

GOVERNMENT/TAXES

- ❖ Primary economic roles for government:
 - Private property rights and contracts: government provides basic laws to protect right of private property and guarantee contracts are enforced
 - A monetary system: gov't establishes money that is widely accepted and has a stable value
 - Unemployment and capacity utilization: gov't can sometimes help w/ the unemployment of labor, capital, and natural resources
 - Competition: policies aimed at increasing competition or sometimes at producing goods/services that markets otherwise would not pursue
 - Incentives: ?
 - Fairness: gov't may redistribute income from those w/ higher incomes to those w/ lower incomes through taxes or subsidies

- "Sin" tax: objectives are to discourage consumption of the good and to raise government revenue
- Taxes → cost of production increases → price increases → quantity demanded decreases → quantity supplied increases
- If inelastic, more of the tax can be passed along to consumers
- The imposition of a tax on one side of the market (producers or consumers) results in a sharing of the burden

- Government provides subsidies, sometimes directly (ex: to farmers to incentivize them to produce a specific good) and sometimes indirectly (ex: building better roads)
- Impact of a subsidy depends on elasticities:
 - If elastic, lower price → larger change in quantity demanded

- Tax incidence:
 - Assumptions:
 - Market is a competitive market
 - Tax is a quantity tax
 - Tax rate is t
 - [Diagrams 2 and 3 on notes p. 13]

- [Laffer curve diagram on notes p. 41]

ELASTICITY

- Inelastic demand does not mean that quantity demanded is totally insensitive to changes in price
- Elastic demand: if a change in price causes a relatively large change in quantity demanded
- $\% \text{ change} = \frac{(\text{ending value} - \text{beginning value})}{\text{beginning value}} \times 100$
- Elasticity of demand = $\% \text{ change in quantity} / \% \text{ change in price}$
 - Use absolute value
- Inelastic demand: if a change in price causes only a small change in quantity demanded
 - If $\% \text{ change in } q_d$ is less than $\% \text{ change in price}$

- What determines elasticity of demand?
 - # of substitutes
 - The greater the # of substitutes, the greater the elasticity
 - Whether or not a good is a necessity
 - If a good is a necessity, it has few or no substitutes, so very little elasticity
 - Percentage of income spent on good
 - If amount spent on a good makes up a large part of one's income, then that good will be more elastic, compared to a good that one spends little money on
 - Length of time for adjustment
 - The more time we have to adjust to a price change, the more elastic demand will be (can identify substitutes or learn to live w/o goods)

- Total revenue = quantity sold x price of good
- If elasticity of demand greater than 1, demand is elastic
- If elasticity less than 1, inelastic
- If = 1, unitary elasticity
- An inelastic demand curve will be steeper than an elastic demand curve
- If price is lowered for an...
 - Inelastic good: revenue decreases
 - Elastic good: revenue increases
- If price elasticity = 1, revenue will stay the same no matter what the price is
- Profit = total revenue minus total costs

GROWTH THEORY

- Many developing countries see much higher growth rates than the U.S. (although many also have lower or negative growth rates)
 - ◆ Developing countries are often able to achieve such high growth rates because they are starting from a lower level w/ greater potential for advancement
 - Countries are able to adopt tech already developed in other countries and improve their education systems

- ★ KEY QUESTION: Why do some economies grow rapidly while others grow slowly -- or not at all?
- ★ An area of economics called “growth theory” is concerned w/ the question of what determines the growth rate

- Long run growth
 - The growth rate of potential GDP depends on:
 - The growth rate of the labor force
 - The growth rate of the nation’s capital stock
 - The rate of technical progress
- Growth theory
 - Output = $y = A[f(K,L)]$
 - $f(K,L)$ = function of capital and labor
 - The output in an economy is a function of capital and labor
 - A = rate of technical progress
- Labor productivity: the amount of output a worker turns out in an hour (or a week, or a year) of labor
- For the 1952-2002 period, labor productivity exhibits:
 - An upward trend
 - Fairly sizable fluctuations around that trend
- The 3 pillars of productivity growth:
 - Capital: for a given technology and labor force, labor productivity will be higher when the capital stock is larger
 - Technology: for given inputs of labor and capital, labor productivity will be higher when the technology is better
 - Labor quality: education and training; for a given capital stock and given technology, labor productivity will be higher when the workforce has more education and training

- Interest rates:
 - If interest rates increase, borrowing decreases and consumption decreases

Investment

- Investment: spending by businesses on new buildings, machines, tools, robots, software, etc.
 - Represents an increase in the capacity to produce future output

Net Exports

- Net exports = exports - imports
- Factors that increase demand for U.S. exports:
 - Increase in income of other countries
 - Increase in international preferences for US goods
 - Increase in prices of substitute goods in foreign countries
 - Decrease in import taxes (tariffs) in other countries
- Factors that decrease demand for imports into the US:
 - Our income decreases
 - Our tastes for goods from other countries decreases
 - Our prices of substitute goods decreases
 - Our tariffs increase

Government

- Government spending: total spending on goods and services by all levels of government
 - Does not include transfer payments

Income-Spending Model

- If spending is greater than output, inventories decrease and output increases
- If spending is less than output, inventories increase and output decreases
- If spending = output, no change
- Economy is in equilibrium where $GDP = \text{spending} = \text{output}$

The Spending Multiplier

- Spending multiplier: the multiple by which an increase in autonomous spending due to an increase or decrease in government spending or investment ripples through the economy
 - As output increases, income increases → consumption increases even further

- Banks increase loans
 - Money supply increases
 - Interest rate decreases
 - Investment increases (positive shift in AD)
 - Income and consumption increase
 - FINAL EFFECT: Real GDP increases, unemployment decreases, and prices increase
- ❖ If there's inflation, Fed takes on a restrictive/contractionary monetary policy
 - ❖ In the case of a supply shock, the options aren't good (supply shock causes AS to decrease)
 - 2 problems: rising unemployment and rising inflation
 - Can solve either one, but in the process, make the other one worse
 - Anti-inflationary policy: decreases AD
 - Anti-unemployment policy: increases AD
- ❖ **MV = PQ**
 - M: money supply
 - V: number of times each dollar is spent on final goods and services/yr
 - Velocity
 - The inverse of the fraction of income people in an economy hold as money
 - So if people decide they want to hold more money, V must decrease unless something else changes
 - P: overall price level
 - Q: real GDP
 - Best explains the relationship between inflation and money supply in the long run
 - When money supply changes, GDP changes
 - ❖ Quantity theory of money: if V and Q are fixed, changes in M will have a powerful and predictable effect in the long run
 - Aka, changes in M will only affect P
 - Aka, the faster M increases, the higher inflation will be
 - ❖ Taylor Rule: $i = \text{constant} + 0.5(\pi - \pi_t) + 0.5(\text{GDP} - \text{GDP}_t)$
 - i = nominal interest rate
 - π = inflation (current)
 - π_t = target for inflation
 - GDP = current GDP growth
 - GDP_t = target GDP growth