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ECONOMICS
Paper 3: Fundamentals of Microeconomic Theory
Module 29: Monopsony, Bilateral Monopoly and Workable Competition

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1. Learning Outcomes

After studying this module, you shall be able to

- Know the concept of Monopsony and Bilateral Monopoly.
- Understand the concept of Workable Competition and its relevance for economy as a whole
- Distinguish between single seller and single buyer market structure.
- Understand how equilibrium takes place when a single buyer meets the single seller?
- Understand the factors affecting the buyer side of the market.
- Understand the difference between two distinctly terms used in economics i.e. Monopsony and Monopsony.

2. Introduction

So far we have discussed the market form which has focused entirely on the seller side of the market. We have studied four market structures i.e. perfect competition, Monopoly, Monopolistic Competition and Oligopoly. Perfect competition is a market structure with large number of buyers and sellers, trading homogeneous products so that each seller and buyer is a price taker and not a price maker. Monopoly is a market structure where there is a single seller and large number of buyers. Monopolist being a sole producer of the product there are no close substitutes available for the product it produces. The monopolistic competition contains elements of both perfect competition and monopoly. Like the perfect competition model, it includes a large number of sellers and there are no barriers to entry into and exit from the industry. Like the monopoly, each firm has the small degree of monopoly power as firms are producing differentiated products. (i.e. product of one firm is not identical to the product of another firm). These products are highly substitutable for one another but they are not perfect substitutes. The last market structure Oligopoly is an industry characterized by few dominant firms. Oligopoly is said to prevail when there are few firms in the market producing or selling a product. Oligopoly is also referred to as “*competition among the few*”. A special case of oligopoly is duopoly where two firms are competing with each other. Under oligopoly each firm has enough market power to prevent itself from being a price taker but each firm is facing inter firm rivalry which is preventing it to consider the market demand curve as its own demand curve.

Now we are moving on to a market form that is focusing on the buyer side of the market. If there are not too many buyers then the buyers have market power that they can use it profitably to affect the price of the product they purchase. Monopsony is a market structure

where there is a single buyer of the product of the market in the market. This market power enables the buyer to purchase the good at less than the price that is prevailing in the competitive market.

3. Monopsony

Monopsony is a market structure which was first introduced by *Joan Robinson* in 1933 in her book, “The Economics of Imperfect Competition”. She awarded as classics scholar Bertrand Hallward at University of Cambridge for this contribution. Monopsony is a market structure where there is a single buyer and many competing sellers. This market power enables the buyer to purchase the good at less than the price that is prevailing in the competitive market.

In order to find equilibrium under monopsony market structure we need to introduce two terms i.e. average expenditure and marginal expenditure. The monopsony is in equilibrium where marginal value is equal to marginal expenditure. In order to understand average expenditure and marginal expenditure concept we are using the concept of competitive buyer. In the market structure we have seen that in order to decide how much of a good to purchase we used the marginal principle rule. Under marginal principle rule, marginal revenue is equal to marginal cost i.e. additional benefit equals additional cost. And demand curve measures the marginal value as a function of quantity purchased. In competitive market, each buyer is so small in terms of a market as a whole that it cannot influence the market. Each individual buyer has no influence on the price of the product and each buyer can purchase whatever amount he want to buy at the industry determined price. The cost of each unit buyer purchase is equal to the price of the product. The price per unit paid by the buyer is known as average expenditure. The average expenditure remains same for all units as the price per unit paid by the buyer is same. On the other hand, marginal expenditure is the addition to total expenditure attributable to purchase of one more unit of good. In competitive market, average expenditure is equal to marginal expenditure. They both are straight line parallel to horizontal axis. But the same is not true for monopsonist. Under monopsony, the price that a monopsonist pays for each quantity purchased is given by the market supply curve of the inputs. The supply curve for most inputs are positively sloped i.e. upward sloping. The positively sloped supply curve indicates a positive relationship between price and quantity purchased. The curve shows how much price per unit buyers are paying for the good which is a function of the number of units buyers purchase. So, the supply curve is the average expenditure curve. The average expenditure curve like market supply curve is upward sloping. The marginal expenditure must lie below average expenditure curve because the decision to buy an extra unit raises the price that must be paid for all units and not just the extra one.

We can obtain marginal expenditure algebraically. Supply curve shows the relationship between price and quantity supplied. So,

$$P = f(Q)$$

Total expenditure is price multiplied by quantity i.e.

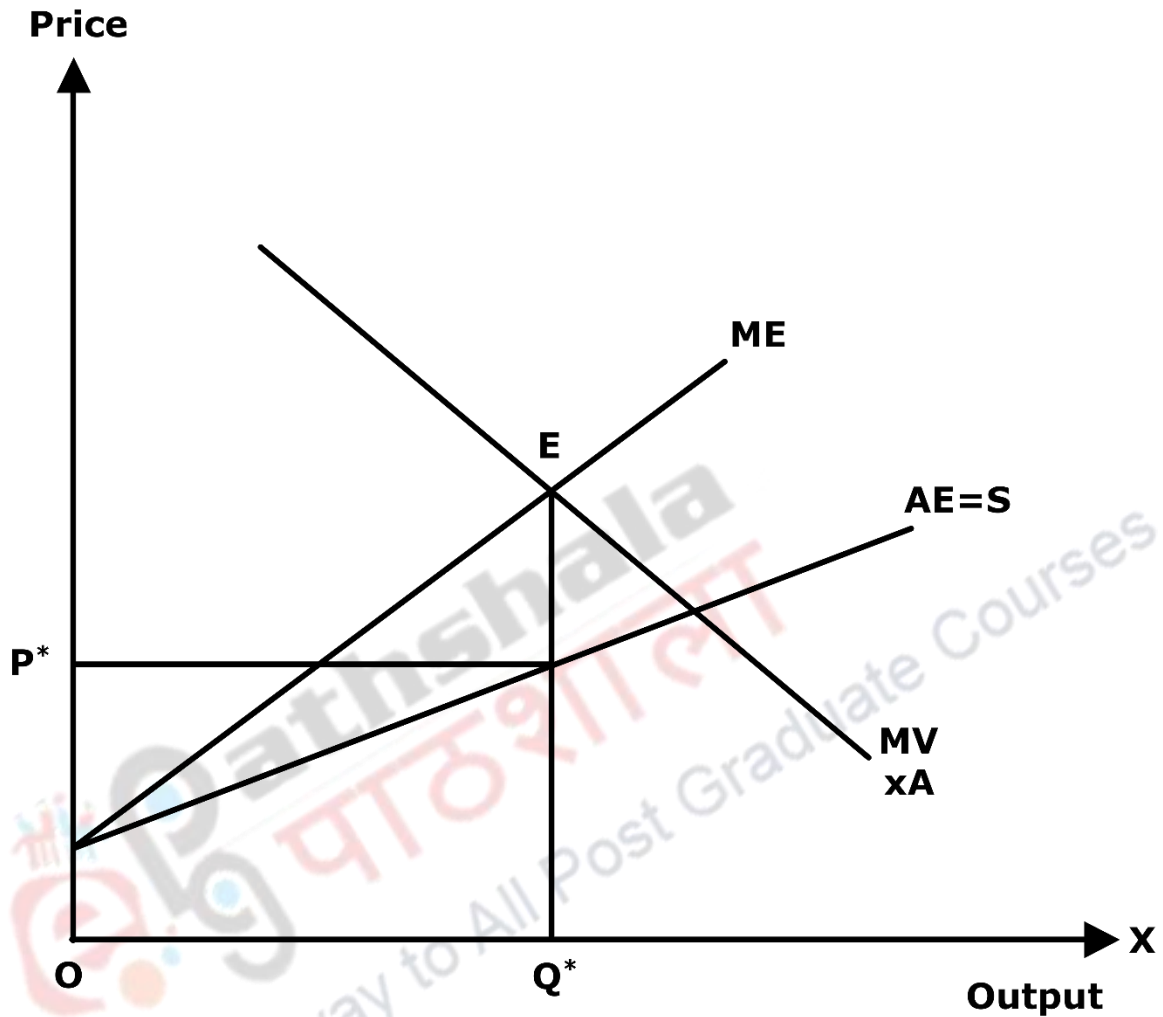
$$E = PxQ$$

Marginal expenditure is addition to total expenditure attributable to purchase of one more unit of good i.e.

$$ME = \frac{\Delta T.E}{\Delta Q} = P(Q) + Q \cdot \frac{\Delta P}{\Delta Q}$$

We know that supply curve is positively sloped, so $\frac{\Delta P}{\Delta Q}$ is positive so marginal expenditure is greater than average expenditure (ME>AE).

The monopsonist is in equilibrium where marginal value is equal to marginal expenditure. It is shown in the figure. Price is measured on X-axis and quantity on Y-axis. AE is the average expenditure curve, ME is the marginal expenditure curve and MV is the demand curve which shows the marginal valuation. The equilibrium would occur at point E where Marginal value curve intersects the marginal expenditure curve. The equilibrium price is OP* and equilibrium quantity is OQ*. The monopsonist is buying the optimal quantity OQ* at price OP*. The quantity and price that is prevailing in monopsony market is lower than price and output that would prevail in competitive market.



Monopsony Equilibrium

Figure 1. The monopsonist is in equilibrium where marginal value is equal to marginal expenditure. The equilibrium occurs at point E and equilibrium price is OP^* and equilibrium quantity is OQ^* .

4. Bilateral Monopoly

Bilateral monopoly is a market structure where the participants are two monopolies i.e. one on the demand side and one on the supply side. It arises when a monopolist (single seller) faces a monopsonist (single buyer). Here both buyers and sellers are in a bargaining position so it is very difficult to predict what the price and output will be. Here we are assuming that firms are organized in such a way that it acts like a monopsony and labor is organized in a labor union that acts like a monopolist.

We know that there is no supply curve for monopoly. It implies that there is no unique relationship between price and quantity supplied. A monopolist is maximizing its profit by selecting a point on his buyer's demand function. On the other hand, there is no input demand function for monopsonist. A monopsonist is maximizing its profit by selecting a point on his seller's supply function.

In bilateral monopoly, monopsony power and monopoly power counteract each other. The monopoly power of sellers will reduce the effective monopsony power of buyers and *vice versa*.

The monopolist cannot exploit a demand function that does not exist and the monopsonist cannot exploit the input demand function that does not exist. The three possible solutions under bilateral monopoly are:

- i. The monopsonist and monopolist may cooperate with each other and achieve a Nash equilibrium solution.
- ii. Monopolist may dominate and force the monopsonist to accept his price and output decisions or vice versa.
- iii. The market mechanism may break down such that no trade takes place at all.

Let us explain the case of bilateral monopoly with the help of a diagram. In the figure, output is measured on horizontal axis and price and cost are measured on the vertical axis. DD_b is the demand curve faced by the monopsonist's (single buyer) which is based upon his marginal utility curve. As there exist a single buyer of the product in the market, his demand curve DD_b would be the average revenue curve of the monopolist. Thus, we denote DD_b curve as the ARs i.e. the average revenue of the seller. MR is the marginal revenue curve faced by the monopolist corresponding to the demand curve DD_b . The supply curve of labor faced by the monopsonist is upward sloping. It is shown by curve S_L . This supply curve is nothing but the average expenditure curve faced by the monopsonist. The corresponding marginal expenditure curve is ME_b and it would lie above AE_b because average expenditure rises as he obtains more quantity of the product.

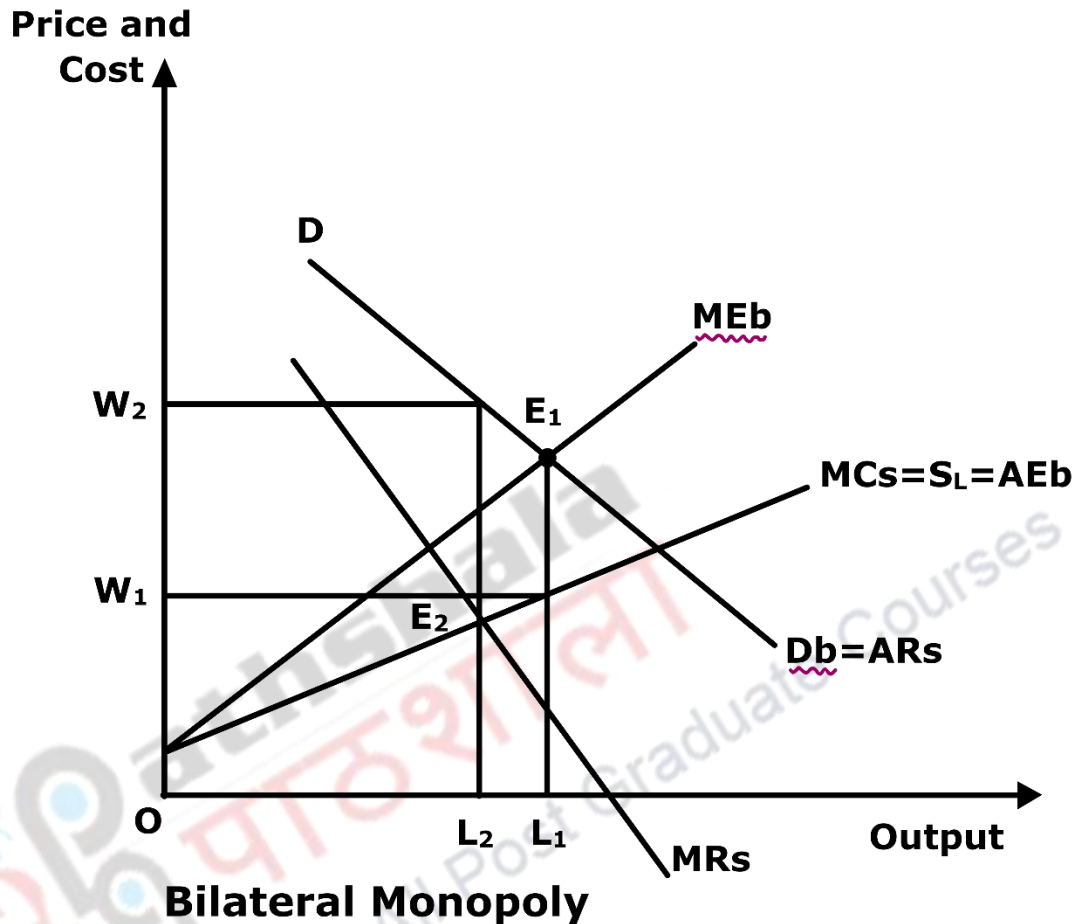


Figure 2: The equilibrium under bilateral monopoly equilibrium is indeterminate. The bilateral monopoly model gives only the upper limit and the lower limit within which the wage rate lies.

Suppose in the first case monopsonist assumes that he has full market power to set the price and output so as to maximize profit. He will equate marginal expenditure to the marginal value indicated by the demand curve DDb . The monopsonist equilibrium would occur at point E_1 where the marginal expenditure curve MEb intersects the demand curve DDb . The monopsonist equilibrium price is OW_1 and equilibrium quantity is OL_1 . The monopsonist is maximizing his profit by optimally purchasing OL_1 at OW_1 price.

On the other hand, suppose the monopolist assumes that he has full market power to set the price and output so as to maximize profit. In order to maximize profit the monopolist would equate marginal revenue with marginal cost. The monopolist is in equilibrium at point E_2 where marginal revenue is equal to marginal cost. The

monopolist equilibrium price is Ow_2 and equilibrium quantity is OL_2 . The monopolist is purchasing the most profitable quantity OL_2 at Ow_2 price. We can see from the figure that the price which the monopolist want to set is higher than the price which monopolist wants to set i.e. $Ow_2 > Ow_1$.

It is clear that when both monopolist and monopsonist assumes to be the sole price maker and act autonomously, then the ultimate result is different prices as well as different quantities. The bilateral monopoly model gives only the upper limit and the lower limit within which the wage rate lies. The wage rate will then be determined by the bargaining. The outcome derived from bargaining is not known with certainty. The upper limit here would be Ow_2 i.e. the price that monopolist wish to set and the lower limit would be Ow_1 i.e. the price that monopsonist wish to set. The price can end up anywhere between these two limits i.e. Ow_2 and Ow_1 . So, we can say that the solution to a bilateral monopoly is indeterminate.

5. Workable Competition

There are four types of market structure that we have covered so far namely perfect competition, monopoly, monopolistic and oligopoly where perfect competition is one extreme and monopoly the other. There are other forms of market likes monopolistic competition, duopoly, oligopoly which lie between perfect competition and monopoly. These market structures are different from perfect competition and monopoly in terms of degree of competition and market power. Now the question that arises here is which market structure to adopt to considering the viewpoints of a business firm and the whole economy. The objective of the business firm is to maximize its profit rather than the welfare. In order to have more profit business firms prefer greater degree of market power. So, a business firm always prefers monopoly market structure. Let us now take the view point of economy as a whole which considers monopoly an inefficient form of market structure. The monopolist equilibrium is allocatively inefficient because it does not maximize the sum of producer surplus and consumer surplus. Monopoly which maximizes its profit by producing an output where price is more than marginal cost results in higher prices and lower quantities and makes the firm better off and consumer worse off. The consumer exploitation is maximum in case of monopoly.

The next market structure which comes after monopoly in terms of market power is duopoly and oligopoly. Duopoly is a special case of oligopoly where two firms are competing with each other. Under oligopoly, each firm has enough market power to prevent itself from being a price taker. The duopoly and oligopoly have assured monopoly power to influence the market. Another market structure which may not be preferred either by firm or by the economy as a whole is “monopolistic competition”. Under monopolistic competition, the industry has excess capacity as each firm is not producing at the minimum

point on its LAC curve. Here firms are investing in capacity that is not fully utilized. Besides this firms are incurring huge expenditures on selling cost. In long run, the firm would attain equilibrium when all the firms are earning zero economic profit. Free entry would drive down all the super normal profits to zero. This is because of these inefficiencies; monopolistic competition is not preferred by society as a whole.

The only market structure left is perfect competition which is most desirable from the economy as a whole. Perfect competition is a market structure with large number of buyers and sellers, trading homogeneous products so that each seller and buyer is a price taker and not a price maker. But the problem with perfect competitive market structure is that it is not observed in reality. Some of its assumptions such as absence of market restriction, homogeneous products, perfect information about the market etc. are not met in practice. Under perfect competition, each seller is so small that by changing its prices it cannot affect the market as a whole. In the long-run, all firms are earning zero economic profit. Even in the short run, perfect competition operate in the business passively without any market power. Therefore, perfect competition is also an unreal situation. Thus, the instability, discontent and hypothetical nature of perfect competition led to a search for its alternative. The alternative should not deviate from the perfect competition but also provides a workable base for the economy. The workable base for the economy should target economic efficiency.

Workable Competition: The idea of workable competition was first enunciated by economist *J.M. Clark* in 1940. There is no exact definition of workable competition. Several authors have taken it in terms of fulfillment of certain conditions.

According to Clark: “ Competition is rivalry in selling goods, in which each selling unit normally seeks maximum net revenue, under conditions such that the price or prices each seller can charge are effectively limited by the free options of the buyer to buy from a rival seller or sellers of what we think of as ‘the same’ product, necessitating an effort by each seller to equal or exceed the attractiveness of the others offering to a sufficient number of sellers to accomplish the end in view”. Clark using this definition makes the concept of workable competition explicit and given three conditions which are:

- A demand curve must be steep enough to enable the entrepreneur to cover per unit cost.
- Active threats of possibility of inter commodity substitution and potential competition.
- In case of small numbers, sufficient non homogeneous products to cause uncertainty about reactions of competitors.

According to Stigler, “an industry is workable competitive when,

- When there are a considerable number of firms selling closely related products in each market area.

- These firms are not in collusion and
- The long run average cost curve for a new firm is not materially higher than that for an established firm”.

According to Edwards, “large number of buyers and sellers, absence of collusion and coercion, free entry and the profit motives are necessary characteristics of workable competition. Bain has defined it as “patterns of market structure and conduct which may be expected to give rise to or associated with workable performance”.

We have seen that workable competition is a normative concept tied up with the overall objectives in economy. Which form of market structure is relevant for economy is a social policy issue. It is a regulatory mechanism to improve the links between market performance, market conduct and market structure in the most desirable way.

6. Summary

We have seen that monopsony is a market structure which shows the buyer side of the market. This market power enables the buyer to purchase the good at less than the price that is prevailing in the competitive market. Bilateral monopoly on the other side is a market structure where two monopolies interact each other. The equilibrium is indeterminate under bilateral monopoly. The bilateral monopoly model gives only the upper limit and the lower limit within which the wage rate lies. The upper limit here would be the price that monopolist wish to set and the lower limit would be the price that monopsonist wish to set. The price can end up anywhere between these two limits. The wage rate will then be determined by the bargaining. The outcome derived from bargaining is not known with certainty. So, we can say that the solution to a bilateral monopoly is indeterminate. We have seen that workable competition is a normative concept tied up with the overall objectives in economy. Which form of market structure is relevant for economy is a social policy issue. It is a regulatory mechanism to improve the links between market performance, market conduct and market structure in the most desirable way. It is a pattern of market structure and conduct which may be expected to give rise to or associated with workable performance”.