

Special Studies

Series P-23, No. 126

**Estimating
After-Tax Money
Income Distributions
Using Data From
the March
Current Population
Survey**

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Issued August 1983

**Estimating
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ACKNOWLEDGMENTS

This report was prepared under the general direction of John F. Coder, Chief, Current Income Statistics Staff. Assistance in the preparation of tables was provided by Robert W. Cleveland. Shirley L. Smith typed this report. Publication review assistance was provided by Rosa B. Taylor. Overall direction was provided by Gordon W. Green, Jr., Assistant Division Chief (Socioeconomic Statistics Programs), Population Division. Sampling review was conducted by Sidney Schwartz and Donna Kestanich of the Statistical Methods Division.

SUGGESTED CITATION

U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 126, *Estimating After-Tax Money Income Distributions Using Data From the March Current Population Survey*, U.S. Government Printing Office, Washington, D.C., 1983.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Postage stamps not acceptable; currency submitted at sender's risk. Remittances from foreign countries must be by international money order or by a draft on a U.S. bank. Current Population Reports are sold in two subscription packages: Series P-20, P-23, P-27, and P-60 are available for \$90 per year (\$22.50 additional for foreign mailing); Series P-25, P-26, and P-28 are available for \$22 per year (\$5.50 additional for foreign mailing). The single-copy price of this report is \$4.50.

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SYMBOLS USED IN TABLES

- Represents zero or rounds to zero.
 - B Base less than 75,000.
 - X Not applicable.
-

Estimating After-Tax Money Income Distributions Using Data From the March Current Population Survey

INTRODUCTION

The Bureau of the Census has been the source of annual money income statistics for families and persons since 1947. These data have been collected each March as part of the Current Population Survey (CPS), the nationally representative household survey conducted monthly to obtain employment and unemployment data. In March, the monthly labor force questions are supplemented with questions on types and amounts of income received during the previous calendar year. The amounts of income collected in the survey are "before taxes" or any other deductions (i.e., gross money income). These are the income figures which have been used to measure levels and changes in the economic well-being of the population since 1947 and, since 1965, levels and changes in the official poverty population.

The annual money income statistics have been published in the Consumer Income Reports, Series P-60, of the Current Population Reports. These reports have been of major interest to economists and social scientists because they have contained income data for households, families, and persons by a large number of characteristics. Traditionally, these reports have included income distributions and median and mean income summary measures for characteristics such as age, race, sex, occupation, marital status, educational attainment, size and type of family, number and age of children, number of earners, and geographical location.

One of the key indicators of economic well-being derived from the CPS has been the annual change in real purchasing power. This change has been measured by comparing before-tax median family income figures after adjusting for changes in prices using the Consumer Price Index (CPI). The before-tax income concept has several limitations. First, measuring change in purchasing power over time using this concept has failed to account for changes in tax regulations and rates or the effect of the well-known "bracket creep." Second, income before taxes may not be efficient for measuring differences in purchasing

power between subgroups, such as the aged and non-aged, because certain groups pay smaller proportions of their gross incomes in tax than others. The focus of this report is the estimation of after-tax income distributions. It provides a measure of after-tax (disposable) income and better measures of changes in real purchasing power between years and of income differences between population subgroups.

The idea of estimating the taxes paid by individuals using the March CPS income data is not a new one. Survey data from the March CPS are made available in the form of public-use microdata files which have individual identifiers removed to protect the identity of sample households. These microdata files are routinely used by the Department of the Treasury, Department of Health and Human Services, the Congressional Budget Office, and others to simulate tax policy changes and changes in various income transfer programs. While these users have sought to estimate taxes and simulate tax and transfer policy, they have not been concerned with the general area of after-tax income distributions. Several other researchers (Herriot and Miller, 1968; Pechman and Okner, 1974; and Browning and Johnson, 1979) have used Census survey data to estimate the total taxes paid by individuals both directly (income, payroll, property, and sales taxes) and indirectly (employer share of contributions for social insurance, corporate profit taxes, etc). None of these studies, however, focused on estimates of the number of households by the distribution of after-tax income.

In contrast to these previous studies, this report describes procedures for simulating taxes paid by households for purposes of estimating after-tax incomes. Only limited information is provided on the distribution of the tax burden. In the future, more refined simulation techniques may improve the accuracy of the tax simulation and permit the examination of policy issues related to taxation.

This report is divided into three sections. The first section describes the

methods and procedures used to estimate taxes paid. The second section contains an evaluation of the simulated taxes by comparing results of the model with published statistics from the Internal Revenue Service and other administrative sources. These comparisons include such items as adjusted gross income, number of taxable returns, number of exemptions, number of returns by type, and net tax liabilities. The third section contains a discussion of the after-tax income estimates. This section also shows comparisons of before- and after-tax income distributions and income per household member for various subgroups of the population for 1980 and comparisons of changes in before- and after-tax money incomes between 1974 and 1980. Estimates of the poverty population based on after-tax income are also in this section.

LIMITATIONS ON THE ESTIMATES OF AFTER-TAX INCOME

The estimates of after-tax income shown in this report were derived by simulating the amount of taxes paid by sample households on the March CPS data file. The tax simulation procedures were based on a "statistical" combination of data from the Internal Revenue Service (IRS), summaries of State individual income tax regulations, data on the characteristics of persons paying FICA payroll taxes from the Social Security Administration, property tax information from the Annual Housing Survey (AHS), and the March CPS microdata file. In order to combine these data sets in the estimation process, important assumptions were made that may have affected the after-tax income estimates. In addition, the general sampling and nonsampling errors associated with survey data, especially the nonsampling errors for income data, must always be kept in mind. Following is a brief discussion of some of the more important limitations on the estimates and the estimation process.

The first limitation that should be mentioned is the difference between CPS and IRS income concepts. One phase of the tax estimation process is the calculation of adjusted gross income (AGI) based on the CPS income. The CPS excludes capital gains (or losses) while AGI for tax purposes includes income from this source. Amounts of capital gains were simulated for the CPS in the tax estimation procedure. (See details on page 4.) The computation of AGI on Federal individual income tax returns allows "adjustments" and various exclusions from total income. These include interest and dividend exclusions, moving expenses, disability income exclusion, alimony paid, and employee business expenses. A simulation of these adjustments was not attempted. Had one been developed, the estimated AGI levels from the CPS would have been

lower resulting in slightly higher after-tax incomes. While, overall, the CPS estimated AGI was about the same as the IRS figure for 1980, the CPS and IRS amounts differ considerably by income type as discussed later.

Second, an initial step in the tax simulation process is the formation of tax filing units using the survey information on household relationship, marital status, and dependency rules based on income. The CPS records this information for each "permanent" household member as of the time of interview in March. The simulation of tax filing units does not, therefore, account for differences in household composition which may have existed during the year for which taxes were simulated. Because of the CPS household definition, it was also not possible to simulate dependents living outside the household. The exact effect of these limitations is difficult to estimate since some simulated tax units will have too few dependents (exemptions) and some will have too many. It seems likely that, overall, too few exemptions would be simulated. This situation probably results in a slight underestimate of after-tax income levels because all exemptions have not been accounted for.

The combination of IRS tax return statistics with the March CPS income data may have also affected the final estimates to a small degree because the IRS returns include units which are not contained in the CPS universe. These include 1) prior year delinquent returns, 2) returns of Armed Forces members living overseas or on base without families, and 3) returns of decedents.

Finally, the procedures for simulating Federal and State individual income taxes tend to underestimate the actual variation in taxes paid by AGI level and, therefore, may tend to underestimate the variation in after-tax incomes. This occurs because the simulation procedures used, in some cases, averages within AGI level to assign statuses and amounts to CPS tax filing units. For example, the amount of deductions for units assigned itemizing status were simulated using the IRS average proportion within AGI levels. The true variation in deductions was not simulated since all units within a specified AGI level were assigned the same proportion of their AGI as deductions. The net effect of this aspect of the simulation procedure on the final after-tax income estimates is not known.

METHODOLOGY AND PROCEDURES

This section describes the methodology and procedures which were developed to estimate taxes paid for the March 1981 and March 1975 CPS microdata files. In all, four types of taxes were simulated: 1) Federal

individual income taxes, 2) State individual income taxes, 3) property taxes on owner-occupied housing, and 4) payroll taxes.

Development of the after-tax simulation procedures began with the March CPS annual demographic supplement. This microdata file contains demographic and economic information for approximately 68,000 sample households and the persons living in these households. It includes detailed information on household and family relationship; age; marital status; race and ethnicity; educational attainment; weeks and hours worked during the calendar year; occupation, industry, and class of worker of the job held longest during the calendar year; and income amounts for wages and salary, nonfarm and farm self-employment income, interest, dividends, rental income, estates and trusts, royalties, pension income, unemployment compensation, and sources of nontaxable income as described in appendix A.

The second major element in the simulation system were statistical summaries of individual income tax returns compiled by the Internal Revenue Service. These statistics are made available in the IRS publication series, Statistics of Income (SOI). Some unpublished statistical summaries from the IRS were also used to develop these procedures.

A third element was the 1980 Annual Housing Survey microdata file. This element was used to assign property taxes paid to the March CPS sample households residing in owner-occupied housing.

Finally, in order to estimate proportions of tax filers owning homes and itemizing deductions, tabulations were made from Interview No. 5 (6) of the 1979 Income Survey Development Program.

The system for estimating taxes paid and after-tax income created a modified March CPS microdata file. This file was formed by expanding the March CPS format to include variables relevant to the simulation of taxes paid. The detailed tables contained in this report were derived from this modified March CPS data file.

Federal Income Taxes

Simulation of Federal income taxes required up to four separate operations. First was the formation and classification of tax filing units using household relationship, marital status, and dependency rules. Second, was the calculation of adjusted gross income for each of those units. Third was the simulation of amount of Federal income taxes paid. Finally, the calculation of earned income tax credits was made, when applicable.

Formation and classification of federal income tax filing units. A Federal tax filing "unit" was defined as any individual (or married couple) with either \$400 in self-employment

income, \$1,000 in wages or salary, or a total of \$1,000 in interest, dividends, rents and royalties, estates and trusts, or pension income in 1980.¹ These income levels were chosen because they either corresponded to tax laws or helped bring the estimated number of filing units on the CPS in line with preliminary 1980 IRS Statistics of Income (SOI) data.

The next step in the formation of Federal tax filing units was the assignment of dependency status. The algorithm for assigning dependency for each tax unit used the following rules:

- o All filing primary family householders and spouses were included as dependents on their own tax returns.
- o All children under age 15 who were members of the primary family were counted as dependents on the return of the family householder. Children aged 15 and over (except related subfamily members) with a total taxable income of less than \$1,000 were assigned dependency to the tax return of the primary family householder. Children aged 15 and over who were students were assigned dependency to the primary family householder regardless of income level.
- o All other primary family members (except related subfamily members) with taxable income of less than \$1,000 were assigned as dependents on the tax return of the primary family householder.²
- o Related subfamilies having at least one Federal tax filing unit were treated separately in the same manner as primary families. Members of a related subfamily containing no Federal tax filing unit were assigned dependency to the tax return of the primary family householder.
- o All unrelated subfamilies were treated in the same manner as primary families.
- o Primary and secondary unrelated individuals age 15 and over were treated as dependents only on their own tax returns.

All simulated filing units were classified into one of three return types. Married couples and persons whose marital status was "married, spouse absent in Armed Forces" were

¹The limit for wages or salary and interest, etc., was \$750 for the 1974 simulation.

²The limit on taxable income was \$750 for the 1974 simulation.

assumed to file joint returns. Unmarried family householders with dependents were assumed to file head of household returns. All other persons classified as Federal tax filing units were assumed to file as single individuals.

Computation of adjusted gross income. Adjusted gross income (AGI) for each simulated tax filing unit was calculated by summing the income amounts from all taxable sources and an imputed amount for capital gains. The sources of CPS income included in AGI were wages and salaries, net farm and nonfarm self-employment income, net rental and royalty income, dividends, interest, estates and trusts, and income from private and government pensions.

Capital gains were imputed to tax filing units based on data obtained from Statistics of Income (SOI) reports summarizing information reported on Federal tax returns. These data provide estimates of the probability that a filing unit in a given AGI interval reported capital gains and the ratio of aggregate capital gains to aggregate AGI for that interval. A Monte Carlo technique was used to randomly assign capital gains: a random number (between 0 and 1) was generated for each filing unit; if that number was less than or equal to the probability of filing units in that AGI interval reporting capital gains, capital gains were computed by multiplying that unit's AGI by the ratio of capital gains to AGI for that interval. This procedure does not allow for capital losses and does not control on demographic and other characteristics which might affect the allocation of this source of income.

In the calculation of 1980 adjusted gross income, a portion of unemployment compensation was also included in AGI if the sum of AGI and unemployment compensation for that tax unit exceeded \$20,000 (\$25,000 for joint returns). In these cases, the lesser of 1) the amount of unemployment compensation or 2) one-half of the difference between the sum of AGI and unemployment compensation and the income limit was included in AGI.

Computation of taxable income and taxes paid. Taxable income was computed by subtracting the estimated allowable deductions from AGI. The first step in this process consisted of predicting which filing units itemized deductions. Homeownership was determined to be the most important variable available from the CPS for assigning itemization status to tax filers. Outlined below is a step-by-step description of the procedures used to assign itemization status.

1. A statistical match was made of the March CPS and Annual Housing Survey (AHS) data files in order to assign a monthly mortgage amount and a property tax amount to

each owner-occupied unit on the March CPS file.³

2. Probabilities of itemizing for homeowner, tax-filing units were computed by size of monthly mortgage payment from the 1979 Income Survey Development Program (ISDP) test panel. Probabilities for renters were computed by AGI level.
3. The probabilities described in step 2 were used to randomly assign itemization status within monthly mortgage (or AGI) intervals using the same Monte Carlo technique used in the assignment of capital gains.
4. The amount of itemized deductions for tax filing units was computed by multiplying AGI by the ratio of itemized deductions to AGI for all units in that AGI interval as reported by IRS. The ratios of itemized deductions to AGI levels were published in the 1980 (and 1974) SOI reports.

Next, a standard deduction was estimated for each tax filing unit by multiplying the number of exemptions by \$1,000. Taxable income was then estimated by subtracting the itemized and standard deductions from AGI. Tax liability was then computed using the appropriate tax schedule for that simulated return type.

Computation of the earned income tax credit. Earned income tax credits were simulated for the 1980 tax model. These tax credits were used in the calculation of net Federal tax liability and computation of after-tax household income for filing units with one or more dependent children, less than \$10,000 in AGI, and earnings between \$1 and \$10,000.

State Individual Income Taxes

There were 44 States that required payment of individual income taxes in 1980. For the purpose of this model, the definitions of tax filing units and AGI used for the estimation of Federal income taxes were also used for the simulation of State income taxes.

The amounts of State individual income taxes paid were computed by developing a model of each State's income tax regulations. Information on the State tax systems was obtained from a publication entitled, Significant Features of Fiscal Federalism: 1979-1980 Edition. While every detail of each State's

³A detailed description of the CPS-AHS statistical match can be found in appendix A.

income tax system was not simulated, most of the important aspects were accounted for.

Property Taxes on Owner-Occupied Housing

Property taxes were estimated using the data file created by the statistical match of the March 1981 CPS and the 1980 AHS. In the statistical match, property tax amounts reported on the 1980 AHS for owner-occupied housing were assigned to CPS households with similar characteristics (as defined by the matching variables). These amounts of property tax were used directly in the simulation. Property taxes paid on secondary residences such as vacation homes, could not be simulated. Also, the proportion of rent that pays the property taxes on renter-occupied housing units was not estimated.

Payroll Taxes

The Social Security payroll tax (FICA) and the Federal Employee Retirement tax were simulated using occupation of longest job and earnings data reported on the CPS. Social Security payroll taxes were calculated directly from the reported CPS earnings using the Social Security payroll tax formula for 1980 (1974). For wages and salary, the tax rate used was 6.13 (5.85) percent up to a maximum of \$25,900 (\$13,200). The tax rate for self-employment was 8.1 (7.9) percent of the amount between \$400 and \$25,900 (\$13,200). Not all workers were assigned coverage under Social Security and, therefore, a small number were not subject to Social Security taxes. All Federal employees and specific proportions of workers in certain occupation groups were assigned noncovered status. Unpublished statistics supplied by the Social Security Administration were used to make these assignments.

Retirement taxes paid by each Federal employee were simulated by multiplying their wages and salary amount by the 7.0 percent tax rate. The identification of Federal employees was based on the class of worker of longest job as reported on the survey.⁴

⁴According to the National Income and Product Accounts published by the Bureau of Economic Analysis (BEA), neither Social Security (FICA) nor Federal Employee Retirement payments are treated as taxes. Instead, they are both included under Federal Government receipts as "Contributions for Social Insurance." We have included them under the broad heading of taxes here for convenience as both are mandatory deductions from gross earnings.

COMPARISON OF SIMULATION RESULTS WITH DATA FROM IRS AND OTHER INDEPENDENT SOURCES

The procedures described in the preceding section were translated into a computer simulation model. Text tables A through F in this section provide a basic evaluation of the accuracy of this model by presenting comparison of the simulation results with data from independent sources.

Number of Federal Tax Filing Units

The 1980 CPS tax simulation yielded 92.8 million Federal tax filing units, about 1 percent lower than the preliminary 1980 IRS Statistics of Income figure of 93.6 million. (See table A.) While the CPS simulated number of married-couple returns (46.9 million) and single returns (39.3 million) are both about the same as preliminary IRS figures, the simulated number of head-of-household returns (6.5 million) was about 16 percent lower than the preliminary IRS figure. An examination of this problem has shown that the inability to identify dependents not residing in the CPS households was the main cause of this underestimate. This problem also contributes to the lower number of simulated exemptions. The total number of exemptions from the model was 220.0 million, about 3 percent lower than the IRS total of 227.1 million.

Amount of Adjusted Gross Income

Shown in tables B and C are comparisons of IRS and CPS distributions of adjusted gross income and numbers of returns with specified income types. The CPS simulated aggregate adjusted gross income was \$1,602.3 billion, about the same as the preliminary IRS figure of \$1,606.3 billion. While the CPS and IRS adjusted gross income amounts are similar, there are major differences in the components of total adjusted gross income. Although the preliminary IRS data indicate a larger amount of wages and salary income and property income than the CPS, the CPS recorded significantly larger amounts of self-employment and pension income. These differences are offsetting. Larger total amounts of self-employment income recorded by the CPS can be attributed to the far fewer number of losses reported in the survey than on tax returns. The reasons for these differences are not fully understood. The larger amount of pension income from the CPS probably occurs because the IRS aggregate pension income figure is based only on the fully taxable amount of the pension while the CPS records the total pension amount.

Table A. Comparison of IRS and CPS Simulated Number of Federal Individual Tax Returns, by Type of Return and Number of Exemptions: 1980

(Numbers in thousands)

Type of return	Number of returns		Total exemptions	
	CPS	IRS	CPS	IRS
Total returns.....	92,758	93,616	220,029	227,091
Married returns, total.....	46,908	46,796	158,477	161,241
Married, filing jointly.....	46,908	45,125	158,477	158,483
Married, filing separately ¹	(NA)	1,671	(NA)	2,758
Head of household returns, total.....	6,542	7,782	17,486	20,730
Surviving spouse returns ¹	(NA)	121	(NA)	348
Other head of household returns.....	6,542	7,661	17,486	20,382
Single returns.....	39,310	39,039	44,065	45,119

NA Not available.

¹Not a separate filing unit type in the CPS simulation model.

Table B. Comparison of IRS and CPS Simulated Number of Federal Individual Income Tax Returns, by Adjusted Gross Income: 1980

(Numbers in thousands)

Adjusted gross income	Number of returns		Percent difference
	CPS	IRS	
Total.....	92,758	93,616	-0.9
Under \$2,000.....	6,531	7,909	-17.4
\$2,000 to \$3,999.....	9,204	8,307	10.8
\$4,000 to \$5,999.....	7,002	7,577	-7.6
\$6,000 to \$7,999.....	6,709	7,571	-11.4
\$8,000 to \$9,999.....	6,250	6,958	-10.2
\$10,000 to \$11,999.....	6,307	6,131	2.9
\$12,000 to \$14,999.....	8,020	8,148	-1.6
\$15,000 to \$19,999.....	11,312	11,083	2.1
\$20,000 to \$24,999.....	9,663	9,127	5.9
\$25,000 to \$29,999.....	6,992	6,779	3.1
\$30,000 to \$39,999.....	8,111	7,911	2.5
\$40,000 to \$49,999.....	3,304	3,034	8.9
\$50,000 to \$74,999.....	2,463	2,010	22.5
\$75,000 and over.....	889	1,071	-17.0

Table C. Comparison of IRS and CPS Simulated Number of Federal Individual Income Tax Returns and Aggregate Adjusted Gross Income, by Type of Income: 1980

(Numbers in thousands and aggregate adjusted gross income in billions of dollars)

Type of income	Number of returns		Aggregate adjusted gross income			
			CPS		IRS	
	CPS	IRS	Amount	Percent distribution	Amount	Percent distribution
Total AGI.....	92,758	93,616	1,602.3	100.0	1,606.3	100.0
Wages and salary.....	80,250	83,653	1,315.6	82.1	1,345.0	83.7
Nonfarm self-employment.....	8,258	8,795	92.6	5.8	54.0	3.4
Farm self-employment.....	1,666	2,580	12.0	.7	-1.5	-0.1
Interest.....	58,420	48,938	66.2	4.1	100.9	6.3
Dividends, rents, royalties, and estates or trusts.....	17,318	19,630	37.1	2.3	42.2	2.6
Pensions.....	9,887	7,383	155.9	3.5	43.3	2.7
Other income included in AGI.	(NA)	(NA)	22.9	1.4	22.4	1.4

NA Not available.

¹Includes nontaxable pensions or the nontaxable portions of pensions.

Number of Federal Taxable Returns and Amount of Taxable Income

The 1980 CPS simulation estimated 74.5 million Federal tax filing units with taxable income (before accounting for the earned income tax credit). This estimate is about 1 percent higher than the preliminary IRS figure of 73.7 million. (See table D.) The aggregate taxable income estimated for these simulated CPS filing units was \$1,255.2 billion, about the same as the preliminary IRS figure of \$1,245.9 billion.

While, overall, there are relatively small differences between the simulated CPS number of taxable returns, there are significant differences in the lowest and highest AGI intervals as shown in table D. The smaller number of returns in the "Under \$4,000" category for the CPS (about 41 percent less) probably reflects the significantly smaller number of losses in self-employment income reported on the survey. In the "\$75,000 and over" category, the CPS estimate is about 17 percent lower than IRS for the number of taxable returns and 38 percent lower for the amount of taxable income. The lower estimates

in the "\$75,000 and over" category from the CPS are largely due to underreporting of income in the survey and various other aspects of nonsampling error. It should be noted that the large underestimate in this category is preceded by significant CPS overestimates in the "\$50,000 to \$74,999" and the "\$40,000 to \$49,999" intervals.

Amount of Federal Income Taxes Paid (Net Tax Liability)

According to the CPS simulation, the total amount of Federal individual income taxes paid in 1980 was \$248.5 billion, about 16 percent of the estimated CPS adjusted gross income. (See table E.) This estimate is virtually identical to the preliminary IRS total of \$248.4 billion in net tax liability for 1980. There are differences between the IRS and CPS proportion of taxable income and adjusted gross income paid in taxes, and these differences seem to be related to the level of adjusted gross income. Overall though, the IRS and CPS proportion of taxes paid by adjusted gross income level are quite similar as indicated in table E.

Table D. Comparison of IRS and CPS Simulated Number of Taxable Returns and Aggregate Taxable Income, by Adjusted Gross Income: 1980

(Numbers in thousands and aggregate taxable income in billions of dollars)

Adjusted gross income	Number of taxable returns			Aggregate taxable income		
	CPS	IRS	Percent difference	CPS	IRS	Percent difference
Total.....	74,484	73,720	1.0	1,255.2	1,245.9	.7
Under \$4,000 ¹	1,288	2,170	-40.6	3.4	5.9	-42.4
\$4,000 to \$5,999.....	4,528	5,049	-10.3	16.7	19.3	-13.5
\$6,000 to \$7,999.....	5,669	5,576	1.7	29.6	31.1	-4.8
\$8,000 to \$9,999.....	5,994	6,306	-4.9	40.6	44.4	-8.6
\$10,000 to \$11,999.....	6,259	5,920	5.7	52.6	51.1	2.9
\$12,000 to \$14,999.....	8,013	7,975	0.5	85.4	85.4	-
\$15,000 to \$19,999.....	11,311	10,948	3.3	158.6	154.2	2.9
\$20,000 to \$24,999.....	9,663	9,059	6.7	175.7	164.0	7.1
\$25,000 to \$29,999.....	6,992	6,756	3.5	155.1	149.8	3.5
\$30,000 to \$39,999.....	8,111	7,871	3.0	226.0	219.5	3.0
\$40,000 to \$49,999.....	3,304	3,023	9.3	120.3	108.3	11.1
\$50,000 to \$74,999.....	2,463	1,999	23.2	118.8	95.5	24.4
\$75,000 and over.....	889	1,067	-16.7	72.4	117.4	-38.3

- Represents zero.

¹Single returns with AGI less than \$3,300 and joint returns with AGI less than \$5,400 were not considered taxable under the CPS simulation, even though a small percentage of those returns do incur a tax liability.

Table E. Comparison of IRS and CPS Simulated Aggregate Amount of Federal Income Taxes Paid, Federal Income Taxes Paid as a Percentage of Taxable Income, and Adjusted Gross Income: 1980

(Taxes in billions of dollars)

Adjusted gross income	Total Federal income tax		Federal income taxes as a percent of taxable income		Federal income taxes as a percent of adjusted gross income	
	CPS	IRS	CPS	IRS	CPS	IRS
Total.....	248.5	248.4	19.8	19.9	15.5	15.5
Under \$4,000.....	.1	.2	2.9	3.4	.3	.9
\$4,000 to \$5,999.....	.9	1.1	5.4	5.7	2.6	2.8
\$6,000 to \$7,999.....	2.3	2.7	7.8	8.7	5.0	5.1
\$8,000 to \$9,999.....	3.9	4.4	9.6	9.9	7.1	7.0
\$10,000 to \$11,999.....	6.1	5.9	11.6	11.5	9.0	8.8
\$12,000 to \$14,999.....	11.2	11.1	13.1	13.0	10.6	10.1
\$15,000 to \$19,999.....	23.6	22.8	14.9	14.8	12.1	11.8
\$20,000 to \$24,999.....	29.2	26.7	16.6	16.3	13.6	13.0
\$25,000 to \$29,999.....	28.2	26.6	18.2	17.8	14.8	14.3
\$30,000 to \$39,999.....	46.3	44.2	20.5	20.1	16.8	16.3
\$40,000 to \$49,999.....	29.4	25.4	24.4	23.5	20.2	19.0
\$50,000 to \$74,999.....	35.5	27.0	29.9	28.3	24.4	22.8
\$75,000 and over.....	31.7	50.2	43.8	42.8	34.2	34.4

State Income Taxes Paid

The CPS tax simulation yielded \$45.7 billion in State income taxes paid in 1980. According to the Bureau of the Census publication entitled "State Tax Collection in 1981," total amount of individual income taxes collected by the States during calendar year 1980 less refunds in 1981 was \$39.3 billion. The overestimation of State income taxes paid by the CPS tax simulation can be attributed to several factors. First, the simulation did not account for every detail of each State's income tax regulations. Second, the simulation did not include various State tax credits and exemptions which could not be computed from the data available on the March CPS file; these included credits for home energy-saving expenditures, charitable contributions, etc.

Payroll Taxes

According to the simulation, Social Security payroll taxes totaled \$74.1 billion in 1980. This estimate is about 1 percent higher than the aggregate amount of \$73.4 billion according to figures from the Social Security Administration. Based on administrative statistics from the Office of Personnel Management, Federal retirement taxes totaled \$3.8 billion in 1980. The comparable figure from the tax simulation model was somewhat higher, \$4.2 billion. The higher estimate of Federal retirement tax may have occurred because the CPS wage and salary figure represents the amount received from all jobs, not just Federal employment. Also, there are a number of noncontributory retirement programs within the Federal system which could not be simulated and a small number of employees not covered by any Federal retirement program.

Amount of Property Taxes

The simulation produced an estimated \$32.1 billion in property taxes for 1980. This compares with the \$27.6 billion figure published in the National Income Accounts by the Bureau of Economic Analysis (BEA). The BEA figure is based on the 1970 census and updated annually using relationships as of that time and is likely less accurate than that produced by this simulation. A comparison of simulated CPS and AHS estimates for property taxes on owner-occupied housing is shown in table F. The AHS estimates exclude condominiums and cooperatives because no property tax data are collected for these types of housing.

ESTIMATES OF AFTER-TAX INCOME

Tables G through J and detailed tables 1 through 5 summarize some of the results of the after-tax simulation. Included in these

tables are comparisons of before- and after-tax income distributions and income per household member for 1980, comparisons of changes in real household money income before and after taxes between 1974 and 1980, and estimates of poverty based on after-tax income for 1980.

After-Tax Income

The data in tables G, H, and I show a summary of comparisons of before- and after-tax incomes for 1980. Overall, median household income after taxes was \$14,550 in 1980, about 18 percent lower than the before-tax median of \$17,710. Income per household member was \$5,960 after taxes, 23 percent below the before-tax estimate of \$7,720. The lower after-tax median household income reflects the downward shifted distribution resulting from the payment of taxes. The number of households with before-tax incomes of \$50,000 or more was 4.4 million in 1980, compared with only about 1.0 million after taxes. The proportion of households in the \$30,000 or more group declined from 23 percent before taxes to about 10 percent after taxes. Households with incomes below \$15,000, in contrast, increased from 34.9 million to 42.6 million after taxes.

The effect of progressivity of income taxes on the distribution of income is illustrated by changes in the Gini index of inequality (index of income concentration) and in the shares of aggregate income received by quintile level. (See tables G and H.) The Gini index of .358 after taxes was about 10 percent lower than the before-tax index of .399 (an index of 0.0 indicates complete equality) for 1980. The change in the distribution of income is further illustrated by the shares of income received by households in the highest quintile, those with before-tax incomes of \$31,540 or more. Households with before-tax incomes in the highest quintile received 44 percent of the aggregate, while those with after-tax incomes in the highest quintile received 41 percent of the aggregate.

Because different subgroups of the population pay different proportions of their income in taxes, comparisons of income levels between groups can be affected when after-tax rather than before-tax incomes are examined. For example, based on before-tax income, the mean income of aged households (householder 65 years and over) was about 60 percent of that for all households. This comparison based on after-tax income shows the mean income of aged households to be 67 percent of the overall mean. The general lower income levels of the elderly (and hence lower tax rates) and the receipt of nontaxable income such as Social Security benefits help to produce this higher after-tax income ratio.

Table F. Comparison of Annual Housing Survey and CPS Simulated Number of Owner-Occupied Households Paying Property Taxes and Mean Amount of Property Taxes Paid: 1980

(Numbers in thousands)

Household income before taxes	Owner-occupied households		Households paying property tax		Mean property taxes paid		Property tax as a percent of household income before taxes	
	AHS	CPS	AHS	CPS	AHS	CPS	AHS	CPS
ALL HOUSEHOLDS								
Total.....	51,114	55,881	41,351	52,328	\$ 610	\$ 575	2.5	2.4
Under \$5,000.....	4,886	4,804	3,308	3,876	411	330	14.6	11.4
\$5,000 to \$9,999....	7,076	7,324	5,108	6,565	394	372	5.3	5.0
\$10,000 to \$17,499..	10,707	10,925	8,243	10,203	435	428	3.2	3.1
\$17,500 to \$24,999..	9,697	10,781	8,125	10,324	548	512	2.6	2.4
\$25,000 to \$34,999..	9,545	10,847	8,344	10,476	672	632	2.3	2.1
\$35,000 and over....	9,203	11,200	8,222	10,893	988	926	1.8	1.8
INSIDE METROPOLITAN AREAS								
Total.....	32,273	36,111	27,726	34,421	\$ 724	\$ 677	2.7	2.6
Under \$5,000.....	2,582	2,560	1,920	2,178	558	435	20.3	14.4
\$5,000 to \$9,999....	3,864	4,037	2,979	3,708	496	458	6.7	6.2
\$10,000 to \$17,499..	5,938	6,404	4,811	6,023	534	508	3.9	3.7
\$17,500 to \$24,999..	6,093	6,864	5,355	6,677	631	591	3.0	2.8
\$25,000 to \$34,999..	6,628	7,584	6,035	7,385	745	699	2.5	2.4
\$35,000 and over....	7,168	8,662	6,626	8,450	1,054	1,004	1.9	2.0
OUTSIDE METROPOLITAN AREAS								
Total.....	16,181	16,966	11,497	15,181	\$ 301	\$ 308	1.5	1.5
Under \$5,000.....	2,075	2,044	1,220	1,507	172	161	5.9	5.9
\$5,000 to \$9,999....	2,816	2,881	1,838	2,462	218	221	2.9	3.0
\$10,000 to \$17,499..	4,134	3,918	2,958	3,600	249	260	1.8	1.9
\$17,500 to \$24,999..	3,034	3,321	2,288	3,069	297	298	1.4	1.4
\$25,000 to \$34,999..	2,471	2,729	1,928	2,559	387	388	1.3	1.3
\$35,000 and over....	1,651	2,073	1,266	1,986	552	528	1.1	1.1

Table G. Number and Percentage of Households, by Before- and After-Tax Income: 1980

(Numbers in thousands)

Household income	Before taxes		After taxes	
	Number	Percent distribution	Number	Percent distribution
Total.....	82,368	100.0	82,368	100.0
Under \$2,500.....	2,511	3.0	2,824	3.4
\$2,500 to \$4,999.....	7,172	8.7	7,876	9.6
\$5,000 to \$7,499.....	6,832	8.3	7,736	9.4
\$7,500 to \$9,999.....	6,176	7.5	8,243	10.0
\$10,000 to \$12,499.....	6,509	7.9	8,024	9.7
\$12,500 to \$14,999.....	5,734	7.0	7,899	9.6
\$15,000 to \$17,499.....	5,817	7.1	7,662	9.3
\$17,500 to \$19,999.....	5,147	6.2	6,753	8.2
\$20,000 to \$22,499.....	5,522	6.7	5,713	6.9
\$22,500 to \$24,999.....	4,495	5.5	4,852	5.9
\$25,000 to \$27,499.....	4,432	5.4	3,661	4.4
\$27,500 to \$29,999.....	3,330	4.0	2,841	3.4
\$30,000 to \$32,499.....	3,418	4.1	2,058	2.5
\$32,500 to \$34,999.....	2,408	2.9	1,546	1.9
\$35,000 to \$37,499.....	2,316	2.8	1,157	1.4
\$37,500 to \$39,999.....	1,624	2.0	881	1.1
\$40,000 to \$44,999.....	2,766	3.4	1,086	1.3
\$45,000 to \$49,999.....	1,759	2.1	585	.7
\$50,000 to \$59,999.....	2,128	2.6	591	.7
\$60,000 to \$74,999.....	1,222	1.5	301	.4
\$75,000 and over.....	1,051	1.3	80	.1
Median income.....	\$17,710	(X)	\$14,551	(X)
Mean income.....	\$21,063	(X)	\$16,272	(X)
Income per household member...	\$7,720	(X)	\$5,964	(X)
Index of income concentration.	.399		.358	

X Not applicable.

Table H. Percent Share of Aggregate Income Received by Each Fifth of Households, Before and After Taxes: 1980

Fifth	Before taxes		After taxes	
	Lower limit	Percent share of aggregate income	Lower limit	Percent share of aggregate income
Lowest fifth.....	(X)	4.1	(X)	4.9
Second fifth.....	7,484	10.2	6,865	11.6
Third fifth.....	14,133	16.8	11,952	17.9
Fourth fifth.....	21,511	24.8	17,176	25.1
Highest fifth.....	31,539	44.2	24,016	40.6
Top 5 percent.....	50,923	16.5	36,105	14.1

X Not applicable.

Table I. Mean Household Income and Income per Household Member Before and After Taxes, by Selected Characteristics: 1980

Characteristic	Mean household income		Income per household member		Taxes as a percent of total money income
	Before taxes	After taxes	Before taxes	After taxes	
All households.....	\$21,063	\$16,272	\$ 7,720	\$5,964	22.7
RACE AND SPANISH ORIGIN OF HOUSEHOLDER					
White.....	21,913	16,852	8,170	6,283	23.1
Black.....	13,970	11,450	4,689	3,844	18.0
Spanish origin ¹	16,674	13,550	4,806	3,905	18.7
TYPE OF HOUSEHOLD					
Family households ²	24,118	18,578	7,328	5,645	23.0
Married couple families, with no related children under 18 years old.....	25,368	19,362	10,881	8,305	23.7
Married couple families, with related children under 18 years old.....	26,910	20,518	6,299	4,803	23.8
Female householder, no husband present, with related children under 18 years old....	11,450	9,891	3,376	2,917	13.6
Nonfamily households.....	12,711	9,970	10,688	8,384	21.6
AGE OF HOUSEHOLDER					
15 to 24 years old.....	14,227	11,584	6,327	5,152	18.6
25 to 29 years old.....	19,223	15,002	7,215	5,631	22.0
30 to 34 years old.....	22,185	16,959	6,971	5,329	23.6
35 to 39 years old.....	25,157	18,884	6,991	5,248	24.9
40 to 44 years old.....	27,152	20,334	7,297	5,465	25.1
45 to 49 years old.....	28,919	21,566	8,156	6,082	25.4
50 to 54 years old.....	27,451	20,423	8,936	6,648	25.6
55 to 59 years old.....	25,805	19,123	10,217	7,572	25.9
60 to 64 years old.....	20,903	16,098	9,642	7,426	23.0
65 years old and over.....	12,628	10,981	7,243	6,299	13.0
TENURE					
Owner-occupied.....	24,147	18,378	8,331	6,340	23.9
Renter-occupied, including no cash rent.....	14,556	11,829	6,145	4,993	18.7

¹Persons of Spanish origin may be of any race.

²Includes male householder, no wife present and female householder, no husband present, with no related children under 18 years old.

While use of an after-tax income concept shows some household groups to be "better off" relative to others than with the use of a before-tax income concept, the relative income of other groups may be lower. For example, the mean income of households with a householder age 45 to 49 was 37 percent above the overall mean before taxes but 33 percent after taxes.

Comparisons based on "income per household member" rather than mean household income are important when examining differences in the income of households. This concept helps standardize for differences in household size. The use of income per household member after taxes provides a far different perspective of income levels and differences in levels between households with different

characteristics. This concept has several limitations which should be mentioned, however. First, the measure adjusts for differences in household size but not for differences in food, housing, clothing, and medical needs which vary by age of household members, geographic location, and health status. In addition, the concept does not account for the economies of scale that exist for households of larger size, i.e., "two can live cheaper than one."

In 1980, income per household member for households with an aged householder was \$7,240 before taxes, about 94 percent of the \$7,720 figure for all households. This comparison reflects the smaller size of these elderly households relative to all households. On an after-tax basis, income per household member was \$5,960 for all households, about 5 percent lower than the \$6,300 estimate for aged households. Thus, using this measure of household income and accounting for taxes shows the income of the elderly to be slightly higher than that of the nonelderly on a per person basis.

Comparisons for larger size households show higher-than-average incomes on a mean household income basis but lower-than-average incomes on a per-household-member basis. Married-couple families with children had a mean household income before taxes of \$26,910 in 1980, 28 percent above the overall average of \$21,060. After adjusting for household size and taxes paid, the income per household member for this group was \$4,800, only 81 percent of the overall income-per-household-member figure.

Changes in After-Tax Income: 1974 to 1980

Changes in income levels between 1974 and 1980 (1974 was the earliest year for which taxes were simulated using the CPS microdata file) were affected by the amount of taxes paid. (See table 3.) After adjusting for both taxes paid and changes in consumer prices, mean household income declined by about 7 percent from 1974 to 1980. Mean before-tax money income of households declined by about 4 percent during the same period after adjustment for price changes. In real terms, after-tax mean incomes declined for all but a few of the socioeconomic categories covered in table 3. The only category experiencing a real increase between 1974 and 1980 was "nonfamily households" which recorded a 4 percent gain. The ratio of after-tax to before-tax mean household income declined from .80 to .77 during the 1974-80 period indicating that, on average, households retained slightly less of their incomes for spending purposes.

During the decade of the 1970's, changes in household composition had a significant effect on the growth rate of income as measured by mean household money income. Increases in

divorce rates, the postponement of marriage, and declining birth rates led to increases in one-person households and in family households maintained by women. Both of these household types tend to have lower than average incomes, and increases in their numbers tended to dampen increases in mean household income during this period.

While before-tax mean household income declined by about 4 percent during the 1974-80 period, income per household member before taxes increased by about 4 percent in real terms. The increase in income per household member occurred even as mean household income decreased because average household size was declining, a result of the structural changes that took place during the 1970's. After taking account of taxes, however, even the real increase in income per household member was erased leaving this figure at \$5,960 in 1980, about the same as the 1974 level after adjustment for price changes.

During the 1974-80 period, several socioeconomic subgroups experienced gains in income per household member before taxes. These included both Whites and Blacks, households in the South and West, households with householders aged 30 to 44 years, one-person households, and owner-occupied households. Only two socioeconomic groups (households in the South and those with a householder aged 35 to 39 years) experienced a statistically significant increase after taxes and many suffered significant declines in after-tax income per household member.

Estimates of Poverty Based on After-Tax Income

The current poverty definition was developed in 1964. The definition was derived using data from a 1955 Department of Agriculture Survey of Food Consumption and the 1961 Department of Agriculture Economy Food Plan. It was determined from the Survey of Food Consumption that families of three or more persons spent about one-third of their after-tax income on food. The poverty level was established at three times the cost of the Economy Food Plan.⁵ Even though this definition was based on after-tax income, estimates of poverty over the years have been computed using the Census Bureau's before-tax income data collected in the March CPS.

The before-tax income data was judged to be acceptable for estimating poverty status because the low-income population paid only a small proportion of their income in taxes. There have been, however, many changes to

⁵After-tax income for this survey accounted only for Federal and State income taxes.

income levels and the tax and transfer system since the poverty definition was developed. Both cash and noncash public transfers increased rapidly during the late 1960's and early 1970's as the "war on poverty" continued. In the last half of the 1970's, high rates of inflation resulted in large increases in the poverty thresholds which are updated annually by the rate of change in the annual average Consumer Price Index. These large increases in the poverty thresholds have increased the probability that the working poor pay income taxes.

In order to examine the effect that taxes have on estimates of the poverty population, tabulations were prepared showing estimates of poverty based on income after the exclusion of only Federal and State income taxes. This definition of after-tax income is consistent with the original procedures used to develop the poverty level. Since taxes reduce income, the after-tax poverty concept yields higher estimates of poverty than the before-tax procedures currently in use. It should be noted that while after-tax estimates of poverty result in larger numbers of persons below the poverty level, a technical report issued by the Bureau of the Census in April 1982 indicates that valuation of noncash benefits such as food stamps, public housing, school lunches, Medicaid, and Medicare reduces the number of poor under the current definition. The report, Alternative Methods for Valuing Selected In-Kind Transfer Benefits and Measuring Their Effect on Poverty, showed that the estimated poverty population in 1979 would have been between 12 and 42 percent lower depending on the technique used to value these noncash benefits.

Estimates of poverty based on after-tax incomes excluding noncash benefits in 1980 are shown in tables 4 and 5. Among the socioeconomic groups with increases in poverty were married-couple households (2 percent)⁶ and households with a householder working full time for 40 weeks or more (4 percent).

The composition of the poverty population is altered to a very small degree under the after-tax definition. Changes in the composition of poverty households are outlined in table 5.

Distribution of Taxpayers and Taxes

Although this report focuses on after-tax income distributions, the tax simulation model provides some insights about the distribution of taxpayers and tax incidence. Shown in tables 6, 7, and 8 are the number and propor-

tion of households paying each type of tax, the proportion of total money income paid in taxes for each type of tax, and each tax as a percent of the total tax, by before-tax income level.

As shown in table 6, about 93 percent of the 82.4 million households in the country paid one or more of the taxes covered in this study. About 74 percent paid Federal income taxes, 64 percent paid State income taxes, 75 percent paid FICA payroll taxes, 4 percent paid Federal retirement taxes, and 64 percent paid property taxes on their own homes. Table 6 also indicates the extent to which tax incidence varies by income level. For example, about 21 percent of all households with before-tax incomes of less than \$10,000 paid Federal income taxes compared with 87 percent for those with incomes between \$10,000 and \$20,000 and almost 100 percent for households with incomes of greater than \$20,000. Similar comparisons can be made for the other types of taxes based on the data in table 6.

Data for average taxes paid and taxes paid as a percent of total household income are shown in table 7. The percents in table 7 approximate tax rates since they are the ratios of mean taxes paid to mean household income for each before-tax income class. Households paying Federal individual income taxes paid an average of \$4,010 in 1980. The tax rate for those households rises steadily from about 3 percent for the \$2,500 to \$4,999 interval to 33 percent for the \$75,000 and over group. The tax rate for the \$75,000 and over group does not totally reflect the tax rates paid on incomes above \$100,000 since the survey records a maximum of that amount for each income type for each person 15 years old and over. In spite of this minor limitation the data indicate that the Federal income tax rate structure is less progressive than implied by the tax code, mainly a result of the larger itemized deductions and use of various types of tax shelters by high income households. The tax rates for other types of taxes indicate that State income taxes tend to be progressive as well, however, FICA payroll taxes and property taxes have regressive tendencies.

The data in table 8 indicate that Federal individual income taxes accounted for 62 percent of the \$394.6 billion in taxes simulated in this study. FICA payroll taxes made up 18 percent of the total, followed by State income taxes, 11 percent, and property taxes, 8 percent.

⁷The tax rates in the "TOTAL" row of table 7 are probably somewhat higher than the actual tax rate since the before-tax mean income is based on all households, both those paying and those not paying taxes.

⁶The increase of married-couple households in poverty was significant at the 90-percent confidence level.

The distribution of total taxes by type of tax changes significantly from the lower to the upper portions of the household income distribution. At the lower end of the income distribution property taxes and FICA taxes account for almost all of the total tax burden. Households with incomes near the before-tax median of \$21,060 pay about 56 percent of their total taxes as Federal income taxes and 24 percent as FICA payroll taxes. State taxes account for about 10 percent and property taxes about 9 percent. In the \$50,000 and over group, Federal income taxes rise to between 70 and 80 percent of the total tax while State taxes increase slightly to about 12 percent. FICA and property taxes decline in relative importance to the total tax burden in these highest income categories.

SUMMARY

This report describes the development of a tax simulation model based on the March CPS microdata file. Survey data from the March CPS were combined with data from other surveys and statistics from administrative sources to model the payment of Federal and State individual income taxes, property taxes, and payroll taxes. Various limitations of the model are discussed and the results compared with data available from the IRS and other administrative sources. These comparisons indicated close agreement at the aggregate level for type of tax returns, number of returns, number of exemptions, number of taxable returns,

and aggregate taxable income. The comparisons within adjusted gross income intervals, however, show some significant differences, especially in the upper tail of the income distribution. Plans have already been made to refine this initial approach to modeling the payment of taxes so that adjustments for these differences can be made.

Estimates of after-tax income have been presented according to a broad range of socioeconomic and demographic characteristics of taxpayers. The tabular results show a much broader range of information than conventionally available from summaries of information reported on tax forms. The results indicated that after-tax income, on average, was about 23 percent lower than before-tax income in 1980. The proportion of total income paid in taxes varies considerably by level of income. Some groups, such as the elderly, pay a lower proportion of their total income in taxes than other groups because they are more likely to receive nontaxable income. Payment of taxes caused a 10-percent reduction in income inequality as measured by the Gini index. It was also found that the ratio of after-tax to before-tax mean household income declined from .80 to .77 during the 1974-80 period indicating that, on average, households retained slightly less of their incomes for spending purposes. Reestimation of poverty based on after-tax income resulted in minor changes in the estimated number of poor and their composition.

Table 1. All Households, Aggregate Income, Mean Income, Income per Household Member (Before and After Taxes), and Number of Persons in Households, by Before-Tax Money Income Levels in 1980 and Selected Characteristics—Continued

(HOUSEHOLDS AS OF MARCH 1981. FOR MEANING OF SYMBOLS, SEE TEXT)

MONEY INCOME LEVELS--BEFORE TAXES	ALL HOUSEHOLDS		BEFORE TAXES					AFTER TAXES					TOTAL NUMBER OF PERSONS IN HOUSEHOLDS (THOUS.)
			AGGREGATE INCOME		MEAN INCOME		INCOME PER HOUSEHOLD MEMBER (DOL.)	AGGREGATE INCOME		MEAN INCOME		INCOME PER HOUSEHOLD MEMBER (DOL.)	
	NUMBER (THOUS.)	PERCENT DISTRIBUTION	AMOUNT (BILLIONS OF DOLLARS)	PERCENT DISTRIBUTION	VALUE (DOL.)	STANDARD ERROR (DOL.)		AMOUNT (BILLIONS OF DOLLARS)	PERCENT DISTRIBUTION	VALUE (DOL.)	STANDARD ERROR (DOL.)		
RACE AND SPANISH ORIGIN OF HOUSEHOLDER--CONTINUED													
SPANISH ORIGIN¹													
TOTAL	3 906	100.0	65.1	100.0	16 674	332	4 806	52.9	100.0	13 990	233	3 905	13 553
UNDER \$2,500	184	4.7	0.2	0.3	1 042	179	445	0.2	0.3	938	188	400	431
\$2,500 TO \$4,999	413	10.6	1.6	2.4	3 778	51	1 604	1.5	2.8	3 640	53	1 545	974
\$5,000 TO \$7,499	414	10.6	2.6	4.0	6 236	57	1 939	2.4	4.6	5 884	59	1 830	1 330
\$7,500 TO \$9,999	402	10.3	3.5	5.4	8 702	54	2 623	3.2	6.1	8 026	60	2 419	1 334
\$10,000 TO \$12,499	389	10.0	4.3	6.7	11 157	59	3 266	3.8	7.3	9 887	71	2 894	1 328
\$12,500 TO \$14,999	328	8.4	4.5	6.9	13 698	57	3 819	3.9	7.4	11 877	82	3 312	1 177
\$15,000 TO \$17,499	304	7.8	4.9	7.5	16 153	67	4 394	4.1	7.8	13 654	95	3 672	1 129
\$17,500 TO \$19,999	246	6.3	4.6	7.0	18 674	66	4 913	3.8	7.2	15 542	110	4 085	934
\$20,000 TO \$24,999	237	6.1	5.0	7.7	21 083	82	5 729	4.1	7.7	17 218	129	4 679	871
\$22,500 TO \$24,999	165	4.2	3.9	6.0	23 720	87	6 170	3.1	5.9	19 001	151	4 943	636
\$25,000 TO \$27,499	178	4.6	4.7	7.1	26 075	89	6 589	3.7	7.0	20 713	193	5 234	706
\$27,500 TO \$29,999	120	3.1	3.4	5.3	28 651	95	7 065	2.7	5.1	22 636	223	5 582	486
\$30,000 TO \$32,499	133	3.4	4.1	6.4	31 121	110	7 294	3.3	6.2	24 477	221	5 737	569
\$32,500 TO \$34,999	80	2.0	2.7	4.1	33 583	135	8 270	2.1	3.9	25 928	350	6 385	325
\$35,000 TO \$37,499	58	1.5	2.1	3.2	(8)	(8)	(8)	1.6	3.0	(8)	(8)	(8)	222
\$37,500 TO \$39,999	49	1.3	1.9	2.9	(8)	(8)	(8)	1.6	2.7	(8)	(8)	(8)	194
\$40,000 TO \$44,999	78	2.0	3.3	5.1	42 254	232	10 310	2.5	4.6	31 385	404	7 698	321
\$45,000 TO \$49,999	38	1.0	1.8	2.8	(8)	(8)	(8)	1.3	2.5	(8)	(8)	(8)	180
\$50,000 TO \$59,999	44	1.1	2.4	3.7	(8)	(8)	(8)	1.8	3.3	(8)	(8)	(8)	209
\$60,000 TO \$74,999	27	0.7	1.8	2.7	(8)	(8)	(8)	1.2	2.3	(8)	(8)	(8)	121
\$75,000 AND OVER	19	0.5	1.9	2.9	(8)	(8)	(8)	1.1	2.1	(8)	(8)	(8)	73
MEDIAN INCOMEDOLLARS . .	13 651	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERRORDOLLARS . .	370	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
REGION													
NORTHEAST													
TOTAL	17 781	100.0	381.4	100.0	21 449	173	7 865	286.9	100.0	16 248	108	5 958	48 488
UNDER \$2,500	421	2.4	0.4	0.1	833	137	454	0.2	0.1	505	147	276	771
\$2,500 TO \$4,999	1 560	8.8	6.0	1.6	3 867	22	2 486	5.7	2.0	3 626	26	2 331	2 427
\$5,000 TO \$7,499	1 584	8.9	9.8	2.6	6 209	25	3 142	9.0	3.1	5 703	28	2 886	3 130
\$7,500 TO \$9,999	1 212	6.8	10.6	2.8	8 707	28	4 001	9.5	3.3	7 810	35	3 588	2 639
\$10,000 TO \$12,499	1 354	7.6	15.1	4.0	11 169	28	4 991	13.1	4.5	9 643	39	4 050	3 223
\$12,500 TO \$14,999	1 167	6.6	16.0	4.2	13 689	28	5 569	13.6	4.7	11 626	47	4 730	2 849
\$15,000 TO \$17,499	1 285	7.2	20.7	5.4	16 090	28	6 364	17.0	5.9	13 225	50	5 231	3 249
\$17,500 TO \$19,999	1 110	6.2	20.8	5.8	18 709	28	6 648	16.7	5.8	15 026	55	5 339	3 123
\$20,000 TO \$24,999	1 252	7.0	26.4	6.9	21 148	28	7 191	20.8	7.2	16 610	53	5 770	3 123
\$22,500 TO \$24,999	926	5.2	21.9	5.8	23 700	31	7 563	17.0	5.9	18 406	63	5 873	2 902
\$25,000 TO \$27,499	1 012	5.7	26.4	6.9	26 103	32	8 093	20.2	7.0	19 927	68	6 178	3 293
\$27,500 TO \$29,999	745	4.2	21.3	5.6	28 643	34	8 804	16.3	5.6	21 887	78	6 727	2 424
\$30,000 TO \$32,499	766	4.3	23.8	6.2	31 094	37	9 486	17.9	6.2	23 376	88	7 131	2 509
\$32,500 TO \$34,999	497	2.8	16.8	4.4	33 710	43	9 733	12.6	4.4	25 301	116	7 306	1 722
\$35,000 TO \$37,499	509	2.9	18.4	4.8	36 107	41	10 689	13.5	4.7	26 473	114	7 836	1 721
\$37,500 TO \$39,999	341	1.9	13.1	3.4	38 594	49	11 363	9.5	3.3	28 006	170	8 246	1 156
\$40,000 TO \$44,999	645	3.6	27.2	7.1	42 151	72	11 792	19.6	6.8	30 297	137	8 476	2 307
\$45,000 TO \$49,999	401	2.3	18.9	5.0	47 224	97	12 515	13.4	4.7	33 571	201	8 897	1 511
\$50,000 TO \$59,999	498	2.8	26.9	7.1	53 999	170	13 569	18.7	6.5	37 879	259	9 443	1 983
\$60,000 TO \$74,999	254	1.4	16.7	4.8	65 676	36	16 769	11.1	3.8	43 789	170	11 173	994
\$75,000 AND OVER	242	1.4	28.1	6.3	99 647	3 223	27 180	13.6	4.7	56 096	1 194	15 301	888
MEDIAN INCOMEDOLLARS . .	18 192	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERRORDOLLARS . .	200	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
NORTH CENTRAL													
TOTAL	21 200	100.0	450.7	100.0	21 261	150	7 775	348.5	100.0	16 437	99	6 011	57 974
UNDER \$2,500	582	2.7	0.4	0.1	746	124	387	0.3	0.1	532	127	276	1 120
\$2,500 TO \$4,999	1 747	8.2	6.6	1.5	3 776	22	2 298	6.2	1.8	3 875	24	2 176	2 871
\$5,000 TO \$7,499	1 701	8.0	10.6	2.4	6 229	24	3 073	9.9	2.8	5 810	26	2 866	3 043
\$7,500 TO \$9,999	1 555	7.3	13.6	3.0	8 760	24	4 043	12.4	3.5	7 952	29	3 670	3 369
\$10,000 TO \$12,499	1 586	7.5	17.7	3.9	11 183	25	4 903	15.6	4.5	9 840	35	4 314	3 617
\$12,500 TO \$14,999	1 446	6.8	19.8	4.4	13 685	25	5 647	17.0	4.9	11 733	41	4 841	3 505
\$15,000 TO \$17,499	1 539	7.3	24.9	5.5	16 178	26	5 759	20.9	6.0	13 552	42	4 824	4 323
\$17,500 TO \$19,999	1 365	6.4	25.5	5.7	18 708	25	6 604	20.8	6.0	15 240	46	5 380	3 866
\$20,000 TO \$24,999	1 458	6.9	30.9	6.8	21 166	27	7 194	24.6	7.0	16 849	50	5 727	4 288
\$22,500 TO \$24,999	1 249	5.9	29.6	6.6	23 703	27	7 619	23.4	6.7	18 704	54	6 012	3 886
\$25,000 TO \$27,499	1 201	5.7	31.4	7.0	26 124	29	8 153	24.4	7.0	20 295	60	6 334	3 847
\$27,500 TO \$29,999	831	3.9	23.8	5.3	28 703	32	8 727	18.4	5.3	22 116	72	6 724	2 732
\$30,000 TO \$32,499	958	4.5	29.8	6.6	31 095	32	9 780	22.6	6.5	23 585	72	7 418	3 047
\$32,500 TO \$34,999	674	3.2	22.7	5.0	33 642	36	10 259	17.1	4.9	25 371	85	7 737	2 210
\$35,000 TO \$37,499	641	3.0	23.1	5.1	36 116	38	10 580	17.3	5.0	26 952	97	7 896	2 188
\$37,500 TO \$39,999	491	2.3	18.9	4.2	38 633	42	10 743	14.1	4.0	28 764	123	7 999	1 764
\$40,000 TO \$44,999	711	3.4	30.0	6.6	42 141	73	11 721	22.0	6.3	30 932	119	8 603	2 555
\$45,000 TO \$49,999	416	2.0	19.6	4.3	47 051	94	13 109	14.1	4.1	33 945	173	9 458	1 494
\$50,000 TO \$59,999	491	2.3	26.5	5.9	53 999	174	14 772	18.7	5.4	38 113	216	10 426	1 794
\$60,000 TO \$74,999	283	1.3	18.7	4.1	65 906	334	17 989	12.6	3.6	44 649	370	12 187	1 038
\$75,000 AND OVER	276	1.3	26.6	5.9	96 231	1 725	26 334	16.2	4.7	58 718	930	16 068	1 009
MEDIAN INCOMEDOLLARS . .	18 313	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERRORDOLLARS . .	178	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

¹PERSONS OF SPANISH ORIGIN MAY BE OF ANY RACE.

Table 1. All Households, Aggregate Income, Mean Income, Income per Household Member (Before and After Taxes), and Number of Persons in Households, by Before-Tax Money Income Levels in 1980 and Selected Characteristics—Continued

(HOUSEHOLDS AS OF MARCH 1981. FOR MEANING OF SYMBOLS, SEE TEXT)

MONEY INCOME LEVELS--BEFORE TAXES	ALL HOUSEHOLDS		BEFORE TAXES				AFTER TAXES				TOTAL NUMBER OF PERSONS IN HOUSEHOLDS (THOUS.)		
	NUMBER (THOUS.)	PERCENT DISTRIBUTION	AGGREGATE INCOME		MEAN INCOME		INCOME PER HOUSEHOLD MEMBER (DOL.)	AGGREGATE INCOME		MEAN INCOME		INCOME PER HOUSEHOLD MEMBER (DOL.)	
			AMOUNT (BILLIONS OF DOLLARS)	PERCENT DISTRIBUTION	VALUE (DOL.)	STANDARD ERROR (DOL.)		AMOUNT (BILLIONS OF DOLLARS)	PERCENT DISTRIBUTION	VALUE (DOL.)			STANDARD ERROR (DOL.)
REGION--CONTINUED													
SOUTH													
TOTAL	27 220	100.0	536.3	100.0	19 703	135	7 158	424.6	100.0	15 597	91	5 666	74 928
UNDER \$2,500	1 117	4.1	0.9	0.2	786	92	356	0.8	0.2	3 695	93	315	2 466
\$2,500 TO \$4,999	2 694	9.9	9.8	1.8	3 655	19	2 074	9.5	2.2	3 541	19	2 009	4 748
\$5,000 TO \$7,499	2 299	8.4	14.3	2.7	6 216	21	2 718	13.5	3.2	5 873	21	2 568	5 257
\$7,500 TO \$9,999	2 238	8.2	19.5	3.6	8 728	21	3 605	18.0	4.2	8 026	24	3 315	5 419
\$10,000 TO \$12,499	2 266	8.3	25.3	4.7	11 180	22	4 409	22.5	5.3	9 918	30	3 912	5 745
\$12,500 TO \$14,999	2 010	7.4	27.4	5.1	13 657	22	5 084	24.1	5.7	11 979	34	4 459	5 400
\$15,000 TO \$17,499	1 899	7.0	30.7	5.7	16 152	23	5 684	26.0	6.1	13 696	37	4 820	5 395
\$17,500 TO \$19,999	1 688	6.2	31.5	5.9	18 664	23	6 445	26.2	6.2	15 510	41	5 355	4 888
\$20,000 TO \$22,499	1 744	6.4	36.8	6.9	21 109	25	7 169	30.0	7.1	17 226	47	5 850	5 136
\$22,500 TO \$24,999	1 428	5.2	33.8	6.3	23 651	25	7 610	27.3	6.4	19 116	51	6 150	4 439
\$25,000 TO \$27,499	1 358	5.0	35.5	6.6	26 119	28	8 319	28.2	6.6	20 783	56	6 620	4 263
\$27,500 TO \$29,999	1 103	4.1	31.7	5.9	28 686	29	8 777	29.0	5.9	22 614	68	6 919	3 606
\$30,000 TO \$32,499	981	3.6	30.5	5.7	31 134	33	9 475	23.7	5.6	24 217	73	7 370	3 222
\$32,500 TO \$34,999	696	2.6	23.4	4.4	33 611	36	10 279	17.9	4.2	25 708	91	7 862	2 275
\$35,000 TO \$37,499	694	2.5	25.1	4.7	36 119	39	11 025	19.2	4.5	27 624	101	8 432	2 273
\$37,500 TO \$39,999	464	1.7	17.9	3.3	38 647	41	11 553	13.6	3.2	29 353	128	8 775	1 592
\$40,000 TO \$44,999	790	2.9	33.3	6.2	42 163	74	12 151	25.0	5.9	31 621	128	9 113	2 741
\$45,000 TO \$49,999	511	1.9	24.2	4.5	47 326	87	13 952	17.6	4.2	34 507	176	10 173	1 733
\$50,000 TO \$59,999	591	2.2	32.0	6.0	54 260	157	15 188	22.8	5.4	38 606	198	10 806	2 110
\$60,000 TO \$74,999	372	1.4	24.5	4.6	65 724	293	19 317	16.7	3.9	44 908	366	13 199	1 267
\$75,000 AND OVER	278	1.0	28.2	5.3	101 463	2 063	28 398	17.0	4.0	61 079	957	17 095	993
MEDIAN INCOME	16 298	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR	149	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
WEST													
TOTAL	16 167	100.0	366.5	100.0	22 667	182	8 457	278.4	100.0	17 219	114	6 424	43 333
UNDER \$2,500	391	2.4	0.2	-	489	152	216	0.1	-	261	156	126	813
\$2,500 TO \$4,999	1 171	7.2	4.6	1.3	3 941	26	2 522	4.4	1.6	3 771	28	2 413	1 829
\$5,000 TO \$7,499	1 248	7.7	7.7	2.1	6 190	27	3 106	7.2	2.6	5 755	27	2 911	2 468
\$7,500 TO \$9,999	1 170	7.2	10.2	2.8	8 737	27	4 038	9.4	3.4	7 989	31	3 689	2 336
\$10,000 TO \$12,499	1 308	8.1	14.6	4.0	11 200	27	4 779	12.9	4.6	9 866	36	4 210	3 055
\$12,500 TO \$14,999	1 111	6.8	15.2	4.2	13 716	27	5 532	13.1	4.7	11 832	43	4 772	2 794
\$15,000 TO \$17,499	1 094	6.8	17.7	4.8	16 147	29	6 264	14.7	5.3	13 458	48	5 221	2 820
\$17,500 TO \$19,999	985	6.1	18.4	5.0	18 709	29	6 763	15.1	5.4	15 311	55	5 534	2 725
\$20,000 TO \$22,499	1 068	6.6	22.6	6.2	21 126	30	7 397	18.0	6.5	16 875	59	5 909	3 051
\$22,500 TO \$24,999	891	5.5	21.1	5.8	23 726	29	8 149	16.7	6.0	18 771	70	6 447	2 594
\$25,000 TO \$27,499	862	5.3	22.5	6.1	26 113	32	8 738	17.5	6.3	20 308	70	6 796	2 576
\$27,500 TO \$29,999	651	4.0	18.7	5.1	28 680	34	9 097	14.5	5.2	22 280	77	7 067	2 052
\$30,000 TO \$32,499	713	4.4	22.2	6.0	31 095	37	9 459	16.9	6.1	23 744	87	7 229	2 344
\$32,500 TO \$34,999	641	3.9	18.2	5.0	33 733	39	10 601	13.7	4.9	25 310	102	7 954	1 721
\$35,000 TO \$37,499	471	2.9	17.0	4.4	36 117	44	11 173	12.7	4.6	26 947	109	8 336	1 524
\$37,500 TO \$39,999	329	2.0	12.7	3.5	38 703	49	11 870	9.4	3.4	28 438	127	8 722	1 072
\$40,000 TO \$44,999	620	3.8	26.2	7.2	42 292	74	12 718	18.9	6.8	30 444	126	9 155	2 062
\$45,000 TO \$49,999	432	2.7	20.4	5.6	47 285	90	13 510	14.5	5.2	33 550	179	9 584	1 510
\$50,000 TO \$59,999	548	3.4	29.7	8.1	54 118	161	15 465	20.4	7.3	37 265	216	10 649	1 919
\$60,000 TO \$74,999	312	1.9	20.6	5.6	66 049	289	19 335	13.6	4.9	43 431	392	12 714	1 067
\$75,000 AND OVER	255	1.6	25.9	7.1	101 607	2 853	30 750	14.7	5.3	57 845	1 524	17 506	841
MEDIAN INCOME	19 009	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR	204	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
TYPE OF HOUSEHOLD													
FAMILY HOUSEHOLDS¹													
TOTAL	60 309	100.0	1454.5	100.0	24 118	93	7 328	1120.4	100.0	18 578	59	5 645	198 490
UNDER \$2,500	1 203	2.0	0.3	-	269	108	85	-	-	37	111	12	3 826
\$2,500 TO \$4,999	2 407	4.0	9.3	0.6	3 858	18	1 326	8.8	0.8	3 662	20	1 259	7 002
\$5,000 TO \$7,499	3 694	6.1	23.1	1.6	6 248	16	2 106	21.8	1.9	5 897	17	1 988	10 959
\$7,500 TO \$9,999	3 851	6.4	33.7	2.3	8 761	15	2 971	31.4	2.8	8 156	17	2 766	11 355
\$10,000 TO \$12,499	4 345	7.2	48.7	3.3	11 207	15	3 702	43.9	3.9	10 111	19	3 340	13 152
\$12,500 TO \$14,999	4 141	6.9	56.7	3.9	13 698	15	4 498	50.1	4.5	12 093	22	3 971	12 610
\$15,000 TO \$17,499	4 339	7.2	70.2	4.3	16 172	15	5 025	59.9	5.3	13 792	23	4 285	13 967
\$17,500 TO \$19,999	4 093	6.8	76.6	5.8	18 718	14	5 788	63.7	5.7	15 567	24	4 614	13 234
\$20,000 TO \$22,499	4 476	7.4	94.6	6.5	21 145	15	6 409	76.8	6.9	17 168	26	5 203	14 767
\$22,500 TO \$24,999	3 840	6.4	91.0	6.3	23 703	15	7 045	72.9	6.5	18 986	29	5 643	12 921
\$25,000 TO \$27,499	3 863	6.4	101.0	6.9	26 131	16	7 676	79.5	7.1	20 566	31	6 041	13 152
\$27,500 TO \$29,999	2 975	4.9	85.4	5.9	28 690	17	8 343	66.6	5.9	22 375	37	6 506	10 232
\$30,000 TO \$32,499	3 035	5.0	94.4	6.5	31 110	18	8 987	72.4	6.5	23 872	40	6 896	10 506
\$32,500 TO \$34,999	2 175	3.6	73.2	5.0	33 673	20	9 729	55.6	5.0	25 540	49	7 379	7 529
\$35,000 TO \$37,499	2 125	3.5	76.7	5.3	36 123	21	10 389	57.6	5.1	27 101	53	7 795	7 387
\$37,500 TO \$39,999	1 510	2.5	58.3	4.0	38 633	23	10 930	43.5	3.9	28 797	70	8 148	5 335
\$40,000 TO \$44,999	2 557	4.2	107.9	7.4	42 181	38	11 637	79.1	7.1	30 948	66	8 538	9 269
\$45,000 TO \$49,999	1 615	2.7	76.3	5.2	47 242	48	12 757	55.0	4.9	34 031	93	9 190	5 982
\$50,000 TO \$59,999	1 969	3.3	106.5	7.3	54 101	85	14 200	74.9	6.7	38 011	112	9 977	7 503
\$60,000 TO \$74,999	1 128	1.9	74.2	5.1	65 796	163	17 684	50.0	4.5	44 329	194	11 914	4 195
\$75,000 AND OVER	967	1.6	96.3	6.6	99 533	1 303	26 693	57.0	5.1	58 923	602	15 802	3 606
MEDIAN INCOME	21 162	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR	90	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

¹INCLUDES MALE HOUSEHOLDER, NO WIFE PRESENT, AND FEMALE HOUSEHOLDER, NO HUSBAND PRESENT, WITH NO RELATED CHILDREN UNDER 18 YEARS OLD.

Table 2. All Households, Aggregate Income, Mean Income, Income per Household Member (After Taxes), and Number of Persons in Households, by After-Tax Money Income Levels in 1980 and Selected Characteristics—Continued

(HOUSEHOLDS AS OF MARCH 1981. FOR MEANING OF SYMBOLS, SEE TEXT)

MONEY INCOME LEVELS--AFTER TAXES	ALL HOUSEHOLDS		AGGREGATE INCOME		MEAN INCOME		INCOME PER HOUSEHOLD MEMBER (DOLLARS)	TOTAL NUMBER OF PERSONS IN HOUSEHOLDS (THOUS.)
	NUMBER (THOUSANDS)	PERCENT DISTRIBUTION	AMOUNT (BILLIONS OF DOLLARS)	PERCENT DISTRIBUTION	VALUE (DOLLARS)	STANDARD ERROR (DOLLARS)		
RACE AND SPANISH ORIGIN OF HOUSEHOLDER--CONTINUED								
SPANISH ORIGIN¹								
TOTAL	3 906	100.0	52.9	100.0	13 550	233	3 905	13 553
UNDER \$2,500	196	5.0	0.2	0.4	1 010	179	431	460
\$2,500 TO \$4,999	452	11.6	1.7	3.2	3 796	50	1 567	1 094
\$5,000 TO \$7,499	467	11.9	2.9	5.5	6 270	54	2 044	1 431
\$7,500 TO \$9,999	518	13.3	4.5	8.5	8 730	48	2 683	1 685
\$10,000 TO \$12,499	461	11.8	5.2	9.8	11 245	52	3 098	1 679
\$12,500 TO \$14,999	387	9.9	5.3	10.0	13 712	57	3 800	1 396
\$15,000 TO \$17,499	362	9.3	9.3	11.1	16 180	59	4 271	1 370
\$17,500 TO \$19,999	269	6.9	5.0	9.5	18 786	67	4 887	1 033
\$20,000 TO \$22,499	202	5.2	4.3	8.1	21 208	79	5 362	800
\$22,500 TO \$24,999	188	4.8	4.5	8.4	23 811	78	5 715	782
\$25,000 TO \$27,499	108	2.8	2.8	5.4	26 176	109	5 733	495
\$27,500 TO \$29,999	90	2.3	2.6	4.9	28 761	119	6 996	370
\$30,000 TO \$32,499	66	1.7	2.0	3.9	(B)	(B)	(B)	278
\$32,500 TO \$34,999	33	0.8	1.1	2.1	(B)	(B)	(B)	154
\$35,000 TO \$37,499	28	0.7	1.0	1.9	(B)	(B)	(B)	139
\$37,500 TO \$39,999	18	0.5	0.7	1.4	(B)	(B)	(B)	81
\$40,000 TO \$44,999	23	0.6	1.0	1.8	(B)	(B)	(B)	125
\$45,000 TO \$49,999	18	0.5	0.8	1.6	(B)	(B)	(B)	85
\$50,000 TO \$59,999	15	0.4	0.8	1.6	(B)	(B)	(B)	76
\$60,000 TO \$74,999	5	0.1	0.4	0.7	(B)	(B)	(B)	20
\$75,000 AND OVER	1	-	0.1	0.2	(B)	(B)	(B)	5
MEDIAN INCOMEDOLLARS	11 741	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR.DOLLARS	263	(X)	(X)	(X)	(X)	(X)	(X)	(X)
REGION								
NORTHEAST								
TOTAL	17 781	100.0	288.9	100.0	16 248	108	5 958	48 488
UNDER \$2,500	520	2.9	0.4	0.1	1 794	125	438	943
\$2,500 TO \$4,999	1 762	9.9	6.8	2.4	3 866	22	2 427	2 806
\$5,000 TO \$7,499	1 740	9.8	10.8	3.7	6 219	23	3 175	3 409
\$7,500 TO \$9,999	1 706	9.6	14.9	5.2	8 746	23	3 930	3 797
\$10,000 TO \$12,499	1 745	9.8	19.7	6.8	11 288	23	4 692	4 233
\$12,500 TO \$14,999	1 686	9.5	23.2	8.0	13 766	23	5 382	4 314
\$15,000 TO \$17,499	1 735	9.8	28.1	9.7	16 217	23	5 430	5 182
\$17,500 TO \$19,999	1 457	8.2	27.2	9.4	18 691	25	6 036	4 514
\$20,000 TO \$22,499	1 253	7.0	26.6	9.2	21 197	27	6 598	4 026
\$22,500 TO \$24,999	1 042	5.9	24.7	8.6	23 741	29	7 098	3 485
\$25,000 TO \$27,499	771	4.3	20.2	7.0	26 209	34	7 559	2 672
\$27,500 TO \$29,999	579	3.3	16.4	5.7	28 656	40	7 994	2 048
\$30,000 TO \$32,499	458	2.6	14.3	4.9	31 187	42	8 589	1 642
\$32,500 TO \$34,999	329	1.8	11.0	3.8	33 559	50	8 874	1 244
\$35,000 TO \$37,499	221	1.2	8.0	2.8	36 209	62	8 807	907
\$37,500 TO \$39,999	207	1.2	8.0	2.8	38 693	67	9 855	813
\$40,000 TO \$44,999	249	1.4	10.5	3.6	42 254	119	9 880	1 067
\$45,000 TO \$49,999	135	0.8	6.4	2.2	47 578	177	11 713	549
\$50,000 TO \$59,999	119	0.7	6.5	2.3	54 827	363	12 016	543
\$60,000 TO \$74,999	52	0.3	3.4	1.2	(B)	(B)	(B)	185
\$75,000 AND OVER	14	0.1	1.4	0.5	(B)	(B)	(B)	53
MEDIAN INCOMEDOLLARS	14 601	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR.DOLLARS	132	(X)	(X)	(X)	(X)	(X)	(X)	(X)
NORTH CENTRAL								
TOTAL	21 200	100.0	348.5	100.0	16 437	99	6 011	57 974
UNDER \$2,500	673	3.2	0.5	0.1	1 746	114	403	1 246
\$2,500 TO \$4,999	1 908	9.0	7.2	2.1	3 781	22	2 254	3 200
\$5,000 TO \$7,499	1 960	9.2	12.3	3.5	6 275	22	3 145	3 911
\$7,500 TO \$9,999	2 009	9.5	17.6	5.1	8 761	21	4 041	4 357
\$10,000 TO \$12,499	2 017	9.5	22.7	6.5	11 235	21	4 660	4 862
\$12,500 TO \$14,999	2 107	9.9	29.0	8.3	13 748	21	5 147	5 627
\$15,000 TO \$17,499	2 018	9.5	32.7	9.4	16 183	21	5 517	5 919
\$17,500 TO \$19,999	1 888	8.9	35.3	10.1	18 690	22	6 008	5 873
\$20,000 TO \$22,499	1 525	7.2	32.3	9.3	21 195	25	6 547	4 936
\$22,500 TO \$24,999	1 319	6.2	31.3	9.0	23 763	26	7 186	4 362
\$25,000 TO \$27,499	982	4.6	25.7	7.4	26 201	30	7 813	3 293
\$27,500 TO \$29,999	736	3.5	21.1	6.1	28 715	35	7 987	2 654
\$30,000 TO \$32,499	534	2.5	16.4	4.8	31 106	41	8 744	1 898
\$32,500 TO \$34,999	398	1.9	13.4	3.9	33 747	48	9 035	1 486
\$35,000 TO \$37,499	276	1.3	10.0	2.9	36 273	59	9 465	1 057
\$37,500 TO \$39,999	188	0.9	7.3	2.1	38 684	70	10 510	693
\$40,000 TO \$44,999	265	1.2	6.3	3.2	42 332	118	10 978	1 021
\$45,000 TO \$49,999	133	0.6	6.3	1.8	47 208	164	11 795	534
\$50,000 TO \$59,999	163	0.8	8.8	2.5	54 199	299	13 647	648
\$60,000 TO \$74,999	81	0.4	5.3	1.5	64 781	504	16 615	317
\$75,000 AND OVER	21	0.1	1.8	0.5	(B)	(B)	(B)	79
MEDIAN INCOMEDOLLARS	14 913	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR.DOLLARS	116	(X)	(X)	(X)	(X)	(X)	(X)	(X)

¹PERSONS OF SPANISH ORIGIN MAY BE OF ANY RACE.

Table 2. All Households, Aggregate Income, Mean Income, Income per Household Member (After Taxes), and Number of Persons in Households, by After-Tax Money Income Levels in 1980 and Selected Characteristics—Continued

(HOUSEHOLDS AS OF MARCH 1981. FOR MEANING OF SYMBOLS, SEE TEXT)

MONEY INCOME LEVELS--AFTER TAXES	ALL HOUSEHOLDS		AGGREGATE INCOME		MEAN INCOME		INCOME PER HOUSEHOLD MEMBER (DOLLARS)	TOTAL NUMBER OF PERSONS IN HOUSEHOLDS (THOUS.)
	NUMBER (THOUSANDS)	PERCENT DISTRIBUTION	AMOUNT (BILLIONS OF DOLLARS)	PERCENT DISTRIBUTION	VALUE (DOLLARS)	STANDARD ERROR (DOLLARS)		
REGION--CONTINUED								
SOUTH								
TOTAL	27 220	100.0	424.6	100.0	15 597	91	5 666	74 928
UNDER \$2,500	1 189	4.4	0.9	0.2	790	89	361	2 601
\$2,500 TO \$4,999	2 887	10.6	10.6	2.5	3 681	19	2 057	5 164
\$5,000 TO \$7,499	2 653	9.7	16.6	3.9	6 253	19	2 828	5 864
\$7,500 TO \$9,999	2 897	10.6	25.3	6.0	8 748	18	3 613	7 015
\$10,000 TO \$12,499	2 687	9.9	30.3	7.1	11 266	19	4 278	7 078
\$12,500 TO \$14,999	2 579	9.5	35.5	8.4	13 747	19	4 965	7 143
\$15,000 TO \$17,499	2 419	8.9	39.1	9.2	16 172	20	5 412	7 227
\$17,500 TO \$19,999	2 160	7.9	40.5	9.5	18 761	22	6 172	6 565
\$20,000 TO \$22,499	1 780	6.5	37.7	8.2	21 200	23	6 602	5 713
\$22,500 TO \$24,999	1 470	5.4	34.8	8.2	23 705	26	7 189	4 844
\$25,000 TO \$27,499	1 121	4.1	29.3	6.9	26 169	30	7 882	3 721
\$27,500 TO \$29,999	842	3.1	24.1	5.7	28 647	34	8 435	2 861
\$30,000 TO \$32,499	614	2.3	19.1	4.5	31 185	40	9 126	2 097
\$32,500 TO \$34,999	467	1.7	15.7	3.7	33 657	45	9 260	1 699
\$35,000 TO \$37,499	386	1.4	14.0	3.3	36 231	51	10 156	1 377
\$37,500 TO \$39,999	279	1.0	10.8	2.5	38 600	59	10 740	1 002
\$40,000 TO \$44,999	309	1.1	13.1	3.1	42 273	113	11 361	1 150
\$45,000 TO \$49,999	172	0.6	8.1	1.9	46 804	150	12 830	628
\$50,000 TO \$59,999	174	0.6	9.4	2.2	54 034	303	14 652	643
\$60,000 TO \$74,999	105	0.4	6.9	1.6	65 665	507	17 290	399
\$75,000 AND OVER	31	0.1	2.6	0.6	(8)	(8)	(8)	130
MEDIAN INCOME DOLLARS	13 757	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR DOLLARS	110	(X)	(X)	(X)	(X)	(X)	(X)	(X)
WEST								
TOTAL	16 167	100.0	278.4	100.0	17 219	114	6 424	43 333
UNDER \$2,500	443	2.7	0.2	0.1	3 492	143	2 243	897
\$2,500 TO \$4,999	1 320	8.2	5.2	1.9	3 967	24	2 505	2 090
\$5,000 TO \$7,499	1 382	8.5	8.6	3.1	6 209	25	3 192	2 688
\$7,500 TO \$9,999	1 630	10.1	14.3	5.1	8 773	22	4 079	3 506
\$10,000 TO \$12,499	1 575	9.7	17.8	6.4	11 273	23	4 629	3 836
\$12,500 TO \$14,999	1 527	9.4	20.9	7.4	13 718	24	5 399	3 880
\$15,000 TO \$17,499	1 490	9.2	24.2	8.7	16 217	23	5 847	4 134
\$17,500 TO \$19,999	1 248	7.7	23.4	8.4	18 714	26	6 137	3 806
\$20,000 TO \$22,499	1 155	7.1	24.5	8.8	21 210	28	7 014	3 493
\$22,500 TO \$24,999	1 021	6.3	24.2	8.7	23 644	28	7 289	3 314
\$25,000 TO \$27,499	788	4.9	20.6	7.4	26 211	31	7 733	2 670
\$27,500 TO \$29,999	684	4.2	19.7	7.1	28 728	36	8 810	2 232
\$30,000 TO \$32,499	453	2.8	14.1	5.1	31 208	43	9 678	1 459
\$32,500 TO \$34,999	352	2.2	11.9	4.3	33 665	49	9 688	1 229
\$35,000 TO \$37,499	275	1.7	8.9	3.6	36 141	52	9 350	1 064
\$37,500 TO \$39,999	207	1.3	8.0	2.9	38 733	65	10 300	777
\$40,000 TO \$44,999	262	1.6	11.1	4.0	42 177	110	11 449	966
\$45,000 TO \$49,999	144	0.9	6.8	2.4	47 204	149	13 257	513
\$50,000 TO \$59,999	135	0.8	7.3	2.6	54 187	311	14 579	500
\$60,000 TO \$74,999	63	0.4	4.2	1.5	(8)	(8)	(8)	227
\$75,000 AND OVER	14	0.1	1.6	0.6	(8)	(8)	(8)	54
MEDIAN INCOME DOLLARS	15 348	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR DOLLARS	135	(X)	(X)	(X)	(X)	(X)	(X)	(X)
TYPE OF HOUSEHOLD								
FAMILY HOUSEHOLDS²								
TOTAL	60 309	100.0	1120.4	100.0	18 578	59	5 645	198 490
UNDER \$2,500	1 312	2.2	0.3	-	201	104	64	4 133
\$2,500 TO \$4,999	2 762	4.6	10.7	1.0	3 885	18	1 339	8 013
\$5,000 TO \$7,499	4 049	6.7	25.5	2.3	6 286	15	2 132	11 941
\$7,500 TO \$9,999	5 109	8.5	44.9	4.0	8 792	13	2 965	15 149
\$10,000 TO \$12,499	5 574	9.2	62.9	5.6	11 283	13	3 671	17 135
\$12,500 TO \$14,999	5 930	9.8	81.6	7.3	13 758	12	4 407	18 513
\$15,000 TO \$17,499	6 397	10.6	103.6	9.3	16 204	12	4 996	20 748
\$17,500 TO \$19,999	5 874	9.7	110.0	9.8	18 726	12	5 647	19 480
\$20,000 TO \$22,499	5 151	8.5	105.2	9.7	21 206	13	6 319	17 288
\$22,500 TO \$24,999	4 427	7.3	105.0	9.4	23 717	14	6 869	15 284
\$25,000 TO \$27,499	3 379	5.6	88.5	7.9	26 193	16	7 469	11 849
\$27,500 TO \$29,999	2 632	4.4	75.5	6.7	28 698	19	8 004	9 437
\$30,000 TO \$32,499	1 914	3.2	59.7	5.3	31 171	21	8 706	6 854
\$32,500 TO \$34,999	1 429	2.4	48.1	4.3	33 661	25	8 902	5 405
\$35,000 TO \$37,499	1 075	1.8	38.9	3.5	36 203	29	9 184	4 236
\$37,500 TO \$39,999	829	1.4	32.0	2.9	38 659	33	10 052	3 187
\$40,000 TO \$44,999	1 008	1.7	42.6	3.8	42 260	59	10 563	4 026
\$45,000 TO \$49,999	547	0.9	25.8	2.3	47 132	83	11 991	2 151
\$50,000 TO \$59,999	554	0.9	30.1	2.7	54 355	144	13 300	2 463
\$60,000 TO \$74,999	281	0.5	18.4	1.6	65 448	312	16 903	1 089
\$75,000 AND OVER	77	0.1	7.0	0.6	91 502	3 879	22 765	308
MEDIAN INCOME DOLLARS	17 118	(X)	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERROR DOLLARS	63	(X)	(X)	(X)	(X)	(X)	(X)	(X)

²INCLUDES MALE HOUSEHOLDER, NO WIFE PRESENT, AND FEMALE HOUSEHOLDER, NO HUSBAND PRESENT, WITH NO RELATED CHILDREN UNDER 18 YEARS OLD.

Table 2. All Households, Aggregate Income, Mean Income, Income per Household Member (After Taxes), and Non-Persons in Households, by After-Tax Money Income Levels in 1980 and Selected Characteristics—Continued

(HOUSEHOLDS AS OF MARCH 1981. FOR MEANING OF SYMBOLS, SEE TEXT)

MONEY INCOME LEVELS--AFTER TAXES	ALL HOUSEHOLDS		AGGREGATE INCOME		MEAN INCOME		INCOME PER HOUSEHOLD MEMBER (DOLLARS)
	NUMBER (THOUSANDS)	PERCENT DISTRIBUTION	AMOUNT (BILLIONS OF DOLLARS)	PERCENT DISTRIBUTION	VALUE (DOLLARS)	STANDARD ERROR (DOLLARS)	
SIZE OF HOUSEHOLD--CONTINUED							
TWO PERSONS							
TOTAL	25 787	100.0	419.3	100.0	16 259	81	8 060
UNDER \$2,500	572	2.2	0.3	0.1	463	128	231
\$2,500 TO \$4,999	1 521	5.9	6.0	1.4	3 916	23	1 939
\$5,000 TO \$7,499	2 417	9.4	15.2	3.6	6 306	19	3 129
\$7,500 TO \$9,999	2 892	11.2	25.4	6.1	8 779	18	4 358
\$10,000 TO \$12,499	2 912	11.3	32.6	7.8	11 270	17	5 387
\$12,500 TO \$14,999	2 963	11.5	40.7	9.7	13 743	17	6 806
\$15,000 TO \$17,499	2 661	10.3	43.1	10.3	16 181	18	8 033
\$17,500 TO \$19,999	2 357	9.1	44.1	10.5	18 095	20	9 254
\$20,000 TO \$22,499	1 893	7.3	40.1	9.6	21 190	22	10 514
\$22,500 TO \$24,999	1 563	6.1	37.1	8.9	23 749	24	11 749
\$25,000 TO \$27,499	1 118	4.3	29.3	7.0	26 190	28	13 025
\$27,500 TO \$29,999	832	3.2	23.8	5.7	28 600	32	14 156
\$30,000 TO \$32,499	597	2.3	18.6	4.4	31 168	37	15 437
\$32,500 TO \$34,999	367	1.4	12.3	2.9	33 602	50	16 661
\$35,000 TO \$37,499	260	1.0	9.4	2.2	36 200	64	17 905
\$37,500 TO \$39,999	218	0.8	8.4	2.0	38 666	81	19 138
\$40,000 TO \$44,999	253	1.0	10.7	2.6	42 254	124	20 958
\$45,000 TO \$49,999	134	0.5	6.3	1.5	47 319	180	23 422
\$50,000 TO \$59,999	144	0.6	7.8	1.9	54 177	304	26 950
\$60,000 TO \$74,999	94	0.4	6.1	1.5	64 828	503	31 952
\$75,000 AND OVER	19	0.1	1.7	0.4	(8)	(8)	(8)
MEDIAN INCOMEDOLLARS	14 676	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERRORDOLLARS	89	(X)	(X)	(X)	(X)	(X)	(X)
THREE PERSONS							
TOTAL	14 849	100.0	272.2	100.0	18 684	118	6 177
UNDER \$2,500	346	2.4	0.2	0.1	678	163	226
\$2,500 TO \$4,999	656	4.5	2.6	0.9	3 885	38	1 306
\$5,000 TO \$7,499	793	5.4	5.0	1.8	6 206	36	2 097
\$7,500 TO \$9,999	1 158	7.9	10.2	3.7	8 769	28	2 916
\$10,000 TO \$12,499	1 309	9.0	14.8	5.4	11 300	26	3 749
\$12,500 TO \$14,999	1 421	9.8	19.6	7.2	13 782	25	4 365
\$15,000 TO \$17,499	1 613	11.1	26.2	9.6	16 236	23	5 354
\$17,500 TO \$19,999	1 468	10.1	27.5	10.1	18 719	25	6 164
\$20,000 TO \$22,499	1 380	9.5	29.3	10.8	21 235	26	7 046
\$22,500 TO \$24,999	1 072	7.4	25.4	9.3	23 703	28	7 838
\$25,000 TO \$27,499	889	6.1	23.3	8.5	26 173	31	8 604
\$27,500 TO \$29,999	681	4.5	18.7	6.9	28 704	39	9 412
\$30,000 TO \$32,499	494	3.4	15.4	5.7	31 177	42	10 200
\$32,500 TO \$34,999	364	2.5	12.3	4.5	33 691	49	11 087
\$35,000 TO \$37,499	242	1.7	8.8	3.2	36 204	62	11 879
\$37,500 TO \$39,999	189	1.3	7.3	2.7	38 637	82	12 520
\$40,000 TO \$44,999	239	1.6	10.1	3.7	42 235	117	13 765
\$45,000 TO \$49,999	131	0.9	6.2	2.3	47 319	158	15 451
\$50,000 TO \$59,999	94	0.6	5.1	1.9	54 171	310	17 738
\$60,000 TO \$74,999	43	0.3	2.8	1.0	(8)	(8)	(8)
\$75,000 AND OVER	17	0.1	1.6	0.6	(8)	(8)	(8)
MEDIAN INCOMEDOLLARS	17 481	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERRORDOLLARS	128	(X)	(X)	(X)	(X)	(X)	(X)
FOUR PERSONS							
TOTAL	12 768	100.0	261.4	100.0	20 475	130	5 121
UNDER \$2,500	240	1.9	-0.1	-	-298	271	-75
\$2,500 TO \$4,999	387	3.0	1.5	0.6	3 664	46	980
\$5,000 TO \$7,499	539	4.2	3.4	1.3	6 290	40	1 576
\$7,500 TO \$9,999	760	6.0	6.7	2.6	8 835	33	2 214
\$10,000 TO \$12,499	949	7.4	10.7	4.1	11 293	32	2 839
\$12,500 TO \$14,999	1 070	8.4	14.7	5.6	13 770	29	3 463
\$15,000 TO \$17,499	1 445	11.5	23.7	9.1	16 176	24	4 069
\$17,500 TO \$19,999	1 373	10.8	25.8	9.9	18 771	25	4 699
\$20,000 TO \$22,499	1 214	9.5	28.8	9.9	21 235	26	5 320
\$22,500 TO \$24,999	1 185	9.3	26.1	10.8	23 721	28	5 938
\$25,000 TO \$27,499	850	6.7	22.3	8.5	26 199	32	6 546
\$27,500 TO \$29,999	734	5.8	21.1	8.1	28 677	36	7 125
\$30,000 TO \$32,499	502	3.9	15.6	6.0	31 166	40	7 708
\$32,500 TO \$34,999	411	3.2	13.8	5.3	33 643	48	8 330
\$35,000 TO \$37,499	292	2.3	10.6	4.1	36 274	64	9 119
\$37,500 TO \$39,999	211	1.6	8.1	3.1	38 672	84	9 883
\$40,000 TO \$44,999	238	1.9	10.0	3.8	42 206	120	10 404
\$45,000 TO \$49,999	133	1.0	6.3	2.4	47 318	168	11 700
\$50,000 TO \$59,999	131	1.0	7.1	2.7	54 136	334	13 281
\$60,000 TO \$74,999	64	0.5	4.2	1.6	(8)	(8)	(8)
\$75,000 AND OVER	20	0.2	2.0	0.8	(8)	(8)	(8)
MEDIAN INCOMEDOLLARS	19 274	(X)	(X)	(X)	(X)	(X)	(X)
STANDARD ERRORDOLLARS	138	(X)	(X)	(X)	(X)	(X)	(X)

Table 3. Mean Income of Households and Income per Household Member in 1980 and 1974 (In Constant 1980 Dollars Before and After Taxes), by Selected Characteristics

(FOR MEANING OF SYMBOLS, SEE TEXT)

CHARACTERISTIC	MEAN INCOME						INCOME PER HOUSEHOLD MEMBER					
	BEFORE TAXES			AFTER TAXES			BEFORE TAXES			AFTER TAXES		
	1980 (DOL.)	1974 (DOL.)	PERCENT CHANGE	1980 (DOL.)	1974 (DOL.)	PERCENT CHANGE	1980 (DOL.)	1974 (DOL.)	PERCENT CHANGE	1980 (DOL.)	1974 (DOL.)	PERCENT CHANGE
ALL HOUSEHOLDS	21 063	21 880	+3.7	16 272	17 527	+7.2	7 720	7 449	+3.6	5 964	5 968	-0.1
RACE AND SPANISH ORIGIN OF HOUSEHOLDER												
WHITE	21 913	22 691	+3.4	16 852	18 119	+7.0	8 170	7 847	+4.1	6 283	6 266	0.3
BLACK	13 970	14 472	+3.5	11 450	12 141	+5.7	4 689	4 428	+5.9	3 844	3 714	3.5
SPANISH ORIGIN ¹	16 674	17 239	+3.3	13 550	14 392	+5.9	4 806	4 718	1.9	3 905	3 939	-0.9
REGION												
NORTHEAST	21 449	23 022	+6.8	16 248	18 258	+11.0	7 865	7 784	1.0	5 958	6 173	+3.5
NORTH CENTRAL	21 261	22 794	+6.7	16 437	18 174	+9.6	7 775	7 691	1.1	6 011	6 132	+2.0
SOUTH	19 703	19 949	-1.2	15 597	16 241	+4.0	7 158	6 738	+6.2	5 666	5 484	+3.3
WEST	22 667	22 453	-1.0	17 219	17 892	+3.8	8 457	7 925	+6.7	6 424	6 315	1.7
TYPE OF HOUSEHOLD												
FAMILY HOUSEHOLDS	24 118	24 712	+2.4	18 578	19 756	+6.0	7 328	7 183	+2.0	5 645	5 743	+1.7
MARRIED-COUPLE FAMILIES, WITH NO RELATED CHILDREN UNDER 18 YEARS	25 368	24 900	-1.9	19 362	19 708	+1.8	10 881	10 763	1.1	8 305	8 518	-2.5
MARRIED-COUPLE FAMILIES, WITH RELATED CHILDREN UNDER 18 YEARS	26 910	27 611	+2.5	20 518	21 986	+6.7	6 299	6 225	1.2	4 803	4 957	+3.1
FEMALE HOUSEHOLDER, NO HUSBAND PRESENT, WITH RELATED CHILDREN UNDER 18 YEARS	11 450	11 813	+3.1	9 891	10 440	+5.3	3 376	3 241	+4.2	2 917	2 844	1.9
ALL OTHER FAMILY HOUSEHOLDS	19 580	20 111	+2.6	15 687	16 537	+5.1	7 454	7 526	-1.0	5 972	6 189	-3.5
NONFAMILY HOUSEHOLDS	12 711	11 807	-7.7	9 970	9 600	-3.9	10 688	10 282	-3.9	8 384	8 361	-0.3
AGE OF HOUSEHOLDER												
15 TO 24 YEARS	14 227	14 543	+2.2	11 584	12 009	+3.5	6 327	6 188	+2.2	5 152	5 110	0.8
25 TO 29 YEARS	19 223	20 641	+7.0	15 002	16 563	+9.4	7 215	7 196	0.3	5 431	5 749	-5.4
30 TO 34 YEARS	22 185	23 936	+7.3	16 959	19 022	+10.8	6 971	6 605	+5.5	5 329	5 249	1.8
35 TO 39 YEARS	25 157	25 897	+2.9	18 884	20 579	+8.2	6 991	6 248	+11.9	5 248	4 965	+5.7
40 TO 44 YEARS	27 152	28 414	+4.4	20 334	22 447	+9.4	7 297	6 741	+6.2	5 465	5 325	2.6
45 TO 49 YEARS	28 919	29 340	-1.4	21 566	23 054	+6.5	8 156	7 809	4.4	6 082	6 136	-0.9
50 TO 54 YEARS	27 451	28 319	+3.1	20 423	21 998	+7.2	8 936	9 024	-1.0	6 448	7 010	-5.2
55 TO 59 YEARS	25 805	25 321	-1.9	19 123	19 608	+2.5	10 217	9 846	+3.8	7 572	7 625	-0.7
60 TO 64 YEARS	20 903	21 103	+0.9	16 098	16 672	+3.4	9 642	9 524	1.2	7 426	7 524	-1.3
65 YEARS AND OVER	12 628	12 757	+1.0	10 981	11 225	+2.2	7 243	7 059	2.6	6 299	6 212	1.4
SIZE OF HOUSEHOLD												
1 PERSON	10 981	10 498	-4.6	8 629	8 573	0.7	10 981	10 498	+4.6	8 629	8 573	0.7
2 PERSONS	20 943	20 948	-	16 259	16 737	+2.9	10 382	10 352	0.3	8 060	8 271	-2.6
3 PERSONS	24 387	24 578	+0.8	18 684	19 544	+4.4	8 063	8 105	-0.5	6 177	6 445	-4.2
4 PERSONS	26 921	27 802	+3.2	20 475	22 020	+7.0	6 733	6 976	+3.5	5 121	5 525	-7.3
5 PERSONS	28 126	28 776	+2.3	21 574	23 064	+6.5	5 624	5 804	+3.1	4 314	4 652	-7.3
6 PERSONS	27 880	28 753	+3.0	21 911	23 374	+6.3	4 647	4 842	+4.0	3 652	3 936	-7.2
7 PERSONS OR MORE	27 280	28 048	+2.7	22 040	23 323	+5.5	3 508	3 600	-2.6	2 834	2 994	-5.3
TENURE												
OWNER OCCUPIED	24 147	25 122	+3.9	18 378	19 882	+7.6	8 331	7 925	+5.1	6 340	6 272	1.1
RENTER OCCUPIED, INCLUDING NO CASH RENT	14 556	15 868	+8.3	11 829	13 161	+10.1	6 145	6 332	+3.0	4 993	5 252	-4.9

¹PERSONS OF SPANISH ORIGIN MAY BE OF ANY RACE.

Table 4. Comparison of Poverty Status of Households Before and After Exclusion of Federal and State Income Taxes by Selected Characteristics: 1980

(Numbers in thousands. Households as of March 1981. Households are classified by the poverty status of the family or nonfamily householder)

Characteristic	Before taxes		After taxes		Percent increase in poverty
	Number	Poverty rate	Number	Poverty rate	
Total.....	10,968	13.3	11,091	13.5	1.1
RACE AND SPANISH ORIGIN OF HOUSEHOLDER					
White.....	7,828	10.9	7,927	11.0	1.3
Black.....	2,864	32.4	2,882	32.6	.6
Spanish origin ¹	956	24.5	970	24.8	1.5
TYPE OF HOUSEHOLD					
Family households.....	6,217	10.3	6,298	10.4	1.3
Married-couple families.....	3,032	6.2	3,091	6.3	1.9
Female householder, no husband present.....	2,972	32.7	2,989	32.9	.6
Nonfamily households.....	4,751	21.5	4,794	21.7	.9
WORK EXPERIENCE OF HOUSEHOLDER					
Worked.....	4,374	7.2	4,465	7.4	2.1
Worked at full-time job.....	2,972	5.4	3,049	5.6	2.6
40 weeks or more.....	1,488	3.1	1,543	3.2	3.7
Worked at part-time job.....	1,401	23.8	1,415	24.1	1.0
Did not work.....	6,535	31.0	6,561	31.1	.4
REGION					
Northeast.....	2,110	11.9	2,134	12.0	1.1
North Central.....	2,542	12.0	2,568	12.1	1.0
South.....	4,551	16.7	4,593	16.9	.9
West.....	1,764	10.9	1,796	11.1	1.8
TENURE					
Owner occupied.....	4,905	8.8	4,970	8.9	1.3
Renter occupied, including no cash rent.....	6,063	22.9	6,122	23.1	1.0

¹Persons of Spanish origin may be of any race.

Table 5. Composition of the Poverty Population Before and After Exclusion of Federal and State Income Taxes, by Selected Characteristics: 1980

(Numbers in thousands. Households as of March 1981. Households are classified by the poverty status of the family or nonfamily householder)

Characteristic	Before taxes		After taxes		Difference (after tax minus before tax)
	Households below the poverty level		Households below the poverty level		
	Number	Percent	Number	Percent	
Total.....	10,968	100.0	11,091	100.0	(K)
RACE AND SPANISH ORIGIN OF HOUSEHOLDER					
White.....	7,828	71.4	7,927	71.5	.1
Black.....	2,864	26.1	2,882	26.0	-.1
Spanish origin ¹	956	8.7	970	8.7	-
TYPE OF HOUSEHOLD					
Family households.....	6,217	56.7	6,298	56.8	.1
Married-couple families.....	3,032	27.6	3,091	27.9	.3
Female householder, no husband present.....	2,972	27.1	2,989	26.9	-.2
Nonfamily households.....	4,751	43.3	4,794	43.2	-.1
WORK EXPERIENCE OF HOUSEHOLDER					
Worked.....	4,374	39.9	4,465	40.3	.4
Worked at full-time job.....	2,972	27.1	3,049	27.5	.4
40 weeks or more.....	1,488	13.6	1,543	13.9	.3
Worked at part-time job.....	1,401	12.8	1,415	12.8	-
Did not work.....	6,535	59.6	6,561	59.2	-.4
REGION					
Northeast.....	2,110	19.2	2,134	19.2	-
North Central.....	2,542	23.2	2,568	23.2	-
South.....	4,551	41.5	4,593	41.4	-.1
West.....	1,764	16.1	1,796	16.2	.1
TENURE					
Owner occupied.....	4,905	44.7	4,970	44.8	.1
Renter occupied, including no cash rent.....	6,063	55.3	6,122	55.2	-.1

¹Persons of Spanish origin may be of any race.

Table 6. Number and Percent of Households Paying Taxes, by Before-Tax Money Income and Type of Tax: 1980

(Numbers in thousands)

Before-tax money income	All house- holds	Households paying											
		One or more taxes		Federal income taxes		State income taxes		FICA payroll taxes		Federal retire- ment taxes		Property taxes	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total.....	82,368	76,171	92.5	61,316	74.4	52,591	63.8	62,061	75.3	3,404	4.1	52,328	63.5
Under \$2,500 ¹	2,511	1,520	60.5	11	0.4	119	4.7	836	33.3	25	1.0	940	37.5
\$2,500 to \$4,999.....	7,172	4,063	56.6	329	4.6	603	8.4	1,802	25.1	51	0.7	2,744	38.3
\$5,000 to \$7,499.....	6,832	5,546	81.2	1,456	21.3	1,978	28.9	3,269	47.8	94	1.4	3,282	48.0
\$7,500 to \$9,999.....	6,176	5,739	92.9	3,015	48.8	2,929	47.4	3,960	64.1	97	1.6	3,140	50.8
\$10,000 to \$12,499.....	6,509	6,295	96.7	4,876	74.9	4,028	61.9	4,732	72.7	149	2.3	3,387	52.0
\$12,500 to \$14,999.....	5,734	5,636	98.3	4,819	84.0	3,967	69.2	4,502	78.5	136	2.4	3,218	56.1
\$15,000 to \$17,499.....	5,817	5,788	99.5	5,477	94.2	4,448	76.5	4,871	83.7	189	3.2	3,453	59.4
\$17,500 to \$19,999.....	5,167	5,137	99.8	5,021	97.5	4,138	80.4	4,467	86.8	208	4.1	3,321	64.5
\$20,000 to \$22,499.....	5,522	5,514	99.9	5,451	98.7	4,448	80.6	4,889	88.5	294	5.3	3,769	68.2
\$22,500 to \$24,999.....	4,495	4,493	100.0	4,461	99.2	3,651	81.2	4,038	89.8	250	5.6	3,240	72.1
\$25,000 to \$27,499.....	4,432	4,426	99.9	4,411	99.5	3,638	82.1	4,088	92.2	233	5.3	3,362	75.9
\$27,500 to \$29,999.....	3,330	3,330	100.0	3,324	99.8	2,731	82.0	3,077	92.4	217	6.5	2,589	77.7
\$30,000 to \$32,499.....	3,418	3,414	99.9	3,411	99.8	2,898	84.8	3,170	92.7	211	6.2	2,701	79.0
\$32,500 to \$34,999.....	2,408	2,407	99.9	2,406	99.9	2,072	86.1	2,265	94.1	175	7.3	2,011	83.5
\$35,000 to \$37,499.....	2,316	2,313	99.9	2,307	99.6	1,950	84.2	2,152	93.0	201	8.7	1,943	83.9
\$37,500 to \$39,999.....	1,624	1,624	100.0	1,624	100.0	1,362	83.9	1,530	94.3	134	8.2	1,367	84.2
\$40,000 to \$44,999.....	2,766	2,766	100.0	2,763	99.9	2,393	86.5	2,628	95.0	227	8.2	2,381	86.1
\$45,000 to \$49,999.....	1,759	1,759	100.0	1,758	99.9	1,492	84.8	1,638	93.1	190	10.8	1,543	87.7
\$50,000 to \$59,999.....	2,128	2,127	100.0	2,127	100.0	1,805	84.8	1,998	93.9	184	8.7	1,894	89.0
\$60,000 to \$74,999.....	1,222	1,222	100.0	1,222	100.0	1,048	85.7	1,150	94.1	102	8.3	1,090	89.2
\$75,000 and over.....	1,051	1,051	100.0	1,049	99.8	894	85.1	997	94.9	38	3.6	954	90.8

¹Includes households with losses.

Table 7. Mean Before-Tax Income, Mean Taxes Paid, and Ratio of Mean Taxes to Mean Before-Tax Income, by Type of Tax and Level of Before-Tax Money Income: 1980

Before-tax money income	Mean before-tax income	Mean taxes paid and ratio of mean taxes to mean before-tax money income											
		One or more taxes		Federal income taxes		State income taxes		FICA payroll taxes		Federal retirement taxes		Property taxes	
		Mean tax	Percent	Mean tax	Percent	Mean tax	Percent	Mean tax	Percent	Mean tax	Percent	Mean tax	Percent
Total.....	\$21,063	\$5,180	24.6	\$4,011	19.0	\$859	4.1	\$1,114	5.3	\$1,251	5.9	\$575	2.7
Under \$2,500 ¹	732	288	39.3	(B)	(B)	31	4.2	104	14.2	(B)	(B)	361	49.3
\$2,500 to \$4,999.....	3,777	303	8.0	128	3.4	44	1.2	166	4.4	(B)	(B)	312	8.3
\$5,000 to \$7,499.....	6,204	502	8.1	329	5.3	75	1.2	287	4.6	216	3.5	365	5.9
\$7,500 to \$9,999.....	8,734	835	9.6	519	5.9	121	1.4	422	4.8	355	4.1	372	4.3
\$10,000 to \$12,499.....	11,182	1,397	12.5	801	7.2	186	1.7	572	5.1	527	4.7	401	3.6
\$12,500 to \$14,999.....	13,682	1,898	13.9	1,085	7.9	244	1.8	692	5.1	584	4.3	405	3.0
\$15,000 to \$17,499.....	16,144	2,648	16.4	1,464	9.1	327	2.0	848	5.3	771	4.8	457	2.8
\$17,500 to \$19,999.....	18,694	3,405	18.2	1,903	10.2	427	2.3	989	5.3	925	4.9	468	2.5
\$20,000 to \$22,499.....	21,126	4,213	19.9	2,389	11.3	538	2.5	1,125	5.3	1,072	5.1	532	2.5
\$22,500 to \$24,999.....	23,690	4,906	20.7	2,847	12.0	652	2.8	1,232	5.2	1,151	4.9	524	2.2
\$25,000 to \$27,499.....	26,115	5,760	22.1	3,369	12.9	785	3.0	1,345	5.2	1,232	4.7	592	2.3
\$27,500 to \$29,999.....	28,679	6,418	22.4	3,830	13.4	884	3.1	1,424	5.0	1,334	4.7	601	2.1
\$30,000 to \$32,499.....	31,106	7,357	23.7	4,454	14.3	1,037	3.3	1,530	4.9	1,367	4.4	659	2.1
\$32,500 to \$34,999.....	33,667	8,230	24.4	5,048	15.0	1,166	3.5	1,591	4.7	1,473	4.4	690	2.0
\$35,000 to \$37,499.....	36,116	9,079	25.1	5,650	15.6	1,314	3.6	1,697	4.7	1,456	4.0	751	2.1
\$37,500 to \$39,999.....	38,643	9,934	25.7	6,294	16.3	1,450	3.8	1,764	4.6	1,626	4.2	748	1.9
\$40,000 to \$44,999.....	42,184	11,313	26.8	7,259	17.2	1,671	4.0	1,850	4.4	1,669	4.0	839	2.0
\$45,000 to \$49,999.....	47,227	13,302	28.2	8,829	18.7	1,930	4.1	1,962	4.2	2,044	4.3	904	1.9
\$50,000 to \$59,999.....	54,102	16,205	30.0	11,158	20.6	2,411	4.5	2,031	3.8	1,993	3.7	1,035	1.9
\$60,000 to \$74,999.....	65,840	21,610	32.8	15,767	23.9	3,210	4.9	2,086	3.2	2,427	3.7	1,038	1.6
\$75,000 and over.....	99,704	41,172	41.3	33,041	33.1	5,711	5.7	2,083	2.1	(B)	(B)	1,416	1.4

(B) Less than 75,000.

¹Includes households with losses.

Table 8. Total Taxes and Percent of Total Taxes, by Type of Tax and Level of Before-Tax Money Income: 1980

Before-tax money income	Total taxes paid (billions)	Percent of total taxes					
		Total	Federal income taxes	State income taxes	FICA payroll taxes	Federal retirement taxes	Property taxes
Total.....	\$394.6	100.0	62.3	11.4	17.5	1.1	7.6
Under \$2,500.....	.4	100.0	1.2	.8	19.8	.6	77.6
\$2,500 to \$4,999.....	1.2	100.0	3.4	2.2	24.3	.6	69.5
\$5,000 to \$7,499.....	2.8	100.0	17.2	5.3	33.7	.7	43.0
\$7,500 to \$9,999.....	4.8	100.0	32.7	7.4	34.8	.7	24.4
\$10,000 to \$12,499.....	8.8	100.0	44.4	8.5	30.8	.9	15.5
\$12,500 to \$14,999.....	10.7	100.0	48.9	9.1	29.1	.7	12.2
\$15,000 to \$17,499.....	15.3	100.0	52.3	9.5	26.9	1.0	10.3
\$17,500 to \$19,999.....	17.5	100.0	54.6	10.1	25.3	1.1	8.9
\$20,000 to \$22,499.....	23.2	100.0	56.1	10.3	23.7	1.4	8.6
\$22,500 to \$24,999.....	22.0	100.0	57.6	10.8	22.6	1.3	7.7
\$25,000 to \$27,499.....	25.5	100.0	58.3	11.2	21.6	1.1	7.8
\$27,500 to \$29,999.....	21.4	100.0	59.6	11.3	20.5	1.4	7.3
\$30,000 to \$32,499.....	25.1	100.0	60.5	12.0	19.3	1.1	7.1
\$32,500 to \$34,999.....	19.8	100.0	61.3	12.2	18.2	1.3	7.0
\$35,000 to \$37,499.....	21.0	100.0	62.1	12.2	17.4	1.4	7.0
\$37,500 to \$39,999.....	16.1	100.0	63.4	12.2	16.7	1.4	6.3
\$40,000 to \$44,999.....	31.3	100.0	64.1	12.8	15.5	1.2	6.4
\$45,000 to \$49,999.....	23.4	100.0	66.3	12.3	13.7	1.7	6.0
\$50,000 to \$59,999.....	34.5	100.0	68.9	12.6	11.8	1.1	5.7
\$60,000 to \$74,999.....	26.4	100.0	73.0	12.7	9.1	.9	4.3
\$75,000 and over.....	43.3	100.0	80.1	11.6	4.8	.2	3.1

Appendix A. Definitions and Explanations

Population coverage. This report includes the civilian noninstitutional population of the United States (the 50 States and the District of Columbia) and members of the Armed Forces living off post or with their families on post, but excludes all other members of the Armed Forces.

Money income before taxes. The before-tax money income distributions and income summary measures (such as medians and means) shown in this report are limited to money income before payment of Federal, State, local, or Social Security (FICA) taxes and before any other types of deductions, such as union dues and Medicare premiums. Total money income before taxes is the sum of the amounts received from wages and salaries, self-employment income (including losses), Social Security, Supplemental Security Income, public assistance, interest, dividends, rent, royalties, estates or trusts, veterans' payments, unemployment and workers' compensations, private and government retirement and disability pensions, alimony, child support, and any other source of money income which was regularly received. Capital gains (or losses) and lump sum or onetime payments such as life insurance settlements are excluded.

Money income after taxes. To compute the after-tax money income distributions and summary measures shown in this report, simulated Federal and State income taxes, Social Security (FICA) taxes, and property taxes were deducted from total money income before taxes as defined above. Total money income after taxes also includes capital gains, which were imputed to some households during the Federal income tax simulation.

Underreporting. As in most household surveys, the estimates of the number of money income recipients and the total amount of money income derived from the March CPS are somewhat less than comparable estimates derived from independent sources, such as the Bureau of Economic Analysis, Social Security Administration, and Veterans Administration. The difference between the survey estimate and the independent estimate is generally termed "underreporting." Underreporting tends to be more pronounced for income sources such as

public assistance and welfare, unemployment compensation, and property income (interest, dividends, and net rental income). Estimates of income from wages and salaries tend to have less underreporting than most income types. For 1979 (the latest year for which estimates of underreporting are available), underreporting of total money income was about 11 percent. For further details concerning the reporting of money income, see Current Population Reports, Series P-60, No. 137.

Poverty definition. Families and unrelated individuals are classified as being above or below the poverty level using the poverty index originated at the Social Security Administration in 1964 and revised by Federal Interagency Committees in 1969 and 1980. The poverty index is based solely on money income and does not reflect the fact that many low-income persons receive noncash benefits such as food stamps, Medicaid, and public housing. The index is based on the Department of Agriculture's 1961 Economy Food Plan and reflects the different consumption requirements of families based on their size and composition. It was determined from the Department of Agriculture's 1955 Survey of Food Consumption that families of three or more persons spend approximately one-third of their income on food; the poverty level for these families was, therefore, set at three times the cost of the Economy Food Plan. For smaller families and persons living alone, the cost of the economy food plan was multiplied by factors that were slightly higher in order to compensate for the relatively larger fixed expenses of these smaller households. The poverty thresholds are updated every year to reflect changes in the Consumer Price Index (CPI). The average poverty threshold for a family of four was \$8,385 in 1980, about 13.5 percent higher than the comparable 1979 cut-off of \$7,386. Weighted average poverty thresholds by size of family are shown in table A-1. For further details, see Current Population Reports, Series P-60, No. 138.

Household. A household consists of all the persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room is regarded as a housing unit

Table A-1. Weighted Average Poverty Thresholds in 1980

Size of family unit	Threshold
One person (unrelated individual)..	\$ 4,184
15 to 64 years.....	4,286
65 years and over.....	3,941
Two persons.....	5,338
Householder 15 to 64 years.....	5,518
Householder 65 years and over....	4,954
Three persons.....	6,539
Four persons.....	8,385
Five persons.....	9,923
Six persons.....	11,215
Seven persons or more.....	13,883

Table A-2. Annual Average Consumer Price Index (CPI): 1947 to 1980

(1977 = 100)

Year	CPI	Year	CPI
1947.	36.9	1964.	51.2
1948.	39.7	1965.	52.1
1949.	39.3	1966.	53.6
1950.	39.7	1967.	55.1
1951.	42.9	1968.	57.4
1952.	44.6	1969.	60.5
1953.	44.1	1970.	64.1
1954.	44.4	1971.	66.8
1955.	44.2	1972.	69.0
1956.	44.8	1973.	73.3
1957.	46.4	1974.	81.4
1958.	47.7	1975.	88.8
1959.	48.1	1976.	93.9
1960.	48.9	1977.	100.0
1961.	49.4	1978.	107.6
1962.	49.9	1979.	119.8
1963.	50.2	1980.	136.0

Source: Department of Labor, Bureau of Labor Statistics.

when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is either (1) direct access from the outside or through a common hall or (2) a kitchen of cooking equipment for the exclusive use of the occupants.

A household includes the related family members and all the unrelated persons, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit or a group of unrelated persons sharing a housing unit as partners is also counted as a household. The count of households excludes group quarters.

AHS-CPS statistical match. In order to simulate property taxes for owner-occupied housing units, the March 1980 CPS simulation file was statistically matched to a file from the 1980 Annual Housing Survey (AHS). Since the AHS file contained responses to questions on annual property tax expenses the statistical match allowed the transfer of property tax amounts to CPS records when a CPS and AHS household were found to have similar characteristics. The group of variables used to match the two files were: age of householder, tenure, public or subsidized housing status, SMSA and central-city status of the household, household income, household size, number of living quarters, and the race, sex, and educational attainment of the householder. Using a very detailed combination of recodes based on the above variables, the two files were matched. If there was no AHS household with the exact combination of characteristics as a particular CPS household, a match was then attempted at a new level that did not have quite as much detail. This was repeated until a match was found for every CPS household.

Households on the AHS file that did not answer the question dealing with property tax expenses were ineligible for the match. Since monthly mortgage expenses, which were used to simulate itemization status for Federal taxpayers, were also assigned to CPS households using this match, households that did not answer the AHS questions on that subject were similarly excluded from the match.

Index of income concentration. The index of income concentration (or Gini index) is a statistical measure of income equality ranging from 0 to 1. A measure of 1 indicates perfect inequality, i.e., one person having all the wealth and the rest having none. A measure of 0 indicates perfect equality, i.e., all persons having equal shares of the wealth. For a more detailed discussion see Current Population Reports, Series P-60, No. 123.

Appendix B. Source and Reliability of Estimates

SOURCE OF DATA

Most of the estimates in the text and tables of this report began with data obtained from the Current Population Survey. Data from the Annual Housing Survey, the Income Survey Development Program, and the Internal Revenue Service were combined with the CPS data to create simulations of taxes paid, number of tax filing units, adjusted gross income, and other tax characteristics for the March 1981 and March 1975 CPS. See the section of the report entitled "Methodology and Procedures" for more details. In addition, unpublished data from the Social Security Administration, administrative data from the Office of Personnel Management, data from the National Income Accounts prepared by the Bureau of Economic Analysis, and Bureau of the Census Publication "State Government Tax Collections in 1981" have all been referenced. Following is a description of the sources of data from which the tax simulations were made. Except for the CPS, these descriptions are brief. Additional information about these data sources can be found in the reports referenced in the brief descriptions given below.

Annual Housing Survey. Housing data are collected by the Bureau of the Census acting as collecting agent for the Department of Housing and Urban Development. The population covered by the sample for the AHS are all housing units in the United States. A structure must meet specific criteria developed by the Bureau of the Census before it is termed a "housing unit." For a more detailed description of the sample design see Current Housing Reports, Series H-150-80, Annual Housing Survey: 1980, Part C, Financial Characteristics of the Housing Inventory.

Income Survey Development Program. The Income Survey Development Program (ISDP) was the research and development phase for the planned Survey of Income and Program Participation (SIPP). The ISDP was intended to examine and resolve design, operational, and technical issues for SIPP. The household sample for the

1979 ISDP was a nationwide multiple-frame sample. The majority of sample households were drawn from addresses contacted in the 1976 Survey of Income and Education. The remainder of sample households were drawn from a reserve file of sample cases maintained by the Census Bureau. For a more detailed description of this sample design, see Current Population Reports, Series P-23, No. 118, Wage and Salary Data from the Income Survey Development Program: 1979 (Preliminary Data from Interview Period One).

Internal Revenue Service Data. Much of the Internal Revenue Service (IRS) data in this report comes from the Statistics of Income (SOI) series, in particular, SOI Bulletin: Winter 1981-82, Individual Income Tax Returns, Preliminary Data: 1980. This report, based on a sample drawn from all tax returns filed through September 1981, presents information on taxpayers' income, exemptions, deductions, credits, and tax. The statistics reflect the increase in the exemption amount and the decrease in tax rates, as well as other provisions effective for tax year 1979 under the Revenue Act of 1978. Unpublished statistical summaries and data from the 1974 SOI series were also used. For further information on the SOI series, see Internal Revenue Series Statistics of Income: 1980, Individual Income Tax Returns, Washington, D.C., 1983.

Current Population Survey. The CPS estimates in this report are based on data obtained in March 1975 and March 1981 from the Current Population Survey (CPS) of the Bureau of the Census and from supplementary questions to the CPS. The monthly CPS deals mainly with labor force data for the civilian noninstitutional population. Questions relating to labor force participation are asked about each member 14 years old and over in every sample household. In addition, supplementary questions are asked every March about money income and work experience for the previous year. In order to obtain more reliable data for the Spanish-origin population, the March

CPS sample was enlarged to include all households from the previous November sample which contained at least one sample person of Spanish origin. For this report, persons in the Armed Forces living off post or with their families on post are included.

The present CPS sample was initially selected from the 1970 census files with coverage in all 50 States and the District of Columbia. The sample is continually updated to reflect new construction. The March 1981 CPS sample was located in 629 areas comprising 1,133 counties, independent cities, and minor civil divisions in the Nation. In this sample, approximately 68,500 occupied households were eligible for interview. Of this number, about 3,000 occupied units were visited but interviews were not obtained because the occupants were not found at home after repeated calls or were unavailable for some other reason. Analogous data for the March 1975 CPS are found in the table below.

**Description of the March 1975 and 1981
Current Population Survey**

Time period	Number of sample areas	Housing units eligible	
		Interviewed	Not interviewed
1981...	629	65,500	3,000
1975...	461	46,500	2,500

The estimation procedure used in the CPS involved the inflation of the weighted sample results to independent estimates of the total civilian noninstitutional population of the United States by age, race, and sex. These independent estimates were based on statistics from decennial censuses of population; statistics on births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces. The independent population estimates used in this report to obtain data for 1980 are based on the 1980 decennial census. The data for 1974 were obtained using independent population estimates based on the 1970 decennial census.

For more details on this change, see the section in the text, "Introduction of 1980 Census Population Controls" in an earlier report (Series P-60, No. 132). The estimation procedure for the data in the report also involved a further adjustment so that husband and wife of a household received the same

weight. Simulation techniques were also used to obtain estimates of after-tax income based on CPS data. For more details on this procedure see the section of this report entitled "Methodology and Procedures."

RELIABILITY OF ESTIMATES

Estimates based on a sample may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same questionnaire, instructions, and enumerators. There are two types of errors possible in an estimate based on a sample survey: sampling and nonsampling. The standard errors provided for this report primarily indicate the magnitude of the sampling error. They also partially measure the effect of some nonsampling errors in response and enumeration, but do not measure any systematic biases in the data. The full extent of nonsampling error is unknown. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates.

In addition, these standard errors are not entirely applicable to estimates from the CPS simulation. These standard errors were computed from CPS data alone and do not reflect any sampling or nonsampling errors present in data from other sources or any other errors due to the simulation process. There is no data available on the size of these additional error sources. However, the effect is not believed to be large. Still, care must be used in interpreting estimates from the CPS simulation.

Nonsampling variability. Nonsampling error is present in both the CPS and other surveys mentioned in this report. The interaction of nonsampling errors when combining data from many surveys may result in an additional component of error. The extent of this error is unknown.

Nonsampling errors can be attributed to many sources, e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness on the part of the respondents to provide correct information, errors made in collection such as in recording or coding the data, errors made in processing the data, errors made in estimating values for missing data, and failure to represent all units with the sample (undercoverage).

Undercoverage in the CPS results from missed housing units and missed persons within sample households. Overall undercoverage, as compared with the level of the 1980 decennial census, is about 7 percent. It is known that CPS undercoverage varies with age, sex, and race. Generally, undercoverage is larger

for males than for females and larger for Blacks and other races combined than for Whites. Ratio estimation to independent age-sex-race population controls partially corrects for the bias resulting from survey undercoverage. However, biases exist in the estimates to the extent that missed persons in missed households or missed persons in interviewed households have different characteristics than interviewed persons in the same age-sex-race group. Further, the independent population controls used have not been adjusted for undercoverage in the decennial census.

A coverage improvement sample was included in computing the estimates beginning in 1978 in order to provide coverage of mobile homes and new construction housing units which had no chance for selection under the 461 area CPS design. This sample comprises approximately 450 sample household units which represent 237,000 occupied mobile homes and 600,000 new construction housing units. These new construction units constitute those units where building permits were issued prior to January 1970 and construction was not completed by the time of the 1970 census (i.e., April 1970). The extent of other sources of housing undercoverage is unknown but believed to be small. The inclusion of this coverage improvement sample in the CPS does not have a significant effect on the estimates.

In most cases, the questionnaire entries for income are based on the memory or knowledge of one person, usually the wife. The memory factor in data derived from field surveys of income probably produces underestimates because the tendency is to forget minor or irregular sources of income. Other errors of reporting are due to misrepresentation or to misunderstanding as to the scope of the income concept. See also the section entitled "Underreporting of Income."

Comparability with other data. A number of changes were made in data collection and estimation procedures beginning with the March 1980 CPS. The major changes were the use of a more detailed income questionnaire, the use of the "householder" concept instead of the traditional "head" concept, and the use of more detailed income intervals in the upper range of the income distribution. Because of these and other changes, caution should be used in comparing estimates for 1980 with estimates for 1974. A description of these changes and the effect they had on the data is given in the section "Modifications to the March 1980 CPS" of an earlier report (Series P-60, No. 129).

Caution should also be used when comparing estimates for 1980, which reflect 1980 census-based population controls, to those for 1974 which reflect 1970 census-based population controls. This change in population

controls had relatively little impact on summary measures, such as means, medians, and percent distributions, but did have a significant impact on levels. For example, use of 1980-based population controls resulted in about a 2-percent increase in the civilian noninstitutional population and in the number of families and households. Thus, estimates of levels for 1980 or later will differ from those for 1974 more than what could be attributed to actual changes in the population and these differences could be disproportionately greater for certain subpopulation groups than for the total population.

Data obtained from the CPS and other governmental sources are not entirely comparable. This is in large part due to differences in interviewer training and experience and in differing survey procedures. This is an additional component of error not reflected in the standard error tables. Also, because data from CPS simulations used in this report were derived using statistics from other governmental agencies, the standard error tables are analogously not entirely applicable to data from the CPS simulations. Therefore, caution should be used when using the standard error tables to compare data from the CPS or CPS simulation with data from other governmental agencies.

Estimation of median incomes. The methodology for computing median income has been changed over the past few years. The computations have been done using either Pareto interpolation or linear interpolation. Pareto interpolation assumes a decreasing density of population within an income interval as income increases, whereas linear interpolation assumes a constant density of population within an income interval. Estimates of median income for 1980 and associated standard errors have been calculated using Pareto interpolation if the estimate is larger than \$20,000 for persons or \$40,000 for families and households. (That is where the width of the income interval containing the estimate is greater than \$2,500.) All other estimates of median income and associated standard errors for 1980 and almost all of the estimates of median income and associated standard errors for 1974 were calculated using linear interpolation. Thus, caution must be exercised when comparing median incomes above \$20,000 for persons or \$40,000 for families and households for different years. Median incomes below those levels are more comparable for 1974 and 1980 since they have been calculated using linear interpolation. For an indication of the comparability of medians calculated using Pareto interpolation with medians calculated using linear interpolation, see Series P-60, No. 114, Money Income in 1976 of Families and Persons in the United States.

Sampling variability. The standard errors given in tables B-1 through B-4 are primarily measures of sampling variability, that is, of the variation that occurred by chance because a sample rather than the entire population was surveyed. The sample estimate and its standard error enable one to construct confidence intervals, ranges that would include the average result of all possible samples with a known probability. For example, if all possible samples were selected, each of these being surveyed under essentially the same general conditions and using the same sample design, and if an estimate and its standard error were calculated from each sample, then:

1. Approximately 68 percent of the intervals from one standard error below the estimate to one standard error above the estimate would include the average result of all possible samples.
2. Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples.
3. Approximately 95 percent of the intervals from two standard errors below the estimate to two standard errors above the estimate would include the average result of all possible samples.

The average estimate derived from all possible samples is or is not contained in any particular computed interval. However, for a particular sample, one can say with a specified confidence that the average estimate derived from all possible samples is included in the confidence interval.

Standard errors may also be used to perform hypothesis testing, a procedure for distinguishing between population parameters using sample estimates. The most common types of hypotheses are 1) the population parameters are identical, or 2) they are different. An example of this would be comparing the mean annual income of men versus the mean annual income of women. Tests may be performed at various levels of significance, where a level of significance is the probability of concluding that the parameters are different when, in fact, they are identical. All statements of comparison in the text have passed a hypothesis test at the 0.10 level of significance or better, and most have passed a hypothesis test at the 0.05 level of significance or better. This means that, for most differences cited in the text, the estimated difference between parameters is greater than twice the standard error of the difference. For the other differences mentioned, the estimated difference between parameters is between 1.6 and 2.0 times the standard error of the

difference. When this is the case, the statement of comparison will be qualified in some way; e.g., by use of the phrase "some evidence."

Note when using small estimates. Summary measures, such as means, medians, and percent distributions, are shown when the base is 75,000 or greater. Because of the large standard errors involved, there is little chance that summary measures would reveal useful information when computed on a smaller base. Estimated numbers are shown, however, even though the relative standard errors of these numbers are larger than those for the corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

Standard errors for data based on surveys other than CPS. To compute standard errors of data obtained from the 1980 SOI reports, see the report Internal Revenue Service Statistics of Income: 1980, Individual Income Tax Returns, Washington, D.C., 1983. To compute standard errors of data obtained from the 1980 Annual Housing Survey, see appendix B of the report, Series H-150-80, Annual Housing Survey: 1980, Part C, Financial Characteristics of the Housing Inventory.

CPS standard error tables and their use. In order to derive standard errors that would be applicable to a large number of estimates and could be prepared at a moderate cost, a number of approximations were required. Therefore, instead of providing an individual standard error for each estimate, generalized sets of standard errors are provided for various types of characteristics. As a result the sets of standard errors provided give an indication of the order of magnitude of the standard error of an estimate rather than the precise standard error.

The figures presented in tables B-1 through B-4 are approximations to standard errors of various estimates for households, families, unrelated individuals, and persons in the United States. Estimated standard errors for specific characteristics cannot be obtained from tables B-1 through B-4 without the use of the factors in table B-5. The factors in table B-5 must be applied to the generalized standard errors in order to adjust for the combined effect of sample design and estimating procedure on the value of the characteristic. Standard errors for intermediate values not shown in the generalized tables of standard errors may be approximated by linear interpolation. Standard errors of estimated means and medians are provided in the detailed tables.

Two parameters (denoted "a" and "b") are used to calculate standard errors for each

type of characteristic; they are also presented in table B-5. These parameters were used to calculate the standard errors in tables B-1 through B-4 and to calculate the factors in table B-5. They also may be used to directly calculate the standard errors for estimated numbers and percentages. Methods for direct computation are given in the following sections.

Standard errors of estimated numbers. The approximate standard error σ_x of an estimated number can be obtained in two ways. It may be obtained by use of the formula

$$\sigma_x = f\sigma \quad (1)$$

where f is the appropriate factor from table B-5, and σ is the standard error on the estimate obtained by interpolation from tables B-1 or B-3. Alternatively, standard errors may be approximated by using formula (2), from which the standard errors were calculated in tables B-1 and B-3. Use of this formula will provide more accurate results than the use of formula (1).

$$\sigma_x = \sqrt{ax^2 + bx} \quad (2)$$

Here x is the size of the estimate and a and b are the parameters in table B-5 associated with the particular type of characteristic.

Standard errors of estimated percentages. The reliability of an estimated percentage, computed using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which this percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. When the numerator and denominator of the percentage are in different categories, use the factor or parameters from table B-5 indicated by the numerator. The approximate standard error, $\sigma_{(x,p)}$, of an estimated percentage can be obtained by use of the formula

$$\sigma_{(x,p)} = f\sigma \quad (3)$$

In this formula, f is the appropriate factor from table B-5 and σ is the standard error on the estimate from table B-2 or B-4. Alternatively, standard errors may be approximated by using formula (4), from which the standard errors in tables B-2 and B-4 were calculated. Use of this formula will provide more accurate results than use of formula (3).

$$\sigma_{(x,p)} = \sqrt{\frac{b}{x} \cdot p(100-p)} \quad (4)$$

Here x is the size of the subclass of persons or families and unrelated individuals which is the base of the percentage, p is the percentage ($0 < p < 100$), and b is the parameter in table B-5 associated with the particular type of characteristic in the numerator of the percentage.

Illustrations of the use of standard error tables. Table G of this report shows that there were 7,172,000 households in the United States with a before-tax income in the range of \$2,500 to \$4,999 in 1980. Table B-5 indicates that the appropriate "a" and "b" parameters to use in calculating a standard error for this estimate are $a = -0.000010$ and $b = 1,721$. Using formula (2), the approximate standard error is

$$\sqrt{(-0.000010)(7,172,000)^2 + 1,721(7,172,000)} = 108,000.^1$$

The 68-percent confidence interval as shown by the data is from 7,063,000 to 7,281,000. The 95-percent confidence interval is from 6,954,000 to 7,390,000 (using twice the standard error). Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 95 percent of all possible samples.

Table G also shows that 4.0 percent of the 82,368,000 households in the United States had before-tax incomes less than \$30,000 but greater than \$27,500 in 1980. Using formula (4) and the appropriate "b" parameter of 1,721 from table B-5, the standard error of 4 percent is given by

$$\sqrt{\frac{1,721}{82,368,000} \cdot 4.0(100.0-4.0)} = 0.09^2$$

Thus, the 68-percent confidence interval on the estimated percentage is from 3.9 to 4.1, and the 95-percent confidence interval is from 3.8 to 4.2.

¹Using formula (1) with appropriate $f = 1.0$ and $\sigma = 108,000$ (from table B-1), the standard error of 7,172,000 is $(1.0)(108,000) = 108,000$.

²Using formula (3) with appropriate $f = 1.0$ and $\sigma = .09$ (from table B-2), the standard error of 4 percent is $(1.0)(0.09) = 0.09$.

Standard error of a difference. For a difference between two sample estimates, the standard error is approximately equal to

$$\sigma_{(x-y)} = \sqrt{\sigma_x^2 + \sigma_y^2 - 2\rho\sigma_x\sigma_y} \quad (5)$$

where σ_x and σ_y are the standard errors of the estimates x and y and ρ represents the correlation between the two estimates. The estimates can be of numbers, percents, ratios, etc. For differences between before- and after-tax poverty estimates assume a value of .9 for ρ . For differences between before- and after-tax income estimates, assume a value of .7 for ρ . For all other differences, ρ should be assumed zero.

Illustration of the computation of the standard error of a difference. Table 1 of this report shows that the median before-tax 1980 income of owner-occupied households was \$21,198 and the median before-tax 1980 income of renter-occupied households was \$12,043. The published estimates of the standard errors of these medians are \$98 and \$94, respectively. Therefore, the standard error of the estimated difference of \$9,155 is

$$\sqrt{(98)^2 + (94)^2} = 136$$

This means that the 68-percent confidence interval on the difference of \$9,155 as shown by these data is from \$9,019 to \$9,291. The 95-percent confidence interval on the difference of \$9,155 is from \$8,883 to \$9,427. Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 95 percent of all possible samples. Since this interval does not contain zero, we can conclude with 95-percent confidence that the 1980 median before-tax income for owner-occupied households was higher than the 1980 median before-tax income for renter-occupied households.

Standard error of a ratio. Certain mean values for persons in families or households shown in the tables were calculated as the ratio of two numbers. For example, the mean number of persons per family or household is calculated as

$$\frac{x}{y} = \frac{\text{total number of persons in families or households}}{\text{total number of families or households}}$$

Ratios of before- to after-tax estimates are also discussed in this report. For exam-

ple, the ratio of mean household income before and after taxes is calculated as

$$\frac{x}{y} = \frac{\text{mean household income before taxes}}{\text{mean household income after taxes}}$$

Standard errors for these ratios may be approximated as shown below. There are three cases to consider. In the first two cases, the denominator y represents a count of families or households of a certain class, and the numerator x represents a count of persons with the characteristic under consideration who are members of these families or households. In the third case, the numerator x and denominator y represent before- and after-tax estimates.

Case 1: There is at least one person having the characteristic in every family or household of the class: for example, the mean number of persons per family or the mean number of persons per family with a male householder. For ratios of this kind, the standard errors are approximated by the following formula:

$$\sigma_{\frac{x}{y}} = \sqrt{\left(\frac{x}{y}\right)^2 \left[\left(\frac{\sigma_y}{y}\right)^2 + \left(\frac{\sigma_x}{x}\right)^2 - 2\rho \left(\frac{\sigma_x}{x}\right) \left(\frac{\sigma_y}{y}\right) \right]} \quad (6)$$

The standard error of the estimated number of families or households, σ_y , and the standard error of the estimated number of persons with the characteristics in those families or households, σ_x , may be calculated by the methods described above. In formula (6), ρ represents the correlation coefficient between the numerator and the denominator of the estimate. In the above examples, and for other ratios of this kind use 0.7 as an estimate of ρ .

Case 2: The number of persons having the characteristic in a given family or household may be 0, 1, 2, 3, or more: for example, the mean number of persons under 18 years of age per household. For ratios of this kind the standard error is approximated by formula (6), but ρ is assumed to be zero. If ρ is actually positive (negative), then this procedure will provide an overestimate (underestimate) of the standard error of the ratio.

Case 3: The numerator and denominator represent before- and after-tax estimates. For example, the numerator may represent the number of families or households in a certain income category before taxes, and the denominator may represent the number of families or households in the same category after taxes. For ratios of this kind σ_x and σ_y represent the standard errors of before- and after-tax estimates, respectively. For ratios of this type, ρ is assumed to be 0.9 for before- and after-tax poverty estimates, and .7 for before- and after-tax income estimates.

STANDARD ERRORS OF ESTIMATED MEANS AND MEDIANS

Estimated standard errors are provided for the means and medians of the published income distributions, and do not need to be calculated by the user. However, because of the approximations used in developing the formula used to estimate the standard error of the mean, the standard error reported for this statistic will generally be an underestimate. Since some users may wish to combine two or more income distributions and compute means and medians for the combined distribution, the following sections are provided to enable the user to calculate standard errors for these statistics.

Estimating the standard error of the mean.

The standard error of a mean can be approximated by formula (7). Because of the approximations used in developing formula (7), an estimate of the standard error of the mean obtained from that formula will generally underestimate the true standard error. The formula used to estimate the standard error of a mean is

$$s \frac{\sigma}{x} = \sqrt{\frac{b}{y} s^2} \quad (7)$$

where y is the size of the base and b is a parameter which depends on the sample size, the sample design, the estimation procedure, and the type of characteristic. The b values are given in table B-5. The variance s^2 , is given by formula (8):

$$s^2 = \sum_{i=1}^c p_i \left(\frac{x_i^2}{i} - \bar{x}^2 \right) \quad (8)$$

where \bar{x} is the mean of the distribution, defined by

$$\bar{x} = \sum_{i=1}^c p_i \bar{x}_i$$

c is the number of groups; i indicates a specific group, taking on values 1 through c .

p_i is the estimated proportion of households, families, or persons whose values, for the characteristic (x -values) being considered, fall in group i .

$\bar{x}_i = (Z_{i-1} + Z_i)/2$ where Z_{i-1} and Z_i are the lower and upper interval boundaries, respectively, for group i .

\bar{x}_i is assumed to be the most representative value for the characteristic for households, families, or persons in group i . Group c is open-ended, i.e., no upper interval boundary exists. For this group an approximate average value is $\bar{x}_c = \frac{3}{2} Z_{c-1}$.

When two or more distributions are combined, the mean of the combined distribution is

$$\bar{x} = \frac{1}{y} \sum_j \bar{x}_j y_j$$

where \bar{x}_j is the mean of the j th distribution, y_j is the base of the j th distribution, and $y = \sum_j y_j$. This mean must be computed by the user.

Confidence interval and standard error of a median. The sampling variability of an estimated median depends upon the form of the distribution as well as the size of its base. An approximate method for measuring the reliability of an estimated median is to determine a confidence interval about it. (See the section on sampling variability for a general discussion of confidence intervals.) The following procedure may be used to estimate the 68-percent confidence limits and hence the standard error of a median based on sample data.

1. Determine, using the standard error tables and factors or formula (4), the standard error of the estimate of 50 percent from the distribution;
2. Add to and subtract from 50 percent the standard error determined in step (1);

3. Using the distribution of the characteristic, calculate the values from the distribution corresponding to the two points established in step (2). These values will be the limits for the 68-percent confidence interval;
4. Divide the difference between the two points determined in step (3) by two to obtain the standard error of the median.

For calculation of the confidence interval in step (3) use Pareto interpolation for any point in an income interval greater than \$2,500 in width, and linear interpolation otherwise. A 95-percent confidence interval may be determined by finding the values corresponding to 50 percent plus and minus twice the standard error determined in step (1).

The formulae used to implement step (3) for Pareto or linear interpolation are:

$$\text{Pareto: } x_{pN} = A_1 \exp \left[\frac{\ln \left(\frac{pN}{N_1} \right) \ln \left(\frac{A_2}{A_1} \right)}{\ln \left(\frac{N_2}{N_1} \right)} \right] \quad (9)$$

$$\text{Linear: } x_{pn} = \frac{N_1 - pN}{N_1 - N_2} (A_2 - A_1) + A_1 \quad (10)$$

where N = total number of households, families, or persons in the distribution.

x_{pN} = estimated income for which the number pN ($0 < p < 1$) of households, families, or persons in the distribution have larger incomes. For the purposes of calculating the confidence interval, p takes on the two values in step (2). Note that the median can be approximated by using $p = .50$ in the formulae.

A_1 and A_2 = the estimated incomes which are the lower and upper bounds, respectively, on the interval in which x_{pN} falls.

N_1 and N_2 = the estimated number of households, families, or persons with incomes greater than A_1 and A_2 , respectively.

exp = refers to the exponential function.

ln = refers to the natural logarithm function.

It should be noted that a mathematically equivalent result is obtained by using common logarithms (base 10) and antilogarithms.

Since the new, more detailed income intervals used in this report have \$2,500 increments up to \$40,000 for households and families and up to \$20,000 for persons, and since Pareto interpolation will only be used when a median income falls in an interval of width larger than \$2,500, this type of interpolation is needed very infrequently (i.e., only in cases where the estimated median income exceeds \$40,000 for households and families and \$20,000 for persons). For this reason an illustration of the use of Pareto interpolation in computing a confidence interval for a median is not given here. Illustrations of this procedure can be found, however, in the Source and Reliability section of Current Population Reports, Series P-60, No. 123.

Illustration of the computation of a confidence interval and the standard error for a median computed using linear interpolation. Table 1 of this report shows that the median before-tax income in 1980 for owner-occupied households in the United States is estimated to be \$21,198. Table 1 also shows that the base of the distribution from which this median was determined is 55,881,000.

1. Using formula (4), the standard error of 50 percent on a base of 55,881,000 is about 0.3 percentage points.
2. To obtain a 68-percent confidence interval on the estimated median, add to and subtract from 50 percent the standard error found in step 1. This yields percent limits of 49.7 and 50.3.
3. From table 1, the 1980 before-tax income of 29,836,000 (53.4 percent) of all owner-occupied households was at least \$20,000, and the 1980 before-tax income of 25,879,000 (46.3 percent) of all owner-occupied households was at least \$22,500.

Thus, the entire 68-percent confidence interval falls in the income interval \$20,000 to \$22,499. Therefore, the median before-tax income and the upper and lower limits on the confidence interval are to be calculated using linear interpolation. Using formula (10), the lower limit on the estimate is found to be about

$$\frac{29,836,000 - (.503)(55,881,000)}{29,836,000 - 25,879,000} (\$22,500 - \$20,000)$$

$$+ \$20,000 = \$21,082$$

Similarly, the upper limit is found by linear interpolation to be about

$$\frac{29,836,000 - (.497)(55,881,000)}{29,836,000 - 28,879,000} (\$22,500 - \$20,000) + \$20,000 = \$21,303$$

Thus, the 68-percent confidence interval on the estimated median is from \$21,092 to \$21,303.

4. The standard error of the median is, therefore, $(\$21,303 - \$21,092)/2$, i.e., \$106. (NOTE: Published standard errors are calculated by the same method as above. However, a different standard error may be obtained because of rounding-off errors; e.g., for the above illustration, table 1 gives a standard error of \$98.)

STANDARD ERROR OF PER CAPITA INCOME

Certain mean values in this report represent the per capita income for households of a certain class. The mean per capita income is approximately equal to:

$$x_c = \frac{h_c m_c}{p_c}$$

- where h_c = number of households in class c.
 m_c = mean income for households in class c.
 p_c = number of persons in households in class c.

x_c = mean per capita income of persons in households in class c.

Standard errors for these means may be approximated using the following formula:

$$\sigma_{(x_c)} = \sqrt{\left(\frac{h_c m_c}{p_c}\right)^2 \left[\left(\frac{\sigma m_c}{m_c}\right)^2 + \left(\frac{\sigma p_c}{p_c}\right)^2 + \left(\frac{\sigma h_c}{h_c}\right)^2 - 2\rho \left(\frac{\sigma p_c}{p_c}\right)\left(\frac{\sigma h_c}{h_c}\right) \right]}$$

In this formula, ρ represents the correlation between p_c and h_c . There are two cases to consider, depending on the nature of class c.

Case 1: Class c represents households containing a fixed number of persons. For example, h_c could be the number of 3 person households. In this case, there is an exact correlation between the number of persons in household and the number of households. Therefore, $\rho=1$ for households of this type.

Case 2: Class c represents households of other demographic types, for example, households in distinct regions, households in which the householder is of a certain age group, and owner-occupied and renter-occupied households. In these examples and other classes in which there is not a perfect correlation between the number of persons in the household and the number of households, use 0.7 as an estimate of ρ .

Table B-1. Standard Errors of Estimated Numbers of Households, Families, Unrelated Individuals, and Persons for 1974 and 1980 CPS and CPS Simulations

(Total, White, or Spanish Origin)

(Numbers in thousands)

Size of estimate	Standard error ¹	Size of estimate	Standard error ¹
75.....	11	7,500.....	111
100.....	13	10,000.....	127
250.....	21	15,000.....	154
500.....	29	25,000.....	192
1,000.....	41	50,000.....	247
2,000.....	58	100,000.....	269
3,000.....	71	125,000.....	243
5,000.....	91	160,000.....	139

¹These values must be multiplied by the appropriate factor in table B-5 to obtain the correct standard error.

Table B-2. Standard Errors of Estimated Percentages of Households, Families, Unrelated Individuals, and Persons for 1974 and 1980 CPS and CPS Simulations

(Total, White, or Spanish Origin)

Base of estimated percentage (thousands)	Estimated percentage ¹				
	2 or 98	5 or 95	10 or 90	25 or 75	50
75.....	2.1	3.3	4.5	6.6	7.6
100.....	1.8	2.9	3.9	5.7	6.6
250.....	1.2	1.8	2.5	3.6	4.1
500.....	0.8	1.3	1.8	2.5	2.9
1,000.....	0.6	0.9	1.2	1.8	2.1
2,000.....	0.4	0.6	0.9	1.3	1.5
3,000.....	0.3	0.5	0.7	1.0	1.2
5,000.....	0.3	0.4	0.6	0.8	0.9
7,500.....	0.2	0.3	0.5	0.7	0.8
10,000.....	0.2	0.3	0.4	0.6	0.7
15,000.....	0.15	0.2	0.3	0.5	0.5
25,000.....	0.12	0.2	0.2	0.4	0.4
50,000.....	0.08	0.13	0.2	0.3	0.3
100,000.....	0.06	0.09	0.12	0.2	0.2
125,000.....	0.05	0.08	0.11	0.2	0.2
160,000.....	0.05	0.07	0.10	0.14	0.2

¹These values must be multiplied by the appropriate factor in table B-5 to obtain the correct standard error.

Table B-3. Standard Errors of Estimated Numbers of Households, Families, Unrelated Individuals, and Persons for 1974 and 1980 CPS and CPS Simulations

(Black and/or Other Races)

(Numbers in thousands)

Size of estimate	Standard error ¹	Size of estimate	Standard error ¹
75.....	12	3,000.....	69
100.....	14	5,000.....	85
250.....	22	7,500.....	95
500.....	30	10,000.....	99
1,000.....	42	15,000.....	90
2,000.....	58	20,000.....	44

¹These values must be multiplied by the appropriate factor in table B-5 to obtain the correct standard error.

Table B-4. Standard Errors of Estimated Percentages of Households, Families, Unrelated Individuals, and Persons for 1974 and 1980 CPS and CPS Simulations

(Black and/or Other Races)

Base of estimated percentage (thousands)	Estimated percentage ¹				
	2 or 98	5 or 95	10 or 90	25 or 75	50
75.....	2.2	3.4	4.7	6.8	7.9
100.....	1.9	3.0	4.1	5.9	6.8
250.....	1.2	1.9	2.6	3.8	4.3
500.....	0.9	1.3	1.8	2.7	3.1
1,000.....	0.6	0.9	1.3	1.9	2.2
2,000.....	0.4	0.7	0.9	1.3	1.5
3,000.....	0.4	0.5	0.8	1.1	1.3
5,000.....	0.3	0.4	0.6	0.8	1.0
10,000.....	0.2	0.3	0.4	0.6	0.7
15,000.....	0.2	0.2	0.3	0.5	0.6
20,000.....	0.14	0.2	0.3	0.4	0.5

¹These values must be multiplied by the appropriate factor in table B-5 to obtain the correct standard error.

Table B-5. "a" and "b" Parameters and "f" Factors for Calculating Approximate Standard Errors of Estimated Numbers and Percentages of Households, Families, Unrelated Individuals, and Persons for 1974 and 1980 CPS and CPS Simulations

Type of characteristic ¹	Parameter		f factor
	a	b	
INCOME			
Number of households, families, or unrelated individuals:			
Total or White.....	-0.000010	1,721	1.00
Black and/or other races.....	-0.000089	1,876	1.00
Spanish origin.....	-0.000014	2,420	1.19
Number of persons:			
Total or White.....	-0.000009	1,885	1.05
Black and/or other races.....	-0.000077	2,155	1.07
Spanish origin.....	-0.000020	3,000	1.32
POVERTY			
Number of households, families, or unrelated individuals:			
Total or White.....	0.000076	1,876	1.04 ²
Black and/or other races.....	0.000076	1,876	1.00 ²
Spanish origin.....	-0.000014	2,420	1.19
Number of persons:			
Total.....	-0.000031	7,946	2.15
NONINCOME			
Number of households, families, or unrelated individuals:			
Total or White.....	-0.000010	1,389	0.90
Black and/or other races.....	-0.000087	1,255	0.82 ²
Spanish origin.....	-0.000020	1,422	0.91
Number of persons:			
Total or White.....	-0.000017	3,500	1.43
Black and/or other races.....	-0.000210	5,020	1.64
Spanish origin.....	-0.000026	4,432	1.60
Number of persons in households or families:			
All households or family members:			
Total or White.....	-0.000020	4,253	1.57
Black and/or other races.....	-0.000308	7,402	1.99
Spanish origin.....	-0.000441	8,917	2.28

¹For nonmetropolitan areas, multiply the "a" and "b" parameters by 1.5.

²The "f" factor for Black households, families, or unrelated individuals for these characteristics is to be used for calculating standard errors of percentages only. For standard errors of estimated numbers, the appropriate "a" and "b" parameters and formula (2) must be used.

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