Chapter 4

Prices and Decision Making

Abstract

In any capitalistic economy, prices are not established by the state but these are adjusted by the traders and customers in the markets. In these systems, market is only a place where trader and customers come together. Contrasting to a physical market, customers and suppliers don't need to come on identical place. That is the place where the supply and demand model comes in. The customer's preferences show demand side of the market, and the manufacture's preferences shows the supply side of the market. The price of a commodity and its quantity is then determined at a point where both match with each other. Price and amount of product are the outputs not the input of the demand-supply model. Supply and demand model are used for competitive markets, i.e., where a large number of sellers and buyers are looking for sale and purchase of related items. In this chapter the equilibrium of demand and supply is discussed in detail.

Keywords: Equilibrium, prices, market, supply, demand

4.1.   Equilibrium

The word 'equilibrium' is used by the economists in the same sense as it is used in basic sciences, to indicate a condition where all drivers are at balance, with the intention of existing condition of system be likely to exits. In the situation of supply and demand, it shows a situation, where the elevated prices are fully stable by a burden for lesser prices, so the existing state of exchange between customers and suppliers can be expected to exist.

At a given price level, if quantity supplied of a commodity increases from the quantity demanded, and some suppliers' fails to sell because less quantities are purchased then this scenario is called surplus. The suppliers who could not sold their product at the market price, alternatively they can sell their product at lower level to increase their selling. These low prices exert pressure on the market price levels and general prices to come down ultimately. The decline of prices normally decreases the amount supplied and raises the amount demanded in this way and surplus is eliminated. Thus, a surplus empowers price cutting, which decreases the surplus, a process which ends only when the amount supplied equals the amount demanded.

In the same way, when the prices are low, the amount demanded crosses amount supplied, a deficit appears. In this case, some customers fail to buys, and these customers have an incentive to buy at some elevated price level. Suppliers are also happy to get the more margins, which exert pressure on prices, and in this way prices rise. The elevation in the price tends to reduce the amount demanded and increase the amount supplied, in this way shortfall is covered. Once more, the process stops when the amount supplied equals the amount demanded.

Having discussed what factors determine demand and supply, we must now discuss how demand and supply interact in the market to determine the price and amount of commodity. Demand and supplies are like two forces pulling in opposite directions and they are balanced, or in equilibrium at the market price, where the amount demanded equals the amount supplied. This price is usually called the equilibrium price, and the amount demanded and supplied at this price are called equilibrium amounts. These must be distinguished from other hypothetical prices and amounts, which might satisfy the conditions of demand and supply separately, but do not satisfy both simultaneously. Market equilibrium is shown graphically in the Figure 4.1. The demand curve DD intersects the supply curve SS at the point R. In this equilibrium situation, the equilibrium amount is exchanged at the equilibrium price. Main concern is to attain the equilibrium prices. It is assumed that at equilibrium, demand and supply curves are such that any disturbance of the original equilibrium situation will set in motion forces which cause a return to that equilibrium. The significance of this assumption can be seen from Figure.

In Figure 4.1, we have a negatively sloped demand curve and a positively sloped supply curve for a commodity. Market is in equilibrium at quantity OM of a good traded at a price OP. If the equilibrium is now disturbed and the price rises to Rs. OP_1, the amount of the commodity supplied, $0M_1$, will exceed the amount demanded, $0M_2$. Suppliers will be supplying more of the commodity at the price of Rs. OP_1 than customers are prepared to buy at that price. They will therefore have to reduce their price. As price falls in this way, the amount demanded will rise and the amount supplied will fail until the two amounts coincide at the equilibrium price of OP. Similarly, if the price falls to OP_2, the amount demanded OM_1, will exceed the amount supplied $0M_2$, and competition between customers will force the price up until once again the equilibrium price of OP is reached. The amount exchanged will once again be OM. When the demand and supply circumstances are such that a movement of the equilibrium condition automatically causes a return to it in this way, the equilibrium is said to be stable. Equilibrium will be stable when slightly to the left of the equilibrium position, the demand price exceeds the supply price, and slightly to the right of it, the supply price exceeds the demand price. Another way of determining whether equilibrium is stable is to discover, whether with a little change in price higher than equilibrium level, the quantity demanded will decreases. If either of these conditions holds, any rise in price above the equilibrium level will set forces which cause its return to that level.

These stability conditions will always be fulfilled if the demand curve slopes downwards and the supply curve slopes upwards. This will show why demand curves normally slope downwards and supply curves normally slope upwards, and equilibrium is usually stable. Hicks (1982) has described markets where prices are

flexible as 'flex-price' markets. Many markets do not behave like this and they are fix-price markets. For example, the government usually intervene in the wheat market of Pakistan.

Fig. 4.1
Market
Equilibrium
Price

Amount of Good
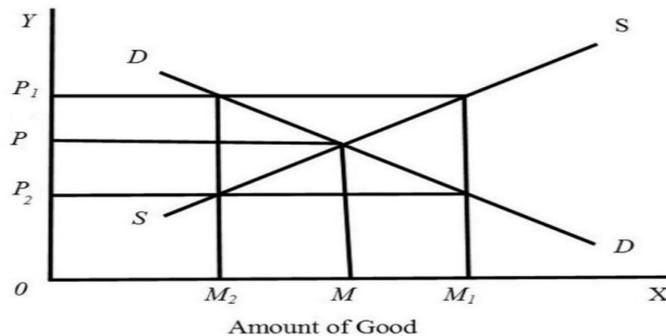
4.2.   Efficiency of Equilibrium

Efficiency of equilibrium states that no surplus is maintained when demand and supply of a commodity equates with each other. It would be required, from a social point of view, to have trade, or to restrain trade below this level. In many situations, balanced level of trade result negative results (Green 1973). People impacted by these activities are the customer and supplier, but overall the balance of supply and demand optimizes the total gains from business.

This proposition is quite easy to see. To optimize the benefits from trade, clearly the highest value customers' must get the product. On the other hand, where a potential buyer that doesn't acquire the product with greater value than one who does, the advantages from trade increases goes to the product with greater value customer. In the same way, the lowest cost suppliers must supply those goods; otherwise profit would be gained from business by substituting higher cost supplier with a lower cost supplier. So, the only question is, how many commodities should be traded to optimize the profits from the business. Since, it will include the lowest cost suppliers selling to the highest value customers. So, the equilibrium optimizes the profits from trade, under the specific assumptions.

4.3.   Changes in Supply and Demand

4.3.1.   Changes in Demand

Here, the impacts of elevation in the demand are discussed. As the population of Pakistan has increased overtime, resultantly the demand for the housing has also grown up. Increasing demand of housing will cause a raise in the prices of housing, and there will be increase in demand and supply of housing. This demand elevation

is described in the Figure 4.2. In this graph, supply and demand have been shown as S and D (McAfee 2006). Demand starts at D_1 and is increased and come at new level to D_2, while keeping supply constant. The equilibrium price rise from p_1 to p_2, and the amount raises from q_1 to q2.

Fig. 4.2 An Increase in Demand
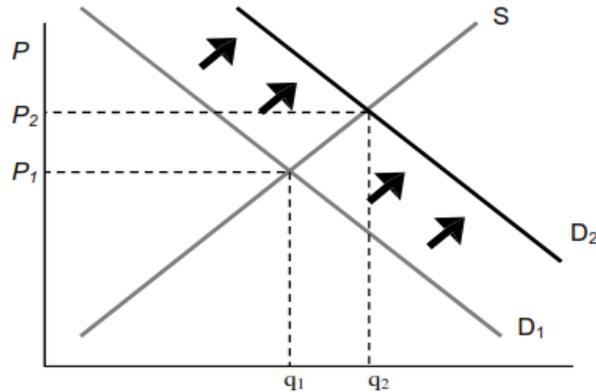
A decline in demand, like demand of typewriters after the introduction of computers, or buggy whips as cars substituted horses as the main way of travelling has the inverse effect of rise. It shows a decline in the price and amount in the business. Like, products substituted by other goods VHS tapes were substituted by DVDs, desktop computer substituted by laptops, and so on. Personal computers experienced a reduction in demand as the market was saturated in the year 2001.

4.3.2.   Changes in Supply

An elevation in the supply derives from a decline into marginal cost. Resultantly, an elevated supply is showed by a curve that is lower and to the right side on the supply and demand figure, which is an infinite source of confusion for many students. Causes of low costs and more supply are the same thing (McAfee 2006). The impacts of rise in supply are showed in the Figure 4.3. The supply curve goes from S_1 to S_2, which shows a lower marginal cost. In this regards, the amount traded increases from q_1^* to q_2^* and price decreases from p_2^* to p_1^*.

A significant source of both supply and demand variation are changes in the markets of complements. A decline in the price of a demand-complement enhances the demand of a good, and in the same way a rise in the prices of an alternative product elevate the demand for good. This gives two methods to trace through effects from external markets to a market via correlation of demand substitutes or complement. As the price of automobiles rises, the demand for bicycles (a substitute in some circumstances) should rise. When the prices of computers decline, the demand for operating systems (a complement) should rise. This gives an operating system supplier, like Microsoft an incentive to encourage technical progress in the computer market, to make the operating system more valuable.

Fig. 4.3 An Increase
in Supply
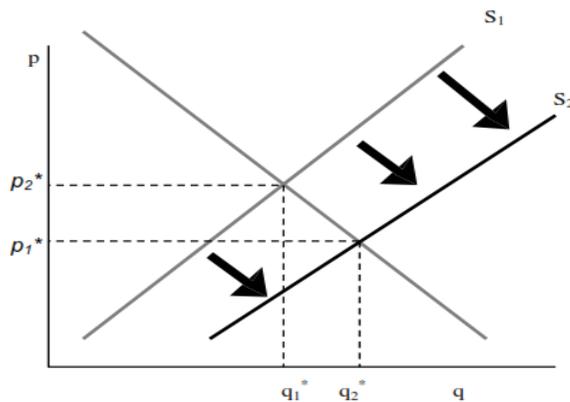
4.4.   Applications of Supply and Demand Analysis

4.4.1.   Analysis of the Consequences of Taxation

Suppose a tax, T, equal to Rs. 1000 per gallon, is imposed on suppliers of gasoline. Assume that 10 million gallons of gasoline are currently sold per month at a price of Rs. 10,000 per gallon. Can it be concluded that the tax will collect a million Rs. in revenue each month? A little reflection will indicate that this is unlikely. Effects of tax that it can have on the market price of gasoline paid by customers can be calculated.

Imposition of a Rs. 1000 per gallon tax on gasoline is likely to raise the price of gasoline and thereby reduce the amount demanded. Figure 4.4 shows the impact of the tax on the market for gasoline. From the suppliers' point of view, the tax is an increase in the cost of making gasoline available to consumers. At the end of each month, they must remit to the government an amount equal to Rs. 1000 multiplied by the number of gallons of gasoline sold. This is the same as if their costs of production were to increase by Rs. 1000 per gallon. This increases the minimum price per gallon that suppliers will require to sell any given amount per month. The tax will affect the supply of gasoline in the same way as any increase in cost by decreasing the profitability of selling the product. Because of the tax, the supply curve of gasoline shifts inward from S_1 to S_2 as shown in Figure 4.4.

Figure 4.4 also shows that the decrease in the supply results a new market equilibrium price and amount. Market price rises to P_G = Rs.10500 per gallon, it is the gross price paid by consumers and received by suppliers before payment of the tax, which is the legal liability of the supplier. The net price (P_N) received by suppliers after payment of the Rs. 1000 tax on each gallon is,

$$P_N = P_G - T$$

Consumers of gasoline make decisions about, how much to purchase based on the new market equilibrium price, which is P. Suppliers decide, how much gasoline to sell on the basis of the net price they receive after paying the tax.
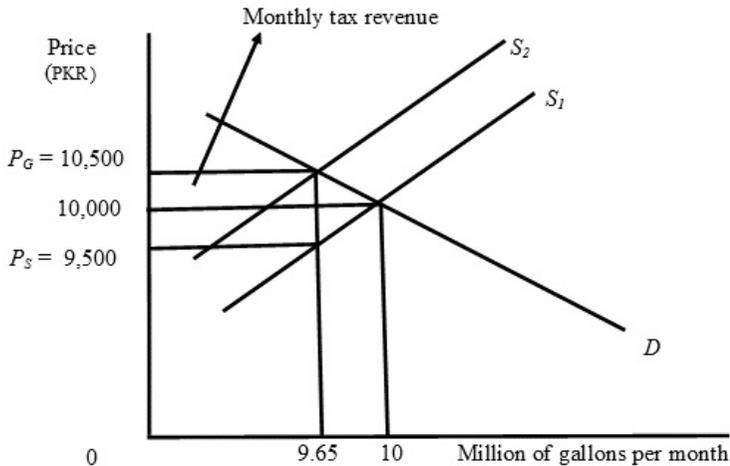

Fig. 4.4 Impact of a Tax on Gasoline

Rs. 100 per gallon tax on gasoline, collected from suppliers decreases its supply from S_1 to S_2. The new market equilibrium is attained. The tax increases market price to P_G = Rs.10500, while reducing the net price received by suppliers to P = Rs. 9500. The shaded area represents the tax revenue collected.

4.4.2. Import Quotas, Tariffs, and the Consequences of Protecting Domestic Industries from Foreign Competition

Domestic industries often use political means to induce government to provide them with protection from foreign competition. Import quotas restrict the amount of foreign commodities that can be sold in a nation [Stonier and Hague (1990); and Hyman (1989)]. An alternative to achieve the same objective is a tariff. Tariffs are taxes levied on imported commodities. Both tariffs and import quotas are likely to affect the prices of the commodities involved. This harms consumers of those commodities but is likely to benefit their domestic producers. However, there are other gains and losses stemming from these two policies that can be illuminated with supply and demand analysis.

A quota on imports places a limit on supply after a certain amount of sales. The supply curve is upward sloping, up to the amount corresponding to the annual import quota. Thereafter, the quota prevents amount supplied from increasing in response to higher prices. Import quota Q_L corresponded to the market equilibrium at E_2 and the demand curve D_1 is drawn. Market price is initially at P_1. In Figure 4.5 shows the supply curve after the quotas is imposed.
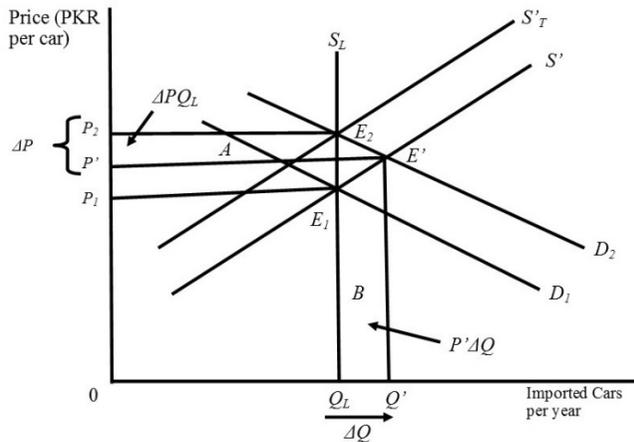
Fig. 4.5 Import Quotas vs. tariffs

An import quota places a limit Q_L on the amount of foreign commodities that can be sold. The supply curve under the quota is a vertical line at Q'_L. A tariff can be used to decrease the supply of imported commodities to S'_T, thereby reducing consumption from Q' to Q_L.

In the absence of the quotas, amount supplied would have increased to Q' along the dashed portion of the actual market supply, E_1S'. Price would have risen to P'. But the quotas prevented amount supplied from increasing beyond the limit prices, increased to P_2 along the vertical portion of the supply curve as the new equilibrium was attained at point E_2.

This difference could be positive or negative. If ΔPQ_L (represented by shaded area A), exceeds $P'Q$ (represented by area B), sales revenues will increase, area A is the increase in supplier revenues resulting from the quotas. Area B is the revenue decline caused by the lost sales. This analysis does not discuss profits of automobile suppliers, this would require data on cost, as well as revenue. Finally, tariffs could be used to finance tax reductions because they substitute for alternative sources of tax revenues for the government.

4.4.3.   Rent Controls: Impact of a Price Ceiling

Government imposed price controls can prevent markets from achieving equilibrium by use of rules and regulations regarding the sale of certain items. The almost inevitable result of market intervention of this kind is a sustained market disequilibrium that manifests itself in the form of either chronic surpluses or chronic shortages of the good or service, whose price is being controlled (Arnott 1995).

One type of price control regulates the rents of residential housing. The simple model of supply and demand is useful in analyzing the impact of such price controls on the parties involved. Rent controls are laws limiting the rents that owners of rental

housing may charge. They either limit increases in monthly rent or establish rules that are used to determine "fair" monthly rental rates for housing of various kinds and quality. The impetus of such rent controls is to keep housing rents lower than those that would prevail, if the market could establish its own equilibrium. Many supporters of rent controls believe that these benefits lower income citizens, who would otherwise have to pay higher percentages of their income in rent.

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