March 2000
No. 96

SPECIAL REPORT

The Tax Burden of the Median American Family

Two-Earner Family's Total Tax Burden Slips Under 40 Percent

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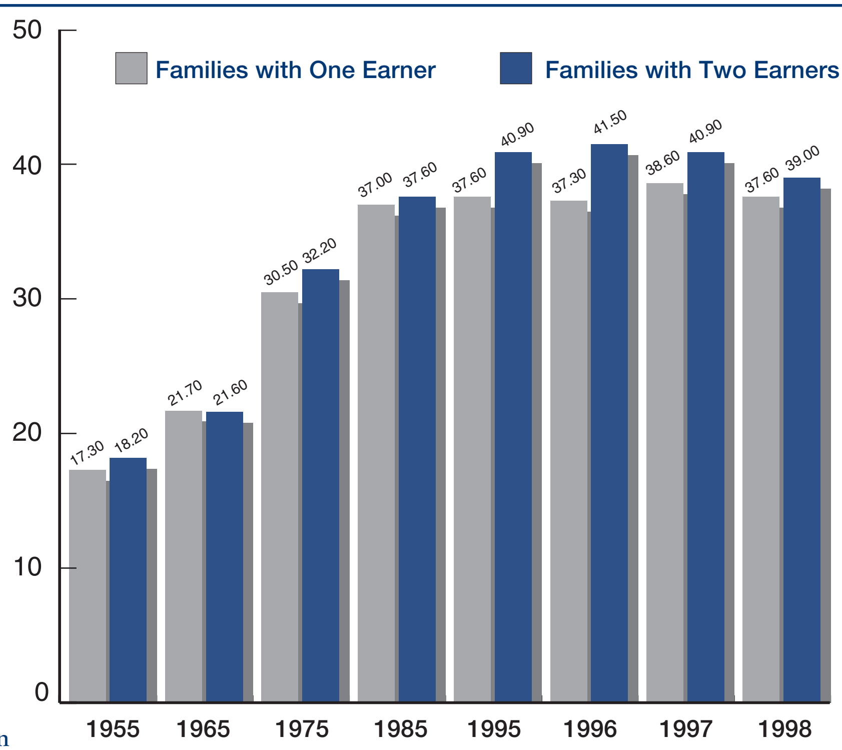
Of the many questions surrounding tax policy, few can match the substantive and political importance of the total tax burden on the median family. Taxes are the most fundamental means of pricing out government, and yet few taxpayers have a clear notion as to the price they pay.

Assessing the Total Tax Burden

Taxpayers pay such a wide variety of taxes at the federal, state, and local levels. Some taxes are easy to detect, like a personal income tax or a sales tax, but many taxes go unseen. That happens when third parties—people who do business with taxpayers—have to pay taxes that end up being passed on to taxpayers in the form of higher prices or lower income. For example, employers pay half of all payroll taxes, and these taxes diminish salaries. Also, when corporations pay their own taxes, they pass that cost on. Unfortunately, taxpayers are mostly unaware of these hidden taxes even though they make up a significant fraction of the family's real tax burden.

This lack of transparency in the national tax system is a great flaw that this study helps to remedy. For historical comparison, this study presents a fifty-year series of the aggre-

Figure 1
Taxes as a Percentage of Median Family Income
Selected Years, 1955–1998



Source: Tax Foundation

gate tax burden on one- and two-earner families.

The Relevance of Measuring the Median Family's Tax Burden

The family unit has grown in political stature greatly in recent years. Advocates of lower taxes often cite the tax pressures on the family as one motivation for a tax reduction. It is, therefore, important to have some gauge as to the magnitude of those pressures. Perhaps of even greater import, policy makers and the taxpayers themselves need some consistent gauge of this tax burden over time.

Focusing on the tax burden of the median income family is relevant because, by definition, half of all families have incomes that exceed that of the median family and half have incomes that are less than the median family's. This study examines one- and two-earner families separately because their tax burdens are typically quite different.

How the Tax Burden is Measured

The tax burden is presented in dollar terms and as a rate. To calculate the tax burden in dollar terms, the study sums the families' total federal, state, and local tax liabilities. This involves adding together such obvious taxes as personal income and payroll taxes, but it also involves attributing some amount of all other taxes these families ultimately pay, such as the corporate income tax, sales taxes, etc.

The tax burden is also expressed as a rate, which reflects the median family's total effective tax rate. This rate is the ratio of the total tax burden to total income. The total income of one- and two-income families is calculated by summing such income as wages and salaries, payroll taxes paid on their behalf by their employers, dividends, interest, and realized capital gains.

The tax burden on the median income two-earner family is estimated to have peaked at 41.5 percent in 1996, dropped to 40.9 percent in 1997 and dropped again to 39 percent in 1998.

A detailed description of the methodology is presented at the end of the report.

Tracking the Median Family's Tax Burden Over Time

The tax burden on the median income two-earner family is estimated to have peaked at 41.5 percent in 1996, dropped to 40.9 percent in 1997 and dropped again to 39 percent in 1998. In 1998, this family is estimated to have paid $26,759 in taxes on $68,605 in direct and attributed income. (See *Figure 1* and *Table 2*). Much of the nearly two percentage point drop that occurred between 1997 and 1998 was the result of the enactment of the Taxpayer Relief Act of 1997 (TRA'97). The effect of TRA'97 was largest on families with children due to the creation of new tax credits: the Per-Child Tax Credit and the Hope and Lifetime Learning Education Credits.

Taxes are the most fundamental means of pricing out government, and yet few taxpayers have a clear notion as to the price they pay.

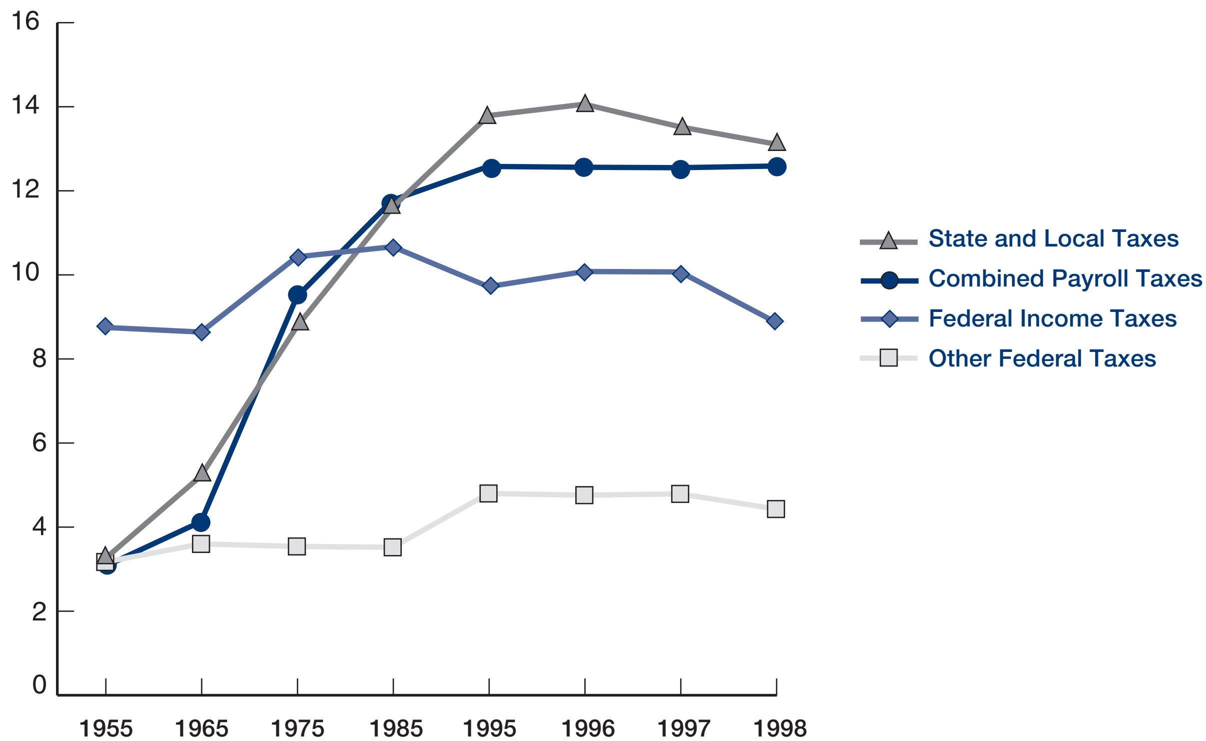
Table 1 and *Table 2* show the historical evolution of the tax burden on one- and two-earner median income families. The burden is shown on a decade-by-decade basis from 1955 through 1985 and on a yearly basis thereafter. Between 1955 and 1998, the tax burdens on both categories of median families grew by over 20 percentage points—more than doubling since 1955.

Both tables also track the tax burden in dollar terms. After adjusting for inflation (to 1998 dollars), the taxes paid by the two-earner family are 4.9 times greater in 1998 than in 1955. For the one-earner family, taxes are 3.4 times greater than they were in 1955.

Defining the "Typical" Family

There is no single, best definition of the typical or average taxpayer. The two-earner family has the advantage of being the most common type of family. However, two-earner families as a group have higher incomes than one-earner families, and thus have historically higher total tax rates. For example, in 1996 the total tax rate of the one-earner family was 37.3 percent, 4.2 percentage points lower than the two-earner family. By 1998, however, the difference

Figure 2
Taxes as a Percentage of the Median Two-Earner Family's Income by Type
Selected Years, 1955–1998



Source: Tax Foundation

between the two rates had narrowed to only 1.4 percentage points. In 1998, the one-earner family is estimated to have paid $13,746 total in taxes on $36,579 in total income.

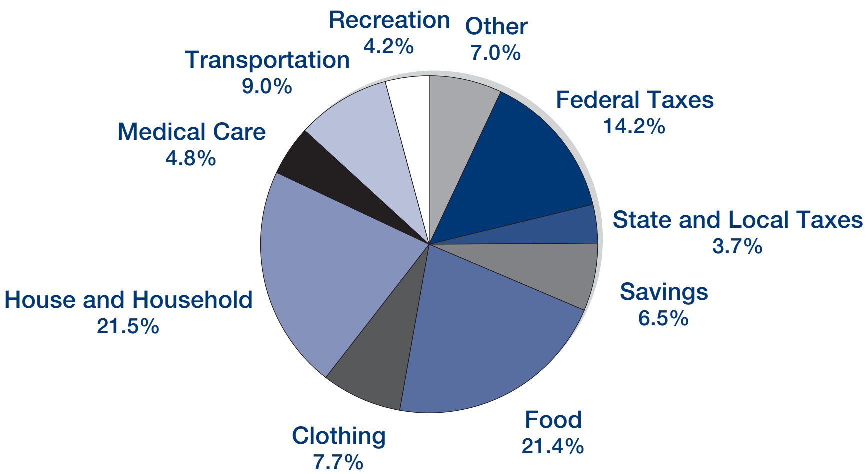
This study uses one- and two-earner median families as representative of a typical family. This is consistent with the practice of the Federal Reserve Board which refers to the net worth of the "typical family" as a family with the median amount of wealth. Also, the Bureau of the Census provides a great deal of information based on these characterizations.

The tax burdens of the one- and two-earner median income families over time may be considered gauges of the "typical" family as reflected by their income. Such a family is typical in the sense that half of all two-earner families have incomes that are higher than the median two-earner family, and half have incomes that are lower. Similarly, half of all one-earner families have incomes higher than the median one-earner family, and half of all such families have lower incomes.

The median is one definition of average. An alternative definition is to calculate the arithmetic mean income level for a family and use this to represent the typical family. The primary reason for not choosing this definition is that government data are more complete and consistent for the median family. If the arithmetic mean were chosen, however, one might expect the total tax rate to be slightly higher for the two-earner mean average family than for the two-earner median family. The reason for this is the greater proportion of income earned by upper-income taxpayers interacting with the generally progressive tax structure.

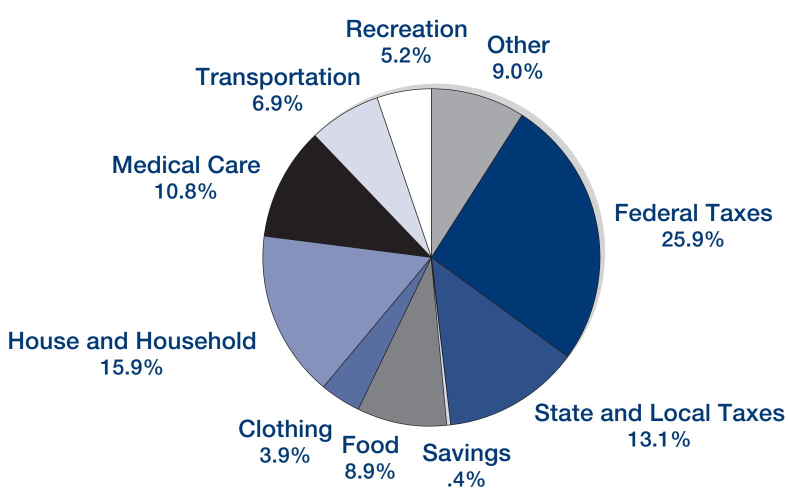
The Tax Foundation releases two other statistics each year that also reflect to an extent an average tax burden. *Tax Freedom Day*, which is released every April 15, shows the ratio of all taxes collected at the federal, state, and local levels to national income, which is then allocated on a pro-rata basis across the calendar. Unlike the two-earner median family calculation, which shows the average tax rate facing a specific category of

Figure 3
Representative Budget of the Median Two-Earner Family, 1958



Source: Tax Foundation

Figure 4
Representative Budget of the Median Two-Earner Family, 1998



Source: Tax Foundation

taxpayer, *Tax Freedom Day* illustrates the tax burden of all Americans, on average. In 1999, for example, 35.7 percent of the nation's income was collected in tax payments. Because 131 days is 35.7 percent of the year, May 11 was Tax Freedom Day in 1999.

Another broad measure of America's tax burden published annually by the Tax Foundation is the *Price of a Civilized Society*. It shows the change over time of the per capita, inflation-adjusted total tax burden. Whereas *Tax Freedom Day* is a depiction through the calendar of the average tax rate, being the ratio of total taxes to national income, the *Price of Civilized Society* depicts the dollar amount of tax paid per capita. In 1999, for example, the *Price of Civilized Society* was estimated to be $10,298.

Types of Taxes

Figure 2 displays the tax burden broken down into its constituent parts: the federal individual income tax, payroll taxes, other federal taxes, and state and local taxes.

Federal Individual Income Taxes

For most families, the federal personal income tax is the most apparent and, in many cases, most feared component of the national tax system. Its provisions influence virtually all major and many minor economic decisions, from whether to buy or rent a house, to the savings vehicle to use for a college fund, to saving for retirement, to continuing one's education or just working harder to earn a raise and a promotion.

The federal income tax burden on the median income family has varied significantly in recent years. In 1955, federal income taxes accounted for 8.8 percent of the two-earner family's income. In the mid-1970s, and through the early 1980s, federal income taxes hovered around ten percent of the two-earner family's income.

In the mid-1980s, Congress enacted the Tax Reform Act of 1986. The federal income tax changes in this Act caused federal taxes as a share of median family income to drop beginning in 1987. Between 1987 and 1994 federal individual income taxes fluctuated between approximately 8.4 and 9.3 percent of the two-earner family's income. By 1996, the federal income tax had again risen to 10.0 percent of the two-earner family's income.

The Taxpayer Relief Act of 1997 had a significant impact on the federal income tax burden of the median income family (see

Figure 2). In 1998, federal individual income taxes dropped to 8.9 percent of median family income for the two-earner family, back to about the percentage of median family income that they comprised in 1955.

Payroll Taxes

Payroll taxes for social insurance have been increasing rapidly since the mid-1960s when they were 4.1 percent of median family income. Today, they account for 12.6 percent of median family income. The employer and employee portions of the payroll tax combined have exceeded the federal income tax on both the median one- and two-earner families since about 1985.

In 1998, the total tax burden of the median American two-earner family constituted 39 percent of the family budget: more than food, housing, and medical care combined.

Payroll taxes fund three federal social insurance programs: old age and survivors insurance (OASI—more commonly known as Social Security) which provides income support for retired workers, disability insurance (DI), and hospital insurance (HI—the primary component of Medicare), which provides health benefits to retirees and the disabled.

Currently, an employee and employer each pay a tax of 7.65 percent of the worker's income to the federal government as payroll taxes.[1] Economists generally agree that employers pass their share of payroll taxes on to workers by paying wages that are proportionately less than they would be in the absence of the tax. At the current level of the payroll tax, then, the median income family's gross wages are more than seven percent less than they would be without the payroll tax.

Other Federal Taxes

Taxpayers can readily perceive the individual income and some of the payroll taxes that they pay because they file tax returns and they see some of their payroll taxes on their pay stubs. They do not see many other taxes that are paid by others on their behalf. For example, no one knows how much corporate tax is paid on their behalf, and few can calculate a reasonable guess. The same holds for all other business taxes collected and remitted by businesses on behalf of the individuals who ultimately bear the taxes, and this also holds for estate and gift taxes that are ultimately borne by the recipients in the form of reduced distributions.

The total of these other federal taxes (the corporate income tax, the estate and gift tax, excise taxes and customs duties) as a percentage of median family income has remained remarkably constant over the time period of the study—rising by about 1.2 percentage points over the last 43 years. In 1955, these taxes were approximately 3.2 percent of the the two-earner median family's income. Forty years later in 1995, they had risen to 4.8 percent of median family income. They currently stand at 4.4 percent of median family income.

State and Local Taxes

State and local taxes are the largest component of the median family's tax burden. They surpassed federal income taxes in 1985 and payroll taxes in 1995. State and local taxes are comprised of personal income taxes, corporate income taxes, sales taxes, property taxes, other minor taxes and contributions for social insurance. Combined, these taxes as a percentage of the median family's income have climbed rapidly over the period and have only begun to level off in the late 1990s. In 1955, these taxes were only 3.3 percent of median family income but by 1995, they amounted to 13.8 percent of median family income. By 1998, they had fallen as a percentage of median family income but they are still about 13.1 percent of family income.

Taxes and the Family Budget

A comparison of *Figures 3* and *4* shows the impact of the large federal, state, and local tax burdens on the budget of the median income family. In 1958, federal, state, and local taxes combined to total 17.9 percent, a smaller share of the two-earner family's budget than either food at 21.4 percent, or housing and household expenditures at 21.5 percent.

In 1998, the total tax burden of the median American two-earner family constituted 39 percent of the family budget: more than food, housing, and medical care combined. Federal taxes were the largest share of the pie at 25.9 percent. At 13.1 percent, state and local taxes by themselves swamped every component of the family budget except for house and household expenses.

Table 1
Taxes and the Median One-Income American Family

	1955	1965	1975	1985	1986	1987	1988
Median Family Income	$ 4,248	$ 6,440	$ 12,560	$ 23,906	$ 26,354	$ 25,908	$ 26,634
Federal income tax	298	450	954	1,867	1,962	1,674	1,727
Payroll Taxes							
Employee Portion	73	174	609	1,384	1,542	1,515	1,636
Employer Portion	73	174	609	1,384	1,542	1,515	1,636
Other Federal Taxes	146	245	481	1,003	1,085	1,149	1,099
Total Federal Taxes	590	1,044	2,653	5,639	6,131	5,852	6,097
State and Local Taxes	144	352	1,178	3,204	3,501	3,556	3,504
Total Taxes	734	1,396	3,831	8,842	9,632	9,408	9,601
After Tax Income	3,513	5,043	8,729	15,063	16,722	16,500	17,033
Total Taxes as a Percentage of Income	17.3%	21.7%	30.5%	37.0%	36.5%	36.3%	36.0%
Inflation Adjusted Total Taxes (1998$)	$ 3,990	$ 6,305	$ 10,260	$ 12,692	$ 13,474	$ 12,767	$ 12,570

Note: Median family income includes the Census Bureau's definition of income, realized capital gains, the family's share of corporate income taxes,
Product Accounts published in the *Survey of Current Business* through September 1999.

All figures subject to rounding.

Source: Tax Foundation

Table 2
Taxes and the Median Two-Income American Family

	1955	1965	1975	1985	1986	1987	1988
Median Family Income	$ 5,477	$ 8,434	$ 17,410	$ 37,533	$ 40,134	$ 41,149	$ 43,186
Federal income tax	479	729	1,815	4,004	4,136	3,467	3,613
Payroll Taxes							
Employee Portion	84	174	825	2,210	2,400	2,447	2,694
Employer Portion	84	174	825	2,210	2,400	2,447	2,694
Other Federal Taxes	174	304	617	1,320	1,264	1,535	1,538
Total Federal Taxes	821	1,381	4,082	9,746	10,201	9,896	10,539
State and Local Taxes	178	441	1,527	4,356	4,368	4,914	4,969
Total Taxes	999	1,821	5,609	14,102	14,568	14,810	15,509
After Tax Income	4,478	6,612	11,801	23,431	25,566	26,339	27,677
Total Taxes as a Percentage of Income	18.2%	21.6%	32.2%	37.6%	36.3%	36.0%	35.9%
Inflation Adjusted Total Taxes (1998$)	$ 5,429	$ 8,223	$ 15,021	$ 20,240	$ 20,378	$ 20,097	$ 20,305

Note: Median family income includes the Census Bureau's definition of income, realized capital gains, the family's share of corporate income taxes,
Product Accounts published in the *Survey of Current Business* through September 1999.

All figures subject to rounding.

Source: Tax Foundation

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
$ 28,126	$ 28,708	$ 28,649	$ 28,925	$ 29,221	$ 30,243	$ 31,896	$ 32,080	$ 34,601	$ 36,579
1,941	2,069	1,985	1,913	1,843	1,869	1,947	1,874	2,389	1,931
1,727	1,795	1,795	1,807	1,822	1,884	1,981	1,994	2,147	2,274
1,727	1,795	1,795	1,807	1,822	1,884	1,981	1,994	2,147	2,274
1,139	1,145	1,147	1,235	1,300	1,464	1,554	1,506	1,693	1,797
6,535	6,803	6,722	6,762	6,786	7,101	7,464	7,367	8,377	8,276
3,675	3,778	3,781	4,038	4,098	4,283	4,526	4,606	4,968	5,470
10,210	10,581	10,503	10,800	10,885	11,384	11,991	11,973	13,344	13,746
17,916	18,126	18,147	18,124	18,336	18,858	19,905	20,107	21,256	22,833
36.3%	36.9%	36.7%	37.3%	37.3%	37.6%	37.6%	37.3%	38.6%	37.6%
$ 12,826	$ 12,743	$ 12,163	$ 12,173	$ 11,952	$ 12,210	$ 12,570	$ 12,321	$ 13,480	$ 13,746

and the employer-paid portion of the payroll tax. Other federal, state and local taxes are computed based on data in the National Income and

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
$ 45,217	$ 46,840	$ 48,277	$ 50,388	$ 53,053	$ 54,547	$ 57,581	$ 61,054	$ 64,321	$ 68,605
4,065	4,351	4,357	4,390	4,559	4,663	5,594	6,152	6,476	6,083
2,779	2,973	3,068	3,204	3,355	3,453	3,623	3,835	4,037	4,319
2,779	2,973	3,068	3,204	3,355	3,453	3,623	3,835	4,037	4,319
1,600	1,792	1,813	1,810	2,139	2,273	2,762	2,904	3,078	3,041
11,224	12,088	12,306	12,607	13,409	13,842	15,602	16,726	17,627	17,762
5,325	5,975	6,072	6,308	6,819	6,885	7,942	8,585	8,696	8,996
16,550	18,063	18,378	18,915	20,228	20,727	23,544	25,311	26,323	26,759
28,667	28,777	29,899	31,472	32,825	33,821	34,037	35,743	37,998	41,846
36.6%	38.6%	38.1%	37.5%	38.1%	38.0%	40.9%	41.5%	40.9%	39.0%
$ 20,791	$ 21,752	$ 21,283	$ 21,320	$ 22,212	$ 22,229	$ 24,682	$ 26,045	$ 26,592	$ 26,759

and the employer-paid portion of the payroll tax. Other federal, state and local taxes are computed based on data in the National Income and

Definitions, Assumptions and Methodology

The major components of any distributional analysis are 1) the unit of analysis; 2) the income measure; 3) the taxes included; and 4) the incidence assumptions. The Tax Foundation's methodological choices regarding these parameters are described below.

Unit of Analysis

The Tax Foundation examines the tax burden of taxable married couples filing jointly. Where possible, only families where both spouses are under 65 years of age are included because elderly couples have unique characteristics and because families of non-retirees seem to accord more nearly to the general notion of a "typical" family. Data considerations allowed taxpayers who are over 65 to be separated from other married couples filing jointly in the calculation of the percentage of income derived from wages and salaries.

Measure of Income

The Tax Foundation uses Census Bureau[2] data to define the base income for the median income one- and two-earner families. This definition includes:

- Earnings
- Unemployment compensation
- Workers' compensation
- Social Security
- Supplemental security income
- Public assistance (cash assistance only)
- Veterans' payments
- Survivor benefits
- Disability benefits
- Pensions and retirement income
- Interest
- Dividends
- Rents, royalties, estates, and trusts
- Educational assistance
- Alimony
- Child support
- Financial assistance from outside the household (excludes gifts and lump sum inheritances)
- Other income

To base income, the Tax Foundation adds realized capital gains,[3] an allocated portion of the corporate income tax,[4] and the employer's share of the payroll tax to arrive at its definition of median family income.

The Tax Foundation does not include imputed rent,[5] accrued pension and retirement savings, accrued capital gains, or employer-provided benefits in its definition of income. Imputed rent and employer-provided benefits such as health insurance are omitted because this study covers a fifty-year period and adequate data is unavailable to measure these variables over the entire period of the study. The Tax Foundation does not include non-cash welfare benefits for the same reason.

The study excludes imputed rent because there is no data on imputed rent and the magnitude of the errors in constructing estimates could be large. One reason for the large potential error is that the imputed rent would have to be calculated on an after-tax basis, requiring a raft of assumptions about the proper tax treatment of imputed rent.

Realized capital gains are included rather than accrued capital gains because data is only available on the former. The study also includes pension and retirement income as received and consumed and therefore does not include pension or retirement savings as accrued.

Taxes Included

The Tax Foundation includes the following federal taxes in its study: the individual income tax, employer and employee payroll taxes, estate and gift taxes, corporate taxes, excise taxes, and customs taxes.

The following state and local taxes are included in this study: individual income taxes, corporate taxes, estate taxes, sales taxes, property taxes, contributions for social insurance, and other taxes from the National Income and Product Accounts.

Incidence Assumptions[6]

Federal Taxes

Individual federal income taxes (including the tax on all non-C corporation businesses such as sole proprietorships, partnerships, and subchapter S corporations) are computed directly from the family's adjusted gross income. This information is based on the Census Department's income data and calculated using an effective tax rate for married couples filing jointly. The 1998 effective federal income tax rate used in the calculation includes changes made by the Taxpayer Relief Act 1997.

Corporate income taxes are assumed to fall fully on the owners of corporate capital. The Tax Foundation distributes these taxes according to corporate ownership proxied by dividends in adjusted gross income. A possible alternative distribution would proxy corporate ownership using accrued capital gains plus dividends. Data on accrued capital gains are not available, however. Realized capital gains could be substituted as a proxy for accrued capital gains, but taxpayers have great discretion as to when or whether to realize capital gains, thus making the effects of using realized capital gains as a proxy for corporate ownership uncertain. Interest income is omitted from the allocator because the ownership of debt need bear no relationship to corporate ownership either across time or across income levels.

Estate and gift taxes are taxes on accumulated wealth. Though the estate tax nominally falls on the estate of the decedent, it reduces the wealth passed on to the heirs. In this sense, it closely resembles the corporate income tax. Therefore, the Tax Foundation distributes these taxes according to asset ownership proxied by interest and dividends in adjusted gross income. Realized capital gains are excluded from the allocator for the same reason that they are omitted from the allocator for corporate income taxes. Interest income is included as part of the allocator for distribution of the estate tax, unlike the case of corporate income, because the allocation of estate assets reflects the allocation of wealth generally, which includes corporate income, corporate and government debt, and many other forms of wealth. Receipts from the gift tax are distributed in the same manner as the estate tax.

Excise taxes paid by individuals are distributed to families according to their consumption of the taxed good or service where a reasonable measure of such consumption is available. Where this is not possible due to data constraints, these taxes are apportioned based on the family's share in aggregate consumption. [7]

Excise taxes that fall on intermediate goods used by businesses in the production of output are apportioned in the same manner as the corporate income tax; that is, they are assumed to be borne by the corporate shareholders.

Economists generally agree that the burden of the payroll tax falls solely on labor. The Tax Foundation attributes both the employer and employee share of the payroll tax to the family based on the family's estimated wage and salary income.[8]

Customs duties are taxes on purchases and hence are distributed like a general sales tax, i.e., in proportion to the family's share in consumption.[9]

State and Local Taxes

Sales taxes are distributed to families according to their consumption of the taxed good or service where specific data on consumption patterns are available or, where the data are unavailable, to the families' share in consumption. Excise taxes that fall on the intermediate goods used by businesses in the production of output are apportioned in the same manner as the corporate income tax.[10]

Corporate income taxes are assumed to fall fully on the owners of corporate capital. State corporate income taxes are distributed in the same manner as federal corporate income taxes.

Estate and gift taxes imposed by the states are allocated in the same manner as are federal estate and gift taxes.

All other state and local taxes are distributed using the following methodology:

(Collections/NNP)*Family Income.[11]

Improvements in Tax Foundation Methodology

As is always the case in such an analysis, the Tax Foundation's methodological choices are a compromise between data constraints and consistency of estimation over the selected historical period. Nevertheless, the Tax Foundation believes that the assumptions and choices made in this report present the most accurate and reasonable picture of these effective tax rates over time.

The Tax Foundation has made significant methodological improvements to its calculation of the median family tax burden. These improvements, while highly time-consuming, were motivated by the rapid increase in interest and politicization of the analysis.

First, the Tax Foundation made significant improvements in the calculation of median family income. A time series on realized capital gains was constructed and added to family income to improve the comprehensiveness with which the Tax Foundation measures income. A similar series on corporate taxes was also added to the median family's income. This improved the estimate of the tax burden resulting from attributing the corporate tax to these families.

Historical data on the distribution of dividends and interest were gathered to use in the allocation of the estate and gift tax, and corporate income taxes. Each of these taxes is allocated to families based on their average holdings of capital income as proxied by dividends and interest in the case of estate and gift taxes, and dividends in the case of the corporate income tax.

In addition, a historical time series on consumer expenditures was compiled to allocate excise, customs, and sales taxes to the consumers who pay them with a greater degree of precision than in past Tax Foundation studies.

These improvements lead to a more accurate estimate of the median family's tax burden and make the Tax Foundation's methodology more comparable to other similar studies.

Comparison of Methodologies

All organizations that seek to estimate the tax burden for a given group use their own methodology. The differences from one estimate to the next involve differences in the measure and definition of income, the taxes considered, and the allocation of some of those taxes.

The Congressional Budget Office (CBO), the Office of Tax Analysis at the Treasury (OTA), and the Joint Committee on Taxation (JCT) all routinely perform distributional analysis of changes in federal tax law which include data on effective tax rates. Each agency uses its own methodological assumptions and reports data in a somewhat different form.

The Tax Foundation's methodology for the calculation of tax burdens differs from those of CBO, OTA, and JCT in certain respects just as the methodologies of these organizations differ from one another.

The first substantive difference is that only the Tax Foundation includes state and local taxes. The Tax Foundation is attempting to calculate the family's tax burden, essentially assuming that it makes little difference to the family's budget which level of government is collecting the tax. The other organizations, being agencies of the federal government, are only concerned with the effects of federal tax policies.

The second area in which significant differences arise relates to the incidence of the corporate income tax. There is no consensus among economists concerning the incidence of the corporate income tax. The Tax Foundation assumes that the incidence of the corporate income tax falls solely on the owners of capital and distributes it accordingly. This methodology was recently adopted by CBO in a recent study of effective tax rates. Some past CBO studies have assumed that the incidence of this tax falls half on labor and half on capital. JCT does not include the corporate tax in its distribution tables at all while OTA has included the corporate income tax since 1990.

Summaries of these agencies' methodologies are presented below to highlight where the Tax Foundation's methodology differs or agrees.

Congressional Budget Office[12]

Unit of Analysis

The CBO presents its data on effective tax rates in terms of families. It defines a family as related individuals sharing a household. Individuals living apart from relatives form one-person families.

Measure of Income

The CBO's measure of pre-tax family income is given by:

- Cash income (wages, salaries, self-employment income, taxable and nontaxable interest, dividends, rental income, retirement benefits, realized capital gains, and all cash transfer payments);
- The employer share of Social Security and federal unemployment payroll taxes; and
- The federal corporate income tax.

Included Taxes and Incidence Assumptions

The CBO distributes federal individual and corporate income taxes, payroll taxes, and excise taxes as follows:

- Individual income taxes are distributed directly to the families paying those taxes; the refundable portion of the EITC is included;
- Payroll taxes (Social Security, Medicare, and federal unemployment) are distributed to families paying these taxes directly or indirectly through their employers;
- Federal excise taxes that fall on consumers are distributed to families according to their consumption of the taxed good or service; and
- Corporate income taxes are distributed to families in proportion to their realized capital income.[13]

As noted above, the CBO's definition of a family is broader than the Tax Foundation's definition because it includes both related individuals sharing a household and single individuals living apart from their family members. In addition, in many tabular presentations of effective tax rates, the CBO presents families grouped into income quintiles based on *adjusted family income*, which is determined by dividing pre-tax family income by the federal poverty threshold for a family of that size.[14] Families with zero or negative income are excluded from the lowest quintile but included in the totals.

The definition of income used by the CBO corresponds closely to the Tax Foundation's definition of income but is somewhat more narrow.

The CBO does not include the federal estate and gift tax, customs taxes, or any state and local taxes.

Office of Tax Analysis

Unit of Analysis

The OTA also bases its analysis on the family. Its definition of family consists of the taxpayer and his spouse or dependents (if any) who live in the same household. Families may include more than one taxpayer. Dependents and their income are attached to their family unit. Single individuals are considered one person families.

Measure of Income

The OTA uses a very broad measure of income called *Family Economic Income,* or FEI. FEI can be derived from Adjusted Gross Income by adding:[15]

- Unreported and under-reported income (including the AGI of non-filers);
- Adjustments from accrual to realization-based valuation of assets;
- Income not included in AGI such as IRA and Keogh Deductions, non-taxable transfer payments such as Social Security and AFD, employer-provided fringe benefits and tax-exempt interest;
- Imputed rent;
- Adjustments to exclude income earned and losses incurred in previous years; and
- Adjustments for inflation and economic depreciation on non-corporate assets.

Included Taxes and Incidence Assumptions

The OTA distributes federal individual and corporate income taxes, payroll taxes, federal excise taxes, customs duties, and the federal estate and gift tax as follows:

- The federal individual income tax is attributed to the taxpayers;
- Payroll taxes (both the employer and employee portions) are distributed to labor income (wages and self-employment income);
- Federal corporate income taxes are distributed to all positive capital income;[16]
- Excise taxes on consumers are assumed to be borne by consumers in proportion to relative consumption of the taxed good and proportionately by labor and capital income;
- Excise taxes on business and customs duties are allocated in proportion to labor and capital income; and
- Estate taxes are attributed to the decedent.

The OTA's definition of a family is also broader than the Tax Foundation's definition. OTA includes the income of minors with their family unit and like CBO, OTA considers single individuals as families. OTA's tax distribution tables are presented for families grouped into income quintiles.

The definition of income used by the OTA is much broader than that of the Tax Foundation. It includes many items including imputed rent, accrued capital gains, and the calculation of inflationary gains and losses that require many contestable assumptions and quite possibly result in a less accurate and less reliable measure of income.

The OTA does not include state and local taxes in its analysis.

The Joint Committee on Taxation[17]

Unit of Analysis

JCT uses tax filing units. For taxpayers filing jointly, as heads of households, and for many single returns, the tax return represents a family. In the case of married couples filing separately, the tax filing unit is smaller than a family. The JCT does not include separately filed returns of dependents. Taxpayers with negative income are also excluded.

Measure of Income

The JCT uses a measure of income which it calls "expanded family income." This measure begins with adjusted gross income and adds the following:

- Tax-exempt interest;
- Employer contributions for health plans and life insurance;
- Employer share of payroll taxes;
- Workers' compensation;
- Non-taxable Social Security benefits;
- Insurance value of Medicare benefits;
- Alternative minimum tax preference items; and
- Excluded income of U.S. citizens living abroad.

Included Taxes and Incidence Assumptions

The JCT distributes federal individual income taxes, payroll taxes, and federal excise taxes as follows:

- Individual federal income taxes are distributed to taxpayers;
- Payroll taxes (both employer and employee portions) are distributed to labor income (wages and self-employment income); and
- Excise taxes are attributed to consumers.

JCT's definition of a family is broader than the Tax Foundation's definition as it considers all tax filing units as families. JCT's distribution tables are based on income categories.

The definition of income used by JCT is also broader than that of the Tax Foundation. It includes many items which require information that must again be estimated and attributed to families from other databases including the insurance value of Medicare benefits, alternative minimum tax benefits and employer contributions for health and life insurance. Unlike the Tax Foundation, JCT excludes public assistance.

JCT does not distribute the federal corporate income tax on the basis that there is no clear consensus among economists as to its incidence. Also, JCT neither distributes federal customs duties or estate and gift taxes, nor does it include state and local taxes in its analysis.

Notes

[1] The tax rate for old age and survivors insurance and disability insurance combined, OASDI, is 6.2 percent for both employer and employee and is levied on wages and salaries up to $68,400. The tax rate for hospital insurance, HI, is 1.45 percent for both employer and employee. HI is paid on total covered earnings without limitation.

[2] For detailed information regarding the U.S. Bureau of the Census definition of income see U.S. Bureau of the Census, Current Population Reports, Consumer Income, P60-200, *Money Income in the United States: 1997 (with Separate Data on the Valuation of Noncash Benefit)*, U.S. Government Printing Office, Washington, DC, 1998. Appendix A.

[3] Realized capital gains are apportioned to families based on ownership of capital assets as proxied by dividends in adjusted gross income.

[4] Corporate profit taxes are apportioned in the same manner as realized capital gains.

[5] Imputed rent is the income a homeowner would receive if he rented his home to himself.

[6] Other federal (exclusive of income taxes and payroll taxes), state and local taxes are computed based on data in the National Income and Product Accounts published in the *Survey of Current Business* Bureau of Economic Analysis, U.S. Department of Commerce, Washington, DC 20230 through September 1999.

The allocation of all taxes was smoothed because of methodical constraints for both the one- and two-earner families in 1989, for the two-earner family in 1995, and for the one-earner family in 1997.

[7] Excise taxes that are levied on consumers are apportioned using data from the Consumer Expenditure Survey compiled by the Bureau of Labor Statistics, United States Department of Labor for various years. Such data are not available prior to 1985. Because of this data limitation, excise taxes on consumers prior to 1985 are apportioned based on the 1985 survey.

[8] The Tax Foundation study focuses on non-elderly families. It therefore assumes .8894 and .903 percent of the one- and two-earner families' incomes, respectively, come from wages and salaries. This is a Tax Foundation calculation for each income class based on IRS data omitting non-taxable filers and the returns of married couple filers where one or both filers was aged 65 or older.

[9] The same caveat applies here as in the case of excise taxes. Because the Consumer Expenditure Survey is not available prior to 1985, customs are apportioned based on the 1985 CES data.

[10] Sales taxes that are levied on consumers are apportioned using data from the Consumer Expenditure Survey compiled by the Bureau of Labor Statistics, United States Department of Labor for various years. Such data are not available prior to 1985. Because of this data limitation, sales taxes on consumers prior to 1985 are apportioned based on the 1985 survey.

[11] The base family income used for this calculation excludes realized capital gains, as capital gains are not a component of NNP. The taxes calculated by this method are state and local income taxes, state and local contributions for social insurance, and items such as license fees. For a full description of these items see *Survey of Current Business*, Bureau of Economic Analysis, U.S. Department of Commerce, Washington, DC 20230.

[12] The methodology given here is described in "Preliminary Estimates of Effective Tax Rates," September 7, 1999, Congressional Budget Office, available at www.cbo.gov.

[13] This is a departure from previous CBO methodology, which split the federal corporate income tax evenly between labor and capital. As noted, corporate income taxes are distributed to families based on their realized capital income which consists of: interest income, dividends, rental income and realized capital gains.

[14] Estimates of effective tax rates based on cash income by the CBO can be found in Kasten, Richard, et al, "Estimates of Federal Tax Liabilities for Individuals and Families by Income Category and Family Type for 1995 and 1999," May 1998, Congressional Budget Office.

[15] OTA's current methodology is detailed in Julie-Anne Cronin, "U.S. Treasury Distributional Analysis Methodology," September 1999, Office of Tax Analysis, United States Department of the Treasury, Washington, DC 20220. Available at http://www.ustreas.gov/ota/otapapers.htm.

[16] All positive capital income at the family level includes real net interest income, pre-tax corporate profits (adjusted for inflation and accelerated tax cost recovery), real-accruals of non-stock capital gains, the capital component of non-corporate business income (adjusted for inflation and accelerated tax cost recovery, pension and IRA benefits, real earnings on retirement (pension, IRA, and Keogh), life insurance assets and imputed rent on owner-occupied housing.

[17] For detailed information on the exact methodology used by the Joint Committee on Taxation, consult Joint Committee on Taxation, *Methodology and Issues in Measuring the Distribution of Tax Burdens (JCS-7-93)*, June 14, 1993, Joint Committee on Taxation.

SPECIAL REPORT (ISSN 1068-0306) is published at least 10 times yearly by the Tax Foundation, an independent 501(c)(3) organization chartered in the District of Columbia.

4–12 pp.
Annual subscription: $50
Individual issues $10

The Tax Foundation, a nonprofit, nonpartisan research and public education organization, has monitored tax and fiscal activities at all levels of government since 1937.

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