**Business Data Management**
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**Lecture 9**
**Summary**

So, we basically have completed 4 weeks of the course now, and I want to quickly summarize what we learnt in the first 4 weeks, so you have a chance to have quite diverse material put together in one single place for you refer to later on. We have seen very different concepts that have been introduced.

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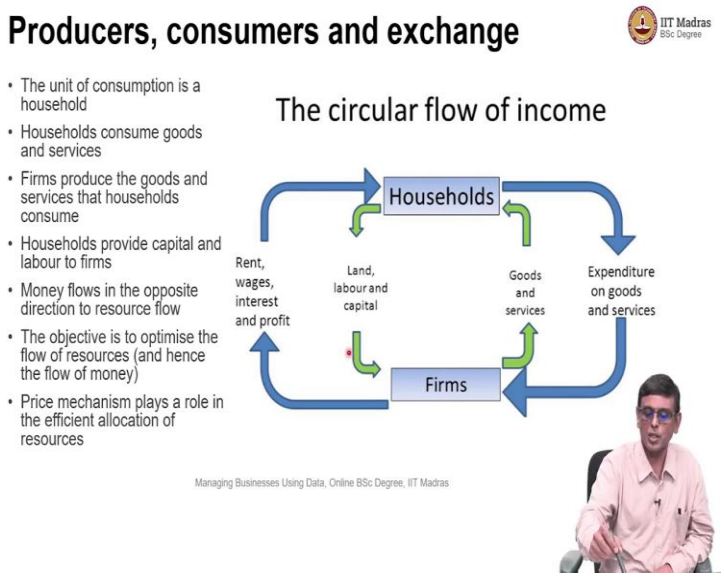


We learned basically that the world of economics is organized using producers or firms, consumers, and exchange. This circular diagram that Suresh Babu presented, contains households on one side, firms on the other side, firms sell goods and services to households and households basically provide the land, labor and capital to the firms.

And therefore resources are moving in one direction, while the money that is paid for acquiring these resources moves in the opposite direction. So you buy goods and services, households return back money which goes to the firms and that is how the firms earn the money. The firms in return basically take land, labor and capital. For land, firms have to pay some rent, for capital

they have to pay maybe dividend or interest depending on whether it is taken as a debt or it is taken as a share capital.

And for labor they have to pay salaries, wages. Thus rent, wages, interest, profit, all goes back from the firms to the households. So, this circular flow of money on one direction, and goods on the other direction, has to be managed very well . The economy is well managed, if this flow happens without any bottlenecks. So this is what we learned first thing.

Second, we learned that households happen to be the unit of consumption. We do not look at individuals, rather we look at households as the unit of consumption. The households consume goods and services, the firms produce those goods and services, so therefore there is a close correlation between the two. Hence you could study household consumption and you can get a good idea of its impact on firms.

So, household consumption data is a great indicator of how well firms are going to do or are doing. Now , where do you get this consumption data?

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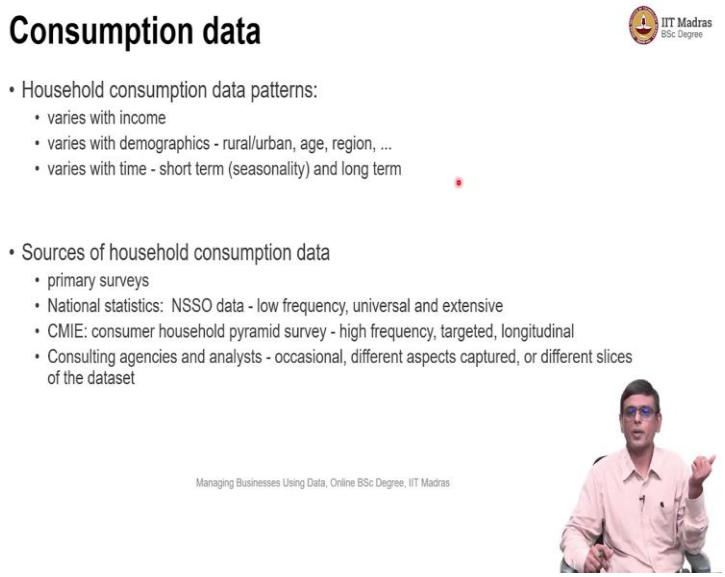


This consumption data can come from many sources. One is you can do a primary survey. In fact, we for the purpose of this course ,actually did a primary survey with three different households at different levels of income.One was at Rs.15,000 a month, another was at Rs.30,000 a month, another was at Rs.50,000 a month.

So, how do you get consumption data from primary surveys and use data to infer whether some consumption patterns are changing with income or not ? Or within the consumption basket what are the possible variations that you can have?

For instance somebody owns a house while somebody does not own a house, hence he has to pay rent. Other things like if they own a vehicle or not and its translation into different consumption patterns. Say whether they eat out or make food at home, and whether they are young or old. If they are young, maybe they eat out more, if old maybe they cook at home and we do not know these kinds of things. (can be removed)

So, we saw that household consumption patterns vary with income, demographics and also with time. There is seasonality to consumption. We also saw that when people buy during festival time, they buy a lot and in fact, they may even borrow and buy and so on.

There are long term patterns because of income effects and so on. Over time people start to change their consumption patterns. For instance initially maybe they spend more money on food, and later buy more consumer goods like refrigerators, air conditioners, cars, and other similar things which they start buying later on.

So, the primary sources we saw were primary survey, the NSSO data which is collected at a low frequency, but is very extensive, universal. Then the CMIE data which is the consumer household pyramid survey data, which is collected at a high frequency and is targeted, more importantly it is longitudinal, because it tells you for one household, how the household has moved along right in time.

And then there are some specific consulting agencies that give interesting insights changes in consumption patterns and capture different aspects. Say for example that women are making decisions more than men today, people are using other means to get information about the products they buy, like electronics and the big difference they make. You also get different slices of the data set also through this method.

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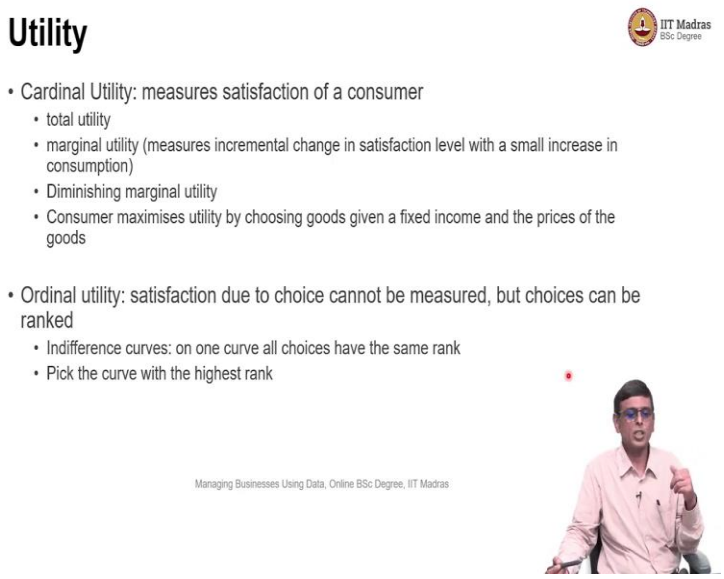


Then we saw that there are some very fundamental concepts underlying the economic model of the world, and one of them is utility, which is about customer satisfaction. How do you measure satisfaction using this concept called utility? We saw that sometimes utility can be measured which is Cardinal or cannot be measured, it can only be ranked, which means it is ordinal.

Then there is this concept of total utility and marginal utility where for the latter consumption of one additional item can be different from the consumption of the first item. If you have 10 items already, the utility from the 11th item might be very little. For example in food, sometimes you are saturated, you do not want to eat anymore, so there is a diminishing marginal utility.

The customer essentially maximizes utility where for a given income they choose the different goods or services that give the best utility. By changing one's consumption with their consumption pattern, one can change the goods and services in such a way that the total goods and services consumed gives the maximum utility in a given budget. that is what the customer does.

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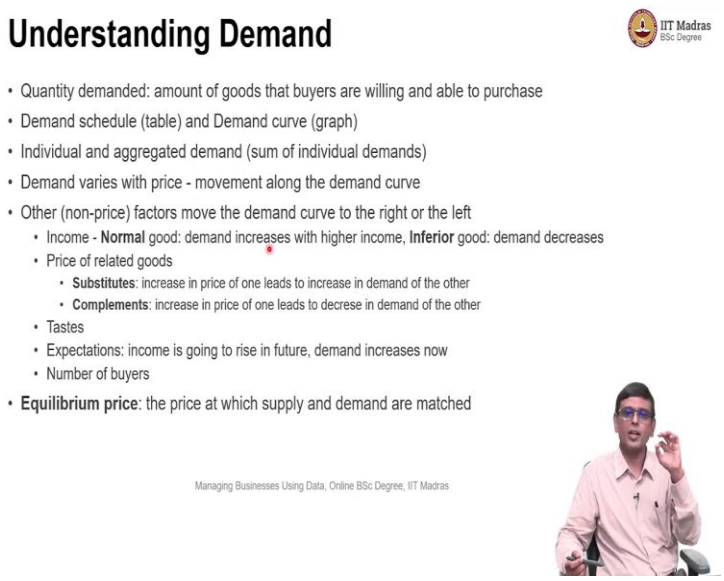


When this consumption of individual customers is put together you get this concept called demand, and this total demand can be captured using the demand schedule. It is a table which tells you how much demand is there at different price points, or you can infer for that product in the form of a graph. So, you can either have a graph or a table .This graph which is the demand graph, one can observe how demand changes with for example price.

So, when price increases, the demand reduces. When price reduces, the demand increases. when companies give discounts during festivals especially, suddenly the demand increases, because people are waiting for that kind of discount to be given.

So, demand varies with price, and this is represented by movement along the demand curve. On other hand, there could be non-price factors that change the demand curve and in this case the demand curve itself shifts to the left or right. For example the demand curve can change with income, so for a normal good the demand curve increases with higher income.

But for an inferior good the demand decreases. An inferior good is one where , when income increases people drop the inferior good and go to another good, say a normal good which now they are able to afford. Similarly, if the price of one item leads to an increase in demand of another good, then the said good is called a substitute. If the price of one item decreases the demand of another then it is called a compliment. And besides these there are other non-price

factors are taste, expectation etc. Because you think your income is going to be increasing quite a lot, for example, there is pay commissions and so on government employees get or bonus is going to come next month.

If you think that you are going to get an income and that you might go and consume something now, in expectation of this income that comes in the future thereby also maybe taking some credit on your credit card. Demand also can change with number of buyers, if a lot of people buy something you may also go buy it because you want to be part to seen part of a group or a set .This herd mentality as it is called, that can also play a role in determining demand.

Equilibrium price also known as market clearing price is the price at which the demand and supply are matched .

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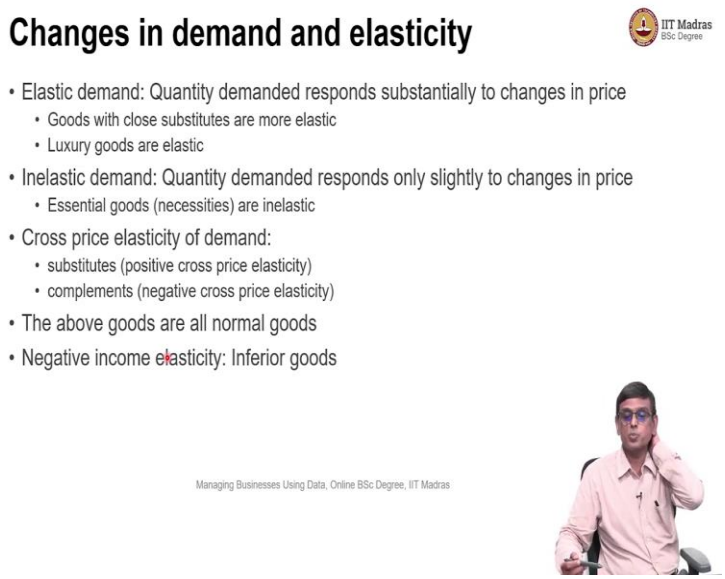


Demand can change in a way which is called elastic demand, which means that the quantity demand response substantially changes with price, so luxury goods for example, are elastic, things which are close substitutes are considered more or less elastic. Then there are demands which are inelastic, where quantity does not change, thus making them essential.

For example, we have a medicine, you need the medicine now, irrespective of the price of the medicine, (whether or not it costs 50 rupees or 100 rupees) if that medicine determines whether you live or die, it is so essential. Essential goods, necessities are inelastic

Then there is this idea of cross price elasticity of demand where substitutes basically show positive cross price elasticity, and complements show negative cross price elasticity, means the demand of one causes a negative change in the price of the other. So, negative income elasticity is for inferior goods. So, on one side ,we saw the idea of demand and the change in demand, and this concept of elasticity.

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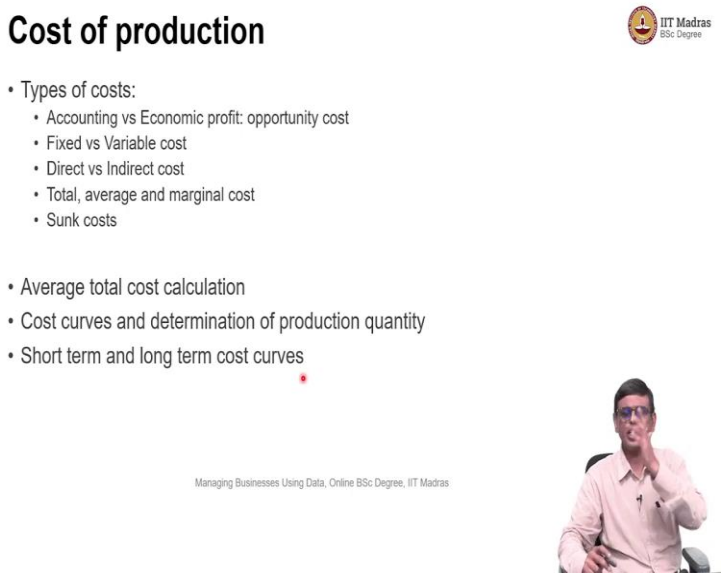


The other side is the idea of production. when you do production again you can look at production costs. Production costs can be either accounting costs or economic costs where the latter incorporates opportunity cost, which is the money that could have been used to do something else. It is used to look at whether or not the money has been deployed correctly.

Costs come in various kinds such as fixed cost, variable cost where fixed cost is plant in machinery; variable cost is people, labor materials and so on. A variable cost, changes as your revenue changes, but you cannot change your fixed cost because you are already sunk it, you have made a factory, it is there.

So, then there are, so using those things you can calculate the total average and marginal costs, and then you can draw the cost curves and then you can determine from the cost curves what is the optimum production quantity, and you can use the short term and long term cost curves to try and figure out what is the way to modularize or to basically stage your capacity addition, you

start with a smaller capacity at the beginning, then you expand your capacity as your demand builds up and so on. So, this kind of strategies you can use by looking at these long and short term curves cost curves.

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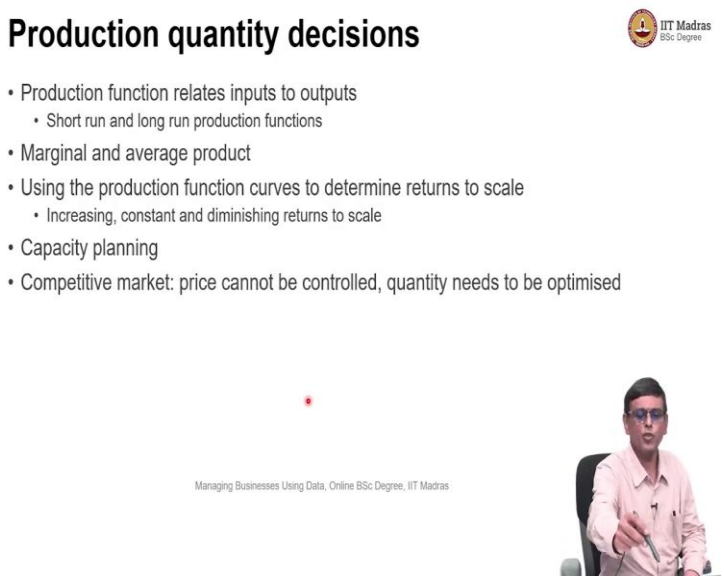


There is this thing called production function which relates input output, and using the production function you can talk about a marginal and an average product, and then basically using that you have this idea of increasing , constant and diminishing returns to scale. The former is when from the inputs you can keep making more and more output for some time.

And then you will find that after some time either you are not getting or you are getting constant returns to scale, where adding some more input is not changing the output, that is called constant returns to scale. And after some time adding an input basically may even cause the returns to reduce. So, for example we all know that when we have more people, people will talk with each other and so actually productivity can reduce, that is an example of a diminishing return to scale.

You can have increasing constant or diminishing returns to scale, ideally you would like to operate in increasing returns to scale or maybe at the constant returns to scale, definitely not in the diminishing return to scale area. This tells you your optimal operating point, and also tells you how to manage your capacity correctly. We also saw that in a competitive market where price cannot be controlled, only quantity can be optimized, how you set the quantity correctly.

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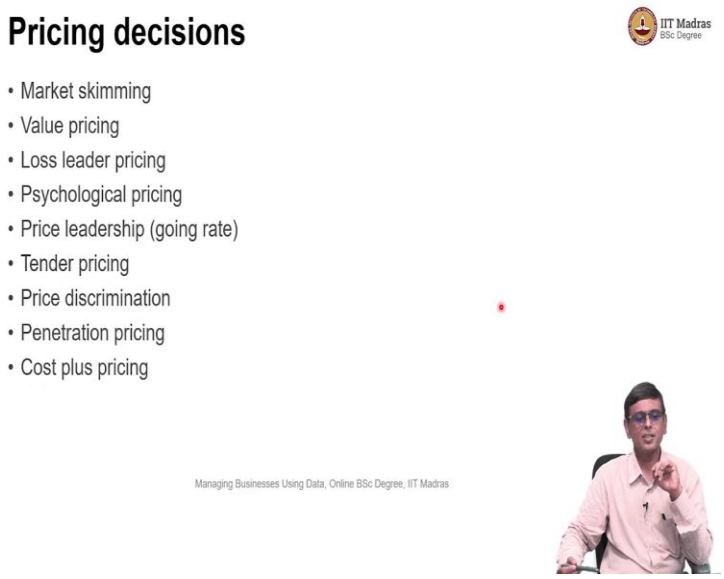


Finally, we looked at pricing decisions, what kind of pricing we can use? We can use various strategies like market skimming, value pricing, loss leader pricing, psychological pricing. we can do tender pricing, penetration pricing, all these kind of cost plus pricing and so, various different strategies depending on the circumstance. The same firm might use actually, at some time, cost plus pricing or for some product,cost plus pricing and for other products they will be doing market skimming. So, depending on what value you are delivering to your customers, you can decide on your pricing strategy.

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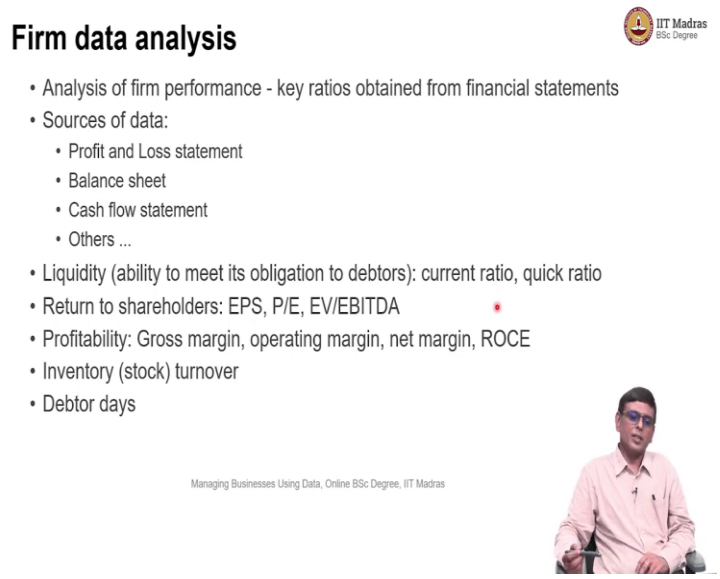


let us take a firm's financial statements profit and loss balance sheet cash flow statements, and let us try and analyze some ratios. the ratios can be in terms of how well they are managing the cash, how well they are managing their operations, are they generating profitability or not? Are they returning to shareholders sufficiently?

Earnings per share, price earnings ratio are all methods of testing whether they are returning property shareholders or not, their ability to meet their debt obligations? In case of money borrowed with an obligation to pay interest, if they have enough money to give interest back, or will they suddenly become insolvent?

So, liquidity measures , current ratio and quick ratio tell you whether or not they can meet debt obligations, obligations to debtors. Then there is this idea of whether they are managing their inventory very well, so there is inventory stock turnover, or are they collecting money from their customers very well, which is managed, which is measured using what is called data days.

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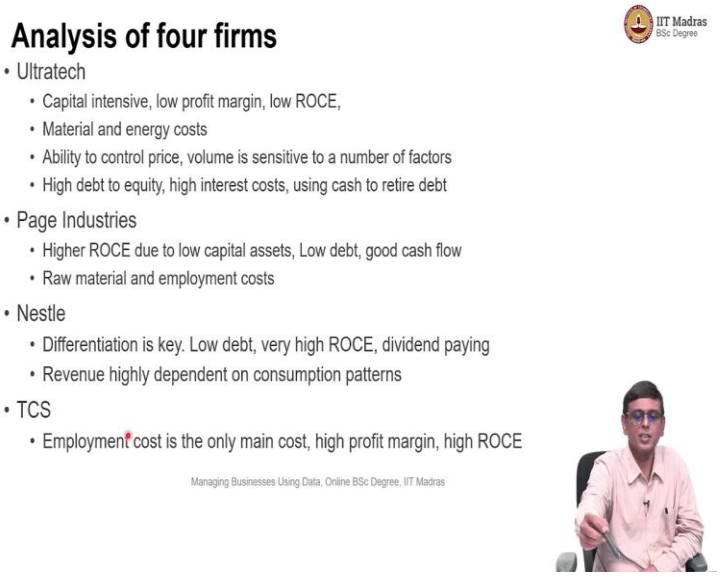


Then we looked at four firms, Ultratech, Page industries, Nestle and TCS. We saw basically that Ultratech is a capital intensive industry with low profit margin and low ROCE, mainly material energy costs dominate their cost structure, they are able to control their price. It is an industry which is catalyzed in a way they set prices very carefully and the price also keeps increasing steadily year over year per bag, and so their control over the price, but they do not have much control over the volume.

And the volume is the one that is going to determine whether the company uses its capacity well enough or not, and so capacity addition decisions are all determined by volume growth. Page industries is a much slightly different industry come from textile sector, so here the RRC is higher compared to Ultratech, which is cement, because they do not have much capital assets, their main costs are employment costs and raw material costs and they have low debt, they have a good cash flow.

Then we saw FMCG, which is example here is Nestle, we saw that differentiation is very key in FMCG company. So, these companies also operate with very low debt, very high ROCE i.e 100 plus percent ROCE, they are dividend paying companies because they are not growing, there is no need to add capacity. They are not growing that fast, at least near term, long term, it looks very good, but the near term Nestle, they are not growing that much.

They just return most of the cash that generating using, has dividends to their shareholders, very highly depend on consumption patterns. Clearly it is FMCG, so it should be consumption pattern. (has to be rephrased completely) Then we saw TCS and IT Company, their only cost is employment mainly that is only cost they have, very-very high profit margin, very ROCE generates a hell of lot of cash, so very good business, in some sense. So, these are 4 firms.

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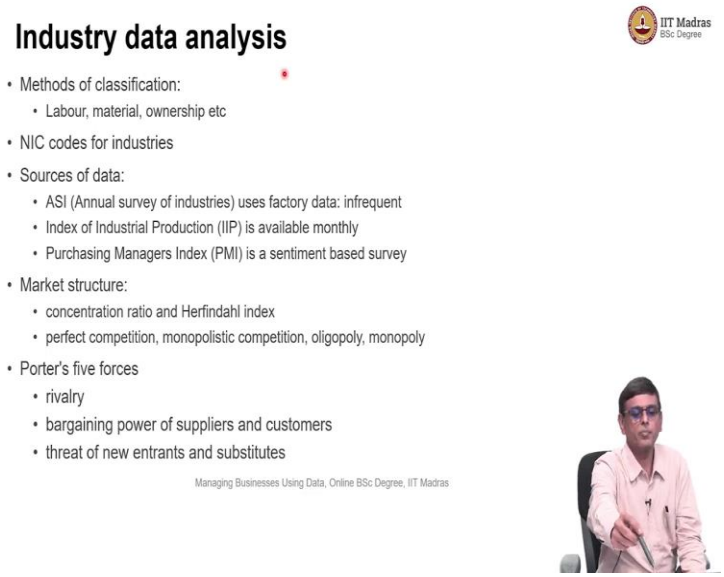


Then we moved on from there to analyzing the industry, that there are various methods of classification like labor material, ownership, et cetera and there is NIC codes that have been given to industry, there are many sources from which you can get data about industries. The annual survey of industries uses factory data, the factory inspector goes and collects information from the factories, it is infrequent, but it is a reliable source of data.

Then there is this thing called industry index of industrial production, which is available monthly, so it is a high frequency data and it is quite valuable data to figure out what is going on in the industry. Then there is a sentiment, which is kind of a futuristic kind of a measure, purchasing managers index PMI, which basically, if the score of PMI score is above 50, so there are 5 things and each of them is rated on a scale of 10.

10 being normal, if it is above 50, which means each of them have 10 or more, then basically, it means that it is positive, it is less than 50, it is 45 or something, it means a trend is negative. So,

some kind of sentiment score, where you are asking questions about whether or not a firm is going to invest or it is going to buy, whether it is going to do anything new.

you can find out more about the market structure using concentration ratios, which is basically a market share information you are using and then Herfindahl index. This is some kind of a square of the market share and then create an index to classify the industry into whether it is perfectly competitive, whether it is somewhat not so perfectly competitive what it is called monopolistic competition.

Where there is one form which is trying to set the price and everybody else is a price taker is a price leader and a price taker. Then few companies cartel and they manage the industry like in the case of cement and all that or you could have a single company that dominates and does everything like they get the utilities many utilities are in this form monopolies.

Then we saw basically that Porter's five forces, which are basically about competition within a sector, whether your suppliers are bargaining with you too much customers are bargaining with you too much, so 1, 2, 3 forces and then are there new entrants who are coming in that is a 4th threat and then the are there substitutes for your product that is the 5th. So, these 5 forces and their impact on the firm can be used to figure out whether the firm is well positioned or even whether the industry itself is well positioned.Thus you can figure out by using Porter's five forces.

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So we analyzed 4 industries cement industry FMCG industry, we did not use Porter's five forces per se here , but some factors in the Porter's five forces that were relevant were highlighted. For example, we saw in the cement industry, they are currently trying to add capacity, Ultratech is trying to increase its market share by putting more, disproportionately more capacity up.

FMCG for example, there is a weak trend seen in the industry in the near term. But the long term it looks very good because India still as a consumption per capita consumption India is very very low. So, the and we saw that raw material costs is increasing right now, because commodity prices are going up and this is going to create profit compression on the FMCG industry.

This is an example of Porter's five forces being used to analyze the industry. Similarly in the textile industry, we saw that it is an industry which has a mix of domestic and exports, both of which are potential. We saw that the textile industry in India is not competitive in finished products, but it is competitive in cotton products and yarn.

The IT industry is got a cost advantage, which is going to keep driving the industry but also at the same time they are looking at value addition through what is called digital transformation. So, sparkly value addition, partly cost advantage are 2 drivers, which will keep this industry going for at least 10 years few not more.

So, Indian companies are still at a very low share of market from a world perspective.This is a summary of our analysis of these 4 industries and we expect basically that you will also do similar analysis of the industry that we give you in the assignment.

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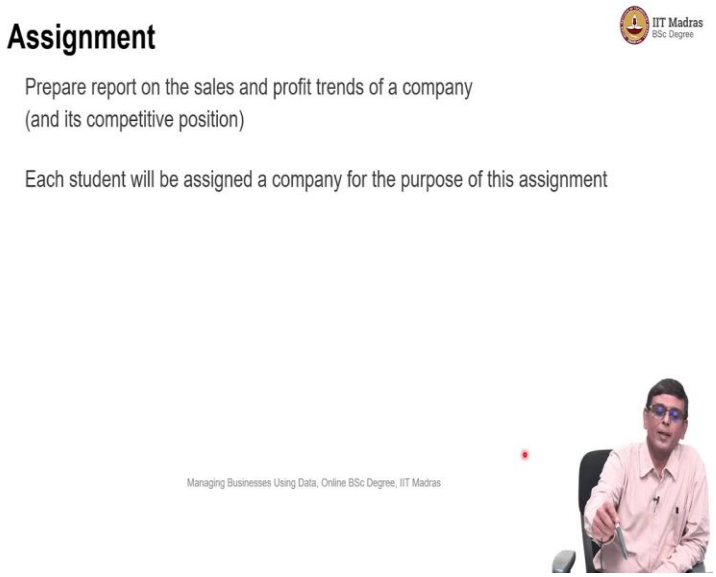


So, the assignment will be giving you a form and we expect basically, you will take the financial data of this form from money control, we will tell you where to look and we will take it looking at the financial data and other data that is surrounding analysis reports and so on. You will prepare a report which tells you about the sales, the profitability, the trends and its competitive position and what is happening in the industry and what is happening to this company with respect to the industry.

And you will have to make a report and this will be your assignment for this 4 weeks. So, with that I think we come to an end of the first 4 weeks. We look forward to seeing you again after this the 5th week where we will be introducing the first case study which is Fab Mart.