Measuring Effective Tax Rates

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Effective tax rates (ETRs) measure how much people pay in taxes as a percentage of their pretax incomes. That seems simple, but there's an important complication: there are different ways to measure how much someone pays in taxes and how much he collects in pretax income. Those choices matter a great deal. As a result, it is essential to use the same ETR measure when comparing tax burdens across individual taxpayers or groups.

The Tax Policy Center regularly publishes ETRs for four federal taxes—individual and corporate income taxes, payroll taxes, and the estate tax—as well as the combination of all four. The amount of tax includes the taxes paid directly by individuals and the taxes paid by their employers and by businesses generally that reduce their after-tax incomes. TPC assumes that individuals bear the entire burden of the individual income tax they pay, workers bear the burden of both their share and the employer's share of payroll taxes (the latter in the form of lower wages), that owners of capital bear the burden of the corporate income tax in proportion to their income from capital (in the form of smaller returns on their investments), and that individuals bear the burden of the estate tax (in proportion to their estimated taxable estate multiplied by their probability of dying during the year).

For most of its analyses, TPC measures income as "total cash income," a broad measure that includes cash income from work, investments, and government programs (e.g., Social Security benefits); employee contributions to tax-deferred retirement savings plans; and two taxes paid indirectly—the employer's share of payroll taxes and imputed corporate income tax liability.[1]

[1] A complete description of cash income is available at http://www.taxpolicycenter.org/TaxModel/income.cfm. Note that TPC's measure of cash income does not include income from all sources. For example, it omits inside build-up in retirement savings accounts, unrealized capital gains, and employer-provided benefits such as payment of health insurance premiums and contributions to retirement accounts. Because income from those sources is not distributed equally across income categories, expanding the cash income measure to include them would affect ETRs differently across the income distribution.

TPC calculates ETRs for each tax as a percentage of total cash income, not of the tax base for the specific tax. Therefore, for example, the effective payroll tax rate is measured as a percentage of all income, not just earnings and self-employment income. Because ETRs all use the same base—cash income—ETRs for the four tax sources add up to the ETR for all taxes.

Analysts, commentators, and ordinary taxpayers often use another income measure, adjusted gross income (AGI), when discussing the individual income tax. AGI is a narrower measure than cash income. It omits nontaxable income from various sources (e.g., tax-exempt interest, nontaxable pensions, and a portion of social security benefits) and excludes specific deductions taken "above the line" (such as employee contributions to qualified retirement saving plans, educator expenses, and interest paid on student loans). Because AGI is generally less than total cash income, ETRs based on AGI are usually greater in absolute value than those based on the broader measure.

TPC estimates that the effective individual income tax rate for all households in 2011 was 9.3 percent of total cash income and 11.5 percent of AGI (see table). The AGI measure was 2.2 percentage points higher because the income measure is narrower than cash income. That differential varies greatly across income groups, because the divergence between cash income and AGI is not constant. For example, the values for tax units in the bottom quintile were -5.8 percent and -12.3 percent, a 6.5 percentage point difference, while middle-quintile tax units faced rates of 3.2 percent and 4.1 percent, less than a percentage point apart.

Adding payroll taxes increases the differences between the two measures. Overall, the ETR for the combination of individual income and payroll taxes (both employer and employee shares) in 2011 was 16.5 percent of total cash income and 20.4 percent of AGI.

TPC also estimates ETRs for the corporate income tax and the estate tax but only relative to cash income—AGI does not provide a meaningful income measure against which to assess those levies. Including corporate income taxes increases the average ETR from 16.5 percent of cash income to 18.7 percent. Adding the estate tax raises the average ETR only slightly further to 18.8 percent. High-income taxpayers tend to have greater wealth, so the impact of both the corporate and the estate taxes is larger at higher income levels. The ETR for individual income taxes and payroll taxes for the 1 percent of tax units with the highest incomes, for example, is 22.3 percent; including corporate and estate taxes raises their ETR more than 8 percentage points to 30.4 percent.

Effective Tax Rates

By Cash Income Level		By Cash Income Percentile	
2010	2011	2010	2011

Average Effective Federal Tax Rates
By Cash Income Percentiles, 2011
Baseline: Current Law

Cash Income Percentile[1,2]	As a Percentage of Cash Income[1]						As a Percentage of Adjusted Gross Income		
	Individual Income Tax[3]	Payroll Tax		Corporate Income Tax	Estate Tax	All Federal Taxes[5]	Individual Income Tax[3]	Payroll Tax	
		Employee[4]	Employer					Employee[4]	Employer
Lowest Quintile	-5.8	3.0	3.2	0.4	*	**0.8**	-12.3	6.5	6.8
Second Quintile	-2.9	3.8	4.5	0.5	*	**5.9**	-4.2	5.5	6.5
Middle Quintile	3.2	4.0	4.9	0.6	*	**12.6**	4.1	5.1	6.3
Fourth Quintile	7.0	4.0	5.0	0.7	*	**16.7**	8.2	4.7	5.8
Top Quintile	14.9	2.8	3.2	3.4	0.2	**24.5**	17.3	3.3	3.7
All	9.3	3.3	3.9	2.1	0.1	**18.8**	11.5	4.1	4.8
Addendum									
80-90	9.5	4.1	5.0	1.0	*	**19.5**	11.0	4.7	5.8
90-95	12.0	3.8	4.5	1.3	*	**21.6**	13.8	4.4	5.2
95-99	16.4	2.8	3.0	2.6	0.1	**25.0**	19.2	3.3	3.5
Top 1 Percent	20.3	1.1	0.9	7.7	0.3	**30.4**	24.0	1.3	1.1
Top 0.1 Percent	19.8	0.5	0.4	10.7	0.7	**32.1**	23.6	0.6	0.5

Source : Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-3).

* Less than 0.05.

(1) For a description of cash income, see http://www.taxpolicycenter.org/TaxModel/income.cfm. For a description of TPC's current law and current policy baselines, see http://www.taxpolicycenter.org/T11-0270. The measure of cash income used to calculate effective tax rates does not include rollovers to IRAs.

(2) The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The breaks are (in 2011 dollars): 20% $16,812; 40% $33,542; 60% $59,486; 80% $103,465; 90% $163,173; 95% $210,998; 99% $532,613; 99.9% $2,178,886. Includes both filing and nonfiling units but excludes those that are dependents of other tax units. Tax units with negative cash income are excluded from the lowest income class but are included in the totals.

(3) After tax credits (including refundable portion of earned income and child tax credits).

(4) Includes the employee portion of Social Security and Medicare taxes plus all SECA taxes for self-employment. The employee's rate for the Social Security tax was reduced 2 percentage points to 4.2% for 2011.

(5) Excludes customs duties and excise taxes.