Case Study 5: Average vs. Marginal Tax Rates

What is the difference between average and marginal tax rates? How does each impact taxpayers' liability and the economy?

Average and marginal tax rates apply to other taxes, but here we will explore the concept through income tax brackets.

The U.S. federal individual income tax has a graduated-rate structure with seven tax brackets and rates ranging from 10 to 37 percent.

A graduated rate income tax system consists of tax brackets where tax rates increase as income increases. Typically, this results in a taxpayer's effective income tax rate, or the percentage of their income paid in taxes, increasing as their income increases.

This system has both average tax rates and marginal tax rates that affect a payer's tax liability.

Average Tax Rates

The average tax rate (ATR) is the total tax paid divided by taxable income (the amount of income subject to tax after deductions and exemptions).

Average tax rates measure the overall share of income paid in taxes, or the individual, household, or business' tax burden.

> **Example:** *A single taxpayer with $45,000 in gross income pays approximately $3,700 in income taxes. This results in an average tax rate of 8.2 percent.*
>
> **3,700 ÷ 45,000 = .082, or 8.2% ATR**

While the average tax rate measures the overall taxes paid as a share of income, marginal tax rates impact the next dollar earned.

Marginal Tax Rates

Marginal tax rates are more complex. The marginal tax rate is the amount of additional tax paid for every *additional* dollar earned as income.

For example, a 10 percent marginal tax rate means that 10 cents of every *next dollar earned* would be taken as tax.

This means that, for example, a rich person facing an effective marginal tax rate of 55 percent does not owe 55 percent of all her income in tax. It just means that government would take 55 cents of the *next* dollar she earned.

There are statutory and effective marginal tax rates. Statutory marginal tax rates are imposed through the law but do not tell the entire story. Effective marginal tax rates show what percentage of income an individual pays in taxes when accounting for different layers of taxes (e.g., income tax and payroll tax) and relevant deductions and credits.

In the U.S. federal income tax system, your statutory marginal tax rate corresponds to the highest tax bracket you face (see below). This is considered "statutory" since it simply describes the top income tax bracket your income falls into as set by federal or state law [See Table 1, p. 3].

> **Example:** *Two taxpayers file jointly with two children. At low levels of income, the taxpayers face negative marginal tax rates because they are* receiving *money from the government through the fully refundable Earned Income Tax Credit (EITC) and partially refundable Child Tax Credit (CTC). This keeps their taxable income within the average tax rate range.*

> *Imagine the couple's income rises above $15,000, triggering the end of the CTC and EITC phase-ins, and their effective marginal tax rate is now above zero.*
>
> *If the couple then earns at least $36,801, the taxpayers can face a marginal tax rate of up to 46.36 percent due to the phaseout of the CTC and EITC, a 15.3 percent payroll tax, and a 10 percent individual income tax.*

Marginal Tax Rates and the Economy

Effective marginal tax rates are important to calculate because they show how workers may be discouraged to work additional hours and earn higher incomes.

Higher effective marginal tax rates disincentivize additional work at the margin, which translates into lower productivity and economic growth overall. On the business side, effective marginal tax rates account not only for statutory rates but also for tax provisions related to cost recovery and financing. Additionally, high marginal tax rates can discourage business investment and work incentives on the labor side.

Marginal tax rates are what matter most for economic efficiency, which is why they are quoted extensively in the economic literature.

Further Reading

Below are some resources about average and marginal tax rates from Tax Foundation and other sources. Please conduct additional research on the case prior to discussion.

2022 Tax Brackets
High Implicit Marginal Tax Rates Make Life Difficult for the Poor
Income Taxes on the Top 0.1 Percent Weren't Much Higher in the 1950s

Reflect on the following questions:

- How do these layers of tax rates impact taxpayers?
- Do these tax rates meet the Principles of Sound Tax Policy?
- What general options are available to develop more sound policy?

2022 Federal Income Tax Brackets and Rates for Single Filers, Married Couples Filing Jointly, and Heads of Households

Tax Rate	For Single Filers	For Married Individuals Filing Joint Returns	For Heads of Households
10%	$0 to $10,275	$0 to $20,550	$0 to $14,650
12%	$10,275 to $41,775	$20,550 to $83,550	$14,650 to $55,900
22%	$41,775 to $89,075	$83,550 to $178,150	$55,900 to $89,050
24%	$89,075 to $170,050	$178,150 to $340,100	$89,050 to $170,050
32%	$170,050 to $215,950	$340,100 to $431,900	$170,050 to $215,950
35%	$215,950 to $539,900	$431,900 to $647,850	$215,950 to $539,900
37%	$539,900 or more	$647,850 or more	$539,900 or more

Source: Internal Revenue Service.

How Is Tax Liability Calculated?

Line Item	Scenario 1: Using the Standard Deduction	Scenario 2: Using Itemized Deductions	
Adjusted Gross Income	**$125,000**	**$125,000**	← Their **Adjusted Gross Income (AGI)** is their combined income but not the amount they pay taxes on
Minus the Standard Deduction	$24,800		Their **standard or itemized deductions** reduce the amount of income they pay taxes on
or Minus Itemized Deductions		$28,000	
Equals their Taxable Income	**$100,200**	**$97,000**	← This is their new "**taxable income**." Note the $3,200 difference because of the itemized deductions
Pay 10% up to $19,749	$1,975	$1,975	The tax brackets apply a different or "marginal" rate to progressively higher levels of their taxable income.
Pay 12% from $19,750 to $80,249	$7,260	$7,260	
Pay 22% from $80,250 to $171,050	$4,389	$3,685	
Total Tax Liability Before Credits	**$13,624**	**$12,920**	← Adding up their "marginal" tax amounts equals their tax liability before credits
Minus Child Tax Credit (2 x $2,000)	$4,000	$4,000	← Tax credits reduce their tax liability by the amount of the credit
Income Tax After Credits	**$9,624**	**$8,920**	← This is their final tax bill after taking their deductions and credits into account
Average Tax Rate	9.6%	9.2%	