**Taxation**

Taxes influence the composition of what is produced and consumed in two ways:

1. Finance government decision to bid for resources from alternative uses
2. Taxes frequently alter marginal decisions of consumers/producers

Taxes are compulsory payments associated with specific activities

Revenues generated from government-provided services not normally considered taxes (ex. tuition, utility bills)

Local, state, and federal taxes take roughly 30 cents of every dollar generated from economic activity

Tax base – the economic activity being taxed

**Marginal tax rate (MTR)**

 Change in total tax given a change in the tax base

MTR = $\frac{∆total tax}{∆tax base}$

**Average tax rate (ATR)**

ATR = $\frac{total tax}{tax base}$

Marginal tax rates should affect economic decisions, not average tax rates

Economic decisions should be based on comparison of benefits and costs that arise with the decision (marginal)

Progressive tax

Average tax rate increases with tax base

Example: Federal income tax, Medicare tax

Flat tax

Marginal tax and average tax equal a single constant value

Example: Sales tax in many cases for its defined tax base

Regressive tax

Average tax rate falls as base increases

Example: Social security tax

End of bracket ATR from [federal tax code.](http://milesfinney.net/433/handout/ftx.xlsx)

[Worksheet of Tax Problems](http://milesfinney.net/433/handout/Tax.docx)

Review History [Federal Income tax](http://milesfinney.net/433/handout/ftx.xlsx)

Issues: bracket creep

Marginal rates

Tax burden

**Economic Effect of Taxes**

Government levies taxes in order to:

1. Affect decision making of producers and consumers

Example: correct externalities from activities such as smoking through a cigarette tax

1. Raise revenues

If purpose of tax is to raise revenue, ideally tax should not affect marginal decisions

Example: tax on a hotel rooms:

Price distorting

Other goods

Consumer budget line

A

B

B’

Rooms rented/year

Room tax shifts consumer budget line AB to AB’

Consumer rents fewer rooms because:

1. Tax reduces consumers real income – the baskets available to the consumer are smaller
2. Marginal cost to rent rooms is now higher – substitute goods/services are now relatively less expensive

**Market effect of marginal taxes**

Market for Haircuts

Price

S =SMC

P’

A

D = SMB

Q’

Haircuts (1000’s) / month

Pre-tax equilibrium:

point A: Q’, P’=$50

Assuming no externalities, point A is efficient: at Q’ SMC=SMB

Suppose $5/haircut tax is levied (t=$5) paid directly by the barber/beautician

Tax shifts supply curve S to ST

ST = SMC + t (marginal tax)

Price

ST = SMC + t

S = SMC

C

W

PG=$53.50

P’=$50

A

B

PN=$48.50

Q’’

Haircuts (1000’s) / month

D =SMB

Q’

With tax, market equilibrium is at point C

PG- market price of haircut (gross price)

PN- price producer receives after pay $5 tax per haircut

PN = PG – tax PG = $53.50 t=$5.00 PN = $48.50

Equilibrium quantity is now Q’’

**Cost of the tax**

1. Transfer of income from market participants to government: area PG C B PN
2. Cost in the form of mutually beneficial transactions that do not take place

Designated as W equaling the area: C A B

Area C A B called the excess burden of the tax

Reflects producers and consumers changing behavior to avoid tax

If not for tax, Q’ transactions would have taken place instead of Q’’

W – net value of transactions eliminated due to tax: also called deadweight loss

Tax policy should limit deadweight loss

In general, to limit W, we should tax goods/services in which consumers/producers do not easily change behavior

Tax goods/services with inelastic demand and supply

Case of inelastic demand, W is small; few transactions eliminated due to tax

 Transactions fall from Q’ to Q1

ST

Price

S

W

C

B

A

Q1

D

Haircuts (1000’s) / month

Q’

Examples?

Tax Burden:

The distribution of tax burden depends on elasticities of supply and demand

In the first example share of $5.00 tax burden:

Consumer bears $3.50 [PG – P’ = $53.50-$50]

Producer bears $1.50 [P’ – PN = $50-$48.50]

Which party’s burden increases in the case with the more inelastic demand?