

PERFECT COMPETITION : MEANING AND CHARACTERISTICS

Meaning : Perfect competition refers to market structure in which there are a large number of buyers and sellers. For buying and selling there is huge competition in the market so that one price of commodity prevails in the whole market and no individual buyer or seller can affect the market price.

According to **Marshall**, "The more nearly perfect a market is the stronger is the tendency for the same price to be paid for the same thing at the same time in all parts of the market."

In words of **Mrs. Joan Robinson**, "Perfect competition prevails when the demand of the output of each product is perfectly elastic. This entails first, that the number of sellers is large, so that output of any seller is negligibly small proportion of the total output of the commodity and second, that buyers are all alike in respect of their choice between rival sellers, so that market is perfect."

Thus, perfect competition is a market structure in which there are a large number of producer (firms) producing a homogeneous product so that no individual firm can influence the price of commodity.

FEATURES OR CONDITIONS OF PERFECT COMPETITION

A perfect competition market satisfies the following conditions or features :

(1) Large Number of Buyers and Sellers : In perfect competitive market the number of buyers and sellers should be so large that any individual buyer or seller may not influence price and quantity of output alone. When there are large sellers of commodity in market, any individual seller, sells such small part of total sales that he can not affect price of commodity through increasing or decreasing his quantity of output. In similar way, not any individual buyer can affect price of commodity, by purchasing more or less quantity, as he purchases very small portion of total purchase in the market. Individual buyer and seller do not have significant role in pricing decision perfect competitive market.

(2) Homogeneous Product : In perfect competition market, all firms produce and sell homogenous product. Homogeneity of the commodity implies both physical features of the product like colour, size, quality etc. and environment conditions like location of seller, credit facilities etc. (conditions

surrounding sale of products). In such condition, product differentiation is not found. Thus, buyers are indifferent to any particular seller.

(3) Freedom of Entry and Exit : In perfect competition, firms have complete freedom for entry and exist in industry. Any firm can enter in industry and any firm can also exist from it, at own desire. No legal or social restrictions are there for entry of new firms or exist of old firms. This condition implies that firms in perfect competition can earn only normal profit in the long-run. It means if there is super-normal profit, in short-run, new firms would enter in such industry and on the other hand if existing firms incur losses the firms would start leaving the industry. That is why firms under perfect competition can earn only normal profit in long-run.

(4) Perfect knowledge of the Market : In perfect competition there is a close contact between buyers and sellers. Both have perfect knowledge of market conditions especially prices. Sellers do not need to spend for advertisement and promotion for increasing sell and due to perfect knowledge of available production techniques, each firm makes use of such best available techniques of production which results in same per unit cost of production for all firms. On the other side, since each buyer has perfect knowledge of the prevailing price, no seller can sell the goods at higher price than prevailing price in market.

(5) Perfect Mobility in the Factors of Production : In case of perfect competition, factors of production have perfect mobility to work with other producer by leaving any specific producer. In other words, resources or factors of production can join or leave a firm as per their desire and are able to switch over from one use to another. Industry can allocate skilled and efficient factors of production in place of inefficient factors.

(6) Absence of Transport Cost : Transport related cost does not exist in perfect competition. Actually all the firms are very closely situated to each other and identical price prevails. In this circumstances, no transportation cost exist for shifting one commodity from one place to another.

(7) Absence of Restrictions : Perfect competition market does not have any governmental or non-governmental control or restriction. No efforts are taken by producers, customers and government for controlling demand, supply and price of commodity. Every buyer and seller is free to take decision and they do not have any attachment or collaboration amongs them. Free market forces decide everything in perfect competitive market.

(8) Equal Price : Equal price prevails in whole perfect competitive market. If any seller decides the price of his product at higher value than it, his demand will be nil. Hence, in perfect competition market, average and marginal revenue curve of a firm is parallel to x-axis. Price is determined by industry and every firm is price taker. It has been shown in following schedule and diagram.

Schedule-1 : Revenue of Perfect Competitive Firm

Price (P) ₹	Quantity (Q) ₹	Total Revenue (TR) ₹	Average Revenue (AR) ₹	Marginal Revenue (MR) ₹
5	1	5	5	5
5	2	10	5	5
5	3	15	5	5
5	4	20	5	5
5	5	25	5	5

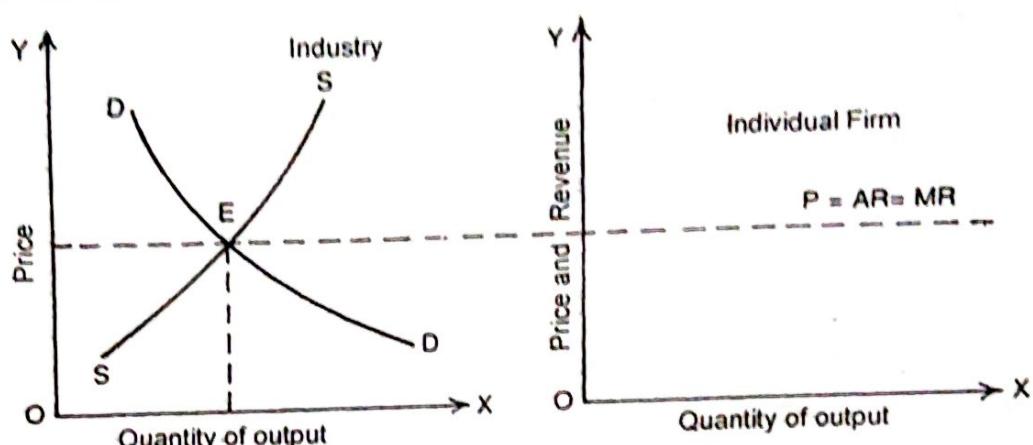


Diagram-1

PERFECT COMPETITION AND PURE COMPETITION

Few economists especially Prof. Chamberlin have differentiated between perfect competition and pure competition. Pure competition is also called **atomistic competition**. As per Chamberlin pure competition is that structure of market where there is lack of monopoly elements. Following three conditions are necessary for pure competition :

- (1) Large number of buyers and sellers,
- (2) Production and sell of homogeneous products, and
- (3) Freedom of entry and exit of firms.

The market which satisfies above three conditions is called pure competition whereas in perfect competition six conditions, including above three, are required perfect knowledge, perfect mobility of resources, absence of transport cost and restriction. Pure competition is more easy and narrow in comparison to perfect competition. Though the difference between them is not basic but only of degree. Even today, economists are not in consensus about what should be included in pure competition. In real life, perfect competition word is more popular and acceptable because it is wider than pure competition.

RATIONALE AND SIGNIFICANCE OF PERFECT COMPETITION

In economics, study of perfect competition is theoretically very significant but, in real life, the concept of perfect competition is a mere imagination.

Modern economists assume perfect competition as a myth and it does not really exist. Conditions of perfect competition are imaginary and following features are found in real market :

- (1) In reality, sellers (producers) of commodities are few and they are in condition to influence the price.
- (2) In real life, commodities of different sellers may be of similar type to each other but they are not perfectly homogeneous. Due to product differentiation, trademark, packaging, advertisement, sales promotion, after sales services the products are not identical in the actual business.
- (3) In market various behavioural difficulties exist for entry of new firms and exit of old firms.
- (4) Most of buyers and sellers do not have perfect knowledge of market conditions.
- (5) In factors of production, mobility is found only in capital but other factors are fixed or semi-fixed.
- (6) Transportation cost exists as sellers are not nearly situated in market and buyers purchase commodities from their nearest sellers in order to avoid transportation cost.
- (7) Governmental and industrial restrictions exist in real life.

It is clear from above discussion that perfect competition is a theoretical concept. As per **Paul A. Samuleson**, "A cynic might say of perfect competition what Barnard Shaw once said of Christianity. The only trouble with it is that it has never been tried. Historians quarrel over whether there was a golden age of free competition and certainly competition is not now perfect in the economist's sense." Though perfect competition is away from reality but its study is very important in economics. Importance of study of perfect competition are as following :

1. Simple Starting Point of Economic Analysis : Perfect competition is the most simple presentation of complex principle of actual price determination. Market of actual imperfect competition is so complex that in such case process of price determination is started with simple point of perfect competition and gradually from simple to complex situation is studied. The study of perfect competition seems as a, b, c for study of exchange. It is helpful in understanding the complexities of imperfect competition.

2. Knowledge of Ideal Market : Study of perfect competition provides the knowledge of such ideal economy where maximum welfare of society can be made. Study of perfect competition gives insight about, "What should be ideal form of real world situation ?" With comparison between perfect competition and actual market conditions it can be known that how much deviations exist in actual market and for what reasons and how it can be improved ?

3. Increasing Tendency Towards Perfect Competition : Prof. Leftwitch and Prof. Stigler have stated on the basis of facts that U.S. economy have become perfect competitive to a large extent. In agricultural sector also conditions of perfect competition are being followed. Modern world economy is moving towards perfect competition due to liberalisation and globalisation. Hence, analysis of perfect competition presents the road map of future world market in front of us.

4. Practical utility : Perfect competitive firms have to be satisfied with normal profit in long-run thus, business firms try to avail additional profit by keeping themselves away from perfect competition. Whereas government wants to control powers of monopoly and imperfect competition because efficient use of factors in society can only be possible in the perfect competition. In this approach, basis for government policy formation is perfect competition. Perfect competition analysis explains, why competition is less in reality than perfect competition.

5. Better understanding of Socialist Economies : Socialist Economic system can only be understood when it is analyzed on the basis of perfect competition background. In this market, no exploitation of society prevails, which is the real crux of socialism.

Conclusion : In brief, it can be said that perfect competition is largely theoretical imagination because the conditions necessary for it are not satisfied in real life. Though, its analysis is necessary for identifying and solving complexity of economy. As per **Prof. McConnel**, "Perfect competition is rare in practice. This does not mean, however, that an analysis of competitive markets is an useless work and irrelevant exercise in logic." In todays 21st century, information technology and computers have expanded its area. Internet, an ocean of knowledge, is providing actual shape for perfect competition is the area of economics and marketing. Perfect competitors do not place different prices for the product and in this buyers have complete knowledge about various available alternatives. World is getting smaller due to internet marketing. With help of website, it can also be known that what are modern machinery and at what price ? This way internet is helping in giving actual shape to perfect competition in economics.

PRICE DETERMINATION UNDER PERFECT COMPETITION BY INDUSTRY

Under perfect competition industry determines the price of commodity by demand and supply of that commodity. Traditional economists have contradiction about it and there were two popular concepts. In first concept group, there were **Adam Smith, Ricardo** etc. economists, according to whom, price of commodity is determined by its cost of production (supply). In second concept, economists like **Wallrus, Jebous** etc. were included, who believe that price of commodity is determined by its utility (demand). **Prof. Marshall** eliminated this contradiction and stated that both the opinions are one sided. The

price of commodity is determined by joint powers of demand and supply. As per **Prof. Marshall**, "We might reasonably dispute whether it is upper or the lower blade of a pair of the scissor that cuts a piece of paper, as whether scissors that cuts a piece of paper, as whether value is governed by utility or cost of production." As both the blades of scissor are required to cut the paper, similarly for price determination, both the powers - its utility or demand and its cost of production or supply are required. In perfect competition, price is determined at point where demand and supply of commodity are equal. Price of commodity at this point is called equilibrium price and quantity of commodity, at this point, is called equilibrium output.

Demand Force : Demand of any commodity is made by buyers or customers. Buyers demand the commodity due to its utility. A demand curve may be drawn on the basis of quantity of commodities demanded by buyer at different prices for purchase. This demand curve is sloping downward from left to right. It means that as price of commodity falls its demand increases. It is clear from given diagram 2 (a) that when price of goods is OP_1 its demand is OQ_1 and when price is reduced to OP_2 its demand increases to OQ_2 .

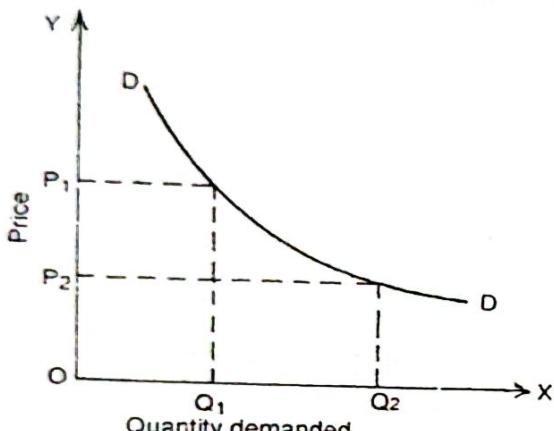


Diagram-2 (a)

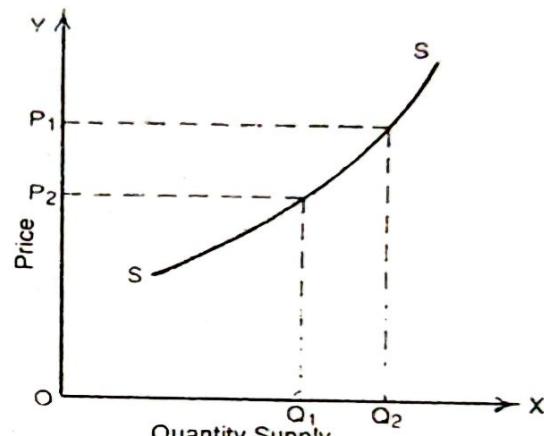


Diagram-2 (b)

Supply Force : Supply of any commodity is made by manufacturer or sellers. Supply of commodity by producers or sellers is based on cost. A supply curve may be drawn on the basis of quantity of commodity sold by sellers at different prices which is upward sloping from left to right. It means that as price of commodity decreases its supply also falls and when its price increases supply rises. In diagram 2 (b), when price is OP_1 its supply quantity is OQ_2 . But when price falls to OP_2 its supply also falls to OQ_1 .

DETERMINATION OF EQUILIBRIUM PRICE THROUGH EQUATION OF DEMAND & SUPPLY

It is clear from above analysis that demand and supply curves move in opposite direction to each other and at a point, where they intersect each other, (or equals) price is determined, in perfect competition. This way determined price is called equilibrium price and quantity to purchase and sell at

equilibrium price is called equilibrium quantity. This equilibrium price can also be explained by following schedule and diagram.

Schedule : 2

Demand-Supply & equilibrium price of wheat in market

Price (₹ per kg.)	Quantity demanded (in kgs.)	Quantity supply (in kgs.)	Special details
1	500	100	Extra Demand 400 kgs.
2	400	200	Extra Demand 200 kgs.
3	300	300	Equilibrium Quantity
4	200	400	Extra Supply 200 kgs.
5	100	500	Extra Supply 400 kgs.

In schedule 2, demand and supply of wheat has been shown. Equilibrium price will be set on ₹ 3 in market because at this price both demand and supply are equal to 300 kgs. If price is less, then, equilibrium price say ₹ 1 or ₹ 2 then, there is excess demand which will push price upward. On its opposite, if price is more than equilibrium price then, due to extra supply, it will push price downward so trend will always be approaching to equilibrium price. It is also known as equilibrium price, normal price and long run price.

In diagram 3, demand and supply quantity of commodity is shown at x-axis and price is shown at y-axis. DD and SS curves are respectively demand and supply curves in market. Demand and Supply curves intersect each other at E point.

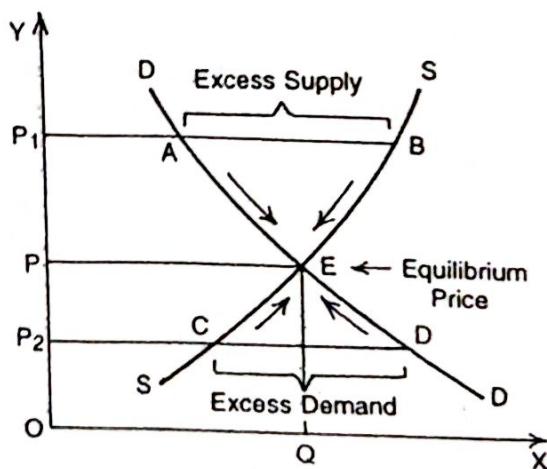


Diagram-3

$$\text{Equilibrium price} = OP \text{ or } QE$$

$$\text{Demand and Supply} = OQ \text{ or } PE$$

If in market equilibrium price is OP_1 and not OP then, demand and supply will be unequal. At this price,

$$\text{Supply} = P_1B$$

$$\text{Demand} = P_1A$$

$$\text{Excess supply} = P_1B - P_1A = AB$$

This excess supply will lower the price to OP . If in market, equilibrium price is OP_2 rather than OP then;

Demand = $P_2 D$

Supply = $P_2 C$

Excess demand = $P_2 D - P_2 C = CD$

This excess demand will rise the price equal to OP.

EFFECTS OF CHANGE IN DEMAND AND SUPPLY ON EQUILIBRIUM PRICE

The analysis of equilibrium price has been made by assuming demand and supply constant. The effect of changes of demand and supply on equilibrium price, can be studied under three parts :

(a) Change in demand, (b) Change in supply, and (c) Combined changes in demand and supply.

(a) Change in Demand : If quantity of supply and its curve is constant and there is change (increase or decrease) in demand, its direct positive effect falls over price. With increase in demand price of commodity rises and with decrease in demand the price of commodity falls. In diagram 4, DD is initial demand curve and SS is supply curve. At equilibrium point E, equilibrium price is OP and equilibrium quantity is OQ. At supply being unchanged, if demand increases to $D_1 D_1$, then at equilibrium point E_1 price increases to OP_1 and equilibrium quantity would be OQ_1 . On its opposite, if demand curve falls downward to $D_2 D_2$, this demand curve intersects supply SS curve at E_2 point where equilibrium price is OP_2 and equilibrium quantity is OQ_2 .

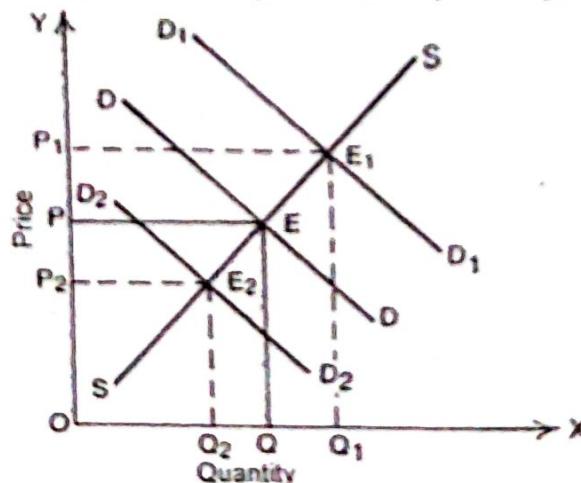


Diagram-4

(4) Change in Supply : It is assumed that at changes (increase or decrease) in supply, demand remains unchanged. The change in supply results the negative or reverse effect on price. When supply increases the price of commodity falls and when supply decreases the price of commodity will rise. In diagram 5, DD is demand curve which is constant. When supply is at initial supply, SS curve with equilibrium point E, the quantity will be OQ and price will be OP. But, when supply rises to $S_2 S_2$ at equilibrium point E_2 , price of commodity reduces to OP_2 and quantity sold is OQ_2 . On its opposite, when supply reduces to $S_1 S_1$ price increases to OP_1 and quantity reduces to OQ_1 .

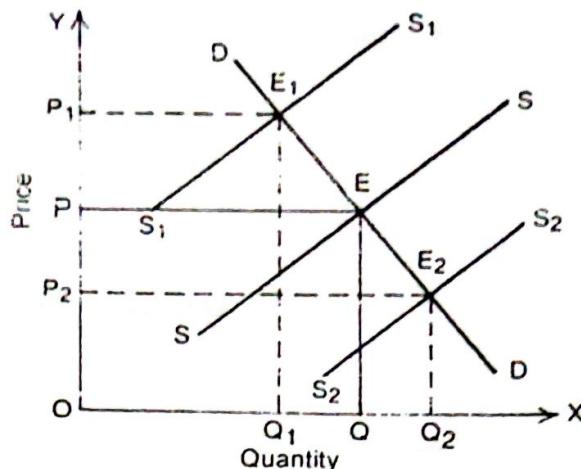


Diagram-5

(c) Combined Changes in Demand and Supply : Both demand and supply of commodity can change simultaneously. Price can change (increase or decrease) with combined change in demand and supply. This combined change can be of four type :

(i) Increase in both demand and supply : Increase in both gives opposite effect on equilibrium price. If increase in supply is more than demand the equilibrium price will reduce and when demand increase is more than supply, the equilibrium price will rise. If both demand and supply increases with same rate there would be no change in prices.

(ii) Decrease in both demand and supply : When both demand and supply are decreasing, the effect of price of commodity will depend on the fact that what is rate of decrease in both demand and supply. If reduction in supply is more than demand, price of commodity will rise. On the contrary, if rate of declining is more to demand than supply, price will fall. If there is same rate of changing, there will be no change in price.

(iii) Increase in demand and decrease in supply : When demand of commodity rises and supply is reduced then there will be sharp increase in price of commodity and quantity will be decreased.

(iv) Decrease in demand and increase in supply : When demand of commodity decreases and supply increases the price falls very fast and quantity increases.

TIME ELEMENT IN PRICE DETERMINATION

Marsl.all was the first economist who explained importance of time element in price determination. Price of any commodity is determined by demand and supply. If there is a change in demand of any commodity, the supply can not be changed immediately according to the new demand. Supply depends on production system and changing the production system requires time.

Clearly the price determination is affected by time element. Usually, if

time is less, determination of price will be affected by largely demand in comparison of supply. On its contrary, if time is more, effect of demand will be less than supply over prices.

Marshall has classified time in four parts :

- (1) Very short period,
- (2) Short period,
- (3) Long period,
- (4) Very long period.

Modern economists consider only first three as relevant for economic analysis because price determination has not very significance of **very long period**. It should be noted that this classification is not based on **clock time** or calendar time but on operational time. Operational time is that period which is required in adjusting or coordinating supply according to changing conditions of demand. For instance, production of television can be increased to demand requirement within 2 years then duration of 2 years is long period for television. Whereas for increasing mango production, new mango trees have to plant and duration for getting production will be at least 5 years. In such case the period of less than 5 years is called short period for mangoes.

(1) Very Short Period : This very short period is also called **market period** and price of very short period is called **market price**. Very short period is that duration in which total supply is almost constant. In this duration time is so short that at demand increase of any commodity a limited quantity of supply can be increased by stock of godowns. Similarly, if demand of commodity falls, only some supply of commodity can be reduced by keeping stock in godowns. In very short period, due to supply being almost constant price is mainly determined by demand. With increase and decrease of demand, price of commodity also rises and falls. In diagram 6, MPS is market period supply line, which is vertical. Demand curve DD intersects supply line at E point and thus price would be OP. If demand increases to D₁D₁, then price will also rise to OP₁. If demand is reduced to D₂D₂, price will be reduced to OP₂.

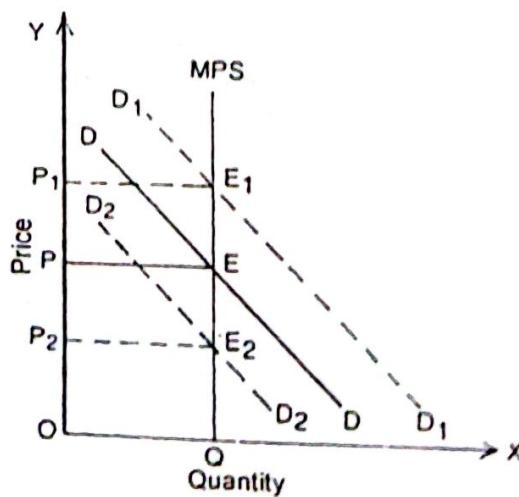


Diagram-6

Purishable commodities like fruits, green vegetables, meat, fish, milk etc. can not be kept safe for long time. Market price for such perishable commodities increases and decreases with rise and fall of demand. But, supply of durable commodities can be changed to a limit in very short period. Supply of durable commodities can be increased or decreased, to an extent, according to demand. Sellers of durable goods do not sell their goods at price below then minimum or safe price because there is no fear of getting the goods wasted.

(2) Short Period : Short period is such period where production quantity of commodity can be changed but this change is possible by keeping capacity of plant as constant. Firm can not change quantity of fixed factors but can only change the variable factors quantity, as per desire. The capacity of plant is fixed but more utilisation of existing capacity is possible. During short period quantity of supply can be changed, to some extent, though demand is more effective on price. In diagram 7, short period price determination has been shown. MPS is market period supply curve and SPS is short period supply curve. DD is initial demand curve. By SPS and DD curve equilibrium QP price is determined where both demand and supply are equal to OQ. When demand increases to D_1D_1 , new price P_1O_1 is determined by new equilibrium and OQ_1 is the quantity of demand when demand decreases to D_2D_2 , the price reduces to P_2Q_2 with OQ_2 quantity. In short run also, price rises at increase in demand but it increases less than to very short period. In the contrary, prices falls at decrease in demand but falls less than very short period.

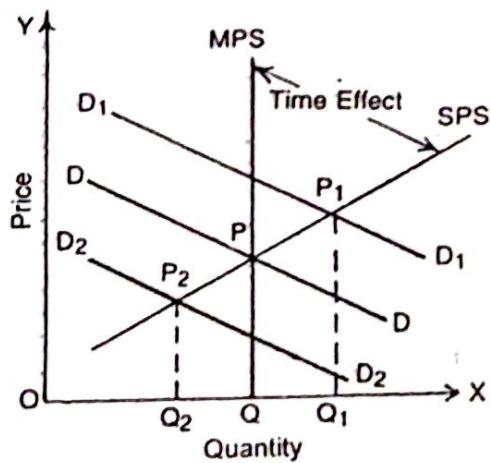


Diagram-7

(3) Long Period : Long period is that duration of time where desired changes can be made in all fixed and variable factors. Firm can increase or decrease scale of production in long period. New firms can enter in production and old firms may leave industry. This way supply can completely be adjusted according to demand. In such period, demand has no significant effect on price, rather supply has great impact on price. The price is also called **normal price** of long period. Price determination in long run has been shown in diagram 8. MPS is market price supply curve, SPS is short period supply curve and LPS is long period supply curve. DD is initial demand curve. With

equilibrium of MPS and DD curve the PQ price is determined. When demand increases to $D_1 D_1$ with new equilibrium in long-run the price is determined as $P_1 Q_1$ which is less than short period price $P_2 Q_2$.

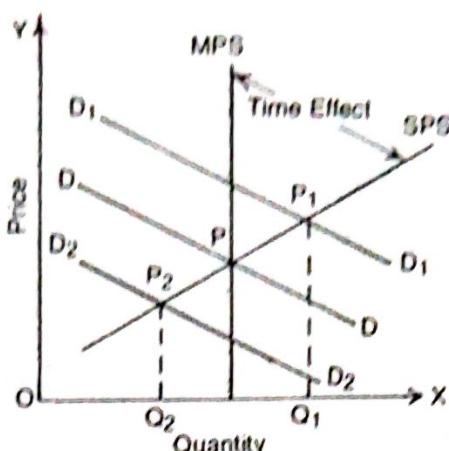


Diagram-8

(4) Very Long Period : Apart from above three operational time periods Marshall has also viewed a fourth time period that is very long period. It is also called secular period, historical long period. Duration of very long period is so large that basic changes can be made in both demand and supply aspects. It is not possible to state about shape of demand and supply curves due to its large duration. It can only be stated that price is determined by equilibrium point of demand and supply of commodity.

Conclusions : It is clear from above discussion that as time increases, the effect of supply increases on price determination of commodity in comparison of demand. Less will be the time, impact of demand will be more on price and more be the time, more will be effect of supply on price.

ESSAY TYPE QUESTIONS

1. What is perfect competition ? State its characteristics and discuss fully how the price of industry is determined under the perfect competition.
2. Describe the main features of perfect competition and distinguish it from pure competition. How is market price decided ?
3. "Perfect competition is myth." Explain this statement. Why do we study perfect competition when it is not found in real life ?
4. State the chief attributes of perfect competition and discuss the rationale of its study. What is the importance of time element in price determination ?
5. Is perfect competition an imaginary situation ? How price of industry is determined in such situation ? Show the effects of change in demand and supply on equilibrium price.
6. Explain, with the help of suitable diagram, the general theory of price determination under perfect competition. How is normal price decided ?

7. How is price of industry determined under the conditions of perfect competition ? Examine the importance of time element in price determination.
8. What is meant by equilibrium, market and normal price ? Show the effect of change in demand and supply on equilibrium price.
9. Write short notes on the following :
 - (a) Marshall period analysis in price determination, and
 - (b) Equilibrium price.
10. Analyse clearly the features of perfect competition. What is the relevance of time element in price determination ? Describe with the help of suitable diagrams.

SHORT TYPE QUESTIONS

1. Distinguish between perfect and pure competition.
2. Enumerate the features of perfect competition.
3. Give the diagram of price determination of industry under perfect competition.
4. Explain the impact of combined change in demand and supply on price.
5. Explain the concept of market price.

VERY SHORT TYPE QUESTIONS

1. State the three conditions essential for pure competition.
2. Explain the concept of Equilibrium Price.
3. Show the impact of change in supply on price.
4. Which price is called normal price ?
5. In how many groups Marshall has classified the time for the purpose of price determination ?
6. What is meant by secular period ?

OBJECTIVE QUESTIONS

1. Who is concerned with the job of distinction between perfect and pure competition ?
 - (a) Marshall
 - (b) Chamberlin
 - (c) Mrs. Joan Robinson
 - (d) None of the above
2. The another name of is atomistic competition.
 - (a) Pure Competition
 - (b) Imperfect competition
 - (c) Monopoly
 - (d) Oligopoly
3. Which is/are the feature of perfect competition ?
 - (a) Large numbers of buyers and sellers

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Ans. 1. (b), 2. (a), 3. (d), 4. (d), 5. (d), 6. (c)



PRICE DETERMINATION UNDER PERFECT COMPETITION

Perfect competition is that market structure in which there are large number of buyers and sellers who sells homogeneous product, at similar price, which can not be influenced by any individual firm. Under perfect competition, price is determined by total demand and total supply of whole industry. Price of commodity is not influenced by purchase or sell by any single buyer or seller, because of their negligible individual share in total demand or supply. Every firm accepts such price decided by the industry and arrange its production quantity in a way that marginal cost is equal to marginal revenue. This is known as equilibrium of the firm. Demand curve and supply curve of industry determine equilibrium price which every firm accepts. Hence, industry is price maker and firm is price taker. Price determined by industry is average revenue and marginal revenue line of firms also. This fact has been shown in diagram 1.

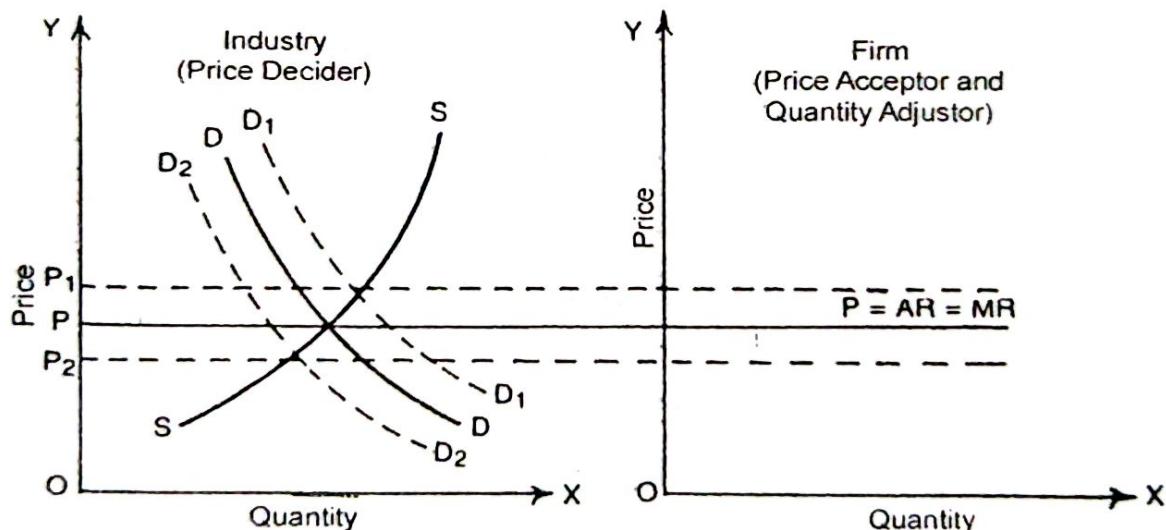


Diagram-1

It can be summarised that;

- (1) Price is determined by industry through the powers of demand and supply under perfect competition.
- (2) Under perfect competition same price prevails in the whole market.
- (3) Effect of demand and supply change is less on price. Because demand rise leads to price increase and demand fall results to price decrease.

- (4) Industry is price maker and firm is price taker. Firm is only a quantity adjuster of output.
- (5) In perfect competition, price, average revenue and marginal revenue all are equal. or $P = AR = MR$.

EQUILIBRIUM OR PRICE AND QUANTITY DETERMINATION OF FIRM

Modern economists call price and output determination of any commodity as equilibrium of firm. Equilibrium of firm refers to that optimum condition when with change in quantity of its total production leads to unfavourable situation of profit. State of equilibrium will determine that quantity and price of output of firm where it earns maximum profit or minimum loss. That is why, **Hanson** wrote, "A firm will be in equilibrium when it is of no advantage to increase or decrease its output."

TWO METHODS OF FIRM'S EQUILIBRIUM

State of earning maximum profit, or to state situation of a firm's equilibrium, there are two methods :

- (1) Total Method (Or total revenue and total cost method), and
- (2) Marginal Method (Or marginal revenue and marginal cost method).

(1) Total Revenue and Total Cost Method : In this method the comparison is made between total revenue (TR) and total cost (TC) of firm's output at different quantities and the point where difference, between TR and TC, is maximum, firm gets maximum profit. At that point, the prevailing price and output is known as equilibrium price and output. In diagram 2, TR is firm's total revenue curve which increases with output in same rate, because price is identical in perfect competition. TC is total cost curve

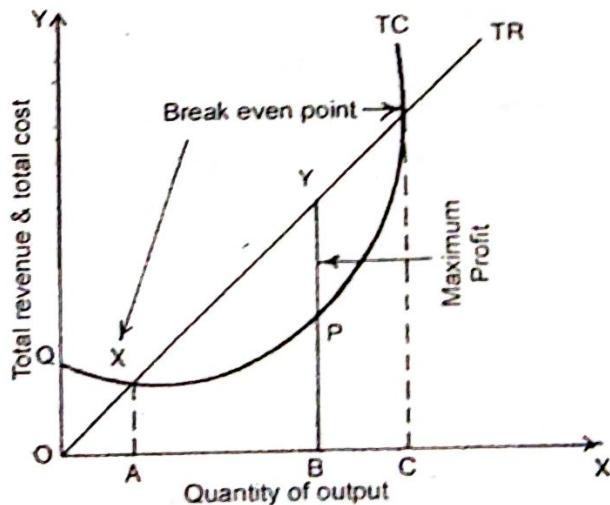


Diagram-2

which, according to law of production, first decreases, then starts rising. In diagram with production, less than OA and more than OC firm bears losses because total revenue is less than total cost. X and Z are break even points or BEPs of firm. Firm's equilibrium will be between OA and OC production quantity, called as safety zone, where difference is maximum between TR and TC. At the equilibrium point Y, there is maximum profit YP, which is the difference between YB and PB equilibrium output will be OB.

It is somewhat awkward method because it is difficult to know difference between TR and TC and the cost or price per unit are not clear in

diagram. Marginal method is better than this method.

(2) Marginal Revenue and Marginal Cost Method : As per marginal revenue and cost method firm's equilibrium has two conditions :

- Marginal Revenue = Marginal Cost ($MR = MC$), and
- MC cuts MR from Below.

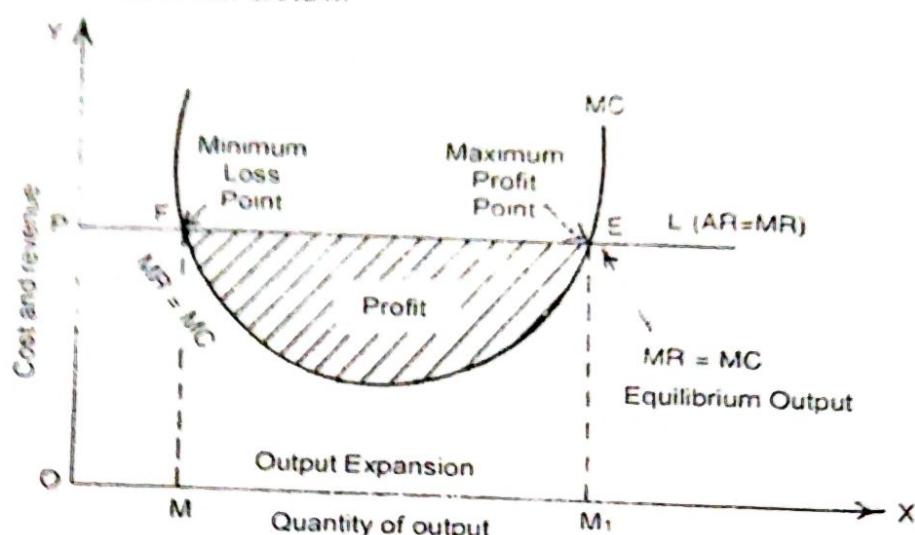


Diagram-3

This method of firm's equilibrium is shown in diagram 3. In diagram PL is average revenue (AR) and marginal revenue (MR) curves of the firm. It is parallel and horizontal line to x-axis because prices are fixed in perfect competition. Shape of marginal cost (MC) is like U which intersect marginal revenue curve at E and F points. Equilibrium of firm can not be before F because till that point $MC > MR$ and firm is in loss due to it. Similarly, after E equilibrium point the firm will not earn profit because there is loss due to $MC > MR$. Firm has possibility of profit between quantity of output at OM and OM_1 . But, equilibrium of firm will not be at F point because at that point profit has started to obtain and at point E total maximum profit is achieved. Thus, at equilibrium point MC should cut MR from below. Equilibrium of firm can be studied by dividing it into two parts.

EQUILIBRIUM OF FIRM IN THE SHORT-RUN

Production or supply of commodity can not be increased or decreased in short period due to lack of time so, a firm can meet abnormal profit or zero profit (or normal profit) or abnormal loss. Profit or loss of firm can be measured by difference between average revenue (AR) and average cost (AC). Explanation of these three conditions are given below :

- Situation of Abnormal Profit :** At profit to firm in short run, its equilibrium has been shown in diagram :

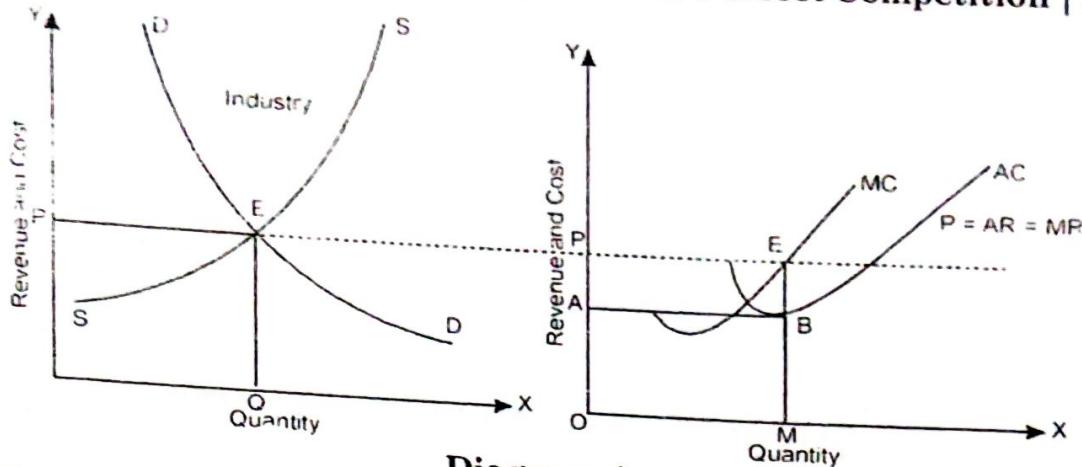


Diagram-4

In diagram-4, equilibrium of industry has been shown at left side where OP price and OQ production quantity has been decided by intersecting demand and supply curve at point E. Firm's equilibrium has been shown at right side where accepted price by firm is the same as OP. In perfect competition, price line is also the average revenue (AR) and marginal revenue (MR) curve. OM equilibrium quantity is decided at point E where marginal cost (MC) and marginal revenue (MR) is equal. Difference between average revenue (AR) and average cost (AC) is profit per unit which in diagram is as EB or PA due to EM - BM. Total profit would be PA x OM = PABE.

(ii) Situation of Normal Profit : The economic situation of zero profit is also called normal profit or situation of no profit no loss. When firm's average revenue and average cost both are equal at equilibrium point the profit of the firm would be zero. In diagram this situation has been shown as follows :

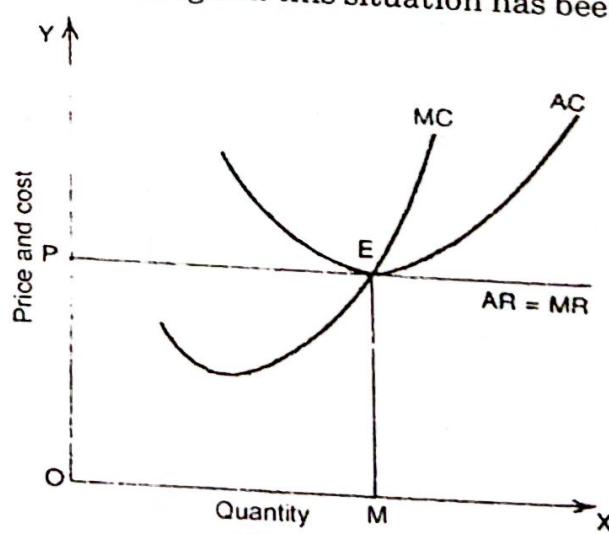


Diagram-5

In diagram-5 price for firm is decided at OP through equilibrium of industry. This price line is also average revenue (AR) and marginal revenue (MR) line. At point E, marginal cost (MC) and marginal revenue (MR) of firm are equal, where production quantity OM is determined for firm. At this production quantity average revenue and average cost are also equal to OP and firm earns zero profit. Thus, in case of zero profit $P = AR = AC = MR = MC$.

(iii) **Situation of Abnormal Loss :** It is also possible in short-run that firm has to bear loss. Situation of loss has been shown in diagram 6.

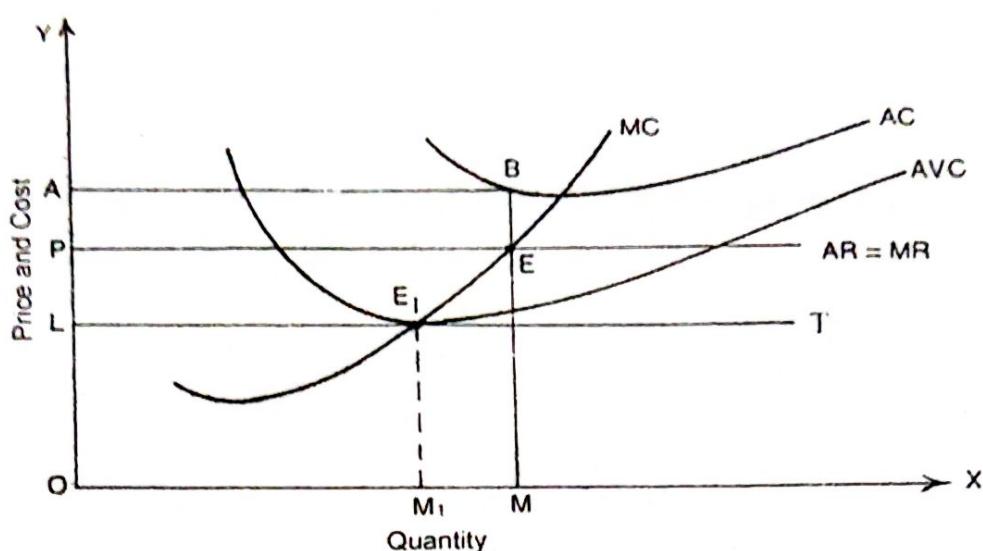


Diagram-6

In diagram-6 firm accepts price OP determined by industry. Equilibrium point would be E where $MR = MC$. In case of equilibrium situation, production quantity would be decided at OM. At this production quantity, average revenue is equal to OP, whereas average cost is equal to OA, hence firm's loss per unit would be $OA - OP = AP$ Or BE and total loss would be $AP \times OM = APEB$.

The question arises whether firm should continue production or stop it at loss. We have to take help of average variable cost or AVC in the situation of abnormal loss. In long-run firm would definitely not sell its production, at less on price than total cost (or average fixed cost + average variable cost). If price gets less than its total cost, firm would stop production. But, in short-run, if firm is able to gain at least average variable cost inspite of total production cost, firm would continue production even at loss. In diagram 6, if situation of price line (average revenue line or AR line) is went to LT and average variable cost (AVC) is equal to it. Firm stops production in short-run if price goes below this point because it would not be able to gain even average variable cost. This point E₁ is called shut-down point and price line LT shows cease-production price, which decides the minimum output in short period.

EQUILIBRIUM OF FIRM IN THE LONG-RUN

Firm earns normal profit or zero profit in long-run because the duration of long-run is so large that supply can be changed according to demand. If firms are in situation of abnormal profit, new firms will enter as a result price of commodities would fall due to supply increase and profit will fall to zero profit. In its opposite, if firms are bearing losses, many firms would leave industry, leading to price rise due to decline in supply and loss ends with

normal profit. It is clear that firm would only obtain normal profit or zero profit in long-run and in case of equilibrium these two conditions are fulfilled:

(i) $MR = MC$

(ii) $AR = AC$

Since in perfect competition, $AR = MR$ hence, AR (price) = $MR = MC = AC$. In brief, in perfect competition everything is equal for equilibrium of firm in long-run. In this case diagram would be same as diagram 5 for zero profit.

ESSAY TYPE QUESTIONS

1. Explain the price and output determination of a firm under perfect competition and short period.
2. How is equilibrium of a firm determined under perfect competition ? Explain diagrammatically.
3. How does a firm attain equilibrium under condition of perfect competition in short and long-run ? Explain, with the help of suitable diagrams.
4. Explain fully the total and marginal method of a firm's equilibrium under perfect competition.
5. "Under perfect competition every firm is a price acceptor and not price maker." In the light of this statement discuss the short-run and long-run equilibrium of a firm under perfect competition.
6. What are the essential conditions of a firm equilibrium under perfect competition ? Show that in the long-period firm will be equilibrium when : $P = MR = MC = AR = AC$.
7. How are price and output determined by a firm under perfect competition ? Discuss diagrammatically.

SHORT TYPE QUESTIONS

1. Prove that in case of zero profit $P = AR = AC = MR = MC$ for a perfect competitive firm.
2. "Perfect competitive firm is price acceptor." Explain this statement.
3. What is total method of firm's equilibrium in perfect competition ?
4. Make out diagram of loss in short-run for a perfect competitive firm.

VERY SHORT TYPE QUESTIONS

1. What is earned by a perfect competitive firm in long-run ?
2. Name the two methods of firm's equilibrium under perfect competition.
3. Name the two essential conditions of a firm's equilibrium under perfect competition.
4. What is Break Even Point ?

OBJECTIVE QUESTIONS

1. State whether the following statements are true or false :
 - (a) In perfect competition industry and firm are synonymous.
 - (b) Long period price is also called normal price.
 - (c) In the condition of perfect competitive market the firm is price decider.
 - (d) For the equilibrium of the firm the marginal cost curve should cut marginal revenue curve from above.
 - (e) A firm will be in long period equilibrium when $MR = MC = AR = AC$.
 - (f) At Break Even Point $TR > TC$.
 - (g) Industry is quantity adjuster in case of perfect competition.

Ans. (a) false, (b) true, (c) false, (d) false, (e) true, (f) false,
(g) false.