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# Decennial Census and Current Population Survey Data on Income

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Since 1810, the people of the United States have been answering census questions about their financial status. This long history of collecting financial information in the censuses came about largely because the decennial census was about the only means the Congress had for collecting data in the nineteenth century. Accordingly, the legislators wrote into the census laws long lists of subjects to be covered. These ranged from the physical condition of the people to the amount of capital stock in insurance companies.

Toward the close of the nineteenth century, other government agencies, such as the Department of Agriculture and the Bureau of Labor, began to compile statistical information. Inevitably, the specialized activities of these agencies made it possible to modify the scope of the decennial census.

The Census Bureau collects information from business establishments and other organizations as well as from individuals. The emphasis in this paper, however, will be on the questions asked by the Bureau or its predecessors of individuals—usually in face-to-face interviews—about their own financial status.

## *Financial Subjects other than Income*

### CENSUS OF AGRICULTURE

Since the first census of agriculture was taken in 1840, farmers have reported the value of certain farm products. In the 1850 and subsequent censuses, they also reported the value of their farms. In addition, they have given information on various expenditures and on the amounts received from the sale of selected farm products.

### CENSUS OF POPULATION

Financial inquiries appeared less regularly in the population census. In 1850, enumerators were instructed "to obtain the value of real estate by inquiry of each individual who is supposed to own

Note: Acknowledgment is made of the assistance in the preparation of this paper of Elva Marquard of the Bureau of the Census.

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real estate, be the same located where it may, and insert the amount in dollars." But the Superintendent of the Census declared that "The value of real estate is taken loosely, and induces no confidence"<sup>1</sup> and he published only the real estate values that were taken from public records.<sup>2</sup>

The censuses of 1860 and 1870 required a report on the value not only of real estate but also of "all bonds, stocks, mortgages, notes, livestock, plate, jewels, or furniture but exclusive of wearing apparel." The 1880 census law provided that "the inquiries as to the value of real and personal estate owned shall be stricken out."

In 1890, questions on ownership of property again appeared on the population schedule. This investigation, the most ambitious up to that time, was instigated by Single Tax leagues. Because the Superintendent of the Census had some misgivings about collecting these data, he placed only the less objectionable questions on the population schedule and put the more detailed questions in a supplemental schedule.<sup>3</sup> The enumerator asked each family if it owned or rented the home it occupied; if owned, whether the home was free from mortgage encumbrance. He asked similar questions about each farm. The supplemental schedule was then mailed to mortgagors (except in the southern states) asking them to indicate the amount of the mortgage debt, the market value of the farm or home, the annual rate of interest, and the object for which the debt was incurred. Response to the supplemental inquiry was considered good. Less than 1 per cent of those replying refused to give information or gave it with reluctance. Lack of funds—a problem familiar to present-day census-takers—prevented solicitation of some mortgagors for whom reports were needed.<sup>4</sup> The results of this investigation consumed more printed pages (696) than the income statistics in the 1950 census.

The 1890 statistics on property values and mortgages appear to have been complete and convincing.<sup>5</sup> In the next three censuses (1900, 1910, and 1920), the enumerator asked if the home was owned or rented; if owned, whether it was mortgaged; but he did not inquire about the value of the home or the amount of the mortgage.

<sup>1</sup> 1850 *Census of the United States*, p. iv.

<sup>2</sup> 1850 *Census of the United States, Report of the Superintendent of the Census for December, 1, 1852; to Which is Appended the Report for December 1, 1851*, p. 46.

<sup>3</sup> 1890 *Census of the United States, Report on Farms and Homes: Proprietorship and Indebtedness*, pp. 3-6.

<sup>4</sup> *Ibid.*, pp. 5-7.

<sup>5</sup> 1900 *Census of the United States, Vol. II, Population, Part 2*, p. clxxxvii.

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In 1930, financial data were again collected on the population schedule. If the occupant owned his home, he was asked to indicate the value; if he rented it, he was asked to give the monthly rental. These questions also appeared on the 1940 population and housing schedules and on the housing side of the 1950 population and housing schedule. Mortgage data were not collected in 1930, but they were collected in 1940 and 1950 in the housing census.

### *Consumer Income Surveys*

Until the early 1930's, consumer income surveys were limited and infrequent. The Bureau of Labor Statistics, its predecessor (the Bureau of Labor), and the Immigration Commission were among the pioneers in this field.<sup>6</sup> In the main, however, income distributions (especially those on a national basis) had to be estimated from related data. One of the bodies of related data used for this purpose was the information on residential rents and values reported in the 1930 census.<sup>7</sup>

The economic dislocations of the early thirties and the inability of the American people to consume available goods and services brought into sharp focus the distribution of consumer incomes. Accordingly, some of the surveys taken to get other types of data (such as health, consumption, and housing) included questions on income. Prominent among these was the Study of Consumer Purchases conducted by the Bureau of Labor Statistics and the Bureau of Home Economics with funds from the Works Progress Administration.

In the Study of Consumer Purchases, nearly 300,000 families answered detailed questions about their money and nonmoney incomes in 1935-1936. The National Resources Committee regarded the resulting data as far more extensive than those for previous years, although subject to many limitations and shortcomings. Nevertheless, it was able to estimate the distribution of incomes in the United States from these data, supplementing them by other sample data on family and individual incomes, by data on earnings, and by income tax statistics.<sup>8</sup> This income distribution was widely used, and it stimulated the statistical appetites of social scientists.

<sup>6</sup> In one of the early surveys made by the Bureau of Labor, data on income and expenditures were obtained from 25,000 families (see *Eighteenth Annual Report, 1903*, Commissioner of Labor, 1904).

<sup>7</sup> Maurice Leven, Harold G. Moulton, and Clark Warburton, *America's Capacity to Consume*, Brookings, 1934, p. 222.

<sup>8</sup> *Consumer Incomes in the United States: Their Distribution in 1935-36*, National Resources Committee, 1938, p. 2.

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### THE 1940 CENSUS

When the 1940 census was planned, many economists were examining the income distribution in their efforts to explain the long depression which the country had experienced. More information on incomes was needed, and suggestions that income questions be included in the census were inevitable. Such a suggestion came from one of the first Conferences on Research in Income and Wealth.<sup>9</sup> By 1940, the Congress had abandoned the practice of writing into the law the questions that were to be asked in each census and had put the selection of the questions in the hands of the Director of the Census.<sup>10</sup> After investigating the need for the data and the possibility of collecting them, the Bureau decided to insert income questions in the 1940 census.

Since some objections could be anticipated despite the need for the data and the legal basis for collecting them, the Census Bureau adopted four methods of lightening the impact of these questions on the public and of getting the information:

1. People were asked to report the amount only of money wages and salaries. Many wage and salary workers knew that such income had been reported to the government for social security purposes, and the Bureau thought they would not object to reporting it in the census. For other types of income, the Bureau asked only "Did this person receive income of \$50 or more from sources other than money wages or salary?"

2. The Bureau did not ask for an exact amount if the respondent received more than \$5,000 in wages or salary. This device was intended to minimize respondent resistance, but it had a good statistical basis, because a relatively small proportion of the people had more than \$5,000 in wage and salary income in 1939.

3. For people who did not wish to reveal the amount of their wages to the local enumerator (who might be a neighbor), the Bureau provided confidential income forms. The enumerator put identifying information on the form and gave it to the respondent who wrote in the answers to the questions and mailed the form to Washington where the information was entered on the schedule.

4. The Bureau put the income question at the end of the schedule so that the enumerator would have obtained the other census information if the respondent protested and refused to cooperate further.

<sup>9</sup> "Report of Committee Three," Conference on Research in Income and Wealth, National Bureau of Economic Research, unpublished, 1936.

<sup>10</sup> 46 Stat. 21 (1929), 13 U.S.C. 201-204.

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Despite these precautions, some adverse publicity preceded the enumeration. Some newspapers carried editorials advising people not to give the information, cartoons ridiculing the collection of the data, and articles questioning the legality of the inquiry. Bills were introduced in Congress to prevent the government from asking questions of this kind; the Congress held hearings but took no further action.

In 1940, it must be remembered, the income tax coverage had not been widely extended by either the federal or the state governments. Social security coverage was limited chiefly to wage and salary workers in business establishments. Many people did not report their earnings to any organization or group, and some of them felt that they were not obliged to do so.

However, the Bureau was agreeably surprised by the cooperation of the people. The nonresponse rate was low, and it appeared to represent largely the omission of entries for persons who had no income. Only 2 per cent of the wage and salary workers did not report wage or salary income. Of the 15 million confidential income forms printed, only 200,000 were used.

The coverage of the 1940 census was larger, in terms of number of respondents, than that of any income survey to that time, and it may prove to be the largest ever to be taken. (The 1950 census income questions were on a sample basis.) The 1940 census income questions were directed to all persons fourteen years old and over except those in specified institutions, and there were 100 million people in this category. Of these, 40 million reported some wage or salary income for 1939.

The Bureau made some attempts to appraise the quality of the 1939 statistics. It examined the nonresponse rates, studied the types of people who failed to respond, aggregated the amounts of wages and salaries and compared them with other wage and salary totals, made certain checks to see if the data were internally consistent, and in a small-scale study matched individual reports with social security records. The general conclusions were that the amount of wages and salaries was somewhat underreported and that the persons with other income were somewhat undercounted. (In subsequent surveys, the Bureau has improved its coverage, but the criticisms still apply.) In any event, the 1939 statistics were reasonably accurate, and they provided a wealth of data on income.

The results were subject to several shortcomings:

1. Limiting the data to wage and salary income eliminated some groups, such as farmers and small businessmen, who suffered from

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underemployment if not unemployment. But it did cover the main group who had been affected by lack of work, and persons who got most of their income from wages or salaries could be studied in the light of their personal, family, housing, and employment characteristics.

2. Persons with other incomes of \$50 or more were excluded from some tabulations on the assumption that they were not primarily dependent on their wage or salary income. This assumption was probably not entirely justified; a higher limit might have been more appropriate.

3. The combination, in some of the wage and salary tabulations, of experienced persons in the labor force with no wage and salary income with those having such incomes of \$1 to \$99 muddied the statistics of incomes of earners and hampered the comparison of incomes of persons in different groups, such as those in different occupations. This limitation was imposed by procedural difficulties.<sup>11</sup>

Combining data for these two groups highlighted the lack of identity between persons in the experienced labor force at the time of the census (April) and those who had income in the previous year. Experience has shown that appreciable numbers of persons in the labor force in the spring may have had no income in the previous year because they were unemployed, working without pay, or engaged in some activity (such as going to school or running a home) which was outside the labor force. Similarly, some persons who earned wages or salaries during a given year may not be in the labor force in the following spring. They may have lost their jobs, retired, died, or left the labor force for some other activity. The incomes of earners who died or left the country before the census was taken would not be included in the census income distribution because they would not be counted in the census. Such losses from

<sup>11</sup> The main difficulty was that persons with no wage or salary income had been coded in such a way that they could be segregated only with an undue amount of tabulating effort. A secondary difficulty was that the number of counters on the tabulating machines was limited, and a \$0 to \$99 combination would make the data fit into those available. With the time and funds obtainable, the only way out of the dilemma at this stage appeared to be to combine the two groups. When the 1940 reports were prepared, the sample tabulations showed that 22 per cent of the persons in the experienced labor force in 1940 had no wage or salary income in 1939, and that these persons comprised 87 per cent of the \$0 to \$99 income group. (*1940 Census of Population*, Vol. III, *The Labor Force*, Part 1, United States Summary, p. 12.) These results were confirmed by the 1950 data, in which persons in the experienced labor force in 1950 with no wage or salary income in 1949 were an even larger proportion (93 per cent) of the \$0-99 group. (*1950 Census of Population*, Vol. II, *Characteristics of the Population*, Part 1, United States Summary, Table 144.)

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the population account for some of the difference between income aggregated from census figures and income statistics from other sources.

4. Collecting data for persons rather than families necessitated a special procedure to get family data, and it compounded the problem of obtaining total family wage and salary income when the enumerator failed to make an entry for wage or salary income for some person. Family wage or salary income was obtained by transcribing to separate sheets of paper the information for all related persons in the household. The wage or salary income of an entire family had to be classified as "not reported" if information was lacking for only one adult family member who was a wage or salary worker in 1940, or who was not in the labor force in 1940 but who reported one or more weeks worked in 1939.

When the wage or salary income question was not answered for self-employed workers, unpaid family workers, new workers, or persons not in the labor force in 1940 and not working in 1939, the Bureau assumed that they had no wage or salary income. Relatively few such persons worked for wages or salaries in 1939, and it was assumed that the enumerator had probably left the column blank because he believed that the question on wage or salary income did not apply to these persons.

Failure to answer the question on other income raised similar problems, but they were somewhat simpler because amounts were not involved. Thus, an entire family could be classified as "with other income" if only one member reported receiving it. A more difficult problem arose when no family member reported receiving other income and the enumerator left blanks for some family members. Such a family was classified as "without other income" if the blanks were for persons who were engaged in housework in their own homes or who were in school; it was assumed that such persons would not have received other income. But if the blanks were for other persons, the Bureau had to classify the family as "other income not reported." When the data were tabulated, however, the Census Bureau combined the families "with other income not reported" with the families "with other income," so that it would have a clean distribution of families known to be primarily dependent on wage or salary income.

The cross-tabulations were extensive. In the interests of economy and timeliness, some of the tabulations were made on a 5 per cent sample of the returns. Distributions of wage and salary income for



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persons were cross-classified by the following criteria (an asterisk indicates a distribution was made for the South only):

- Class of worker, sex, residence, receipt of other income (for persons in labor force)
- Months worked, sex, residence, receipt of other income (for wage or salary workers not on emergency work)
- Color, months worked, residence, sex, receipt of other income (for wage or salary workers not on emergency work)
- Age, months worked, sex, residence, receipt of other income (for wage or salary workers not on emergency work)
- Industry, sex (for experienced persons in labor force not on emergency work)
- Industry, months worked, sex (for wage or salary workers not on emergency work)
- Family wage and salary income, number of earners in family, receipt of other income in family, color, residence
- Wage or salary income of wife, receipt of other income, color\*, residence (for nonfarm married men with wife present)
- Employment status, sex, months worked, residence (for experienced persons in labor force)
- Occupation, sex, months worked (for experienced persons in labor force not on emergency work)
- Household relationship, marital status, sex, color, residence, receipt of other income (for experienced persons in labor force not on emergency work)
- Years of school completed, age, residence (for native white and Negro males in nonfarm areas)
- Sex, residence, receipt of other income, nonworker category (for persons not in the labor force)
- Labor force status and age of wife, color, and presence or absence of children under ten years old (for married men without other income, with wives eighteen to sixty-four years old, in specified urban and rural nonfarm areas)

Distributions of family wage and salary income were cross-classified by the following criteria (an asterisk indicates a distribution was made for the South only):

- Size of family, residence, receipt of other income, color\*, sex, marital status, and age of head
- Class-of-worker composition of family, class of worker of head, color\*, residence, receipt of other income (for nonfarm families)

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- Size of family, number of earners, color\*, residence, receipt of other income (for nonfarm families with all workers wage and salary workers)
- Number of earners in family, months worked in 1939, color\*, residence, receipt of other income (for nonfarm families with all workers wage or salary workers)
- Employment status and major occupation group of head, color\*, residence, receipt of other income (for nonfarm families with all workers wage or salary workers)
- Age of head, color\*, residence, receipt of other income (for nonfarm families with all workers wage or salary workers)
- Sex, marital status and age of head, number of children under eighteen, color\*, residence, receipt of other income
- Wage or salary income of head, color\*, residence, receipt of other income
- Tenure, residence, color\*, and receipt of other income
- Tenure, amount of rent, residence, color\*, and receipt of other income (for nonfarm families)
- Size of family, amount of rent, tenure, residence, color\* (for nonfarm families without other income)
- Marital status and sex of head, number of children under twenty-one, tenure, amount of rent, residence, color\* (for nonfarm families without other income)
- Size of family, tenure, amount of rent, receipt of other income (for families in large metropolitan districts)
- Marital status and sex of head, number of children under twenty-one, tenure, amount of rent, receipt of other income (for families in large metropolitan districts)
- Number of persons in labor force, tenure, amount of rent, color\*, residence (for nonfarm families without other income)
- Number of rooms in dwelling unit, tenure, amount of rent, color\*, residence (for nonfarm families without other income)
- Number of persons in labor force, tenure, amount of rent, receipt of other income (for families in large metropolitan districts)
- Number of rooms in dwelling unit, tenure, amount of rent, receipt of other income (for families in large metropolitan districts)
- Employment status of head, tenure, amount of rent, color\*, residence (for nonfarm families without other income)
- Major occupation group of employed head, tenure, amount of

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- rent, color\*, residence (for nonfarm families without other income)
- Employment status of head, tenure, amount of rent, receipt of other income (for families in large metropolitan districts)
- Major occupation group of employed head, tenure, amount of rent, receipt of other income (for families in large metropolitan districts)
- State of repair and plumbing equipment of dwelling unit, tenure, amount of rent, color\*, residence (for nonfarm families without other income)
- Employment status and major farm occupation group of employed head, tenure, color\*, receipt of other income (for farm families)
- Size of family, receipt of other income, residence, age, sex, and marital status of head

The publication program was correspondingly extensive. Two volumes were devoted entirely to wage and salary income, and the income data appeared in a number of reports on other subjects. The following reports of the 1940 census include 1939 data on wage and salary income:

*Population, Vol. III, The Labor Force*

*Population—The Labor Force (Sample Statistics):*

- “Employment and Family Characteristics of Women”
- “Wage or Salary Income in 1939”

*Population—Families:*

- “Family Wage or Salary Income in 1939”
- “Size of Family and Age of Head”
- “Types of Families”

*Population and Housing—Families:*

- “Characteristics of Rural-Farm Families”
- “General Characteristics”
- “Income and Rent”
- “Tenure and Rent”

Wage and salary income data for 1939 were also included in the following special reports:

- “Per Capita Income in Wage-Earner Families, by Size of Family: 1939,” Series P-44, No. 19, 1944
- “Educational Attainment by Wage or Salary Income: 1940,” Series P-46, No. 5, 1946

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### CURRENT POPULATION SURVEY

After the Census Bureau finished the reports for the 1940 census, economic conditions and administrative decisions combined to put it again in the business of collecting income data. World War II caused incomes to increase sharply and made earlier income statistics obsolete. Businessmen and social scientists were again looking for current income distributions. At the same time, the Government transferred to the Bureau of the Census the Current Population Survey, which the WPA had originally developed as the Monthly Report on Unemployment.

The statistical world looked at the Current Population Survey and saw something more than a monthly survey of unemployment. It saw a miniature population census that could yield any kind of statistics that a census could. Moreover, the CPS had greater flexibility than the census, and it could produce data on a more current basis.

The Bureau had collected some income data in its Consumer Requirements Surveys in 1944, but in May 1945 it took its first sample survey to determine annual incomes of all types of consumers. The inquiry was in the form of a supplement to the Current Population Survey for that month. The survey covered income in 1944, and an earlier month than May would have been better, but in view of the considerable increase in the scope of the inquiries, much time was required for planning. The Bureau studied its previous experience and consulted many experts in the field, particularly those who had worked on the Consumer Purchases Study, including many of the members of the Conference on Research in Income and Wealth. It finally selected nine questions to get the income information, and then proceeded to develop sampling procedures, prepare instructions, and outline tabulations.

Again, the Census Bureau tried to reduce the impact of the income questions on the respondent and to minimize possible damage to the CPS. Instead of asking all households in that survey to answer the income questions, it asked only those that were scheduled to leave the sample in May to do so; then, if any ill feeling developed, it would not affect the CPS response in succeeding months. The income questions were put at the end of the schedule so that the enumerator would have the other information if the respondent refused to cooperate further. Persons with large incomes were not asked to report the exact amount, but the maximum to be reported was raised to \$10,000.

Within six months of the time the survey was taken, the Bureau

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issued a preliminary report of the results. The time required to produce the report seemed to be unreasonable, but a number of years elapsed before it was reduced (see Table 1).

The 1945 survey provided fairly good statistics, it was relatively inexpensive because it was attached to the CPS, and the public cooperated well in providing information. Moreover, government and business groups used the data in various ways and pointed to the advantages of annual income surveys that would provide comparable statistics. In addition, the Bureau needed income surveys to test questions and procedures for the 1950 census, and it saw that it could improve the usefulness of other data by collating them with the income data. Recently, for example, in its statistics on smoking habits, it was able to provide income data for different types of smokers without asking income questions in the smoking survey. As a result of these needs for the data, the Bureau has produced an uninterrupted series covering the years from 1944 to the present.<sup>12</sup>

From time to time, the Bureau has introduced changes in the income survey to improve the income estimates (see Table 1). Some of these changes may have affected the comparability of the data. In the earlier surveys, for example, specific questions were asked about ten or more types of income; in recent surveys, questions were asked about only four types. The intensive inquiry techniques of the earlier surveys may have helped respondents to recall minor or irregular sources of income and thus may have produced more nearly complete results, but evidence on this factor is inconclusive. The change in the maximum to be reported from \$10,000 in 1944 to \$25,000 in 1954 reflects the change in economic conditions and also the virtual disappearance of objection on the part of the public to furnish income information. Other changes were made in the coverage, the size of the sample, and the time the survey was taken.

The only significant break in the series was occasioned by the elimination of rural-farm households from the 1946 statistics. The Bureau of the Census agreed to exclude this group because the Bureau of Agricultural Economics planned to collect income information from farm households in its January 1947 Quarterly Survey of Agriculture. The two bureaus intended to combine the two sets of statistics, but they were unable to merge them in a satis-

<sup>12</sup>The Census Bureau has issued Current Population Reports on the basis of the annual CPS as Series P-S, Nos. 22 and 22-s and as Series P-60. A list of these can be found in the annual issues of *Catalog of United States Census Publications*, 1947 to 1955. In addition, the *Preliminary Report on Survey of 1944 Consumer Income* was issued in 1945.

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factory manner. The Bureau of the Census, therefore, confined its publication of 1946 data to urban and rural-nonfarm persons and families.

The Bureau continues its experimental work and the introduc-

TABLE 1

Selected Characteristics of Income Surveys Taken in the Current Population Survey, 1945-1955

(number)

YEAR COVERED <sup>a</sup>	Households (thousands)	CPS Areas	Questions Asked	Months from Collection to Publication
1944	6.7 <sup>b</sup>	68	9	6
1945	8.7 <sup>b</sup>	68	17 <sup>c</sup>	13
1946	20.0 <sup>d</sup>	148 <sup>d</sup>	20	9
1947	25.0 <sup>e</sup>	68	2	10
1948	25.0 <sup>e</sup>	68	3	10
1949	15.0 <sup>b</sup>	68	4	10
1950	25.0 <sup>e</sup>	68	6	11
1951	15.0 <sup>b</sup>	68	4	13
1952	18.0 <sup>b</sup>	68	4	5
1953	15.0 <sup>b</sup>	230	4	13
1954	14.0 <sup>b</sup>	230	4	4

<sup>a</sup> The survey covering 1944 was taken in May 1945; the survey covering 1949, in March 1950; the surveys of all the other years were taken in the April of the year following the year covered.

<sup>b</sup> Subsample of the cps sample.

<sup>c</sup> Also 39 calculation questions.

<sup>d</sup> Expanded cps sample.

<sup>e</sup> cps sample.

<sup>f</sup> Split sample: 1 or 2 questions.

*Coverage:* All persons fourteen years of age and over except (by year covered): 1944—(1) persons living on military reservations; (2) persons in institutions; (3) persons in hotels, YMCA's, fraternity houses, and similar places; and (4) persons in trailer camps, labor camps, logging camps, houseboats, ships, etc.

1945—(1)–(4) same as for 1944, and (5) persons in large lodging houses

1946—(1) persons living on military reservations, (2) inmates of institutions, and (3) residents of rural-farm areas

1947—(1) persons living on military reservations, and (2) inmates of institutions

1948-1954—(1) members of armed forces living in barracks on military reservations, and (2) inmates of institutions

*Maximum income to be reported* (by year covered): 1944-1950—\$10,000; 1951-1952—\$15,000; and 1953-1954—\$25,000

tion of needed changes. In 1956 it related income for 1955 to work experience in that year. Until that time, the Bureau had assumed that the persons who did not answer the income questions had the same characteristics as those who did. In getting information on work experience, it will at least know whether the non-respondents were paid workers, and hence recipients of earnings,

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during the year. It will also be able to check the work experience of persons who reported no income to see if they reported paid work. This additional information should increase the reported number of income recipients and, more important, it should increase the reported amount of aggregate income.

### CPS DATA VERSUS CENSUS DATA

Comparing the collection of income data in the 1950 census and in the CPS, the Census Bureau finds that the CPS has a number of advantages and only one or two disadvantages. The advantages are:

1. Since persons are arranged in household groups, income data are collected for all persons in the household, and family income can be tabulated with little difficulty.

2. More questions can be asked because the number of respondents is much smaller and the cost of adding a question is small.

3. Fewer enumerators are employed and they can be better trained.

4. More detailed processing is feasible, because there are fewer schedules. (Income data usually need editing and can be substantially improved in such an operation.)

5. The data can be published within a shorter period of time.

6. Experimentation is easier. Procedures are more flexible, and the CPS sample is large enough so that it can be split into different test groups. (This was done in the April 1948 survey when different questions were tested for the 1950 census.)

7. The data can be obtained without an undue burden on respondents. Not more than 25,000 households have been asked to give income information in any one survey while millions of households are involved in a census.

The major disadvantage of the CPS is that the size of the sample does not permit the detailed cross-classifications that are possible in the census, and it does not provide data for states and smaller areas. This is a severe limitation. Cross-classifications of income and occupation are particularly interesting, but with the CPS sample, the Bureau can cross-classify income by only the major occupation groups. Another possible disadvantage of the CPS is that it lacks the publicity and the mandatory reporting provisions of the census, but it is doubtful whether these shortcomings have had any significant effect.

Costs of CPS and census income data are not easily compared. A comparison of persons enumerated would not yield an exact ratio, because more time is spent on each CPS report than on each census

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report. A very rough guess is that the income segment of the census costs several hundred times as much as one CPS annual survey. Over a decade, therefore, the ten annual surveys cost much less than the decennial census.

Uses of the two types of data differ somewhat because CPS provides relatively simple national distributions, while the census provides detailed national cross-classifications and also simple distributions for counties and other small areas. The CPS data are utilized mainly by organizations concerned with broad national problems. For example, they are used by Congressional committees to study the problems of low-income families and their effect on economic stability, by labor organizations to determine policies with respect to labor welfare, and by federal government departments to plan programs for the aged, the disabled, the unskilled, and other disadvantaged groups. Census data are also used by organizations concerned with broad national problems, but they are used especially by groups that need income information for counties, cities, suburbs, and other small areas. Census data are used, for example, by marketing experts to analyze potential markets in various parts of the country, by local housing authorities to determine the necessity for public action in slum clearance and new construction, and by utility companies to forecast needs for equipment in newly developed or older areas.

### OTHER SAMPLE SURVEYS

Since 1945, income questions have been included in a considerable number of surveys taken by the Bureau of the Census. In addition to the annual surveys taken with the CPS to obtain income estimates for the general population in the entire country, income surveys have been made for local areas, and income questions have been included in surveys that were made primarily to get information on other subjects.

The first income survey for a local area was made in February 1948 for the District of Columbia. A public housing law required that the District Commissioners determine, "the maximum net family income falling within the lowest 20 per centum by number of all family incomes in the District of Columbia." The National Capital Park and Planning Commission asked the Census Bureau to take the survey, and the Housing and Home Finance Agency and the Bureau of Labor Statistics provided additional funds to extend its scope.

The Bureau has taken a number of "family income and rent" surveys at the request of local housing authorities. In these surveys,



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data are collected for dwelling units that, at the time of the 1950 census of housing, were renter-occupied and were substandard as defined by the Public Housing Administration. Income distributions were cross-classified with color of the head of the family and with the size of the family. The Bureau also collected income data for renter families in all types of dwelling units (not just substandard) and showed relationships between rent and income. Each of these surveys relates to an individual city.

In studies of certain groups—the aged, veterans, the disabled—the Bureau collected income data to determine their economic status. It also obtained income data in a survey of pension plan coverage in order to segregate the lower-income groups and get further pension information concerning them.

In these surveys, the Bureau has provided materials for a better understanding of the economic situation of special groups and special areas, and it has also derived several technical advantages from them. It has gained experience in compiling income data for special rather than general purposes and thus improved its techniques. In addition, it has discovered relationships between income and other data which will enable it to plan census cross-classifications more intelligently. Among the surveys in which income data were obtained were those on District of Columbia income, family incomes and rents, rents and vacancies, the pension plan coverage in Pennsylvania, aged persons in Rhode Island and in the United States as a whole, disabled persons, and all persons who ever served in the U.S. armed forces.<sup>13</sup>

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The widespread use of the income data provided by the 1940 census and the CPS supplements prepared the Census Bureau for demands for income data in the 1950 census. Government agencies, Congressional committees, business groups, labor organizations,

<sup>13</sup> Some of the data collected in these surveys have been summarized in the following publications: *Income of Families and Persons in Washington, D.C. 1947*, *Current Population Reports, Series P-60, No. 4, 1948*; *Family Income and Rent Survey by the U.S. Bureau of the Census for the Local Housing Authority* (separate publication for each city); *Old Age in Rhode Island*, Report of the Governor's Commission to Study Problems of the Aged, 1953; *Selected Employee Benefit Plans*, Report of the Joint State Government Commission to the General Assembly of the Commonwealth of Pennsylvania, Session of 1955; Lenore A. Epstein, "Economic Resources of Persons Aged 65 and Over," *Social Security Bulletin*, June 1955; and Robert Dorfman, "The Labor Force Status of Persons Aged 65 and Over," and Peter O. Steiner, "The Size, Nature, and Adequacy of the Resources of the Aged," both published in the *American Economic Review*, May 1954.

educational and research institutions, and other groups had requested income data throughout the decade. These data had been useful not only in themselves but also in the seasoning which they added to other bodies of data, such as those on occupation, education, types of family, and industry. (Herman P. Miller's paper in this volume is an example of this use.) Accordingly, income was one of the subjects that the Bureau placed on its preliminary schedules and referred to advisory committees for their approval.

Pretests of the income questions began with the District of Columbia income survey taken in February 1948. This survey resulted in changes in the schedule format, in the questions, and in the instructions.<sup>14</sup> In April 1948, three procedures for getting the income data were tested while the regular annual income information was collected.<sup>15</sup> In the same month, the first "full-dress" pretest of the population schedule was made in Missouri. Income questions were included and information was obtained on field costs and operations problems. In October 1948, another full-dress pretest was made in four scattered areas, and in one of these areas the income entries were checked in a re-enumeration survey.

The Bureau presented the experience gained in these pretests to its Technical Advisory Committee on Economic Statistics, and that committee recommended that income data be obtained by asking each person his wage and salary income, his income from self-employment, and his other income.<sup>16</sup> In May 1949, the Bureau took the population schedule to the field for the last full-dress pretest. The final decision was to ask the following questions in the census:

Last year (1949), how much money did he earn working as an employee for wages or salaries?

Last year, how much money did he earn working in his own business, professional practice, or farm?

<sup>14</sup> *The 1950 Censuses—How they Were Taken*, Bureau of the Census, 1955, p. 6.

<sup>15</sup> In the first, the enumerator asked the respondent two questions—one on wages and salaries in 1947, and one on total income in 1947; in the second, only one question—total income in 1947. The third procedure differed from the second only in that the enumerator used a "flashcard." This card showed various income intervals, and the respondent was asked to indicate the class interval of each person's income. The flashcard reduced respondent resistance, but the statistics were not as good.

<sup>16</sup> The following persons served on the Technical Advisory Committee on Economic Statistics: Paul Webbink (Chairman), Wroe Alderson, Dorothy Brady, Ewan Clague, Donald R. G. Cowan, John C. Davis, J. Frederic Dewhurst, Louis J. Ducoff, John D. Durand, Katherine P. Ellickson, Martin Gainsbrugh, Meredith B. Givens, Hildegard Kneeland, Stanley Lebergott, Howard B. Myers, Gladys L. Palmer, Benedict Saurino, Margaret Scattergood, Samuel Weiss, and Emmett H. Welch.

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Last year, how much money did he receive from interest, dividends, veterans' allowances, pensions, rents, or other income (aside from earnings)?

The sample used as a part of the 1950 census was a sample of persons. Every fifth line on each schedule was marked "sample line" and the person enumerated on that line was to be asked the sample questions. The income questions had been moved to the sample section, and the problem arose of obtaining family income data when ordinarily only one person in the family would give income information. The device used to solve this problem was to have two sets of the income questions. If the person on the sample line was not head of a family (and if he was fourteen years of age or over), information for him was entered in the first set of income questions, and the second set was left blank. But if the person on the sample line was head of a family, then the enumerator put the information on his income in the first set of questions and put the information on the income of other family members (as a group) in the second set of questions. This device proved to be a little awkward for both the enumerator and the respondent, but it did provide family income data.

The income inquiries in the 1950 census differed from those in the 1940 census in two important respects: (1) persons were to report on *all* types of money income and not just on wages and salaries; and (2) only one person in five was to answer the income questions (except for the special augmentation when the sample person was a family head).

The income questions were moved from 100 per cent to 20 per cent coverage not because they were unimportant, but because income was one of several items that were shifted to a sample basis as a part of the historical development of census taking. The uses of the statistics for these items did not require 100 per cent enumeration, and money and time were saved by putting the items on a sample basis. The sample was still a very large one compared to those used to collect annual data, and it provided usable income information for relatively small areas.

As in 1940, the Bureau tried to reduce the number of objections in several ways. It did not ask the exact amount of the income if it was over \$10,000. It provided confidential income forms for the respondent to send to Washington if he did not want to tell the local enumerator the amount of his income. Again, the Bureau put the income questions near the end of the schedule so that any reaction to them would not affect answers to the other questions. Then

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too, the Bureau thought the data might be easier to collect on a sample basis, because the respondent would not believe that the Bureau was trying to check on his tax payments or other activities if it asked income information of only one person in five and selected that person entirely by chance.

After ten years of relatively good cooperation from the people who were asked about income, the Bureau was hopeful that the 1940 protests would not be repeated. In 1949, however, objections began to accumulate. Accordingly, the Bureau provided information and explanations for the press, for its own and Commerce Department officials, and for Congressmen. The turmoil diminished and disappeared very much as it had done in 1940. People generally accepted the questions on income as a normal part of the census, and only relatively few of them (300,000) used the confidential income forms. Some of these forms were used not because the respondent was unwilling to give the information to the enumerator, but rather because the enumerator wanted to avoid a return visit to get income information from a particular family member.

The procedure for obtaining information on income provided an unbiased 20 per cent sample of families and persons, but it resulted in some underreporting in family income. If the enumerator had asked about the income received by each member of the family (instead of the combined income received by all family members other than the head), probably a larger amount of income would have been reported.

Another limitation in the 1950 procedure was that sample questions (other than income) were asked only for the person on the sample line. Consequently, when the head of the family fell on the sample line and income was reported for the other members of the family, other sample information was available only for him. For example, it was impossible to get information on weeks worked in 1949 for other members of the family. This information would have enabled the Bureau to judge whether family members other than the head had income in 1949 when the enumerator failed to fill the section for other family members. An assumption that, if the questions for other family members were not answered, these family members had no income, led to some understatement of family income.

In the 1950 census, a family was defined as two or more persons related by blood, marriage, or adoption and living in the same household. This basic definition has been used in the CPS income surveys from their inception. In the 1940 census, however, a family had been defined as a family head and all other persons in the

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home who were related to the head by blood, marriage, or adoption, and who lived together in a private household. A person living alone was counted as a one-person family. A household head who shared his living accommodations with one or more unrelated persons (but not more than ten) was also counted as a one-person family. In the 1950 census (and the CPS), the one-person family of 1940 was classified as an "unrelated individual." This term also included other persons (except inmates of institutions) who were not living with any relatives. Moreover, the 1950 census definition of a family included not only families in private households but also those in quasi households (hotels, lodging houses, institutions, labor camps, military barracks, etc.).

The Census Bureau planned three groups of tabulations of income data from the 1950 census returns. In the first group were tabulations of income distributions for families and for families plus unrelated individuals for local areas. These were recommended by the Technical Advisory Committee on Economic Statistics. In the second group, income distributions for persons were cross-classified with other data. In this group, the Bureau was forced to choose between detailed data for persons and for families; it chose data for persons because they would supplement and complete occupation, industry, and other labor force data for persons. In the third group of tabulations, family income distributions were to be cross-classified with other family characteristics. Unfortunately, problems developed in preparing the second group of tabulations, and time and money ran out before the third group could be completed. The family tabulations were delayed, and only a small part of them were published.

In addition to providing simple income distributions for families and for families plus unrelated individuals for small areas, the Bureau cross-classified income with the following characteristics in the tabulations for the 1950 Census of Population: <sup>17</sup>

### Income of persons:

- Sex, age, color, residence
- Sex, color, family status, residence
- Sex, color, weeks worked in 1949, residence
- Sex, age, color, size of place
- Sex, age, color, marital status, family status, relationship
- Sex, color, age, grade of school completed
- Sex, race, residence
- Sex, age, race

<sup>17</sup> For a complete listing of tabulations and the areas for which they were prepared, see *The 1950 Censuses—How They Were Taken*, Appendix B.

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Sex, age, birthplace (or parent's birthplace), residence  
Sex, color, type of income, residence (for persons with income)

Sex (for persons in armed forces and persons not in experienced labor force)

Sex, class of worker (for persons in experienced civilian labor force)

Sex, detailed occupation (for persons in experienced civilian labor force)

Sex, detailed industry (for persons in experienced civilian labor force)

Sex, detailed occupation (for persons who worked fifty to fifty-two weeks in 1949)

Sex, detailed occupation (for nonwhite persons in experienced civilian labor force)

Sex, color, detailed industry (for persons in experienced civilian labor force)

Sex, age, type of institution (for inmates of institutions)

Sex, amount of wage and salary income (for persons with income in experienced labor force)

Age, residence in 1949, residence in 1950 (for males living in different county in 1949 and 1950)

Type of family, sex and age of head, residence (for heads of families)

Type of unrelated individual, age, sex, residence (for unrelated individuals)

Wage or salary income of persons:

Sex, detailed occupation (for wage and salary workers)

Sex, detailed industry (for wage and salary workers)

Self-employment income of persons:

Sex, detailed occupation (for self-employed workers)

Sex, detailed industry (for self-employed workers)

Family income:

Sex, color (in selected areas), type of mobility, residence (for family heads living in different house in 1949 and 1950)

Type of family, sex and age of head, residence

Family income was cross-classified with the following characteristics in the tabulations for the 1950 Census of Housing:

For owners of dwelling units in nonfarm areas:

Condition and plumbing facilities

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Type of household (husband-wife, etc.)  
Number of persons  
Persons per room  
Number of rooms  
Sex and age of household head  
Value-income ratio  
Value of dwelling unit

For renters of dwelling units in nonfarm areas:

Contract rent  
Gross rent  
Gross rent as per cent of family income  
Number of rooms  
Sex and age of household head  
Condition and plumbing facilities  
Type of household (husband-wife, etc.)  
Number of persons  
Persons per room

For occupants of dwelling units in farm areas:

Tenure, color, condition and plumbing facilities

The following reports of the 1950 Census of Population include income information:

Vol. II, *Characteristics of the Population*

Vol. III, *Census Tract Statistics*

Vol. IV, *Special Reports:*

“Occupational Characteristics,” Part 1, Chap. B

“Industrial Characteristics,” Part 1, Chap. D

“General Characteristics of Families,” Part 2, Chap. A

“Institutional Population,” Part 2, Chap. C

“Marital Status,” Part 2, Chap. D

“Nativity and Parentage,” Part 3, Chap. A

“Nonwhite Population by Race,” Part 3, Chap. B

“Persons of Spanish Surname,” Part 3, Chap. C

“Puerto Ricans in Continental United States,” Part 3, Chap.

D

“Characteristics by Size of Place,” Part 5, Chap. A

“Education,” Part 5, Chap B

In addition, the following reports were prepared on the basis of income data for families and unrelated individuals obtained in the 1950 census:

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*1950 Census of Population—Preliminary Reports, "Estimated Distribution of Family Income in 1949, for the United States, Regions, and Selected States," Series PC-7, No. 5.*

*Farms and Farm People—Population, Income, and Housing Characteristics by Economic Class of Farm, Bureau of the Census, 1953.*

The following reports of the 1950 Census of Housing include income data:

Vol. II. *Nonfarm Housing Characteristics*

Vol. III. *Farm Housing Characteristics*

Vol. IV. *Residential Financing*

### *Plans for the Future*

Looking to future collections of income data, the Census Bureau hopes to increase public acceptance of this kind of collection, to decrease the time between collection of data and publication, to raise the quality of the statistics, and to provide more cross-classifications for family income. It may also investigate the need for data on net worth; some groups want this information to determine the welfare and market status of families with low incomes. Additional cross-classifications of income data have also been recommended. The Bureau will act on such suggestions if the data are given a high priority rating and if available funds are sufficient to provide these and other data of similar priority.

The Bureau will try to increase public acceptance by explaining the need for the data and the precautions it takes to protect the public from disclosure of personal information. In doing so, it is not just trying to create a pleasant atmosphere in which its enumerators can bask. The hard cold fact is that good public relations increase efficiency and reduce costs, because an understanding and cooperative public will provide information more accurately and more quickly.

The Bureau will seek new methods and new equipment to decrease the time span between the date of collecting the information and the date of publishing it. It has already made some advances by using electronic processing equipment, and its growing experience in this field should produce cumulative results. By using electronic tabulating equipment such as the Univac (Universal Automatic Computer) and possibly the Fosdic (Film Optical Sensing Device for Input to Computers), it hopes to reduce considerably the time needed to process the 1960 census data.



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The importance of improving quality can be measured by the attention it receives. Many of the papers in this volume are primarily on the topic of quality, and Miller has devoted an entire appendix to this subject in his book on *Income of the American People*.<sup>18</sup> In the future, the Bureau will persist in its attempts to provide better income information, though the reported income may always fall short of the income actually received. In a quick interview with the housewife, some amounts of income are likely to be forgotten, particularly for part-time or casual workers. This bias is sometimes counteracted by the tendency of some self-employed persons to report total receipts instead of net income; but this neutralizing action is not a satisfactory solution to the problem. The Census Bureau's present activities include research on response variation, better training for enumerators, extension of the CPS sample, and efforts to improve public relations. Electronic equipment permits more thorough editing of the schedules, and such processing should result in better statistics.

Some improvement in the significance of some of the income cross-classifications can be effected in the 1960 census if the Bureau relates the employment status, occupation, industry, and class-of-worker questions to the previous year rather than to the previous week. Cross-classifications in the 1950 census had faults caused by the changes that occurred between 1949 (for which income was reported) and a week in the spring of 1950 (for which labor force items were reported). For example, a man may have earned \$5,000 on a government job in 1949 but worked as a farm laborer in April 1950. In the cross-classification of income and occupation, the \$5,000 income would appear to be earned as a farm laborer. Other types of slippage also occur. Many of these can be eliminated if both the labor force and the income inquiries are directed to the same time interval.

If the point of reference for the labor force questions is changed, it will be done not primarily to improve the income data but to make the labor force data more appropriate for a decennial inventory. Some experts believe that the census (as distinguished from the monthly CPS) should provide a comprehensive view of the normal composition of the labor force over the period of a year and not a snapshot of its composition in a single week. The gainful worker concept used before 1940 enabled the Bureau to provide information of a broad nature, but it was abandoned because it lacked specificity, and it was interpreted differently by different persons at different times. It has been suggested that the Bureau

<sup>18</sup> Herman P. Miller, *Income of the American People*, Wiley, 1955.

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seek, for the decennial census, a concept that will have the breadth of the gainful worker concept and the specificity of the labor force concept. If such an approach can be used, and if the income and labor force inquiries are related to the same period, the income statistics will benefit.

To remedy the deficiency in analytical data on family incomes in the census, the Bureau hopes to improve the method of getting data for families in the 1960 census, to put a higher priority on family tabulations, and to develop better equipment for producing them. Just now, the Bureau is considering a sample of households instead of a sample of persons in the population census. If a household sample is used, sample data would be collected for all members of the sample household. With whole family groups and complete information for each member, more cross-classifications of family characteristics will be possible and the housing data collected from the same sample can be used. Moreover, the family income data from a household sample would presumably be more accurate than those obtained with the rather cumbersome 1950 procedure.

Priorities on tabulations are difficult to establish. Each tabulation has the backing of some group which believes it should have a high priority. With the faster equipment available for 1960, however, it may be possible to avoid the 1950 situation where a choice had to be made between tabulations of persons and of families. Presumably, the new electronic equipment will be fully tested by 1960 and will be able to produce the data needed in the time available. We are sure there will be problems, but we hope they will not be as troublesome as the ones in 1950.

In general, the tabulation plans for the 1950 census will serve as a model for the 1960 census. For small areas, the Bureau will probably provide distributions for families and for families plus unrelated individuals. It will plan to cross-classify income of persons with occupation, industry, age, sex, color, and other economic and personal characteristics. Finally, it will cross-classify family income with other family characteristics.

Some of these plans for the future are still only hopes, but others have reached a stage where they can be regarded as expectations. If all its hopes and expectations are realized, the Bureau will produce more and better income statistics in less time, and it may bring in a new era for the recently neglected family data.

