

Meanings and Definition of Demand:

- ▶ The word '**demand**' is so common and familiar with every one of us that it seems superfluous to define it.
- ▶ The need for precise definition arises simply because it is sometimes confused with other words such as desire, wish, want, etc.
- ▶ Demand in economics means a **desire** to possess a good supported by **willingness** and **ability** to pay for it.
- ▶ If you have a desire to buy a certain commodity, say a car, but you do not have the adequate means to pay for it, it will simply be a wish, a desire or a want and not demand.
- ▶ Demand is an effective desire, i.e., a desire which is backed by willingness and ability to pay for a commodity in order to obtain it.

- ▶ In the words of **Prof. Hibdon**:
- ▶ "Demand means the various quantities of goods that would be purchased per **time** period at different **prices** in a given **market**".

Characteristics of Demand:

- ▶ There are thus ***three main characteristics of demand*** in economics.
- ▶ **(i) Willingness and ability to pay.** Demand is the amount of a commodity for which a consumer has the willingness and also the ability to buy.
- ▶ **(ii) Demand is always at a price.** If we talk of demand without reference to price, it will be meaningless. The consumer must know both the price and the commodity. He will then be able to tell the quantity demanded by him.
- ▶ **(iii) Demand is always per unit of time.** The time may be a day, a week, a month, or a year.

▶ Example:

- ▶ For instance, when the milk is selling at the rate of Tk 60 per liter, the demand of a buyer for milk is 1 liter a day.
- ▶ If we do not mention the period of time, nobody can guess as to how much milk we consume?
- ▶ It is just possible we may be consuming ten liters of milk a week, a month or a year.
- ▶ **Summing up**, we can say that by demand is meant the amount of the commodity that **buyers are able and willing to purchase at any given price over some given period of time.**
- ▶ Demand is also described as a schedule of how much a good people will purchase at any price during a specified period of time.

Types of Demand

- ▶ **Price demand:** Price demand refers to the various quantities of a commodity which will be bought at a given time at various prices, other things remaining constant.
- ▶ **Income demand:** Income demand refers to the various quantities of a commodity, which will be bought at various level of income, other things remaining constant.

- ▶ **Cross demand:** Cross demand refers to the various quantities of a commodity, which will be bought with reference to change in price not of this good but of other related goods, other things remaining constant. For example, increase in demand of tea due to rise in the price of coffee.

Law of Demand:

► Definition and Explanation of the Law:

- We have stated earlier that demand for a commodity is related to price per unit of time.
- It is the experience of every consumer that when the **prices** of the commodities **fall**, they are tempted to purchase **more commodities** and when the **prices rise**, the quantity **demand decreases**. There is, thus, **inverse relationship** between the price of the product and the quantity demanded. The economists have named this inverse relationship between demand and price as the ***law of demand***.

Statement of the Law:

- ▶ Some well-known statements of the law of demand are as under:
 - ▶ According to **Prof. Samuelson**:
 - ▶ "The law of demand states that people will buy more at lower prices and buy less at higher prices, other things remaining the same".
 - ▶ **E. Miller** writes:
 - ▶ "Other things remaining the same, the quantity demanded of a commodity will be smaller at higher market prices and larger at lower market prices".
 - ▶ "Other things remaining the same, the quantity demanded increases with every fall in the price and decreases with every rise in the price".

- ▶ In simple we can say that when the price of a commodity rises, people buy less of that commodity and when the price falls, people buy more of it **ceteris paribus** (other things remaining the same).
- ▶ Or we can say that the quantity varies inversely with its price. There is no doubt that demand responds to price in the reverse direction but it has got no **uniform relation** between them.
- ▶ If the price of a commodity falls by 1%, it is not necessary that demands may also increase by 1%. The demand can increase by 1%, 2%, 10%, 15%, as the situation demands. The functional relationship between demanded and the price of the commodity can be expressed in simple mathematical language as under:

Formula for Law of Demand:

- ▶ $Qd^x = f(P^x, M, P^o, T, \dots)$

- ▶ **Here:**

- ▶ Qd^x = A quantity demanded of commodity x.

- ▶ f = A function of independent variables contained within the parenthesis.

- ▶ P^x = Price of commodity x.

- ▶ P^o = Price of the other commodities.

- ▶ T = Taste of the household.

- ▶ M = The purchasing power of the typical consumer

▶ The bar on the top of M, P^o , and T means that they are kept constant. The demand function can also be symbolized as under:

▶ $Q_d^x = f(P^x)$ **ceteris paribus**

▶ **Ceteris Paribus.**

▶ In economics, the term is used as shorthand for indicating the effect of one economic variable on another, holding constant all other variables that may affect the second variable.

Schedule of Law of Demand:

- ▶ The demand schedule of an individual for a commodity is a list or table of the different amounts of the commodity that are purchased the market at different prices per unit of time.
- ▶ An individual demand schedule for a good say shirt is presented in the table below:

► **Individual Demand Schedule for Shirts:**

(In Dollars)

Price per shirt	100	80	60	40	20	10
Quantity demanded per year Q^{dx}	5	7	10	15	20	30

Demand Curve/Diagram:

- ▶ Demand curve is a graphical representation of the demand schedule.
- ▶ According to **Lipsey**:
- ▶ "This curve, which shows the relation between the price of a commodity and the amount of that commodity the consumer wishes to purchase is called demand curve".
- ▶ It is a graphical representation of the demand schedule.

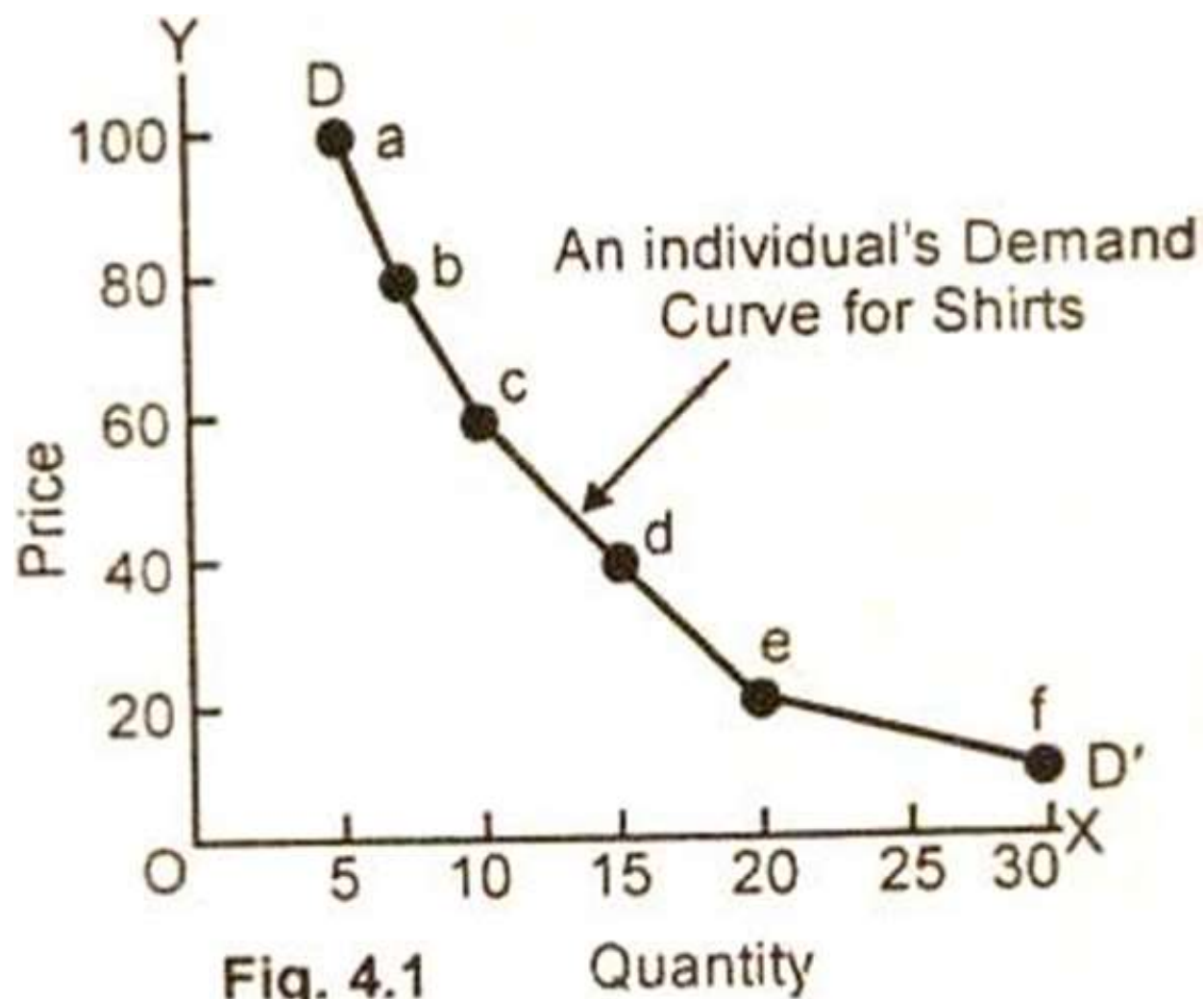


Fig. 4.1

Quantity

- ▶ In the figure (4.1) the quantity demanded of shirts is plotted on horizontal axis OX and "price is measured on vertical axis OY.
- ▶ Each price- quantity combination is plotted as a point on this graph.
- ▶ If we join the price quantity points a, b, c, d, e and f, we get the individual demand curve for shirts.
- ▶ The DD/ demand curve slopes downward from left to right. It has a negative slope showing that the two variables price and quantity work in opposite direction.
- ▶ When the price of a good rises, the quantity demanded decreases and when its price decreases, quantity demanded increases, *ceteris paribus*.

Assumptions of Law of Demand:

- ▶ According to Prof. Stigler and Boulding:
- ▶ There are three main assumptions of the Law:
 - ▶ (i) There should not be any change in the tastes of the consumers for goods (T).
 - ▶ (ii) The purchasing power of the typical consumer must remain constant (M).
 - ▶ (iii) The price of all other commodities should not vary (P^0).

Example of Law of Demand:

- ▶ If there is a change, in the above and other assumptions, the law may not hold true.
- ▶ For example, according to the law of demand, other things being equal quantity demanded increases with a fall in price and diminishes with rise to price.
- ▶ Now let us suppose that price of tea comes down from \$40 per pound to \$20 per pound.
- ▶ The demand for tea may not increase, because there has taken place a change in the taste of consumers or the price of coffee has fallen down as compared to tea or the purchasing power of the consumers has decreased, etc., etc.
- ▶ From this we find that demand responds to price inversely only, if other thing remains constant. Otherwise, the chances are that, the quantity demanded may not increase with a fall in price or vice-versa.

- ▶ Demand, thus, is a negative relationship between price and quantity.
- ▶ In the words of **Bilas**:
- ▶ "Other things being equal, the quantity demanded per unit of time will be greater, lower the price, and smaller, higher the price".

Limitations/Exceptions of Law of Demand:

- ▶ Though as a rule when the prices of normal goods rise, the demand then decreases but there may be a few cases where the law may not operate.
- ▶ **(i) Prestige goods:** There are certain commodities like diamond, sports cars etc., which are purchased as a mark of distinction in society. If the price of these goods rises, the demand for them may increase instead of falling.
- ▶ **(ii) Price expectations:** If people expect a further rise in the price particular commodity, they may buy more in spite of rise in price. The violation of the law in this case is only temporary.

- ▶ **(iii) Ignorance of the consumer:** If the consumer is ignorant about the rise in price of goods, he may buy more at a higher price.
- ▶ **(iv) Giffen goods:** If the prices of basic goods, (potatoes, sugar, etc.) on which the poor spend a large part of their incomes declines, the poor increase the demand for superior goods, hence when the price of Giffen good falls, its demand also falls. There is a positive price effect in case of Giffen goods.

Importance of Law of Demand:

- ▶ **(i) Determination of price.**
- ▶ The study of law of demand is helpful for a trader to fix the price of a commodity.
- ▶ He knows how much demand will fall by increase in price to a particular level and how much it will rise by decrease in price of the commodity.
- ▶ The schedule of market demand can provide the information about total market demand at different prices.
- ▶ It helps the management in deciding whether how much increase or decrease in the price of commodity is desirable.

- ▶ **(ii) Importance to Finance Minister.**
- ▶ The study of this law is of great advantage to the finance minister.
- ▶ If by raising the tax the price increases to such an extent that the demand is reduced considerably.
- ▶ And then it is of no use to raise the tax, because revenue will almost remain the same. The tax will be levied at a higher rate only on those goods whose demand is not likely to fall substantially with the increase in price.

▶ **(iii) Importance to the Farmers.**

▶ Good or bad crop affects the economic condition of the farmers. If a good crop fails to increase the demand, the price of the crop will fall heavily. The farmer will have no advantage of the good crop and vice-versa.

▶ **Summing up** we can say that the limitations or exceptions of the law of demand stated above do not falsify the general law. It must operate.

Individuals and Market Demand for a Commodity:

- ▶ Individual's Demand for a Commodity:
- ▶ Definition and Explanation:
- ▶ ***"The individuals demand for a commodity*** is the amount of a commodity which the consumer is willing to purchase at any given price over a specified period of time".

- ▶ The individual's demand for a commodity varies inversely price *ceteris paribus*. As the price of a goods rises, other things remaining the same, the quantity demanded decreases and as the price falls, the quantity demanded increases.

- ▶ Price (p) is here an independent variable and quantity (q) dependent variable.

- ▶ **Individual's Demand Schedule:**

- ▶ The demand schedule of an individual for a commodity is a list or table of the different amounts of the commodity that are purchased the market at different prices per unit of time. An individual demand schedule for a good say shirt is presented in the table below:

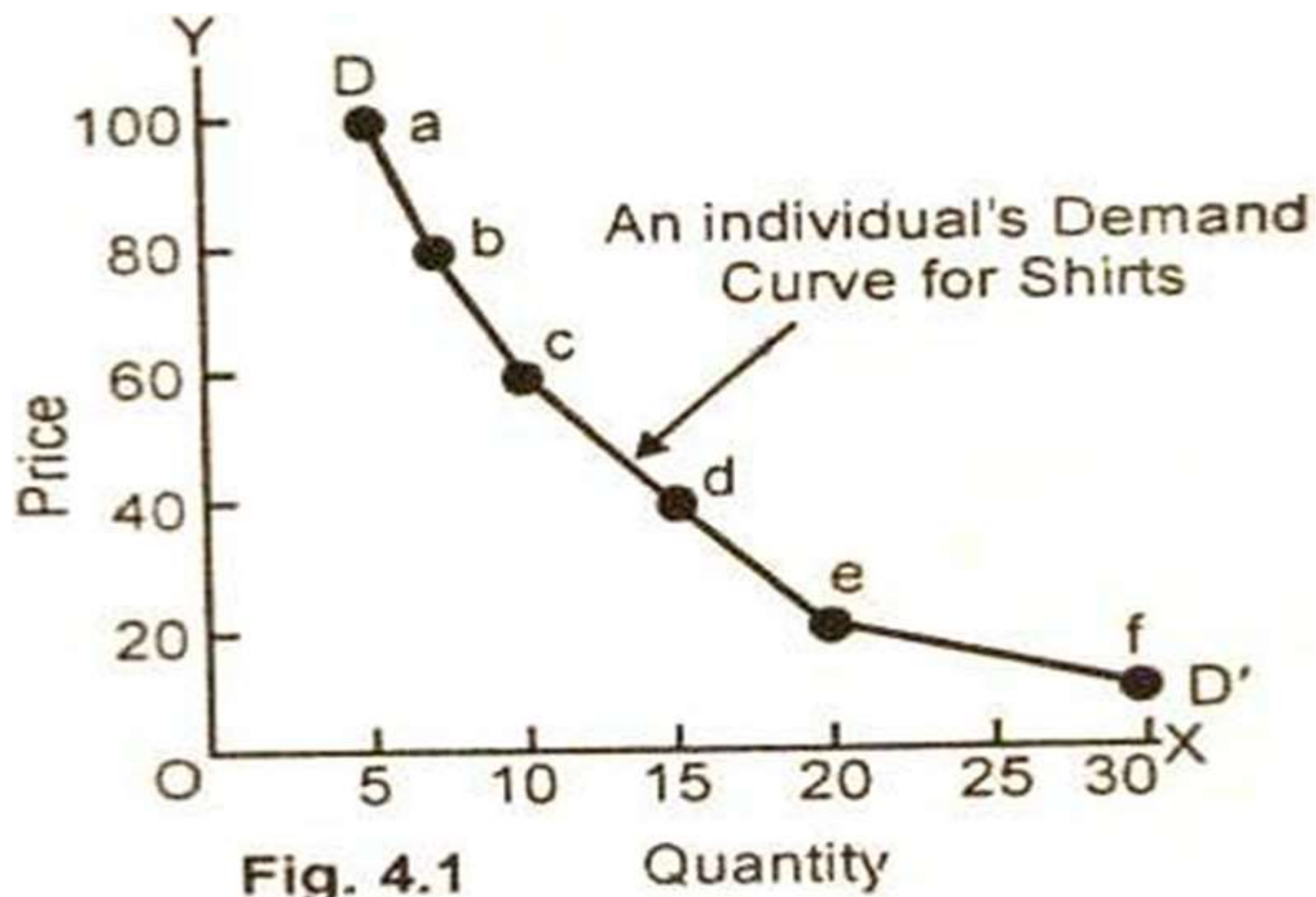
Individual Demand Schedule for Shirts:

Price Per Shirt (\$)	100	80	60	40	20	10
Quantity Demanded Per Year Q^{dx}	5	7	10	15	20	30

According to this demand schedule, an individual buys 5 shirts at \$100 per shirt and 30 shirts at \$10 per shirt in a year.

▶ **Individual's Demand Curve:**

- ▶ Demand curve is a graphical representation of the demand schedule. According to **Lipsey**:
- ▶ "The curve, which shows the relation between the price of a commodity and the amount of that commodity the consumer wishes to purchase is called demand curve".
- ▶ It is a graphical representation of the demand schedule.



- ▶ In the figure (4.1) the quantity demanded of shirts is plotted on horizontal axis OX and price is measured on vertical axis OY. Each price quantity combination is plotted as a point on this graph. If we join the price quantity points a, b, c, d, e and f, we get the individual demand curve for shirts.
- ▶ The DD/ demand curve slopes downward from left to right. It has a negative slope showing that the two variables price and quantity work in opposite direction. When the price of a good rises, the quantity demanded decreases and when its price decreases, quantity .demanded increases, *ceteris paribus*.

Market Demand for a Commodity:

▶ Definition and Explanation:

- ▶ The market demand for a commodity is obtained by adding up the total quantity demanded at various prices by all the individuals over a specified period of time in the market.
- ▶ It is described as the horizontal summation of the individuals demand for a commodity at various possible prices in market.
- ▶ In a market, there are a number of buyers for a commodity at each price.
- ▶ In order to avoid a lengthy addition process, we assume here that there are only **four buyers** for a commodity who purchase different amounts of the commodity at each price.

► **Market Demand Schedule:**

► The horizontal summation of individuals demand for a commodity will be the market demand for a commodity as is illustrated in the following schedule:

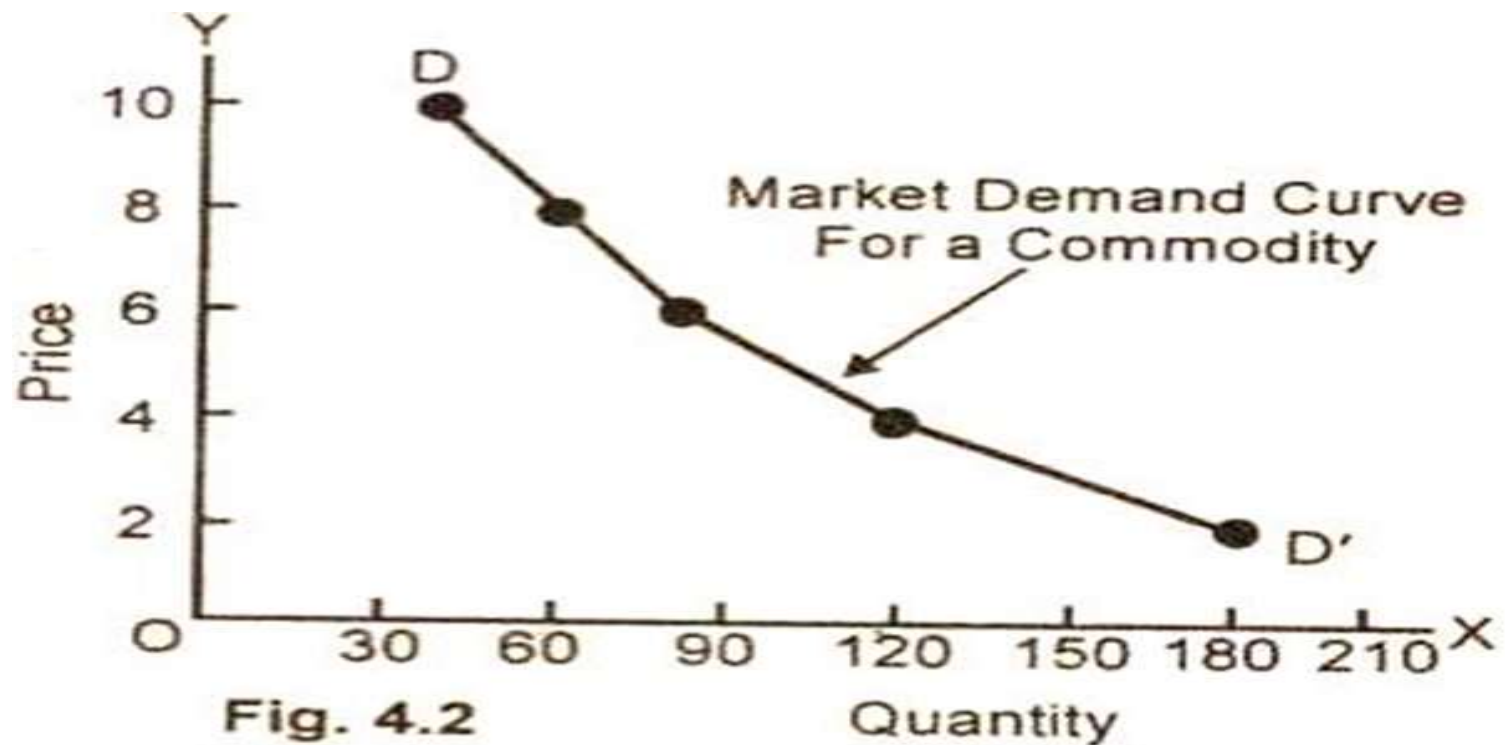
A market Demand Schedule in a Four Consumer Market:

Price (\$)	Quantity Demanded	Quantity Demanded	Quantity Demanded	Quantity Demanded	Total Quantity Demanded Per Week (in thousands)
	First Buyer	Second Buyer	Third Buyer	Fourth Buyer	
10	10	13	6	11	40
8	15	20	9	16	60
6	25	30	10	20	85
4	40	35	15	30	120
2	60	50	30	40	180

- ▶ In the above schedule, the amount of commodity demanded by four buyers (which we assume constitute the entire market) differs for each price.
- ▶ When the price of a commodity is \$10; the total quantity demanded is 40 thousand units per week.
- ▶ At price of \$2, the total quantity demanded increases to 180 thousand units.

Market Demand Curve:

▶ Market demand curve for a commodity is the horizontal sum of individual demand curves of all the buyers in a market. This is illustrated with the help of the market demand schedule given above.



- ▶ The market demand curve DD' for a commodity, like the individual demand curve is negatively sloped, (see figure 4.2). It shows that under the assumptions (*ceteris paribus*) other things remaining the same, there is an inverse relationship between the quantity demanded and its price.
- ▶ At price of \$10, the quantity demanded in the market is 40 thousand units. At price of \$2, it increases to 180 thousand units. In other words, the lower the price of the good X, the greater is the demand for it *ceteris paribus*.

Factors of Changes in Demand:

► Determinants of Demand:

- While explaining the law of demand, we have stated that, other things remaining the same (ceteris paribus), the demand for a commodity inversely with price per unit of time. The other things have an important bearing on the demand for a commodity.
- They bring about changes in demand independently of changes in price. These ***non-price factors shift factors or determinants*** which influence demand are as follow:

▶ (i) Changes in population:

- ▶ If the population of a country increase account of **immigration** or through **high birth rate** or on account of these factors, the demand for various kinds of goods will increase even the prices remains the same. The demand curve will shift upward to the right.
- ▶ The nature of the commodities demanded will depend up to taste of the consumers.

- ▶ If due to high net production rate, the percentages of **children** to the total population increases in a country, there will greater demand for **toys, children food**, etc.
- ▶ Similarly, if the percent **aged people** to the total population increases, the demand for **walking sticks, artificial teeth, invalid chairs, etc.** will increase.

- ▶ **(ii) Changes in tastes and preferences**



- ▶ Demand for a commodity may change due to changes in tastes. For example, people develop a taste for coffee. There is then a decrease in the demand for tea. The demand curve for tea shifts to the left of the original demand curve.

▶ (iii) **Changes in income:**

- ▶ When the income of consumers increases generally leads to an increase in the demand for some commodities and a decrease in the demand for other commodities.
- ▶ For example, when income of people increases, they begin to spend money on those which were previously regarded by them as luxuries, or semi-luxuries and reduce the expenditure on inferior goods.
- ▶ Take the case of a man whose income has increased from \$1000 to \$20,000 per month. His consumption of wheat will go down because he now spends more money on the superior food such as cake, fish, daily products, fruits, etc.

▶ **(iv) Changes in the price of substitutes:** if the price of a particular commodity rises, people may stop further purchase of that commodity and spend money on its substitute which is available at a lower price. Thus we find, a change in demand can also be brought about by a change in the price of the substitute.

- ▶ **V. Changes in the distribution of income:** If income distribution is equal (i.e. difference is less), demand for necessary goods will increase. If the difference is high i.e. major portion of income belongs to the rich, the demand for luxury items will increase and demand for necessary items like rice, pulse, soap, fish, meat etc will fall.
- ▶ **VI. Seasonality:** In winter, demand for warm clothing will increase and in summer demand for electric fan and air cooler will increase.

- ▶ **VII. Changes in savings:** Demand for goods is affected by the consumer's propensity to save. In other words, if consumers prefer to save more and more and to put it in the bank rather than to have more assets like, good quality sofa, fridge and other furniture, the demand for those goods will increase.
- ▶ **IX. Asset preferences:** If consumers prefer to have more assets like, good quality sofa, fridge and other furniture rather than to keep money in the bank, the demand for those goods will increase

VIII. Trade cycle: Demand for everything is greater in the boom, even though prices are rising. On other, demand for everything is low in the lean or slack season, even though prices are lower or declared sale reduction.

▶ **IX. Fashion:** Fashion among ladies to keep hair long or short brings about changes in demand for hair pin, hair clip hair oil etc.

Slope of the Demand Curve:

- ▶ **Demand Curve is Negatively Sloped:**
- ▶ The demand curve generally slopes downward from left to right.
- ▶ It has a negative slope because the two important variables price and quantity work in opposite direction.
- ▶ As the price of a commodity decreases, the quantity demanded increases over a specified period of time, and vice versa, other things remaining constant.
- ▶ The fundamental reasons for demand curve to slope downward are as follows:

▶ (i) Law of diminishing marginal utility:

- ▶ The law of demand is based on the law of diminishing marginal utility.
- ▶ According to the cardinal utility approach, when a consumer purchases more units of a commodity, its marginal utility declines.
- ▶ The consumer, therefore, will purchase more units of that commodity only if its price falls. Thus a decrease in price brings about an increase, in demand. The demand curve, therefore, is downward sloping.

▶ **(ii) Income effect:**

- ▶ Other things being equal, when the price of a commodity decreases, the real income or the purchasing power of the household increases.
- ▶ The consumer is now in a position to purchase more commodities with the same income. The demand for a commodity thus increases not only from the existing buyers but also from the new buyers who were earlier unable to purchase at higher price.
- ▶ When at a lower price, there is a greater demand for a commodity by the households the demand curve is bound to slope downward from left to right.

▶ **(iii) Substitution effect:**

- ▶ The demand curve slopes downward from left to right also because of the substitution effect.
- ▶ For instance, the price of meat falls and the prices of other substitutes say poultry and beef remain constant.
- ▶ Then the households would prefer to purchase meat because it is now relatively cheaper. The increase in demand with a fall in the price of meat will move the demand curve downward from left to right.

▶ (iv) Entry of new buyers:

▶ When the price of a commodity falls, its demand not only increases from the old buyers but the new buyers also enter the market.

▶ The combined result of the income and substitution effect is that demand extends, *ceteris paribus*, as the price falls. The demand curve slopes downward from left to right.

Contraction and Extension in Demand

- ▶ **Contraction in demand:** When demand falls due to rise in price only, then it is called contraction in demand.
- ▶ **Extension in demand:** When demand rises due to fall in price only, then it is called extension in demand.
- ▶ In such cases the consumer moves along the same demand curve upward and downward.

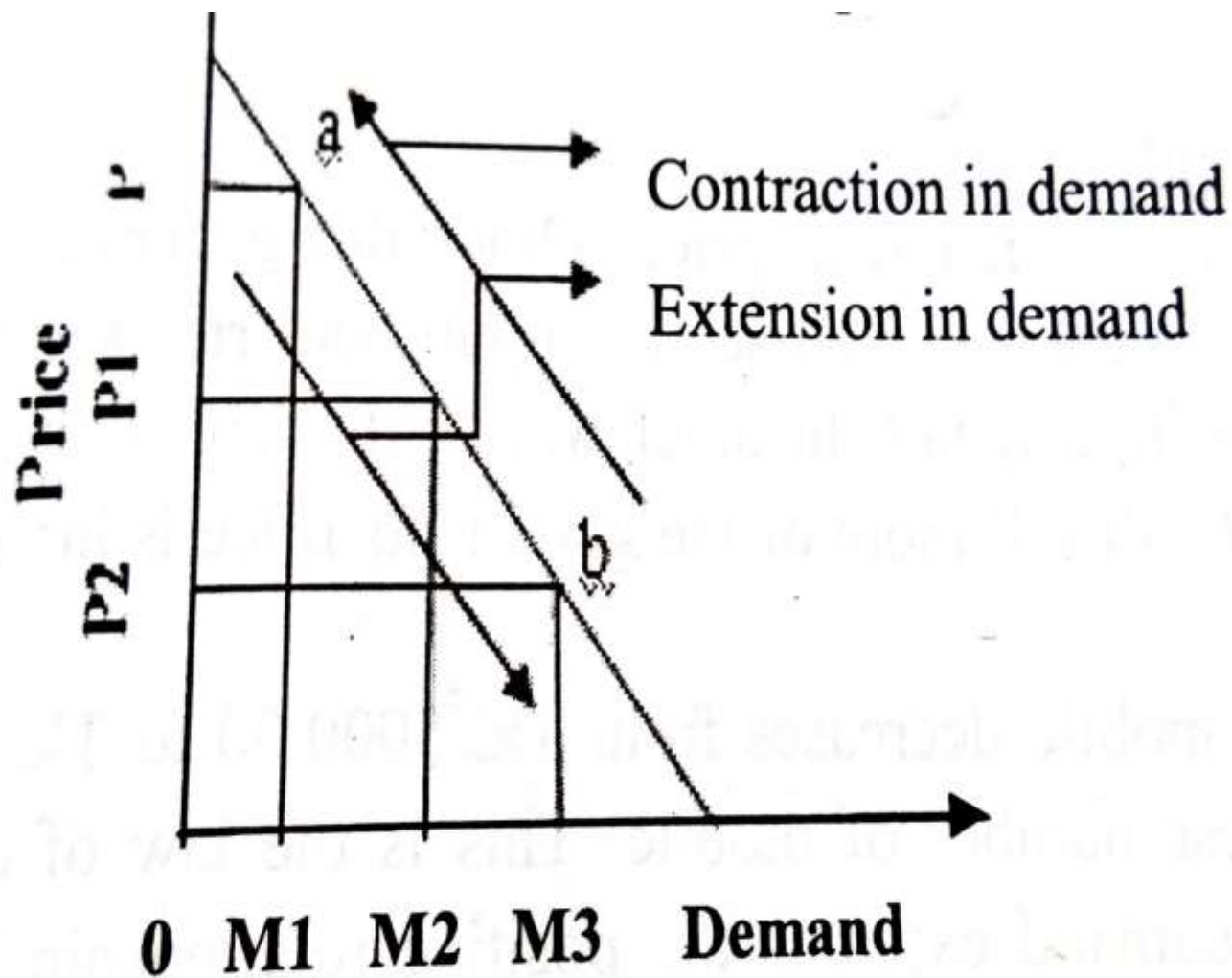


Figure. Contraction and extension in demand

- ▶ Demand moves from **b to a** is contraction in demand because the price increase from OP2 to OP and demand falls from OM3 to OM1.
- ▶ Demand moves from **a to b** is extension in demand because the price decrease from OP to OP2 and demand increase from OM1 to OM3.

Decrease and increase in Demand

- ▶ **Decrease in demand:** When demand falls due to changes in any other factor except price then it is called decrease in demand.
- ▶ **Increase in Demand:** When demand rises due to changes in any other factor except price then it is called increase in demand.

- ▶ In such cases the demand curve is shifted leftward or rightward. DD is the demand curve. Upward curve shows the increase in demand. Downward curve shows the decrease in demand.

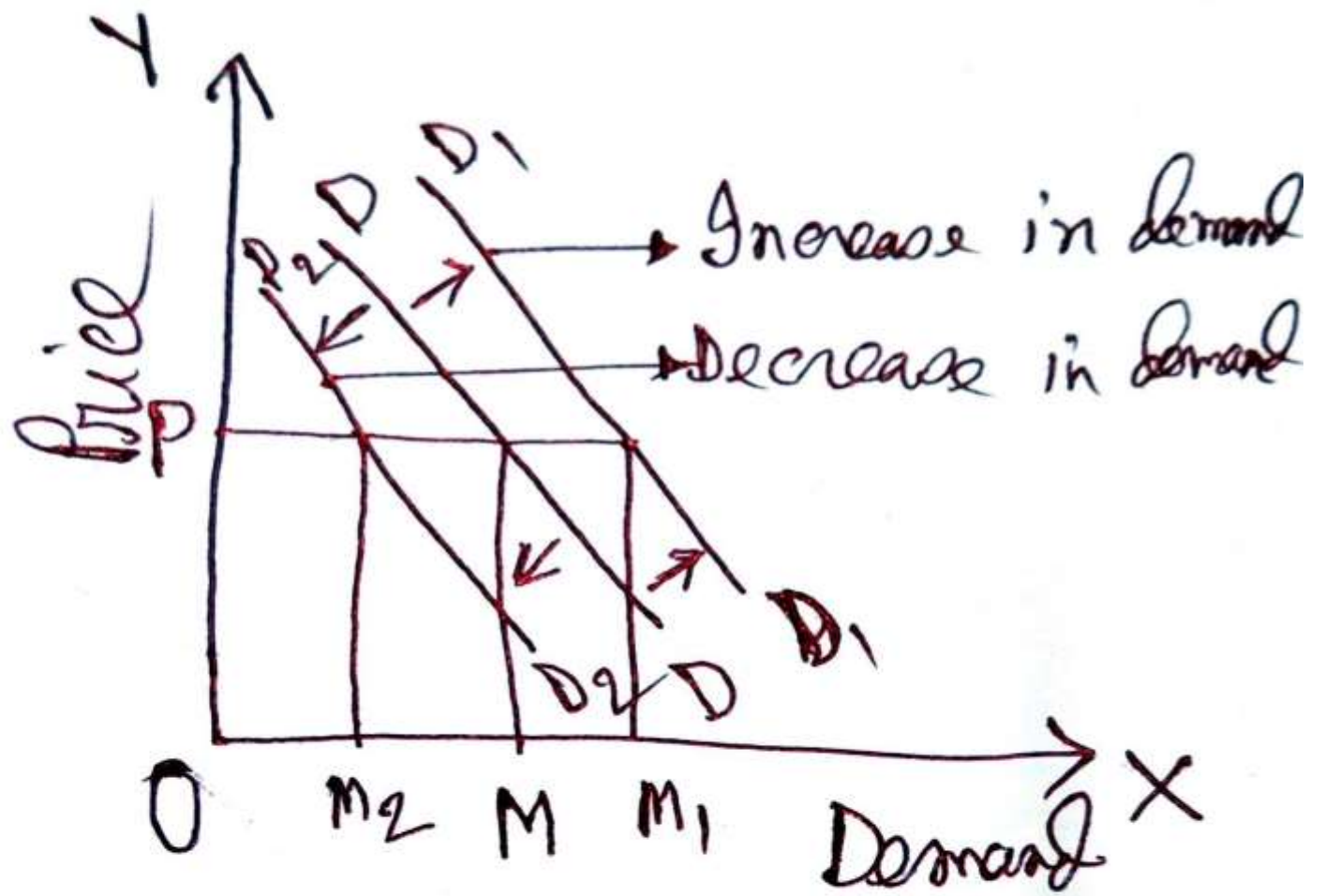


Fig : Decrease and increase in demand

- ▶ Here D_1D_1 is the increase in demand
- ▶ and D_2D_2 is the decrease in demand because
- ▶ if price is same that is equal to OP but the income is increase then quantity demand increase from OM to OM_1 but if the income is decrease then quantity demand decrease from OM to OM_2 .