Chapter 7

REVIEW CONCEPTS

Comparative Statics: Analysis of changes in equilibrium outcomes when the underlying determinants of supply and demand change, without consideration of the adjustment paths over time.

Complements: Products used together, so that when use of one product falls due to a price increase, use of the other product also falls. Complements have a negative cross-price elasticity of demand.

Contestable Market: A market with zero costs of entry and exit, so that even if there is only one organization supplying the market, that organization must behave as if it had many competitors.

Cross Price Elasticity of Demand: The percentage change in the quantity demanded of one good divided by the percentage change in the price of a different good.

Economic Profit: The difference between the total revenue received by the firm from its sales and the total opportunity costs of all the resources used by the firm.

Elastic Demand: When the absolute value of the price elasticity of demand is greater than 1. This implies that a given percentage price change will cause a larger percentage change in quantity demanded. The concept also applies to other demand elasticities, e.g., demand is income elastic when a given percentage change in income causes a larger percentage change in quantity demanded.

Elasticity: A way of calculating how responsive one variable (the effect) is to a change in another variable (the cause) based on a ratio of percentage changes.

Equilibrium: The outcome of a market situation that is predicted to occur by economic theory. A balancing of forces, such that no individual or organization wants to change its behavior given the behavior of others in the economy.

Fixed Revenue: Revenue available to an organization that is independent of the level of production, like investment returns, royalties, rents received, and at least a portion of donations and grants.

Free Entry and Exit: Free entry is a circumstance where, if a new organization enters a market, it will have the same cost curves as other organizations in the market. Free exit is a circumstance where organizations do not pay a cost to leave the market.

Horizontal Sum of Curves: A way of adding curves (graphed functions), rather than numbers, that involves adding the x-coordinates of each curve for each y-coordinate. Market demand is the horizontal sum of individual demand curves, meaning at each price, we add the quantities that each individual wants to buy and plot that sum against the price.

Income Elasticity of Demand (Supply): Measures responsiveness of quantity demanded (quantity supplied) to changes in income, holding constant the effect of all other determinants of quantity demanded (supplied).

Inelastic Demand: When the various elasticities of demand are between 0 and 1 in absolute value. Demand is price inelastic when the absolute value of elasticity is in this range, and income inelastic when the income elasticity is in this range. When demand is price inelastic, a given percentage change in price causes a smaller percentage change in quantity demanded.

Inferior Good: A good or service with a negative income elasticity of demand, which means when income goes up and all other determinants of demand are held constant, the quantity demanded goes down.

Long Run: The long run occurs when enough time passes that all factors of production can be varied. Organizations can adjust plant capacities, train and engage more labor, replace old
machines, purchase new equipment, and so on. New organizations can enter the market in the long run.

Luxury: A normal good that is income elastic, so that a given percentage increase in consumer income causes a larger percentage change in quantity demanded.

Necessity: A normal good that is income inelastic so that a given percentage increase in consumer income causes a smaller percentage change in quantity demanded.

Normal Good: A good or service with a positive income elasticity of demand, so that when consumer income goes up and all other determinants of demand are held constant, the quantity demanded increases.

Perfect Competition: An idealized market in which there are many buyers and sellers of a homogeneous good or service, no single buyer or seller controls a noticeable share of the market, and all buyers and firms are fully informed about the prices of each and every firm. Some markets come close to this ideal and are analyzed as if all buyers and sellers are price-takers.

Price Elasticity of Demand: Responsiveness of the quantity demanded to a change in the price of the product, holding constant the values of all other determinants of demand. Computed as the percentage change in the quantity demanded divided by the percentage change in its price.

Price Elasticity of Supply: Responsiveness of the quantity supplied to a change in the price of the good, holding constant the values of all determinants of supply. Computed as the percentage change in the quantity supplied divided by the percentage change in price.

Price Taker: An individual or organization who believes their own actions cannot influence the price of its product. Price takers view the market price and decide how much to buy or sell at that price.

Short Run: A time period in which there is at least one fixed factor of production. Usually, in simplified economic models, we assume that labor is variable, but capital is fixed in the short run.

Substitutes: Products that can be substituted for other products, so that when the quantity demanded of one good falls due to a price increase, buyers will switch away from the other good and demand for the substitute product will fall. Substitutes have a positive cross-price elasticity of demand.

Supply Curve: A graphic illustration of the quantity offered for sale at each possible price, holding other determinants of this quantity constant.

Unitary Elasticity: When elasticity (of any kind) is equal to 1. When the price elasticity of demand is unitary, a given percentage increase or decrease in price causes an equal and opposite percentage change in quantity demanded, so that total revenue remains constant.

Variable Revenue: Revenue available to an organization that depends on the level of production. Sales revenue is variable, and sometimes a portion of donations and grants is also variable.
1. Think of the process of charitable giving as a market in which nonprofit organizations compete for the funds offered by donors. In particular, nonprofits supply satisfactions to donors in exchange for financial contributions. If \( Q \) is the supply of donor satisfactions (tangible expressions of recognition, services provided for which the donor can claim credit, etc.):

(a) Draw a typical organization's supply curve for these satisfactions, using Figure 7.1 as a model.
(b) What assumption(s) did you make about the objective function for nonprofit organizations in this situation? Are they reasonable for real-world nonprofit organizations?
(c) Add the short-run market supply curve for these satisfactions to your graph from part (a), using Figure 7.1 as a model. Make the assumption that there is no “commons externality” (Chapter 13) in the short run. That is, an increase in fund-raising by one nonprofit can make it more expensive for competing organizations to succeed in their fund-raising. Charities fishing in the same donor pool and getting in each other's way is the essence of the commons externality. Please ignore that effect here.
(d) If, instead, there is free entry and exit for nonprofit organizations and the commons externality is important in this donor market, what would the long-run market supply curve look like? Upward-sloping, horizontal, or downward-sloping, and why?

2. If the market for donations is perfectly competitive, with free entry and exit,

(a) How will this affect the ability of individual nonprofits to raise funds in the long run?
(b) How does your reasoning in this case help us to understand the justification for united fund-raising organizations like United Way?
(c) Can you use the set of categories for market structures (perfect competition, monopoly, and oligopoly) to accurately describe this market? If so, how would you classify this market. If not, why?
(d) Compare the likely long-run net proceeds from fund-raising with and without a united fund-raising organization. In your answer, consider the difference between what would happen if all nonprofits (including those that might enter the market later) must conduct their fund-raising through the combined campaign and what would happen if some nonprofits choose not to join the combined campaign.

3. There are several dozen nonprofit and for-profit theaters in the entertainment district of the city of Thespian that offer serious dramatic performances. However, ever since Computers, Inc. closed its nearby facility and many citizens moved away, these theaters have all run annual deficits. In this market, how are the strategies and objectives of nonprofits likely to differ from those of the for-profit theaters? In the long run, what are the likely ways for this market to adjust, in terms of the number of theaters, how much they produce, what they will charge, and how well they do in terms of profit or loss? Use a graph such as that in Figure 7.7 to illustrate your reasoning.
4. Beans for Economic Justice (BEJ) is a social enterprise that sells fair-traded coffee in its café, in a market where demand is \( Q^D = 3 - P \). Calculate the price elasticity of demand at each of the following price points (think of these prices as the average price for two bracketing adjacent values on the demand curve). At each point, explain whether total revenue increases, decreases or remains the same as BEJ increases or decreases the price of a cup of coffee near the starting price:

(a) \( P = $2 \)
(b) \( P = $1.50 \)
(c) \( P = $1 \)

5. In each instance below calculate the relevant elasticity. Explain what the calculated value means, and why the sign makes sense in this context.

(a) Income elasticity of demand, if \( Q^D = Y + 10 \), between two points with average income of $2.
(b) Cross-price elasticity of demand, if \( Q^D_a = 100 - P_a + 2P_b \), between two points where the average quantity of good a that is demanded is 115, the average price of good b is $10, and the price of good a is held constant at $5.
(c) Cross-price elasticity of demand, if \( Q^D_a = 100 - P_a - P_b \), between two points where the average quantity of good a that is demanded is 85, the average price of good b is $10, and the price of good a is held constant at $5.
(d) Elasticity of supply, if \( Q^S = P + 4 \), between two points with an average price of $2.
(e) Income elasticity of supply, if \( Q^S = Y + 10 \), between two points with an average income of $2 million. Explain what \( Y \) means in the context of nonprofit and social enterprise organizations.

6. For each of the following nonprofit services, discuss whether demand is likely to be price-elastic or price-inelastic at various levels of output:

(a) Shelter care for the homeless.
(b) Emergency medical clinics.
(c) Girl Scout cookies.
(d) Opera performances.
(e) Meals on Wheels programs.

How would your assessment in each case influence how the producing nonprofit should price these services?