

Lecture 11: Taxes

1. *Average Tax Rate* = taxes paid divided by income of taxpayer
For U.S., average tax rate is around 30%
2. *Marginal Tax Rate* = change in taxes paid divided by change in income

For a “flat tax”, where all income is taxed at the same rate, the average tax rate and the marginal tax rate will be the same.

But for many taxes, especially the income tax, where the percentage of income paid in taxes *increases* with increases in the taxpayer’s income, the marginal tax rate will not be the same as the average tax rate.

The marginal tax rate is the more relevant economic concept because it tells the taxpayer how his/her taxes change with changes in income – example – how much additional taxes will be paid from a pay raise.

3. *FICA* (federal insurance contribution act) taxes

Fund Social Security and Medicare
Employee and employer both pay equal amounts
Self employed person pays entire amount

For 2005, Medicare part is 1.45% on all earnings (paid by both employee and employer)

For 2005, Social Security part is 6.2% on all earnings up to \$90,000 (also paid by both employee and employer)

Why stop at \$90,000? Because Social Security retirement benefits paid back to the person don’t increase beyond \$90,000

So, notice;

Marginal tax rate for Medicare is always 1.45%

Marginal tax rate for Social Security is 6.2% up to earnings of \$90,000 and then 0% for earnings above \$90,000

4. Individual income tax

Is example of tax where marginal tax rate usually is different than the average tax rate.

Terms:

Gross income = total income before any adjustments

Taxable income = income on which tax is paid, after adjustments

Personal exemption = reductions to gross income based on number of persons in the household (in 2005, each personal exemption was worth \$3200)

Deduction = reductions to gross income based on “approved” types of spending, like home mortgage interest payments, some health care expenditures, etc. (in 2005, a single person could take a “standard” deduction of \$5000)

So, *taxable income* = gross income minus personal exemptions minus deductions

Tax brackets = ranges of taxable income to which different marginal tax rates apply

Example: Federal income tax, 2005, single person (subject to change by the government)

Taxable income range	Tax rate
\$0 - \$7300	10%
\$7301-29700	15%
\$29701 - \$71950	25%
\$71951 - \$150150	28%
\$150151 - \$326450	33%
over \$326450	35%

Let’s say Joe Smith, who is single, has gross income of \$100,000. How much does he pay in federal income taxes?

Taxable income = \$100,000 - \$3200 - \$5000 = \$91,800

Tax calculation:

$$\$7300 \times .10 = \$730$$

$$(\$29700 - \$7300) = \$22400 \times .15 = \$3360$$

$$(\$71950 - \$29700) = \$42250 \times .25 = \$10563$$

$$(\$91800 - \$71950) = \$19850 \times .28 = \underline{\$5558}$$

$$\text{Total} = \$20211$$

Notice, this means Joe’s *average tax rate* is \$20211/\$100,000 or 20.2%
However, his *marginal tax rate* is 28%, because his next dollar of earnings will be taxed at 28%

5. FICA and income taxes combined.

North Carolina has an individual income tax also. I won't give you the details, but tax rates range from 5% to 7%.

Therefore, if someone, for example, has \$80,000 of taxable income and gets a \$1000 pay raise, notice how much would be deducted in FICA and income taxes: 7.65% for FICA, say 7% for NC income taxes, and 28% for federal income taxes, for a total marginal tax rate of almost 43% !!!!

6. Sales tax

A state tax on retail spending

Everyone pays the same rate, but since everyone doesn't spend the same percentage of their income, rate as a percentage of income can vary.

In particular, if lower income households spend a higher percentage of their income than higher income households, sales tax paid as a percentage of income can be higher for lower income households than for higher income households.

Example

	<u>Jane</u>	<u>Sally</u>
Income	\$20,000	\$100,000
Spending	\$20,000	\$ 70,000
6% tax on spending	\$ 1200	\$ 4200
Tax as % of income	6%	4.2%

But, some economists say Sally will simply spend the \$30,000 she saved later, and so in the long run, everyone pays the same % of income

7. Classification of taxes

Proportional: the tax paid as a percentage of income is the same for all levels of income

Progressive: the tax paid as a percentage of income increases as the taxpayer's income increases; example: federal individual income tax

Regressive: the tax paid as a percentage of income decreases as the taxpayer's

income increases; example: sales tax

8. Tax incidence

Businesses also pay taxes, such as sales taxes and income taxes on their profits. The question is, who ultimately pays these taxes? Are businesses able to directly pass these taxes on to buyers, or will businesses reduce profits or reduce worker wages to pay the taxes? This is the question of “*tax incidence*”.

In summary, there are three entities that can effectively pay business taxes: owners of the business (including shareholders for corporations), workers at the business, or consumers of the business’s products.

Answer depends on our old friend, *price elasticity of demand*. In a nutshell, if the demand curve is *price inelastic*, then buyers are not very sensitive to price changes, and the business will be able to pass along most of their taxes to buyers in the form of higher prices.

Alternatively, if the demand curve is *price elastic*, then buyers will significantly reduce their purchases when price increases, and so businesses will pay most of their taxes in the form of lower wages for workers and lower profits for owners.