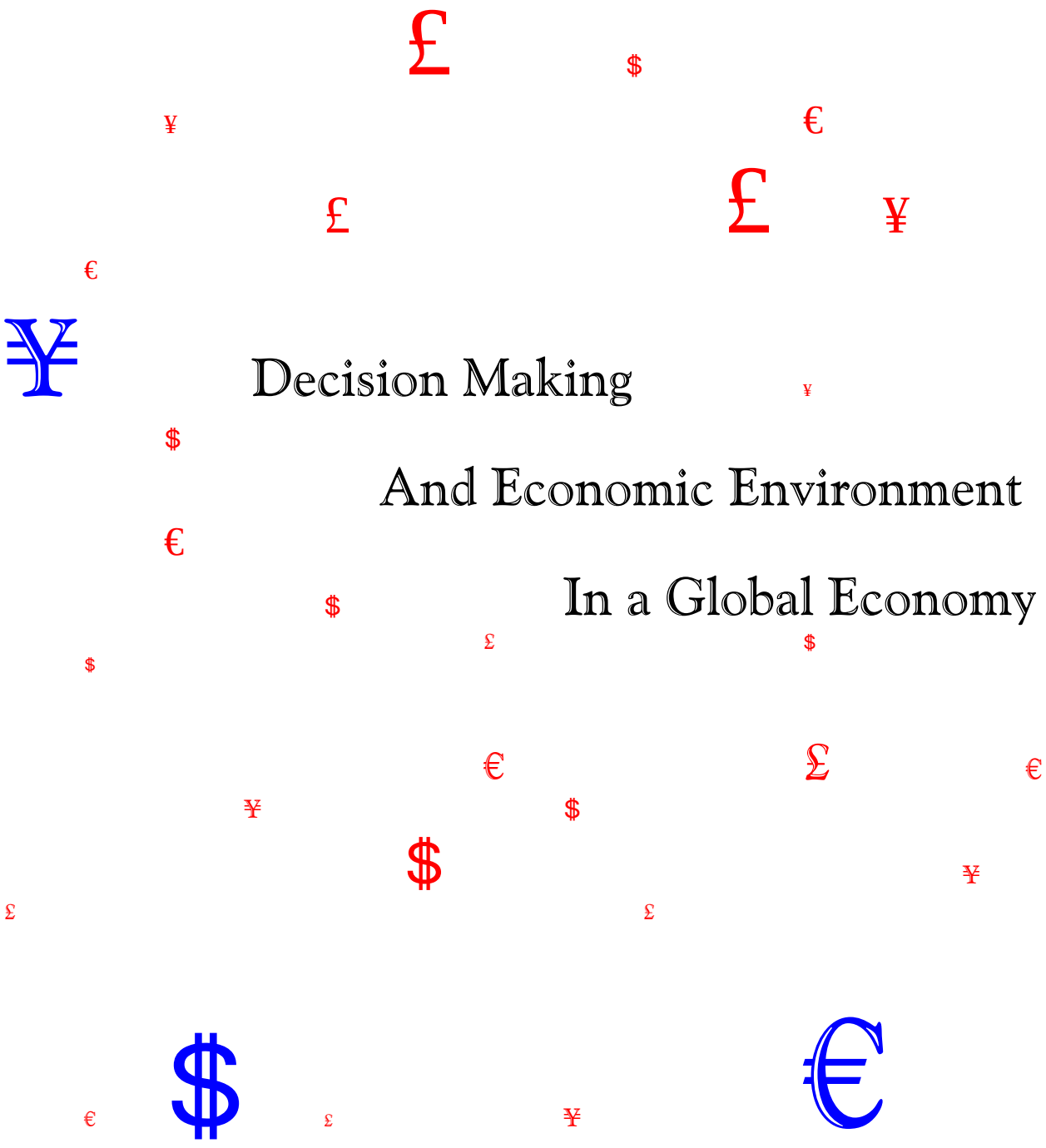

Decision Making And Economic Environment In a Global Economy

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LECTURE NOTES

Decision Making and Economic Environment in a Global Economy

A524

1. Introduction to Economics

Lecture Notes

1. Economics Defined - Economics is the study of the ALLOCATION of SCARCE resources to meet UNLIMITED human wants.

    a. Microeconomics - is concerned with decision-making by individual economic agents such as firms and consumers.

    b. Macroeconomics - is concerned with the aggregate performance of the entire economic system.

    c. Empirical economics - relies upon facts to present a description of economic activity.

    d. Economic theory - relies upon principles to analyze behavior of economic agents.

    e. Inductive logic - creates principles from observation.

    f. Deductive logic - hypothesis is formulated and tested.

2. Usefulness of economics - economics provides an objective mode of analysis, with rigorous models that are predictive of human behavior.

    a. Scientific approach

    b. Rational choice

3. Assumptions in Economics - economic models of human behavior are built upon assumptions; or simplifications that permit rigorous analysis of real world events, without irrelevant complications.

a. Model building - models are abstractions from reality - the best model is the one that best describes reality and is the simplest – Occam's Razor.

b. simplifications:

1. ceteris paribus - means all other things equal.

2. There are problems with abstractions, based on assumptions. Too often, the models built are inconsistent with observed reality - therefore they are faulty and require modification. When a model is so complex that it cannot be easily communicated or its implications easily understood - it is less useful.

4. Economics and Values

a. POSITIVE economics is concerned with what is;

b. NORMATIVE economics is concerned with what should be.

c. Economics is not value free, there are judgments made concerning what is important:

1. Individual utility maximization versus social betterment

2. Efficiency versus fairness

3. More is preferred to less

5. Objective Thinking:

a. bias - most people bring many misconceptions and biases to economics.

4. Because of political beliefs and other value system components rational, objective thinking concerning various issues requires the shedding of these preconceptions and biases.

b. fallacy of composition - is simply the mistaken belief that what is true for the individual, must be true for the group.

c. cause and effect - post hoc, ergo propter hoc - “after this, because of this” – fallacy.

1. correlation - statistical association of two or more variables.

2. causation - where one variable actually causes another.

a. Granger causality states that the thing that causes another must occur first, that the explainer must add to the correlation, and must be sensible.

d. cost-benefit or economic perspective - marginal decision-making - if benefits of an action will reap more benefits than costs it is rational to do that thing.

1. Focus on the addition to benefit, and the addition to cost as the basis for decision-making.

a. Sunk costs have nothing to do with rational decision-making.

6. The economizing problem involves the allocation of resources among competing wants. There is an economizing problem because there are:

a. unlimited wants

b. limited resources

7. Resources and factor payments:

a. land - includes space (i.e., location), natural resources, and what is commonly thought of as land.

    1. land is paid rent

b. capital - are the physical assets used in production - i.e., plant and equipment.

    2. capital is paid interest

c. labor - is the skills, abilities, knowledge (called human capital) and the effort exerted by people in production.

    3. labor is paid wages

d. entrepreneurial talent - (risk taker) the economic agent who creates the enterprise.

    4. entrepreneurial talent is paid profits

8. Technology

    a. Technology is the mix of resources, how the factors of production come to together to produce.

    b. The best technology is that which produce a given level of output at the minimum cost.

9. Full employment includes the natural rate of unemployment and down time for normal maintenance (both capital & labor). However, full production or 100% capacity utilization cannot be maintained for a prolonged period without labor and capital breaking-down:

    a. underemployment - utilization of a resource in a manner, which is less than what is consistent with full employment - using an M.D. as a practical nurse.

10. Economic Efficiency consists of the following three components:

    a. **allocative efficiency** - is measured using a concept known as Pareto Superiority (or Optimality)

1. Pareto Optimal - is that allocation where no person could be made better off without inflicting harm on another.

2. Pareto Superior - is that allocation where the benefit received by one person is more than the harm inflicted on another. [cost - benefit approach]

b. **technical efficiency** - for a given level of output, you minimize cost or (alternatively) for a given level of cost you maximize output.

c. **full employment** - for a system to be economically efficient then full employment is also required.

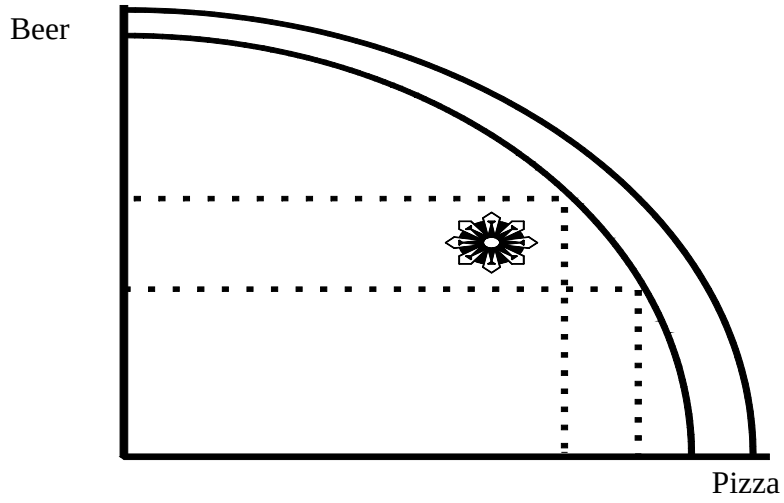
11. Allocations of resources imply that decisions must be made, which in turn involves choice. Every choice is costly; there is always the lost alternative -- the opportunity cost:

a. opportunity cost - the next best alternative that must be foregone as a result of a particular decision.

12. The production possibilities curve is a simple model that can be used to show choices:

a. assumptions necessary to represent production possibilities in a simple production possibilities curve model:

1. efficiency
2. fixed resources
3. fixed technology
4. two products



13. Law of Increasing Opportunity Costs is illustrated in the above production possibilities curve. Notice - As we obtain more pizza (shift to the right along the pizza axis), we have to give up large amounts of beer (downward shift along beer axis).

14. Inefficiency, unemployment and underemployment are illustrated by a point inside the production possibilities curve, as shown above. (identified by this symbol):

    a. Inefficiency is a violation of the assumptions behind the model, but do not change the potential output of the system.

15. Economic Growth can also be illustrated with a production possibilities curve. The dashed line in the above model shows a shift to the right of the curve, which is called economic growth.

    a. The only way this can happen is for there to be more resources or better technology.

    b. Growth will change the potential output of the economy, hence the shift of the entire curve.

16. The modern economic system is no longer the closed (i.e., U.S. only) system upon which the debates surrounding isolationalism occurred prior to World War II.

    a. Imports and Exports are increasingly important

b. Foreign investment versus U.S. investment abroad

    1. Outsourcing

    2. Technological transfers

c. Balance of trade issues.

    1. Current accounts (import v. exports)

    2. Capital accounts (foreign investment)

17. Capitalist Ideology - The characteristics of a capitalist economy and the ideology that has developed concerning this paradigm are not necessarily the same thing. The elements of a capitalist ideology are:

    a. freedom of enterprise

    b. self-interest

    c. competition

    d. markets and prices

    e. a very limited role for government

    f. different countries with different views of these matters – i.e., equity v. efficiency again.

18. Market System Characteristics - the following characteristics are typical of a system that relies substantially on markets for allocation of resources. These characteristics are:

    a. division of labor & specialization

b. capital goods

c. comparative advantage - is concerned with cost advantages.

1. Comparative advantage is the motivation for trade among nations and persons.

2. Terms of trade are those upon which the parties may agree and depends on the respective cost advantages and bargaining power.

19. Trade among nations

a. the reliance upon comparative advantage to motivate trade – assuming barter:

	Belgium	Holland
Tulips	400	4000
Wine	4000	400

The data above show what each country could produce if all of their resources were put into each commodity. For example, if Holland put all their resources in tulip production they could produce 4000 tons of tulips but no wine. Assuming the data give the rate at which the commodities can be substituted, if both countries equally divided their resources between the two commodities, Belgium can produce 200 tons of tulips and 2000 barrels of wine and Holland can produce 200 barrels of wine and 2000 tons of tulips (for a total of 2200 units of each commodity produced by the two countries by splitting their resources among the two commodities). If Belgium produced nothing but wine it would produce 4000, and if Holland produced nothing but tulips it would produce 4000 tons). If the countries traded on terms where one barrel of wine was worth one ton of tulips then both countries would have 2000 units of each commodity and obviously benefit from specialization and trade.

b. absolute advantage for one trading partner results in no advantage to trade.

3. LDCs often have no comparative advantage and hence the developed countries, possessing absolute advantage have no incentive to trade (.

3. LDC– Less Developed Country - Low-income countries – 60 – (per capita GDP of $800), middle-income countries – 75 – (per capital GDP of $8000).

4. High income countries and developed countries (19 countries)

5. High income countries without economic development (Hong Kong, Israel, Kuwait, Singapore, and UAE)

20. Money facilitates market activities and is necessary in complex market systems:

a. barter economy - is where commodities are directly traded without the use of money.

1. Direct trade requires a coincidence of wants.

2. Prices become complicated by not having a method to easily measure worth.

b. functions of money:

1. medium of exchange

2. store of value

3. measure of worth

c. Fiat money

1. European Gold & Silver smith receipts 15th century

2. Genghis Kahn in the 12th century in Asia – paper money

21. Foreign exchange – value of one currency versus another

    a. Hard currency – U.S. dollar, British Pound, Canadian dollar, Japanese Yen, and the Euro – general acceptability of the currency and it being demanded as reserves by central banks

        1. G-7 nations, hard currency nations; Euro predecessors France, Germany, Italy

    b. Exchange rates affect both imports and exports; and foreign investment here, U.S. investment abroad.

        1. Dollar gains strength, Imports cheaper here, exports more expensive abroad

        2. Dollar gains strength, foreign investment in U.S. more attractive because dollar buys more foreigners' home currency when investment repatriated

    c. Strong dollar policy in exchange – based on interest rates, growth, and relative strength of economy and stability of political system etc.

        1. Debt and supply of currency an important factor in economic development

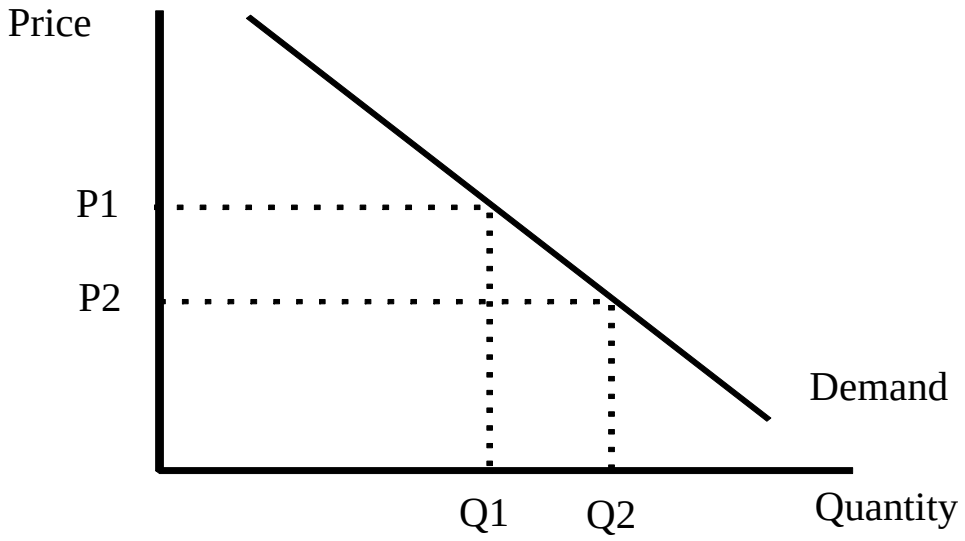
2. Basics of Supply and Demand

Lecture Notes

1. A market is nothing more or less than the locus of exchange, it is not necessarily a place, but simply buyers and sellers coming together for transactions.

2. The law of demand states that as price increases (decreases) consumers will purchase less (more) of the specific commodity.

    a. The demand schedule (demand curve) reflects the law of demand it is a downward sloping function and is a schedule of the quantity demanded at each and every price.



As price falls from P1 to P2 the quantity demanded increases from Q1 to Q2. This is a negative relation between price and quantity, hence the negative slope of the demand schedule; as predicted by the law of demand.

1. utility (use, pleasure, jollies) from the consumption of commodities.

2. The change in utility derived from the consumption of one more unit of a commodity is called marginal utility.

3. Diminishing marginal utility is the fact that at some point further consumption of a commodity adds smaller and smaller increments to the total utility received from the consumption of that commodity.

b. The income effect is the fact that as a person's income increases (or the price of item goes down [which effectively increases command over goods] more of everything will be demanded.

c. The substitution effect is the fact that as the price of a commodity increases, consumers will buy less of it and more of other commodities.

3. Demand Curve

a. Price and quantity - again the demand curve shows the negative relation between price and quantity.

b. Individual versus market demand - a market demand curve is simply an aggregation of all individual demand curves for a particular commodity.

c. Nonprice determinants of demand; and a shift to the left (right) of the demand curve is called a decrease (increase) in demand. The nonprice determinants of demand are:

    1. tastes and preferences of consumers,

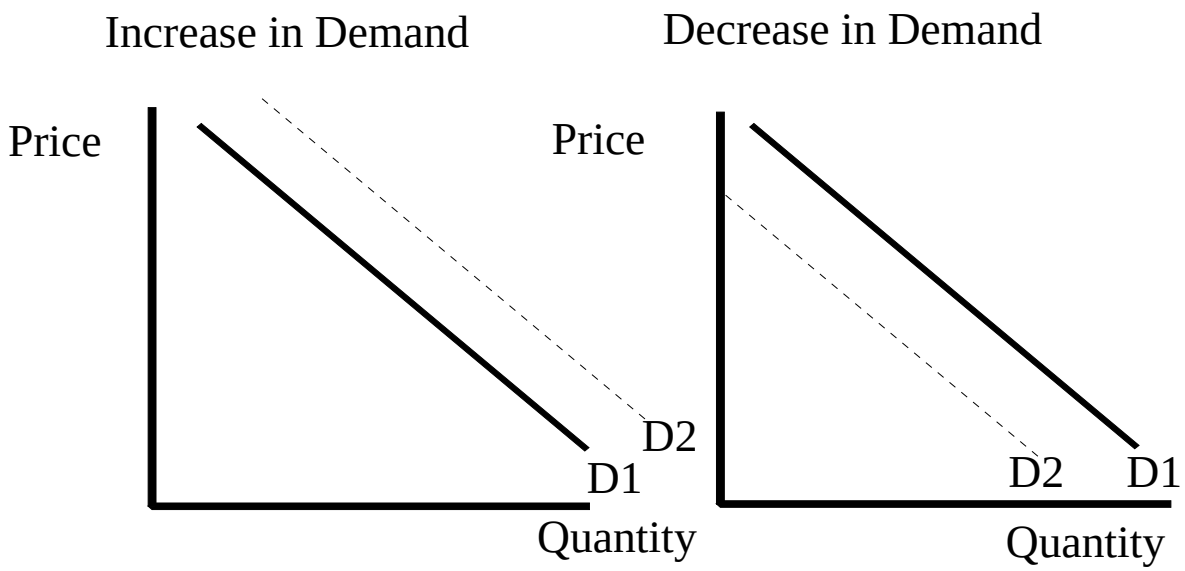
    2. the number of consumers,

    3. the money incomes of consumers,

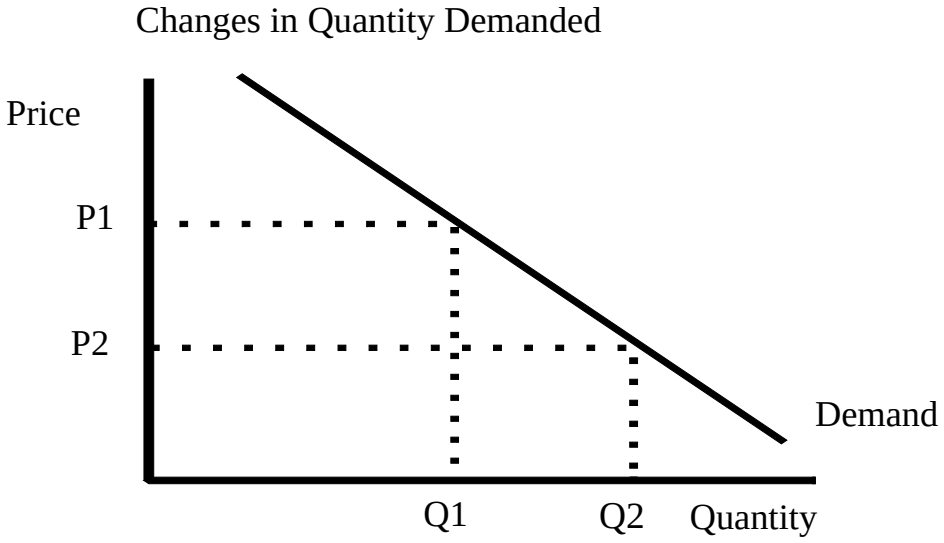
    4. the prices of related goods, and

    5. consumers' expectations concerning future availability or prices of the commodity.

d. Changes in demand versus in quantity demanded



An increase in demand is shown in the first panel, notice that at each price there is a greater quantity demanded along D2 (the dotted line) than was demanded with D1 (the solid line). The second panel shows a decrease in demand, notice that there is a lower quantity demanded at each price along D2 (the dotted line) than was demanded with D1 (the solid line).



Movement along a demand curve is called a change in the quantity demanded. Changes in quantities demanded are caused by changes in price. When price decreases from P1 to P2 the quantity demanded increases from Q1 to Q2; when price increases from P2 to P1 the quantity demanded decreases from Q2 to Q1.

4. The law of supply is that producers will supply more the higher the price of the commodity.

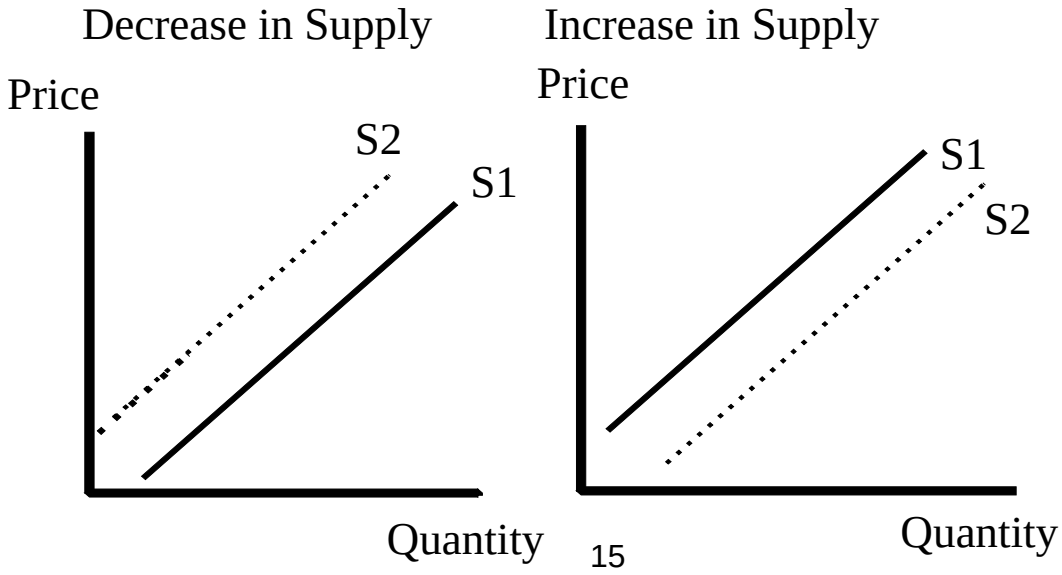
    a. Supply schedule - are the quantities supplied at each and every price.

5. Supply curve - is nothing more than a schedule of the quantities at each and every price.

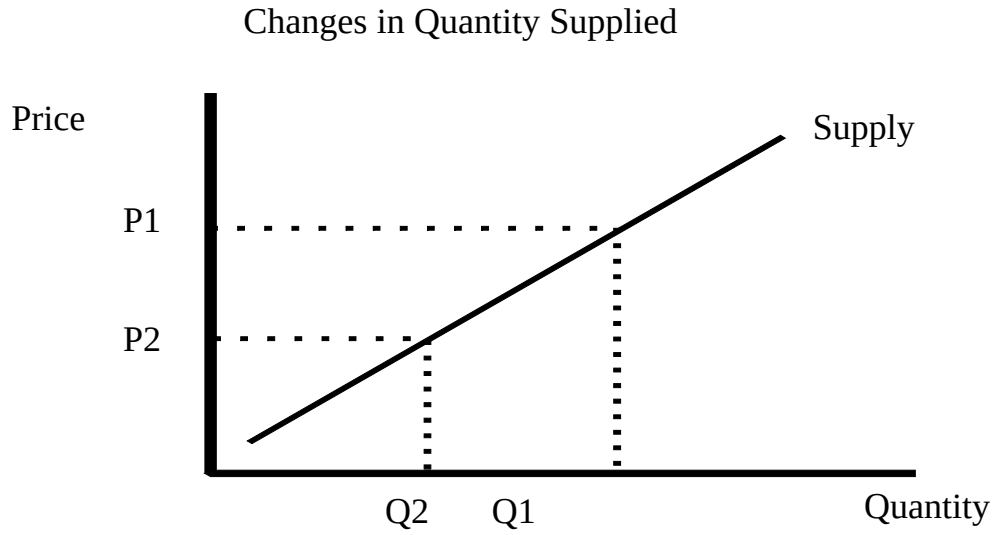
    a. There is a positive relation between price and quantity on a supply curve.

    b. Changes in one or more of the nonprice determinants of supply cause the supply curve to shift. A shift to the left of the supply curve is called a decrease in supply; a shift to the right is called an increase in supply. The nonprice determinants of supply are:

        3. resource prices,
        4. technology,
        5. taxes and subsidies,
        6. prices of other goods,
        7. expectations concerning future prices, and
        8. the number of sellers.



A decrease in supply is shown in the first panel, notice that there is a lower quantity supplied at each price with S2 (dotted line) than with S1 (solid line). The second panel shows an increase in supply, notice that there is a larger quantity supplied at each price with S2 (dotted line) than with S1 (solid line).



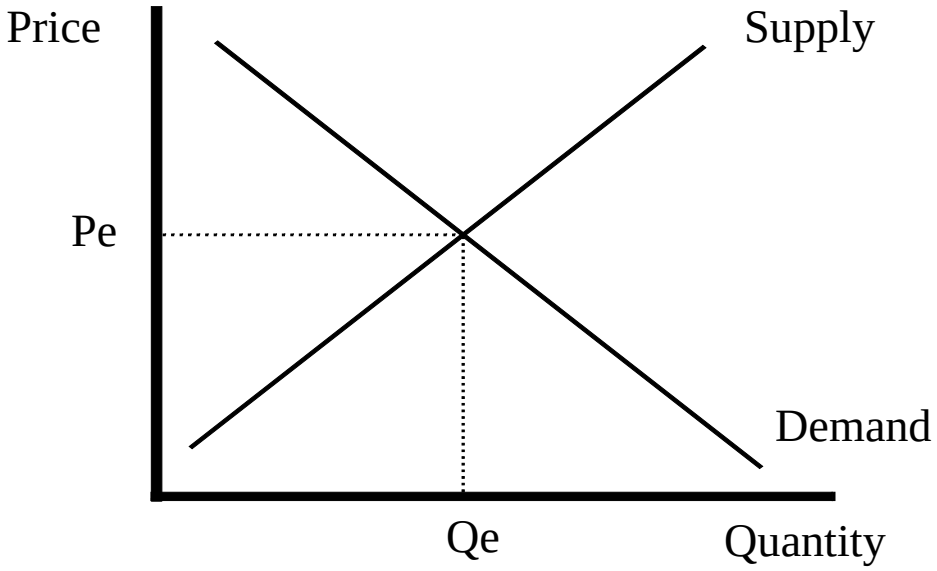
Changes in price cause changes in quantity supplied, an increase in price from P2 to P1 causes an increase in the quantity supplied from Q2 to Q1; a decrease in price from P1 to P2 causes a decrease in the quantity supplied from Q1 to Q2.

6. Market equilibrium occurs where supply equals demand (supply curve intersects demand curve).

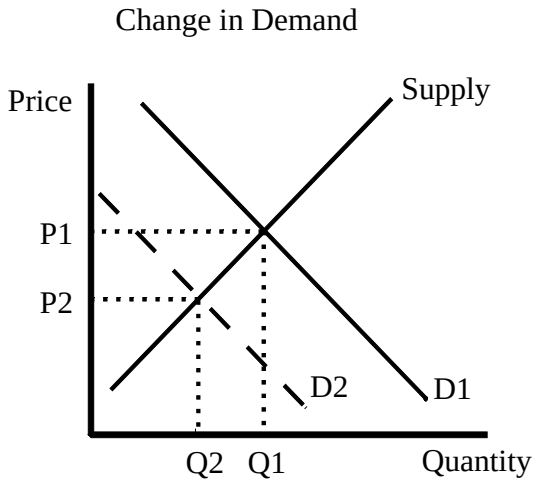
    a. An equilibrium implies that there is no force that will cause further changes in price, hence quantity exchanged in the market. This is analogous to a cherry rolling down the side of a glass; the cherry falls due to gravity and rolls past the bottom because of momentum, and continues

rolling back and forth past the bottom until all of its' energy is expended and it comes to rest at the bottom - this is equilibrium [a rotten cherry in the bottom of a glass].

The following graphical analysis portrays a market in equilibrium. Where the supply and demand curves intersect, equilibrium price is determined (Pe) and equilibrium quantity is determined (Qe)

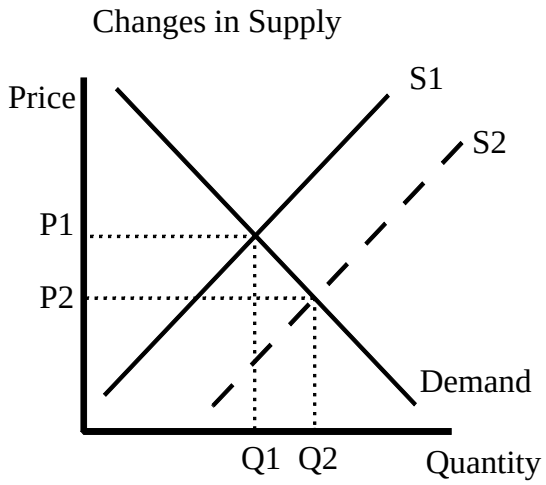


7. Changes in supply and demand in a market result in new equilibria. The following graphs demonstrate what happens in a market when there are changes in nonprice determinants of supply and demand.



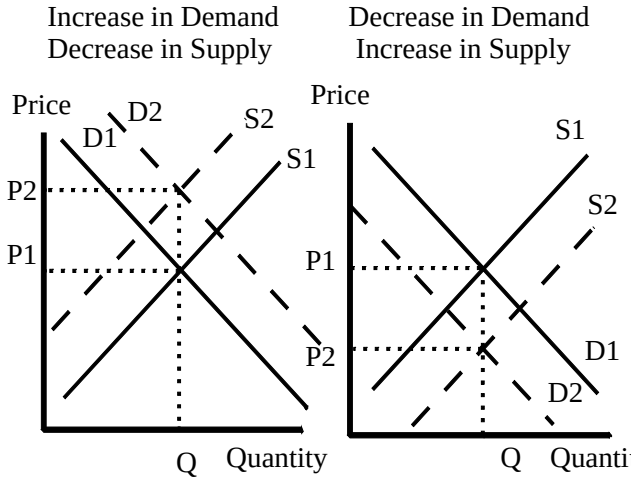
Movement of the demand curve from D1 (solid line) to D2 (dashed line) is a decrease in demand (as demonstrated in the above graph). Such decreases are caused by a change in a nonprice determinant of demand (for example, the number of consumers in the market declined or the price of a substitute declined). With a decrease in demand there is a shift of the demand curve to the left along the supply curve, therefore both equilibrium price and quantity decline. If we move from D2 to D1 that is called an increase in demand, possibly due to an increase in the price of a substitute good or an increase in the number of consumers in the market. When demand increases both equilibrium price and quantity increase as a result.

Considering the following graph, movement of the supply curve from S1 (solid line) to S2 (dashed line) is an increase in supply. Such increases are caused by a change in a nonprice determinant (for example, the number of suppliers in the market increased or the cost of capital decreased). With an increase in supply there is a shift of the supply curve to the right along the demand curve, therefore equilibrium price and quantity move in opposite directions (price decreases, quantity increases). If we move from S2 to S1 that is called an decrease in supply, possibly due to an increase in the price of a productive resource (capital) or the number of suppliers decreased. When supply decreases, equilibrium price increases and the quantity decreases as a result. That is the result of the supply curve moving up along the negatively sloped demand curve (which remains unchanged).



If both the demand curve and supply curve change at the same time the analysis becomes more complicated.

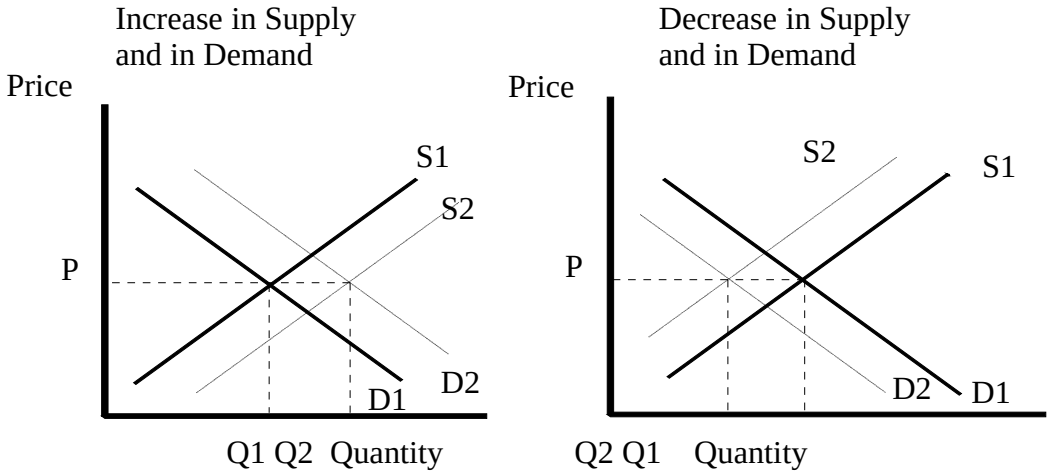
Consider the following graphs:



Notice that the quantity remains the same in both graphs. Therefore, the change in the equilibrium quantity is indeterminant and its direction and size depends on the relative strength of the changes between supply and demand. In both cases, the equilibrium price changes. In the first case where demand increases, but supply decreases the equilibrium price increases. In the second panel where demand decreases and supply increases, the equilibrium price decreases.

In the event that demand and supply both increase then price remains the same (is indeterminant) and quantity increases, and if both decrease then price is

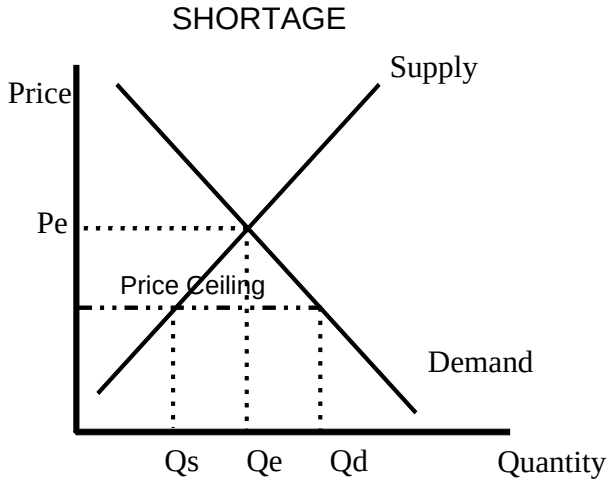
indeterminant and quantity decreases. These results are illustrated in the following diagrams.



The graphs show that price remains the same (is indeterminant) but when supply and demand both increase quantity increases to Q2. When both supply and demand decrease quantity decreases to Q2.

8. Shortages and surpluses occur because of effective government intervention in the market.

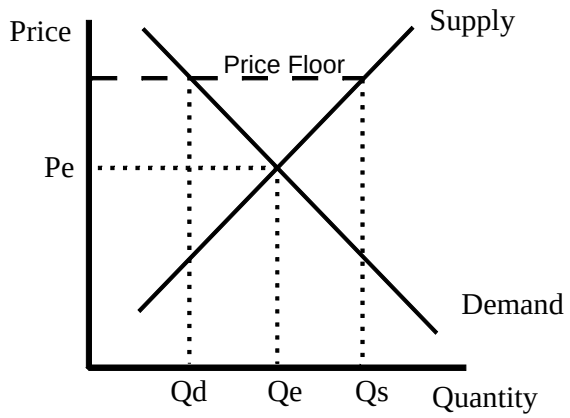
    a. Shortage is caused by an effective price ceiling (the maximum price you can charge for the product). Consider the following diagram that demonstrates the effect of a price ceiling in an otherwise purely competitive industry.



1. For a price ceiling to be effective it must be imposed below the competitive equilibrium price. Note that the Qs is below the Qd, which means that there is an excess demand for this commodity that is not being satisfied by suppliers at this artificially low price. The distance between Qs and Qd is called a shortage.

b. Surplus is caused by an effective price floor (i.e., the minimum you can charge):

SURPLUS



For a price floor to be effective it must be above the competitive equilibrium price. Notice that at the floor price Qd is less than Qs, the distance between Qd and Qs is the amount of the surplus. Minimum wages are the best-known examples of price floors and will be discussed in greater detail in Chapter 11.

9. Supply and Demand is rudimentary, and does not exist in the real world. In most respects the supply and demand model is the beginning point for understanding markets. Monopoly, monopolistic competition and oligopoly are, in some important respects, refinements from the purely competitive market. Therefore, the basic supply and demand model may accurately be thought of as the beginning point from which we will explore more realistic market structures.

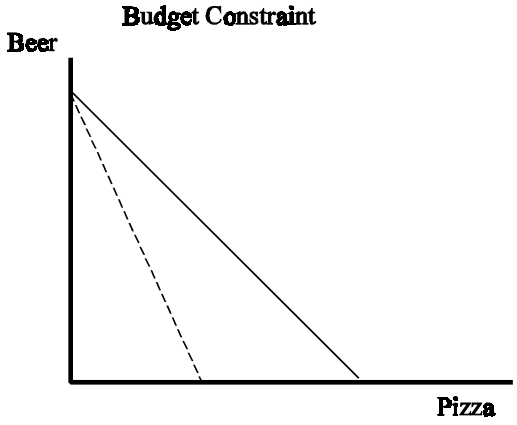
10. Individual demand curves can be constructed from observing consumer purchasing behaviors as we change price.

a. This is called REVEALED PREFERENCE

b. Market demand curves are constructed by aggregating individual demand curves for specific commodities.

11. Individual preferences can be modeled using a model called indifference curve - budget constraint and from this model we can derive an individual demand curve.

a. The budget constraint shows the consumer's ability to purchase goods.



The consumer is assumed to spend their resources on only beer and pizza. If all resources are spent on beer then the intercept on the beer axis is the amount of beer the consumer can purchase; on the other hand, if all resources are spent on pizza then the intercept on that axis is the amount of pizza that can be had.

If the price of pizza doubles then the new budget constraint becomes the dashed line. The slope of the budget constraint is the negative of the relative prices of beer and pizza.

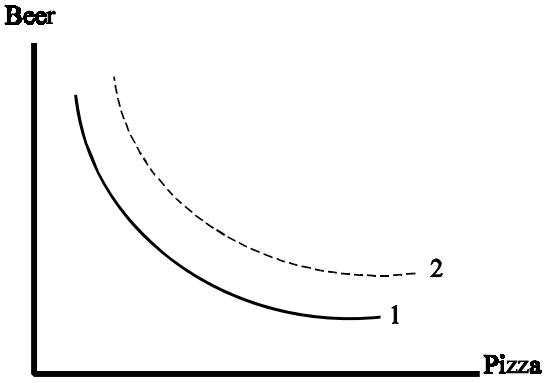
b. The indifference curve shows the consumer's preferences:

1. There are three assumptions that underpin the indifference curve, these are:

    1) Indifference curves are everyplace thick

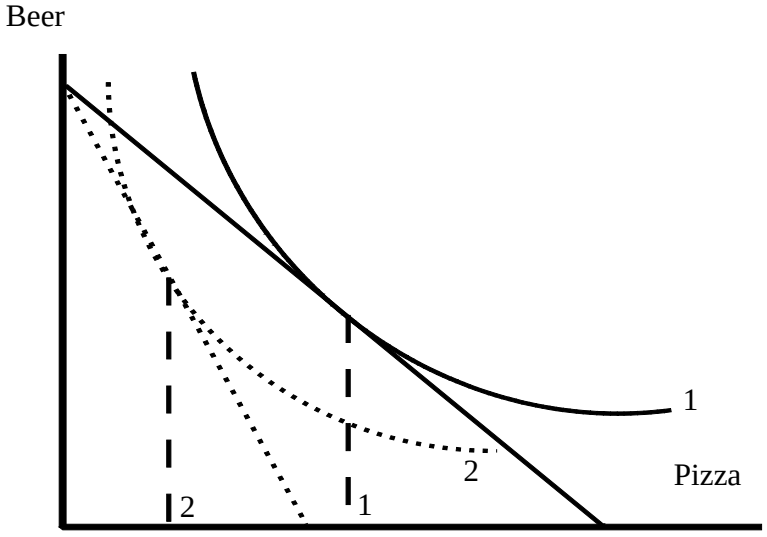
    2) Indifference curves do not intersect one another

3) Indifference curves are strictly convex to the origin



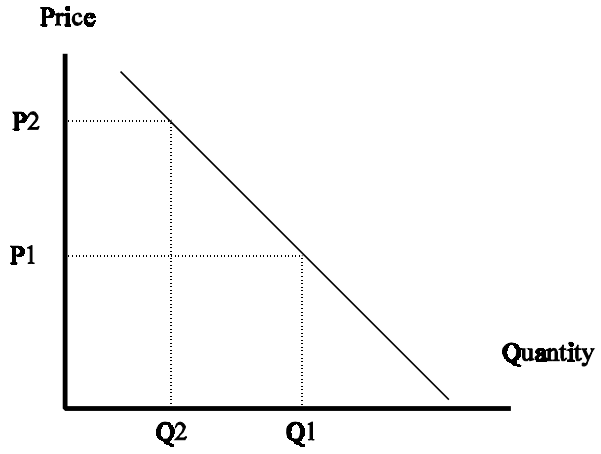
The dashed line (2) shows a higher level of total satisfaction than does the solid line (1). each indifference curve is the mix of beer and pizza that gives the consumer equal total utility.

Consumer equilibrium is where the highest indifference curve they can reach is exactly tangent to their budget constraint. Therefore if the price of pizza increases we can identify the price from the slope of the budget constraint and the quantities purchased from the values along the pizza axis and derive and individual demand curve for pizza:



When the price of pizza doubled the budget constraint rotated from the solid line to the dotted line and instead of the highest indifference curve being curve 1, the best the consumer can do is the indifference curve labeled 2.

Deriving the individual demand curve is relatively simple. The price of pizza (with respect to beer) is given by the (-1) times slope of the budget constraint. The lower price with the solid line budget constraint results in the level the higher level of pizza being purchased (labeled 1for the indifference curve - not the units of pizza). When the price increased the quantity demanded of pizza fell to the levels associated with budget constraint 2.

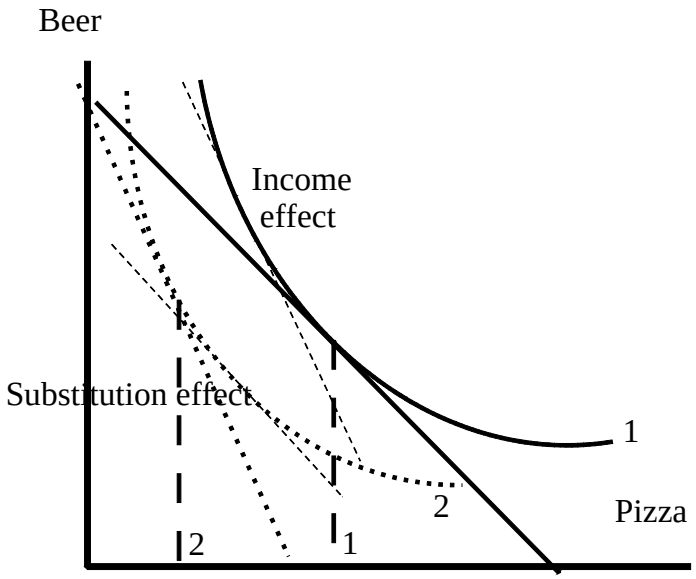


Notice that Q2 and P2 are associated with indifference curve 2 and budget constraint 2, and that Q1 and P1 result from indifference curve 1 and budget constraint 1. The above model shows this individual consumer's demand for pizza.

12. Income and substitution effects combine to cause the demand curve to slope downwards.

    a. the income effect results from the price of a commodity going down permitting consumers to spend less on that commodity, hence the same as having more resources.

       The dashed line is an imaginary budget constraint that the consumer will attempt to attain, and consume both commodities as though his income had not changed (labeled income effect)



b. As a price increases, the consumer will purchase less of that commodity and buy more of a substitute, this is the substitution effect.

The dashed line at the new indifference curve illustrates the substitution effect, the consumer will attempt to substitute more pizza for beer at the old price relative even though the income will not permit it.

c. The combination of the income and substitution effects is that an individual (hence a market) demand curve will generally slope downward. The respective effects of the income and substitution effects bring the consumer into a new equilibrium at the higher price for pizza where amount 2 of pizza is consumed.

d. Giffin's Paradox is the fact that some commodities may have an upward sloping demand curve. This happens because the income effect results in less of a quantity demanded for a product the lower the price.

1. There is also the snob appeal possibility where the higher the price the more desired the commodity is - Joy Perfume advertised itself as the world's most expensive.

a. Utility maximizing rule - consumers will balance the utility they receive against the cost of each commodity to arrive at the level of each commodity they should consume to maximize their total utility.

a. algebraic restatement - $MU_a/P_a = MU_b/P_b = . . . = Mu_z / P_z = 1$

3. More on Supply & Demand: Price Elasticities

Lecture Notes

1. Price Elasticity of Demand is how economists measure the responsiveness of quantities demanded to changes in prices.

    a. The elasticity coefficient is calculated using the midpoints formula presented below:

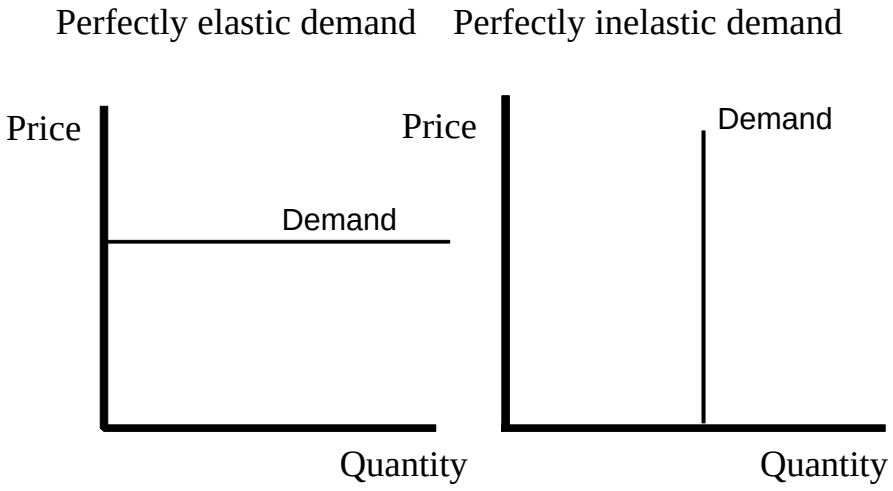
        i. $E_d = \frac{\text{Change in Qty}}{(Q1 + Q2)/2} \div \frac{\text{Change in price}}{(P1 + P2)/2}$

    b. Elastic demand means that the quantities demanded respond more than proportionately to changes in price; with elastic demand the coefficient is more than one.

    c. Inelastic demand means that the quantities demanded respond less than proportionately to changes in price; with inelastic demand the coefficient is less than one.

    d. Unit elastic demand means that the quantity demanded respond proportionately to change in prices; with unit elastic demand the coefficient is exactly one.

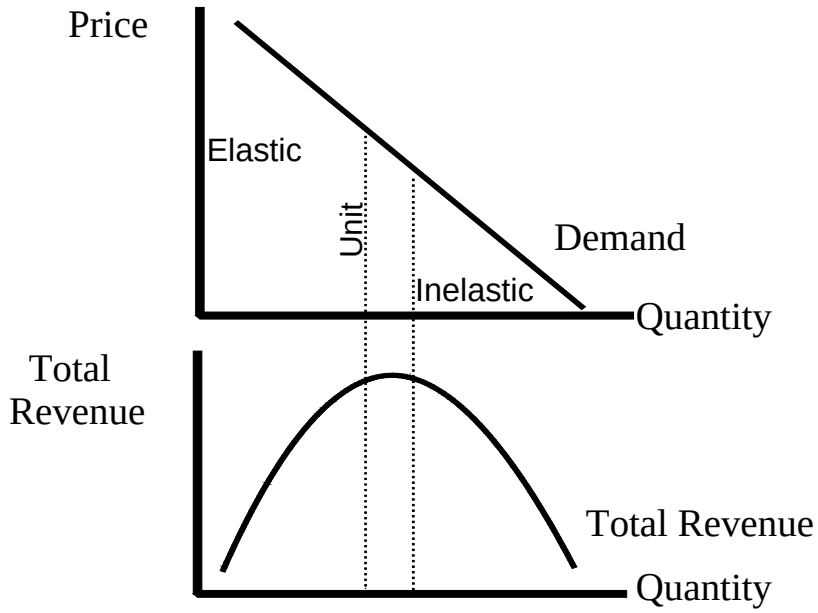
2. Perfectly Elastic and Perfectly Inelastic Demand Curves



Notice that the perfectly elastic demand curve is horizontal, (add one more horizontal line at the top of the price axis and it will look like an E) and the inelastic demand curve is vertical (looks like an I).

a. Elasticity changes along the demand curve, however slope does not. Elasticity is concerned with changes along the curve rather than the shape or position of the curve.

3. Demand Curve and Total Revenue (total revenue = P x Q) Curve



In examining the above graphs, notice that as total revenue is increasing, demand is elastic. When the total revenue curve flattens-out at the top then demand becomes unit elastic, and when total revenue falls demand is inelastic.

4. Total Revenue Test uses the relation between the total revenue curve and the demand curve to determine elasticity.

Consider the following numerical example:

Total Quantity	Price per unit	Total Revenue		Elasticity
1	9	9		
			>+7	Elastic
2	8	16		
			>+5	Elastic
3	7	21		
			>+3	Elastic
4	6	24		
			>+ 1	Elastic
5	5	25		
			> - 1	Inelastic
6	4	24		
			> - 3	Inelastic
7	3	21		
			> - 5	Inelastic
8	2	16		
			> - 7	Inelastic
9	1	9		

The total revenue test is simply the inspection of the data to see what happens to total revenue. If the change in total revenue (marginal revenue) is positive then demand is price elastic, if the change in total revenue is negative the demand is price inelastic. If the marginal revenue is exactly zero then demand is unit elastic.

5. The following determinants of the price elasticity of demand will determine how responsive the quantity demanded is to changes in price. These determinants are:

    a. substitutability

    b. proportion of income

    c. luxuries versus necessities

    d. time

6. Price Elasticity of Supply is determined by the following time frames. The more time a producer has to adjust output the more elastic is supply.

a. market period

b. short run

c. long run

7. Cross elasticity of demand measures the responsiveness of the quantity demanded of one product to changes in the price of another product. For example, the quantity demanded of Coca-Cola to changes in the price of Pepsi.

8. Income elasticity of demand measures the responsiveness of the quantity demanded of a commodity to changes in consumers' incomes.

9. Interest rate sensitivity.

4. Costs of Production

Lecture Notes

1. Explicit are accounting costs, however, Implicit Costs are the opportunity costs of business decisions.

    a. normal profit includes an opportunity cost - the profit that could have been made in the next best alternative allocation of productive resources.

        1. In other words, there is a difference between economic and accounting cost; accountants are unconcerned with opportunity costs.

2. Time Periods are defined by the types of costs observed. These time periods differ from industry to industry.

    a. market period - everything is fixed

    b. short run - there are both fixed and variable costs

    c. long run - everything is variable

3. Prelude to Production Costs in Short Run - include both fixed and variable costs:

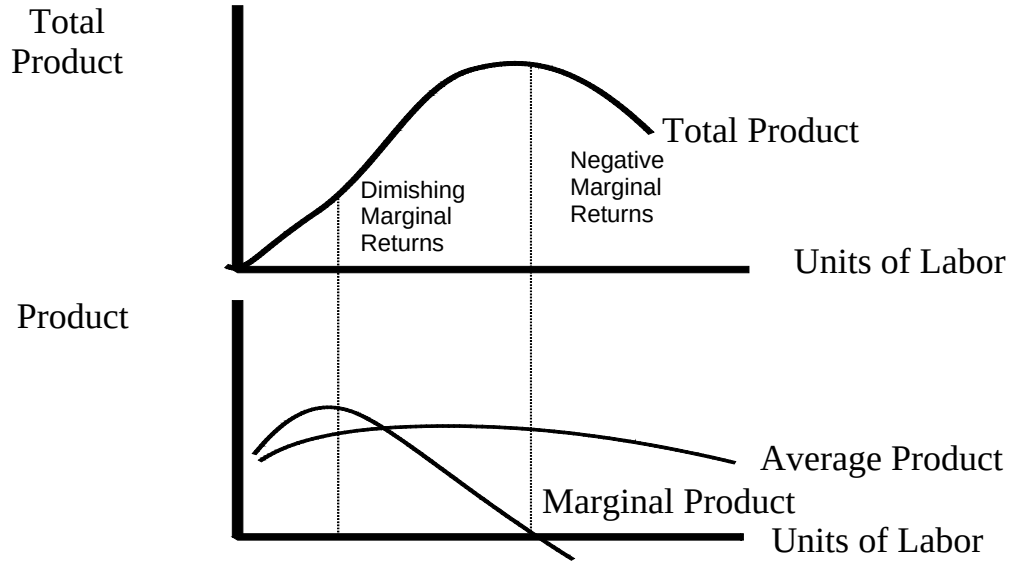
    a. the law of diminishing returns is the fact that as you add variable factors of production to a fixed factor at some point, the increases in total output become smaller.

    b. total product is the total units of production obtained from the productive resources employed.

    c. average product is total product divided by the number of units of the variable factor employed

d. marginal product is the change in total product associated with a change in units of a variable factor

1. graphical presentation:



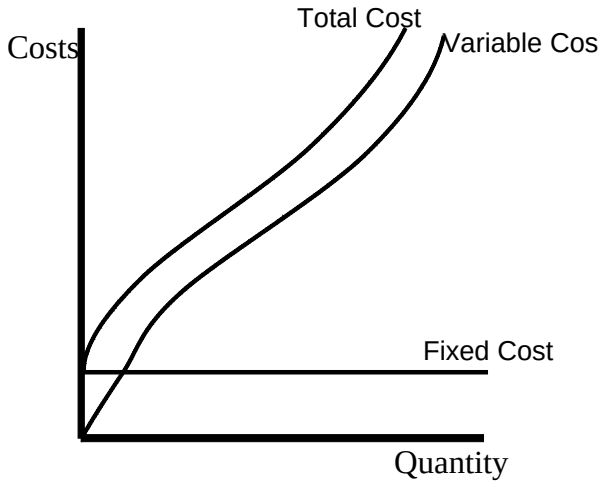
The top graph shows total product (total output). As total product reaches its maximum marginal product becomes zero and then negative as total product declines. When marginal product reaches its maximum, the total product curve becomes flatter. As marginal product is above average product in the bottom diagram, average product is increasing. When marginal product is below average product, then average product is decreasing. The ranges of marginal returns are identified on the above graphs.

4. Short-run costs:

a. total costs = VC + FC

b. variable costs are those items that can be varied in the short-run, i.e., labor

c. fixed costs are those items that cannot be varied in the short-run, i.e., plant and equipment



The fixed cost curve is a horizontal line because they do not vary with quantity of output. Variable cost has a positive slope because it vary with output. Notice that the total cost curve has the same shape as the variable cost curve, but is above the variable cost curve by a distance equal to the amount of the fixed cost.

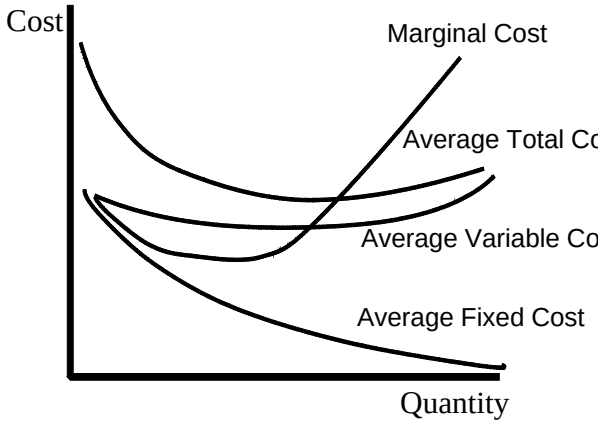
d. average total costs = TC/Q

e. average variable cost = VC/Q

f. average fixed cost = FC/Q

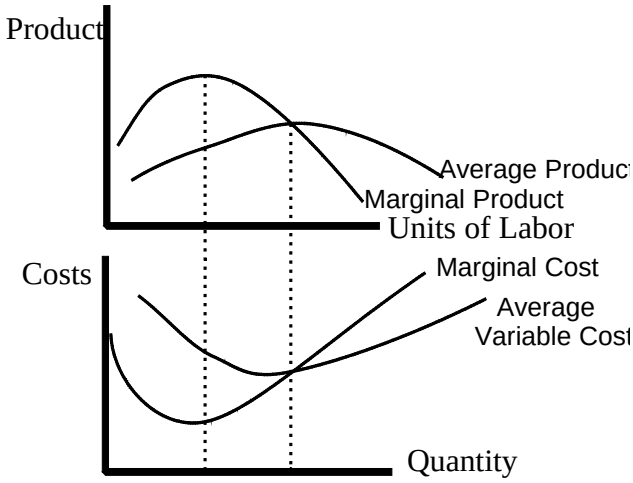
g. marginal cost = $\Delta TC/\Delta Q$; where Δ stands for change in.

1. The following diagram presents the average costs and marginal cost curve in graphical form.



Notice that the average fixed cost approaches zero as quantity increases. Average total cost is the summation of the average fixed and average variable cost curves. The marginal cost curve intersects both the average total cost and average variable cost curves at their respective minimums.

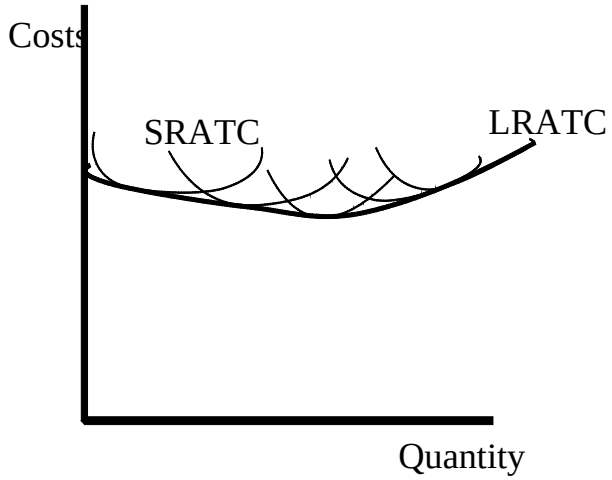
The following graph relates average and marginal product to average variable and marginal cost.



Notice that at the maximum point on the average product curve, marginal cost reaches a minimum. Where marginal cost equals average variable cost, the marginal product curve intersects the average product curve.

5. Long Run Average Total Cost Curve

    a. Is often called an envelope curve because it is the minimum points of all possible short-run average total cost curves (allowing technology and fixed cost to vary).



6. Economies of Scale are benefits obtained from a company becoming large and Diseconomies of Scale are additional costs inflicted because a firm has become too large.

    a. The causes of economies of scale are:

        1. labor specialization

        2. managerial specialization

        3. more efficient capital

        4. ability to profitably use by-products

    b. Diseconomies of scale are due to the fact that management loses control of the firm beyond some size.

    c. Constant returns to scale are large ranges of operations where the firm's size matters little.

    d. Minimum efficient scale is the smallest size of operations where the firm can minimize its long-run average costs.

    e. Natural monopoly is a market situation where per unit costs are minimized by having only one firm serve the market -- i.e., electric companies.

5. Product Market Structures

Lecture Notes

1. There are several models of market structure, these include:

    a. pure competition (atomized competition, price taker, freedom of entry & exit, no nonprice competition, standardized product)

    b. pure monopoly (one seller, price giver, entry & exit blocked, unique product, nonprice competition)

    c. monopolistic competition (large number of independent sellers, pricing policies, entry difficult, nonprice competition, product differentiation)

    d. oligopoly (very few number of sellers, often collude, often price leadership, entry difficult, nonprice competition, product differentiation)

        1. all assume perfect knowledge

2. Assumptions of Pure Competition:

    a. large number of agents

    b. standardized product

    c. no non-price competition

    d. freedom of entry & exit

    e. price taker

3. Revenue with a price taking firm:

    a. average revenue and marginal revenue are equal for the purely competitive firm because price does not change with quantity.

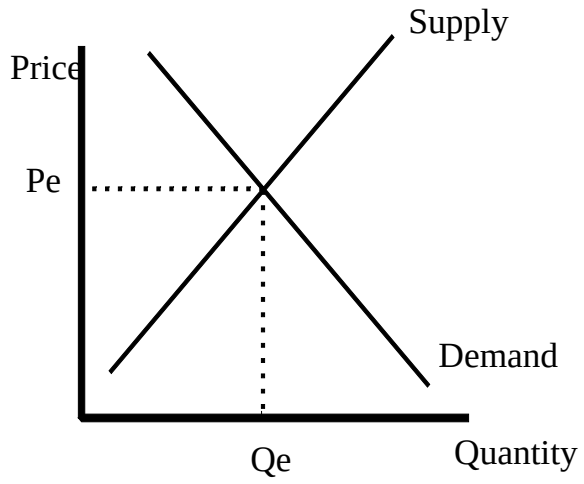
    b. total revenue is P x Q which is the total area under the demand curve (up to where MR = MC) for the purely competitive firm.

4. The profit maximizing rule is that a firm will maximize profits where Marginal Cost is equal to Marginal Revenue.

    a. MC = MR

    b. Where MC = MR; revenue is at its maximum and costs are at their minimum.

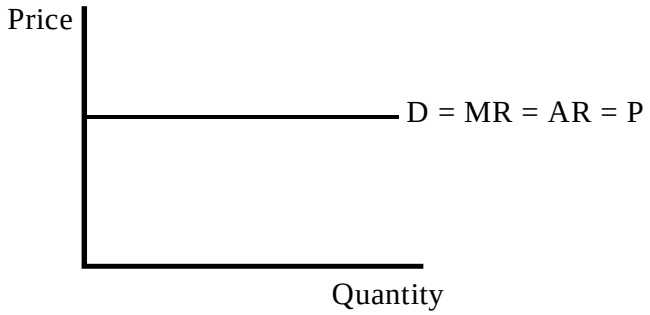
5. Model of the purely competitive industry:



The purely competitive industry is the supply and demand diagram presented in chapter 4.

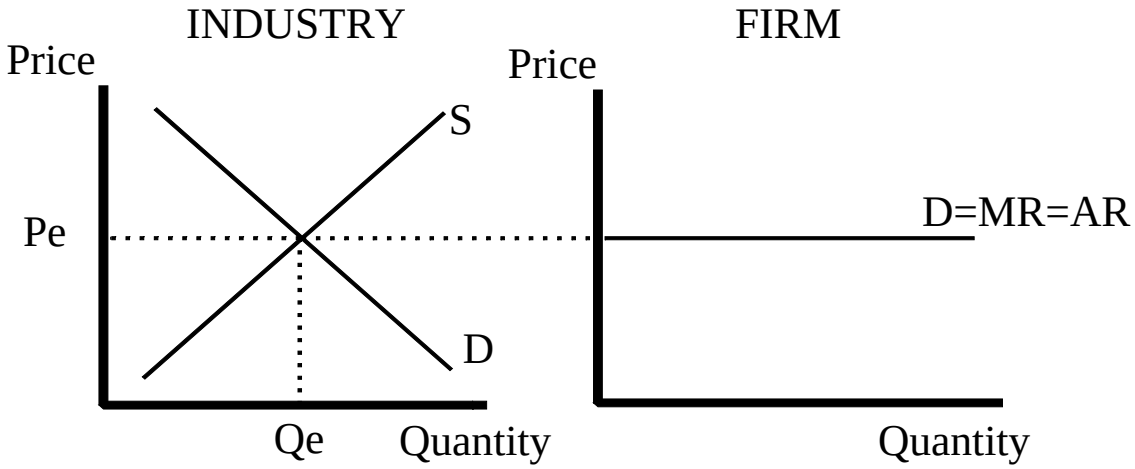
6. Firm in Perfect Competition

   a. perfectly elastic demand curve



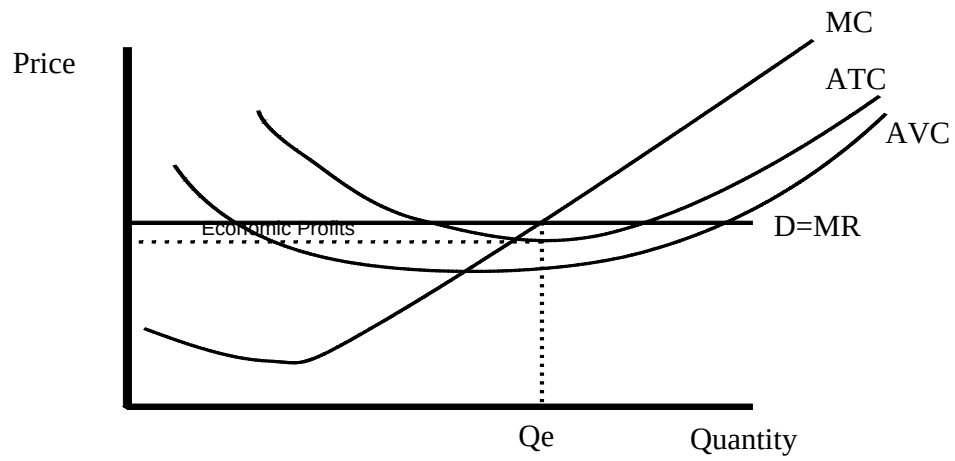
   b. Because the firm is a price taker, meaning that it charges the same price across all quantities of output, marginal revenue is always equal to price, and average revenue will always be equal to price. Therefore the demand curve intersects the price axis and is horizontal (perfectly elastic).

   c. Establishing price in the industry and the firm:



   d. The price is established by the interaction of supply and demand in the industry (Pe) and the quantity exchanged in the industry is the summation of all of the quantities sold by the firms in the industry.

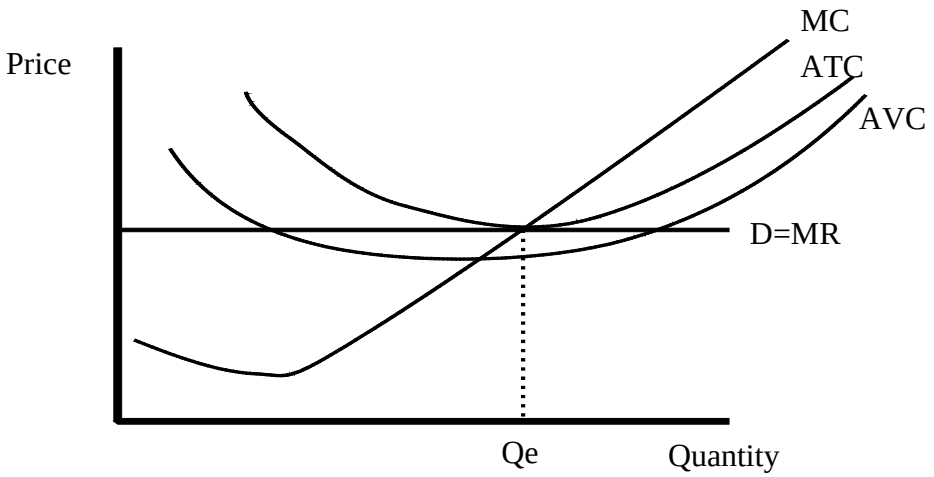
e. Economic profit for the competitive firm is shown by the rectangle labeled "Economic Profit" in the following diagram:



f. The firm produces at where MC = MR, this establishes Qe. At the point where MC = MR the average total cost (ATC) is below the demand curve (AR) and therefore costs are less than revenue, and an economic profit is made. The reason for this is that the opportunity cost of the next best allocation of the firm's productive resources is already added into the firm's ATC.

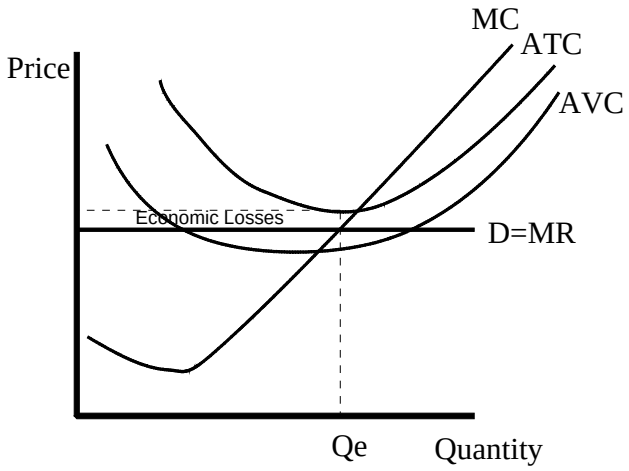
1. However, the firm cannot continue to operate at an economic profit because those profits are a signal to other firms to enter the market (free entry). As firms enter the market, the industry supply curve shifts to the right reducing price and thereby eliminating economic profits. Because of the atomized competition assumption, the number of firms that must enter the market to increase industry supply must be substantial.

g. A normal profit for the competitive firm is shown in the following diagram:



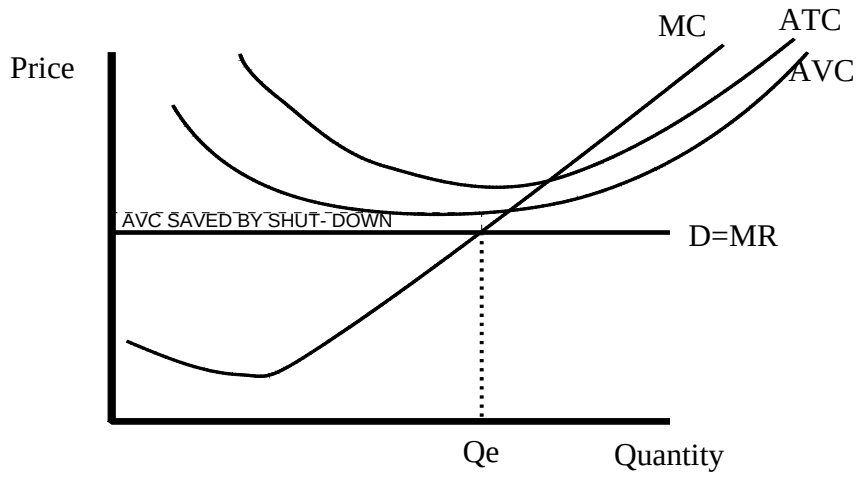
1. The case where a firm is making a normal profit is illustrated above. Where MC = MR is where the firm produces, and at that point ATC is exactly tangent to the demand curve. Because the ATC includes the profits from the next best alternative allocation of resources this firm is making a normal profit.

h. economic loss for a firm in pure competition:



i. The case of an economic loss is illustrated above. The firm produces where MC = MR, however, at that level of production the ATC is above the demand curve, in other words, costs exceed revenues and the firm is making a loss.

j. shut-down case



1. The firm will continue to operate in the case presented in (d.) above because the firm can cover all of its variable costs and have something left to pay on its fixed costs - this is loss minimization. However, in the case above you can see that the AVC is above the demand curve at where MC=MR, therefore the firm cannot even cover its variable costs and will shut down to minimize its losses.

7. Pure Competition and Efficiency

a. Allocative efficiency criteria are satisfied by the competitive model. Because P = MC, in every market in the economy there is no over- or under- allocation of resources in this economy.

b. Technical or Productive efficiency criteria are also satisfied by the competitive model because price is equal to the minimum Average Total Cost.

c. This, however, does not mean a purely competitive world is utopia. There are several problems including which are typically associated with a purely competitive market:

1. Market failures and externalities.

2. Income distribution may lack fairness.

3. There may be a limited range of consumer choice.

4. Many natural monopolies are in evidence in the real world.

Monopoly

8. Assumptions of Monopoly Model

    a. single seller

    b. no close substitutes

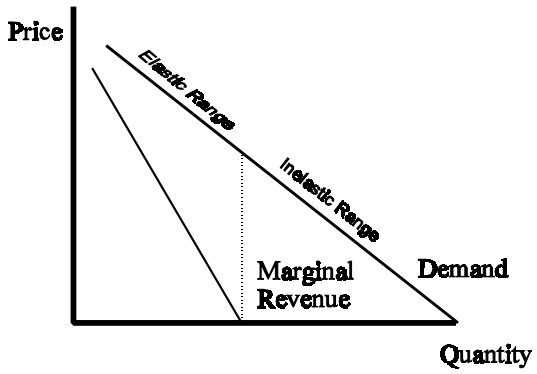
    c. price giver

    d. blocked entry

    e. non-price competition

9. The Firm is the Industry and therefore faces a downward sloping demand curve, which is also the average revenue curve..

    a. If the firm wants to sell more it must lower its price therefore marginal revenue is also downward sloping, but has twice the slope of the demand curve.



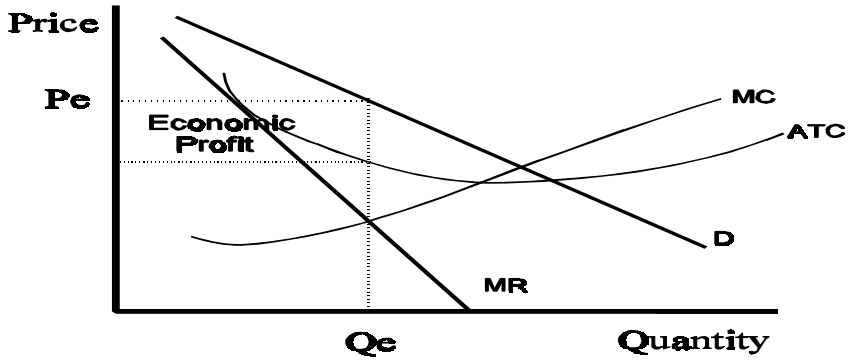
        1. The point where the marginal revenue curve intersects the quantity axis is of significance; this point is where total revenue is maximized. Further, the point on the demand curve associated with where MR = Q is unit price elastic demand; to the left along the demand curve is the elastic range, and to the right is the inelastic range.

10. There is no supply curve in an industry, which is a monopoly.

    a. The monopoly decides how much to produce using the profit maximizing rule; or where MC= MR

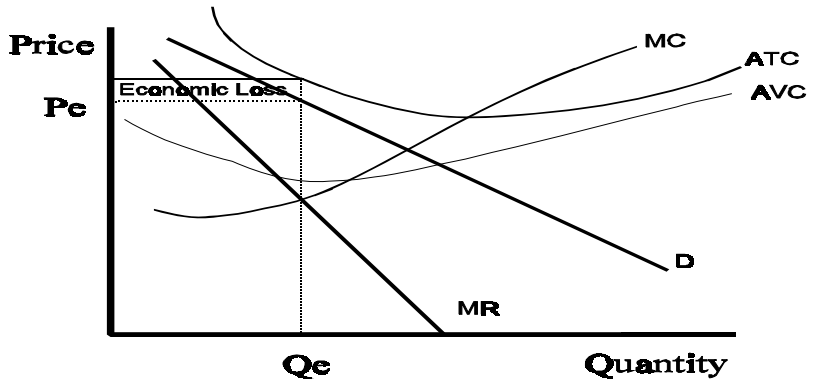
11. Monopolized Market

a. Economic Profit:



b. Because entry is blocked into this industry the economic profits shown above can be maintained in the long run. The monopolist produces where MC = MR, but the price charged is all the market will bear, that is, where the demand curve is above the intersection of MC = MR.

c. Economic losses

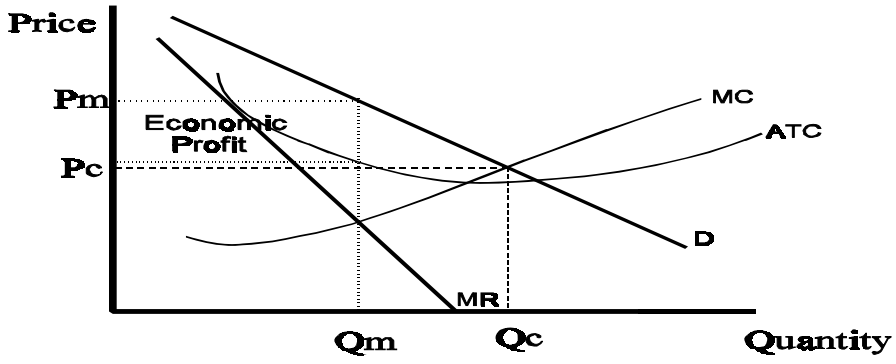


1. This monopolist is making an economic loss. The ATC is above the demand curve (AR) at where MC = MR (the loss is the labeled rectangle). However, because AVC is below the demand curve at

where MC = MR the firm will not shut down so as to minimize its losses.

5. Economic Effects of Monopoly:

   a. prices, output & resource allocations are not consistent with allocative and maybe not technical efficiency criteria. With allocative efficiency consider the following graph:



      1. The above graph shows the profit maximizing monopolist, Pm is the price in the monopoly and Qm is the quantity exchanged in this market. However, where MC = D is where a perfectly competitive industry produces and this is associated with Pc and Qc. The monopolist therefore produces less and charges more than a purely competitive industry.

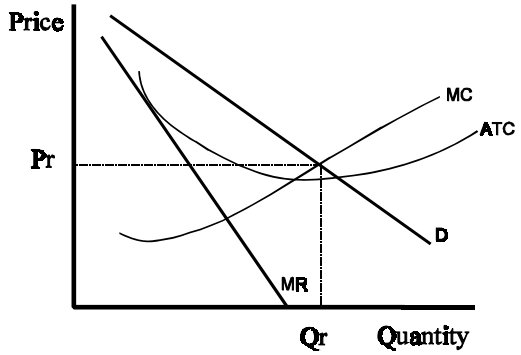
   b. A monopolist can also segment a market and engage in price discrimination. Price discrimination is where you charge a different price to different customers depending on their price elasticity of demand. Because the consumer has no alternative source of supply price discrimination can be effective.

   c. Sometimes a monopolist is in the best interests of society (besides the natural monopoly situation). Often a company must expend substantial resources on research and development. If these types of firms where forced to permit free use of their technological developments (hence no monopoly power) then the incentive to develop new technology and products would be eliminated.

6. Regulated Monopoly - Because there are natural monopoly market situations it is in the public interest to permit monopolies, but they are generally regulated.

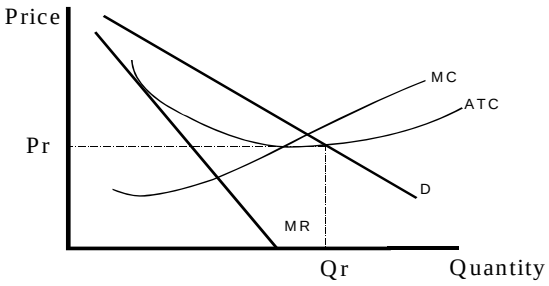
Examples of regulated monopolies are electric utilities, cable TV companies, and telephone companies (local).

a. A monopoly regulated at social optimum P = D = MC



1. This firm is being regulated at the social optimum, in other words, what the industry would produce if it were a purely competitive industry. The price it is required to charge is also the competitive solution. However, notice the ATC is below the demand curve at the social optimum which means this firm is making an economic profit. It is also possible with this solution that the firm could be making an economic loss (if ATC is above demand) or even shut down (if AVC is above demand).

b. A monopolist regulated at the fair return P = D = AC



1. The fair rate of return enforces a normal profit because the firm must price its output and produce where ATC is equal to demand. This eliminates economic profits and the risk of loss or of even putting the monopolist out of business.

c. The dilemma of regulation is knowing where to regulate, at the social optimal or at the fair return. In reality regulated monopolies are permitted to earn a rate of return only on invested capital and all other costs are simply passed on.

6. Measuring Aggregate Performance

Lecture Notes

1. Gross Domestic Product - (GDP) the total value of all goods and services produced within the borders of the United States (or country under analysis).

2. Gross National Product - (GNP) the total value of all goods and services produced by Americans regardless of whether in the United States or overseas.

3. National Income Accounts are the aggregate data used to measure the well-being of an economy.

    a. The mechanics of these various accounts are:

    Gross Domestic Product

    - Depreciation =

    Net Domestic Product

    + Net American Income Earned Abroad
    - Indirect Business Taxes =

    National Income

    - Social Security Contributions
    - Corporate Income Taxes
    - Undistributed Corporate Profits
    + Transfer Payments =

    Personal Income

    - Personal Taxes =

    Disposable Income

4. Expenditures Approach vs. Incomes Approach

    a. Factor payments + Nonincome charges - GNP/GDP adjustments = GDP is the incomes approach

    b. $Y = C + I_g + G + X_n$
    is the expenditures approach (where Y = GDP)

5. Social Welfare & GDP - GDP and GNP are nothing more than measures of total output (or income). More information is necessary before conclusions can be drawn concerning social welfare. There are problems with both measures, among these are:

    a. Nonmarket transactions such as household-provided services or barter are not included in GDP.
    b. Leisure is an economic good but time away from work is not counted, however, movie tickets, skis, and other commodities used in leisure time are.
    c. Product quality - no pretense is made in GDP to account for product or service quality.
    d. Composition & Distribution of Output - no attempt is made in GDP data to account for the composition or distribution of income or output. We must look at sectors to determine composition and other information for distribution.
    e. Per capita income - is GDP divided by population, very rough guide to individual income, but still mostly fails to account for distribution.
    f. Environmental problems - damage done to the environment in production or consumption is not counted in GDP data unless market transactions occur to clean-up the damage.
    g. Underground economy - estimates place the amount of underground economic activities may be as much a one-third of total U.S. output. Criminal activities, tax evasion, and other such activities are the underground economy.

6. Price Indices - are the way we attempt to measure inflation. Price indices are far from perfect measures and are based on surveys of prices of a specific market basket of goods.

    a. Market basket surveys - The market basket of goods and services are selected periodically in an attempt to approximate what the average family of four purchases at that time.

        1. Paasche and Lespeyres indices.

    b. CPI (U) is for urban consumers & CPI (W) is for urban wage earners. GDP Deflator is based on a broader market basket and may be more useful in measuring inflation.

        1. Standard of living - is eroded if there is inflation and no equal increase in wages.

        2. COLA - are escalator clauses that tie earnings or other payments to the rate of inflation, but only proportionally.

3. Other indices - American Chamber of Commerce Research Association in Indianapolis does a cross sectional survey, there are wholesale price indices and several others designed for specific purposes.

c. Inflation/Deflation - throughout most of U.S. economic history we have experienced deflation - which is a general decline in all prices. Inflation is primarily a post-World War II event and is defined to be a general increase in all prices.

d. Nominal versus Real measures - economists use the term nominal to describe money value or prices (not adjusted for inflation); real is used to describe data, which are adjusted for inflation.

7. Measuring the price level

a. CPI = (current year market basket/ base year market basket) X 100 the index number for the base year will be 100.00 (or 1 X 100)

b. Inflating is the adjustment of prices to a higher level, for years when the index is less than 100.

c. Deflating is the adjustment of prices to a lower level, for years when the index is more than 100.

1. to change nominal into real the following equation is used:

Nominal value/(price index/100)

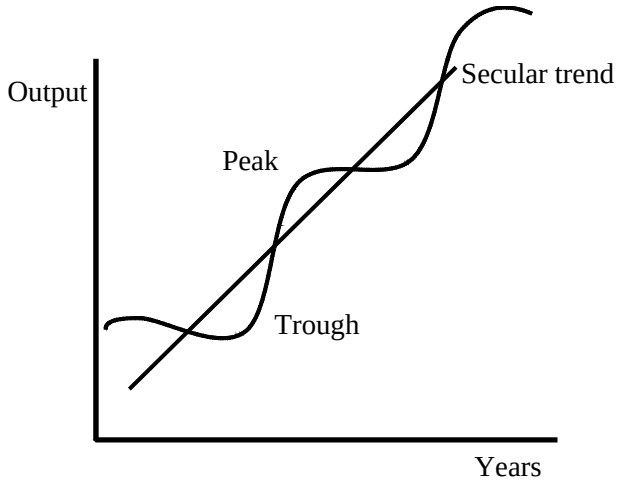
d. Changing base years - a price index base year can be changed to create a consistent series (remembering market baskets also change, hence the process has a fault). The process is a simple one. If you wish to convert a 1982 base year index to be consistent with a 1987 base year, then you use the index number for 1982 in the 1987 series and divide all other observations for the 1982 series using the 1982 value in 1987 index series.

8. Business Cycle - is the recurrent ups and downs in economic activity observed in market economies.

a. troughs are where employment and output bottom-out during a recession (downturn) also implies income, debt (household & business) government crowding out etc.
b. peaks are where employment and output top-out during a recovery (upturn)

c. seasonal trends are variations in data that are associated with a particular season in the year.

d. secular trends are long-run trend (generally 25 or more years in macroeconomic data.



9. Unemployment - there are various causes of unemployment, including:

    a. frictional - consists of *search* and *wait* unemployment which is caused by people searching for employment or waiting to take a job in the near future.

    b. structural - is caused by a change in composition of output, change in technology, or a change in the structure of demand.

    c. cyclical - due to recessions, (business cycle).

10. Full employment - is not zero unemployment, full employment unemployment rate is the same as the natural rate.

    a. natural rate - is thought to be about 4% and is structural + frictional unemployment.

        1. potential output - is the output of the economy at full employment.

11. Unemployment rate - is the percentage of the workforce that is unemployed.

    a. labor force - those employed or unemployed who are willing, able and searching for work; the labor force is about 50% of the total population.

b. part-time employment - those who do not have 40 hours of work (or equivalent) available to them, at 6 million U.S. workers were involuntarily part-time, and about 10 million were voluntarily part-time employees in 1992.

c. discouraged workers - those persons who dropped out of labor force because they could not find an acceptable job.

d. false search - those individuals who claim to be searching for employment, but really were not, some because of unemployment compensation benefits.

12. Okun's law

a. Okun's Law states that for each 1% unemployment exceeds the natural rate there will be a gap of 2.5% between actual GDP and potential GDP.

13. Burden of unemployment differs by several factors, these are:

a. Occupation - mostly due to structural changes.

b. Age young people tend to experience more frictional unemployment.

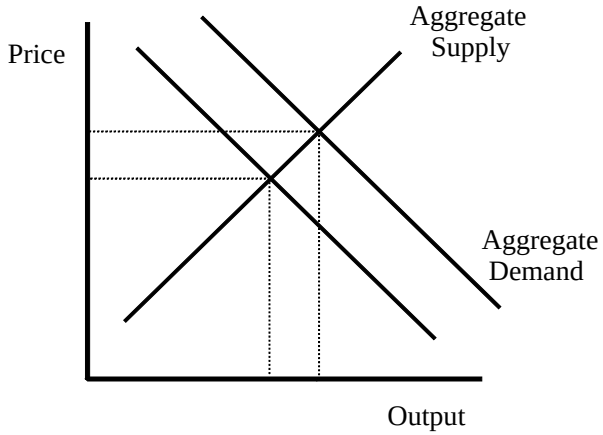
c. Race and gender reflect discrimination in the labor market and sometimes in educational opportunities.

14. Inflation - general increase in all prices.

a. CPI - is the measure used to monitor inflation.

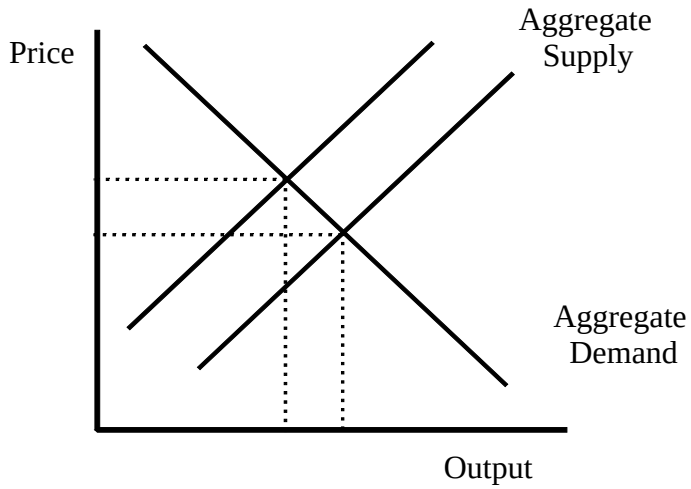
b. Rule of 70 -- the number of years for the price level to double = 70/%annual rate of increase.

c. Demand - pull inflation

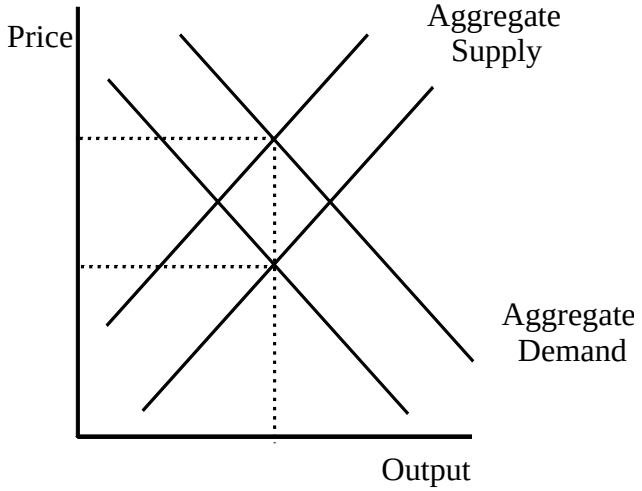


Using a naive aggregate demand - aggregate supply model (similar to the supply and demand diagrams for a market, except the supply is total output in all markets and demand is total demand in all markets, as the aggregate demand shifts outwards prices increase, but so does output.

15. Cost - push inflation - again using a naive aggregate supply - aggregate demand approach cost-push inflation results from a decrease in aggregate supply:



a. pure inflation results from an increase in aggregate demand that is equal to a decrease in aggregate supply:



16. Effects of inflation impact different people in different ways. If inflation is fully anticipated and people can adjust their nominal income to account for inflation then there will be no adverse effects, however, if people cannot adjust their

nominal income or the inflation is unanticipated those individual will see their standard of living eroded.

a. Debtors typically benefit from inflation because they can pay loans-off in the future with money that is worth less, thereby creditors are harmed by inflation.

b. Inflation typically creates expectations among people of increasing prices, which may contribute to future inflation.

c. Savers generally lose money because of inflation if the rate of return on their savings is not sufficient to cover the inflation rate.

d. Monetary aggregates, which also have implications for foreign trade accounts

7. Classical and Keynesian Models

Lecture Notes

1. Classical theory of employment (macroeconomics) rests upon two founding principles, these are:

    a. underspending unlikely - spending in amounts less than sufficient to purchase the full employment level of output is not likely.

    b. even if underspending should occur, then price/wage flexibility will prevent output declines because prices and wages would adjust to keep the economy at the full employment level of output.

2. Say's Law "Supply creates its own demand" (well not exactly)

    a. in other words, every level of output creates enough income to purchase exactly what was produced.

    b. among others, there is one glaring omission in Say's Law -- what about savings?

3. Savings

    a. output produces incomes, but savings is a leakage

    b. savings give rise to investment and the interest rates are what links savings and investment.

4. Wage-Price flexibility

    a. the classicists believed that a laissez faire economy would result in macroeconomic equilibria and that only the government could cause disequilibria.

5. Keynesian Model - beginning in the 1930s the classical models failed to explain what was going on, hence a new model was developed -- the Keynesian Model.

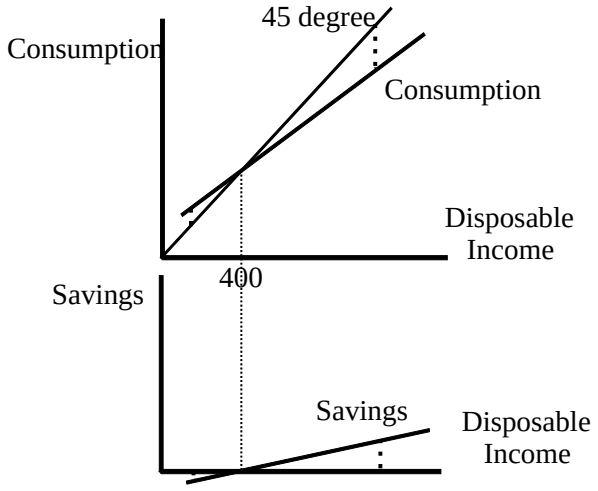
    a. full employment is not guaranteed, because interest motivates both consumers & businesses differently - just because households save does not guarantee businesses will invest.

    b. price-wage rigidity, rather than flexibility was assumed by Keynes

6. The Consumption schedule - income & consumption

    a. consumption schedule - the 45-degree line is every point where disposable income is totally consumed.

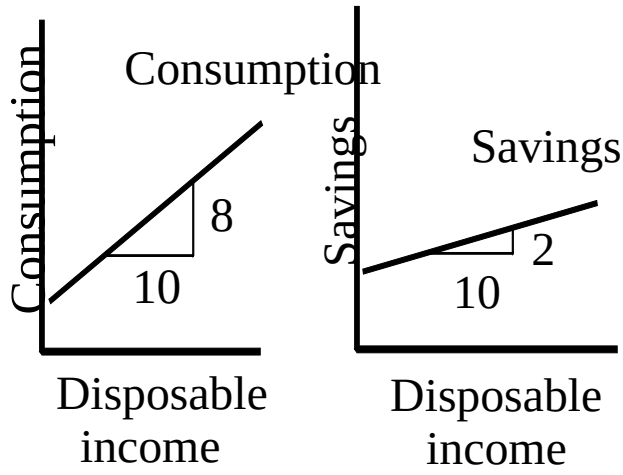
    b. saving schedule - shows the amount of savings associated with the consumption function.



The consumption schedule intersects the 45-degree line at 400 in disposable income, this is also where the savings function intersects zero (in the graph below the consumption function). To the left of the intersection of the consumption function and the 45-degree line, the consumption function lies above the 45-degree line. The distance between the 45-degree line and the consumption schedule is dissavings, shown in the savings schedule graph by the savings function falling below zero. To the right of the intersection of the consumption function with the 45 degree line the consumption schedule is below the 45-degree line. The distance that the consumption function is below the 45-degree line is called savings, shown in the bottom graph by the savings function rising above zero.

    c. Marginal Propensity to Consume (MPC) is the proportion of any increase in disposable income spent on consumption (if all is spent MPC is 1, if none is spent MPC is zero). The Marginal Propensity to Save (MPS) is the proportion of any increase in disposable income saved. The relation between MPC and MPS is:

        1. MPC + MPS = 1



d. The slope (rise divided by the run) of the consumption function is the MPC and the slope of the savings function is the MPS. Add the slope of the consumption function (8/10) to the slope of the savings function (2/10) and they equal one (10/10).

e. The Average Propensity to Consume (APC) is total consumption divided by total income, Average Propensity to Save (APS) is total savings divided by total income. Again, if income can be either saved or consumed (and nothing else) then the following relation holds:

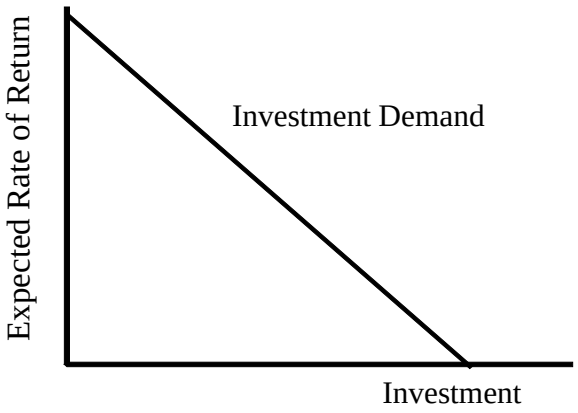
1. APC + APS = 1

7. The nonincome determinants of consumption and saving are (these cause shifts in the consumption and saving schedules):

a. Wealth,
b. Prices,
c. Expectations concerning future prices, incomes and availability of commodities,
d. Consumer debts, and
e. Taxes.

8. Investment

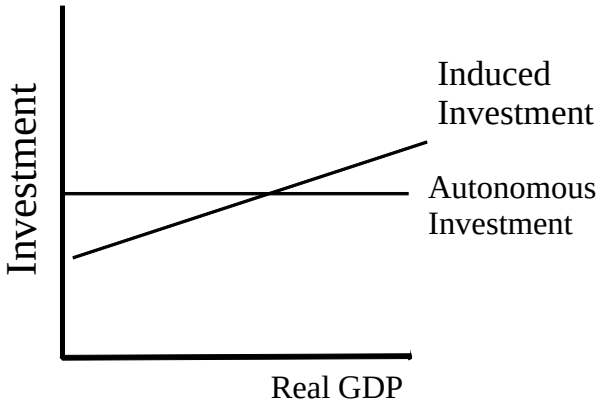
a. investment demand curve is downward sloping:



b. determinants of investment demand are:

1. acquisition, maintenance & operating costs,
2. business taxes,
3. technology,
4. stock of capital on hand, and
5. expectations concerning profits in future.

c. Autonomous (determined outside of system) v. induced investment (function of GDP):



1. Instability in investment has marked U.S. economic history.

2. Causes of this instability are:

a. Variations in the durability of capital,

b. Irregularity of innovation,

c. Variability of profits, and

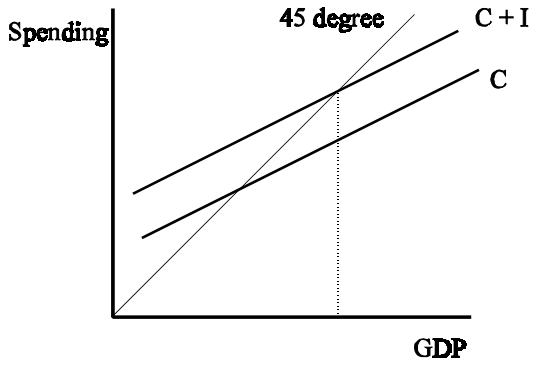
d. Expectations of investors.

9. Equilibrium GDP - is that output that will create total spending just sufficient to buy that output (where aggregate expenditure schedule intersects 45-degree line).

    a. Disequilibrium - where spending is insufficient (recessionary gap) or too high for level of output (inflationary gap).

10. Expenditures - Output Approach

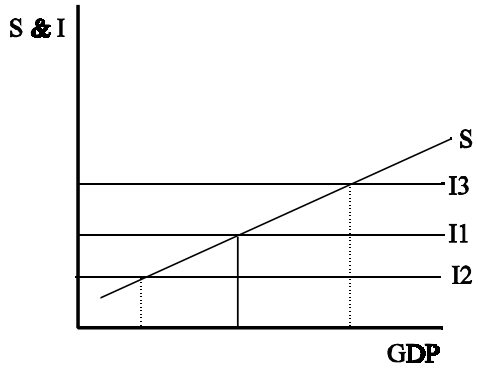
    a. Y = C + I + G + X is the identity for income where Y = GDP, C = Consumption, I = Investment, G= Government expenditures, and X = Net exports (exports minus imports)



The equilibrium level of GDP is indicated above where C + I is equal to the 45-degree line. Investment in this model is autonomous and the amount of investment is the vertical distance between the C and the C + I lines. This model assumes no government and that net exports are zero.

11. Leakages - Injections Approach relies on the equality of investment and savings at equilibrium.

a. I = S is equilibrium in the leakages - injections approach.
b. planned v. actual investment, the reason that the leakages - injection approach works is that planned investment must equal savings. Inventories can increase beyond that planned, hence output that is not purchased which is recessionary; or intended inventories can be depleted which is inflationary.



The original equilibrium is where I1 is equal to S and that level of GDP is shown with the solid indicator line. If we experience a decrease in investment we move down to I2 and if an increase in investment is observed it will be observed at I3.

12. If there is an increase in expenditures, there will be a respending effect. In other words, if $10 is injected into the system, then it is income to someone. That first person will spend a portion of the income and save a portion. If MPC is .90 then the first individual will save $1 and spend $9.00. The second person receives $9.00 in income and will spend $8.10 and save $0.90. This process continues until there is no money left to be spent. Instead of summing all of the income, expenditures, and/or savings there is a short-hand method of determining the total effect -- this is called the Multiplier, which is:

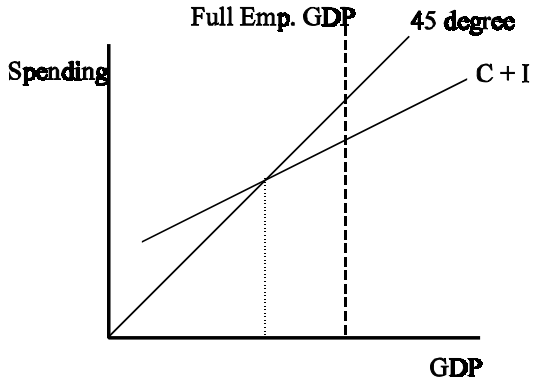
    a. **Multiplier M = 1/1-MPC or 1/MPS**

    b. significance - any increase in expenditures will have a multiple effect on the GDP.

13. Paradox of thrift - the curious observation that if society tries to save more it may actually save the same amount - unless investment moves up as a result of the savings, all that happens is that GDP declines and if investment is autonomous then savings remain the same.

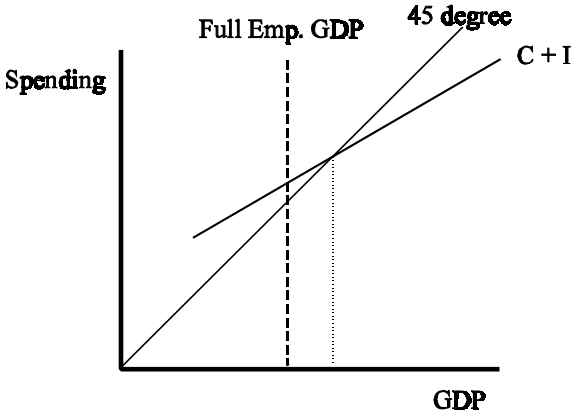
14. Full Employment level of GDP may not be where the aggregate expenditures line intersects the 45-degree line. There are two possibilities, (1) a recessionary gap or (2) an inflationary gap, both are illustrated below.

    a. Recessionary gap



    The distance between the C + I line and the 45-degree line along the dashed indicator line is the recessionary gap. The dotted line shows the current macroeconomic equilibrium.

    b. Inflationary gap



The distance between the C + I line and the 45-degree line along the dashed indicator line is the inflationary gap. The dotted indicator line shows the current macroeconomic equilibrium.

15. Reconciling AD/AS with Keynesian Cross the various C + I and 45-degree line intersections, if multiplied by the appropriate price level will yield one point on the aggregate demand curve. Shifts in aggregate demand can be shown with holding the price level constant and showing increases or decreases in C + I in the Keynesian Cross model. Both models can be used to analyze essentially the same events.

16. Discretionary Fiscal Policy - involves government expenditures and/or taxes to stabilize the economy.

    a. Employment Act of 1946 - formalized the government's responsibility in promoting economic stability.

    b. simplifying assumptions for the analyses presented here:

        1. exogenous I & X,
        2. G does initially impact private decisions,
        3. all taxes are personal taxes,
        4. some exogenous taxes collected,
        5. no monetary effects, fixed initial price level, and
        6. fiscal policy impacts only demand side.

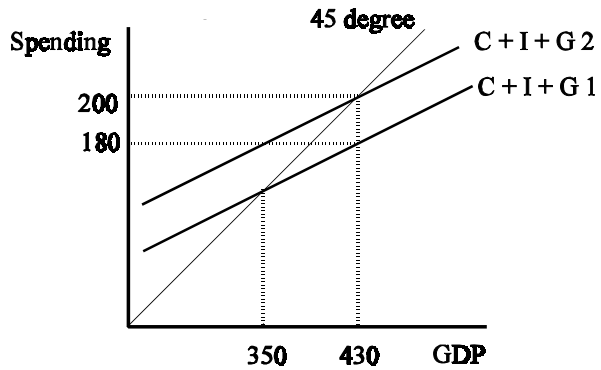
17. Changes in Government Expenditures - can be made for several reasons:

    a. Stabilization of the economy,

        1. To close a recessionary gap the government must spend an amount that time the multiplier will equal the total gap.
        2. To close an inflationary gap the government must cut expenditures by an amount that times the multiplier will equal the inflationary gap.

    b. Political goals, and

    c. Provision of necessary goods & services.



An increased government expenditure of $20 billion results in an increase in GDP of $80 billion with an MPC of .75, hence a multiplier of 4.

18. Taxation effects both consumption and savings.

    a. If the government uses a lump sum tax increase to reduce an inflationary gap the reduction in GDP occurs thusly:

        1. The lump sum tax must be multiplied by the MPC to obtain the reduction in consumption;
        2. The reduction in consumption is then multiplied by the multiplier.

    b. A decrease in taxes works the same way, the total impact is the lump sum reduction times the MPC to obtain the increase in consumption, which is, in turn, multiplied by the multiplier to obtain the full impact on GDP.

    c. A short-cut method with taxes is to calculate the multiplier, as you would with an increase in government expenditures and deduct one from it.

19. The balanced budget multiplier is always one.

    a. Occurs when the amount of government expenditures goes up by the same amount that a lump sum tax is increased.
    b. That is because only the initial expenditure increases GDP and the remaining multiplier effect is offset by taxation.

20. Tax structure refers to the burden of the tax:

    a. progressive is where the effective tax rate increases with ability to pay,
    b. regressive is where the effective tax rate increases as ability to pay decreases,
    c. proportional is where a fixed proportion of ability to pay is taken in taxes.

21. Automatic stabilizers help to smooth business cycles without further legislative action:

    a. Progressive income taxes,
    b. Unemployment compensation,
    c. Government entitlement programs

22. Fiscal Lag - there are numerous lags involved with the implementation of fiscal policy. It is not uncommon for fiscal policy to take 2 or 3 years to have a noticeable effect, after Congress begins to enact fiscal measures.

    a. Recognition lag - how long to start to react.

b. Administrative lag - how long to have legislation enacted & implemented.
c. Operational lag - how long it takes to have effects in economy.

23. Politics and Fiscal Policy.

    a. Public choice economists claim that politicians maximize their own utility by legislative action.
    b. Logrolling and negotiations results in many bills that impose costs.

24. Government deficits and crowding - out. It is alleged that private spending is displaced when the government borrows to finance spending:

    a. Ricardian Equivalence - deficit financing same effect on GDP as increased tax.

25. Open economy problems. Because there is a foreign sector that impacts GDP there are potential problems for fiscal policy arising from foreign sources.

    a. increased interest - net export effect

        1. An increase in the interest rate domestically will attract foreign capital, but this increases the demand for dollars which increases their value and thereby reduces exports, hence GDP.

    b. foreign shocks - in addition to currency exchange rates.

        1. Oil crises increased costs of production in the U.S.

8. Money and Banking
Lecture Notes

1. Functions of Money - there are three functions of money:

    a. Medium of exchange - accepted as "legal tender" or something of general and specified value.

        1. Use avoids reliance on barter.
        2. Barter requires a coincidence of wants and severely complicates a market economy.

    b. Measure of value - permits value to be stated in terms of a standard and universally understood standard.

    c. Store of value - can be saved with little risk, chance of spoilage and virtually no cost and later exchanged for commodities without these positive storage characteristics.

2. Supply of money

    a. There are numerous definitions of money M1 through M3 most commonly used.

        1. M1 is currency + checkable deposits
        2. M2 is M1 + noncheckable savings account, time deposits of less $100,000, Money Market Deposit Accounts, and Money Market Mutual Funds.
        3. M3 is M2 + large time deposit (larger than $100,000).

3. Near Money - are items that fulfill portions of the requirements of the functions of money.

    a. Credit cards - fulfill exchange function, but are not a measure of value and if there is a credit line, can be used to store value.
    b. Other forms of near money:

        1. Precious metals - store of value, but not easily exchanged
        2. Stocks and Bonds - earnings instruments, but can be used as store of value.

    c. Implications for near money - stability, spending habits & policy

4. What gives money value

    a. No more gold standard

        1. Nixon eliminated gold standard

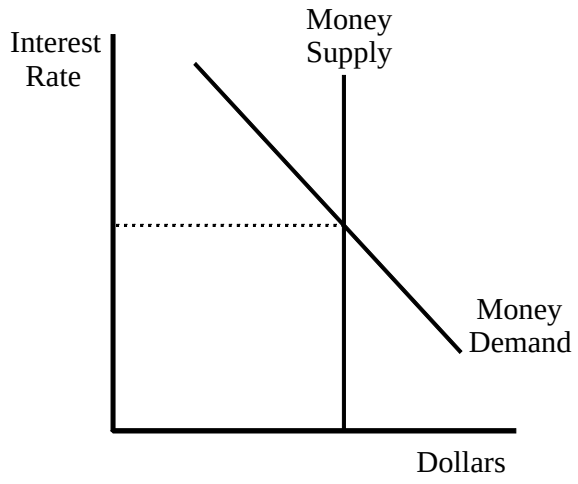
    b. The Value of money depends upon:

        1. acceptability for payment,
        2. because the government claims it is legal tender, and
        3. its relative scarcity.

5. Value of dollar = D = 1/P

6. Demand for Money - three components of money demand:

    a. Transactions demand
    b. Asset demand
    c. Total demand



The money supply curve is vertical because the supply of money is exogenously determined by the Federal Reserve. The money demand curve slopes downward and to the right. The intersection of the money demand and money supply curves represents equilibrium in the money market and determines the interest rate (price of money).

7. Money market

    a. With bonds that pay a specified interest payment per quarter then:

        3. interest rate and value of bond inversely related

8. U.S. Financial System

    a. FDIC - Federal Deposit Insurance Corporation - guarantees bank deposits.
    b. Federal Reserve System - is comprised of member banks. The Board of Governors and Chairman are nominated by the President of United States. The structure of the system is:

        3. Board of Governors
        4. Open Market Committee
        5. Federal Advisory Council
        6. 12 regions

    c. Functions

        3. Set reserves requirements,
        4. Check clearing services,
        5. Fiscal agents for U.S. government,
        6. Supervision of banks,
        7. Control money supply through FOMC,

9. Moral hazard - insuring reduces insured's incentive to assure risk does not happen

10. Balance sheet (T accounts -- assets = liabilities + net worth)

    a. is nothing more than a convenient reporting tool.

11. Fractional Reserve Requirements

    a. Goldsmiths used to issue paper money receipts, backed by stocks of gold. The stocks of gold acted as a reserve to assure payment if the paper claims were presented for payment.

        1. Genghis Khan first issued paper money in the thirteenth century - it was backed by nothing except the Khan's authority.

    b. The U.S. did not have a central banking system from the 1820 through 1914. In the early part of this century several financial panics pointed to the need for a central banking and financial regulation.

        1. States and private companies used to issue paper money.
        2. In the early days of U.S. history Spanish silver coins were widely circulated in the U.S.

3. The first U.S. paper money was issued during the Civil War (The Greenback Act), which included fractional currency (paper dimes & nickels!).

c. Today, the Federal Reserve requires banks to keep a portion of its deposits as reserves.

1. purposes to keep banks solvent & prevent financial panics

12. RRR (Required Reserve Ratio) and multiple expansion of money supply through T accounts

a. How reserves are kept

1. Loans from Fed - discount rate at which Fed loans reserves to members
2. Vault cash
3. Deposits with Fed
4. Fed funds rate - the rate at which members loan each other reserves

b. RRR = Required reserve/demand deposit liabilities

c. actual, required, and excess reserves

13. Money created through deposit/loan redepositing

a. Money is created by a bank receiving a deposit, and then loaning that non-reserve portion of the deposit, which is deposited and loans made against those deposits.

1. If the required reserve ratio is .10, then a bank must retain 10% of each deposit as a reserve and can loan 90% of the deposit; the multiple expansion of money, assuming a required reserve ratio of .10, is therefore:

Deposit	Loan
$10.00	9.00
9.00	8.10
8.10	7.29
.	.
.	.
$ 100.00	$90.00

Total new money is the initial deposit of $10 + $90 of multiple expansion for a total of $100.00 in new money.

14. Money multiplier Mm = 1/RRR

    a. Is the shorthand method of calculating the entries in banks' T accounts and shows how much an initial injection of money into the system generates in total money supply.
    b. With a required reserve ratio of .05 the money multiplier is 20 & with a required reserve ratio of .20 the money multiplier is 5.
    c. the Federal Reserve needs to inject only that fraction of money that time the multiplier will increase the money supply to the desired levels.

15. Monetary policy, defined and objectives

    a. Monetary policy is carried out by the Federal Reserve System and is focused on controlling the money supply.

    b. The fundamental objective of monetary policy is to assist the economy in attaining a full employment, non-inflationary equilibrium.

16. Tools of Monetary Policy

    a. Open Market Operations is the selling and buying of U.S. treasury obligations in the open market.

    b. Expansionary monetary policy involves the buying of bonds.

        1. The Fed buying bonds, it puts money into the hands of those who had held bonds.

    c. Contractionary monetary policy involves the selling of bonds.

        1. The Fed sells bonds it removes money from the system and replaces it with bonds.

17. Required Reserve Ratio - the Fed can raise or lower the required reserve ratio.

    a. Increasing the required reserve ratio, reduces the money multiplier, hence reduces the amount by which multiple expansions of the money supply can occur.

        1. decreasing the required reserve ratio increases the money multiplier, and permits more multiple expansion of the money supply.

18. The Discount Rate is the rate at which the Fed will loan reserves to member banks for short periods of time.

19. Velocity of Money - is how often the money supply turns-over.

    a. The quantity theory of money is: MV = PQ

        1. This equation has velocity (V) which is nearly constant and output (Q) which grows slowly, so what happens to the money supply (M) should be directly reflected in the price level (P).

20. Target Dilemma in Monetary Policy

    a. Interest rates and the business cycle may present a dilemma. Expansionary monetary policy may result in higher interest rates, which dampen expansionary policies.

    b. Fiscal and monetary policies may also be contradictory.

21. Easy Money - lowering interest rates, expanding money supply.

    a. mitigate recession and stimulate growth.

    b. cheap dollar policy in foreign trade

        1. encourage exports

22. Tight Money - increasing interest rates, contracting money supply.

    a. mitigate inflation and slow growth.

    b. strong dollar policy in foreign trade

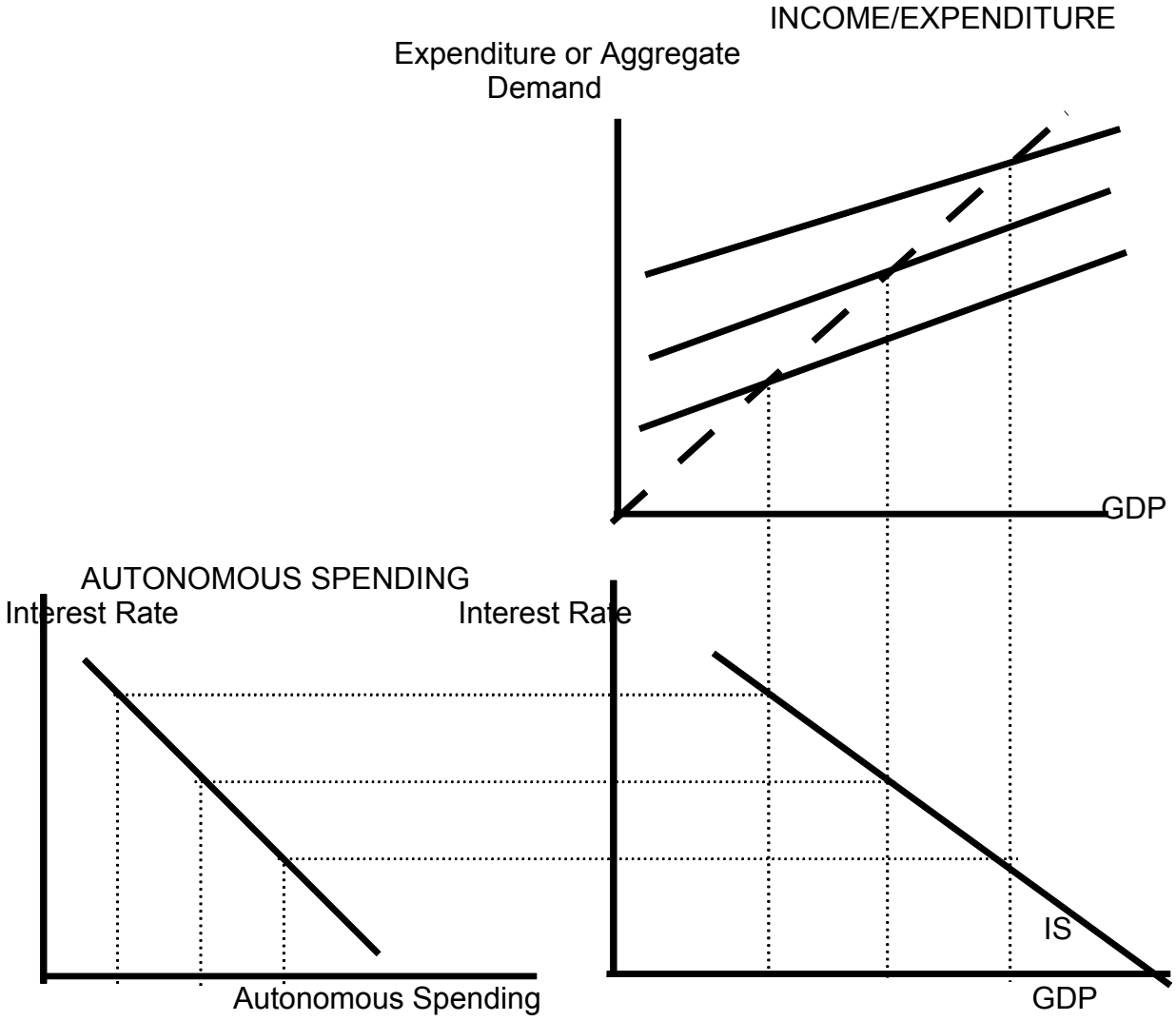
        1. encourage imports
        2. Repatriating profits for multi-nationals

9. Interest Rates and Output: Hick's IS/LM Model

Lecture Notes

1. IS Curve

The IS curve shows the level of real GDP for each level of real interest rate. The derivation of the IS curve is a rather straightforward matter, observe the following diagram.



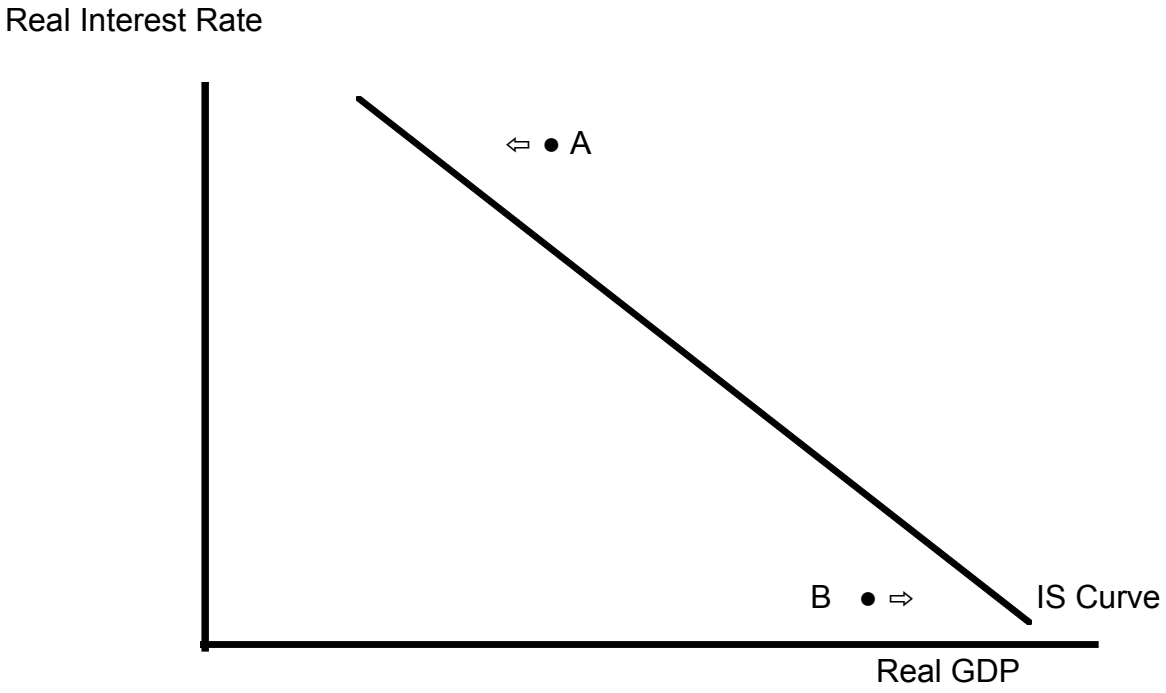
The Income-Expenditure diagram determines for each level of aggregate demand the associated level of GDP.

The intercept of the IS Curve is the level of GDP that would obtain at a zero real interest rate. The slope of IS Curve is the multiplier (1/1 - MPC) times marginal propensity to Invest (resulting from a change in real interest rates) and the marginal propensity to export (resulting from a change in real interest rates).

The IS curve can be shifted by fiscal policy

Changes in Co or Io will also move the IS curve.

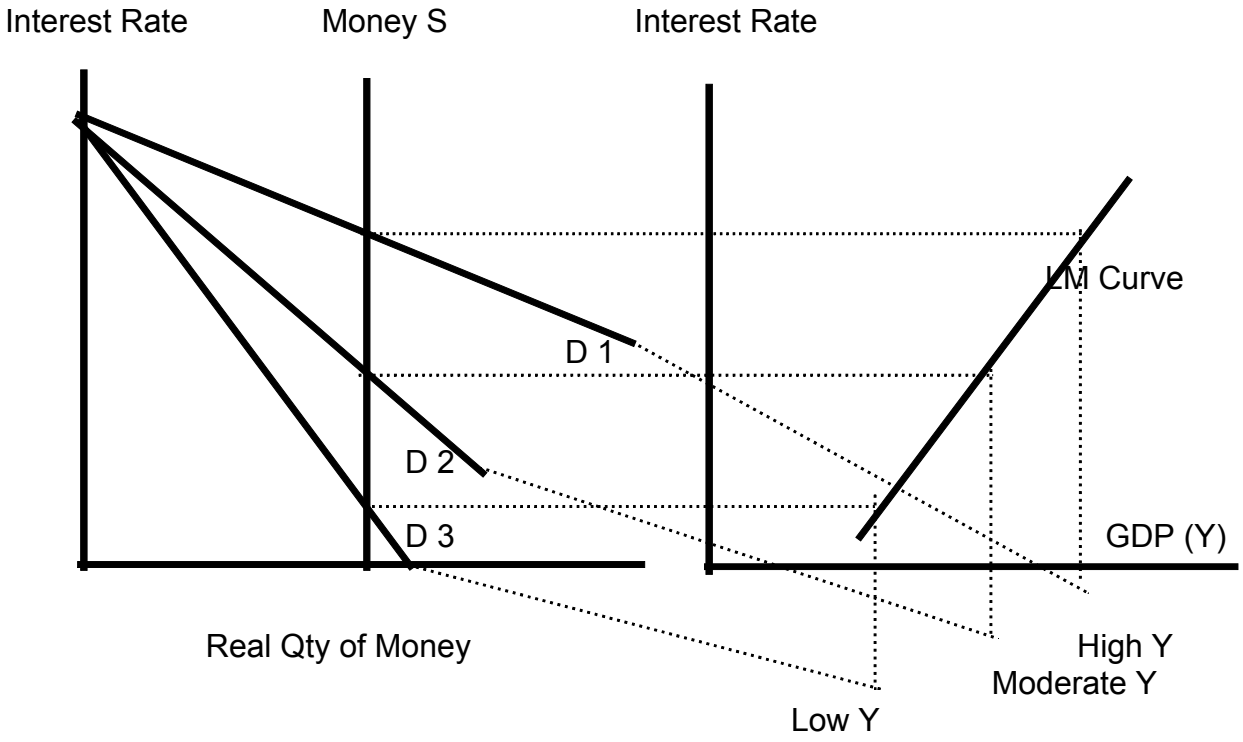
Anytime the economy moves away from the IS curve there are forces within the system which push the economy back onto the IS curve. Observe the following diagram:



If the economy is at point A there is a relatively high level of real interest rates which results in planned expenditure being less than production, hence inventories are accumulating, and production will fall, hence pushing the economy toward the IS curve. On the other hand, at point B the relatively low real interest rate results in planned expenditure being greater than production, hence inventories are being sold into the market place and product will rise to bring us back to the IS curve.

2. LM Curve

The LM Curve is derived in a fashion similar to that of the IS curve. Consider the following diagram:



As can be readily observed from this diagram the LM curve is the schedule of interest rates associated with levels of income (GDP). The interest rate, in this case, being determined in the money market.

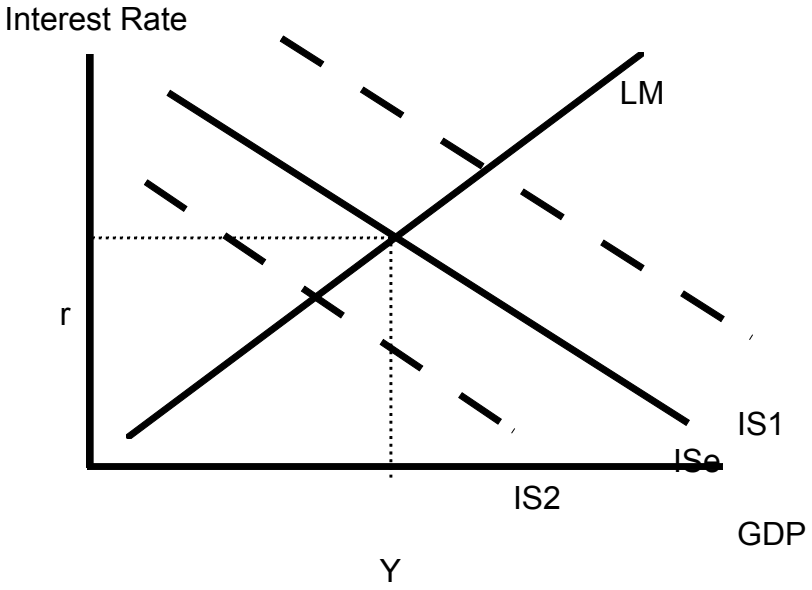
With a fixed money supply each level of demand for money creates a different interest rate.

If the money market is to remain in equilibrium, then as incomes rise so too, then must the interest rate, if the supply of money is fixed.

The shifting of the LM curve is obtained through inflation or monetary policy.

3. Equilibrium in IS-LM

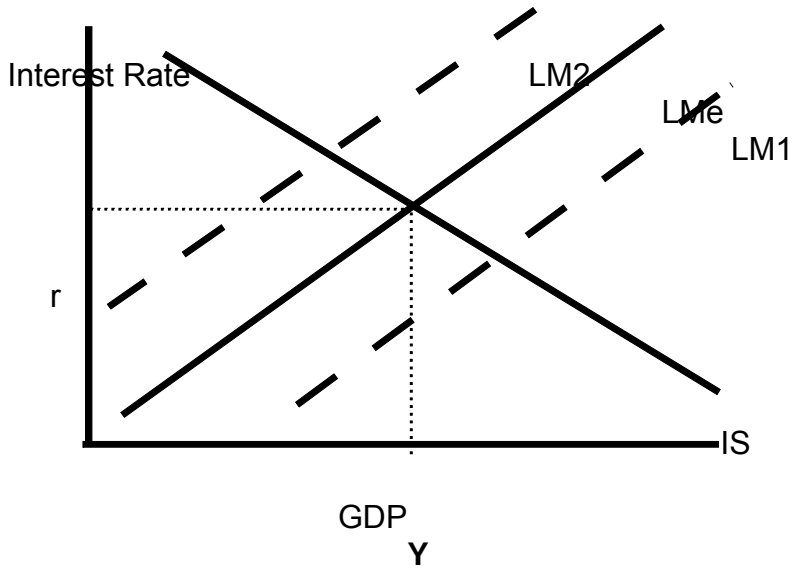
The Intersection of the IS and LM curve results in there being an equilibrium in the macroeconomy.



Where the IS and LM curves intersect is where there is an equilibrium in this economy. With this tool in hand the affects of the interest rate on GDP can be directly observed. As the IS curve shifts to the right along the LM curve notice that there is an increase in GDP, but with a higher interest rate (IS1) and just the opposite occurs as the IS curve shifts back towards the origin (IS2). From above it is clear the sorts of things that shift the IS curve, fiscal policy or changes in Co or Io.

4. Expansionary and Contractionary Monetary Policies

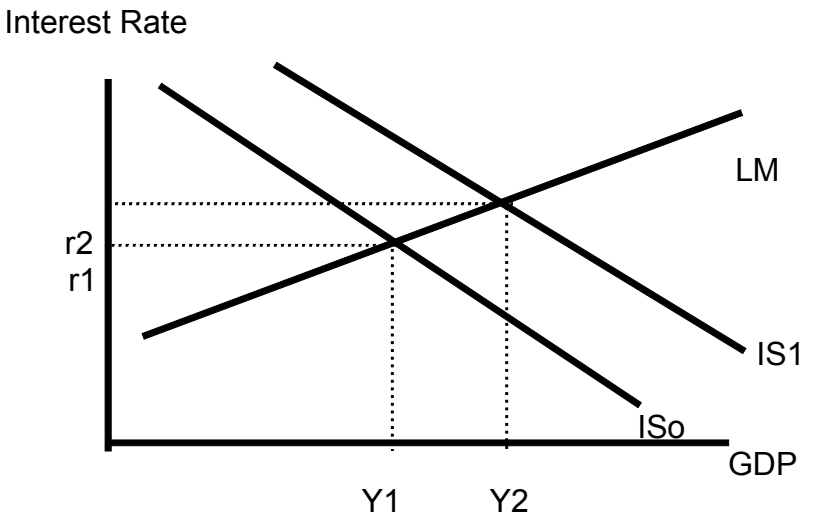
The LM curve, too, can be moved about by changes in policy. If the money supply is increased or decreased that will have obvious implications for the LM curve and hence the interest rate and equilibrium level of GDP. Consider the following diagram:



As the Fed engages in easy monetary policies the LM Curve shifts to the right, and the interest rate falls, as GDP increases.

5. Foreign Shocks

The U.S. economy is not a closed economy, and the IS-LM Model permits us to examine foreign shocks to the U.S. economy. There are three of these foreign shocks worthy of examination here; these are (1) increase in demand for our exports, (2) increases in foreign interest rates, and (3) currency speculators expectations of an increase in the exchange rate of our currency with respect to some foreign currency. Each of these foreign shocks results in an outward expansion of the IS Curve as portrayed in the following diagram:



An increase in demand for exports has essentially the same effect on GDP and interest rates as an increase in foreign interest rates, or currency speculators expecting an increase in our exchange rate.

10. Economic Stability and Trade Policies

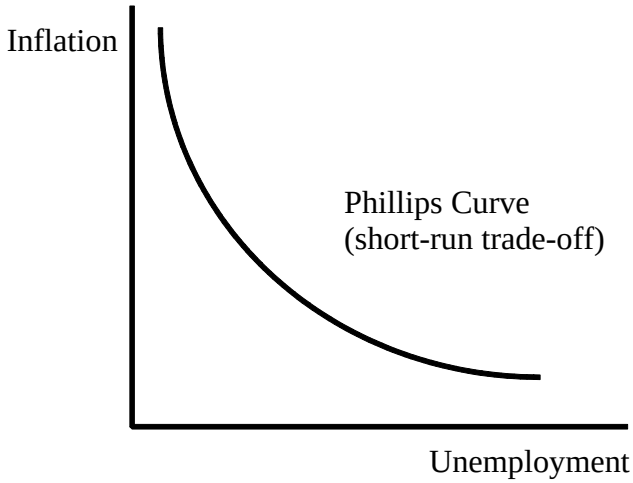
Lecture Notes

1. Inflation, Unemployment and Economic Policy

    a. The misery index is the inflation rate plus the unemployment rate.

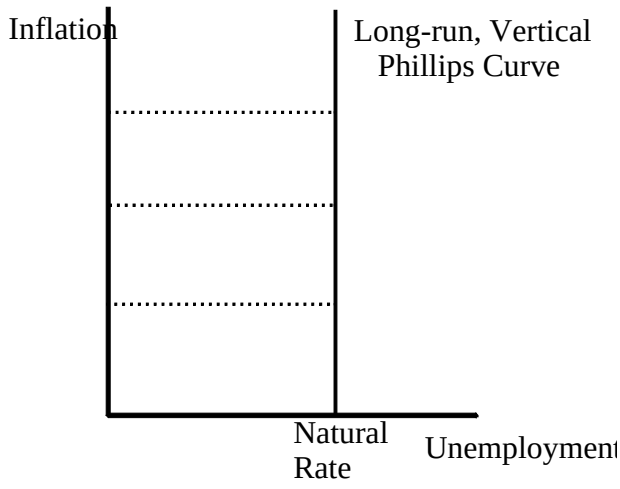
2. The Phillips Curve is a statistical relation between unemployment and inflation named for A. W. Phillips who examined the relation in the United Kingdom and published his results in 1958. (Actually Irving Fisher had done earlier work on the subject in 1926).

    a. Short run trade-off



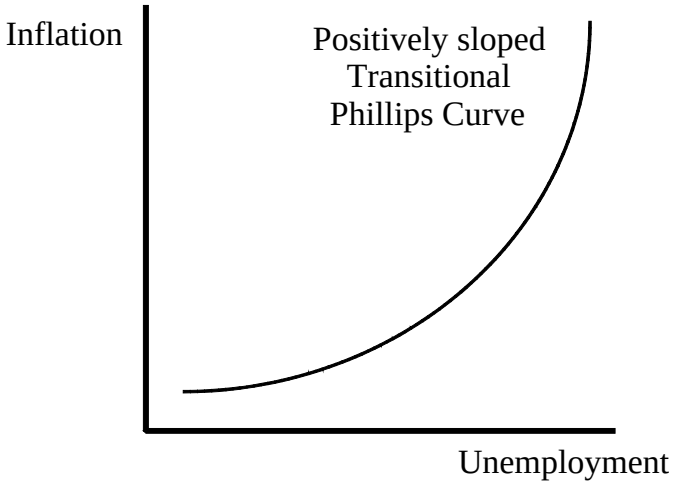
Often used to support activitist role for government, however, the short-run trade-off view of the Phillips curve demonstrates that there is a cruel choice between increased inflation or increased unemployment, but low inflation and unemployment together are not possible.

    b. Long run Phillips Curve is alleged to be vertical at the natural rate of unemployment.



This long-run view of the Phillips Curve is also called the Natural Rate Hypothesis. It is based on the idea that people constantly adapt to current economic conditions and that their expectations are subject to "adaptive" revisions almost constantly. If this is the case, then business and consumers cannot be fooled into thinking that there is a reason for unemployment to cure inflation or vice versa.

c. Possible positive sloping has hypothesized by Milton Friedman. Friedman was of the opinion that the may be a transitional Phillips curve while people adapt both their expectations and institutions to new economic realities. The positively sloped Phillips curve is show in the following picture:



The positively sloped transitional Phillips Curve is consistent with the observations of the early 1980s when both high rates of unemployment existed together with high rates of inflation -- a condition called stagflation.

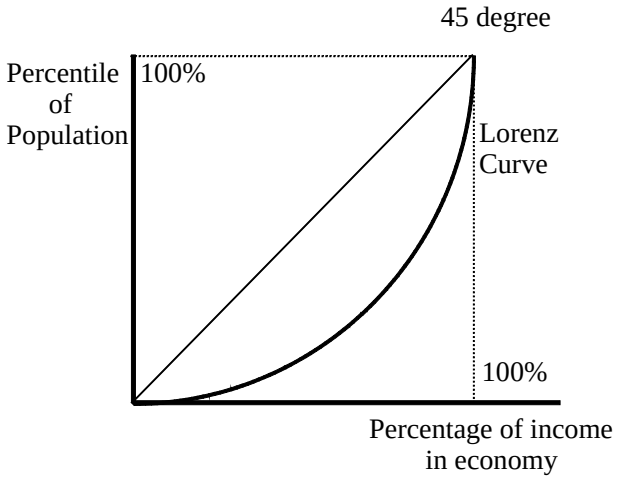
d. Cruel choices only exist in the case of the short-run trade-off view of the Phillips Curve. However, there maybe a "Lady and Tiger Dilemma" for policy makers relying on the Phillips Curve to make policy decisions.

3. Rational expectations is a theory that businesses and consumers will be able to accurately forecast prices (and other relevant economic variables). If the accuracy of consumers' and business expectations permit them to behave as though they know what will happen, then it is argued that only a vertical Phillips Curve is possible, as long as political and economic institutions remain stable.

4. Market policies are concerned with correcting specific observed economic woes.

   a. Equity policies are designed to assure "a social safety net" at the minimum and at the liberal extreme to redistribute income.

      1. The Lorenz Curve and Gini Coefficients are used to measure income distribution in economies.



The Lorenz curve maps the distribution of income among across the population. The 45 degree line shows what the distribution of income would be if income was uniformly distributed across the population. However, the Lorenz curve drops down below the 45-degree line showing that poorer people receive less than rich people.

The Gini coefficient is the percentage of the triangle mapped out by the 45-degree line, the indicator line from the top of the 45-degree line to the

percentage of income axis, and the percentage of income axis that is accounted for by the area between the Lorenz curve and the 45-degree line. If the Gini coefficient is near zero, income is close to uniformly distributed; if is near 1 then income is mal-distributed.

b. Productivity is also the subject of specific policies. The Investment Tax Credit, WIN program, and various state and federal training programs are focused increasing productivity.

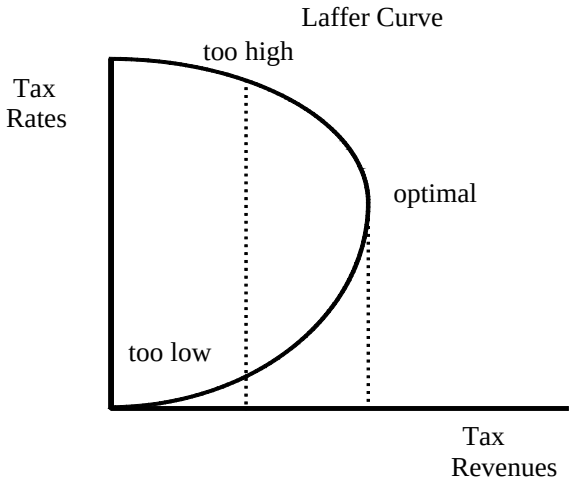
c. Trade barriers have been reduced through CAFTA, NAFTA and GATT in hopes of fostering more U.S. exports.

5. Wage-Price Policies

   a. Attempts have been made to directly control inflation through price controls, this seemed to work reasonably well during World War II. Carter tried voluntary guidelines that failed, and Nixon tried controls that simply were a disaster.

6. Supply Side Economics of the Reagan Administration were based on the theory that stimulating the economy would prevent deficits as government spending for the military was increased. This failed theory was based on something called the Laffer Curve.

   a. Laffer Curve (named for Arthur Laffer) is a relation between tax rates and tax receipts. Laffer's idea was rather simple, he posited that there was optimal tax rate, above which receipt went down and below which receipts went down. The Laffer curve is shown below:



The Laffer Curve shows that the same tax receipts will be collected at the rates labeled both "too high" and "too low." What the supply-siders thought was that tax rates were too high and that a reduction in tax rates would permit them to slide down and to the right on the Laffer Curve and collect more revenue. In other words, they thought the tax rate was above the optimal. We got a big tax rate reduction and found, unfortunately, that we were below the optimal and tax revenues fell, while we dramatically increased the budget. In other words, record-breaking deficits and debt.

b. There were other tenets of the supply-side view of the world. These economists thought there was too much government regulation. After Jimmy Carter de-regulated trucking and airlines, there was much rhetoric and little action to de-regulate other aspects of American economic life.

7. Unfortunately, the realities of American economic policy is that politics is often main motivation for policy.

    a. Tax cuts are popular, tax increases are not.

    b. Deficits are a natural propensity for politicians unwilling to cut pork from their own districts and unwilling to increase taxes.

8. World Trade Organization

    a. Treaties on trade and tariffs

    b. Most favored nation status

        1. Drop barriers to free trade, including protectionist quotas, no subsidies, and labor, environmental, and financial standards

    c. Plight of LDCs particularly with debt

9. Free-Trade Areas

    a. NAFTA
    b. CAFTA
    c. EEU
    d. African Free Trade Area

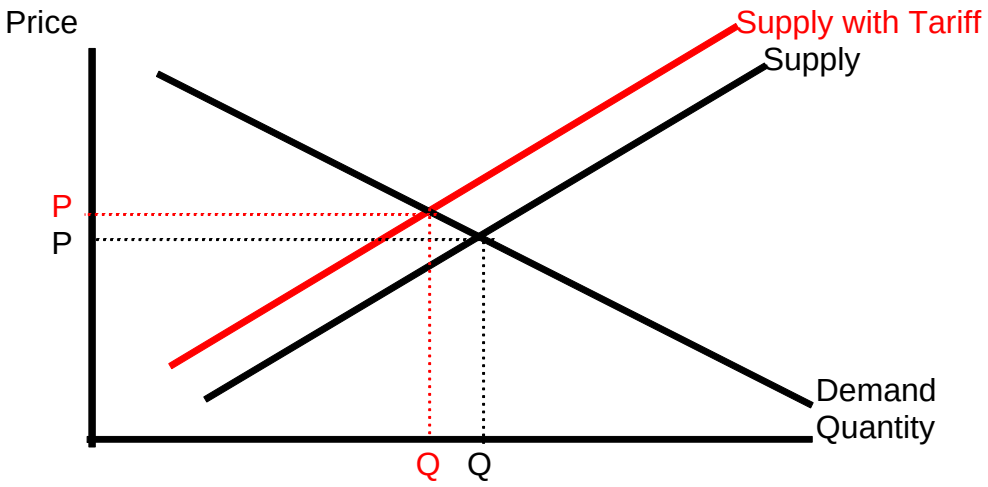
10. Bretton Woods and World Bank

    a. Data gathering
    b. Economic Development
    c. IMF

11. Controversies Concerning International Trade

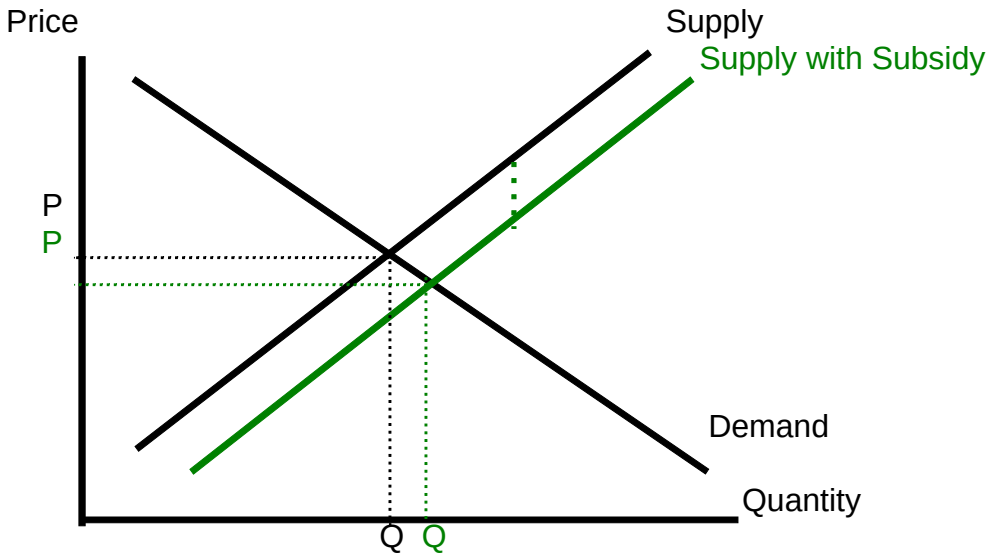
Lecture Notes

1. Historical Context of Protectionism
    A. Wilson Administration
        1. Technology - Oceans no longer barriers
        2. Commercial ventures of the 1920s
            a. Fordlandia
            b. Latin fruit, mid-east oil
    B. Commercial colonization, the rise of Nationalism in third world
2. Protectionist Policies
    A. Currency controls
    B. Embargoes
    C. Tariffs
        1. A tariff is an *ad valorem* tax. Income base not until 1930s
    D. Tariff in Competitive market:



The result of a one-dollar tariff, for the price of the commodity will depend on the elasticity of demand and the elasticity of supply. If there was a perfectly inelastic demand curve, then the tariff would all be reflected in the price of the commodity.

E. Subsidies by foreign governments to foreign producers:

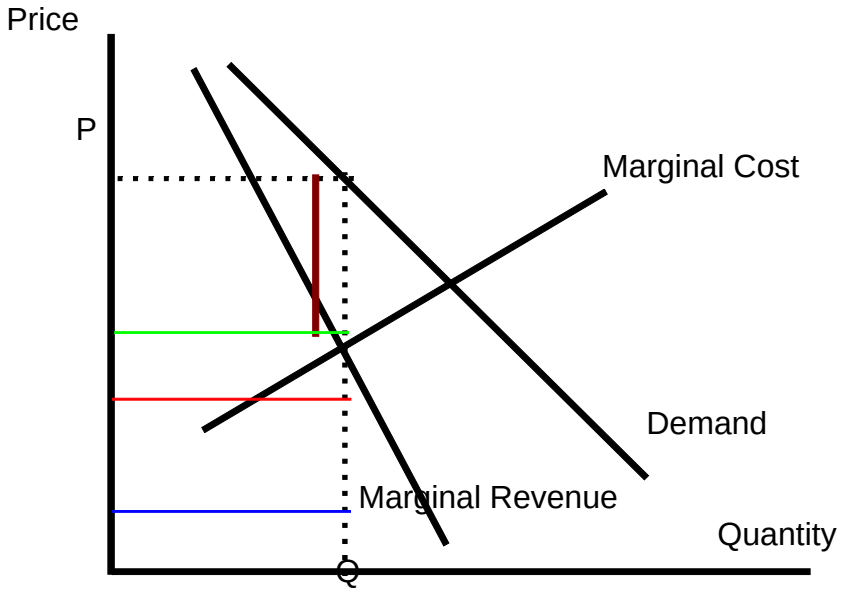


In this case, the policy makers who impose a tariff on this commodity would do so in an amount equal to the vertical distance between the green demand curve and the black one, which is the amount of the subsidy.

F. Problems with market structures

1. Pure competition doesn't exist, hence imperfect market structures are the appropriate models

2. Tariffs have different effect in imperfect product markets



If the blue line shows the amount of fixed cost with this total revenue, the red line the variable cost, and the green line the total cost, then you may place a tariff up to as much as the brown line per unit of the commodity sold without affecting either the price or the quantity sold in the marketplace.

3. Legitimate Reasons for Protectionism

    A. Imperfect versus perfect market structures.

    B. Fair versus Free Trade

    C. Infant industries refers to the fact that certain domestic industries may find it difficult to get a foothold if they are forced to compete with foreign producers.

        1. economies of scale which requires a firm to be given an opportunity to progress to a point where it can become competitive

    D. National security is also a powerful argument for trade restrictions.

        1. World War II & Japanese scrap iron and iron

    E. Fair trade is becoming a more complex problem.

        1. When comparative advantage arises from the exploitation of labor that raises an array of ethical and moral problems.

F. Free trade is one thing, but when comparative advantage is based in labor markets, which do not pay living wages, have no protections for worker safety or health, make no provision for health care or retirement, then that is not a comparative advantage. What this describes is a system abroad that is corrupt and corrosive. Such corruption and devastation of the a foreign labor force cannot and should not be misunderstood as a comparative advantage upon which normal commercial relations can be tolerated. Cost minimization has its limits, and when it involves less than a living wage that is not a viable long-term solution to a comparative advantage relationship with trading partners.

G. In some of our trading partners health care is provided through social programs paid for at taxpayer expense.

4. Exchange Rates

A. Pegging Chinese Currency

1. Artificially creates comparative advantage by manipulating exchange rate.

B. Weak Dollar Policies

1. National Debt

2. Foreign Policy

3. Monetary Supply

C. Political constraints

1. Foreign Wars

2. Political Controversy