

Session 4

- ▶ An introduction to
 - Implicit taxes
 - Tax clienteles
 - Tax arbitrage



Implicit Taxes

- ▶ In equilibrium the after-tax returns on all assets with the same risk and maturity have to be the same.
- ▶ For equal after-tax returns the pre-tax return on tax favored assets must be lower than that of fully taxed assets
 - This reduction in pre-tax returns is referred to as an "implicit tax"
 - The most common example of implicit taxes is the yield on municipal bonds, interest on which is (generally) excluded from gross income for federal tax purposes.
 - The yields on municipal bonds are lower than those of fully taxable bonds with similar risk.



Taxes and Relative Prices: Implicit Taxes

- ▶ While our focus today will be on assets and rates of return, the implicit tax concept is more general than just the returns on financial assets. For example:
 - When a compensation package has mostly heavily taxed components, workers require more total pretax compensation than when the firm uses tax-advantaged forms of compensation.
 - Multinational investment provides another example. Input prices (especially land) in countries that offer multinational corporations special tax incentives for direct investment may be higher than they would be without the tax incentives.



Implicit taxes

- ▶ Unlike explicit tax payments implicit taxes need not increase government revenue. While the owner of a tax-exempt bond receives less income because of the implicit tax, the Federal government is not the beneficiary of this reduced income. Instead, the issuer (usually a state or local government) benefits from the lower interest rate. Thus, understanding the equilibrium effects of taxes on prices and returns (i.e., the implicit taxes) is critical from understanding the incidence of a particular tax policy.



Implicit taxes

- ▶ The term for who bears the burden (or benefits) from a particular tax policy (or, more generally, any government policy) is the *incidence* of the policy. Statutory incidence describes who writes the check to or who receives a subsidy from the government, economic incidence describes who wins or loses from the policy after accounting for changes in wealth.
- ▶ Foregone tax revenues via preferential treatment are referred to as *tax expenditures*.



General technique for measuring implicit taxes

- ▶ Define a benchmark “asset”
- ▶ Measure the pretax return on the benchmark
- ▶ Measure the pretax return on the alternative asset
- ▶ The difference in returns (benchmark minus alternative) is the implicit tax
- ▶ The implicit tax divided by the return on the benchmark asset is the implicit tax rate



Other factors affecting pre-tax rates of return

- ▶ Changes in tax rates can also have the effect of causing changes in pre-tax returns
 - For example, if you had a 50% tax rate this year and Congress reduces your tax rate next year to 30% you could earn a lower pre-tax return next year and be just as well off
 - $10\%(1-.5)=5\%$ after-tax return with 50% tax rate
 - $7.15\%(1-.3)=5\%$ after tax return with 30% tax rate
- ▶ If everyone in the economy also had the same rate reduction, interest rates could drop from 10% to 7.15% and everyone would earn the same after-tax return



An example

- ▶ 1981 and 1986 tax rate changes and t-bill rates
- ▶ The implicit tax can be expressed as a "tax rate" using the following relation:
 - $r = R - Rt$ where R is the yield on a fully taxable bond
- ▶ For equal after-tax returns, r must also be the yield on a municipal bond of similar risk and maturity
 - $Rt = R - r$
 - $t = (R - r) / R$



An example - continued

- ▶ Taxable bond yield is 8%
- ▶ Municipal bond yield for similar risk and maturity is 6%
- ▶ Implicit tax rate is:
 - $t = (0.08 - 0.06) / 0.08 = 25\%$
- ▶ Why do we care? Compare your actual marginal tax rate with the implicit tax rate
 - If your actual rate is higher, you prefer the municipal bond (in effect you are only paying the lower implicit rate)
 - If your actual rate is lower, you prefer the taxable bond (you would rather pay your actual rate than the implicit rate)



An example - continued

- ▶ Taxable bond yield is 8%
- ▶ Municipal bond yield for similar risk and maturity is 6%
- ▶ Implicit tax rate is 25%
- ▶ Taxpayer's marginal tax rate is 30%
 - taxable bond results in return of $0.08(1-0.3) = 5.6\%$ after tax
 - municipal bond results in return of 6% after tax
- ▶ Taxpayer's marginal tax rate is 20%
 - taxable bond results in return of $0.08(1-0.2) = 6.4\%$ after tax
 - municipal bond results in return of 6% after tax



Tax clienteles

- ▶ For two investments of equal risk and maturity, the after-tax returns must be the same. If not, the investment with the lower return would be shunned and everyone would buy the investment with the higher return causing the pre-tax returns (i.e., the yields) of the investments to adjust until the after-tax returns are the same
- ▶ Since many investors have different marginal tax rates, whose marginal tax rate is reflected in the prices of the investments?
 - Prices reflect the tax rate of the "marginal investor"
 - For most tax-favored investments, there is some tax rate that will make investors indifferent between the tax-favored investment and a similar fully taxable investment



Tax clienteles - continued

- ▶ From the earlier example, a taxpayer with an explicit tax rate of 25% is indifferent between a taxable yield of 8% and a tax exempt yield of 6%. We refer to investors with that particular marginal tax rate as the "marginal investor"
- ▶ When considering a tax-favored investment
 - taxpayers with marginal tax rates $>$ marginal investor's will want to invest in the tax-favored investment
 - taxpayers with marginal tax rates $<$ marginal investor's will want to invest in fully taxable investments
 - this creates a separation of taxpayers into different "groups" based on their marginal tax rates, these groups are referred to as "tax clienteles."



Tax clienteles - some examples

- ▶ We expect most investors in preferred stock are corporations, because corporations get a "dividend received deduction" that lowers the tax rate on dividend income
 - corporations form a "clienteles" for preferred stock
- ▶ High marginal tax rate investors are a clienteles for municipal bonds
- ▶ Tax exempt organizations (such as pension plans) are a clienteles for investments that are fully taxable at ordinary tax rates



What clientele do you fall into?

- ▶ What are your retirement assets invested in?
- ▶ When making investments it is important to understand what clientele you are in (or which clientele your investment falls into). Such information helps you to understand which investments will result in the highest after-tax return.
- ▶ If your tax status changes you may find yourself in the wrong clientele, and you may have to sell your old investments and move into different investments.



Other examples of clientele effects

- ▶ Lease or buy
- ▶ Debt or equity
- ▶ Organizational forms - to be discussed next time

