| 18. Louisiana | 36. Oklahoma | 54. Virgin Islands of U. S. |

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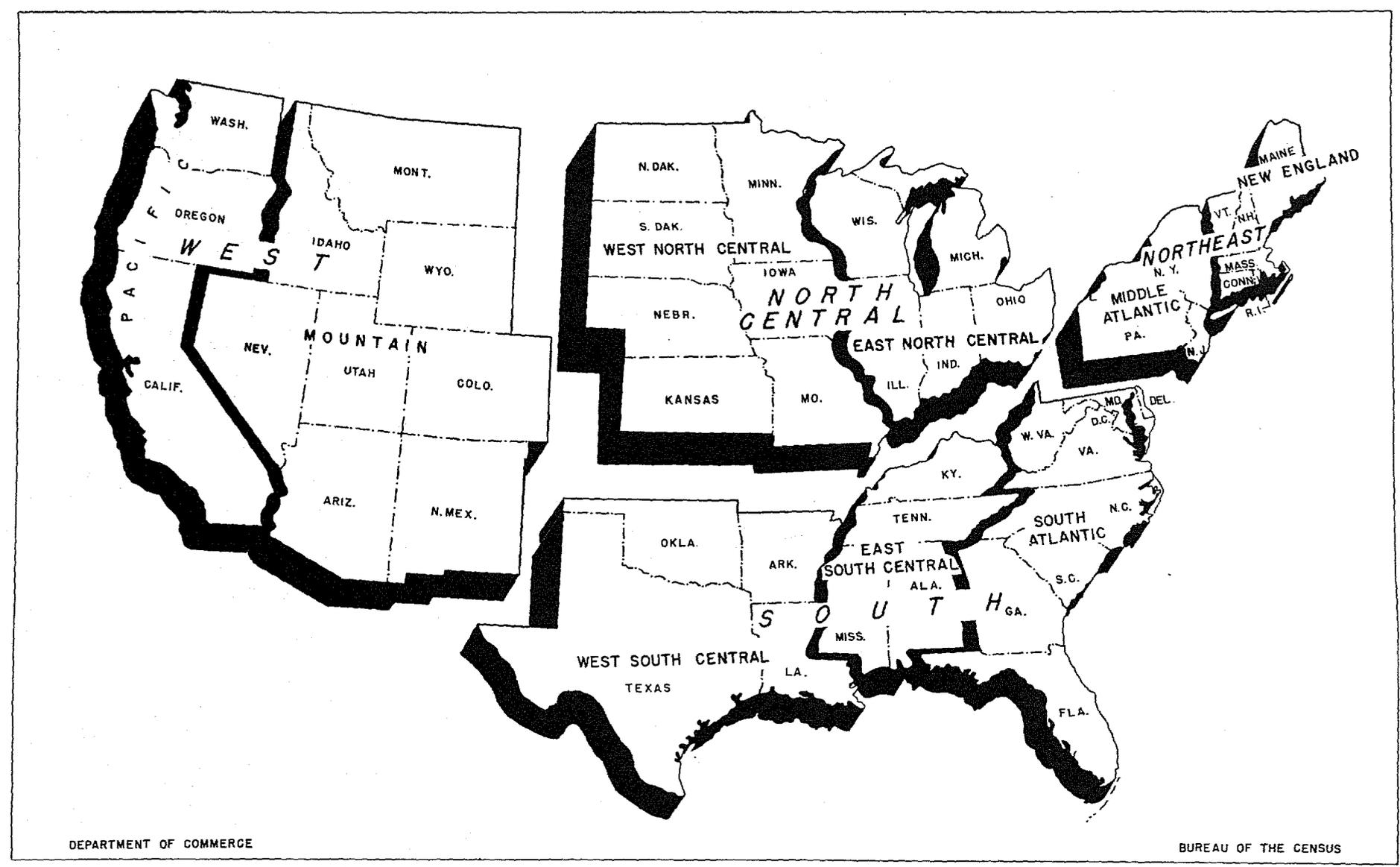
| Subject | The State by urban-rural | Standard metropolitan areas and constituent counties, urbanized areas, and urban places of 10,000 or more | Urban places of 2,500 to 10,000 | Places of 1,000 to 2,500 | Counties | | |
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| Refrigeration equipment..... | 13 | 20 | 23 | | 27 | 30 | 33 |
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| Contract monthly rent..... | 3 14 | 21a | 24a | | 28a | 31a | |
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¹ Also for dwelling units occupied by nonwhite persons. Additional references to data for dwelling units occupied by nonwhite persons in the South are presented in the lower section of this table.

² For the States in the South (including Texas), the data are presented for dwelling units occupied by nonwhite persons. For the States of Arizona, California, Colorado, New Mexico, and Texas, the data are presented for dwelling units occupied by white persons of Spanish surname. Data are shown only for those areas having 250 or more such households.

³ Not shown for dwelling units occupied by white persons of Spanish surname.

Figure 1.—REGIONS AND GEOGRAPHIC DIVISIONS OF THE UNITED STATES



General Characteristics

GENERAL

CONTENT

Volume I of the Housing reports presents basic statistics relating to practically all subjects for which information was collected in the Census of Housing, taken as of April 1, 1950. The dwelling unit is the reporting unit in the housing census.

This volume is arranged by chapters and is bound in seven parts. Part 1 consists of the United States Summary; Parts 2 to 6 contain the separate chapters for the States and the District of Columbia; and Part 7 comprises the chapters for 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) and for the following types of areas within the State: 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. Characteristics are not shown if the base consists of fewer than three dwelling units in order to avoid disclosure of information for individual units.

The United States Summary contains data for continental United States. It provides statistics for the United States as a whole, the four regions (Northeast, North Central, South, and West), and the nine groups of States designated as "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. In addition, there is included in the summary a discussion of the 1950 Census results and some historical data for comparative purposes. In the United States tables, the data are presented by urban, rural-nonfarm, and rural-farm residence. The State data in the United States Summary are summarizations of practically all the State figures in the individual chapters except the data by residence and the data on the characteristics of nonwhite households. The data for the standard metropolitan areas and large cities are summarizations of all the figures appearing in the State chapters for those areas, except the data on the characteristics of dwelling units occupied by nonwhite households (and Spanish-surname households). Statistics for urbanized areas are limited to a summary of selected items from the basic distributions which appear in the State chapters. However, separate statistics for the urban, rural-nonfarm, and rural-farm portions of the State; counties; urban places of fewer than 100,000 inhabitants; places of 1,000 to 2,500 inhabitants; and the rural-nonfarm and rural-farm portions of counties appear only in the individual State chapters.

Statistics are presented in Volume I for the following subjects:

Occupancy characteristics
Occupancy and tenure
Race and color of occupants
Population per occupied dwelling unit
Number of persons
Persons per room

Structural characteristics

Number of rooms
Type of structure
Year built

Condition and plumbing facilities

Condition and plumbing facilities in combination
Water supply
Toilet facilities
Bathing facilities

Equipment and fuels

Electric lighting
Radio
Television
Refrigeration equipment
Kitchen sink
Heating equipment
Heating fuel
Cooking fuel

Financial characteristics of nonfarm dwelling units

Contract monthly rent
Gross monthly rent
Value
Mortgage status

Some housing characteristics are presented separately for owner-occupied, renter-occupied, and nonseasonal not dilapidated vacant dwelling units for rent or sale. For all States, limited data on the characteristics of dwelling units occupied by nonwhite households are presented for the State totals. In addition, in the chapters for the States in the South, data for nonwhite households are provided for areas having 250 or more such households.

In five Southwestern States (Arizona, California, Colorado, New Mexico, and Texas), data for Spanish-surname households are included in the State chapters for areas having 250 or more such households. A special Population report, "Persons of Spanish Surname," includes State totals of selected housing data for the five States.

The enumeration and publication of some subjects were restricted to specific segments of the dwelling unit inventory. In particular, the following subjects were restricted to occupied dwelling units: race and color of occupants, number of persons, persons per room, radio, television, refrigeration equipment, kitchen sink, heating equipment, heating fuel, and cooking fuel. Financial characteristics were enumerated only for nonfarm dwelling units—rent was obtained for renter-occupied units and vacant units for rent, mortgage status for owner-occupied units, and value for owner-occupied units and vacant units for sale. Seasonal status and "for rent or sale" status were obtained only for vacant units.

ARRANGEMENT OF TABLES

In the State chapters, the tables are arranged by type of area, the figures in the tables for the larger areas being presented in greater detail than those for the smaller areas. Table 1 presents a summary of selected characteristics for the State by residence (urban, rural nonfarm, and rural farm), standard metropolitan

areas, urban places of 10,000 inhabitants or more, and counties. Tables 2 to 16 provide totals for the State and for the urban, rural-nonfarm, and rural-farm portions of the State. Data for standard metropolitan areas and their constituent counties, urbanized areas, and urban places of 10,000 inhabitants or more are provided in tables 17 to 21 in approximately the same detail as for the State as a whole. Less detail is presented in tables 22 to 33 for urban places of 2,500 to 10,000 inhabitants, places of 1,000 to 2,500 inhabitants, counties, and the rural-nonfarm and rural-farm portions of counties. Additional tables provide statistics for non-white households in the South and for Spanish-surname households in five Southwestern States (Arizona, California, Colorado, New Mexico, and Texas).

The tables in the United States Summary also are arranged by type of area and correspond in content to tables in the State chapters. The subjects in table 1 (for the United States, regions, divisions, and States) and table 32 (for urbanized areas) in the United States Summary correspond to the subjects in table 1 of the State chapters. Tables 2 to 16 for the United States totals (by urban, rural-nonfarm, and rural-farm residence) correspond to tables 2 to 16 for the State totals in the State chapters. Tables 17 to 31 of the United States Summary comprise three series of tables, with the subjects in each series corresponding to those in tables 17 to 21 in the State chapters. In the United States Summary, tables 17 to 21 contain data for regions, divisions, and States; tables 22 to 26, standard metropolitan areas; and tables 27 to 31, cities of 100,000 inhabitants or more.

In addition to the tables described above, the United States Summary includes text tables A to T. Tables F to T contain the more significant comparative statistics available from previous censuses, as well as selected data from the 1950 Census.

The subjects presented in the tables by type of area are shown in tabular form on p. vii.

SUBJECTS ENUMERATED ON A SAMPLE BASIS

Statistics on most of the subjects are based on complete enumerations. Some of the data, however, are based on information obtained from samples of 20 percent of the dwelling units. The subjects obtained on a sample basis, "Year built" and "Equipment and fuels," are identified in the tables by asterisks. The differences between the estimates from the samples and data which would have been obtained from complete counts are not large enough to have a significant effect on most uses of the data.

For sample items, the category "Not reported" is omitted from the tables; both number and percent distributions are based on the number reporting. As a result of the method used in deriving estimates based on the sample, "Number reporting," in some cases, will be somewhat larger than the 100-percent count of dwelling units. 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 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, estimated rentals of owner-occupied homes, and value and rent of farm dwellings, 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 useful-

ness 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."

For most of the subjects, the 1940 and the 1950 data are comparable. In some cases, only rough comparisons are possible and these should be made with caution. Basic data from the 1940 Census of Housing are contained in Volume II, *General Characteristics*, 1940 Housing reports.

HOUSING DATA FROM OTHER CENSUSES

Although the 1940 Census of Housing was the first census of housing, data on a few housing characteristics were collected in earlier years in conjunction with decennial censuses of population and agriculture.

Statistics on the number of "families," "private families," or "homes," and the "population per family" may be derived from earlier censuses of population. The count of families (including quasi-family groups for some censuses) are available for each census year since 1850. In addition, comparable statistics by color of head are available for each census year since 1890, except for 1910. The classification of homes by tenure has been reported since 1890; and the number and characteristics of owned homes that were encumbered were included in the censuses from 1890 to 1920. Value and monthly rent of nonfarm homes and the number of families having a radio were included for the first time in the 1930 reports. Although concepts and procedures were not identical from census to census, the differences are not great enough to invalidate comparisons of the data.

The Census of Agriculture in 1920 and in 1930 reported the number of farm operators' dwellings that were lighted by electricity, the number with water piped into the dwelling, and (for 1930 only) the number with water piped into a bathroom. The value of farm dwellings also was obtained in 1930. These statistics are only roughly comparable with the statistics for corresponding subjects as presented for rural-farm dwelling units in 1940 and in 1950 because the data from the agriculture census represent the homes of farm operators only, whereas the figures from the 1940 and 1950 Censuses of Housing include all dwelling units classified as on farms.

HOUSING REPORTS

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

Volume I, *General Characteristics*, is the basic publication. Each chapter is available as a separate bulletin, Series H-A.

Volume II, *Nonfarm Housing Characteristics*, presents analytical data on housing and household characteristics for occupied dwelling units in the nonfarm segment of the dwelling unit inventory. The data generally are cross-tabulations of housing characteristics, such as contract rent or value by condition of the dwelling unit and by type of structure. In addition, the volume presents tabulations of housing characteristics in relation to characteristics of occupants, such as income, and sex and age of the household head. Statistics are presented as a separate chapter for the United States, for each of the 9 geographic divisions, and for each of the 152 standard metropolitan areas of 100,000 inhabitants or more in the United States. Data for the 106 cities of 100,000 inhabitants or more are included in the chapter for the standard metropolitan area in which the city is located. Each of the chapters is available as a separate bulletin, Series H-B, "Nonfarm Housing Characteristics."

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.

PRELIMINARY AND ADVANCE REPORTS

Preliminary and advance reports from the 1950 Census of Housing were issued in Series HC-1 to HC-9.

Preliminary counts of dwelling units, based on tabulations made in the Bureau of the Census field offices, were issued in Series HC-1 for the States (by counties and places of 5,000 inhabitants or more) and in Series HC-2 for Alaska, Hawaii, Puerto Rico, and the Virgin Islands of the United States.

Preliminary data based on samples of dwelling units were published in three series of reports—Series HC-3 for selected standard metropolitan areas, Series HC-4 for the 10 States with the largest population in 1940, and Series HC-5 for the United States and regions. These preliminary figures, which are for the most part replaced by data in Volume I, differ somewhat from the

final figures because they do not include all of the refinements that result from the careful examination of the schedules and tables prior to the publication of the final data. Furthermore, the tabulations of the preliminary data are subject to sampling variability.

Special tabulations for local housing authorities, which were made on a reimbursable basis, were published in the Series HC-6 reports for 219 areas. The tabulations relate to housing and population characteristics and income of families living in dwelling units defined as substandard by the Public Housing Administration. Data for most of the areas were based on a sample of dwelling units.

The advance reports published in Series HC-7, HC-8, and HC-9 were based on final tabulations from the 1950 Census of Housing. The HC-7 reports contain basic counts of vacant dwelling units by States. The HC-8 reports present a summary of selected housing characteristics for each State. Both the HC-7 and HC-8 reports include statistics for standard metropolitan areas and for urban places of 10,000 inhabitants or more. Reports in the HC-9 series present statistics from all of the Housing volumes.

AVAILABILITY OF UNPUBLISHED DATA

In general, the statistics for the larger areas are published in greater detail than those for the smaller areas. However, data for most of the smaller areas have been tabulated in the same detail as for the larger areas. Such statistics not published in the State chapters can be made available, upon request, for the cost of transcription or reproduction. For a complete listing of tabulated, but unpublished, statistics for these areas, see U. S. Bureau of the Census, *U. S. Censuses of Population and Housing: 1950, Key to Published and Tabulated Data for Small Areas*, Washington, D. C., 1951.¹ An estimate of the cost of providing unpublished data will be made upon request to the Director, Bureau of the Census, Washington 25, D. C.

MAPS

Each of the State chapters contains (a) a map of the State showing the outlines of counties and standard metropolitan areas, and the location of cities of 25,000 inhabitants or more, and (b) a map showing the boundaries of the urbanized areas in the State.

A map of the United States showing the outlines of the States and the location of the 168 standard metropolitan areas and a map showing the boundaries of the regions and divisions are on pp. VIII and IX of this volume.

SCHEDULES AND INSTRUCTIONS

An illustrative example of the housing schedule used in the enumeration is reproduced 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 the appendix of the United States Summary following the illustration of the housing schedule.

¹ Address purchase orders to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 30 cents.

DEFINITIONS AND EXPLANATIONS

URBAN AND RURAL RESIDENCE

A new definition was adopted for use in the 1950 Census in response to requests from many users of census data for a more realistic classification by urban and rural residence.

According to the 1950 definition, 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. According to the 1940 definition, urban housing was limited to all dwelling units in incorporated places of 2,500 inhabitants or more and in a relatively few areas (usually minor civil divisions) classified as urban under special rules relating to population size and density.

In both definitions, the most important component of the urban territory is the group of incorporated places having 2,500 inhabitants or more. A definition of urban territory restricted to such places would exclude a number of equally large and densely settled places, merely because they were not incorporated places. Under the 1940 definition, an effort was made to avoid some of the more obvious omissions by the inclusion of the places classified as urban under special rules. Even with those rules, however, many large and closely built-up places were excluded from the urban territory. To improve the situation in the 1950 Census, the Bureau of the Census set up, in advance of enumeration, boundaries for urban-fringe areas around cities of 50,000 or more and for unincorporated places outside urban fringes.

The net effect of the change in the urban-rural definition has been to transfer a considerable number of dwelling units from a rural to an urban classification. This shift has resulted in a more homogeneous grouping of dwelling units than under the 1940 definition. There is a wide range of variation in the impact of this change on the statistics for the various States. For the States of Massachusetts and Rhode Island, in fact, the change results in a reduction in the urban total. Only a portion of some of the towns in these States was within an urban fringe or unincorporated urban place, but the entire towns were classified as urban under the 1940 rule. The net effect of the change in the urban-rural classification on population counts is shown in Population Volume I and in Population Volume II, Chapter I, for the respective State or the United States.

The rural classification comprises a variety of residences, such as isolated homes in the open country, dwelling units in villages and hamlets of fewer than 2,500 inhabitants, and some dwelling units in the areas surrounding urban places of fewer than 50,000 inhabitants.

FARM AND NONFARM RESIDENCE

In the 1950 Census, the enumerators in rural areas 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.

In rural areas, dwelling units are classified into rural-farm units which comprise all dwelling units on farms, and rural-nonfarm units which are the remaining rural units. In most areas, virtually all farm housing is in rural areas. Therefore, housing characteristics are shown in this report for rural-farm dwelling units instead of for all farm units. Urban-farm dwelling units are dwelling units on farms within the boundaries of urban areas. Such farms constitute only 1.5 percent of the total farm dwelling units in the United States. The number, but not the characteristics, of the urban-farm dwelling units is shown in a few of the tables.

In the 1950 Census of Housing, as in 1940 and earlier, farm housing was defined to include all housing on farms. However, in the 1940 and previous censuses, there was no specific exclusion of dwelling units for which cash rent was paid for the house and yard only, nor of institutions, summer camps, and tourist courts; moreover, the enumerators were not specifically instructed to report farm-nonfarm residence according to the respondent's reply to the question concerning location on a farm. For the United States as a whole, there is evidence from the Bureau of the Census Current Population Survey that the farm population in 1950 would have been somewhat larger and, of course, would have resulted in a larger number of farm dwelling units, had the 1940 procedure been used. However, the change in procedure accounts for only a small part of the indicated decline in the total amount of farm housing over the decade.

In 1950, rural-nonfarm dwelling units include all dwelling units outside urban areas which are not on farms. In 1940 and earlier, units in the suburbs of cities constituted a large proportion of the rural-nonfarm housing. The effect of the new urban-rural definition has been to change the classification of a considerable number of such dwelling units to urban. Rural-nonfarm housing is, therefore, somewhat more homogeneous than under the old definition. It still comprises, however, dwelling units of a variety of types, such as homes in the open country, in villages and hamlets of fewer than 2,500 inhabitants, and in some of the fringe areas surrounding the smaller incorporated places.

In 1950, nonfarm dwelling units for which financial characteristics are presented in this report consist of all units in urban areas and all units not on farms in rural areas.

TYPES OF PLACES

Place.—The term "place" refers to a concentration of population regardless of legally prescribed limits, powers, or functions. Thus, some areas having the legal powers and functions characteristic of incorporated places are not recognized as places.

In a majority of instances, however, the legally prescribed limits of incorporated places serve to define concentrations of population. Of the 18,548 places recognized in the 1950 Census, 17,118 are incorporated as cities, towns, villages, or boroughs. In New England, New York, and Wisconsin, however, towns are minor civil divisions of counties and are not considered as places, even though they may be incorporated. Similarly, in the States in which townships possess powers and functions identical with those of villages, the township is not classified as a place. Although areas of this type are not recognized as places, their densely settled portions may be recognized as unincorporated places or as a part of an urban fringe.

In addition to incorporated places, the 1950 Census recognizes 1,430 unincorporated places. These unincorporated places, which contain heavy concentrations of population, are recognized as places by virtue of their physical resemblance to incorporated places of similar size. To make this recognition possible, the Bureau of the Census has defined boundaries for all unincorporated

rated places of 1,000 inhabitants or more which lie outside the urban fringes of cities of 50,000 inhabitants or more. Because local practice as to incorporation varies considerably from one part of the country to another, some States have very few if any such unincorporated places and others have a great many. Although there are also unincorporated places within the urban fringe, it was not feasible to establish boundaries for such places, and, therefore, they are not separately identified.

Urban places.—Urban places are incorporated places which had 2,500 inhabitants or more and those unincorporated places outside of urban fringes which had 2,500 inhabitants or more on April 1, 1950. In many States, the number of dwelling units in "urban places" is somewhat less than the total urban. The difference comprises dwelling units in those portions of urban fringes that are incorporated places of less than 2,500 inhabitants or are unincorporated.

In the 1940 Census, all incorporated places of 2,500 inhabitants or more and a relatively few areas (usually minor civil divisions) classified as urban under special rules were recognized as urban places.

Places of 1,000 to 2,500 inhabitants.—Places of 1,000 to 2,500 inhabitants comprise incorporated places and those unincorporated places outside urban fringes which had from 1,000 to 2,500 inhabitants on April 1, 1950. In 1940, places of this size for which data were presented were limited to incorporated places.

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. For States having standard metropolitan areas, the constituent counties are found in tables 17 to 21 in the State chapters.

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. The list of places comprising the standard metropolitan areas for a New England State follows the urbanized area descriptions and maps at the end of the State chapter.

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.

URBANIZED AREAS

"Urbanized areas" have been defined for the first time in the 1950 Census. These areas were delineated to provide a better separation of urban and rural population and housing in the vicinity of large cities. All of the dwelling units within the urbanized area are classified as part of the urban housing in 1950.

Each urbanized area contains at least one city with 50,000 inhabitants or more in 1940 or according to a special census between 1940 and 1950. Each urbanized area also includes the surrounding closely settled incorporated places and unincorporated areas that comprise its "urban fringe." The boundaries of these fringe areas were established to conform as nearly as possible to the actual boundaries of thickly settled territory, usually characterized by a closely spaced street pattern. Like standard metropolitan areas, urbanized areas are not confined within State boundaries, nor within region or division boundaries. A complete description and a map of each urbanized area of a State is at the end of the State chapter.

The urbanized area can be characterized as the physical city as distinguished from both the legal city and the metropolitan community. In general, the urbanized area represents the thickly settled urban core of the standard metropolitan area. Urbanized areas are smaller than standard metropolitan areas and in most cases are contained in them. Since the boundaries of standard metropolitan areas are determined by county lines and those of urbanized areas by the pattern of urban growth, there are small segments of urbanized areas, in a few instances, which lie outside

the standard metropolitan area. Because of discontinuities in land settlement, there are also some cases in which a single standard metropolitan area contains two urbanized areas. The lists of urbanized areas and of standard metropolitan areas also differ somewhat because the former had to be established for cities of 50,000 or more before 1950, whereas the latter were established for cities of 50,000 or more as determined in the 1950 Census.

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. However, for a city block, tract, or other small area where there are rooming houses, housekeeping rooms, hotels, and similar quarters for which the interpretation of the dwelling unit definition is most likely to vary, it is possible that the count of dwelling units by the two definitions would differ.

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.

Population in dwelling units.—The count of the population in dwelling units represents the population in living quarters which were classified as dwelling units and therefore excludes the population in institutions and other quasi households. This count was used in computing the 1950 "population per occupied dwelling unit." In 1940, however, population per occupied dwelling unit was obtained by dividing the total population by the number of occupied dwelling units. Thus the 1950 and the 1940 figures for population per occupied dwelling unit are not strictly comparable. The differences are negligible, however, except in those areas where there is an appreciable resident population in institutions, large rooming houses, dormitories, or other quarters not classified as dwelling units.

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.

Race and color of occupants.—Occupied dwelling units are classified by the race and color of the head of the household according to the definition used in the 1950 Census of Population. The term "color" refers to the division of households into two groups, white and nonwhite. The group designated as "nonwhite" consists of those whose heads are of Negro, Indian, Japanese, Chinese, or other nonwhite race. A head of a household of Mexican ancestry or birth who is not Indian or of another nonwhite race was classified as white. The concept of race as it has been used by the Bureau of the Census is derived from that which is commonly accepted by the general public. The classification "Negro" includes persons of mixed white and Negro parentage, and persons of mixed Indian and Negro parentage unless the Indian blood very definitely predominates or unless the individual is accepted in the community as an Indian. Persons of mixed white and nonwhite races are classified according to the race of the nonwhite parent, and persons of mixed nonwhite races are generally classified according to the race of the father.

Spanish-surname households.—In the 1950 Census, for five of the Southwestern States—Arizona, California, Colorado, New Mexico, and Texas—households in which the head was a white person with a Spanish surname were identified separately from other white households.

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. The median was computed on the basis of the class intervals shown in the tables for the larger areas.

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.

Nonresident dwelling units.—A nonresident dwelling unit is a unit which is occupied temporarily by persons who usually live elsewhere. Nonresident units are not included with occupied dwelling units. For the basic occupancy and tenure classification in some of the tables, they are presented as a separate count; otherwise, they are classified with vacant units not for rent or sale. The nonresidents were assigned to the dwelling unit at their usual place of residence.

In 1940, units occupied by nonresidents were tabulated as "vacant, occupied by nonresident" or combined with "vacant, not for rent or sale." The dwelling units maintained by such households at their usual place of residence were tabulated as "vacant, held for absent household," or combined with "vacant, not for rent or sale."

Vacant dwelling units.—A dwelling unit is vacant if no persons were living in it at the time of enumeration, except when its occupants were only temporarily absent. Dilapidated vacant dwelling units were included if they were intended for occupancy as living quarters. New units not yet occupied were enumerated as vacant dwelling units if construction had proceeded to the extent that all the exterior windows and doors were installed and final usable floors were in place; otherwise, potential units under construction were not enumerated.

The enumeration of vacant units in the 1950 Census of Housing is not entirely comparable with the procedure used in the 1940 Census. Counts of total vacant units in 1950 are considered more inclusive than in 1940. In 1940, vacant units were enumerated only if they were habitable; vacant units which were uninhabitable and beyond repair were omitted. In 1950, all vacant units, whether or not dilapidated, were included if they were intended for occupancy as living quarters. Many houses throughout the United States, particularly in rural areas and isolated towns where there was little or no demand for housing, were not enumerated as part of the dwelling unit inventory because they were used for storage or were abandoned and no longer intended for occupancy as living quarters.

Seasonal and nonseasonal vacant units.—Vacant seasonal dwelling units are those intended for occupancy during only a portion of the year, and are found primarily in resort areas. In farm areas, dwelling units used for only a portion of the year to house migratory workers employed during the crop season are classified as seasonal. Similarly, vacant dwelling units in lumber camps were enumerated as seasonal. In resort areas, a dwelling unit which is usually occupied on a year-round basis was considered nonseasonal.

Nonseasonal not dilapidated vacant units, for rent or sale (available vacant units).—This category provides a measure of vacant dwelling units which are on the housing market for year-round use. It excludes dilapidated, seasonal, and other vacant

dwelling units not on the rental or sale market. The count of available vacancies constitutes a more practical measure of the supply of vacant housing than does the count of total vacancies. There was no comparable classification in 1940.

The 1950 category "For rent" consists of vacant units offered for rent as well as those being offered for rent and for sale. The "for sale only" group is limited to those for sale only. "Not for rent or sale" includes units already rented or sold but not yet occupied, and units being held off the market for other reasons.

In the 1940 Census, vacant units for sale and vacant units for rent were enumerated as one combined category, namely, "For sale or rent." This category included all habitable vacant units available for occupancy even though not actually being offered for rent or sale at the time of enumeration, that is, all dwelling units that were vacant except those held for occupancy of an absent household. Thus, the 1940 and 1950 "for rent or sale" counts are not comparable.

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. 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. Because the category represents a combination of units in structures containing one dwelling unit and those in structures containing two dwelling units, it is not possible to derive a total count of 1-dwelling-unit structures. However, if the number of units in either type of semidetached structure in a community is known to be small, a close approximation of the total number of 1-dwelling-unit structures can be made. A "2-dwelling-unit, other" structure is a detached or attached structure containing two dwelling units. 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 some categories, the number of structures can be derived with little difficulty. The number of units equals the number of structures for both categories of "1-dwelling-unit" structures. For the category "2-dwelling-unit, other" structures, the number of structures equals the number of units divided by two. However, the derivation of the exact number of structures in the remaining categories is impossible.

Although there are some differences between the 1950 and 1940 definitions of type of structure, a direct comparison can be made for most of the categories presented. The principal difference involves units in semidetached structures with one or two dwelling units. In 1950, each of two (and only two) adjoining residential structures was classified as "semidetached," regardless of the number of dwelling units in either structure. In 1940, however, units in two adjoining residential structures were classified on the basis of the number of dwelling units in each side. If only one dwelling unit was found in each side, each was classified as "2-family side-by-side." If either side contained more than one dwelling unit, the side containing one dwelling unit was classified as "1-family attached"; if the other side had two dwelling units, it was classified as "2-family other," whereas, if it had more than two dwelling units, it was classified according to the number of dwelling units it contained. The term "family" in the 1940

type-of-structure categories is equivalent to "dwelling unit" in the 1950 categories.

The effect of this different treatment of semidetached structures on the comparability of data between the two censuses is insignificant in any community where either there are a small number of semidetached structures, or where practically all of the semidetached structures contain only one dwelling unit in each adjoining structure.

The only other difference 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.

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.

The median number of rooms is computed in the same manner as the median number of persons.

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 particular, 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.

The category "With private toilet and bath" includes those dwelling units 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 private flush toilet or lacking a private bathtub or shower. "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 25 in the State chapters, the category "No private bath or dilapidated" includes, in addition to the category "No running water or dilapidated," all dwelling units that are not dilapidated and have running water, but lack a private flush toilet or private bathing facilities. The one category, therefore, is contained in the other.

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 run-down 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.

*Data based on a 20-percent sample. For a description of the sample and estimates of sampling variability, see the section on "Reliability of data."

- 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.

Water supply.—A dwelling unit has "piped running water" if water is piped to it from a pressure or gravity system. "No piped running water" includes water from a hand pump or from a well or stream where no piped running water is available.

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 1950 data on piped running water were collected in terms of location inside or outside the structure, whereas the 1940 data distinguished between location inside or outside the dwelling unit. However, the 1950 count of units with "piped running water inside structure" may be considered comparable with the 1940 count of units with "running water in dwelling unit" in places where the number of units with running water outside the unit but inside the structure is insignificant.

Toilet facilities.—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 flush toilet for exclusive use is differentiated from one that is shared.

Bathing facilities.—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." Bathing facilities inside the structure for exclusive use are differentiated from facilities that are shared.

Exclusive or shared use.—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. Facilities are shared when occupants of two or more dwelling units use the same facilities. Also, facilities are shared if they would be used by the occupants of a unit now vacant, if that unit were occupied.

Inside or outside structure.—Facilities or equipment are considered "inside 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 AND FUELS*

Electric lighting.—A dwelling unit is reported as "with electric lights" if it is wired for electric lights, even though service may have been temporarily suspended at the time of enumeration.

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.

*Data based on a 20-percent sample. For a description of the sample and estimates of sampling variability, see the section on "Reliability of data."

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. "Other means 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 included in the category "Other means 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 combination of the 1950 categories "Other means with flue" and "Other means without flue" is roughly comparable with the category "Without central heating" in 1940.

Heating fuel.—Where more than one heating fuel was used in a dwelling unit, the fuel used most for heating was reported. Statistics for heating fuel are presented separately for units with central heating and units with noncentral heating.

The category "Coal" includes coke. "Utility gas" is piped into the dwelling unit from mains from a central system, which is usually owned and operated by a public utility company or by a local government; it may be either manufactured or natural. "Bottled gas," generally known by a trade name, is supplied to the consumer in containers (bottles or tanks) which are replaced or refilled as needed. "Liquid fuel" includes fuel oil, furnace oil, distillate oil, kerosene, coal oil, stove oil, range oil, lamp oil, gasoline, and alcohol.

For the most part, the 1950 data on heating fuel may be compared with the 1940 data when certain combinations are made. The 1950 categories "Utility gas" and "Bottled gas," when combined, are comparable with the 1940 category "Gas." The 1950 category "Liquid fuel" is roughly comparable with the combination of the 1940 categories "Fuel oil" and "Kerosene or gasoline."

Cooking fuel.—The fuel used most for cooking was reported. Where the fuel used most was not readily ascertainable for combination stoves, the fuel reported was the one appearing first in the listing of fuels on the housing enumeration schedule and in the tables. The categories of data on cooking fuel are the same as on heating fuel.

For both cooking fuel and heating fuel, the 1950 Census figures represent the number of households using a particular fuel as the principal fuel for cooking or heating. The data, therefore, are not comparable with reports by utility companies on the number of residential customers for that fuel. Generally, utility company data are based on a count of meters or the number of bills rendered. Several households which are served by one meter are counted as one customer by the utility companies but as several dwelling units by the Bureau of the Census. On the other hand, the utility companies report each customer regardless of the amount of fuel used or its purpose (cooking, heating, or for hot water), while the Bureau reports only the principal fuel used for cooking or heating.

Kitchen sink.—A dwelling unit is reported as "with kitchen sink" if a sink, located within the structure and with a drainpipe leading to the outside, is available for use by the occupants of the unit. The sink need not have running water piped to it.

Usually, the sink is located in the kitchen, but a sink located in a hall, pantry, enclosed porch, or room adjacent to the kitchen, if used in the washing of dishes or cooking utensils, is considered a "kitchen sink." However, a sink located on an open porch, or

a washbowl, basin, or lavatory located in a bathroom or bedroom is not a "kitchen sink."

Refrigeration equipment.—The principal refrigeration equipment available to the dwelling unit was reported, whether or not it was in use at the time of enumeration. "Mechanical" refrigeration includes any type of refrigerator operated by electricity, gas, kerosene, gasoline, or other source of power. "Ice" refrigeration includes a refrigerator, box, or chest cooled by ice supplied from an outside source. "Other" refrigeration includes other devices or methods used to refrigerate food, such as a spring house, cooler, well cooler, an ice house in which storage space is provided for perishable food, and any evaporative cooler which is operated by application of water. A window box, root cellar, open spring, or basement was classified as "none."

Radio.—Data on radio represent the number of dwelling units which have a radio, even though the set was temporarily out of order or being repaired at the time of enumeration. The data do not represent the total number of radios in dwelling units because some dwelling units have two or more sets.

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. Monthly rent for vacant dwelling units is the monthly rent asked at the time of enumeration. Data are limited to nonfarm units; data for vacant units are further limited to nonseasonal not dilapidated units, for rent. 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. The data for vacant units are not comparable, however, because in 1940 rental amounts for all vacant units were presented, whereas in 1950 rent data for vacant units are limited to nonseasonal not dilapidated vacant units, for rent. Furthermore, in 1940 estimates of monthly rent were obtained for owner-occupied and for farm units, whereas 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.

The median contract monthly rent of the dwelling units is the rent which divides the series into two equal parts, one-half of the units with rents higher than the median and the other half with rents lower than the median. In the computation of the median, the limits of the class intervals were assumed to stand at the midpoint of the 1-dollar interval between the end of one of the rent groups and the beginning of the next. For example, the limits of the interval designated \$10 to \$14 were assumed to be \$9.50 and \$14.50. The median was computed on the basis of the tabulation groups in full detail as shown in the tables for larger

areas. In rare instances where the median is located in the highest tabulation group, \$100 or more or \$75 or more, the median is indicated as \$100+ or \$75+.

The average contract monthly rent instead of the median is presented in the State chapters for places of 1,000 to 2,500 inhabitants. The average is the quotient of the sum of the rents divided by the number of dwelling units reporting rent.

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 monthly rent data were computed for renter-occupied nonfarm units only.

Median gross monthly rent was computed in the same manner as median contract monthly rent. Ordinarily, the median gross rent is higher than the median contract rent. However, the median gross rent may be lower in an area where there are enough cases in which the estimate of the rental value of furniture included in the contract rent exceeds the cost of utilities.

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 farm land, business uses, or for more than one dwelling unit in the property. For a vacant property, value is the sale price asked by the owner. Data for vacant units are further limited to nonseasonal not dilapidated units, for sale only. 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-family 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. No value data were provided for vacant dwelling units in 1940.

The median value of the dwelling units is the value which divides the series into two equal parts, one-half of the units with values higher than the median and the other half with values lower than the median. In computing the median, the limits of the class interval were assumed to stand at \$50 below the beginning and end of the value group as shown in the tables. For example, the limits of the interval designated \$2,000 to \$2,999 were assumed to be \$1,950 and \$2,950. The median was computed on the basis of the tabulation groups in full detail as shown in the tables for larger areas. In rare instances where the median is located in the highest tabulation group, \$20,000 or more, \$15,000 or more, or \$10,000 or more, the median is indicated as \$20,000+, \$15,000+, or \$10,000+.

The average value instead of the median is presented in the State chapters for places of 1,000 to 2,500 inhabitants. The average is the quotient of the sum of the values divided by the number of dwelling units reporting value.

Mortgage status.—An owner-occupied dwelling unit was reported as mortgaged if the property on which it was located had an indebtedness in the form of a mortgage or deed of trust, or the occupants had a contract to purchase the property. Statistics on mortgage status are limited to nonfarm owner-occupied dwelling units in structures without business and having from one to four dwelling units.

Data on mortgage status of owner-occupied dwelling units (excluding trailers, tents, boats, and railroad cars) presented in this report differ from data presented in Volume IV, *Residential Financing*, in that statistics in Volume IV relate to all mortgaged residential nonfarm properties instead of to the group described above. Further differences are due, in part, to the fact that the person interviewed for general housing information was not always familiar with the financial arrangements, particularly the existence of a mortgage, nor did the respondent always recognize certain types of financing as mortgages. Data in the report on residential financing, usually collected from owners, are considered more accurate. Some caution, therefore, should be exercised in the use of the mortgage data provided in this report (Volume I).

RELIABILITY OF DATA

CONSISTENCY

The percentages in percentage distributions were computed separately and no adjustment was made to force them to add to exactly 100.0 percent.

Because of the methods by which the statistics were compiled, the figures for parts of an area in a chapter may not total to the figures for the area as a whole. For example, statistics for the counties within a State may not add precisely to the State totals.

Further, there are some differences between the figures in the State chapters, and the figures for the State totals and other areas in tables 17 to 32 of the United States Summary. The State parts of this volume (Parts 2 to 6) were prepared primarily by assembling and binding the statistical portions of previously issued Series H-A bulletins which constituted preprints of the State chapters. Statistics in the United States chapter (Part 1) are summarizations or compilations of data from the individual State chapters. Some errors were discovered after the State bulletins were issued and, generally, the corrected figures were transcribed to the United States Summary.

DATA FOR SMALL AREAS

Users of data for the smaller areas, which are included in the State chapters, should bear in mind that the data for such areas represent the work of a very small number of enumerators (often only one or two). The misinterpretation by an enumerator of the instructions for a particular item may, therefore, have an appreciable effect on the statistics for a small community, even though it would have a negligible effect upon the figures for a large area.

NUMBER REPORTING

Occasionally, the enumerator was unable to obtain all of the information for a dwelling unit, or he failed to record the data. Such instances are generally shown in the tables as "Not reported." However, when farm-nonfarm residence, color of head, occupancy and tenure status, number of persons, or type of structure was not reported for a dwelling unit, the classification was estimated on the basis of related information. Hence, the number reporting for these basic subjects is identical with the total dwelling units.

For sample items, those indicated in the tables by asterisks, the number reporting may be larger than the total number of dwelling units because of the method by which the results were derived from the sample data. (See section on "Sample design.")

Percentages, medians, and averages were based on the number reporting the item rather than on the total.

SAMPLE DESIGN

Some of the subjects in the tables are indicated by asterisks as those for which information was requested for a representative 20-percent sample of dwelling units. The nine subjects obtained on a sample basis were arranged in five groups. These groups were listed in sequence on the housing schedules so that, for each dwelling unit, information was requested for one of these five groups. The sample group appearing first in the sequence was varied to obtain five versions of the schedule. Within each enumeration district, the schedules were divided approximately equally among the five versions.²

This procedure, however, did not automatically insure an exact 20-percent sample of dwelling units for each group of sample questions in each locality. Each enumeration schedule provided for a maximum of 30 persons and 12 dwelling units. Whenever all 30 population lines were completed on a schedule, the instructions called for the next dwelling unit to be enumerated on the following schedule, regardless of whether all housing lines were used. Although the procedure was unbiased, the effect of such blank lines was to introduce variations in the size of the samples, each of which was designed to consist of 20 percent of the dwelling units.

TABLE A.—PROPORTION OF DWELLING UNITS IN SAMPLE FOR SUBJECTS ENUMERATED ON SAMPLE BASIS, FOR THE UNITED STATES, BY REGIONS: 1950

| Sample group | United States | North-east | North Central | South | West |
|--|---------------|------------|---------------|---------|---------|
| | Percent | Percent | Percent | Percent | Percent |
| Heating equipment and heating fuel..... | 20.10 | 20.13 | 20.11 | 20.05 | 20.10 |
| Electric lighting and refrigeration equipment..... | 19.97 | 19.94 | 19.98 | 19.97 | 19.97 |
| Radio and television..... | 19.99 | 19.98 | 19.99 | 20.02 | 19.98 |
| Kitchen sink and cooking fuel..... | 19.96 | 19.96 | 19.96 | 19.97 | 19.97 |
| Year built..... | 19.98 | 19.98 | 19.98 | 19.99 | 19.97 |

Estimates of the number of dwelling units with specified characteristics based on sample data were in all cases obtained by multiplying by five the number of dwelling units in the sample with the specified characteristic. Percentages have been obtained in each case by using estimates based on the sample for both the numerator and denominator.

SAMPLING VARIABILITY

The data for items indicated by asterisks are subject to sampling variability. Table B presents the approximate standard errors of sample estimates of selected size. Table C shows the approximate standard errors of percentages computed by using sample data for both numerator and denominator. These tables apply to all areas. For most estimates, linear interpolation will provide reasonably accurate results.³

² In 19 counties of Michigan and Ohio, the sample consisted basically of every fifth dwelling unit, and all the sample questions were asked for each of these units.

Sample estimates may differ, due to sampling variability, from the counts which would be obtained by a complete enumeration. The standard error is a measure of sampling variability. The chances are about 2 out of 3 that the difference between a sample estimate and the complete count 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.

Illustration: Let us assume that in an urban place containing 100,000 dwelling units, there were an estimated 74,000 dwelling units with central heating equipment, 75.3 percent of the 98,300 dwelling units reporting. Linear interpolation between values in table B indicates that the sampling variability for an estimate of 74,000 in an area with 100,000 dwelling units is about 240. Consequently, the chances are about 2 out of 3 that the figure which would have been obtained from a complete count of the number of dwelling units with central heating in this urban place differs by less than 240 from the sample estimate. It also follows that there is only about 1 chance in 100 that a complete count of dwelling units with central heating would differ by as much as 600, i. e., by about 2½ times the number given in the table. Table C shows that the standard error of 75 percent on a base of 100,000 is 0.3 percent; the standard error of the 75.3 percent, by linear interpolation, is also 0.3 percent. Further uses of table C may arise. For example, if 75 percent of the estimated 100,000 units built since 1940 were built since 1945, the standard error is also 0.3 percent. If, in another instance, 75 percent of the estimated 100,000 rural-nonfarm units had mechanical refrigeration, the standard error would be 0.3 percent.

The standard errors shown in tables B and C are not directly applicable to differences between two estimates. These tables are to be applied differently in the three following cases:

1. The difference may be one between a figure based on a sample and a figure obtained from a complete count, for example, a difference arising from a comparison between 1950 sample data and 1940 complete-count data. The standard error of a difference of this type is identical with the variability of the 1950 sample estimate.
2. The difference may be one between two sample estimates, one of which represents the total of a group and the other a part of the same group. For example, the reported number of occupied dwelling units without television in a standard metropolitan area can be obtained by subtracting the estimated number with television in this standard metropolitan area from the sample estimate of the total number reporting. Tables B and C can be used directly for a difference of this type, with the difference considered as a sample estimate.
3. The standard error of any other type of difference between two sample estimates will be 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 estimates of the same characteristic in two different areas, although it is only a rough approximation if the difference is between two characteristics in the same area.

³ A closer approximation of a standard error from table B may be obtained by using $1.8z\sqrt{\frac{1-p}{zD}}$ where z is the size of the estimate and D is the total number of dwelling

units in the area; in table C, the approximation is $1.8\sqrt{\frac{p(1-p)}{y}}$ where p is the estimated percentage and y is the size of the base. For example, the approximation provided by the above formula of the standard error of an estimate of 100,000 dwelling units (z) in an area with 150,000 dwelling units (D) is 360; linear interpolation would yield about 190.

TABLE B.—STANDARD ERROR OF ESTIMATED NUMBER: 1950
[Range of 2 chances out of 3]

| Estimated number | Dwelling units in area ¹ | | | | | | | |
|------------------|-------------------------------------|--------|--------|---------|-----------|-----------|------------|------------|
| | 1,000 | 10,000 | 25,000 | 100,000 | 1,000,000 | 5,000,000 | 25,000,000 | 45,000,000 |
| 50 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 100 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 250 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| 500 | 30 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 1,000 | 20 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| 2,500 | | 80 | 90 | 90 | 90 | 90 | 90 | 90 |
| 5,000 | | 100 | 120 | 130 | 130 | 130 | 130 | 130 |
| 10,000 | | 50 | 150 | 180 | 180 | 180 | 180 | 180 |
| 15,000 | | | 150 | 210 | 220 | 220 | 220 | 220 |
| 25,000 | | | 80 | 260 | 290 | 290 | 290 | 290 |
| 50,000 | | | | 300 | 400 | 410 | 410 | 410 |
| 100,000 | | | | 170 | 550 | 580 | 580 | 580 |
| 250,000 | | | | | 780 | 900 | 910 | 920 |
| 500,000 | | | | | 1,240 | 1,240 | 1,290 | 1,290 |
| 1,000,000 | | | | | 520 | 1,660 | 1,800 | 1,820 |
| 2,500,000 | | | | | | 2,140 | 2,770 | 2,830 |
| 5,000,000 | | | | | | 1,170 | 3,710 | 3,900 |
| 10,000,000 | | | | | | | 4,620 | 5,190 |
| 25,000,000 | | | | | | | 2,640 | 6,430 |
| 45,000,000 | | | | | | | | 3,510 |

¹ An area is the smallest complete geographic unit to which the estimate under consideration pertains. Thus, the area may be: the United States, region, division, State, city, county, standard metropolitan area, urbanized area, or their urban or rural portions. The rural-nonfarm or rural-farm dwelling units in the United States, State, or county, the nonwhite-occupied dwelling units, the owner-occupied dwelling units, etc., do not represent complete areas.

TABLE C.—STANDARD ERROR OF ESTIMATED PERCENTAGE: 1950
[Range of 2 chances out of 3]

| Estimated percentage | Base of percentage | | | | | | | |
|----------------------|--------------------|-------|-------|--------|--------|---------|---------|-----------|
| | 500 | 1,000 | 2,500 | 10,000 | 25,000 | 100,000 | 500,000 | 5,000,000 |
| 2 or 98 | 1.2 | 0.8 | 0.5 | 0.3 | 0.2 | 0.1 | | |
| 5 or 95 | 1.8 | 1.3 | 0.8 | 0.4 | 0.3 | 0.1 | 0.1 | |
| 10 or 90 | 2.4 | 1.7 | 1.1 | 0.6 | 0.3 | 0.2 | 0.1 | |
| 25 or 75 | 3.6 | 2.5 | 1.6 | 0.8 | 0.5 | 0.3 | 0.1 | |
| 50 | 4.1 | 2.9 | 1.8 | 0.9 | 0.6 | 0.3 | 0.1 | |

COMPLETENESS OF ENUMERATION

Control and measurement of quality of enumeration.—The degree of completeness of enumeration has always been a matter of deep concern to the Bureau of the Census. This concern with the quality of its products has led the Bureau of the Census to undertake two kinds of activity: (1) Development of procedures to improve the quality of enumeration and (2) systematic evaluations of the quality of enumeration, particularly of the degree of completeness actually attained in its censuses.

In the 1950 Censuses of Population, Housing, and Agriculture, a number of devices were developed to improve the quality of enumeration. Also, a major attempt was made to measure the degree of completeness of the enumeration by means of a carefully conducted post-enumeration survey. This took the form of a re-enumeration in a scientifically selected sample of areas in the United States, thus permitting a direct check on a case-by-case basis of the actual enumeration. The results of this survey for the Census of Housing indicated a net underenumeration in the census count of occupied dwelling units in the United States of about one million, or 2.5 percent.

It may safely be said that no national census, whether in the United States or abroad, has ever represented an absolutely accurate count. Accuracy in a census can be increased by using better procedures, but some procedures are so expensive that the improvement would not be worth the added costs.

Procedures to improve quality of enumeration.—In this country, the difficulties of finding and identifying many classes of dwelling units, the living habits of apartment dwellers and lodgers in our metropolitan centers, and the inexperience of most of the

census enumerators, all represent relatively great problems. Thus, the difficulties involved in obtaining a complete and unduplicated count of the number of dwelling units in the United States, in addition to obtaining accurate information concerning the characteristics of dwelling units, are clearly very great. The major devices used in the 1950 Census of Housing to improve quality were:

1. The enumerators were given a course of training that emphasized the importance of an accurate count, the definition and identification of dwelling units, and the classification of dwelling units with respect to such complicated characteristics as the condition of the dwelling unit. A training guide for the instructors, film strips, records, and practice enumerations were among the devices used.

2. Each enumerator was furnished with a map of his enumeration district; the map showed the boundaries of the area for which he was responsible.

3. A crew leader was assigned to supervise each group of approximately 15 enumerators. The crew leader's duties included helping enumerators with problem cases and spot-checking a sample of the dwelling units assigned to them.

4. District supervisors made preliminary announcements of the number of people counted so that any complaints or criticisms concerning the completeness of the enumeration in local areas could be made before field offices were closed. This led not only to enumerating people who might otherwise have been missed, but also to increasing the coverage of dwelling units.

Post-Enumeration Survey.—A particularly important and useful method of checking the accuracy of enumeration is a direct check on a case-by-case basis of the actual enumeration. A procedure of this type was used in the Post-Enumeration Survey of the 1950 Census in which a re-enumeration on a sample basis was undertaken. To check for dwelling units erroneously omitted from the census, a probability sample of about 3,500 small areas was canvassed and the relistings compared with the original census listings. In addition to the sample directed towards discovering erroneously omitted dwelling units, a sample of about 22,000 enumerated dwelling units was investigated to determine whether or not they were erroneously enumerated. This sample of enumerated dwelling units was also used to determine the accuracy of the reports obtained on their characteristics, such as number of rooms, rent, value, and the presence or absence of piped hot water.

The Post-Enumeration Survey interviewers were carefully selected and were given intensive training and supervision. Great efforts were made to obtain information from respondents who were presumably best informed regarding the information desired—in the case of occupied dwelling units, usually the head of the household or the spouse of the head. These measures resulted in an expenditure per case in the Post-Enumeration Survey many times that which was feasible for the original census enumeration.

A further description of the procedures and results of this Post-Enumeration Survey will be published at a later date. The discussion below is limited to an analysis of the completeness of enumeration of occupied dwelling units.

As indicated in table D, the net underenumeration in the census count of occupied dwelling units in the United States is estimated at 2.5 percent (with an estimated standard error of 0.2 percent). The estimated underenumeration is the difference between the estimated erroneous omissions and the estimated erroneous inclusions. The figures shown in table D report those errors in the count which were detected by the Post-Enumeration Survey. Errors not reflected in these figures may have arisen because of the following factors among others:

1. Identifying all errors in the coverage of the census is extremely difficult. Although some of the errors in the census listings come from carelessness or ineptness of the enumerators, many of them are a result of the intrinsic difficulty of recognizing certain types of dwelling units—for example, dwelling units in "converted" buildings, dwelling units in basements or behind

stores. The Post-Enumeration Survey interviewers did succeed in locating many of the dwelling units which were missed or erroneously included in the census, but they could not identify all such cases. A small-scale field check on the Post-Enumeration Survey results indicated that the Post-Enumeration Survey errors were, in general, in the direction of underestimating the number of erroneously omitted dwelling units.

2. The reliability of the Post-Enumeration Survey estimates, as in all statistical surveys, is also affected by errors in the application of sampling and other procedures.

Those errors in the Post-Enumeration Survey which could be identified were almost always in the direction of underestimating the number of occupied dwelling units erroneously omitted from, or erroneously included in, the census, with probably more erroneous omissions than inclusions. These and other considerations suggest that the estimated net underenumeration of 2.5 percent in 1950 is a minimum estimate.

As indicated in table D, there appears to be some variation in the coverage error of the housing census among tenure classes, with renter-occupied units showing higher levels of error than owner-occupied units. The differences that appear must be interpreted, however, in the light of the sampling variability shown in table E. The error rates would also vary among smaller areas such as individual States, counties, and cities; but the sample was not large enough to yield reliable estimates for such areas.

It should be noted that not all of the persons residing in erroneously omitted occupied dwelling units were missed in the census. This is a consequence, in part, of some erroneous omissions of dwelling units arising from failure to apply the dwelling unit definition correctly; in particular, the reporting in the census as one dwelling unit, living quarters which should have been re-

TABLE D.—ESTIMATES OF COVERAGE ERROR FOR OCCUPIED DWELLING UNITS, FOR THE UNITED STATES, BY TENURE, URBAN AND RURAL, AND BY REGIONS: 1950

[Numbers are rounded to the nearest thousand without being adjusted to group totals, which are independently rounded. Percentages are based on census count]

| Region, tenure, and residence | Total occupied dwelling units | | Post-Enumeration Survey | | | | | |
|---------------------------------|-------------------------------|-------------------------------------|-------------------------------|----------|--------------------------------|----------|--------------------------------|----------|
| | Census (thousands) | Post-Enumeration Survey (thousands) | Erroneously omitted in census | | Erroneously included in census | | Net underenumeration in census | |
| | | | Number (thousands) | Per cent | Number (thousands) | Per cent | Number (thousands) | Per cent |
| United States | 42,826 | 43,897 | 1,336 | 3.1 | 265 | 0.6 | 1,071 | 2.5 |
| Northeast..... | 11,228 | 11,475 | 304 | 2.7 | 57 | 0.5 | 247 | 2.2 |
| North Central..... | 12,972 | 13,242 | 319 | 2.5 | 49 | 0.4 | 270 | 2.1 |
| South..... | 12,653 | 12,976 | 425 | 3.4 | 82 | 0.6 | 343 | 2.7 |
| West..... | 5,994 | 6,207 | 289 | 4.8 | 76 | 1.3 | 213 | 3.6 |
| TENURE BY RESIDENCE | | | | | | | | |
| All occupied units | 42,826 | 43,897 | 1,336 | 3.1 | 265 | 0.6 | 1,071 | 2.5 |
| Urban..... | 28,492 | 29,116 | 836 | 2.9 | 212 | 0.7 | 624 | 2.2 |
| Rural nonfarm..... | 8,613 | 8,910 | 334 | 3.9 | 37 | 0.4 | 297 | 3.4 |
| Rural farm..... | 5,721 | 5,871 | 166 | 2.9 | 16 | 0.3 | 150 | 2.6 |
| Owner-occupied | 23,560 | 23,970 | 460 | 2.0 | 50 | 0.2 | 410 | 1.7 |
| Urban..... | 14,377 | 14,572 | 219 | 1.5 | 24 | 0.2 | 195 | 1.4 |
| Rural nonfarm..... | 5,425 | 5,572 | 158 | 2.9 | 11 | 0.2 | 147 | 2.7 |
| Rural farm..... | 3,758 | 3,827 | 83 | 2.2 | 14 | 0.4 | 69 | 1.8 |
| Renter-occupied | 19,266 | 19,926 | 876 | 4.5 | 216 | 1.1 | 660 | 3.4 |
| Urban..... | 14,116 | 14,545 | 617 | 4.4 | 188 | 1.3 | 429 | 3.0 |
| Rural nonfarm..... | 3,188 | 3,339 | 177 | 5.6 | 26 | 0.8 | 151 | 4.7 |
| Rural farm..... | 1,963 | 2,044 | 83 | 4.2 | 2 | 0.1 | 81 | 4.1 |

ported as two or more dwelling units. In such situations, all of the persons may have been correctly counted in the 1950 Census of Population. For this reason, the computation of ratios representing the number of missed persons per erroneously omitted dwelling unit cannot be made by relating the findings on erroneously omitted persons presented in Population Volumes I and II to those for erroneously omitted dwelling units in Housing Volume I.

The definitions which were used for erroneous omissions and erroneous inclusions of occupied dwelling units are important in interpreting the results:

1. *Erroneous omissions*.—An occupied dwelling unit was classified as erroneously omitted—

If it was not enumerated at all or was not enumerated in its proper enumeration district;

If it was enumerated as vacant when it should have been enumerated as occupied; or

If it was enumerated as part of another dwelling unit when it should have been enumerated as a separate dwelling unit.

2. *Erroneous inclusions*.—An occupied dwelling unit was classified as an erroneous inclusion—

If it was enumerated more than once or was enumerated in the wrong enumeration district;

If it was enumerated as occupied when it should have been enumerated as vacant;

If it was enumerated as a dwelling unit when it should have been enumerated as part of a dwelling unit;

If it was non-existent (i. e., an apparent fabrication on the part of the original enumerator); or

If it did not meet the criteria for definition as a dwelling unit.

Some limitations of the Post-Enumeration Survey results have been discussed above. An additional limitation is, of course, the presence of sampling variability. Estimates of standard errors are presented in table E.

TABLE E.—STANDARD ERRORS OF COVERAGE-ERROR STATISTICS FOR OCCUPIED DWELLING UNITS, FOR THE UNITED STATES, BY TENURE, URBAN AND RURAL, AND BY REGIONS: 1950

[Range of 2 chances out of 3]

| Region, tenure, and residence | Estimated standard error of specified types of coverage error | | |
|------------------------------------|---|--------------------------------|--------------------------------|
| | Erroneously omitted in census | Erroneously included in census | Net underenumeration in census |
| United States | 85,000 | 52,000 | 92,000 |
| Northeast..... | 42,000 | 19,000 | 46,000 |
| North Central..... | 36,000 | 14,000 | 38,000 |
| South..... | 42,000 | 15,000 | 43,000 |
| West..... | 49,000 | 44,000 | 57,000 |
| TENURE BY RESIDENCE | | | |
| All occupied units | 85,000 | 52,000 | 92,000 |
| Urban..... | 74,000 | 50,000 | 83,000 |
| Rural nonfarm..... | 28,000 | 12,000 | 31,000 |
| Rural farm..... | 21,000 | 5,000 | 21,000 |
| Owner-occupied units | 40,000 | 11,000 | 40,000 |
| Urban..... | 29,000 | 8,000 | 30,000 |
| Rural nonfarm..... | 21,000 | 5,000 | 21,000 |
| Rural farm..... | 13,000 | 5,000 | 14,000 |
| Renter-occupied units | 64,000 | 48,000 | 72,000 |
| Urban..... | 59,000 | 47,000 | 68,000 |
| Rural nonfarm..... | 20,000 | 9,000 | 22,000 |
| Rural farm..... | 14,000 | 2,000 | 14,000 |