

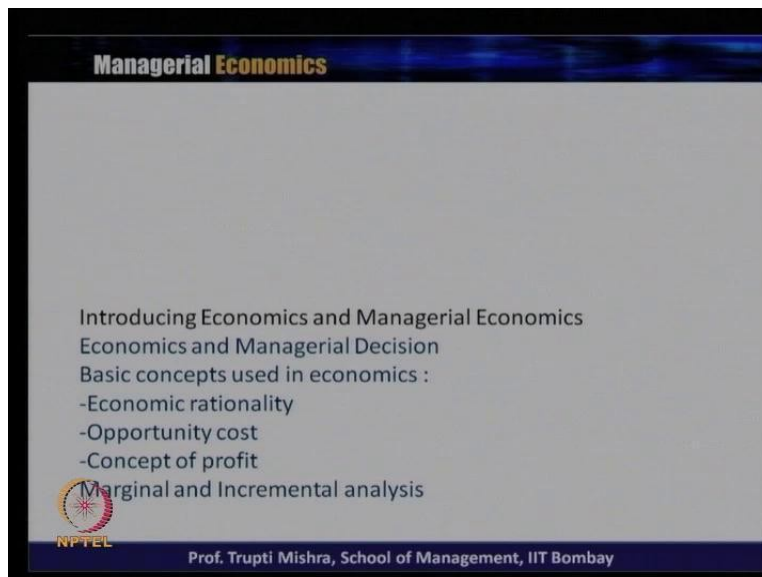
Managerial Economics
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Lecture - 40
Summary of the course

So, with this we completed all this topic whatever we listed in the this typical course or whatever has to be covered in this typical course. And now we will do a summing up of the entire topics whatever we have covered in this particular course. And to start with if you remember we divided the entire managerial course into 4 modules and module 1 we will talk about basically introducing the different kind of economic concept, economic principle. And the basic tools required for the economic analysis and the optimism technique. Module 2 talks about the demand and supply, typically demand supply elasticity of demand the consumer behavior and the demand forecasting.

Module 3 is theory of cost and theory of production and module 4 is market structure. So, we will try to summarize each module on the basis of whatever the key concept discussed in the in each of this module. So, if you remember in the very first class as we discussed, this is we introduced the subject economics.

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Managerial Economics

Introducing Economics and Managerial Economics
Economics and Managerial Decision
Basic concepts used in economics :

- Economic rationality
- Opportunity cost
- Concept of profit

Marginal and Incremental analysis

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The what is basically economics and if you remember economics is it is the study of choice and valuation or is the study of the scarce resources. And from there the concept of managerial economics came, because generally using the economic theory economic principle. And with a decision making tools manager try to solve whatever the business decisions problems and that gives us the optimal solution.

And since all the economic and managerial managerial decisions it is related to the basic problem basic economic problems of the country of the economy. And what is the basic economic problem, because there is a there is a difference between the unlimited human want and the scarce resources available to satisfy those want. From there actually the basic problems of the economy or the three basic question, what the manager faces in the firm level and what the economy faces as a general level for the whole countries, what to produce, how to produce and for whom to produce.

So, all the managerial business decision problem is somehow in the broad level related to this three question that is what to produce, how to produce and for whom to produce. And managerial economics or the managers will try to what is the job of the manager, the manager job of the manager to is to direct the resources, so that the firm can achieve the goals or the achieve the objective.

So, in this case generally the managerial economics where it is a study of resources, here the manager when they use the study of economics to do the direction or the resource direction to stated objective, that is generally the managerial economics. And then we discussed few basic concept that is getting used in the economics analysis and economic understanding that is one is two basic assumption that is one is economic rationality. And second one is ceteris paribus, ceteris paribus talks about the fact that other than study variable other all other variable has to be remain constant and it ah.

And the second assumption second basic assumption is economic rationality and here the assumption is that all economic agent that is consumer, producer, seller they have to be rational in their decision, they have to rational in their behavior. Then we discussed about the opportunity cost, this is the benefit from the next best alternatives, because and why this opportunity cost

comes. Because, there is no unlimited resources to satisfy unlimited wants, generally the economic agents they do valuation of their alternative and on that basis they use the resources.

So, it is not that all the wants get fulfilled or all the alternatives, for all the alternative they have resources and the that is why this opportunity cost comes. Whenever we use the resources to for one alternative we need to see what is the opportunity cost of using that resources. And opportunity cost of using the resources is always the benefit forgone from the next best alternative.

Then we discussed about the concept of profit concept of profit is basically the concept of economic profit and the accounting profit. And about that where to we need to add the implicit cost and where implicit cost is not going to added. Then we discussed about the marginal analysis and incremental analysis, marginal analysis is generally the difference the total or the addition to the total, whenever the new activity is done by them it is a marginal cost.

The cost additional to the total cost, marginal revenue addition to the total revenue by selling one more unit, marginal cost addition to the total cost by producing one more one more unit of the output. And then incremental analysis we discussed in that context where it is not, when the change is not per unit, when the change in the junk. Generally the study of incremental change comes and that is typically known as the incremental analysis.

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Basic tools for economic analysis and Optimization Technique

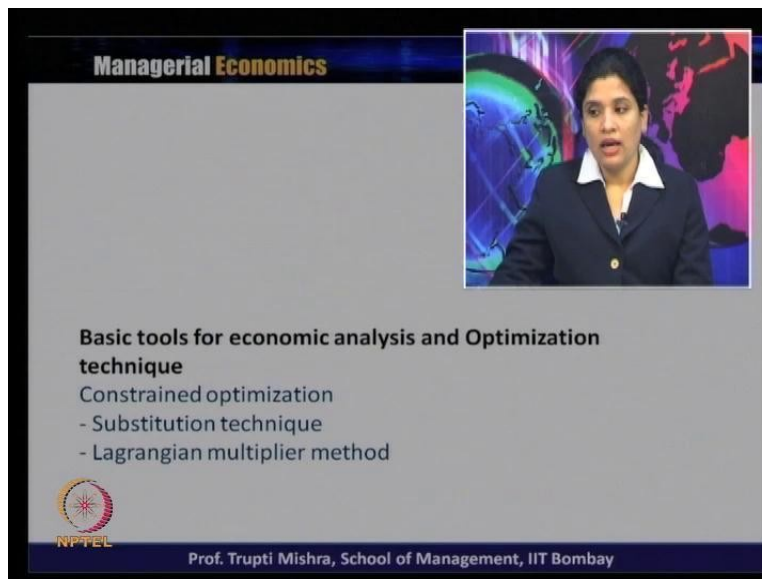
- Functional relationship between the economic variables
- Slope and its use in economic analysis
- Derivatives of various functions

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Then we discussed about the functional relationship between the economic variable that is in term of linear, non-linear and polynomial function. Then we discussed about the slope and how slope is getting used in the economic analysis, basically to study the relationship between the dependent variable and the independent variable.

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Managerial Economics

Basic tools for economic analysis and Optimization technique

Constrained optimization

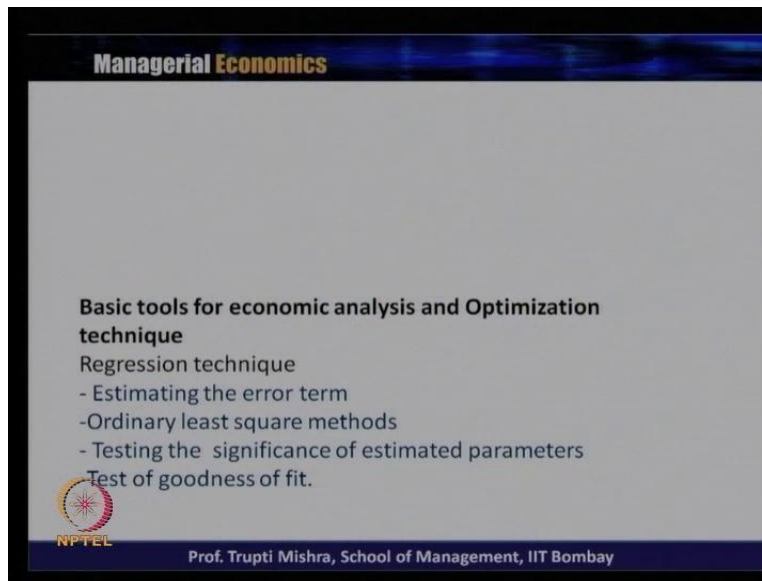
- Substitution technique
- Lagrangian multiplier method

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Then we discussed about the derivative of various functions and then we discussed about the optimism technique, typically the constant optimism and constant optimism either it is a case of profit maximization or the cost minimization case. So, we we understood the substitution technique and the Lagrangian multiplier method to do this profit maximization and the cost minimization typically in the optimism technique.

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Managerial Economics

Basic tools for economic analysis and Optimization technique

Regression technique

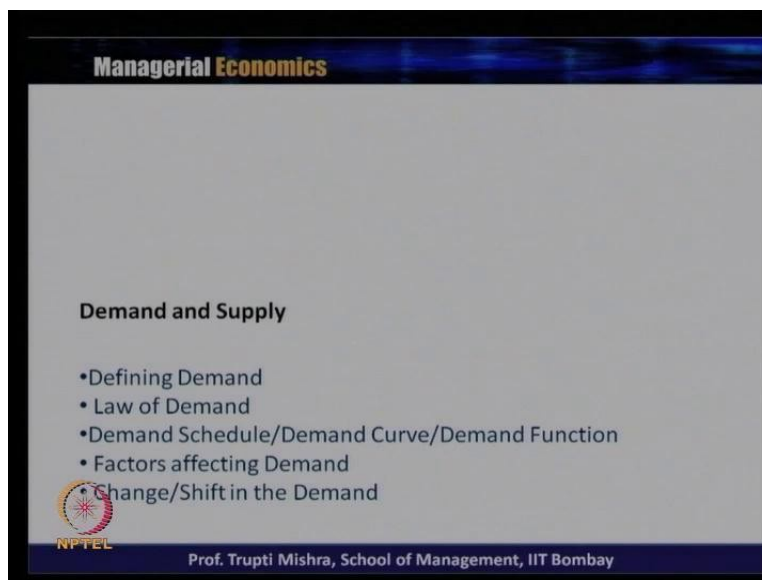
- Estimating the error term
- Ordinary least square methods
- Testing the significance of estimated parameters
- Test of goodness of fit.

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Then the regression technique is being cover and in the regression, we cover the estimating the error term, ordinary least square method, testing the significance of the estimated parameter and test of goodness of it.


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Demand and Supply

- Defining Demand
- Law of Demand
- Demand Schedule/Demand Curve/Demand Function
- Factors affecting Demand
- Change/Shift in the Demand

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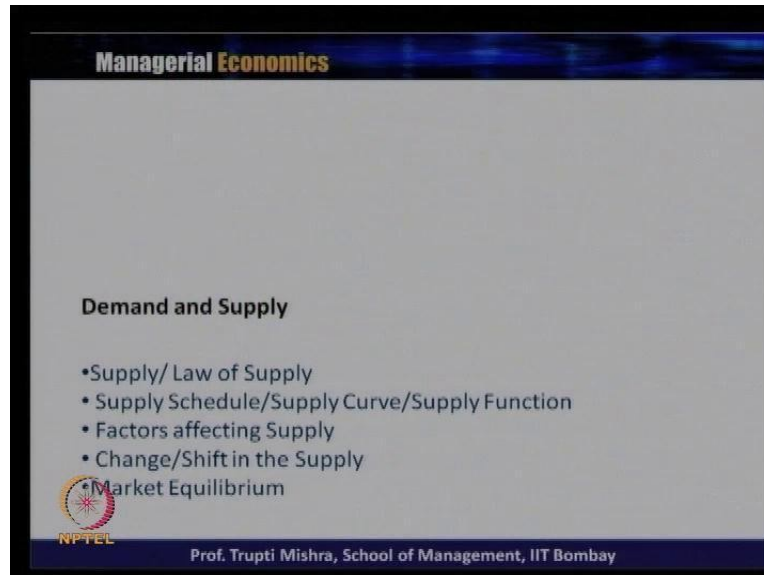
Then module two talks about the theory of demand and in this module the discussion started about this by defining demand then the law of demand law of demand essentially talks about that

how price and quantity demanded they are related. So, other things being remaining constant, the quantity demanded and price they are inversely related. Then, the demand schedule basically the numerical value assigned to both the price and quantity demanded in different time period that gives us the demand schedule.

Demand curve is the graphical relationship between the price and quantity demanded and demand function is the the formulating the function on the basis of that relationship between the dependent and the independent variable. Then the factors affecting demand has been discussed, that is mainly apart from the price there is some non price factor also affects the demand. And on the basis of the factors the change and shift in the demand takes place, whenever there is a change in the price that shift the that shift the demand from along the demand curve from one point to another point.

And whenever there is a change in the non price determinant of the demand, the demand curve shift entirely to the right in case of increase and left in case of decrease.

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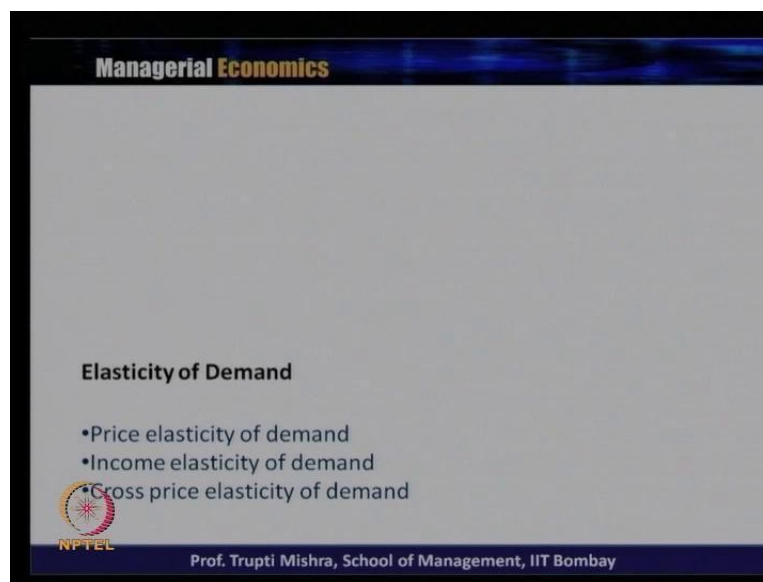
Then supply and law of supply is been discussed and law of law of supply is again other things being constant there is a positive relationship between the price and quantity supply. Supply schedule is the numerical value representation of supply and the price in a different time period.

Supply curve is the graphical representation of the relationship between the supply and price, and supply function is the mathematical relationship between the supply and the price.

Then there are a few factors which identity affects the supply, and the change in the shift in the supply is related to this factors, if it is price then the supply is shift, in the supply is along the supply curve from one point to another point. Whereas, if there is a change in the non price determinant of the supply, then the supply curve shift to the right in case of increase and shift to the left in case of decrease.

Then the intersection of demand and supply curve is generally leads to the market equilibrium, and market equilibrium is one where the market demand is equal to the market supply. So, price and quantity they are inversely related, but what is the magnitude of change in the quantity demanded, whenever there is a increase or decrease in the price, that is being studied through the price elasticity of demand.

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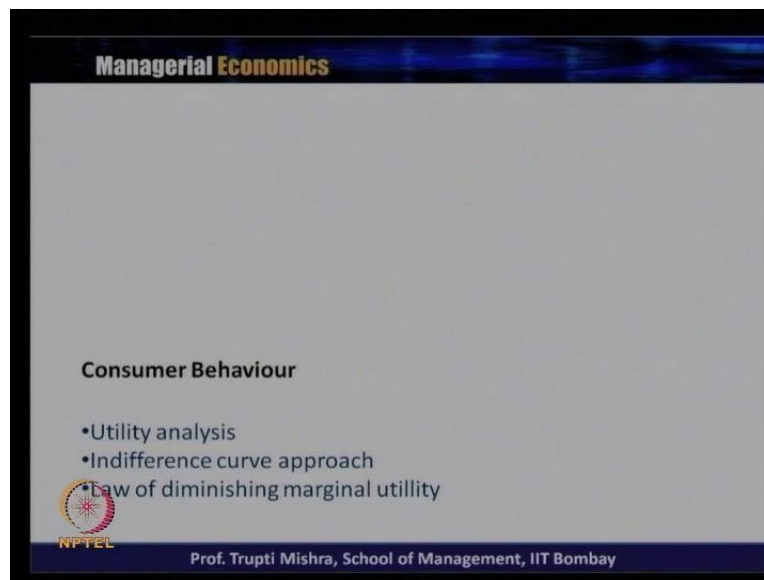


So, this talks about the responsiveness of the consumer to change in the price and corresponding to what is the change in the quantity demanded. Then income elasticity of demand income elasticity of demand is again the change responsiveness of the consumer or the responsiveness of the quantity demanded due to change in the income.

And then cross price elasticity of demand essentially talks about the relationship between the change in the price of the substitute goods and or the complimentary goods that is related goods in production and what is the effect in the quantity demanded. So, if price of the substitute good is changing when the quantity demanded of the present good is increasing and if the price of substitute good is decreasing, then the quantity demanded is again decreasing over here.

So, cross price elasticity of demand essentially talks about the magnitude of change in the quantity demanded, when price of the related goods that is either substitute or complementary changes there changes.

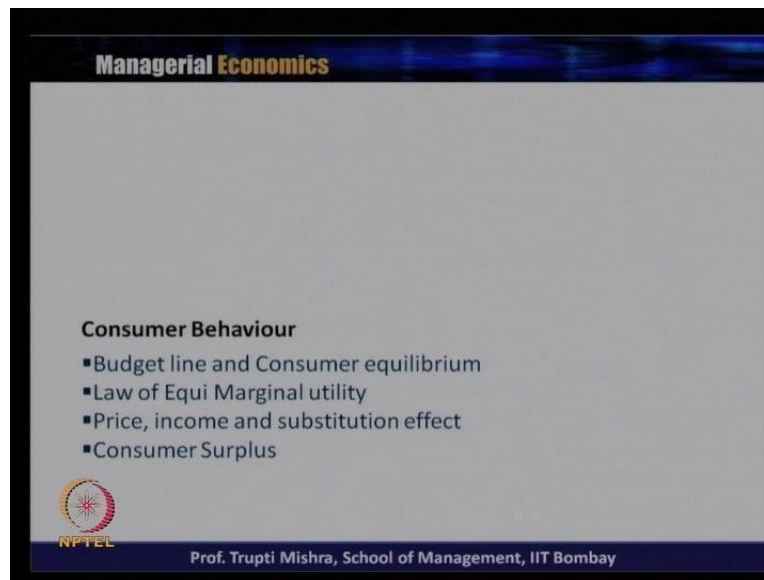
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Then consumer behavior is being studied on the basis of the utility analysis; utility analysis is two types one is cardinal and other is ordinal, where the utility can be measured on the basis of the units called utility that is generally cardinal utility analysis, where utility cannot be measured that is only ranked on the basis of preference that is ordinal utility analysis. On the basis of ordinal utility analysis, the indifference curve by approach has been studied, and indifference curve is nothing but the locus of different points are that gives the combination of two goods, which gives equal level of satisfaction.

And indifference curve has few properties that has been discussed; and then the law of diminishing marginal utility is discussed and law of diminishing marginal utility states that other thing being equal, when the consumer go on consuming the products the utility what he receive from consuming that product that generally goes in a negative direction.

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Then the budget line is being discussed and budget line is nothing but the individual budgets, what he can afford to the afford from the combination, the product combination. And the budget line is being discussed and the basis of the budget line and indifference curve consumer equilibrium is consumer equilibrium can be found. And consumer equilibrium is the point where the slope of the budget line is equal to the slope of the indifference curve.

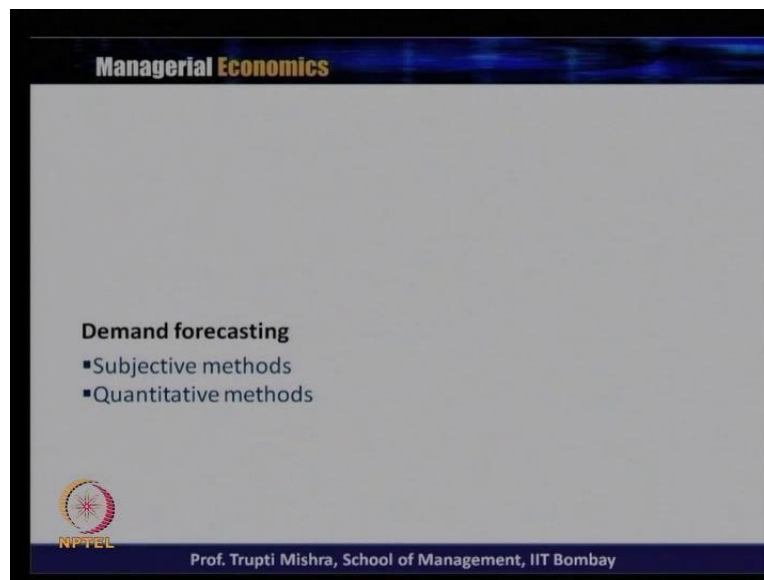
Then law of equi marginal utility is discussed which talks about the utility what we get from the by by by from from the different product that has to be same. But, is the ratio of the marginal utility of both the ratio of marginal utility and price of both the goods has to be same; at any point of time if one is more than the other the consumer will spend more on the that product where he gets a higher level of utility.

When the change in the price takes place it has two effects one is the change in the quantity demanded and also the change in the other product. So, in this context the price income and substitution effect has been discussed and the price effect is always a combination of the income

effect plus the substitution effect. Then at the end the consumer surplus concept of consumer surplus has been discussed and concept consumer surplus is a situation where this is the difference between what consumer is ready to pay for the product and what actually he is paying.

And this difference is generally known as the consumer surplus, because consumer is ready to pay more, but whatever the market price for the product product that becomes less.

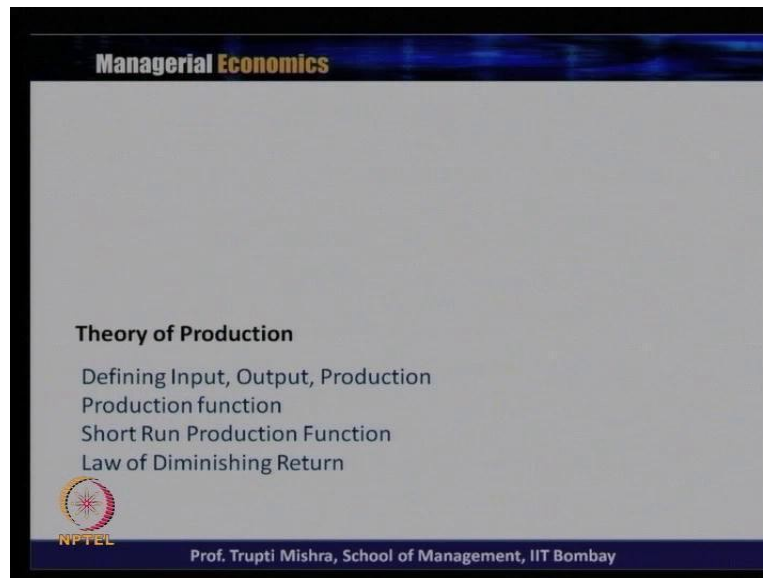
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Then the demand forecasting is being discussed and demand forecasting in term of two methods we discussed that what is the need for the demand forecasting, what are the steps in the demand forecasting. And two methods one is the qualitative for the subjective method like the consumer opinion survey market stimulation test marketing that in the subjective method.

And in the quantity method we talked about the econometrics method, trend projection method, barometric method and the smoothing techniques to understand that how demand forecasting is being done following the different method in the different situation. Module 3 talks about theory of production and cost, here the topics related to the production and cost being covered.

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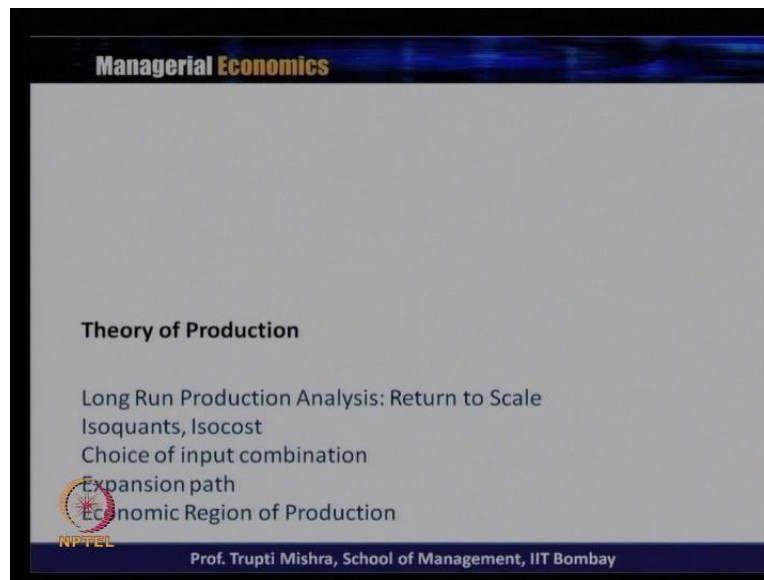


So, this theory production the definition of input output and production and the to start the to start the topics, we did the defining input output and production. Then production function different kind of production function, then short run production function and law of diminishing return; so short run production function is analyzed with the law of diminishing return or the law of variable proportion.

And law of variable proportion talks about three stages of production process, on the basis of relationship between the total product average product and the marginal product. And for the rational producer it is always ideal to produce in the stage two of the production process, because stage two is the stage two is the stage where there is a efficient utilization of both the input that is fixed input and variable input.

So, in this is a short run production analysis, one unit has to be fixed and that is why there is a fixed unit. And stage two is one where there is a efficient utilization of both the fixed input and the fixed inputs and the variable inputs and all the rational producer they prefer to operate in stage two of the production process.

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Then the long run production analysis is discussed with the help of return to scale and return to scale talks about three kinds of return to scale that is the constant return to scale, increasing return to scale and decreasing return to scale. So, constant return to scale is one where the change in the output with respect to change in the input the proportion is remain same.

Then in case of increasing return the proportional increase in the output is more than the proportional increase in the input. And in case of decreasing return the proportional increase in proportional, increase in the output is less than the proportional increase in the input. In that context also the homogeneous production function is being discussed homogeneous production function is one where it takes a value equal to one it is the cost and return to scale.

Degree of homogeneity or this generally when the degree of homogeneity is one there is a linear homogeneous production function it is a cost and return to scale, if the degree of homogeneity is greater than one it is a case of increasing return to scale. And if the degree of homogeneity is less than one this is the case of the decreasing return to scale.

Then Isoquants and Isocurves being discussed isoquants is the indifference curve of if you remember this indifference curve of the consumer theory the same indifference curve indifference curve is the product indifference curve. And it is the locus of point of two different input combination, which gives the same level of same level of production. Isocost is the line which gives the different combination of the product whatever is being used for the. Whatever is being used for the production process slope of isocost is the ratio of the input prices and slope of isoquant if it is a ratio of the marginal product of capital and labor if the production function consist of two inputs capital and labor.

Then choice of input combination is being discussed in the case of maximization and minimization using the Lagrangian multiplier as a constant. Then expansion path is being discussed looking at the producer equilibrium at the different different isocost and isoquant level. And then economic region is being discussed because isoquant is one it is in if it is in normal isoquant generally one input can be substituted for the another input.

And that is why at all point of isoquant we get the same level of output, but up to how long this inputs can be substituted to one to another and which one is the efficient region of production, that we discussed through the economic region of production.

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Theory of Cost

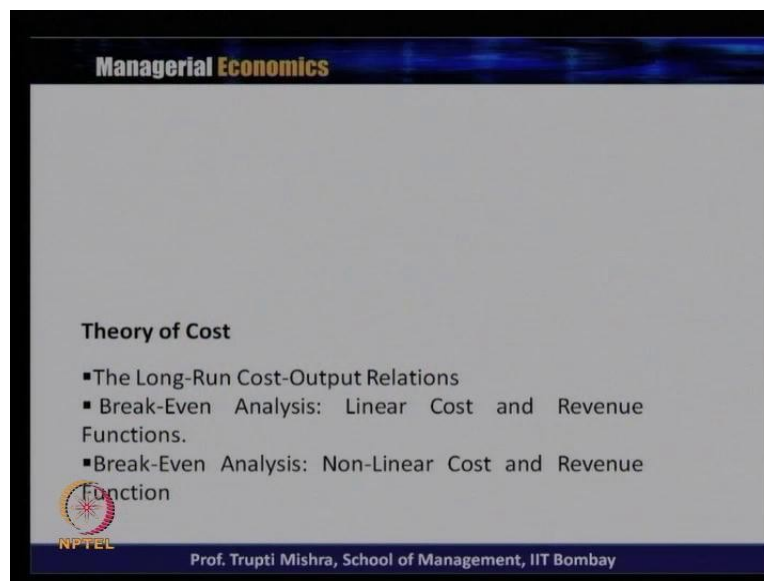
- Production cost
- Types of Cost: Accounting/Economic Analysis
- Cost-Output Relationship
- Short run cost Analysis

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Then this module covers about the cost typically the production cost we discussed about the types of cost that is accounting, that is required for accounting and economic analysis. Then cost and output relationship, then the short run cost analysis where there is one fixed cost and one variable cost. And in the short run all the cost curve is used except the average fixed cost, because average fixed cost is generally rectangular hyperbola it never touches any of these axis.

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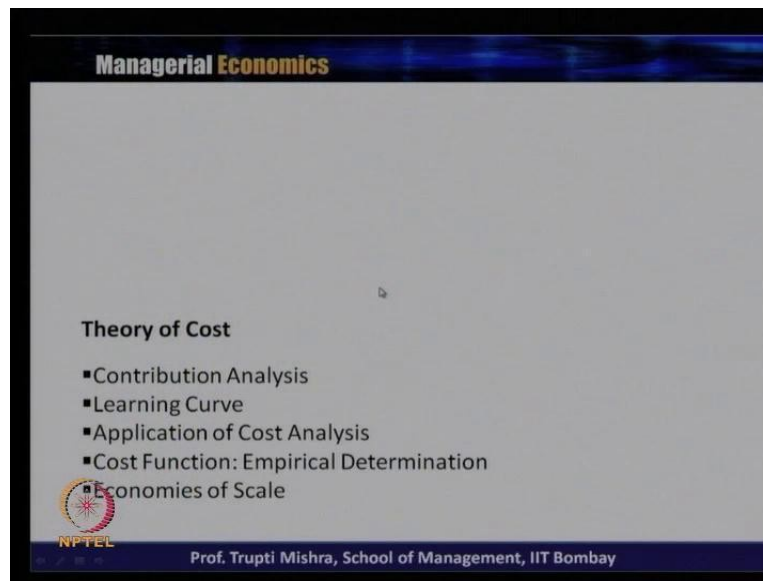


Then the long run cost output analysis is being discussed and long run cost output relationship basically that why the long run average cost curve is used here and then we discussed the long run marginal cost curve. And how long run average cost curve also serve as a planning horizon for the producer and it also causes envelope curves, because it envelopes number of short run cost curve in the different time horizon.

Then break even analysis is being discussed on the basis of linear cost and revenue function and non-linear cost revenue function. So, in case of linear cost and revenue function the profitable region is generally there is infinite till that a firm can get profit, till the time the revenue is greater than the cost. And here we get only one inflexion point where revenue is equal to cost, but in case of a non-linear cost and revenue non-linear break even analysis there is a range has been identified, where the firm can maximize the profit on the basis of higher revenue and lower cost.

And it is not there is a limit and on that basis this range has been difficult, here we get two inflexion point where total revenue is equal to total cost one at the beginning and one at the end of the profitable region.

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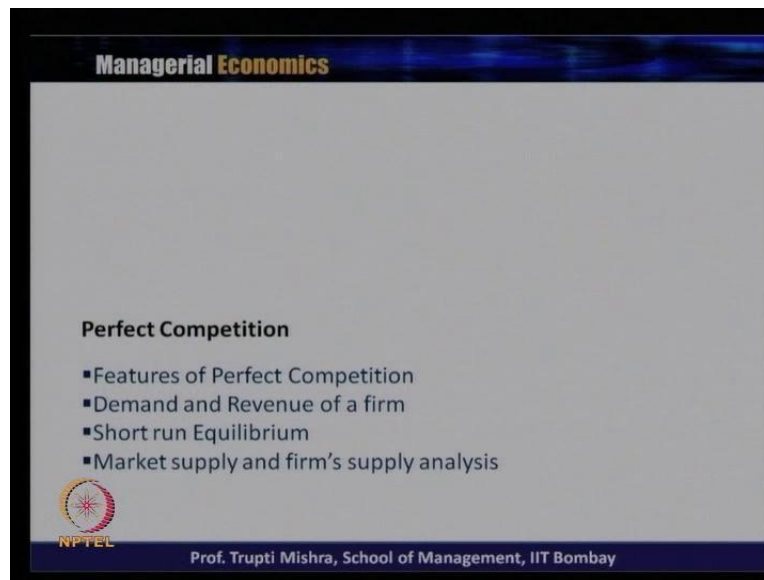
Then contribution analysis learning curve has been discussed, then application of cost analysis in the different function, then cost function empirical determination. And finally, the economies of scale where we discussed about the real economies of scale and pecuniary economies of scale. Pecuniary economies of scale is the basis that one long run average cost curve is decreases, because of advantage of economies of scale.

And pecuniary economies of scale talks about the cost advantage in the term that the input price is less and that is why they are economies of scale. But, real economies of scale there is less usage of the physical input and that is why we get the real economies of scale cost advantage.

And real economies of scale has production economies of scale, then technical economies of scale, managerial economies of scale and also the sales and marketing economies of scale. Then we discussed about diseconomies of scale diseconomies of scale is basically contributing that why long run average cost curve is increasing after the minimum point.

And it is noticed that the maximum diseconomies of scale generally comes from the managerial diseconomies of scale and that is why there is a increase in the cost of production. Then the last module talks about or the it discusses about the theory of market and the pricing practices.

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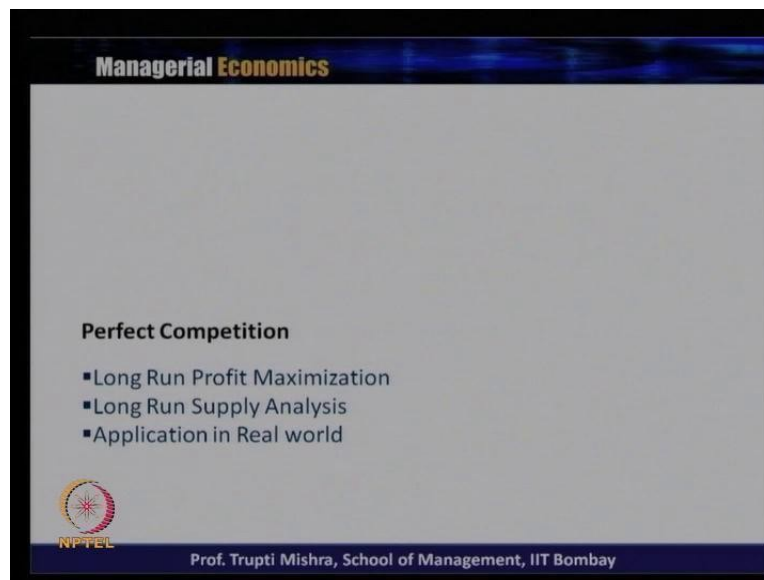


So, the classification of market definition of market classification of market on the basis of different parameters is being discussed. And the focus here is on when the market is classified on the basis of entry condition, the product and what is the what is the competition level on that basis the classification is done.

So, the first kind of market form of market is perfect competition, we discussed about the feature of perfect competition, the demand and revenue, short run equilibrium market supply and firm supply analysis. So, perfect competition is the one extreme form of market, where there is no competition at all. And the but all the firms they are price taker price decided by the demand and supply forces they maximize the revenue by selling more output.

The equilibrium condition is same again, this they always follow equilibrium condition where marginal cost is equal to marginal revenue and on that basis generally they identify the price in the corresponding demand curve.


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Managerial Economics

Perfect Competition

- Long Run Profit Maximization
- Long Run Supply Analysis
- Application in Real world

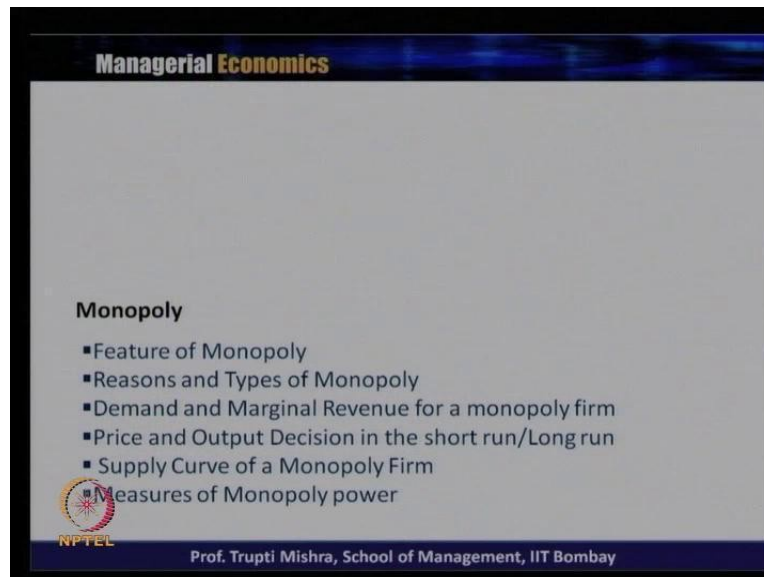
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The supply curve in case of perfect competitive market is typically defined through the marginal cost curve, that is the segment where it lies above the minimum point of the average variable cost. Then long run profit maximization is seen and if short run is someone if the firm is making loss at least long run they get the normal profit.

So, there are three kind of situation the firm gets either they get a normal profit or they get a loss or they get a supernormal profit. And perfect competitive we also discussed that what is their application in the real world taking the example of the stock market and credit card industry.

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Managerial Economics

Monopoly

- Feature of Monopoly
- Reasons and Types of Monopoly
- Demand and Marginal Revenue for a monopoly firm
- Price and Output Decision in the short run/Long run
- Supply Curve of a Monopoly Firm
- Measures of Monopoly power

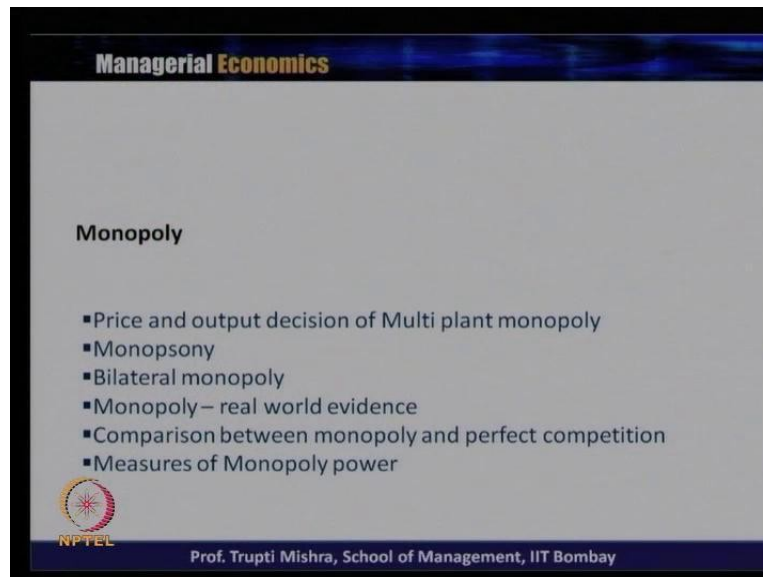
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Then the second kind of market structure is monopoly this is another extreme in the market form, there is only one seller one seller and large number of buyers as compared to the large number of buyers and sellers in the market. Then then the regions and the types of monopoly discuss, that how the market form emerged as a monopoly market; the demand revenue of the monopoly form discuss and also the price and output decision in the short run and the long run.

Then we discussed about the supply curve of monopoly form if you look at there is absence of supply curve of the monopoly firm. Then, the measurement of the monopoly power is done using different methods like learner index HSI index market concentration and also on the basis of the cross price elasticity of demand.


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Managerial Economics

Monopoly

- Price and output decision of Multi plant monopoly
- Monopsony
- Bilateral monopoly
- Monopoly – real world evidence
- Comparison between monopoly and perfect competition
- Measures of Monopoly power

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Then Multiplant monopoly is talked about like when the monopoly has different plants to produce the output. Then monopsony market monopsony form of market is discussed, where it is just reverse to the monopoly market where there is one buyer and the number of sellers are many. Then the bilateral monopoly is being discussed when there is one buyer and one seller and then some real world evidence has been taken for the monopoly; and then the comparative comparison between the monopoly and the perfect competition.

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Then the ideal perfect structure is the competition. on that competition on determination the short run significant monopolistic

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Monopolistic Competition

- Determination of price and output in the short/long run
- Non Price Competition

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mix of monopoly and competitive market monopolistic So, the discussion is monopolistic the basis of of price and output in and the long run, the feature of competition is the

product differentiation, where there are large number of firms. But, all of them they produce a differentiated product, because all of them they produce a differentiated product, their product is different from each other either on the basis of the quality on the basis of the services associated with it. Or on the basis of packaging or on the basis of the content; and since they have some freedom about the product differentiation also they decide the price of the product.

Here the competition is mainly on the basis of non price rather than price, because each of them they advocate that their product is different in term of the other product. Monopolistic competition has taken some feature of the perfect competition and some feature of the monopoly.

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Oligopoly

- Feature of oligopoly
- Non collusive model
- Collusive model

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Then the oligopoly market structure is being discussed and typically the feature of oligopoly and there is one significant feature of oligopoly is the interdependence between the firms in the market. And when it comes to interdependence in the firms in the market it is in two way, one is where they compete with each other and other when they collide with each other. So, when they collide with each other that kind of that kind of oligopoly generally known as the collusive model of oligopoly, and when they compete with each other that generally known as the non collusive model of oligopoly.

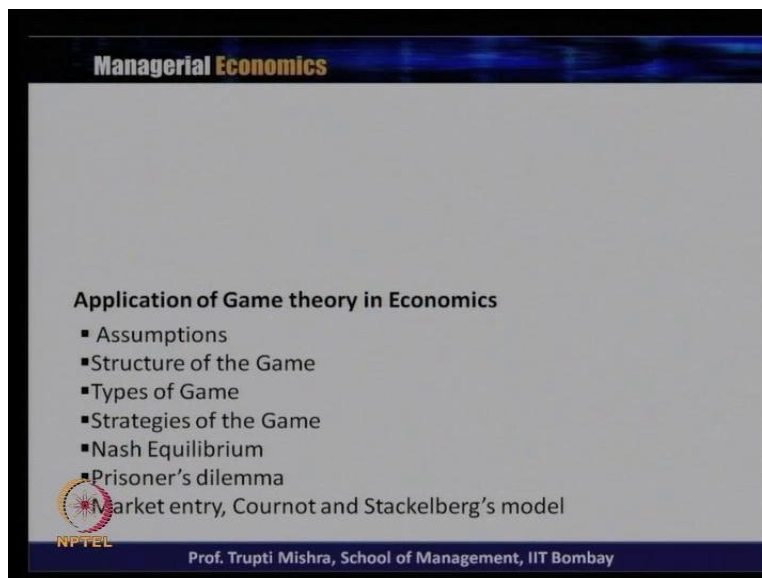
So, we discuss about the Cournot models, Stackelberg model and Kink demand curve approach in case of a non collusive model, when the case of duopoly. How duopoly is basically the case of two sellers and large number of buyers and at we examine all this non collusive model taking the duopoly form. So, Cournot model talks about the fact that even if the firm knows that the other firm is going to change their revise, their plan and output and price till they believe that they are going to follow whatever there in the past period.

And they continue they go on continuing the same behavior and finally, in that case they reach to a sub optimal solution rather than the optimal solution. In case of Stackelberg model it is a leader follower models generally one firm as a leader and set up the price and set up the output and other firm generally follows it. Kink demand curve talks about typically the price rigidity, how increase in the price is not matched by the competitor, but decrease in the price is always matched by the competitor.

And in that case the whatever the firm whatever the demand curve the firm face it has a kink on it and the corresponding marginal revenue curve has gap, always the marginal cost pass through the gap and that is why the gap there is no change in the price of the firm. So Kink demand curve model typically talks about the price rigidity in the oligopoly market. In case of collusive model we discuss about the price reduced model cartel.

Cartel typically the centralized cartel on the market sharing cartel and we talk about the price leadership model that is on the basis of local price leadership, dominant price leadership and the barometric price leadership.

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Then since there is a group here is where in case of the oligopoly market and there is a interdependence between the firm, their behavior is a strategic behavior known as a strategic behavior, because what is best for one firm that is always dependent that what the other firms doing on their price and the output plan. So, in that context the game theory has been introduced to understand the economic behavior.

So, the game theory is discussed on the basis of their assumptions the structure of the game structure of the game covers from the players to strategy. Then the types of game on the basis of the end outcome and then the strategy of the game in term of pure strategy max min, min max dominated dominant strategy.

Then one of the important contribution of game theory to the economic analysis the Nash equilibrium. And the Nash equilibrium is being discussed taking into the both where there is a dominant strategy for the player, and when there is a absent of the dominant strategy of the player.

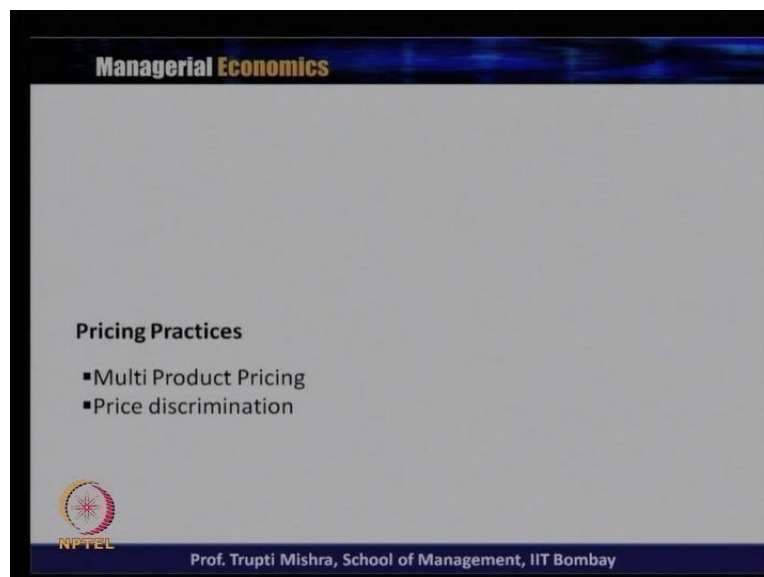
So, Nash equilibrium talks about the that what is the this is the point this is the this is the point where this is the best outcome to the player irrespective of whatever the other players does in their whatever the opponent does in the market. Then the prisoner dilemma is discussed which is a interesting phenomena of the fact that where cooperation is beneficial it is difficult to maintain

cooperation. And that is why the players whether they are the individual, whether they are the firms, whether they are the country they reach to a sub optimal solution, where they are not getting maximum profit.

But, since cooperation is difficult to maintain and even if cooperation is beneficial they are not getting into the cooperation and they are reaching into the sub optimal solution. Then this game theory is discussed on the basis of its applicability on the market entry game typically, when the market is when the firm is trying enter into the market where a monopolist firm is facing, what should be the strategy for the monopolist firm that is existing firm.

And what should be the strategy strategy for the entering firm then Cournot and Stackelberg model, what kind of game whether it is a simultaneous game, whether it is a sequential game that generally discussed in case of the Cournot model and the Stackelberg model.

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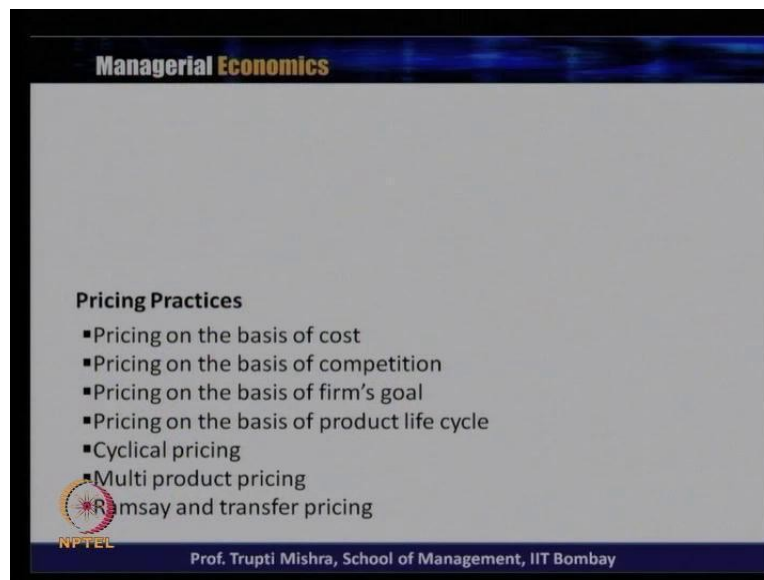


Then the last topic for this course version pricing practices typically the multiproduct pricing and pricing discrimination is being discussed. Price discrimination is basically discussed that when the monopolist charges, different prices to different consumer group in the different time zone and different market. On that basis three type of price discrimination is discussed that is first degree price discrimination, where the price is charged on the basis of willingness to pay. And in this case the firms motivation is to take out the consumer surplus from the consumer, second

degree price discrimination where the discrimination is on the basis of quantity not on the basis of price, and typically this is an example of the meter pricing.

Then the third degree price discrimination where the market is segregated on the basis of the consumer responsiveness on the elasticity of demand. And always higher price is charged in case of inelastic demand inelastic market a lower price is charged in case of the elastic market.

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Then pricing practices is being discussed that is on the when the pricing is on the basis of the cost, pricing is on the basis of the competition, pricing is on the basis of the firm's goal. And pricing on the basis of the product lifecycle, cyclical pricing, multiproduct pricing, Ramsay and transfer pricing and also on the basis also we discussed about the retail pricing.

So, generally the pricing strategy differs on the basis the on the basis whether the basis is cost, whether the basis is competition, whether the basis is product lifecycle, whether it is on the basis of firms goal or the objective or whether it is a transfer pricing. And so these are the topics that has been covered in this course managerial economics. So, to conclude or to give end note we can say that this course is an attempt to provide the understanding of basic economic theories, principle and concept and their application on the managerial decision problems.