

Topics to review for Micro Econ

1) Introduction to Supply and Demand.

- Conditions change in the market. The key point is to tell a story on what happens to the graph. Consider how the change impacts your:
 - a. Supply/Demand curve: Does it shift (inward/outward?)
 - b. Equilibrium Price
 - c. Equilibrium Quantity
- Think about SUPPLY from the perspective of the firm
- Think about DEMAND from the perspective of the consumer
- Mathematically, when supply cross the demand curve and results in the equilibrium price, you set your Supply Equation = Demand Equation.
- See Shiva's Recitation Notes #1

Readings. NS11, Chapter 1 (including appendix). Stephanie Clifford, "Sales Were Sluggish in July for Retailers," *New York Times*, August 5, p. 1. Andrew E. Kramer and Jack Healy, "Russia Bans Grain Exports After Drought Shrivels Crop," *New York Times*, August 5, p. 1.

2) Price Elasticity of Demand, Price Elasticity of Supply and Income Elasticity of Demand.

- Price Elasticity of Demand: How sensitive is the demand for your good given a slight increase in price? Technically known as % change in quantity demand divided by % change in price. In other words, the percentage change in quantity demanded per 1 percent change in price.
- Calculate by: $(\text{Change in Quantity Demanded} / \text{Quantity Demand}) / (\text{Change in Price} / \text{Price})$
- Other types of elasticity: (a) Income elasticity of demand (b) price elasticity of supply (c) cross elasticity of demand - measures the responsiveness of the demand for a good to a change in the price of another good. $(\% \text{ Change in Demand for Good A} / \% \text{ Change in Price for Good B})$
- Elasticity < 1 : **Inelastic**. Change of quantity is less than change in price so an increase in price will cause revenue to rise. Elasticity > 1 : **Elastic**.
- See Shiva's Recitation Notes #1 & #3

Readings: NS11, pp 117-132. Associated Press, "Post Office Wants to Raise Stamp Price," *New York Times*, July 6, 2010.

Visualization Tools: Go to <http://web.mit.edu/11.203/www/econ/> Experiment with Examples 1.1 and 1.2.

3) Behind the Demand Curve, Utility Theory and the Allocation of Scarce Resources

- Utility function represented as $U(x,y) \rightarrow$ function of preferences for good x and y

- Indifference curve → all combinations of 2 goods (x,y) that provide the same utility
- Marginal** rate of substitution (MRS): Amount you're willing to give up good Y for good X. If good y is on the vertical axis and good x is on the horizontal axis, the $MRS = MU_X / MU_Y$
- Diminishing MRS: you become less willing to give up Y for X
- Review curve maps for: useless good; economic bad; perfect substitution; perfect complement

Readings: NS11, Chapter 2. Carl S. Shoup, "Rules for Distributing a Free Government Service among Areas of a City," *National Tax Journal*, June 1989 pp. 1-9 only.

Visualization Tools: <http://web.mit.edu/11.203/www/econ/> Experiment with exercises 2.1-2.3.

4) Behind the Demand Curve ctd. Income and Substitution Effects and Consumer Surplus

- I found the book's chapter very helpful on how to calculate income/substitution effect. It goes step by step. A useful exercise might be to draw out what the resultant substitution, income, and total effects would be if (a) price of Good A increased (b) price of Good B decreased (c) if one of the goods was inferior (review Giffen's paradox)
- Also, do you know why when the price of hamburgers falls, you may end up buying more apples as well as more hamburgers?
- See Shiva's Recitation Notes #3

Readings: NS11, pp. 87-117, Edward L. Glaeser et. al, "Why do the Poor Live in Cities? The Role of Public Transportation", *Journal of Labor Economics*, (2007) (pages to be assigned)

5) The Housing and Financial Bubbles

- Main idea here is how expectation of future prices can cause a demand curve to shift inward or outward.
- See PSET2 Question #1

6) Technology, Costs and Returns to Scale

- There are a different set of cost curves depending on what time scale you are looking at (long-run or short-run).
- Moving forward, we'll be using a standard set of cost curves where:
 - Firms start with increasing returns to scale then decreasing returns to scale (Can you tell me the shape of the MC, AC curves?)
 - Assume firm has one size – don't worry about long-run/short run cost curves for a given firm.
- Rather, use the long run/short run distinction to talk about whether or not new firms have a time to enter the industry. In the short run, they don't.

- See Shiva's Recitation Notes #5

Readings: NS11, Chapters 6 and 7. Bill Vlasic, "Detroit Goes From Gloom to Economic Brightspot," *New York Times*, August 13, 2010.

Visualization Tools: <http://web.mit.edu/11.203/www/econ/> Experiment with exercise 3.1.

7) Technology, Costs, ctd, and Profit Maximization

- Profit maximization for perfect competition: $\text{Price} = \text{MC}$ (But remember that this is a special case of the more general relationship: $\text{MR} = \text{MC}$. In the case of perfect competition, the firm faces a perfectly flat (infinitely elastic) demand curve. Since the demand curve is flat, the marginal revenue *becomes* the demand curve – i.e. the farmer doesn't have to lower his/her price to sell more quantity.

Readings: NS11, Chapter 8.

Visualization Tools: <http://web.mit.edu/11.203/www/econ/> Experiment with exercise 4.1.1.

8) Perfect Competition, Entry and Exit

- Tip: before you solve any of these questions, determine based on the given facts in the problem whether the market is one of (a) perfect competition (b) monopoly (c) monopolistic competition (d) oligopoly. See Shiva's Recitation Notes #7
- $P = \text{MC} = \text{MR} = \min AC$
- Demand curve perfectly inelastic. Equal to the MR line
- In the long run, firms make no economic profits because there are no barriers to entry
- Firms are price-takers
- See PSET #5 Question 3

Readings: NS11 Chapter 9. View "Farm Fallout" (video segment), from *Jim Lehrer News Hour*, Monday July 13 2009. http://www.pbs.org/newshour/bb/business/july-dec09/dairy_07-13.html

9) A Overview of General Equilibrium (big points in general equilibrium are that all consumers have to have the same rate of marginal substitution (which they do because they all adjust to the same prices) and that price = marginal cost for

Readings: NS11 Chapter 10.

10) Imperfect Competition I – Monopoly

- Downward sloping demand curve and a separate MR curve
- Profit maximizing Q occurs where $\text{MR} = \text{MC}$
- Profit maximizing price occurs where profit maximizing quantity intersects with the demand curve.

- Firms have positive economic profits.
- Monopolies will only set a price in the elastic portion (where there is positive marginal revenue) of the demand curve, which is above the half-way point on the curve. Results in dead weight loss and less consumer surplus. *See Shiva's Recitation Notes #7*
- Graphically, what is the difference between a monopoly curve and perfect competition curve?

Readings: NS1, pp. 377-388. Steven Levy, "Secret of Googlenomics: Data-Fueled Recipe Brews Profitability" *Wired Magazine*, May 22, 2009. Also read: http://www.wired.com/special_multimedia/2009/nep_googlenomics_auction and you can watch Hal Varian do an explanatory video on Google Auctions <http://www.youtube.com/watch?v=K710a2PVhPQ> (optional).

Visualization Tools: <http://web.mit.edu/11.203/www/econ/> Experiment with exercise 4.2.1 and 4.2.2.

11) Imperfect Competition II (Price Discrimination, Monopolistic Competition)

- Firms can maximize profit if they can charge the appropriate price based on the consumer's individual demand. This can only work if the market can be divided into different groups that cannot trade with each other. Examples: hard cover vs. paperback books (people who want the book right away pay more), requiring airline travelers who don't stay over on Saturday night to pay a higher fare (business travelers pay more).
- Competing producers sell products that are differentiated from one another (I.e. product are substitutes but have non-price difference such as in branding, etc.)
- Firms can behave like monopolies in the short-run, generate profit. In the long-run, market becomes more like perfect competition where firms cannot gain economic profit due to limited barriers to entry/exit
- Examples: shoes (Nike vs. ADIDAS offer same product but of different designs and appeal to different types of customers); restaurants (Applebee's vs. Denny's)

Readings: NS 11, pp. 388-402, pp. 442-43, Edward Wyatt, "Google and Verizon Near Deal on Web Pay Tiers", *New York Times*, August 4. Claire Cain Miller and Brian Stelter, "Web Plan Is Dividing Companies", *New York Times*, August 11.

12) Imperfect Competition III – Oligopoly and Game Theory

- Refer back to Lauren's powerpoint presentations.
- Kinked demand: Downward sloping demand curve with 'kink' at established market price, where firms want to be. If in elastic region above kink by raising price, firms lose market share because competing firms won't follow. If below kink by lowering price (undercutting competitors), competing firms respond and price war 'race to the bottom' ensues so no huge gain. Therefore, instead of competing based on price, focus more on differentiating product or quality of services to gain profits.

- Bertrand: See Lauren's PowerPoint.
- Cournot: See Lauren's PowerPoint.

Readings: NS 11, pp. 411 and pp. 414-421. Michael Parkin, *Economics* (9'th edition - 2010) Chapter 15, "Oligopoly", "Start-Up Airlines in a Struggle to Survive" *Dealbook* column, *The New York Times*, July 6, 2010.

13) November 2: Capstone Example – No need to worry about this.

MIT OpenCourseWare
<http://ocw.mit.edu>

11.203 Microeconomics
Fall 2010

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.