

Econ321 Chapter 2

Review of Principles

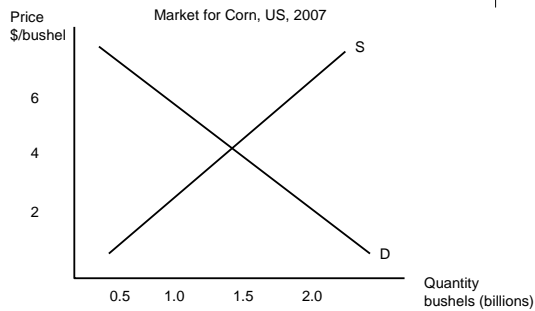


Demand and Supply

- The Demand-Supply Model
 - Is used for analyzing competitive markets
 - What is a “competitive” market?
 - Is an “equilibrium” model
 - Can illustrate the use of comparative static methods
 - Can be presented in a simple graphical manner



Demand Supply Diagram



About the Diagram



- Demand
 - Shows the quantity of corn that all buyers in the market (the US) are willing and able to buy at various possible price levels, holding other things equal
 - This is a market demand curve
- Supply
 - Shows the quantity of corn that all sellers in the market are will to sell at various price levels, holding other things equal
 - This is a market supply curve

Other Things Held Equal



- Suppose that quantity demanded depends on other variables (besides price)
 - Those other variables become demand curve shifters
 - This is a general issue in plotting functions of more than one variable

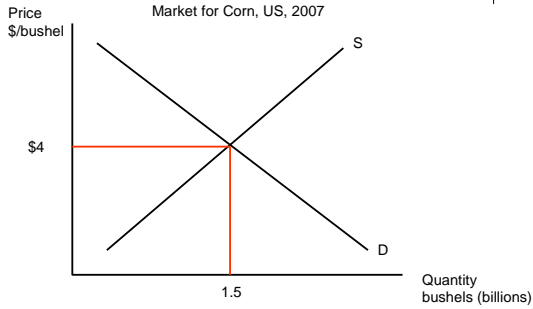
$$Q^d = D(P, P_{other}, I)$$

Laws of Demand and Supply

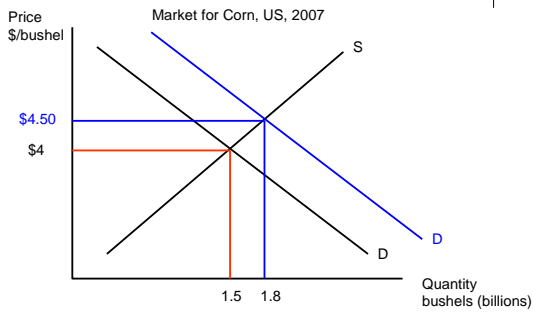


- The “laws” of demand and supply say that
 - Demand curves are negatively sloped
 - Supply curves are positively sloped
 - Neither law is inviolable

Market Equilibrium



Comparative Statics



What is an Elasticity?

- Compare slope and elasticity concepts
 - Price elasticity of demand

$$\text{slope} = \frac{\Delta Q}{\Delta P} \qquad \epsilon_{Q,P} = \frac{\frac{\Delta Q}{Q} \times 100\%}{\frac{\Delta P}{P} \times 100\%}$$

Elasticity, Price Changes and Total Revenue



- Inelastic Demand:
 - Price changes and total revenue changes go in the same direction
- Elastic Demand:
 - Price changes and total revenue changes go in opposite directions.
- Unitary Elasticity:
 - Price changes result in no change in total revenue.

Elasticity, Price Changes and Total Revenue

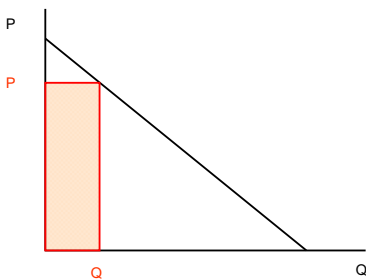


- Intuition: Suppose that quantity demanded is very sensitive to price (demand is elastic)
- Then a small price rise causes a large drop in quantity demanded, and total revenue falls

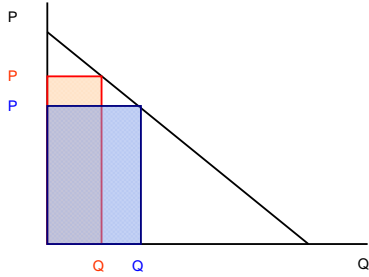
$$TR = PQ$$

↑
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Total Revenue



Total Revenue



Question



- On the preceding slide, did the reduction in price increase or decrease total revenue?
 - Increase
 - Decrease

Question



- In the preceding slide, for the interval over which price changed, was demand elastic, inelastic, or of unitary elasticity?
 - Elastic
 - Inelastic
 - Unitary elasticity

Estimated Price Elasticities



- Economists have statistically estimated price elasticities of demand for many goods (See Tables 2.1 -2.3)
 - Cigars: -0.76
 - Bread: -0.22
 - Leisure Air Travel -1.52
 - Cadillac Seville -3.97

Why a Single Number?



- Since elasticities vary along a demand curve, why is only one number reported for each good?
 - Constant elasticity demand function?
 - Elasticity calculated at the prevailing market price?
- Constant elasticity demand:

$$Q_d = aP^b$$

Determinants of Price Elasticities



- Good substitutes?
- Durable?
- Large item in budget?
- Derived demand?
- Necessity or non-essential?
- Long-run or short-run?

Question



- Is the demand for salt elastic or inelastic?
 - Elastic
 - Inelastic

Income Elasticity



$$\varepsilon_{Q,I} = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta I}{I}}$$

Normal and Inferior Goods



- For a normal good, the income elasticity of demand is positive
- For an inferior good, the income elasticity of demand is negative

Cross-Price Elasticity



$$\varepsilon_{Q_i, P_j} = \frac{\frac{\Delta Q_i}{Q_i}}{\frac{\Delta P_j}{P_j}}$$

Substitutes and Complements



- If a cross-price elasticity is positive, two goods are substitutes
- If a cross-price elasticity is negative, two goods are complements

Supply Elasticity



$$\varepsilon_{Q^s, P} = \frac{\frac{\Delta Q^s}{Q^s}}{\frac{\Delta P}{P}}$$

Question



- True (A) or False (B):
 - The equation below correctly defines the price elasticity of demand

$$\epsilon_{Q,P} = \frac{\Delta P}{\Delta Q} \frac{P}{Q}$$

Question



- True (A) or False (B):
 - Suppose that the city bus system is losing money and needs to generate more revenue. The transit authority should increase bus fares.

Question



- At the current market price, the demand for salt is probably:
 - A: Elastic
 - B: Inelastic
 - C: Unit elastic

Question



- The cross-price elasticity of demand for grapefruits with respect to the price of oranges is probably:
 - A: Positive
 - B: Negative

Question



- Suppose that the price of a good rises by 5%. In response, the quantity demanded for that good falls by 10%. What is the price elasticity of demand?
 - A: -1
 - B: -2
 - C: -5
 - D: -10

Question



- Suppose that Pepe's pizzeria sells 200 pizzas per day at \$18 per pizza. If the price elasticity of demand for Pepe's pizza is -1.5 and Pepe wants to increase his pizza sales by 15% per day, then Pepe should reduce the price of his pizza by:
 - A: 10%
 - B: 22.5%
 - C: 30%

