E -CONTENT-SERIES I N MICRO ECONOMICS

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THE ELEMENT OF TIME IN PRICE DETERMINATION.

Marshall greatly emphasized the importance of time element of price determination while he propounded the theory that price is determined by both demand and supply.

Initially , Adam Smith and Ricardo firmly believed that the price is determined by the forces of cost of production. Later on , in 1870, Jevons Menger and Walras criticized the cost of production concept, and assured that it is the utility which decides the price

But both the views were one sided. As stated earlier, Marshall realized the importance of both the utility (demand) and cost (supply) in the determination of price when demand and supply will establish an equilibrium, the equilibrium price will accordingly be fixed. According to Marshall to reach this equilibrium, it takes time. It is due to time element, that sometimes the effect of demand is greater and sometimes the effect of supply is greater. with the passage of time, the demand and supply greatly effects the equilibrium price. The lesser the time, the equilibrium will tend to be partial, and greater the time available, the equilibrium will tend to be more complete.

ñas a general rule , shorter the period which we are considering, the greater must be the share of our attention, which are given to the influence of value; and the longer period, the more important will be the influence of cost of production of valueò.

Marshall , principles of economics , PP-349.50

Marshall has divided time into four parts:

1. very short period market
2. short period market
3. long period market
4. very long period market

it must be mentioned that Marshall has divided time-period from the viewpoint of supply and from the viewpoint of demand. It is the supply which adjust itself when the time is short. It takes time for the supply to fully adjust itself with changes in the conditions of demand. There are certain technical conditions of production which needs to be adjusted. Size, scale, organization etc needs certain period of time to adjust themselves with changes occurred due to changes in demand.

Marshallôs long period or short period does not indicate any calendar time. Rather it is the óoperational timeô in terms of economic forces at work. Here, the supply forces were given major focus and thus, time becomes long or shorts, according to the extent of adjustments in the forces of supply.

1. very short period market :- the market period is considered to be very short when supply is almost fixed and as such no adjustments can take place in supply conditions. The supply is, in fact, restricted to the existing stock of good. In case, the demand increases, there cannot be production of good due to lack of time. The maximum that can be done is to make available only that amount of product

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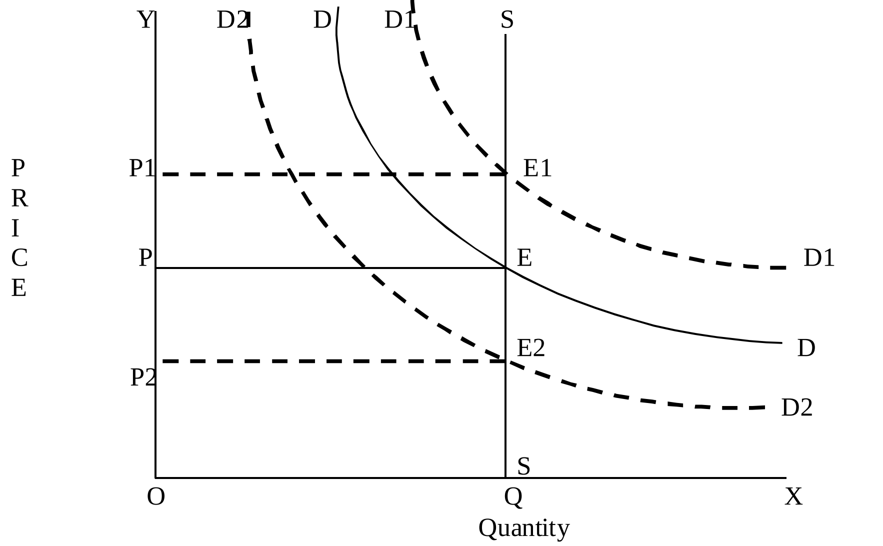
which is already been produced. Under these conditions, the demand will play the deciding role on the equilibrium price, under changed conditions. Let us examine the following diagram:

FIGURE I



In the above diagram, SS is the very short run supply curve. Since the quantity supplied cannot be changed, with the changed conditions, the SS curve is perfecty inelastic when the demand curve DD intersects the supply curve SS at the equilibrium point E, the price was fixed at OP for OQ level of quality. When demand has increased from DD to D1D1 the market price sharply rose from OP to OP1 the quantity supplied remaining fixed At OQ. On the Q contrary, if the demand decreases from DD to D2D2, consequently the price will again react supply, falling from OP to DP2, and again supply remaining constant at OQ. As we can see that the reaction of price is sharp in very short period .

This generally happens in case of perishable goods, e.g. milk, fish which cannot be stored for long. Thus in case of emergent increase/ decrease in demand, the whole of the available stock should be made available whatever price of the good. As a result, the SS is a vertical time. This also implies that the cost of

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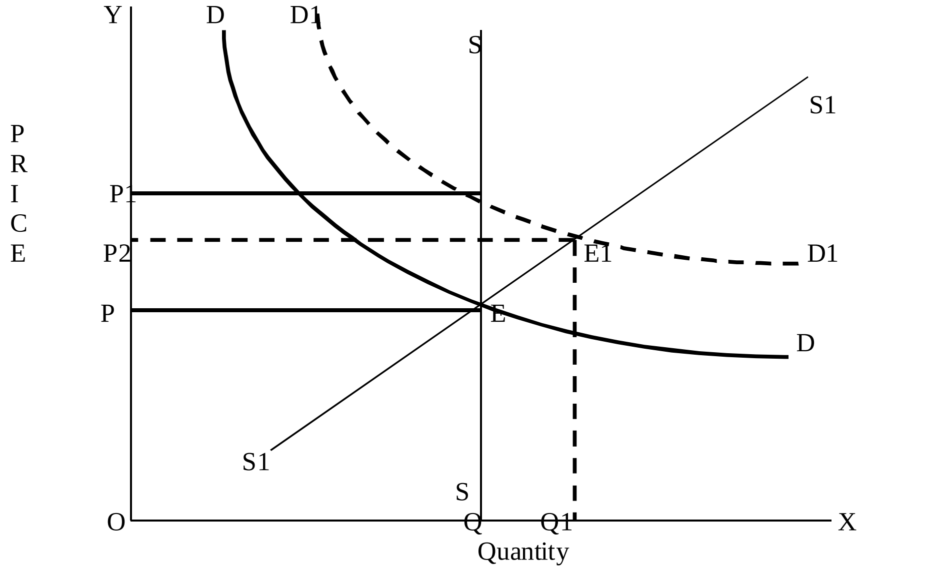
production does not play a vital role in price determination in very short periods. It is the demand which finally decides the price.

2. short period market:- in this case, the supply can be adjusted to some extent. The producer has enough time to alter the level of production by making adjustments in his variable cost. He can vary labor or equipmentôs but he does not have plenty of time to change his capital or plant altogether. Output can be valued to a limited extent. Again here the impact of demand in deciding equilibrium price is more than its supply because the seller could not get enough time to adjust his supply completely with the change in demand. Examine, the following figure 2:

FIGURE 2



As we can see- SS is very short period supply curve and S1S1 is short period supply curve. E is the original equilibrium. Now, when demand increases from DD to D1D1 there can be some adjustment made in the supply curve and new equilibrium at point E, is achieved. At this point, the price has increased from OP to OP2 and the quantity has increased from OQ to Oq1 because due to availability of time, some more level of output can be made available. OP1 is the price achieved at very short period with the

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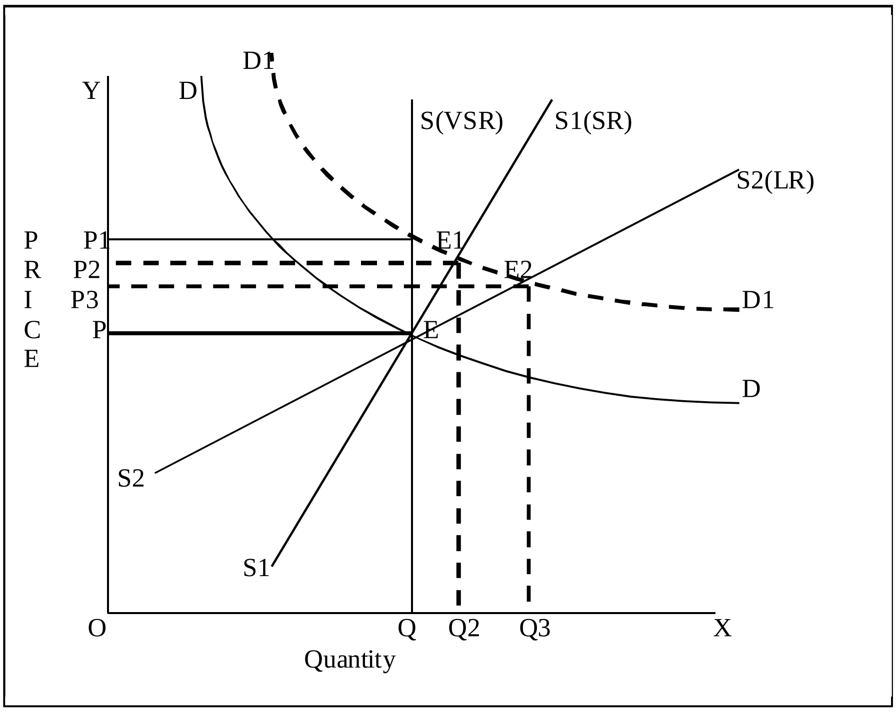
increase in time. It is clear that the rise in price (OP2) in short period is less than the rise in price (OP1) in very short period with rise in demand. Thus price does not increase so sharply in short period as it has increased in the very short period. Conversely, happens, in case the demand decreases.

3. Long period market:- in a long run period, the time is long enough to allow the firms to adjust its supply in accordance with the change in the demand. It can built up new plants and leave the old ones. If there is possibility of an increase in the demand, with the availability of time, the firm can make entire adjustments in the supply. He can increase the level of stock, replace the sufficient workers/machines, enhance innovative techniques for new production function etc. since all factors are subject to variations, in long run there is no fixed factor. The rise of individual firm as well as the size of the whole industry changes according to the changes in demand.

FIGURE 3



VRS,SR and LR curves are very short run, short run and long run supply curves respectively. At original equilibrium E, the price is fixed at OP and quantity at OQ. With increase in demand from DD to D1D1 the equilibrium points changed and

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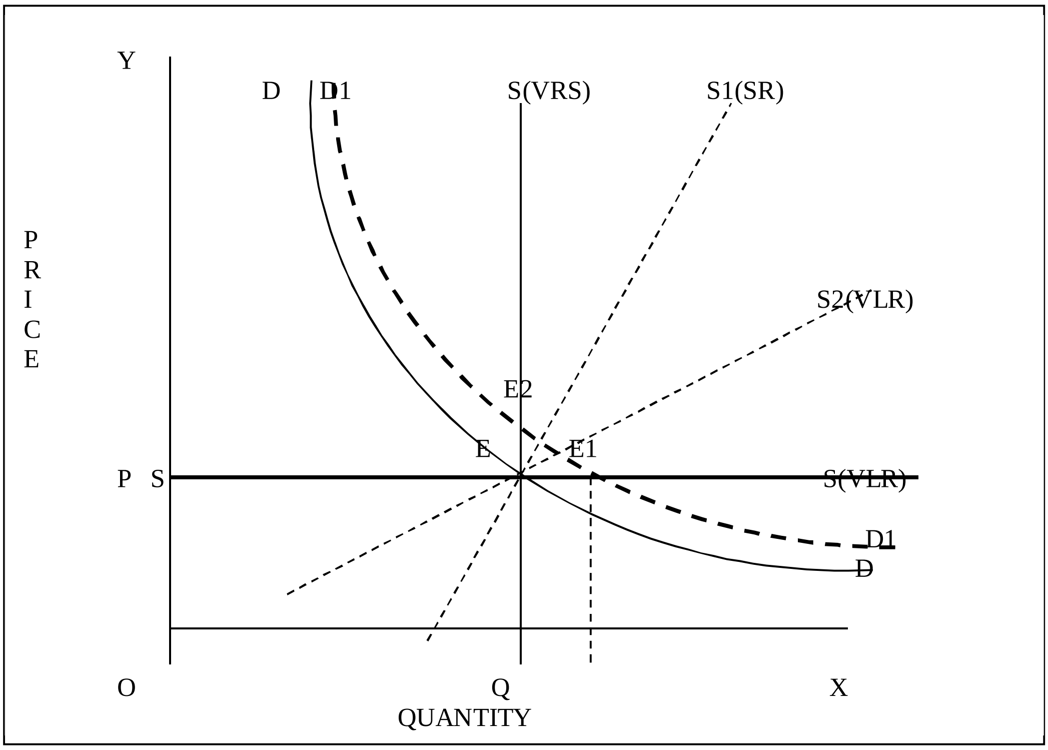
became E1 for short run and E2 for long run. As we can see that in all changes, the price has increased. In case of very short period, the price rose from OP to P1 and in short run, the price rose from OP to OP2. But the rise in price is less the rise in very short period because OP2 is less than OP1. Similarly, in long run the price rose from OP to OP3 is less than both OP and OP2. Increase of quantity, the larger the period, the greater will be the adjustments in the quantity. In short period, it rose to Oq2 from OQ and in long period it became OQ3which is more than both OQ and Q2. Now, if we join points E2 and E, we get the long run supply curve which slopes upward to the right. It makes that in long run the price of product increases as demand increases. In other words, more quantity of goods will be supplied only at a higher price. The greater the price, the higher the quantity supplied and vice versa.

4. Very long period market:- it is also known as ;historical long periodô or ósecular periodû. In fact the time is so long that it can change almost all-underlying economic factors. In the industry, on its expansion gives rises to some external economics and external dis-economics which cancel each other so that the consistent firms do not experience any shift in the cost curves. There can be few entry and exist of firms in and out the industry. In case, more firms enter the industry, the demand for productive factors like labor, machinery, raw material etc automatically will increase. But this increase in demand of factors by industry is only a negligible part of the total demand for them so that the increase in demand for tem does by industry does force the price to more upwards. In Samuelsonôs words: ñ only is the industry is small compared with the total of all other rises will Marshallôs long run supply curve be horizontal ï which is called the constant costò. (Paul A Samuelson, economics, 8th edition , page 366)

FIGURE 4



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As we can see, figure 4 show long run normal price. In short run when DD intersects the supply curve VSR, OP price was fixed at OQ quantity. OP is in fact assumed to be equal to the minimum long run average cost of the firm. This implies that the number of firms have fully adjusted themselves to the given demand conditions. Thus at this point of time, OP is also long run price corresponding to the demand conditions present at that time represented by the DD curve. As with the availability of time, new firms will enter the industry the VRS curve will more towards right to SR and then to LR. It will keep on tilting towards right until its intersection with the demand curve D1D1 determines a price at super natural profits of the firms are completely evaded.

As we can see that originally the equilibrium was set at point E with OP price, where it intersects the short run supply curve. But when the demand curve moved to D1D1 at point E, once again the price has determined at OP at which the firm will make only normal profits as before. This implies that the OP is a long term price that the OP is a long run price corresponding to the demand curve D1D1. The external economics and dis-economics have offset each others effect, and therefore at this point of time, the cost curves of time firms would not shift. Thus the price has shifted upwards in short run to point E2 but in long run, it has again came down to the level of OP in case of quantity, increase and decrease in the demand in long run will change the supply of output by causing a change in the number of firms without showing any effect on the long run normal price.

Conclusion:

1. Both demand and supply are equally important in determining price.
2. With the passage of time, unstable equilibrium tends to change to stable equilibrium.
3. Time factor plays a crucial role in price determination.