Chapter 4 - Microeconomics

Introduction

1. Economics: defined as the study of choices in the presence of scarce resources.
2. Microeconomics: defined as the study of how individuals and companies make decisions to allocate scarce resources.
3. Macroeconomics: defined as the study of the economy as a whole.
4. Supply: refers to the quantity of a good or service that suppliers are willing to sell.
5. Demand: refers to the quantity of a good or service that buyers are willing to buy.
6. The “invisible hand” of the markets leads to greater prosperity for individuals, firms, and the economy as a whole over time.

Demand and Supply

1. Introduction:
    a. Properly functioning markets are essential to capitalism because the interaction of buyers and sellers determines the price and quantity of a product or service traded.
2. Demand
    a. Demand refers to the quantity of a good or service that consumers are willing to buy at a given price. Theoretically, consumers will buy a good or service if its perceived value is greater than its cost.
    b. The Law of Demand:
        i. The Law of Demand: states that as the price of a good and its quantity demanded are inversely related.
        ii. Law of Diminishing Marginal Utility: states that the marginal utility of a good and its quantity owned are inversely related.
    c. The Demand Curve:
        i. The Demand Curve (as it is used in supply and demand graphs) represents consumers' demand for a good.
        ii. Factors affecting supply (such as input costs) do not affect the demand curve.
        iii. Changes in price (and therefore quantity demanded) are known as movements along the demand curve (not shifts.) However, if there are changes in the variables that affect the demand curve, the demand curve can shift.
        iv. Factors that change the demand curve include income, preferences, the price of substitutes, the price of compliments, and the price of unrelated goods.
    d. Effect of Income on Demand:
        i. Income Effect: a change in demand resulting from changes in purchasing power.
        ii. Normal Goods: refers to goods for which demand increases as income increases.
        iii. Inferior Goods: refers to goods for which demand increases as income decreases.
    e. Effect of the Expected Future Price of a Product on Demand:
        i. Changes in the expected price of a good and quantity demanded for that good are positively related. Meaning, if the price of a good is expected to rise, demand for

it by consumers will increase as a result of their attempting to avoid paying a higher price for it.

f. Effects of Changes in General Tastes and Preferences on Demand
    i. Changes in demand, and therefore in the demand curve, can occur when there are changes in consumer preferences and tastes.
g. Effects of Prices of Other Products on Demand
    i. Changes in demand for a good can be brought about by changes in the prices of related goods.
        1. Substitute Products: goods that are substitutes for each other. Consumers will substitute goods for other goods if the relative price is lower for the substitute.
        2. Complementary Products: good thats are compliments of one another. These goods share an identical relationship in terms of the effect of price on demand, and because they are related goods, changes in one affect changes in the other.
    ii. Unrelated Goods: changes in the price of goods that are seemingly unrelated to one another (meaning not substitutes or compliments) can still have effects on the demand of the other.

3. Supply
    a. Introduction:
        i. Supply refers to the quantity of a good that suppliers are willing to sell at a given price.
        ii. The Law of Supply: states that price and quantity supplied are positively related.
        iii. Similarly to the demand curve, there are movements along the supply curve and shifts of the supply curve.
        iv. Factors that change the supply curve include production costs, costs of input goods, technology, and taxes.
    b. Market Equilibrium
        i. Market Equilibrium occurs at the price where quantity demanded is equal to quantity supplied. At this point, neither buyers or sellers have incentive to change the price, ceteris paribus.
        ii. Equilibrium Price: the price at which quantity supplied is equal to quantity demanded.
        iii. Changes in the supply and demand curves will cause changes in the equilibrium price, unless both curves shift in a proportional way.

Elasticities of Demand

1. Introduction
    a. Elasticity: refers to how much the quantity demanded for a good changes in response to changes in variables such as price, income, and the price of closely related goods. (This

can be useful in investments, for instance, by allowing investors/analysts to predict which companies will grow fastest in response to changes in the overall economy.)

2. Price Elasticity of Demand
    a. Price Elasticity of Demand allows for measurement of how the quantity demanded of a good changes in response to changes in the price of the good itself and closely related goods.
    b. Own Price Elasticity of Demand: the percentage change in the quantity demanded of a good in response to a percentage change in the price of the same product. Own Price Elasticity of Demand is equal to the percentage change in quantity demanded over the percentage change in price.
        i. Sign: the sign of the calculated elasticity indicates the direction of the relationship between changes in demand and price. If the elasticity is negative (as it will be with most goods), quantity demanded decreases and price increases.
        ii. Magnitude: the magnitude of the calculated elasticity indicates the proportion of change in demand to change in price.
            1.

Sign and Magnitude	Characterization
$e < -1$	Negatively elastic
$e = -1$	Negatively unit elastic
$-1 < e < 0$	Negatively inelastic
$0 < e < 1$	Positively inelastic
$e = 1$	Positively unit elastic
$1 < e$	Positively elastic

        iii. Goods that are non-differentiated and that have close substitutes are typically negatively elastic, meaning that percentage changes in price will lead to an opposite percentage change in demand that is of a greater magnitude.
        iv. Unique goods with no substitutes are typically inelastic and can even be perfectly inelastic. Meaning, that a percentage change in price will cause a percentage change in demand of a smaller magnitude (potentially zero in the case of perfect inelasticity.)
    c. Cross-Price Elasticity of Demand
        i. Cross-Price Elasticity of Demand measures the magnitude of change in the quantity demanded for a good in response to changes in the price of other goods.
        ii. Cross-Price Elasticity of Demand is equal to the percentage change in the quantity demanded of good 1 over the percentage change in the price of good 2.
        iii. A negative cross-price elasticity indicates that the two goods are complements.
        iv. A positive cross-price elasticity indicates that the two goods are substitutes.
        v. The magnitude of cross-price elasticity can indicate how closely related the goods are (whether compliments or substitutes.)

d. Interpreting Price Elasticities of Demand
    i. Price elasticity of demand helps investors and analysts determine the value of a given investment. Changes in price and demand directly affect revenue and profit, which are integral parts of the valuation of an investment/security.

3. Income Elasticity of Demand
    a. Income Elasticity of Demand measures the magnitude of change in the quantity demanded of a good in response to changes in the income(s) of consumer(s).
    b. Goods that have a positive income elasticity of demand, meaning that quantity demanded increases as income increases are considered to be normal goods.
    c. Goods that have a negative income elasticity of demand, meaning that quantity demanded decreases and income increases are considered to be inferior goods.
        i. As income increases, consumers substitute inferior goods for those that are more expensive.
    d. Luxury vs. Necessity:
        i. Goods that have an income elasticity greater than one are considered to be luxury goods.
        ii. Goods that have an income elasticity closer to zero are considered to be necessities.
        iii. Note that what consumers perceive to be luxury goods can change over time as income levels change within an economy.

Profit and Costs of Production

1. Accounting Profits vs. Economic Profits
    a. Both accounting and economic profits entail calculating profit as being equal to revenue minus costs. The difference lies in how the two calculate total costs. Total costs in calculating accounting profit include only explicit costs, while total costs in calculating economic profit include both explicit and implicit costs.
        i. The implicit cost most commonly used in economic profit calculations is opportunity cost, which is the value forgone by choosing one action over another.

2. Fixed Costs vs. Variable Costs
    a. Definition of Costs:
        i. Fixed costs are defined as costs which do not fluctuate based on the level of output. (This is also known as overhead.)
        ii. Variable costs are defined as costs which do fluctuate based on the level of output.
        iii. Total Costs (in terms of accounting profit) are equal to fixed plus variable costs.
        iv. Revenue is equal to quantity of goods sold times the price of the goods.
        v. The Breakeven Point is the point at which revenue is equal to total costs, meaning profit is equal to zero.

b. The technical difference between the short-term and the long-term relates to the differences in classification of goods in terms to fixed versus variable. In the long-run, all costs are variable.
c. Average Costs:
    i. Fixed costs are incurred when production is started.
    ii. As output increases, the average fixed cost per unit of production decreases, because the fixed costs are being divided over a large number of units of output.
    iii. Average variable cost per unit tends to remain fairly constant.
    iv. Overall, as output increases, total average cost per unit decreases (until some input reaches its maximum capacity.)
d. Economics of Scale:
    i. Are defined as production situations in which increasing output is accompanied by a lack of necessary increase in fixed costs. This leads to an overall decrease in total average cost per unit as output increases.
e. The Law of Diminishing returns as it relates to production states that the marginal increase in output caused by additional factors of input will decrease as the quantity of additional factors of input increases. There is a point at which adding more factors of input will lead to a decrease in revenue and profit (if the additional factor of input costs something while providing zero or negative additional output.)

3. Effect of Fixed Costs on Profitability
    a. Operating Leverage: refers to the extent to which fixed costs are used in production. Companies with high fixed costs relative to variable costs have high operating leverage, meaning that these companies have greater potential for profit when output is increased.
    b. As output increases and average total cost per unit of production decreases, profitability should improve.
    c. Marginal Cost: the additional cost (to a firm) of producing one more unit of output.
    d. Marginal Revenue: the additional revenue that is produced by selling one more unit of a good.
    e. Pricing and Output are optimized (in theory) at the point at which marginal cost is equal to marginal revenue.

Market Environment

1. Perfect Competition
    a. A perfectly competitive market is one in which there is a large number of sellers who are selling a homogenous product. No single buyer or seller has the ability to affect the market price. Buyers and sellers in this kind of market are both considered to be price takers.
    b. In this kind of market, marketing, research and development, advertising, and sales play little no role in demand and price setting.
    c. Theoretically, in the long-run, firms in this kind of market earn economic profits of zero, as they are compensated exactly for their opportunity cost.
    d. Barriers to Entry:

        i. Barriers to entry are things that inhibit firms from entering a market. These can take the form of licenses, brand loyalty, control of natural resources, or start up/fixed costs.
        ii. Barriers to entry in a perfectly competitive market are low to non-existent. The entry of firms as a result of this is one of the reasons that economic profits tend to zero in the long-run.
    e. An advantage of a perfectly competitive market is that they facilitate an efficient allocation of resources.

2. Pure Monopoly
    a. A Pure Monopoly is a market in which there is a single producer and seller of a good or service. In this situation, that are high barriers to entry, and these can take the form of economic, natural, or legal.
    b. Sometimes, these are essential goods and services and the monopolistic firm has legal protection in being a monopoly.
    c. Monopolistic firms have an ability to dictate prices and quantities sold, and this typically results in higher prices and lower quantities of goods being sold.

3. Monopolistic Competition
    a. Markets characterized as monopolistic competition feature many buyers and sellers who buy and sell products of a similar type but with enough differentiation for there to be variety among them. Typically, there are no major barriers to entry in these kinds of markets.

4. Oligopoly
    a. A market characterized as an oligopoly typically features a small number of large firms with high barriers to entry. In these markets, firms are able to make large profits over a long period of time. But, the behavior of one firm in a market of this type greatly affects the behavior of other firms. Collusion is often exhibited, but it is typically illegal and regulated. (This usually results in higher prices and lower quantities, which leads to consumer loss.)