Managerial Economics
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Lecture - 8
Theory of Demand

Welcome to the 2nd module of Managerial Economics, in previous 7 lectures, we are discussing about the introduction to managerial economics. And then different tools and techniques that how you, how generally the decision making is done, and what is or what is being used for the decision making. So, our 2nd module consist of Theory of Demand, which talks about demand analysis, essentially how demand is related with the other market forces, like supplier how it leads to equilibrium.

And also we will talk about the different law of demand, whether that is in term of demand, consumer demand or in term of the utility. So, basically this module talk about three topics, one is the demand analysis, second one is the elasticity of demand, and third one is consumer behavior.

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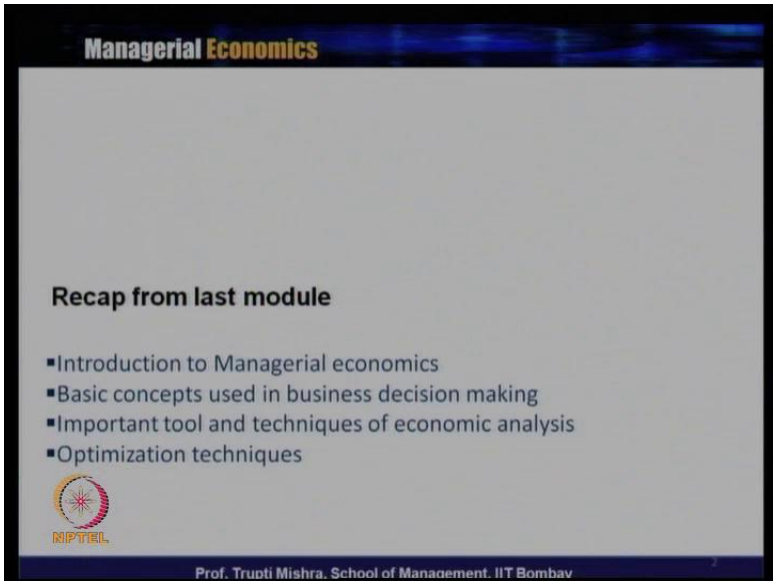

So, if you will do a quick recap what we did in the last module, we introduce the subject managerial economics, how it developed from the subject economics. Then we discussed about few concept that used in the business decision making, then we discussed about the tools and technique for economic analysis and finally, we discussed about the

optimization technique. Now, this present module the, if the focus is on the demand, supply, the equilibrium, how the elasticity of demand and elasticity of supply generally takes place and finally, what is the consumer response to the change in the demand and change in the supply, what we will be discussing through the consumer behavior.

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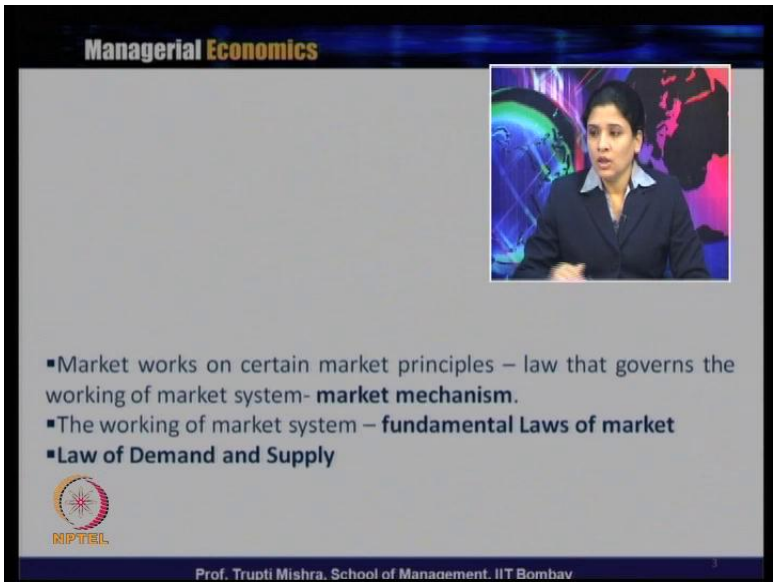

So, if you look at the the economy runs on it is market, and market works on certain market principle, there is set of principle, there is set of loss, on that basis generally the market work. So, market works on a certain market principle, and that governs the working of the market system, so in other word generally we call that as the market mechanism.

And working of any markets system, the basis always on the basis of the fundamental laws of the market; and the fundamental laws of the market is nothing but the law of demand and supply, because demand and supply are the two market forces, those essential for the working of the market system. So, when you talk about the fundamental laws of market, it is laws of demand and laws of supply.

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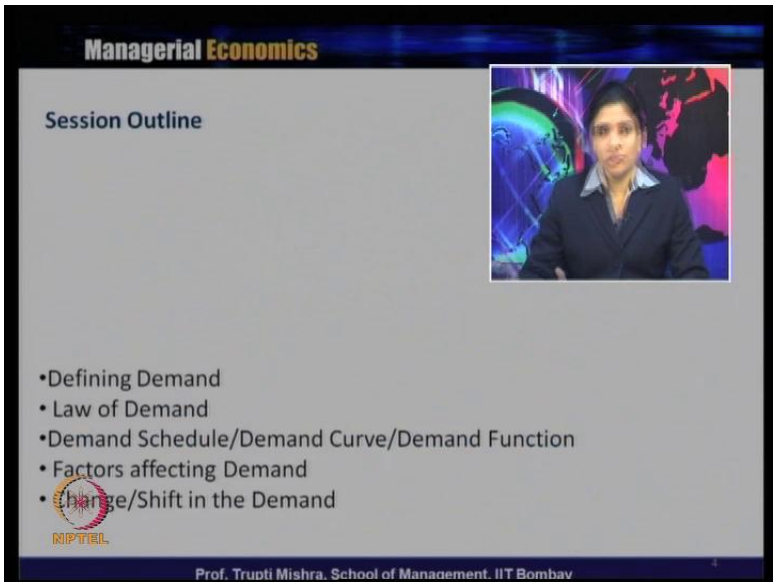

So, in today's session, we will focus more on the first part of the market forces, that is demand forces. We will define the demand, we will discuss what is the law of demand how it works, then we will discuss a demand schedule how the demand curve is basically drawn, what is the demand function, what are the factors that affect demand and in which scenario there is a change or there is a shift in the demand.

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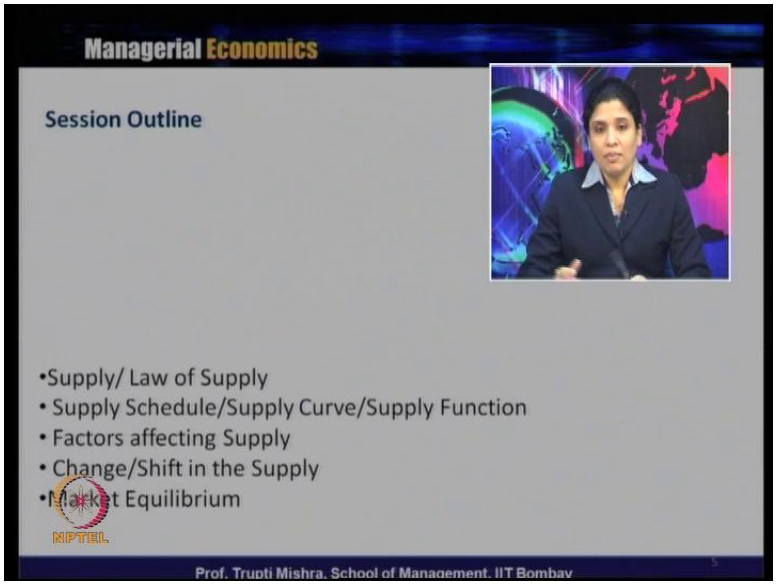

Then the second part of this session will be on second market forces, that is supply forces. So, we will define what is supply we will discuss the law of supply, then we will

discuss the exception of law of supply, in which scenario generally the law of supply never works out as per the rule or as per the principle. Then we will discuss about a supply schedule, we will talk about a supply curve, supply function, supply function keeping by two variables and the multivariable. Them we will talk about the factors affecting the supply, and in which scenario there is a change or the shift in the supply.

And finally, looking at the demand forces and supply forces, we will see how the equilibrium is generally maintained in the economy or in the market, what are the preconditions in which cases, when there is a change in the demand, when there is a change in the supply. How it leads to disturb the equilibrium, whether the equilibrium gets really disturb or there is no change equilibrium, what are the scenario that we are going to study in the market equilibrium.

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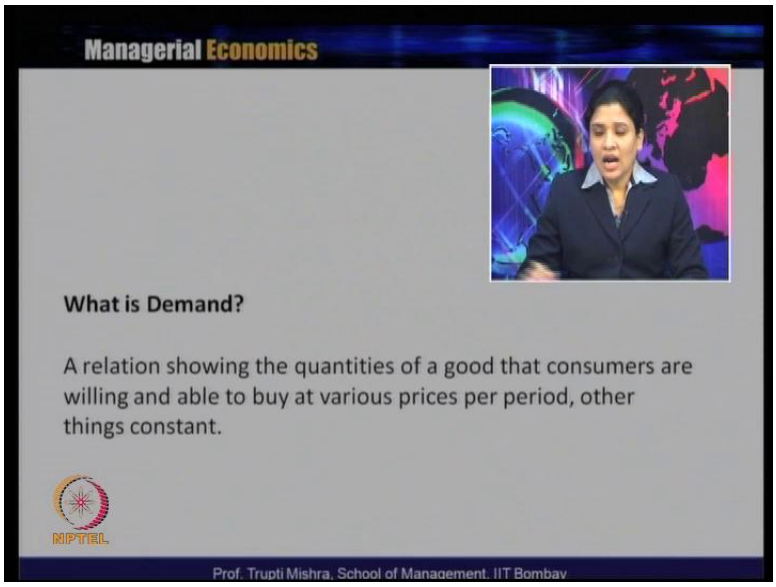

So, we will start from the first market force that is demand, and when we define demand this is basically a relation showing the quantity of the good that consumer are willing and ability to buy at various prices per period, other things remaining constant. So, here if you look at the other things, whether it is the income, whether it is the market situation, whether it is the forecasting about the price, all other variables that has a has some say when it is comes to demand for the product, all other variables are remain constant. And the relationship between the quantity of the goods or the quantity of the products, and the may be at a typical price or a typical time period that is generally demand.

So, demand is nothing but, relation showing the quantity of a good that consumer is willing and able to buy at various prices per period, other things being constant. So, if you look at the definition there are two point, one is willing to buy and the other one is the able to buy the product.

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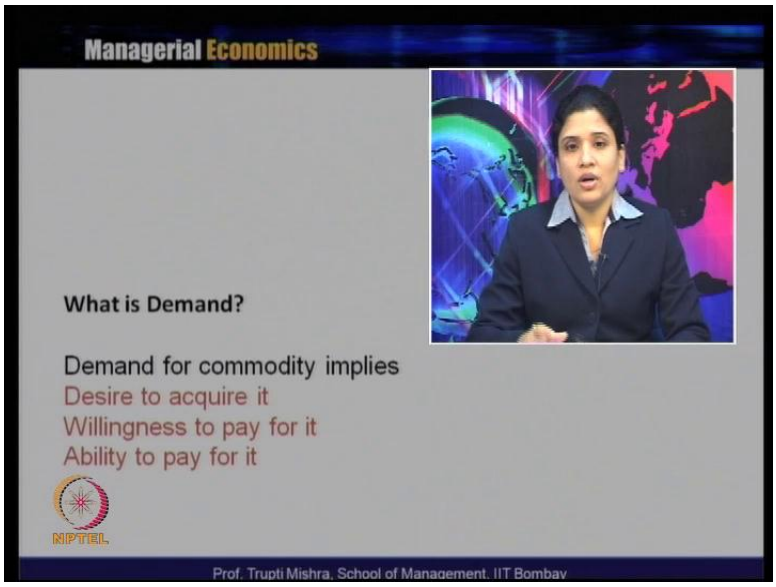

So, if take forward this, then specifically a demand for commodity depends on three preconditions, the demand takes place when the consumer has the desire to acquire it, when the consumer has the willingness to pay for it, and (( )) has the ability to pay for it. So, what is this desire acquire it, may be there are many products what the consumer is willing to pay for it or maybe he has the ability to pay for it, but till that time the consumer has no desire to acquire that product, we cannot convert that into demand.

Because, the consumer has to wish for the product, the consumer has to desire for that product, then only it can be converted into demand. The second criteria or the second precondition is willingness to pay for it, so if you look at even if the consumer has a desire to pay for it, desire to acquire the product, he has the ability to pay for it. If there is no willingness to pay for it, the it cannot be again part of demand, because the consumer is not ready to pay for the product, in that case we cannot convert that into demand.

Similarly, ability to pay for it this is strictly on the basis of income, whether there is a purchasing power of the consumer is present or not; if there is a consumer purchasing power is present in the consumer, then the consumer has also the ability to pay for it. So,

in this case if you look at the preconditions are three desires to acquire it, willingness to pay for it, and ability to pay for it. So, whether you, if one of this three condition or one of this precondition are not being made, then in the demand is not possible.

Even if the consumer has the willingness to pay for it, ability to pay for it, if the consumer has no desire to acquire it, it cannot be converted into or the part of demand, if the consumer has no willingness to pay for it, then again it cannot be part of demand. And if the consumer has no capability in term of money, in term of payment or may be not able to pay for the product, then again it cannot be considered as a demand. So, demand for commodity implies that, the consumer has to (( )) has the desire to acquire it, willingness to pay for it, and the ability to pay for it.

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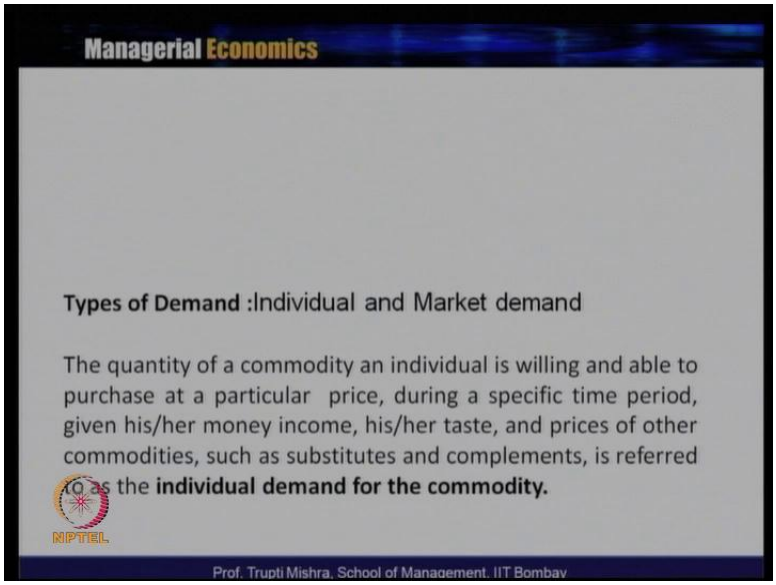

Then there are different types of demand, so will see few different types of demand, the first one is individual and market demand, the quantity of a commodity and individual is willing. And able to purchase at a particular price, during specific time period given his or her money income, taste and prices of the other commodity, such as substitute is referred to as the individual demand for the commodity.

So, individual to in a very simplify manner individual demand is nothing but, what the individual is willing to and able to purchase at a particular price, any specific time period keeping his taste, keeping his price, and also looking at what are the substitute and compliments products available in the market. So, any consumer, any specific time

period at different price level or the same price level, whatever the willingness to and ability to pay for it that is typically the individual demand. So, here we have (( )) introduce if there are two term over here, what needs may be little bit explanation, one is substitute and second is compliments.

So, one category generally the substitute could, another category is the compliment goods. You take the example of tea and coffee, they are the substitute goods because, if you look at people if they are not very specific about tea or not very specific about coffee, they consume this two products interchangeably; either they have coffee or they have the tea. So, tea and coffee when one product is substitute of another product, this is generally know as the substitute goods.

Similarly, if you look at petrol or diesel, again it is the case of your substitute goods because, one good is substitute for the other one; similarly compliment is one, where one product cannot be consumed without another product. So, if you take the case of again tea sugar or coffee sugar or tea milk or coffee milk, again they are the complimentary product, because you cannot consume one product without another. You take the example of suppose car petrol or car diesel, you cannot run the car without petrol or without diesel, so in this case we can say that car petrol or car and diesel, they are the complimentary to each other.

Similarly, if you are coming to the food item, like if you take the example of bread and jam or bread and butter, again they are the complimentary goods, because you can the consumer cannot consume one goods without consuming another. So, if the product is independent, it is not depend, the consumption of the product is not dependent any other product, basically this is the normal goods. Otherwise, we get another two category of goods, one is substitute good the typical example is again tea and coffee, and second one is the complimentary goods, in this case one goods cannot be consumed without consuming the other goods; the typical example, we always take whether it is car petrol, car diesel, butter bread or jam and bread.

Similarly, may be there are numerous example, where we can say that one goods cannot be consumed without the another good, so considering this typically in case of individual demand, irrespective of the substitute good, complimentary goods, the prices of the goods or the taste and preference of the consumer. At any specific time or any specific

time period, whatever the consumer demand of typical commodity that becomes the individual demand.

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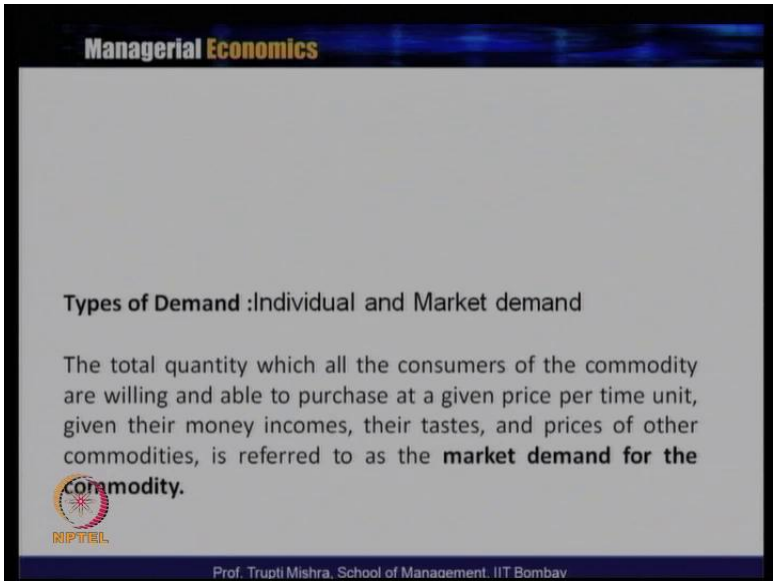

Suppose, if you look at what is your grocery demand per month, that is that becomes the quantity demanded of a specific consumer on a specific month, corresponding the prices of the different items in the grocery basket. The second one is the market demand, market demand is the total quantity which all the consumer of the commodity are willing and able to purchase at a given price per time unit, given their money income, their taste, prices of the other commodity is referred to the market demand for the commodity.

So, in this case if you look at, the other things remaining constant, the price is constant, the income is constant, the taste at the of the consumer at that typical time period is constant; prices of the other commodity, whether it is substitute, whether it is compliments, they are constant. And given all this the total quantity, what all the consumer they are consuming in a specific time period that becomes the market demand.

So, if you take a simple example, may be you can take a case of how much a cup of coffee you take during a day, some total of all the all the quantity per day, per month basis that is your monthly individual demand for cup of coffee. But, when it comes to the coffee vendor for him, it is always not the individual demand, what consumer one is consuming or what consumer two is consuming, for it is that monthly how much you need of coffee that vendor is selling that is the market demand.

So, if the market price of coffee is 6 rupees, and all the individual at the 6 rupees price whatever they are consuming in a month that becomes the market demand. So, here product is coffee price is fixed, the consumer whatever they consume throughout the month, so in a specific time period on a monthly basis, price of the coffee give at 6, all the consumer whatever the amount of coffee, they are consuming that consist of the market demand. So, in one way we can say the sum total of all individual demand in a specific time period, in a specific price that becomes the market demand for the product.

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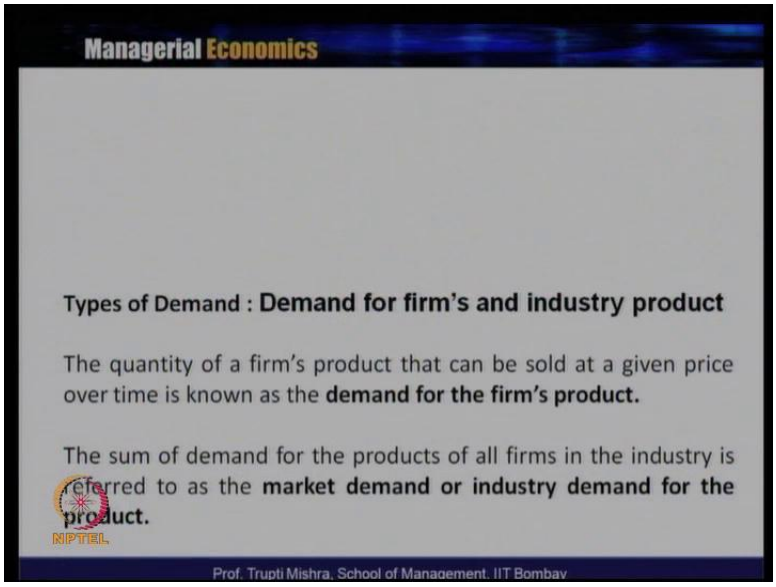

Let us go to the second types of demand that is firms demand and industry demand, the quantity of firms product that can be sold at a given price, overtime is known as the demand for the firms product. And the sum of demand for the product of all the firm in the industry is refers to the market demand or the industry demand of the product. So, it is if you look at, again it is the case of same differences between the individual demand and the market demand.

Now, what is the difference between the firm and the industry, industry is sum total of the number of firms, the firm also produce a product same product and the industry as a whole they also produce the same product. So, the quantity of the product what is being demanded for from the firm of from the typical firm that is become the firms product; and what is the sum total of demand for all the firms across the industry that becomes the industry demand.

So, again we can explain it using the same concept that, the sum total of all the firms product at a given price, at a given time period is consist of the market demand or industry demand for the product. Because, if you look at firm is nothing but, the sub may be the part of the industry or industry is nothing but, the sum total of all firms in the industry. So, here also again the difference between the firm and industry product is, firm is the individual productive unit, and industry is the sum total of all the firms they are producing the same product.

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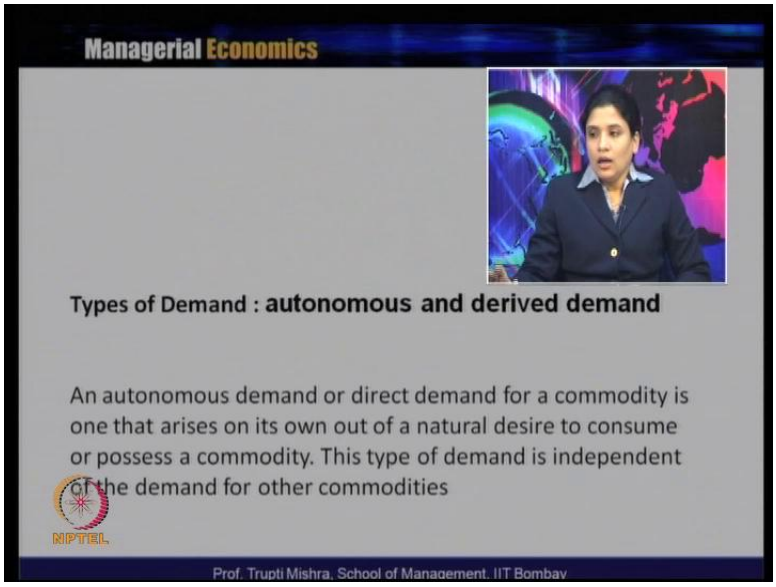

The third type of demand is autonomous demand or the derived demand, so autonomous demand or the direct demand for a commodity is one, that comes on it is own out of the natural desire to consumer purchase a commodity. This type of demand the independent of the demand of the other commodity, so autonomous demand is there is no forces that guides the demand to happen, it generally comes from the natural desire to consume or natural natural natural desire to own a commodity or own a product.

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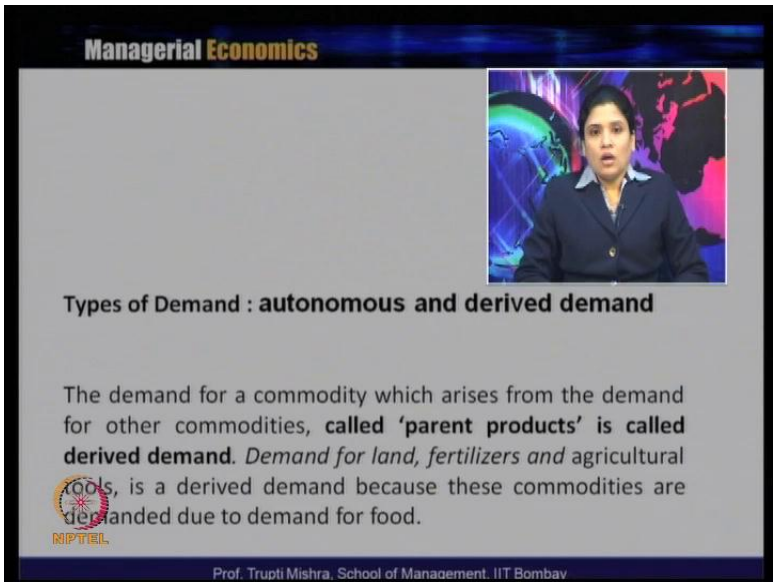

However, if you look at the derived demand, the demand for commodity which arises from the demand of other commodity that is the called as the parent product, which called generally the derived demand. So, in this case the demand for this product, generally comes from the demand for the other product. So, if you take specifically what is the need of agriculture or what is the need for land or what are the need for fertilizer? You need land, you need fertilizer, you need agricultural tool for harvesting, and this is always a derived demand, because they they those commodities has demanded due to demand for food.

Why the agriculture being done, because there is a demand for grains, and demand for grain comes from the fact that there is a demand for the food; and that leads to demand for grain, that leads to demand for land, that leads to demand for fertilizer, and that leads to demand for agricultural tools. So, that the basic difference between the autonomous demand and the derived demand is, autonomous demand is independent it can just happen, it can just take place when the consumer has the desire to desire to acquire it, willingness to pay for it or ability to pay for it, whereas derived demand is when it comes from the demand for the other product.

So, if you if you can connect this two this this may be also like a product, which is not direct rather this is a indirect demand or may be derived demand. Because, the demand takes place for the another product which leads to take which needs to, which leads to the

demand for the this typical product. So, autonomous is direct, and derived demand is always comes from the, demand for the other product.

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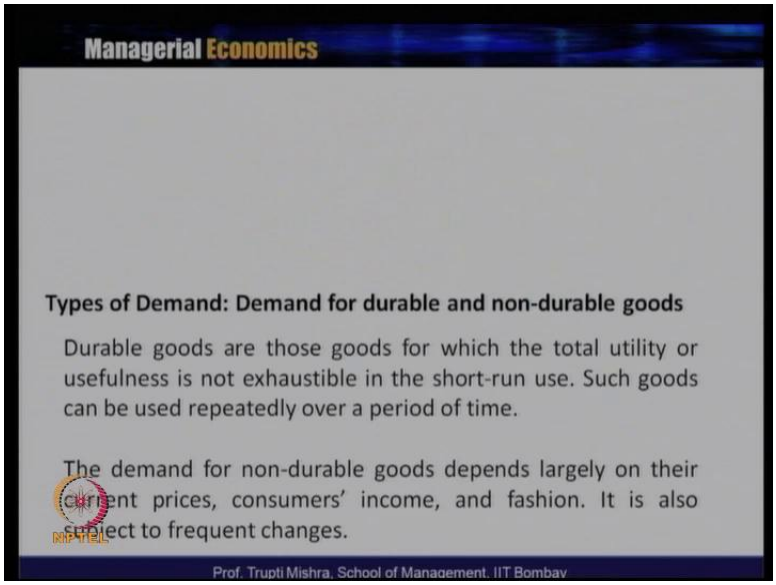

The next category of types of demand comes is demand for durable, and the non-durable goods. Durable goods are those goods for which the total utility or usefulness is not exhaustible in the short run, such goods can be used repeatedly over a period of time. So, it is a kind of non perishable goods, which can be used again and again, the consumption can be repeat and the utility or the usefulness of the product is not with for one time consumption.

So, durable goods are those, generally the usefulness of the product as a specific life time and it is not in the short run. And the non-durable good is basically the perishable good, it depends largely on the consumer current prices, consumer income and fashion, it is also subject to frequent change. Like if you look at the demand for durable goods, may be it is a vehicle, may be it is a house, which if you look at and they are usefulness or their utility never goes overnight or it it is not for the short run, rather the use for the typical durable goods for long life.

If you take the example of a refrigerator, if you take the example of a computer, if you take a example of a television, specifically their life time is not short their life time is long, at least it goes for 5 year, 10 years, 15 years and some time more than that. So, the demand for these goods are always different from the non-durable good, non-durable

good is one, because where the utility or the usefulness of the goods goes along with the consumption. So, once the good gets consumed, the utility usefulness goes with that, so the demand pertain is there is a variation in the demand pertain, between the durable good and the nondurable goods.

Like when there is a change, when there is a need to change the durable goods, when you feel that, if your already use it for 5 years, we have already use it for 10 years, you are getting a good. May be if you are getting a good exchange offer, if you are getting a good may be discount, you always feel I have already used this product for more than 10 years, more than 15 years. And if I am getting a good resale value, and some discount on the new value, then I am going for it or when the technology changes, when the fashion changes along with that the demand for the durable goods change.

If you look at the television specifically, may be earlier it was just a normal screen, then we came to the age of large screen, and then now if it is a case of LED and LCD. So, in this case the demand changes, when the when we get a new product, when the in term of may be the change in the technology, change in the appearance or the change on the as a whole the product, when there is a new product is being launched.

But, in case of non-durable good (( )) you take the example of which is short may be vegetable is the extreme form of non-durable good, like what we use as the cloths, what we use daily may be it is a pen, maybe it is a note book, it is may be dairy. What you, what we change frequently, because the utility that goes with a very short span, whatever the usefulness of the product that goes like, if you take the example of a ball pen till that time in case there it is being used, so it is may be 10 days, it may be 20 days, it may be 1 month, it may be 2 months. So, the usefulness of the product is short, and we need to change it when there is requirement, either when there is a change in the price, when there is a change in the fashion and when there is a change in the income.

How it is related to change in the price, may be if the current price gets changes, if we are getting something good at lower price, you always (( )), and because this is also a low value product as compared to the durable goods. Similarly, if you look at the fashion, like we change our cloth patterns on the basis of fashion, we feel that this is outdated and I am not going to consume it, any more.

In that case again the demand comes over there, because there is a change in the fashion and nobody use the outdated product rather, everybody opt to use for the whatever comes new in the market. So, that is the reason, the use of durable and non-durable goods generally different, and that leads to the variation in the demand pattern of demand pattern of durable and the non-durable goods.

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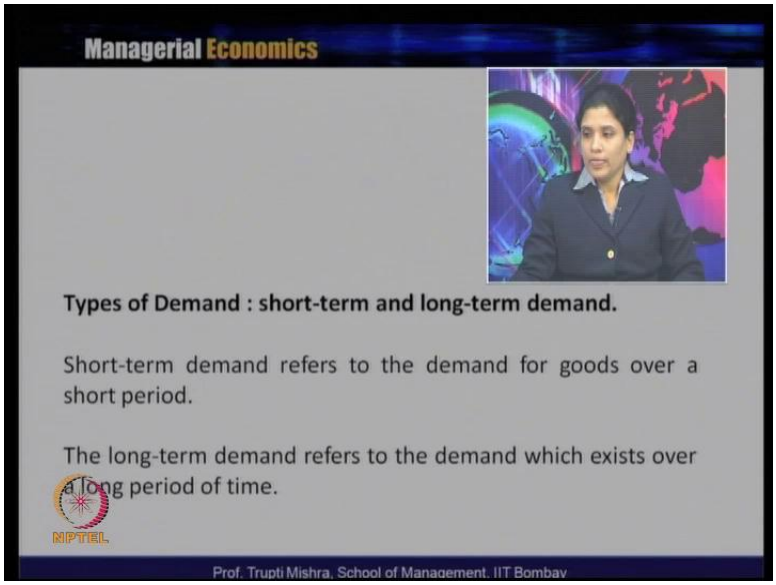

The last category what we discussed on the types of demand is, short term and the long term demand. So, short term demand refers to the demand for goods over a short period, whereas long term demand refers the demand which exist over a long period of time. So, in this case, again we can link this to our demand for durable and non-durable goods.

Generally, durable goods are long term demand, because demand which exist over a long period of time, and the demand for the goods over a short period or may be again you can link this, because if it is usefulness is less, may be you use that and this is a short term demand, because your next demand is something else. But, long term demand is again what you use on the daily basis, that is then that again you can link that way long run demand.

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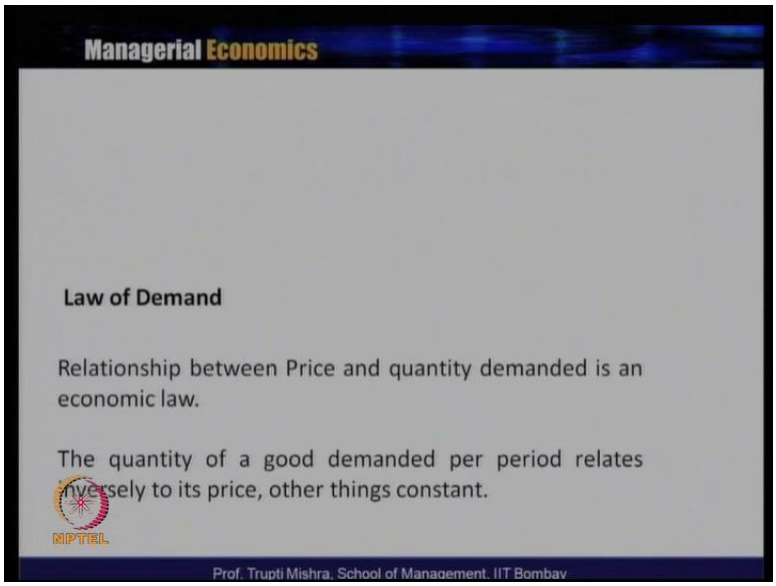

Now, we will discuss, what is law of demand? As we discuss in the very beginning that, the market forces governs by the demand forces; on the basis of certain principle, on the basis of certain law also, in this case we will see what the law of demand is. So, law of demand the basis is the relationship between the price and quantity demanded, and this is generally known as economic law that, how the price and quantity they are related to each other. The quantity of a goods demanded per period, relates inversely to the price other thing constant, so law of demand says that, there is a inverse relationship between the price and quantity demanded, other things remaining constant.

And what are the other things here, the other things here is the the factors that those affects the quantity demanded for the product. So, keeping all other factors remaining constant, which affects the quantity demanded, the quantity of good inversely related to the price in a typical time period. So, law of demand says that there is a inverse relationship between the price and quantity demanded, other things remaining constant.

So, whenever there is a increase in the price, quantity demanded suppose to decrease, and whenever there is a decrease in the price, the quantity demanded suppose to increase assuming all the goods are normal goods. So, law of demand says that, there is a inverse relationship between the price and quantity demanded, assuming all the goods are normal good, and all other things are remaining constant. But in few cases there is if you find the

law of demand does not hold good, there are few exception where law of demand cannot be practice, or the law of demand does not hold good.

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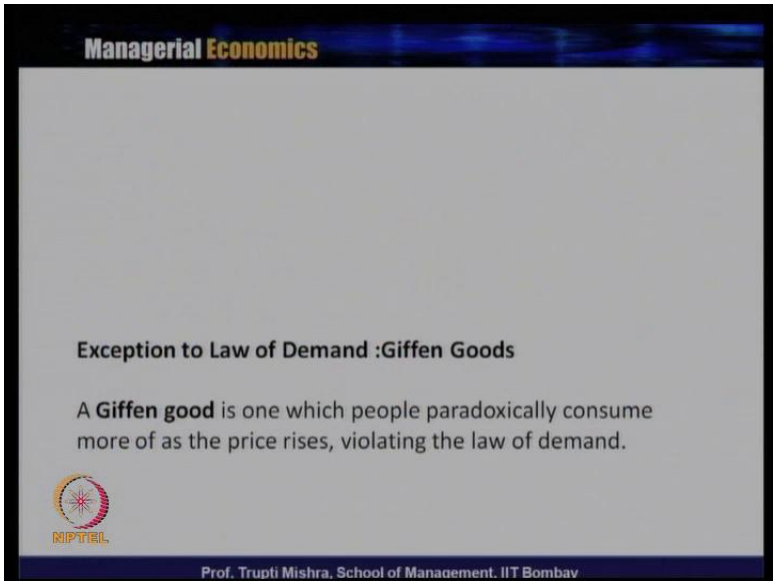

The one example is Giffen goods, so till that time we have introduced three type of goods, if you look at one is normal goods, second one is the substitute good, and third one is complimentary goods. So, this a different kind of good that is Giffen goods, sometimes this is also known as the inferior good, or you can say it a specific case of inferior good, this is Giffen goods comes into picture.

Now, what is a Giffen goods, a Giffen good is one in which one which people paradoxically consume more as the price rise violating the law of demand; so in case of Giffen good, law of demand does not hold good. Because, once the price increases for this product, generally people they consume more of it, but what is the what law of demand tells us, law of demand tells us that whenever there is a increase in the price of the product, generally the quantity demanded for that product decreases.

So, in this case the pattern is not such, because whenever there is a increase in the price, there is a increase in the quantity demanded also. And that that is why we say that, this is not a normal good, this is a Giffen good; and in case of Giffen good law of demand does not hold good.

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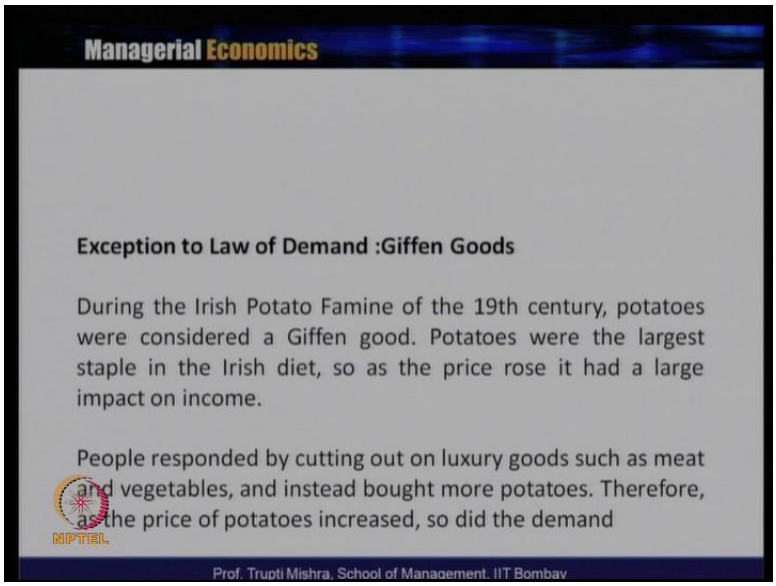

So, there is a, so in the background there is a story to this Giffen goods, how Giffen goods comes into picture, and how how the law of demand does not hold good in case of Giffen goods. So, during Irish potato famine in 19th century, potato where the consider as the Giffen good, and potato where the largest staple in the Irish diet, so as the price rose it had a large impact on income. People expanded by cutting out on luxury goods such as meat and vegetables, instead of bought more potato therefore, as the price of potato increase, so did the demand.

So, if you look at what is the consumption basket of Irish, during that time in 19th century the consumption basket or their food basket consist of potato, meat and vegetables, but being potato is the staple diet, the composition of potato more in the food basket; price increases for potato, there is no change in the income of the consumer. So, in this case what the consumer they will do, since potato is the staple diet, they need to have the same quantity, even if there is a increase in the price.

So, in this case consumer what they did, they started cutting down their expenditure on meat and vegetable, which is consider to be the superior in the food basket, and they bought more potato, because potato is staple diet, even if price increases still they have to consume the same amount. So, the expenditure from the other superior items, from the consumption basket being cut, that is meat and vegetable, and the same same money is diverted into potato.

And in this case the price of potato increase, and also the demand because, even if price is increasing still people they are buying more of it, which is again a which is again the exception to law of demand, where the whenever there is a price in the price increases that leads to decrease in the quantity demanded. So, this is one case, in case of Giffen goods the price increases and along with that the quantity demanded also increases, and that leads to exception of the law of demand.

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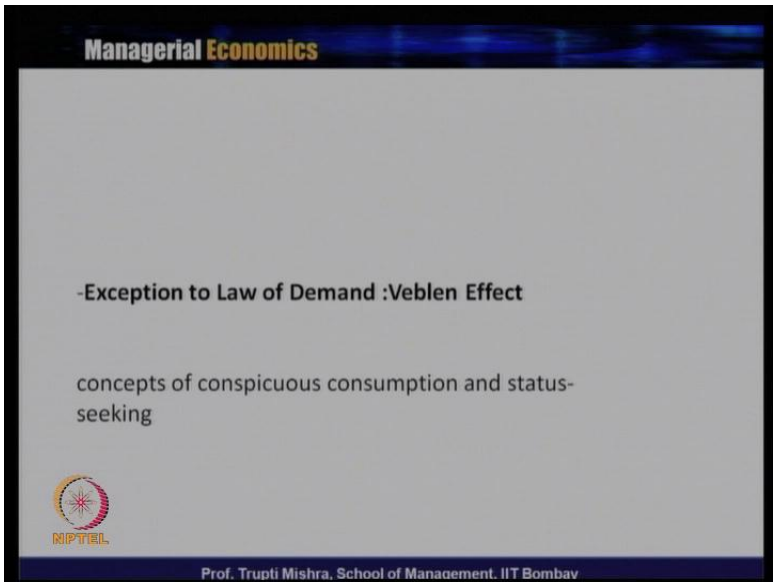

The second one is the Veblen effect, and this generally introduces the concept of conspicuous consumption and the status seeking. If you look at in our daily life, it also happen that if something is expensive we always feel that, this is good because, there is a perception that the, if there is a increase in the increase in the price of it, generally it has to be good. Whether it is a designer product, whether its jewelry, whether it is a may be designer accessories, we always feel that if they are charging more it has to be a good quality.

So, consumer they have the perception that, if price has been charged premium, then the quality is good and the product is good, and this is generally known as Veblen effect. So, in this case even if there is a increase in the price, people they always feel that, if there is a increase in the price, I think there is a increase in the quality and they generally go for it. And also this is consider as the status checking, if the if the consumer is consume

some highly priced product, it always leads to the status checking, and in this case again the law of demand is not applicable.

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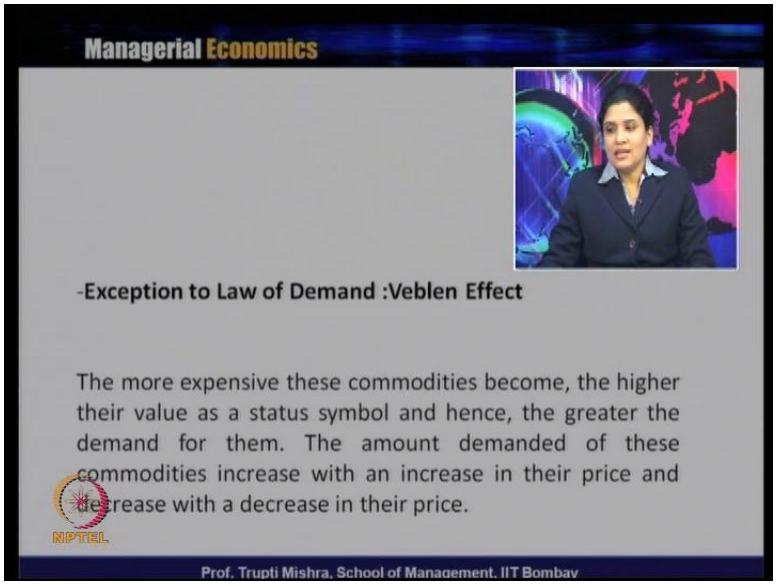

So, what is the perception over here, the more expensive this commodities become the higher their value as a status symbol, and hence the greater the demand for them. So, if it is more expensive they feel that it is again, as a value of a status symbol, and they feel that is a good quality attached to it, and the there is a greater demand for it. So, the amount demand of this commodity increases with an increase in their price, and decrease in their decrease with their price.

So, in this so typically for this type of product, when there is a increase in the price that leads to increase in the quantity demanded, and when there is a decrease in the price people they stop consuming this or they decrease their consumption. Assuming that since this is a lower price product, there is no quality attached to it or there is no value or the status attached to it. So, this is about if you look at in this case, typically this is the perception of the consumer that high value goods is better quality, and it leads it links to also status.

Whereas, the low value good even if it is may be good, still the perception is that low value products since, it is not on a higher segment, it is always a, it is always a inferior product as compared to other product, and generally they decreases their consumption

for it. So, in case of Veblen goods or incase of Veblen effect, again the law of demand does not hold good, and the price and quantity demanded is not related inversely.

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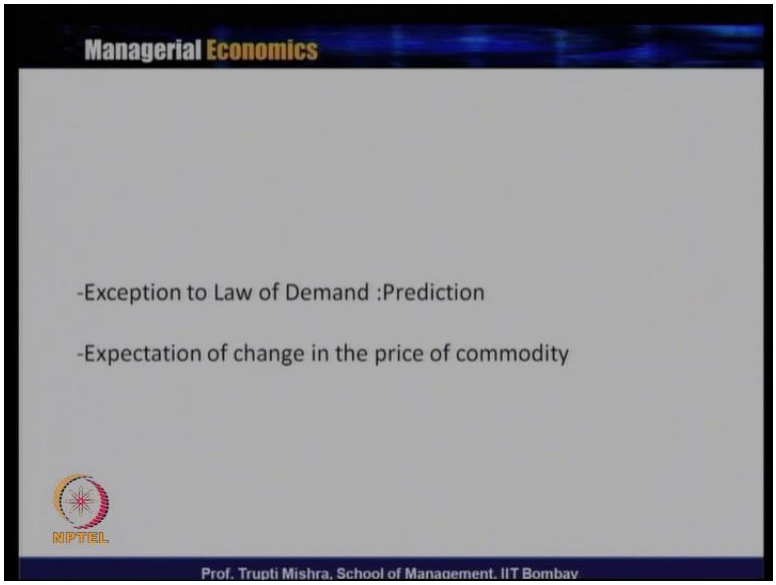

There are one more exception that is law of demand, that is in case of prediction or may be expectation of change in the price of the commodity. So, if the price is going to increase, if there is a expectation, if there is a prediction that the price is going to increase, people they buy more the demand increases. And if the price is going to decrease in the future, that leads to decrease the consumption at this movement.

So, sometimes their prediction, when there is a prediction the law of demand does not work the, so if you look at before budget, if you have seen people they predict or people they do a forecast that after budget, the price of this going to increase, the price of this going to decrease. That leads to some disturbance in the decision making or some disturbance in the the consumer patterns, for consumer demand pattern for different goods. If the price is going to increase, the consumer feel that let me buy more, so even if the price is on a higher side, still the consumer buys more.

And if the price is going to decrease, the consumer even if the price remain constant still the consumer is consuming less, assuming the fact that when the price is going on a lower side he is going to consume more. Similar, if you look at whether the prediction is related to durable goods or whether the prediction is non-durable goods, the prediction works well, the prediction works more in case of durable goods.

Because, you cannot (( )) in case of durable goods, you can postpone your consumption till that time you are getting a favorable price, but in case of non-durable goods the prediction never work, because this is only kind of necessity what we use in our daily life, so we cannot postpone the consumption. And in that case generally the prediction, the role of prediction is bit less, and in case of durable goods this generally works and law of demand does not hold good.

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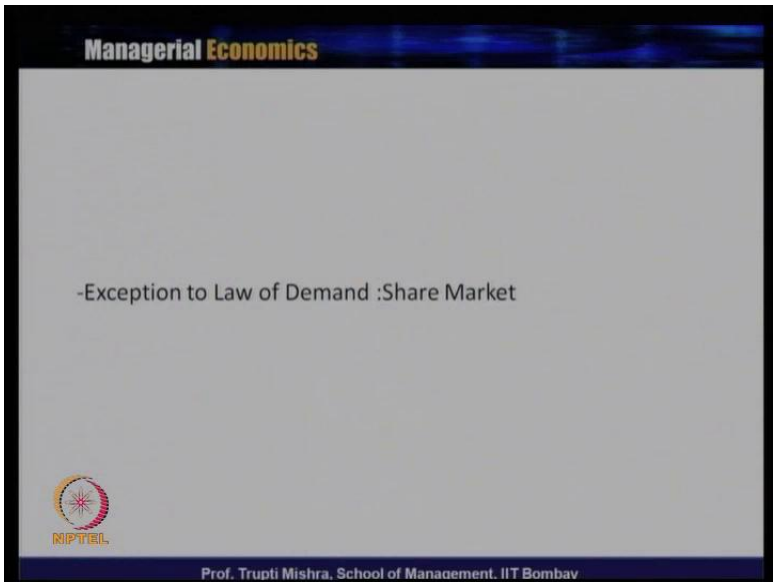

Similarly, in case of share market or stock market where the basis is speculation, if the price of the share is increasing, price of the stock is increasing, there is a perception of the consumer that may be again it is going to increase, and they are going to get more value if they are buying more. So, since the basis of share market or since the basis of stock market is speculation, the law of demand does not hold good there, and this is one more exception to law of demand.

So, if you look at by principle of by economic principle there should be a inverse relationship between price and quantity demanded, and that is generally known as law of demand. But, in case of few instances or in case of few type of product, generally the law of demand does not hold good like in case of a Giffen good, Veblen good or when the market is governed by prediction or some kind of market like stock market, share market, where the basis is speculation, the law of demand does not hold good.

There may be few more examples, like in which case like when it comes to suppose necessity, what is if the consumption is necessity or if it is like emergency, if it is a life saving drugs again the law of demand does not hold good. Even if price is on a higher side, since it is a part of necessity, this is a life saving drug, the consumer they are not changing the demand pattern, like if you take a medicine everyday as a precaution or as a part of treatment, generally the consumer takes that even if there is a increase in the price. So, in case of few again the law of demand does not hold good.

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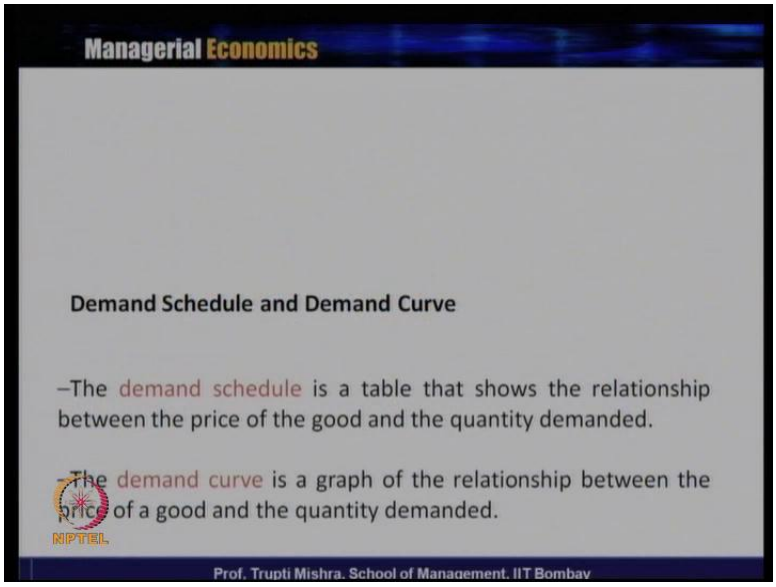

Then we will talk about the demand schedule and the demand curve, demand schedule is a table that shows the relationship between the price of the good, and the quantity demanded; and demand curve is a graph of the relationship between the price of the goods and the quantity demanded. So, if you look the relationship between the price and the quantity demanded, it is again on the basis of inverse, there is a inverse relationship between the price and quantity demanded.

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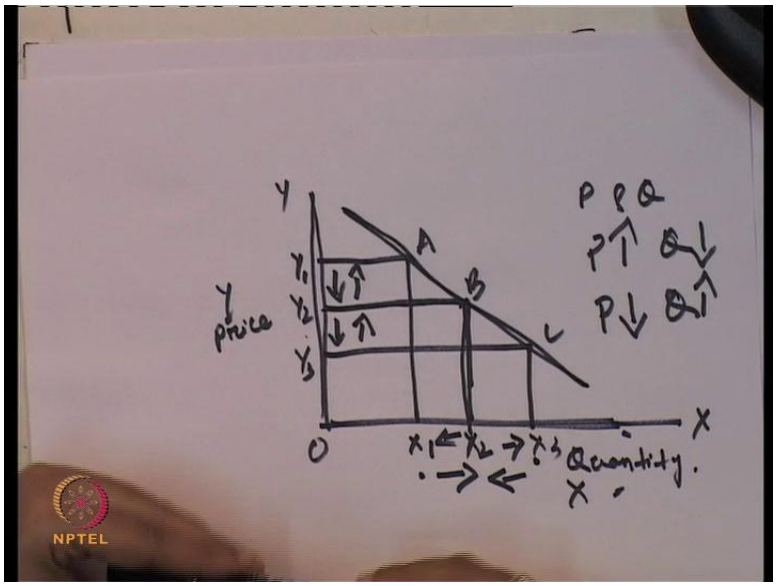

So, when you graphically plot this price of price and quantity in a graph, looking at their principle or how they are related, we generally take quantity on the X axis, and price on the Y axis. And we know that there is a inverse relationship between the price and quantity demanded. So, on that basis demand curve always slopes down ward, because whenever there is a increase in the price, that leads to decrease in the quantity demanded; whenever there is a decrease in the price, that leads to increase in the quantity demanded.

So, suppose we take point A, point B and point C, and this point A is combination Y 1, X 1, point B is combination Y 2, X 2, and point c is combination Y 3, X 3. X is our quantity and Y is our price, when the price is Y 1 the quantity is X 1, when price is Y 2 the the quantity is X 2, why there is a increase in the quantity from X 1 to X 2, because there is a decrease in the price from Y 1 to Y 2. Similarly, when the price is Y 3, the quantity is X 3, why there is a increase in the quantity from X 2 to X 3, because there is a decrease in the price from Y 2 to Y 3.

So, price and quantity since both are in inversely related, whenever there is a decrease in the price that leads to increase in the quantity demanded, and in similar way again we can explain that, when there is a increase in the price. Suppose, initially the price is Y 3 and quantity demanded is X 3, now price of Y 3 price is increases from Y 3 to Y 2, if you look at the quantity will decrease from X 3 to X 2, and again if the price is increasing from Y 2 to Y 1, the quantity will again decrease from X 2 to X 1.

So, price and quantity they are both inversely related, whenever there is increase in the price that leads to increase in the quantity decrease in the quantity demanded and whenever there is a decrease in the price that leads to increase in the quantity demanded. And demand curve is always a downward sloping demand curve, because both price and quantity they are inversely related to each other.

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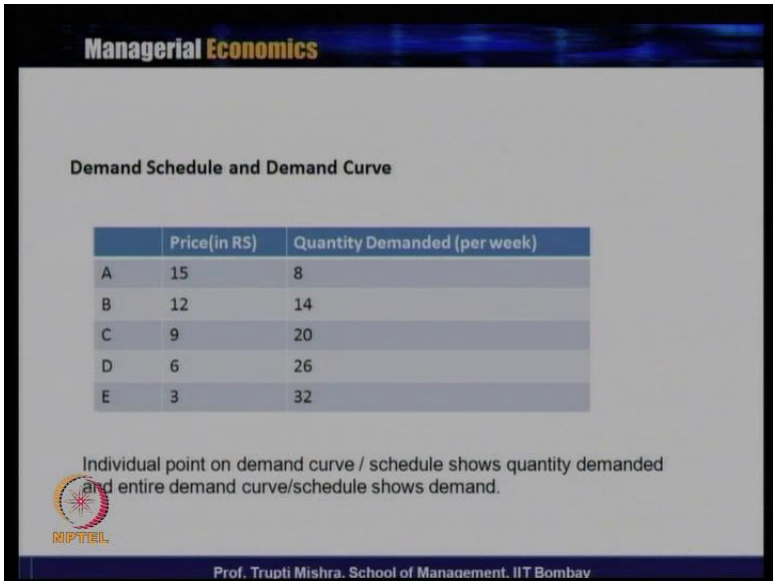

Then next we will see a demand schedule this basically (( )) downs the relationship between the price and quantity demanded, so if you look at there are five points A, B, C, D, E and each each point gives a combination of both the price and quantity. So, at the point A, like if you look at the graph, again we can put this into graph suppose when the price is 15, quantity demanded is 8; and again when the price is 12, quantity demanded is 14, price is 9, quantity demanded is 20.

So, if you plot this again in a graph taking the number rather than Y Y 1, Y 2, Y 3, if you are putting 15, 12 and 9, and in this case X 1, X 2, X 3, again if we can put 8, 14 and 20, again it shows the same relationship that. Whenever there is a decrease in the price that leads to increase in the quantity demanded, and whenever there is a increase in the price that leads to decrease in the quantity demanded.

So, the same relationship is again shown in case of a demand schedule if you look at, and if you look at the trend over here the price is decreasing like 15, 12, 9, 6, 3 and correspondently the quantity demanded is increasing, because there is a decrease in the

price. Again if you read it from the below you will find that, if your moving from point E to point A, you will find that when the price is increasing that again again leading to the decrease in the quantity demanded. Any individual point on demand curve or demand schedule, so as the quantity demanded or the entire demand or the entire demand curve or schedule that shows the demand.

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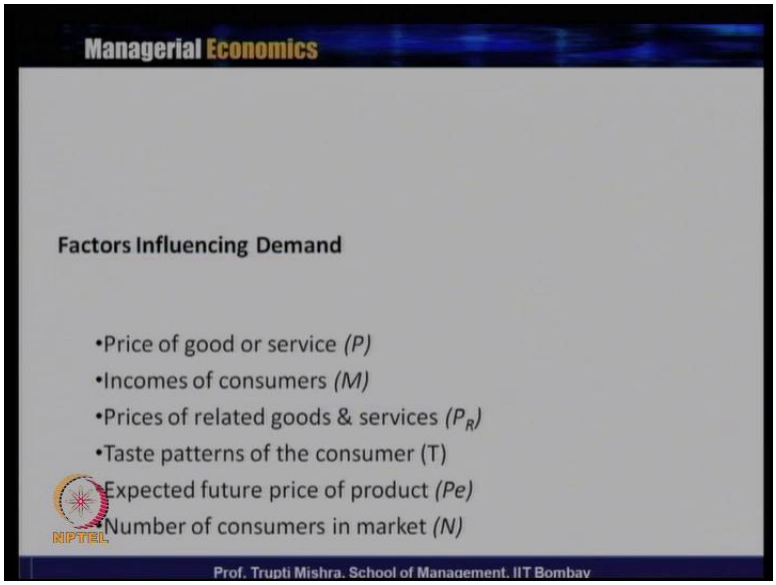

Now, we will see what are the factors, generally that influence the demand, we know that one that is already we have been discussing in last couple of minutes that price and quantity they are inversely related. So, apart from price, what are the other factors that influence the demand? The first one is price of goods and services; second one is the income of the consumer. How income of the consumer is related to quantity demanded? If the income increases they are positively related, if the income increases the people the demand more, the consumer demand more for the product.

And the third factor what influence the demand is the price of related goods and services, like we are taking the example of tea and coffee, if you are consuming, if the price of coffee decreases obviously, the demand for quantity demanded for tea generally decreases. Because, the consumer will move from tea to coffee, because coffee is now a low cost product as compared to the tea, so that is how the price of related goods like, price of substitute good, price of compliment goods that also influence the demand for the product.

So, one is price of the product, second one is the income of the consumer, third one is the price of related goods and services, the related goods and services in question can be substitute good can be complimentary good. So, price of substitute good, price of complimentary good also influence the demand for this typical good. Then the taste pattern of the consumer, if the consumer has developed a taste for it, if the consumer has, consumer has liked the product, if they are happy about the usefulness of the product they have developed a taste for it.

And if they have developed a taste for it, they will always the prefer this product as compared to the other product, which will again influence the demand for the product. So, taste pattern of the consumer is again a positive relationship with the demand, if the taste pattern is good generally the demand for the product is also good. Then the expected future price of the product, if the future price is going to increase, the demand is going to, demand is going to be more now, because if they are postponing their consumption they are paying more in the future, rather than whatever the price they are paying now.

So, expected future price of the product again plays a important role, when it comes to the demand for the product, then the number of consumer in the market, more consumer consuming the product the demand for the product is more. And they are positively related, the number of the consumer is positively related to the quantity demanded for the product.

So, the demand for the product essentially dependent on all this six factor that is prices of goods and services, income of the consumer, because that reflects the purchasing power of the consumer. Price of related goods and services, taste pattern of the consumer expected future price of the product and finally, the number of consumers in the market they, they generally leads that, what what should be the demand for the product.

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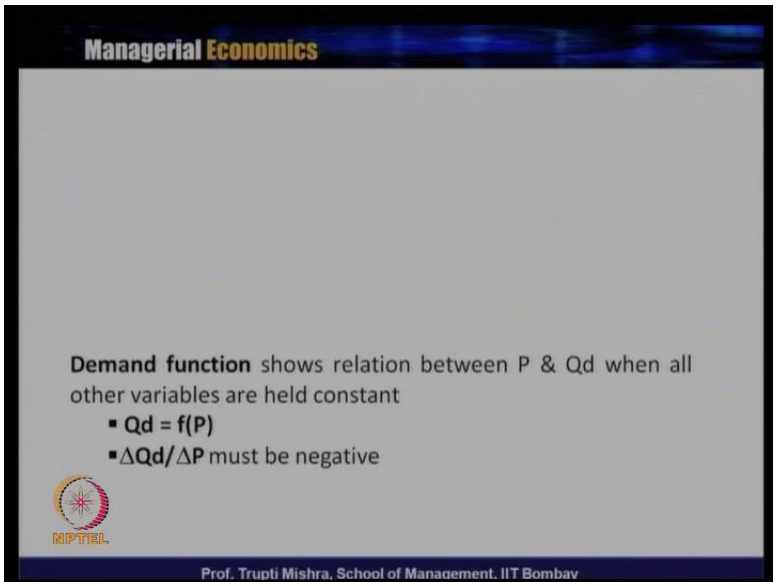

Now, what is a demand function, so mathematically when you when you analyze the relationship between the price and quantity demanded, that through a demand function. And demand function it shows a relationship between the price and quantity demanded, represented as P and Qd when all other variables are remain constant. So, the relationship of price and quantity demanded, in term of a mathematical function we generally call as the demand function.

So, in this case, suppose we assume that all other fixed, all other variable are constant, like income, price of the related goods and services, future price, number of consumers all other variables are constant; they are not influencing demand at this point of time. Demand function is specifically the mathematical relationship between the quantity demanded and price, so if you look at Qd is a function of price, so quantity demanded is dependent on the price.

And the slope of Qd and P it should be, it must be negative, because quantity demanded and price they are negatively related, they are inversely related; if one is increasing, the other one should be decreasing, and if the other one should be decreasing, then the one should be increasing. So, the slope of quantity demanded and price has to be negative, and demand function essentially it is the mathematically a relation, mathematical relationship between the price and quantity demanded.

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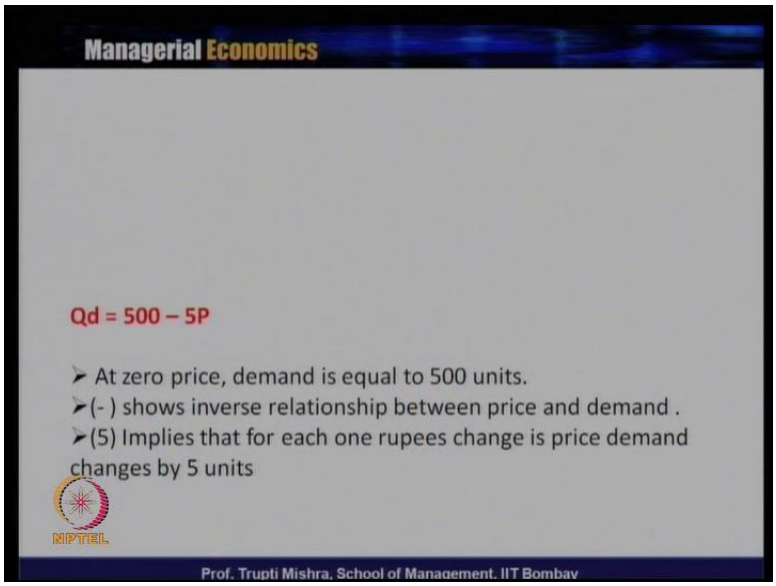

So, if you take a simple example Qd is equal to 500 minus 5 P, a typical example of the demand function, so how do we interpret this, at this typical demand function. Here, if you look at all other variable are constant, because we do not have the value for income, we do not have the value of the prices of other goods, future prices, number of consumers taste pattern. So, we can, we can say that the quantity demand is only dependent on price, so Qd is equal to 500 minus 5 P.

Now, how do we interpret this typical demand function, at zero price demand is equal to 500 units means, if the, if you are getting the product at free the demand is 500 units, because the consumer who requires the product there the number is only 500 minus negative sign shows inverse relationship between the price and demand. And 5 implies that each 1 rupee change in the price demand, price demand changes by 5 unit, because Qd is again it is a minus 5 P 500 minus 5 p, so 500 gives us the value of the, value of the intercept and minus 5 gives us the value of the slope. So, 5 imply that for each 1 rupee change in the price, demand changes by 5 units, negative sign shows the inverse relationship between the price and demand, and at 0 price demand is equal to 500 unit.

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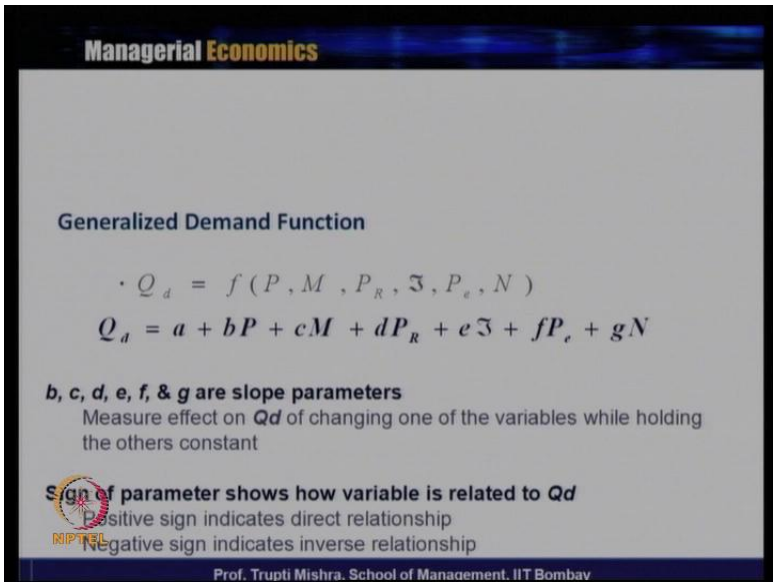

Now, if we consider a generalized demand function, demand is not only dependent on price, rather it depends on all the factors as we discussed before few minutes that number of factors that decides the, that influence the demand. So, taking all this variable Qd is a function of price of the goods denoted by 5 M that is income, P R that is price of the related goods, T is the taste pattern, P is the expected future price of the product, and N is the number of consumer.

So, generalized demand function consider all the factors that influence the demand for the product that is P is the price of product, M is the income, P R is the price of related goods and services, T is the taste pattern of the consumer, P is the expected price of the product, future price of the product, and N is the number of consumer. Then if you formulate at generalized demand function, then Qd is equal to a, which is the value of intercept plus b P plus c M plus d P R plus e T plus f P e and g N where b, c, d, e, f, g are the slope parameters. And the slope parameters measure effects and quantity demanded of changing one of the holding the other constant.

So, slope variable says that what, how they are related that is typical variable, how they are related with the quantity demanded, and the sign of parameter shows how variable is related to quantity demanded. If it is positive sign, there is a direct relationship between that variable and the quantity demanded, and if it is negative sign then there is a inverse relationship between that variable and the quantity demanded.

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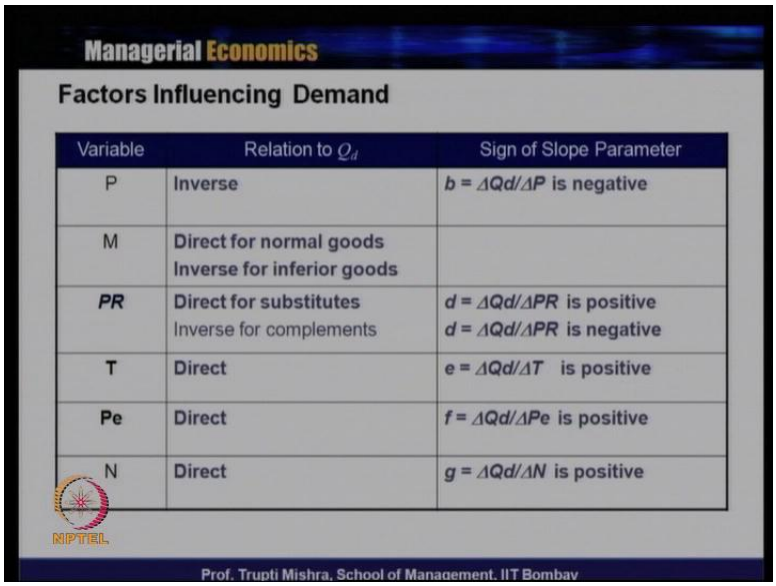

So, now if you will see all this variable, and how they are related price is inversely related to quantity demanded and the slope, that is b which is del Qd by del P is negative, M is the income direct for normal good, and inverse for inferior goods. It means when the consumer increases, the consumer money income increases, the quantity demanded for the normal goods increases whereas, the quantity demanded for the inverse good is, inferior good is decreases. Because, when income increases people always prefer to buy the superior goods what they can afford now.

So, that is the reason the normal goods there is a increase in the quantity demanded for the normal goods, and there is a decrease in the quantity demanded for the inferior good. Like when the income increases, you prefer to buy your own vehicle rather than going by the public transport, so in this case own vehicle is a normal good, and in a public transport is a inferior good.

So, when if the consumer money income increases, the consumer prefer to spend more on the normal goods and less on the inferior good, that leads to the fact that income increases, that leads to increase quantity demanded for more for the normal goods and less for the, less for the inferior good. And that is the reason that relationship is direct between the income and the quantity demanded, and inverse for between the quantity demanded, and the quantity demanded of inferior good and the income.

Again the price of related goods it is direct for substitute inverse for compliment, now take the example of tea and coffee, when the price of coffee increases, quantity demanded of coffee decreases, but the quantity demanded of tea increases; it means when there is a increase in the price of substitute good that leads to increase in the quantity demanded of this good. So, if t being the normal good or goods in typical goods in this context, a price of coffee increases that leads to increase in the quantity demanded of tea, and that is why there is a direct relationship between the price of related good and the substitute good.

Whereas, in case of complimentary goods, how it works suppose complimentary goods is tea and sugar, a price of tea is price of sugar is increasing obviously, the price of tea will also, a price of sugar is increasing that leads to decrease in the quantity demanded of sugar and that also leads to decrease in the quantity demanded of tea. Or may be you can put it in a other or a other way round that if the price of tea is increasing that leads to decrease in the quantity demanded of tea, and also it leads to decrease in the quantity demanded of sugar. Because, when tea is not demanded, there is no demand for sugar specifically in this content.

So, there is a inverse relationship between the price of complimentary goods, and the quantity demanded of this typical goods. Taste pattern they are direct, because if the consumer likes the product, the more demand is there for this typical product. So, the slope variable is again positive that is del Qd by del t which is positive, more the consumer more like the product, more is the quantity demanded for this product, then the expected future price of the product is again directly related to the quantity demanded.

If the price of the product is going to increase in the future, quantity demanded is more now because, the consumer prefers to buy more at this point, because the price is going to use increase in the future. And if the price of expected price is going to decrease, the consumer is again postponed all its consumption to the time period when the price is going to decrease. So, expected future price of the product is directly related to quantity demanded, because if it is going to increase then quantity demanded is increasing, if it is going to decrease then quantity demanded is decreasing.

And the last factor which influence the quantity demanded is the number of consumer in the market. If the number of consumers are more, the quantity demanded is going to be

more, because more the demand for this product and if it is less, the quantity demanded is less.

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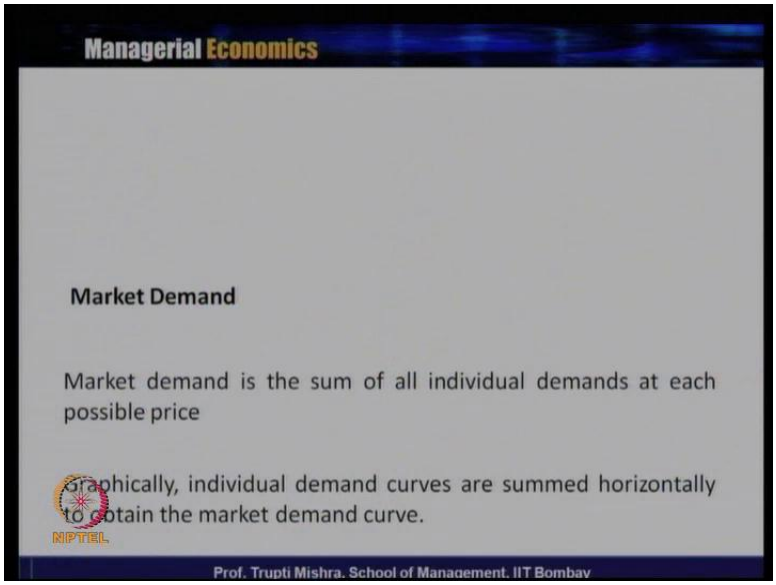

And market demand is again, if you remember the difference between the individual demand and the market demand, market demand is the sum total of all individual demand at each possible price. And graphically if you look at market demand is the summation of all individual demand curves, horizontally and generally all demand curve is some horizontally, in order to get the market demand curve.

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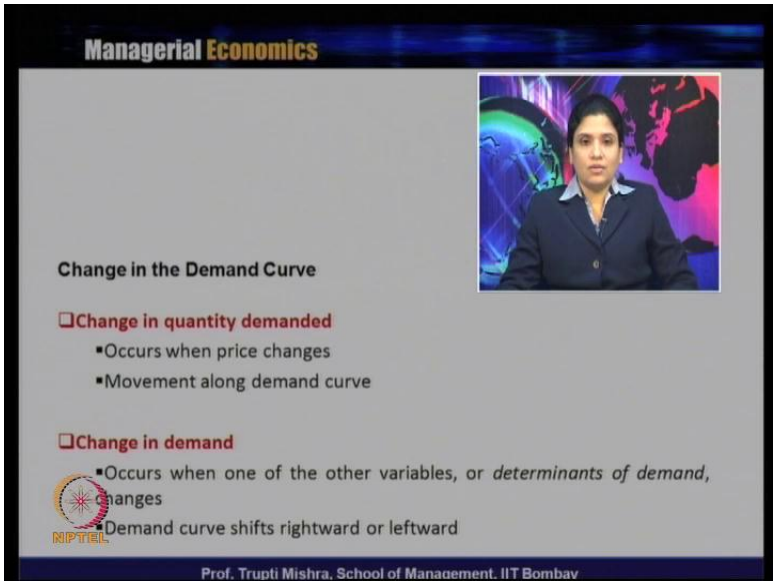

So, there is a change in the demand curve, either due to change in the quantity demanded or due to change in the demand. So, demand changes either, when there is a change in the price or when there is change in the all other factors that influence the quantity demanded for the product.