



Assignment
Managerial Economics

Program
MBA (Non Business)

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Q3: Define Supply? Discuss determinants of Supply.

Supply:

In economics, supply is the amount of a resource that firms, producers, labourers, providers of financial assets, or other economic agents are willing and able to provide to the marketplace or directly to another agent in the marketplace. Supply can be in currency, time, raw materials, or any other scarce or valuable object that can be provided to another agent. This is often fairly abstract. For example in the case of time, supply is not transferred to one agent from another, but one agent may offer some other resource in exchange for the first spending time doing something

Determinants of supply

Determinants of supply (also known as factors affecting supply) are the factors which influence the quantity of a product or service supplied. The price of a product is a major factor affecting the willingness and ability to supply. Here we will discuss the determinants of supply other than price. These are the factors which are assumed to be constant in law of supply.

Change in the price of a product causes the price-quantity combination to move along the supply curve. However when the other determinants change, the supply curve is shifted.

Following are the major determinants of supply other than price:

Number of Sellers

Greater the number of sellers, greater will be the quantity of a product or service supplied in a market and vice versa. Thus increase in number of sellers will increase supply and shift the supply curve rightwards whereas decrease in number of sellers will decrease the supply and shift the supply curve leftwards. For example, when more firms enter an industry, the number of sellers increases thus increasing the supply.

Prices of Resources

Increase in resource prices increases the production costs thus shrinking profits and vice versa. Since profit is a major incentive for producers to supply goods and services, increase in profits increases the supply and decrease in profits reduces the supply. In other words supply is indirectly proportional to resource prices. Increase in resource prices reduces the supply and the supply curve is shifted leftwards whereas decrease in resource prices increases the supply and the supply curve is shifted rightwards.

Taxes and Subsidies

Taxes reduces profits, therefore increase in taxes reduce supply whereas decrease in taxes increase supply. Subsidies reduce the burden of production costs on suppliers, thus increasing the profits. Therefore increase in subsidies increase supply and decrease in subsidies decrease supply.

Technology

Improvement in technology enables more efficient production of goods and services. Thus reducing the production costs and increasing the profits. As a result supply is increased and supply curve is shifted rightwards. Since technology in general rarely deteriorates, therefore it is needless to say that deterioration of technology reduces supply.

Suppliers' Expectations

Change in expectations of suppliers about future price of a product or service may affect their current supply. However, unlike other determinants of supply, the effect of suppliers' expectations on supply is difficult to generalize. For example when farmers suspect the future price of a crop to increase, they will withhold their agricultural produce to benefit from higher price thus reducing the supply. In case of manufacturers, when they expect the future price to increase, they will employ more resources to increase their output and this may increase current supply as well.

Prices of Related Products

Firms which are able to manufacture related products (such as air conditioners and refrigerators) will shift their production to a product the price of which increases substantially related to other related product(s) thus causing a reduction of supply of the products which were produced before. For example a firm which produces cricket bats is usually able to manufacture hockey sticks as well. When the price of hockey sticks increases, the firm will produce more hockey sticks and less cricket bats. As a result, the supply of cricket bats will be reduced.

Prices of Joint Products

When two or more goods are produced in a joint process and the price of any of the product increases, the supply of all the joint products will be increased and vice versa. For example, increase in price of meat will increase the supply of leather.

Q4: Discuss Monopoly Equilibrium in the Firm?

The Price-Output Equilibrium under Monopoly!

Monopolist, like a perfectly competitive firm, tries to maximize his profits. Profit maximization assumption on which is based the equilibrium analysis of the perfectly competitive firm is also taken to be the most valid assumption about the behaviour of the monopolist too.

The motive of monopolist is the same as the motive of the perfectly competitive firm, that is, both aims at maximizing money profits. We thus do not attribute any more sinister motive to the monopolist. If the results of monopolist' behaviour on the basis of profit maximisation motive are different from that of the firm under perfect competition, it is not due to any more sinister motive of monopolist but due to the circumstances arid situation in which he is placed.

A firm under perfect competition faces a horizontal straight-line demand curve and marginal revenue is equal to average revenue (or price), but a monopolist faces a downward-sloping demand (or AR) curve and his marginal revenue curve lies below the average revenue curve.

The difference in the demand conditions facing the monopolist and the perfectly competitive firm makes all the difference in the results of their equilibrium, even though both work on the basis of the same profit maximisation motive.

Monopoly equilibrium is depicted in Fig. 26.3. The monopolist will go on producing additional units of output so long as marginal revenue exceeds marginal cost. This is because it is profitable to produce an additional unit if it adds more to revenue than to cost.

His profits will be maximum and he will attain equilibrium at the level of output at which marginal revenue equals marginal cost. If he stops short of the level of output at which MR equals MC, he will be unnecessarily forgoing some profits which otherwise he could make.

In Fig. 26.3, marginal revenue is equal to marginal cost at OM level of output. The firm will be earning maximum profits and will therefore be in equilibrium when it is producing and selling OM quantity of the product. If he increases his output beyond OM, marginal revenue will be less than marginal cost, that is, additional units beyond OM will add more to cost than to revenue.

Therefore, the monopolist will be incurring loss on the additional units beyond OM and will thus be reducing his total profits by producing more than OM. Thus he is in equilibrium at OM level of output at which marginal cost equals marginal revenue ($MC = MR$).

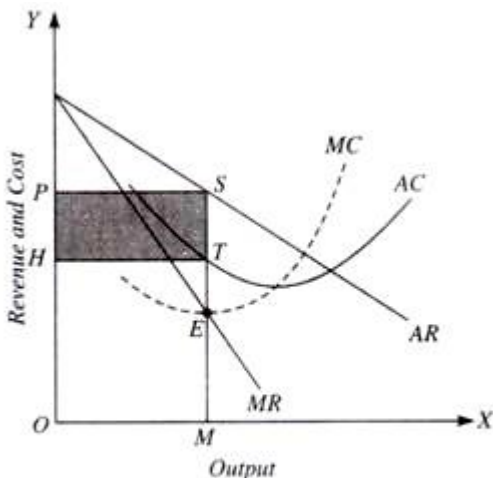


Fig. 26.3. Firm's Equilibrium under Monopoly:
Maximisation of Profits

It will be seen from the AR curve in Fig. 26.3 that he will be getting the price MS or OP by selling OM quantity of output. The total profits earned by him are equal to the area HTSP. There is here a significant difference between monopoly and perfect competition.

The price under perfect competition is equal to marginal cost, but under monopoly price is greater than marginal cost. The monopolist, unlike perfectly competitive firm, faces a downward-sloping average revenue curve and his marginal revenue lies below average revenue curve.

Therefore, in monopoly equilibrium when marginal cost is equal to marginal revenue, it is less than price (or average revenue). From Fig. 26.3 it will be noticed that at equilibrium output OM, marginal cost and marginal revenue are equal and both are here equal to ME, while price fixed by monopolist is MS or OP. It thus follows that price under monopoly is greater than marginal cost.

$$MR = P (e - 1/e)$$

Where MR stands for marginal revenue, P for price and e for price elasticity of demand at the equilibrium output.

Since in equilibrium, MR = MC, therefore

$$P (e - 1/e) = MC$$

$$P = MC \frac{e}{e-1} \dots (2)$$

Equation (2)* provides us with rule of thumb for pricing by the monopolist. If he knows marginal cost for his product and value of price elasticity of demand at or near the equilibrium output he can easily calculate what price he should fix to maximise profits. In Equation (2) since $e/e-1$ is greater than one, $P > MC$.

Further, it shows that price is inversely related to elasticity of demand. The greater the price elasticity of demand, the smaller the price fixed by the monopolist and vice-versa. Thus, if price elasticity of demand for the firm's product is equal to -4 marginal cost of production is 12, the profits-maximising price of the monopolist will be

$$P = MC \frac{e}{e-1} = 12 \frac{4}{4-1} = 16$$

Monopoly Equilibrium and Price Elasticity of Demand:

An important feature of monopoly equilibrium is that the monopolist will never be in equilibrium at a point on the demand curve or average revenue curve at which price elasticity of demand is less than one. In other words, the monopolist will never fix his level of output at which elasticity of the demand or average revenue curve is less than one, provided the marginal cost is positive which the case is most usually?

Since marginal cost can never be negative, equality of marginal revenue and marginal cost cannot be achieved where price elasticity of demand is less than one and marginal revenue is therefore negative. We know from the relationship between price elasticity and marginal revenue that whenever price elasticity is less than one, marginal revenue is negative.

Therefore, no sensible monopolist will produce on that portion of the demand or average revenue curve which gives him negative marginal revenue, that is, which reduces his total revenue, while the production of additional marginal units of output adds to his total cost.

That the equilibrium of the monopolist will never be at the level of output at which the elasticity of demand curve or average revenue curve is less than one is illustrated in Fig. 26.5. It will be seen from Fig. 26.5 (upper panel) that up to ON level of output, MR is positive and total revenue is increasing because up to this output level, price elasticity of demand on the demand or average revenue curve is greater than one.

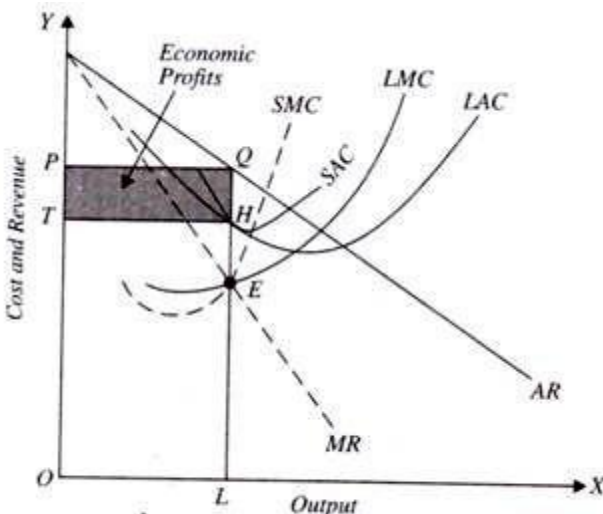


Fig. 26.5. Long-Run Equilibrium under Monopoly

Monopoly equilibrium will always lie where price elasticity is greater than one if marginal cost is positive. We know that at the middle point R of the straight-line demand or AR curve, elasticity is equal to one and corresponding to this unit elasticity point, marginal revenue is equal to zero.

Below the middle point R on the average revenue curve, elasticity is less than one and marginal revenue is negative. The equilibrium of the monopolist, will never lie below the middle point of the average revenue curve AR as over this range, marginal revenue becomes negative and total revenue (TR) decreases as is evident from the falling the TR curve beyond CW output in the bottom part of Fig. 26.4.

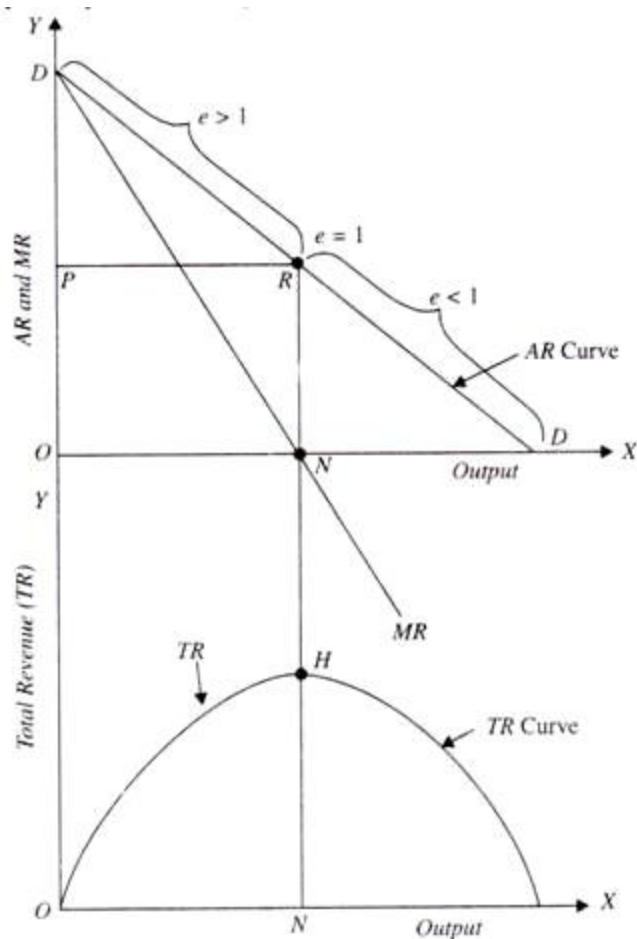


Fig. 26.4. Monopolist cannot be in equilibrium at a level of output where elasticity of demand is less than one.

Thus, given that MC is positive; the equilibrium cannot live below the middle point of the average revenue curve where elasticity is less than one. It will always lie above the middle point of the average revenue curve where elasticity is greater than one. The precise point on which equilibrium point lies depends, as already explained, upon the position of marginal cost curve and its intersection point with the marginal revenue curve.

Monopoly Equilibrium in Case of Zero Marginal Cost:

There are, however, some cases where marginal cost is zero, that is, it costs nothing to produce additional units of output. For instance, in case of mineral spring, cost of production of mineral water is zero. Furthermore, in the very short period when a product is already on hand in excessive amount, it is not relevant to consider cost of production while determining the quantity of output to sell. In these cases where cost of production is either zero or is irrelevant to consider the monopoly equilibrium will lie at a unit elasticity point on the demand curve.

This is because in such cases monopolist has only to decide at which output the total revenue will be maximum. And total revenue is maximum at the output level at which marginal revenue

is zero. When marginal cost is zero, the condition of profit maximisation, that is, the equality between marginal cost and marginal revenue is achieved only at the output where the latter is zero.

In Fig. 26.4 if marginal cost is zero, monopoly equilibrium will be achieved at ON level of output at which MR is zero. The price set by him in this situation will be NR or OP. ON quantity of output will yield maximum total revenue since beyond this marginal revenue becomes negative and total revenue will, therefore, start declining.

Since cost of production is zero, the whole revenue will represent profits and because total revenue is maximum at ON output, the total profits will be maximum at this output. As at ON level of output, MR is zero and, as already seen, corresponding to zero marginal revenue, elasticity of the demand on the average revenue curve is equal to one or unity.

We therefore conclude that when cost of production is zero, monopoly equilibrium will be established at a level where price elasticity of demand is one. If the marginal cost is positive, then, as explained above, monopolist will be in equilibrium at a point where elasticity on average revenue curve is greater than one.

Q2: Discuss demand analysis and forecasting under the umbrella of Business Management?

Q2: Demand Analysis

Definition: The Demand Analysis is a process whereby the management makes decisions with respect to the production, cost allocation, advertising, inventory holding, pricing, etc. Although, how much a firm produces depends on its production capacity but how much it must endeavor to produce depends on the potential demand for its product.

Thus, the marketer is required to analyze properly the demand for its product in the market and must hold inventory accordingly. Such as if there is a potential demand in the future, then the firm should hold more inventories and in case there is no demand, then the production remains unwarranted, and hence, lesser inventories are held.

There is a possibility that production might exceed the demand, then the marketer must use alternative ways such as better advertisements to create a new demand.

The demand shows the relationship between two economic variables, the price of the product and the quantity of product that a consumer is willing to buy for a given period of time, other things being equal.

Forecasting:

It is a decision-making tool used by many businesses to help in budgeting, planning, and estimating future growth. In the simplest terms, forecasting is the attempt to predict future outcomes based on past events and management insight.

There are two forecast types: judgment-based (e.g. “gut feel”) and quantitative (e.g. statistics). The most trustworthy forecasts combine both methods to support their strengths and mitigate their weaknesses.

Judgement Forecasting

Judgement forecasting uses only our intuition and experience. Our minds are able to make connections and understand the context in a way that no computer can. However, we’re also prone to certain biases that make analyzing large amounts of data difficult. Judgment forecasting is best where there is little to no historical data- such as new product launches, competitor actions, or new growth plans.

Quantitative Forecasting

Quantitative forecasting uses analytics to analyze large amounts of historical data in order to discern trends and patterns. Quantitative forecasting is excellent at churning through large amounts of data and is less prone to bias. However, it is weakest when there is little to no historical data that can be analyzed. Quantitative forecasting relies, more or less, on identifying repeated patterns in your data so it may take a while to see the same pattern repeat more than once. Combining judgment and quantitative forecasting gets the best results.

Q1: It is said that firms are generally organized for profit earning. In the managerial economics, profit management is a challenging issue. Explain?

The free enterprise system would fail without profits and the profit motive. Even in planned economies, where state ownership rather than private enterprise is typical, the profit motive is increasingly used to spur efficient resource use. In the former Eastern Bloc countries, the former Soviet Union, China, and other nations, new profit incentives for managers and employees have led to higher product quality and cost efficiency. Thus, profits and the profit motive play a growing role in the efficient allocation of economic resources worldwide.

Business Versus Economic Profit

The general public and the business community typically define profit as the residual of sales revenue minus the explicit costs of doing business. It is the amount available to fund equity capital after payment for all other resources used by the firm. This definition of profit is accounting profit, or **business profit**.

The economist also defines profit as the excess of revenues over costs. However, inputs provided by owners, including entrepreneurial effort and capital, are resources that must be compensated. The economist includes a normal rate of return on equity capital plus an opportunity cost for the effort of the owner-entrepreneur as costs of doing business, just as the interest paid on debt and

the wages are costs in calculating business profit. The risk-adjusted **normal rate of return** on capital is the minimum return necessary to attract and retain investment. Similarly, the opportunity cost of owner effort is determined by the value that could be received in alternative employment. In economic terms, profit is business profit minus the implicit (noncash) costs of capital and other owner-provided inputs used by the firm. This profit concept is frequently referred to as **economic profit**.

Measurement of Profit and Profit Policy

The concepts of business profit and economic profit can be used to explain the role of profits in a free enterprise economy. A normal rate of return, or profit, is necessary to induce individuals to invest funds rather than spend them for current consumption. Normal profit is simply a cost for capital; it is no different from the cost of other resources, such as labor, materials, and energy. A similar price exists for the entrepreneurial effort of a firm's ownermanager and for other resources that owners bring to the firm. These opportunity costs for owner-provided inputs offer a primary explanation for the existence of business profits, especially among small businesses.

Variability of Business Profits

In practice, reported profits fluctuate widely. Table shows business profits for a wellknown sample of 30 industrial giants: those companies that comprise the Dow Jones Industrial Average. Business profit is often measured in dollar terms or as a percentage of sales revenue, called **profit margin**, as in Table The economist's concept of a normal rate of profit is typically assessed in terms of the realized rate of **return on stockholders' equity** (ROE). Return on stockholders' equity is defined as accounting net income divided by the book value of the firm. The average ROE for industrial giants found in the Dow Jones Industrial Average falls in a broad range of around 15 percent to 25 percent per year. Although an average annual ROE of roughly 10 percent can be regarded as a typical or normal rate of return in the United States and Canada, this standard is routinely exceeded by companies such as Coca-Cola, which has consistently earned a ROE in excess of 35 percent per year. It is a standard seldom met by International Paper, a company that has suffered massive losses in an attempt to cut costs and increase product quality in the face of tough environmental regulations and foreign competition. Some of the variation in ROE depicted in Table represents the influence of differential risk premiums. In the pharmaceuticals industry, for example, hoped-for discoveries of effective therapies for important diseases are often a long shot at best. Thus, profit rates reported by Merck and other leading pharmaceutical companies overstate the relative profitability of the drug industry; it could be cut by one-half with proper risk adjustment. Similarly, reported profit rates can overstate differences in economic profits if accounting error or bias causes investments with long-term benefits to be omitted from the balance sheet. For example, current accounting practice often fails to consider advertising or research and development expenditures as intangible investments with long-term benefits. Because advertising and research and development expenditures are immediately expensed rather than capitalized and written off over

their useful lives, intangible assets can be grossly understated for certain companies. The balance sheet of Coca-Cola does not reflect the hundreds of millions of dollars spent to establish and maintain the brand-name recognition of *Coca-Cola*, just as Merck's balance sheet fails to reflect research dollars spent to develop important product names like *Vasotec* (for the treatment of high blood pressure), *Zocor* (an antiarthritic drug), and *Singulair* (asthma medication).