

Review Notes - Micro Review

- Demand Defined
 - definition
 - the law of demand (as P increases $\Rightarrow Q_d$ decreases)
 - Why?
 - substitution effect
 - income effect
 - absolute vs. relative price for the law of demand
 - market demand
 - Other influences on Demand
 - tastes and preferences: as they increase $\Rightarrow D$ increases and reverse
 - income (Y)
 - normal goods: as Y increases $\Rightarrow D$ increases and reverse
 - inferior goods: as Y increases $\Rightarrow D$ decreases and reverse
 - the price of related goods
 - substitutes in consumption: as P_s increases $\Rightarrow D$ increases and reverse
 - complements in consumption: as P_c increases $\Rightarrow D$ decreases and reverse
 - the number of demanders (buyers) in a market: as # increases $\Rightarrow D$ increases and reverse
 - expectations about the future: if expect P increase in the future $\Rightarrow D$ increases in the present and vice versa
 - Change in Demand (D) vs. change in Quantity Demanded (Q_d)
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- Supply Defined
 - definition
 - the law of supply (as P increases $\Rightarrow Q_s$ increases)
 - market supply
- Other influences on Supply (besides the good's own price)
 - costs of production: as costs increases $\Rightarrow S$ decreases and reverse
 - technology: as tech. increases \Rightarrow costs decrease and reverse
 - input prices: as input prices increases \Rightarrow costs increase and reverse
 - the price of related goods
 - substitutes in production: as P_s increases $\Rightarrow S$ decreases and reverse
 - complements in production: as P_c increases $\Rightarrow S$ increases and reverse

- the number of suppliers (firms) in a market: as # increases => S increases and reverse
 - expectations about the future: if expect P increases in the future => S decreases in the present and vice versa
 - Change in Supply (S) vs. change in Quantity Supplied (Q_s)
 - Demand and Supply as flow variables (vs. stock variables)
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- Market equilibrium
 - Definitions
 - equilibrium
 - stable equilibrium
 - How does the market attain equilibrium?
 - excess demand or a shortage
 - price competition among consumers
 - excess supply or a surplus
 - price competition among suppliers
 - Predictions about equilibrium P and Q
 - increase in D => what happens to equilibrium P and Q?
 - decrease in D => what happens to equilibrium P and Q?
 - increase in S => what happens to equilibrium P and Q?
 - decrease in S => what happens to equilibrium P and Q?
 - increase in D and increase in S => what happens to equilibrium P and Q?
 - increase in D and decrease in S => what happens to equilibrium P and Q?
 - decrease in D and increase in S => what happens to equilibrium P and Q?
 - decrease in D and decrease in S => what happens to equilibrium P and Q?
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- Elasticity
 - Definition of 4 different types
 - Price Elasticity of Demand (η)
 - Price Elasticity of Supply (η_s)
 - Income Elasticity of Demand (η_y)
 - Cross Elasticity of Demand ($\eta_{x,y}$)

- Interpretation of size and sign of the elasticity coefficient for each type of elasticity.

- sign

- $-\eta < \text{or } = 0$ always; reflects the law of Demand (as P increases \Rightarrow Q_d decreases)
- $-\eta_s > \text{or } = 0$ always; reflects the law of Supply (as P increases \Rightarrow Q_s increases)
- $-\eta_y$; if $\eta_y > 0 \Rightarrow$ as income increases, Q_d increases, \Rightarrow the good is normal.
if $\eta_y < 0 \Rightarrow$ as income increases, Q_d decreases, \Rightarrow the good is inferior.
- $\eta_{x,y}$; if $\eta_{x,y} > 0$ as P_x increases, Q_d of y increases \Rightarrow x and y are substitutes.
if $\eta_{x,y} < 0$ as P_x increases, Q_d of y decreases \Rightarrow x and y are complements.
if $\eta_{x,y} = 0$ as P_x increases, Q_d of y is constant \Rightarrow x and y are unrelated.

- size

- $-\eta$; if $\eta > 1 \Rightarrow$ D is price **elastic** ($\% \Delta Q_d > \% \Delta P$) .
if $\eta < 1 \Rightarrow$ D is price **inelastic** ($\% \Delta Q_d < \% \Delta P$) .
if $\eta = 1 \Rightarrow$ D is **unitarily** elastic ($\% \Delta Q_d = \% \Delta P$) .
- $-\eta_s$; if $\eta_s > 1 \Rightarrow$ S is price **elastic** ($\% \Delta Q_s > \% \Delta P$) .
if $\eta_s < 1 \Rightarrow$ S is price **inelastic** ($\% \Delta Q_s < \% \Delta P$) .
if $\eta_s = 1 \Rightarrow$ S is **unitarily** elastic ($\% \Delta Q_s = \% \Delta P$) .
- $-\eta_y$; if $|\eta_y| > 1 \Rightarrow$ D is income **elastic** ($|\% \Delta Q_d| > |\% \Delta Y|$) .
if $|\eta_y| < 1 \Rightarrow$ D is income **inelastic** ($|\% \Delta Q_d| < |\% \Delta Y|$) .
if $\eta_y > 1 \Rightarrow$ the good is a luxury.
if $0 < \eta_y < 1 \Rightarrow$ the good is a necessity.
- $-\eta_{x,y}$; if $\eta_{x,y} > 0 \Rightarrow$ as $\eta_{x,y}$ increases x and y become closer substitutes.
if $\eta_{x,y} < 0 \Rightarrow$ as $\eta_{x,y}$ decreases (increases in absolute value) x and y become closer complements.

- **make sure you know how to interpret elasticity coefficients**

- Efficiency

- allocative efficiency and inefficiency
 - MSB and MSC (what are those?)
 - efficiency occurs where?

- technological efficiency and inefficiency
 - definition
 - Applications
 - Health Insurance
 - what is the impact of regular third-party health insurance?
 - to price and quantity?
 - allocative efficiency?
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- Consumer Choice
 - Simple two good model
 - Budget constraint
 - $p_1X_1 + p_2X_2 \leq M$
 - meaning? graphically?
 - Budget Line
 - $p_1X_1 + p_2X_2 = M$
 - meaning? graphically?
 - intercepts of the BL?
 - slope of the BL?
 - what shifts the BL?
 - opportunity cost of the two goods?
 - Preferences
 - define consumption bundle, preferred, and indifferent
 - rationality
 - completeness (what's that?)
 - transitivity (what's that?)
 - indifference curves
 - how are points on, and off, an indifference curve related?
 - two points on the same indifference curve?
 - a point above and a point on an indifference curve?
 - a point below and a point on an indifference curve?
 - what do they look like?
 - how many are there?
 - in which direction is the consumer better off?
 - can indifference curves cross?
 - what do different examples of indifference curves look like?
 - utility
 - what does utility measure?
 - what happens to utility as we move to a higher indifference curve?

- assume individuals want to maximize utility given prices, income, and preferences
 - what is marginal utility?
 - how do you derive a demand curve, graphically, from indifference curve analysis?
 - applications
 - subsidies of health by the government
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- Production and Profit Maximization
 - what is production?
 - production function - $Q = f(\text{inputs})$
 - graphically
 - interpret the graph
 - marginal and average product curves
 - law of diminishing returns (marginal productivity)
 - definitions
 - graphically
 - relationship to production function?
 - costs of production
 - definitions: marginal cost, average total cost, average variable cost, etc.
 - what do the curves look like?
 - relationship between costs and production?
 - profit maximization
 - what is marginal revenue?
 - where does profit maximization occur and why? ($MR = MC$)
 - for perfectly competitive firms
 - for monopoly firms
 - what is profit on the graph?
 - technological efficiency
 - firm technological efficiency (produce on the cost curve given output produced)
 - industry technological efficiency (produce at the minimum point of the ATC curve)
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- Statistical Tools
 - What is a hypothesis? How do we test it?
 - How do we test whether two means are different?
 - Focus on definitions of terms - variance, standard deviation, standard error, normal distribution, etc.

- What is the general idea of how one would test whether the means of two groups are different? What is statistical significance?
 - Regression analysis
 - Define regression analysis, multiple regression analysis, and Ordinary Least Squares (OLS) regression.
 - What is the basic idea behind regression analysis, multiple regression analysis?
 - How do you use/interpret the coefficient estimates from regression analysis?
 - How do you test the coefficients - when are they statistically significant?
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- Cost/Benefit Analysis (and others)
 - Definitions
 - Cost/Benefit Analysis, Cost/Effectiveness Analysis, Cost/Utility Analysis.
 - Cost/Benefit Analysis
 - What is Marginal Social Benefit/Marginal Social Cost? How do they relate to Cost/Benefit analysis?
 - where is the social optimum?
 - What is discounting? Why is it necessary? (Don't need to know how to do it although this is a useful skill.)
 - Problems with Cost/Benefit Analysis
 - how to identify B/C in dollar terms
 - how to include external costs (externalities)
 - What is the correct discount rate?
 - Cost Effectiveness Analysis
 - - What is the major difference between CBA and CEA?
 - - What are the advantages of CEA?
 - - What are the disadvantages of CEA?
 - Cost Utility Analysis
 - What are the differences between CEA and CUA?
 - QALYs
 - Definition
 - Problems with QALYs
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