AP Microeconomics Course Study Guide

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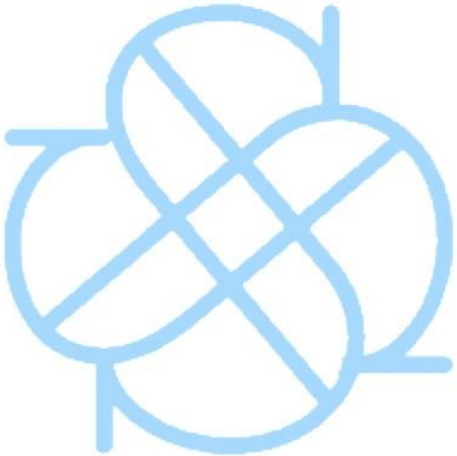
Tips For Test:

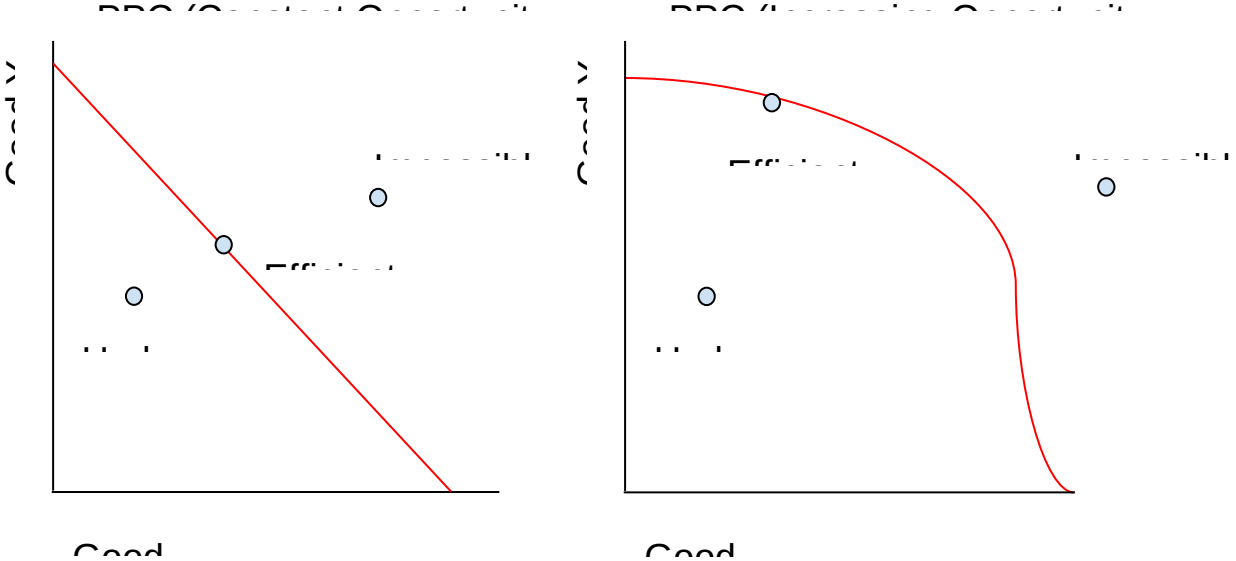
- Two-thirds of your grade comes from the multiple choice, while the other third comes from the FRQ
- There are roughly **60** multiple choice questions, and you are given about **70** minutes to complete them
- The FRQ has one long question and two short questions, and you are given roughly 60 minutes to complete them
- Topics covered
    - 8%-14% - Basic economic concepts cover
    - 55%-70% - Nature and functions of product markets cover roughly
    - 10%-18% - Factor Markets cover roughly
    - 12%-18% - Market Failure and the role of the government covers roughly
- Score information
    - In order to earn a **5**, you must get 80% or higher on the exam
    - In order to earn a **4**, you must get 60% or higher on the exam
    - In order to earn a **3**, you must get 50% or higher on the exam
    - In order to earn a **2**, you must get 33% or higher on the exam
    - In order to earn a **1**, you must get 0% or higher on the exam
- On multiple choice, pace yourself accordingly, and never stick on one question for too long.
- Whenever you have doubts, graph it out!
- There is no penalty for wrong answers, so answer every question to the best of your ability, taking guesses if needed
- Anytime a potential answer uses extreme words (ex. “always”, “never”, “rarely”, “none”) that choice is usually not the best choice to go with
- Stay positive for most answer choices, but recognize if there is “not” or “except”, in which case you pick the negative answer
- Read the question carefully, analyze it, and simplify it if needed in order to avoid confusion.
- The difficulty usually increases towards the second half of the test, so be able to answer all the easy questions in the beginning with confidence
- For FRQs, remember that you get consistency points for your answers, so if you feel you messed up, as long as you do the right steps, even with the wrong numbers, you will still earn credit for that problem

- Always make sure to remember your P's and Q's when labeling a graph
- Concision is key, as this is an AP Micro Exam, not AP Lang, so essays are not needed
- Always draw a graph; it can only help you, not harm you
- If a question asks for you to show your work, you better show it
- If a question asks to explain, you need to give a written explanation of your work/thought process
- If a question asks for you to identify or determine, then they ask for a straightforward answer, so not much writing is required
- If a question asks for you to draw or show, then a graph is required
- Know about the 4 market structures as the long frq usually asks about perfect competition, monopoly, or monopolistic competition; oligopoly is also asked in one of the short questions
- Any topic from this course can be used in the two short questions, so study up!



What is Economics?

- Economics is social science that studies how resources are used and how they can be used to their full potential
- Macro vs. Micro:
    - Macroeconomics: the study of economic problems encountered by the nation as a whole
    - Microeconomics: the study of economic problems encountered by the individuals within the economy
- Positive vs. Normative:
    - Positive Economics: based on the scientific method, so hypotheses are formed and tested
    - Normative Economics: based on the way things "should" be; valuing judgments
- Resources: anything that can be used to produce other goods or services
    - Most resources are either land, labor, or capital
        - Land: considered to be all natural resources
        - Labor: considered to be all human attributes that are productive
        - Capital: productive equipment/machinery
- Opportunity Cost: what is sacrificed in order to obtain something else
    - Ex. The opportunity cost of studying for 2 hours is how you could have watched Netflix for 2 hours
    - $Opportunity\ Cost\ of\ Good\ X\ = \frac{\Delta Good\ Y Production}{\Delta Good\ X\ Production}$
- Production Possibility Curve:
    - Shows the combination of two goods being produced using the economy's resources
    - Points below the curve are possible but inefficient
    - Points on the curve are possible and efficient
    - Points above the curve are impossible (unless the economy has an increase in resources)
    - Changes in technology/productivity and changes in the amount of resources can cause the curve to shift (increases = right shift, decreases = left shift)
    - Unemployment does not shift the curve, but rather moves the point as it is below the curve

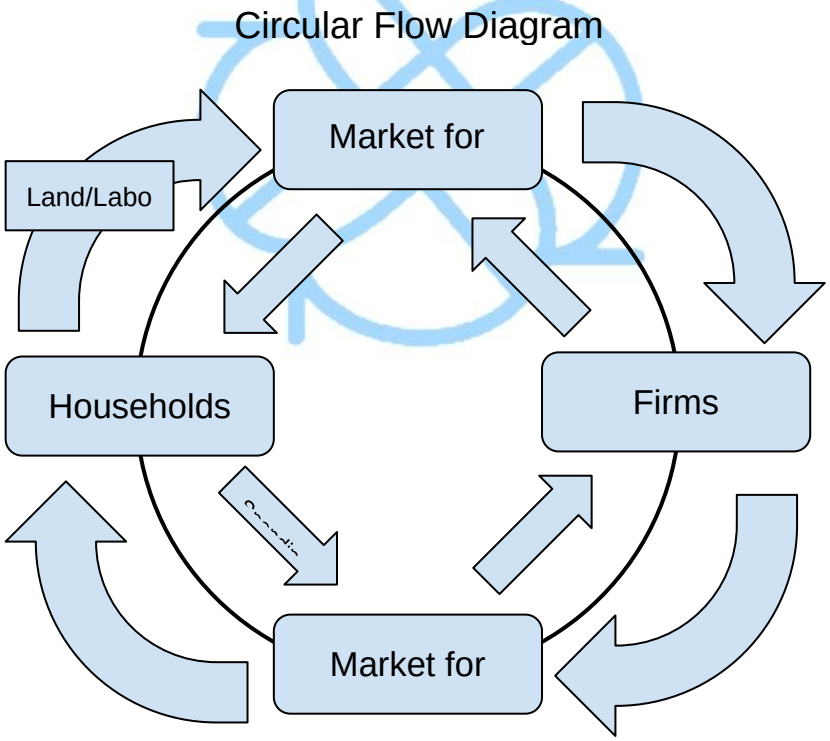


- There are constant opportunity costs (above) or increasing opportunity costs (below)
- The reason increasing opportunity cost is more common is because if there are more resources that are better for producing one good, but are being used up to produce another, they will be less productive

- Comparative Advantage: where specialization can improve productivity
- Absolute Advantage: when both products can be produced more efficiently by one party itself
- `Comparative Advantage ≠ Absolute Advantage`
    - One party cannot have both in both goods

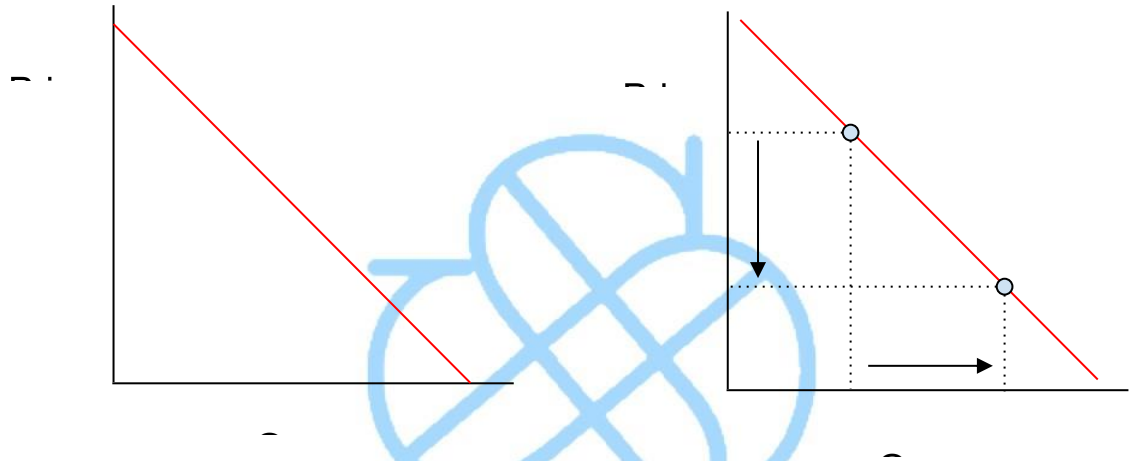
Econ Systems:

- Market: mechanism that allows buyers and sellers to exchange goods and services
- Law of Supply: when the price of a product increases, the quantity supplied increases
- Law of Demand: when the price of a product increases, the quantity demanded decreases
- Command Economy: where a central government dictates what will/will not be produced, how much of it will be produced, and who gets the final products
    - Can be described as communist/socialist governments
- Capitalism: where supply and demand determine the prices in a free market
- Allocative Efficiency: where resources are deployed in the optimal way to ensure the right products are sold in the right amounts to satisfy consumers
- Mixed Economy: blend of government commands and capitalism
- Circular Flow Diagram: the idea that shows how households and firms are related by the flow of resources/products (below)

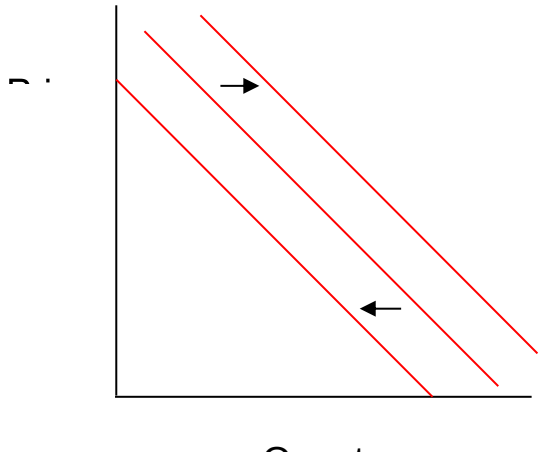


Supply and Demand:

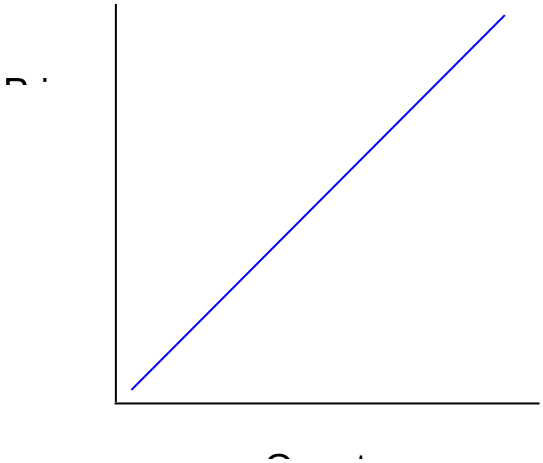
- Changes in demand mean a shift in the demand curve due to a non-price determinant
- Changes in supply mean a shift in the supply curve due to a non-price determinant
- Changes in quantity demanded mean a price change, so there is only movement along the demand curve
- Changes in quantity supplied mean a price change, so there is only movement along the demand curve
- Market Equilibrium: where quantity demanded equals the quantity supplied, determining the level of output and price



- Demand: the quantity of a product a consumer would purchase at a given price (above)
- Law of Demand indicates an inverse relationship between price and demand
    - Demand Declines



- The Income Effect: when prices fall, consumers can afford to buy more of a certain good/service
- The Substitute Effect: when the price of a good increases, its price also increases relative to the prices of other equivalent goods
- Determinants of Demand:
    - **SPICE Mnemonic**
        - S - Substitute Goods
        - P - Preferences/Population
        - I - Income
        - C - Complementary Goods
        - E - Expectations
- Substitute Goods: when an increase in the price of one good results in an increased demand for the other good
    - Direct relationship
- Preferences: consumers' taste for a good/service (taste increases = demand increases)
    - Direct relationship
- Population: number of consumers in the market, so a bigger market is more demand
    - Direct relationship
- Income: when people have more currency to spend, their demand increases
    - Normal Good: as income increases, demand increases (direct relationship)
    - Inferior Good: as income increases, demand decreases (indirect relationship)
- Complementary Goods: goods that are purchased separately but used together, and as the price for one good increases, the demand for the other decreases
    - Inverse relationship
- Expectations: if consumers expect future prices to increase, the demand for the product today increases
    - Direct relationship

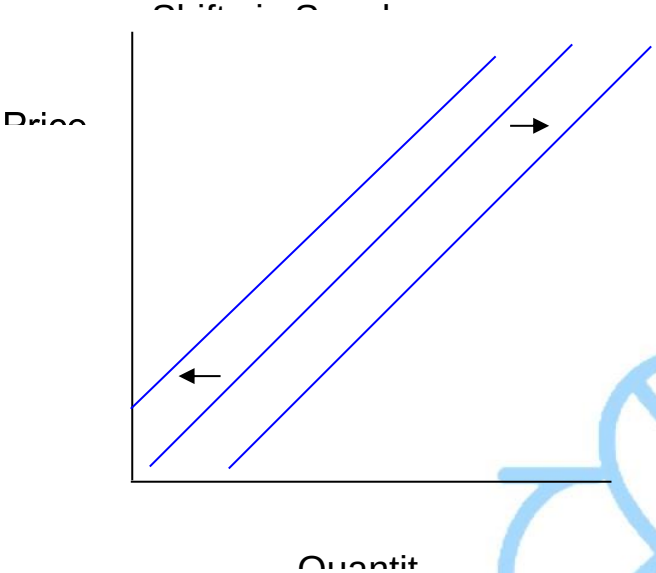


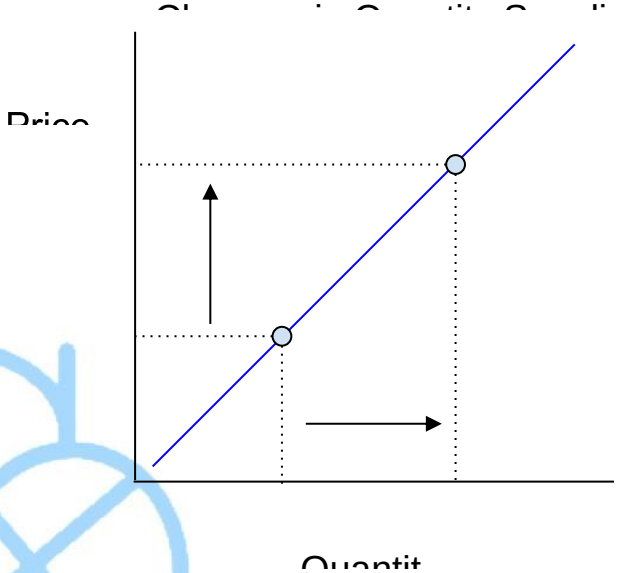
- Supply: quantity a producer would produce at a given price (above)
- Law of Supply indicates a direct relationship as prices increase, quantity supplied increases

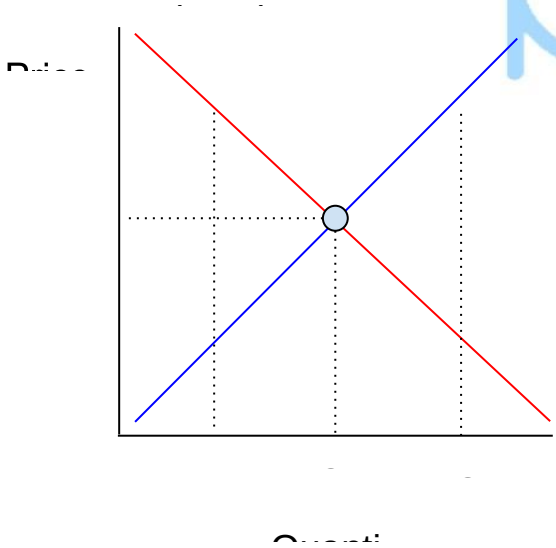
- Determinants of Supply:
  - **C** - Cost of Inputs
  - **O** - Opportunity cost of Alternative Production
  - **T** - Technologies
  - **T** - Taxes and Subsidies
  - **E** - Expectations
  - **N** - Number of Sellers
- Cost of Inputs: when the cost of producing a product increases the supply decreases
  - Inverse relationship
- Opportunity Cost of Alternative Production: if a firm can switch between production of different products, they will choose what to produce to give them maximum profit
- Technology: better technology can decrease production costs and increase productivity, increasing supply
  - Direct relationship.
- Taxes and Subsidies:
  - A tax on the good will result in increased production costs, which will decrease supply (inverse relationship)
  - A subsidy is the government paying for the production of a product => supply will increase (direct relationship)
- Expectations: if expectations of prices increasing in the future are held, the supply will decrease at the present moment
  - Inverse relationship
- Number of Sellers: if there is more competition in the market, supply will increase

- Direct relationship

- Surplus: above the equilibrium price, when quantity supplied is greater than quantity demanded
- Shortage: below the equilibrium price, when quantity demanded is greater than quantity supplied







- Ceteris Paribus: holding all other factors/conditions constant
- Price Ceiling: a government-mandated control on the max price a seller can put their product at
- Price Floor: a government-mandated control on the lowest price something can be at

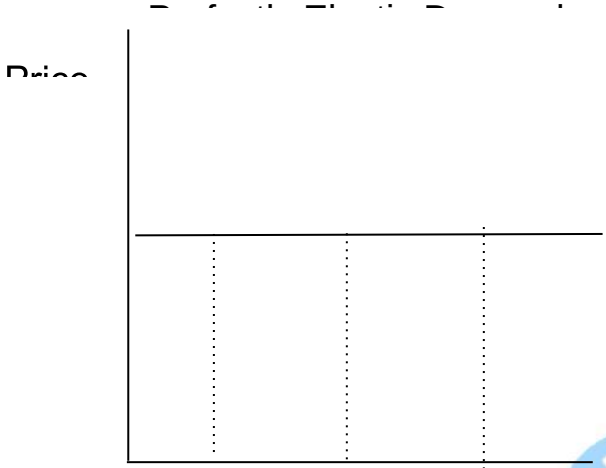
Elasticity and Taxation:

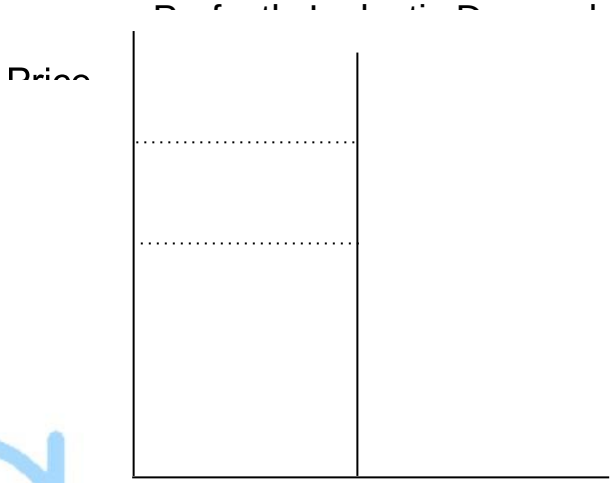
- Total Revenue Test (TR): $P \times Q = TR$
- Unit Elastic: if price increases by a factor and quantity demanded decreases by the same factor, total revenue stays the same
- Elastic Demand: if the price increases by a factor and quantity demanded decreases by a greater factor, total revenue decreases
    - Inverse Relationship
- Inelastic Demand: If the price increases by a factor and quantity demanded decreases by a smaller factor, total revenue increases
    - Direct Relationship
- Price Elasticity of Demand Formula: $\frac{\%\Delta Quantity\ Demanded}{\%\Delta Price}$
- Price Elasticity of Supply Formula: $\frac{\%\Delta Quantity\ Supplied}{\%\Delta Price}$
- Elasticity Coefficient Values:
    - Perfectly Inelastic = 0
    - Relatively Inelastic < 1
    - Unit Elastic = 1
    - Relatively Elastic > 1
    - Perfectly Elastic ∞ (infinity)

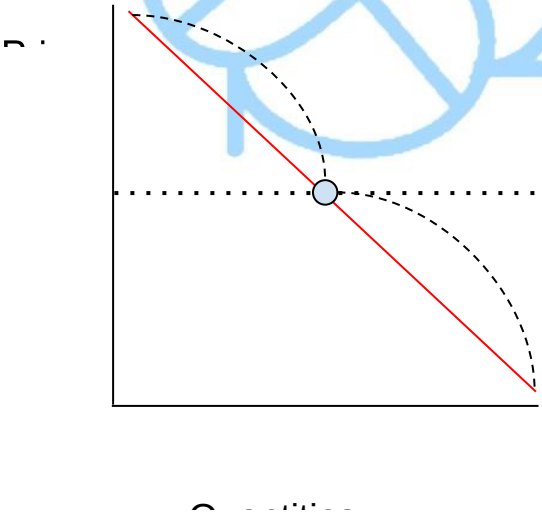
Price	Total Revenue	Price Elasticity of Demand
Increases	Decreases	>1, relatively elastic
Increases	Increases	<1, relatively inelastic
Increases	Stays the same	=1, unit elastic
Decreases	Increases	>1 relatively elastic
Decreases	Decreases	<1 relatively inelastic
Decreases	Stay the same	=1, unit elastic

- Perfectly Elastic Coefficient is 0, which makes the graph flat (slope of 0)
- Perfectly Inelastic Coefficient is infinity, which makes the graph have slope DNE

- Cross-Price Elasticity of Demand: the percentage change in demand for good X based on the price change for good Y
    - If the number is negative, the products are complements
    - If the number is positive, the products are substitutes





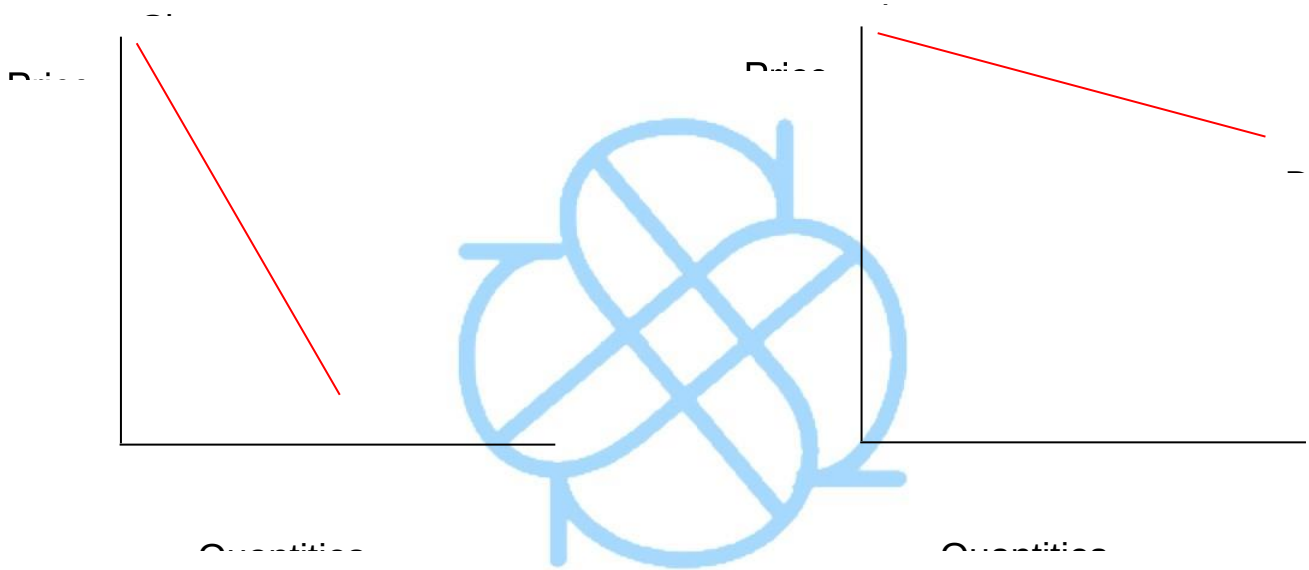


- Cross-Price Elasticity of Demand Formula:

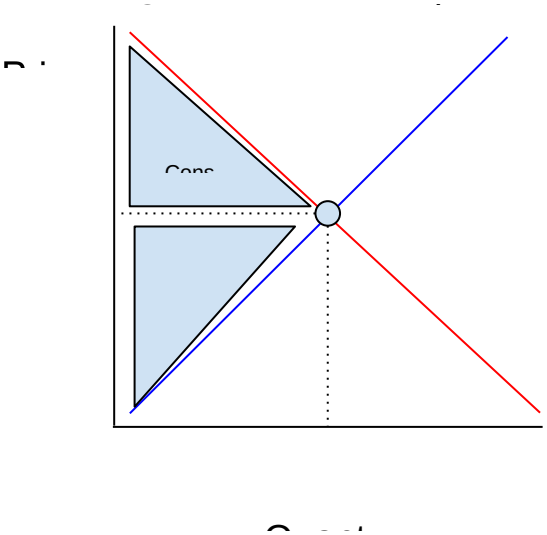
$$\frac{\%\Delta Quantity\ Demanded\ of\ Product\ Y}{\%\Delta Price\ of\ Product\ X}$$

- The Period of Adjustment: The Long Run vs. The Short Run
    - The Short Run: period of time where supply cannot fully adjust to demand changes so there is more demand than supply; prices begin to skyrocket

    - The Long Run: period of time where more choices are available, so consumers are more sensitive to price changes
    - The Long Run demand curve will relatively be more elastic than the Short Run curve
- Generally, necessities have inelastic demand because there will always be a market for these products, regardless of the price
- Income Elasticity of Demand: how changes in income affects quantity demanded for a product
    - If the sign is positive, it is a normal good
    - If the sign is negative, it is an inferior good



- Income Elasticity Of Demand Formula: $\frac{\%\Delta Consumption\ of\ a\ Good}{\%\Delta\ Consumer\ Income}$
- Price Elasticity of Supply Formula: $\frac{\%\Delta Quantity\ Supplied}{\%\Delta Price}$

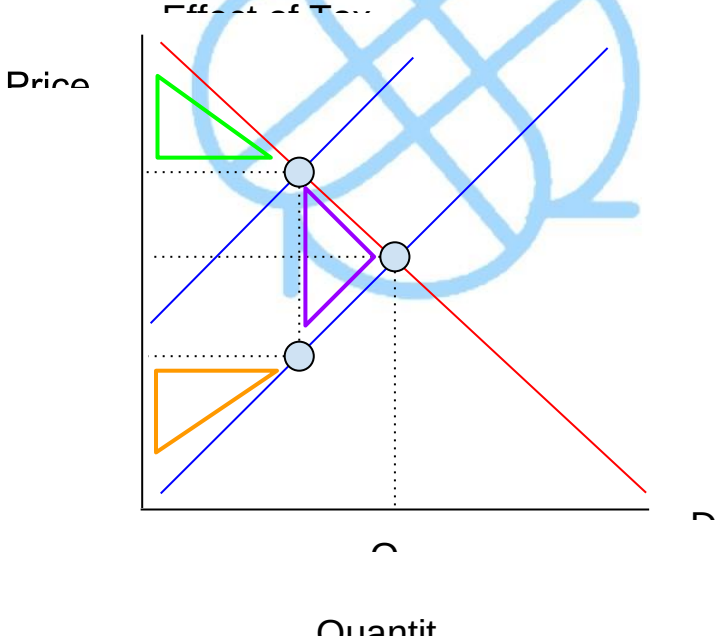


- Producer Surplus: the difference between the lowest price a producer would sell a product, and the actual price it was sold for

- Consumer Surplus: the difference between the highest price a consumer would pay for a product and the actual price paid

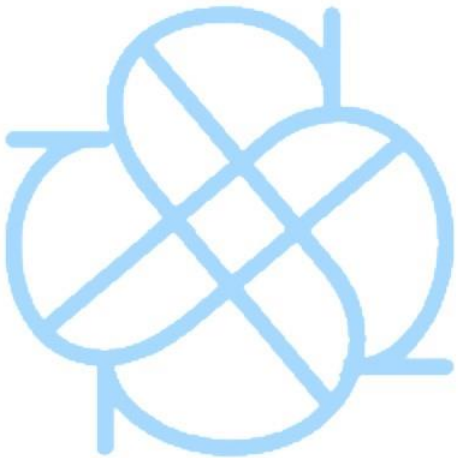
- Deadweight Loss: it is the loss of total surplus for a society when a market fails to reach a competitive equilibrium due to a market distortion (ex. taxes)

- Quota: sets a limit on the quantity of goods imported/exported
- Tariff: a tax on imports/exports



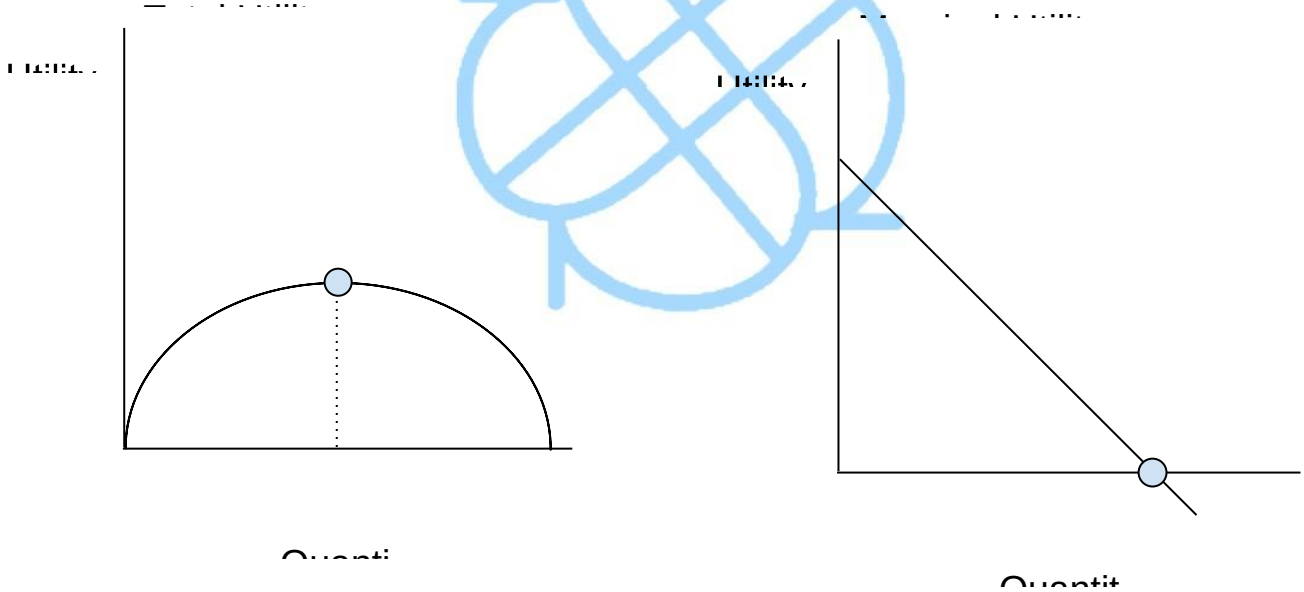
Elasticities	Tax Incidence
Demand > Supply	Producers pay > Consumers pay
Demand < Supply	Producers pay < Consumers pay

Perfectly Inelastic Demand	Consumers pay all
Perfectly Inelastic Supply	Producers Pay all
Perfectly Elastic Demand	Consumers pay Nothing
Perfectly Elastic Supply	Producers Pay Nothing



Theory of Consumer Choice or Behavior:

- Consumers rank goods in terms of preference
- Utils: a measurement of utility/satisfaction
- Utility: how much satisfaction a consumer has
- Total utility: total amount of satisfaction from the consumption of a good
- Marginal utility: the addition to total satisfaction
- Diminishing Marginal Utility: when the consumption pattern of a good yields less additional satisfaction with every additional unit consumed
- Consumers buy products based on their rationality, preference, and the diminishing marginal utility that comes with the said product
- Utility Maximization Formula: $\frac{MUx}{Px} = \frac{MUy}{Py}$
- Utility Maximization: when the marginal utility of the consumption of Good X is equivalent to the marginal utility of the consumption of Good Y



Supply, Costs, and Production:

- Accounting Profit: the difference between total revenues and explicit costs
- Average Fixed Cost: a firm's total fixed cost divided by total output
  - $AFC = \frac{Total\ Fixed\ Cost}{Output}$
- Average Product: total product divided by the variable input used in production
  - $AP = \frac{Total\ output}{Variable\ input}$
- Average Total Cost: Average Variable Costs + Average Fixed Costs
- Average Variable Cost: $\frac{Total\ Variable\ Cost}{Output}$
- Diseconomies of Scale: as a firm's output increases, it's long-run average total cost curve increases as well
- Economic Profit: total revenues that are subtracted by both explicit/implicit costs
- Excise Tax: a per-unit tax that is placed on the sales of a specific product
- Fixed Costs: these costs cannot change when quantity changes in the short run, but can change in the long run
- Law of Diminishing Marginal Returns: the range of output where production increases at a decreasing rate
- Long Run: the long-term view of a situation where supply fully adjusts to changes in demand and wages aren't sticky
- Lump-Sum Tax: a fixed tax that is put on producers regardless of how much they produce; affects both the average fixed and total costs
- Marginal Cost: $\frac{\Delta Total\ Cost}{\Delta Output}$
- Marginal Product: how much more product can be produced when another input is added by a firm
  - $MP = \frac{Change\ in\ output}{Change\ in\ input}$
- Normal Profit: where an entrepreneur will not be better off in any other venture
- Per-Unit Tax: a tax on each additional unit produced; affects variable costs (ex. marginal cost, average total/variable costs)
- Short Run: a period of time where supply does not adjust to changes in demand
- Total Costs: all fixed and variable costs in total
  - TC = Total Variable Costs + Total Fixed Costs
- Variable Costs: costs that change as production increases

Product Markets:

- Monopolistic Competition: a market structure characterized by many medium sized firms who are innovative and differentiate their products in both price and non price ways
- Monopoly: one firm that constitutes the entire industry selling a product, for there are no close substitutes
- Oligopoly: a market structure characterized by few sellers that are interdependent of each other to create control over price markets
- Perfect Competition: a market structure characterized by a large number of sellers with a homogeneous product, infinitely elastic demand for firms, and no price takers
- Price Takers: cannot control the price of their goods because they don't have enough market power and must accept the market price
- Price Makers: can control and manipulate markets by charging prices that is in excess of marginal costs to maximize profits

Perfect Competition:

- Economic Efficiency: the distribution of resources to their most productive and desired uses
- Profit-Maximizing Criterion: also called *Loss-Minimizing Criterion*, where the level of output at which the marginal revenue is equivalent to the marginal cost
    - Marginal Revenue = Marginal Cost
- Shut-Down Point: when the price is less than the average variable cost, the firm should shut down in the short-run
    - Price < AVC ==> the firm should shut down
- *Price = Marginal Revenue* is the perfectly competitive firm's demand function
- *Price = Marginal Cost* is the socially optimal price (efficiency) that can be achieved under perfect competition in the long run
- *Price = Minimum Average Cost* is the formula for a perfectly competitive firm in the long run
- *(Price - Average Total Cost) * Output* will calculate either profits or losses

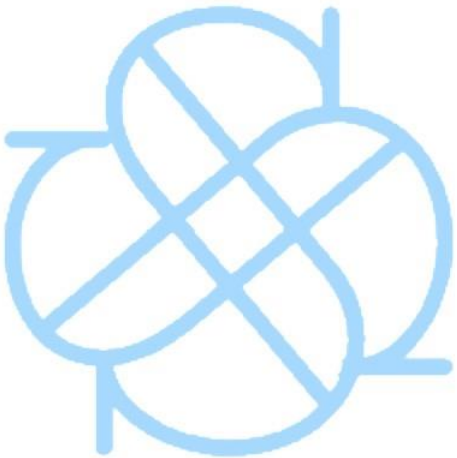
Monopoly:

- Herfindahl Index: the sum of the squares of market shares of a firm in a particular market or industry; used to measure the level of concentrated power of said firm in an industry
- Natural Monopolies: monopolies that have many cost advantages and can offer a lower cost for a product than most other firms
- Price-Discrimination: when different customers are charged with different prices for the same product
- Socially-Optimal Pricing: where government regulators force monopolies to have allocatively efficient pricing, which can force firms to go out of business, or require large subsidies to compensate
- Fair-Return Pricing: regulators created to set prices deliberately to let monopolies break-even and earn normal profits like the other firms in the same industry
- Unregulated Monopoly: these monopolies produce at the profit-maximizing quantity, underproduce, and overcharge
- Regulated Monopolies Pricing At A Fair-Return Price:
    - Price = Average Total Cost
- Regulated Monopolies Pricing At A Socially Optimal Price:
    - Price = Marginal Cost

Imperfect Competition:

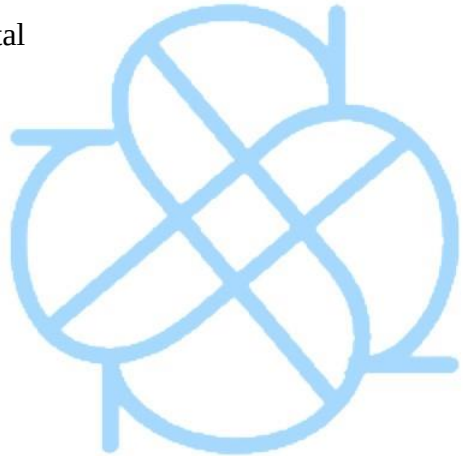
- Cartel: a group of firms that act together and have a formal agreement not to compete with one another
- Collusion: an agreement that is usually illegal to agree on the price and quantity produced in a given market
- Dominant Strategy: the best choice for one player regardless of what the other player may end up choosing
- Game Theory: the study of how firms and people act tactically during a game
- Prisoner's Dilemma: if neither of them confess, they both get a prison sentence. If one of them confesses and the other doesn't, one gets a longer sentence than the other, or can potentially walk free. If both confess, then they get a longer prison sentence than they would have gotten if both of them didn't confess.
- Monopolistic Competition:
    - Has relatively easy entries
    - Has differentiated products
    - Has advertising and non-price competition
    - Has inefficient, excess capacity
    - Has a large number of buyers and sellers
    - Has long-run equilibrium
    - Is allocatively inefficient with the price being greater than the marginal costs
    - Has the price greater than the marginal revenue
    - Is the most common type of market structure in America
- Nash Equilibrium: game theory outcome, which involves when both players choose the action that is best for them, given the actions of other players, yet they reach the same payoff matrix cell
- Oligopoly:
    - Have formidable barriers to entry
    - Have differentiated or similar products
    - Has interdependence
    - Has few firms that control major shares of the market
    - Is allocatively inefficient, where the price is greater than the marginal cost, resulting in excess profits
    - Has the price greater than the marginal revenue
    - Has price-makers

- Has collusive activities and cooperative arrangements
- Has actions that are influenced by the actions of rivals



Resource Markets:

- Derived Demand: the demand for a resource such as labor comes from the product the resource helps to produce
- The firm in a perfectly competitive labor market is a price taker, because of the wage rate paid by the firm for its workers, while supply is perfectly elastic
- Marginal Revenue Product: represents the demand for labor
- Marginal Factor Cost: represents the cost of labor
- Monopsony: a market where there is only a singer buyer for labor
- Three things shift the demand curve for labor:
    - Demand for the product.
    - Changes in productivity.
    - Changes in prices of other resources.
- Least Cost Rule: to minimize costs, a firm must adjust the ratio of inputs labor to be equivalent to its capital
    - $\frac{MPl}{Pl} = \frac{MPk}{Pk}$



Market Failure and Externalities:

- Coase Theorem: theory that states private parties have the ability to solve issues created by externalities by themselves without needing government assistance
- Free-Rider Problem: government ends up providing public goods because people benefit from public goods that they didn't pay for
- Gini Coefficient: a measure of income inequality with a range of 0 to 1
    - **1** means all the income goes to one family
    - **0** means all the families receive the same amount of income
- Lorenz Curve: shows how much a country's total income is earned by a household
- Marginal Social Benefit: the benefits that come with society's consumption of products
- Marginal Social Cost: the costs that came to society when additional units of goods are produced
- Negative Externality: when a third party outside of the given market has to take some of the cost of producing a product, causing the market to produce too much of the good
- Positive Externality: the production/consumption of a good/service that creates benefits for third parties that were not involved in the transaction; causes the maker to produce little of that said good/service
- Private Goods: goods that are exclusive in consumption
- Progressive Tax: tax that increases to higher rates as incomes increase
- Proportional Tax: tax that imposes the same tax rates on everyone regardless of their incomes
- Public Goods: goods that are non exclusive, so one singular person's consumption of it does not exclude others' benefits from it
- Regressive Tax: tax where the tax burden falls as incomes rise

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