Managerial Accounting
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Lecture - 26
Cost Volume Profit Analysis

Dear participations in our early session, we have discussed about activity base costing. As you would remember this is the challenge to traditional costing, where we identify cost drivers and try to link cost directly to products. Today, we are going to discuss a very important technique known as Cost Volume Profit Analysis, also known as breakeven point analysis, sometimes it is known as marginal costing. Before going into exactly what is CVP, I would like you to remind that we have studied types of cost.

And we had also tried to classify the cost into various types. Do you remember, what were the types of cost we have learnt? So, one classification is based on elements, where will we classify the cost into material labor expenses. One way of classifying is classification as per direct cost and indirect cost. One way of classifying as per the nature of cost is classifying the cost into fix cost and variable cost. That is something, which is the base of CVP.

So, you need to properly know and remember it, then we can proceed for understanding what is cost volume profit analysis. As per as the utility is concerned, the technique is very much useful for taking a variety of decisions. So, let us now come to classification of cost into fixed and variable. Do you remember, how did we define variable cost, which cost can be considered variable. You can also think of one are two examples of variable cost.

So, if you assume, that for making 100 units the cost is 1000. And for making 200 units if it becomes 2000, then that cost will be called as variable cost. So, it is the cost, which changes in the direct proportion to the level of activity or number of units as the case may be. So, if number of units increase three times, the variable cost will also increase three times. Can you think of some examples of the variable cost? Even from your day to day life you can think of such examples.

Suppose you are driving a two wheeler. So, for a two wheeler what is a variable cost? Typically the fuel consume will be variable. More the distance travel more will be the petrol consumed. So, fuel cost is a variable cost. As again this there is another set of cost known as fixed cost. What is fixed cost? Just think of how will you explain it and also one are two examples of what is fixed cost? Yes, fixed cost is a cost, which never changes with the level of activity, it remains constant.

So, if you make 100 units and cost is say 1000 rupees. Even if you make 200 units, it remains 1000 rupees only it does not increase, such types of cost is known as fixed cost. Can you think of any example of fixed cost? Again come to the example of driving a vehicle. If you are using some vehicle, we have seen that the petrol is a variable cost, what will be the fixed cost? Usually, RTO taxes insurance for the vehicle, these will be fixed. They are a fixed sum to be paid every year and they do not change.

Even if you travel for 0 kilometers, even if you travel for 100 kilometers, even if you travel for 200 kilometers, the amount is going to remain the same. This is an example of a fixed cost. Now, on one hand you have cost which changes in the same proportion known as fixed cost. On the other hand, we have an example of the cost which does not change at all. That is known as fixed cost. In between them there are number of cost known as semi variable cost.

As the name suggest they change with the level of activity, but not in the same proportion. So, for 100 units you have 1000 rupees, if you make 200 units, it would not become 2000, but it will neither remain 1000. So, it is neither variable nor fixed, may be it is 1600, 1500, 1300 whatever. But, it has increased, but not in the same proportion,. Such costs are known as semi variable cost. Now, give me an example again in the contexts of use of vehicle.

So, in while using vehicle, petrol is variable, insurance is fixed and maintenance could be a good example of semi variable. Because, you have to incur some amount of maintenance, even if variable is vehicle is idol. As the use will increase, the maintenance cost will increase, but not in the same proportion. So, it is a semi variable cost. I hope the classification of the three is very clear to you. This is the base for cost volume profit analysis. Now, let us try to understand what is CVP and will also see the graphs about this cost classifications.

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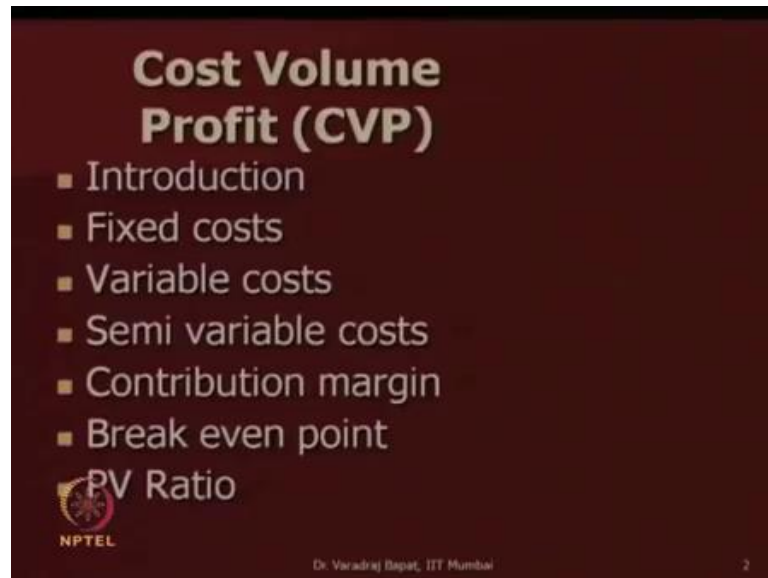
So, this is module 12 we are going to discuss CVP, these are the contents. We will see what is CVP? Then, discuss about fixed cost, variable cost, semi variable cost, contribution margin, breakeven point, PV ratio. The first part we have already discussed, but again you can see here in the graphical format.
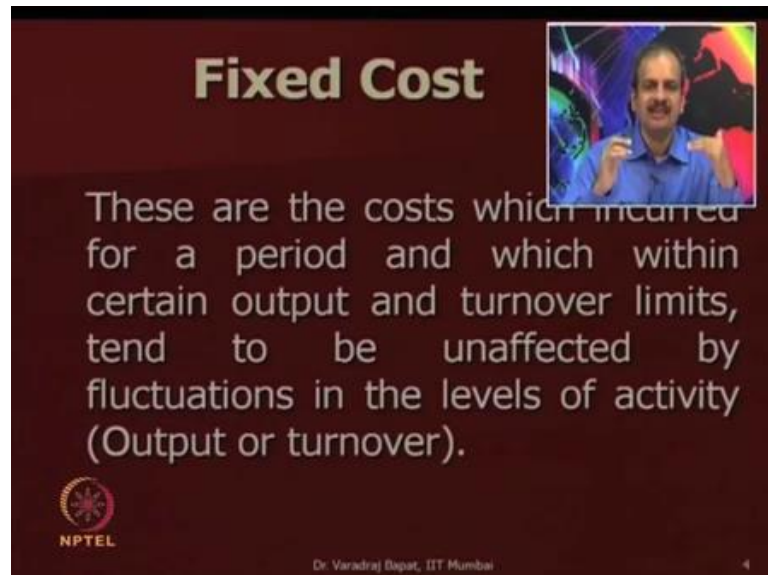
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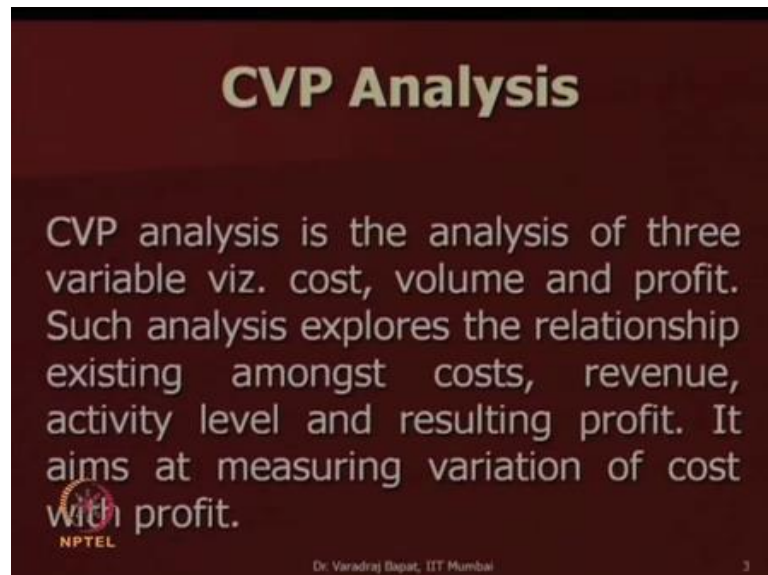
Now, CVP is an analysis of three variables as the name suggest, it analysis the cost volume and profit. Such analysis explores the relationship between cost and revenues.

And inter it is cost and revenues with the level of the activity. And inter it is bound to impact the profit.

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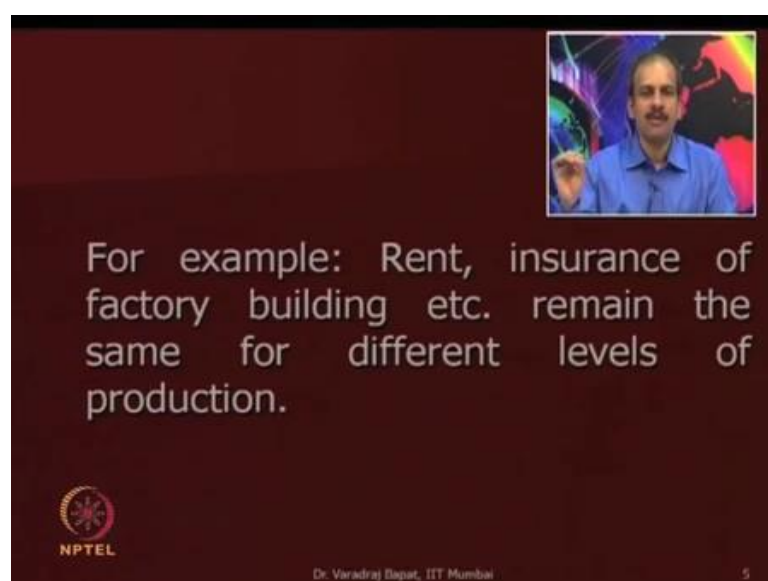
Now, we have already discuss, this that one type of cost or fixed cost, which are essentially period cost, they do change not with the level of activity. So, they are completely unaffected with the fluctuations in output turn over number of units produced etcetera. So, they are called as fixed cost.

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We have already seen an example in the context of vehicle. Now, here are there are some more examples, let us say for a factory. Rent of the factory or insurance of the factory building they will always remain constant. So, in a factory set up they are good examples of fixed cost.

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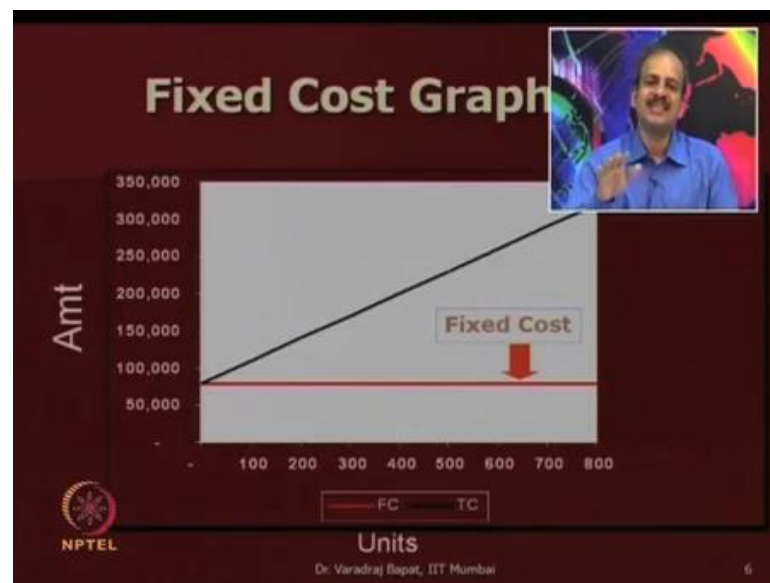
Now, this is graph of fixed cost. You can see the total cost will raise the level of activity will also rise from 0 to above. But, fixed cost remains that horizontal line, which never changes. Is it clear? So, as the number of units increased, the fixed cost does not change at all it remains completely constant, hence it is known as fixed cost.

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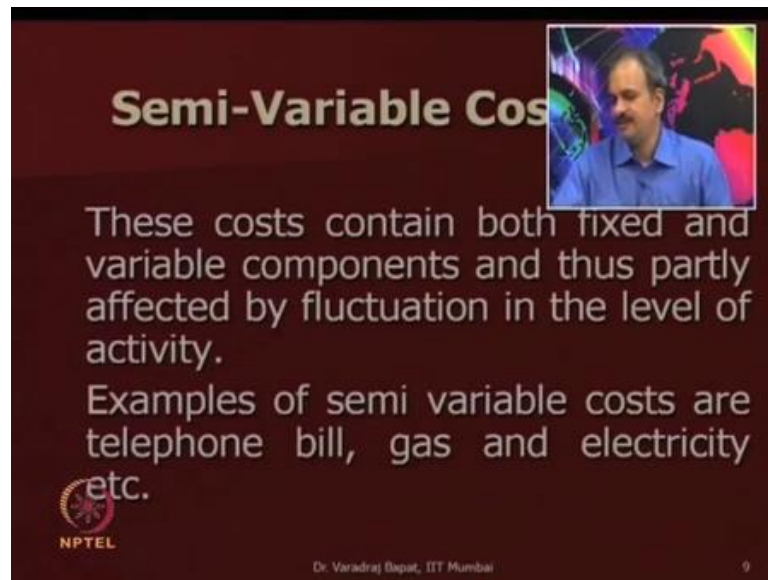

Now, the other type of cost, which is known as variable cost. Here, we have already seen every increase in the level of activity will have same increase in the cost. Then, it is called as variable cost. Naturally, when the output decreases, variable cost will decrease in the same proportion. Here, the examples more for a production set up are given. So, cost of direct labor, cost of direct material, they are typically variable cost. We have already seen in a example of a vehicle, petrol becomes a variable cost.

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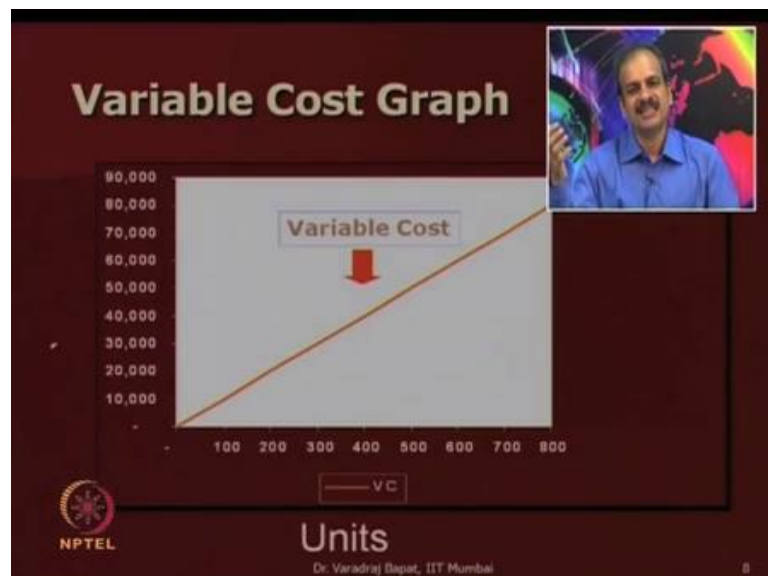
This is a graph of variable cost. So, it was 0 in the beginning. And then, it increases linearly. So, every extra unit means there will be some extra cost. This is how variable cost will increase in the same proportion as the output increases.

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Now, you have semi variable cost, which are a combination of fixed and variable. So, we have seen that they do change with the level of activity, but, not in the same proportion. So, examples are given here like, telephone, gas, electricity bills, you know generally they have fixed component. And then, as you use more the cost tends to increase. In turn we can also say that, semi variable cost actually have fixed component, which is a fixed cost. And we have a variable component, which increases.

Hence, when we try to do CVP Cost Volume Profit analysis, we divide semi variable cost into fixed component and variable component. Fixed component is added to fixed cost. Variable component is added to variable cost. So, ultimately we have only two costs. We have fixed cost at one end and variable cost at other end.

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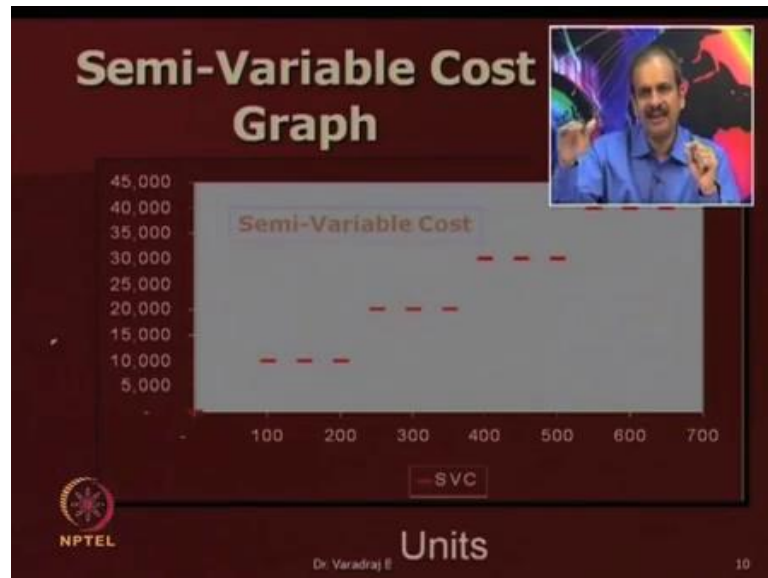
Now, this is a graph of semi variable cost. You can a see step like structure. So, what happens is for 100 to 200 units, it is at certain level. Once, the unit cost 300 it suddenly increases again it becomes constant. It increases again within the level it remains constant. So, most of the semi variable cost do increase, but not linearly. They increases gradually and in a step manner, though it is not necessary that they must increase in step manner. They can also have a sort of curve not a line. But, they can have a curve which is going up. But, slightly say it would not increase in the same proportion as the output increases.
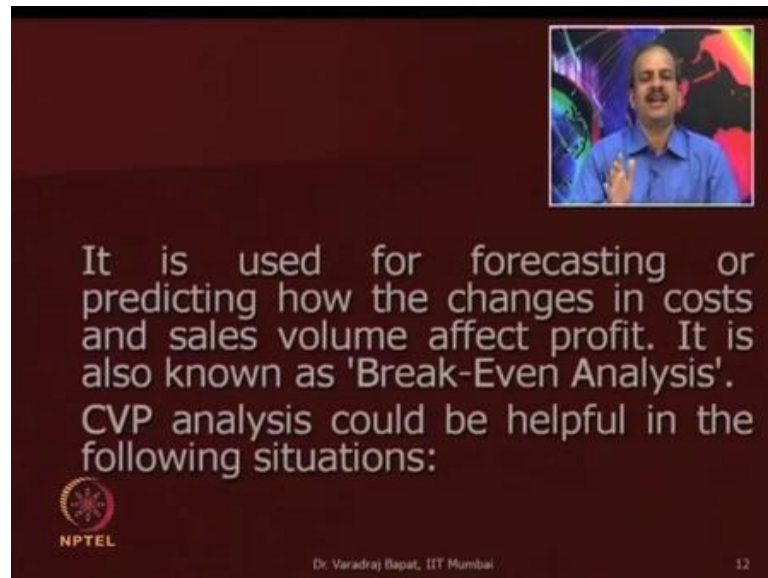
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Now, let us come to what is the main topic? That is CVP analysis. In CVP analysis one there are three components which had studied. One is the cost, which is divide into fixed and variable cost. The other there is a revenue and the net result is a profit. And as the share volume changes the profit changes. Those changes are studied that is why it is called as cost volume and profit analysis.

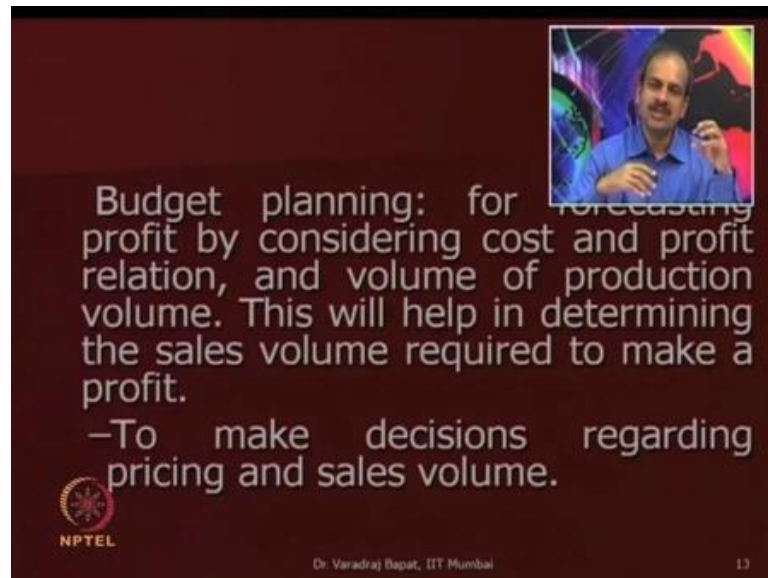(Refer Slide Time: 11:34)

Now, this is very, very important and useful for forecasting, how change in the volume affects the profitability. We can also use a breakeven point tool, hence it is called as a breakeven point analysis also.

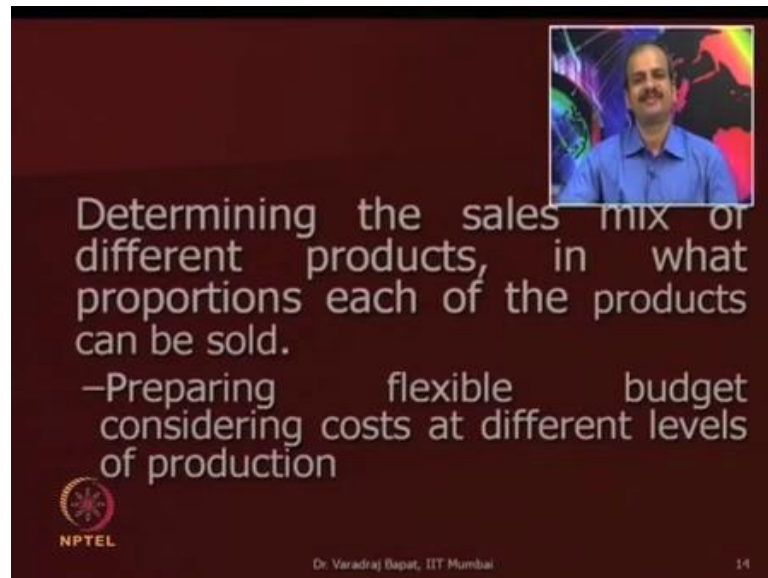(Refer Slide Time: 11:58)

It is useful in the following situations, it is extremely useful for budget planning. Because, while budgeting we are never sure as to how many units will be sold or what level of activity will be achieved. That is why one has to make multiple budgets at different level of activity. So for, budget planning CVP becomes very important. It is also very important for decision making, particularly or pricing and sales volume.

Because, we must know at what volume it is more profitable for us. And you are aware that prices in turn impact the volume. So, if we keep the price high the volume will affected, if we keep the price low the sale volume increase, but our margins will fall. So, a delicate balance has to achieved and those decisions can be taken very well, when we use CVP technique.

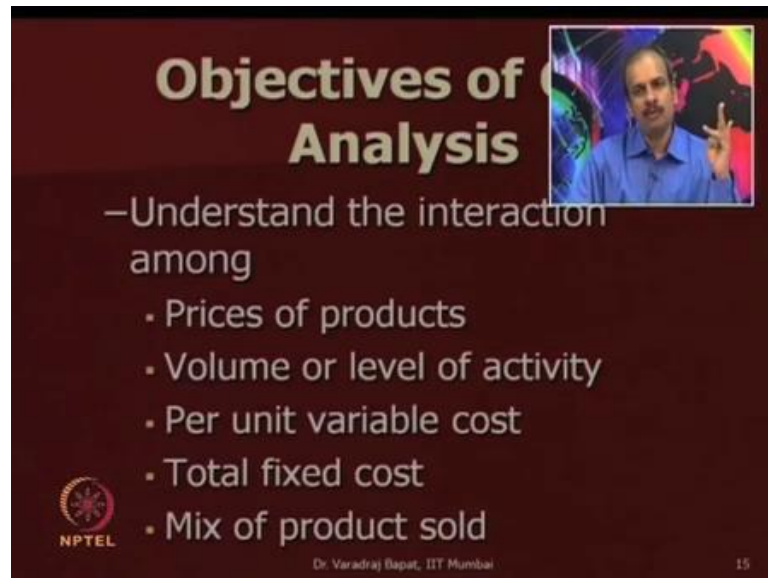(Refer Slide Time: 13:03)

It is also very much useful for determining the sales mix. What happens is when using the same facilities. We can make product a, b and c. We have to decide, which product should be focused. And such decisions can be well taken if we know product wise margin. And we also know the component of fix and variable cost. And the impact of sale prices on the profits.

It is very much useful for making flexible budgets, because as we just now discussed the chances that we achieve different level of activity exits. So, we have to make budgets at different levels, which is known as flexible budgets.
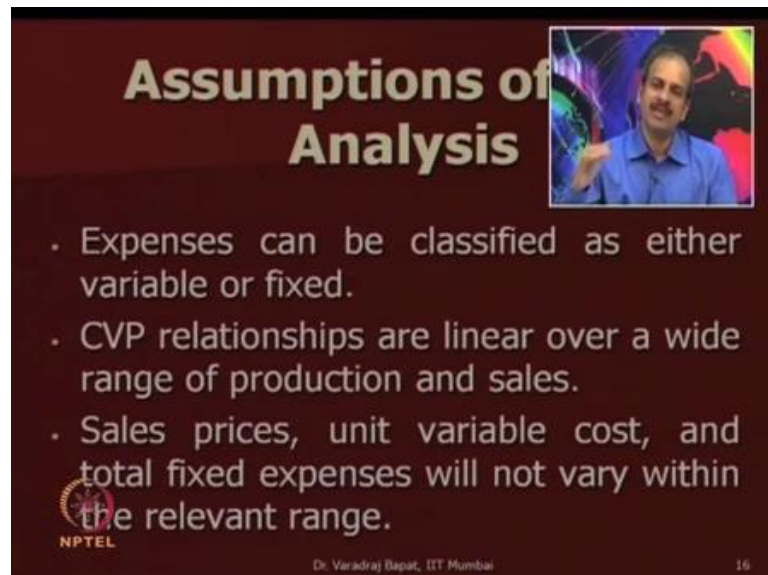
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Now, objectives of CVP in cost volume profit analysis, the interaction of these factors is same. One is price, then volume or the level of activity, variable cost which is generally measured per unit basis, fixed cost, which is measured on total basis. Because, it remains constant and the mix of products as is propose to be sold.
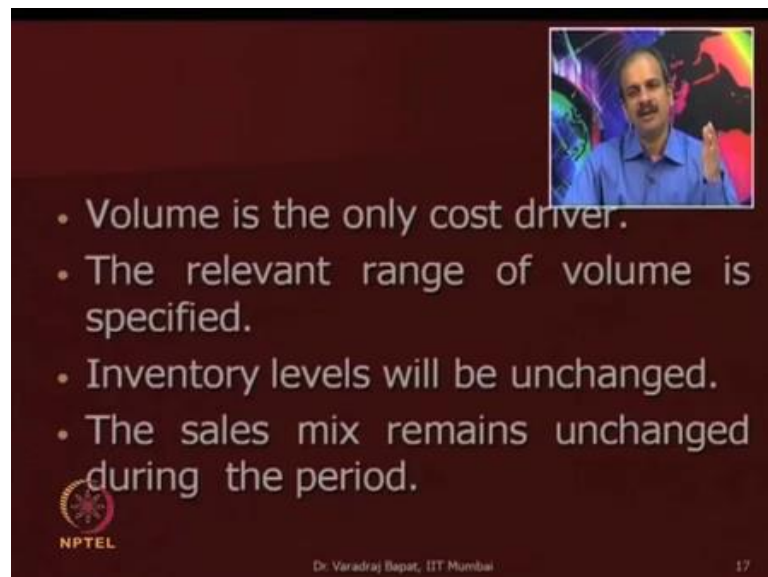
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We should also know that CVP is based on certain assumptions. The first assumption, which is used in CVP is that, the cost can be divided as fix and variable. Here, we are assuming that all cost, can always be identified with this character. It will be either fixed

or variable if it is semi variable, it will be again sub divided and can be classified as fix and variable.

The second is that there is a linear relationship. So, as the units increase as the output increase, the sales will also increase, the price will essentially remain the constant. So, in the third assumption we are saying that sale prices and per unit variable cost will be constant, where as fixed cost will also remain constant at a total level. Of course, this is a within the relevant range say from 100 units to 500 units. We will assume that SP that is sale price, variable coat per unit is same. And fix cost as total also remains the same.
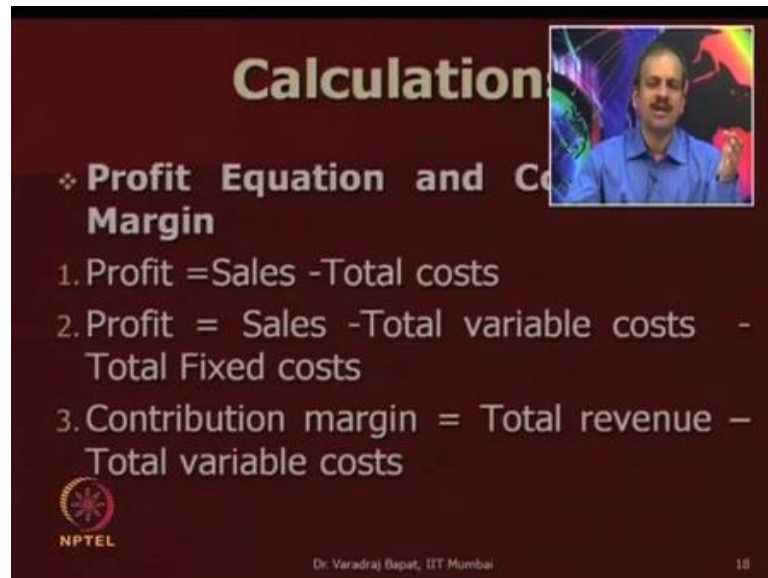
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One more assumption is that volume is the only cost driver. So, there could be some other cost driver, but we ignore them. Relevant change in the volume, relevant range of volume is also specified, because beyond a range. Let us, say from hundred to one thousand we have capacity. If the production goes beyond one thousand, then we have to obtain a new equipment or we have to increase the capacity. Then the cost structure will change, but within the relevant range the cost structure remains constant.

We also ignore the inventory levels, because we are focusing on volume and profit relationships. Sales mix is also assume to remain constant of course, it can change and we can take decision on it. But, when we are doing a CVP we assume that it is constant.
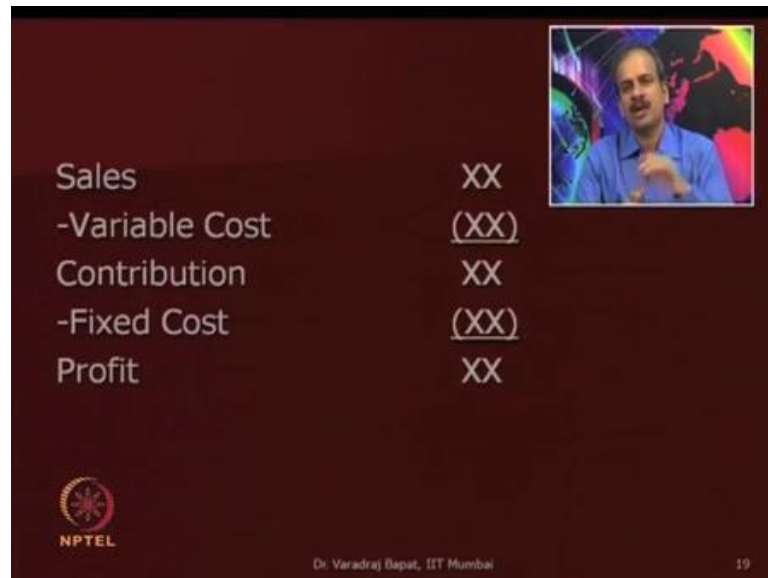
Now, let us look at calculations. Certain equations I have given and this will be useful and will also do some cases, so that it is more clear to you. All of us know, that profit is nothing but, sales minus total cost. Now the total cost itself we divide into fix and variable. So, we say that profit is nothing but, sales minus variable cost minus fixed cost. Now, this sale or the revenue minus variable cost we segregate and we call it contribution margin.

So, contribution margin is equal to sale minus variable cost or we can see total revenue minus total variable cost. This is a new definition, so keep in mind. Contribution margin or it is sometimes I am just call contribution it is sale minus VC.
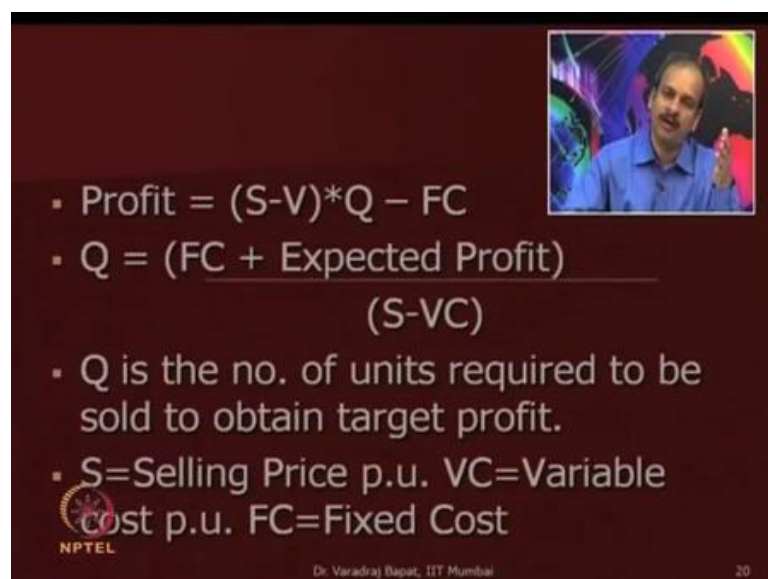
This is how now we make cost sheet normally we just take a sale minus cost to calculate profit. Here we divide the cost into variable and fixed. So, we say sale minus VC we get contribution. Contribution is a pool, which is collected for paying fixed cost and what remains is a profit. So, from contribution we pay fixed cost, contribution less fix cost gives us profit. Calculation of contribution is very important, when we try to use it for decision making. Because, as the volume changes the contribution will change. Because, sale and variable cost both will change with number of units, where as fixed cost will remain constant. So, any change in the contribution will have complete impact on profit.

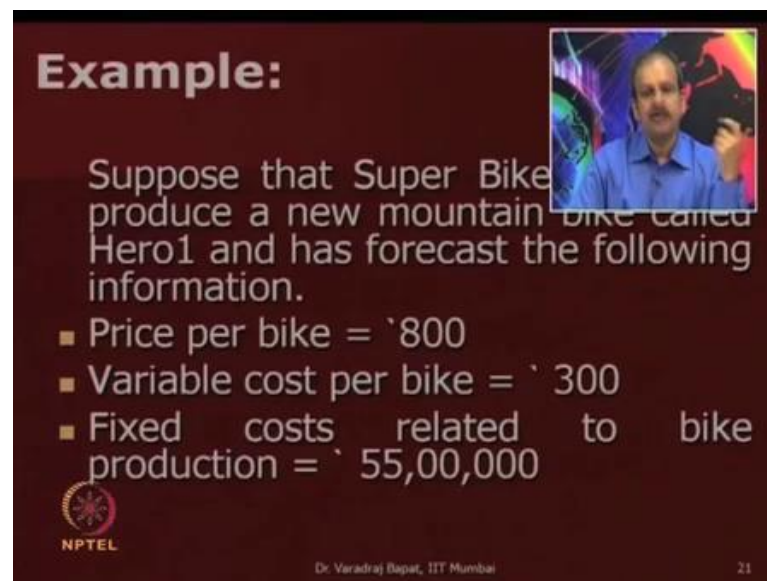Now, the same thing has been put now little more in different format. So, we know that profit is equal to total sale minus variable cost minus fixed cost. Of that selling price and variable cost are constant. So, we have taken them in one bracket. So, we can say that profit is nothing but, S minus V into Q. Where in Q is nothing but, the number of units targeted to be produced and sold. So, sale minus variable cost margin has now been calculated as S minus V into Q minus F gives us profit.

Now, same thing the same equation can be changed to compute profit, to compute the required level of quantity. That is why we can say that Q is equal to FC plus expected profit upon S minus VC. So, fixed cost plus expected profit is the amount we want to generate. We generated it by selling the units, which gives us some margin. So, S minus VC becomes a margin for us. So, FC plus expected profit we divide by the margin to low the Q. Now, this equation will be very much useful, because in the many times we have to decide what level of activity we should work on or we should target, that is nothing but, Q.
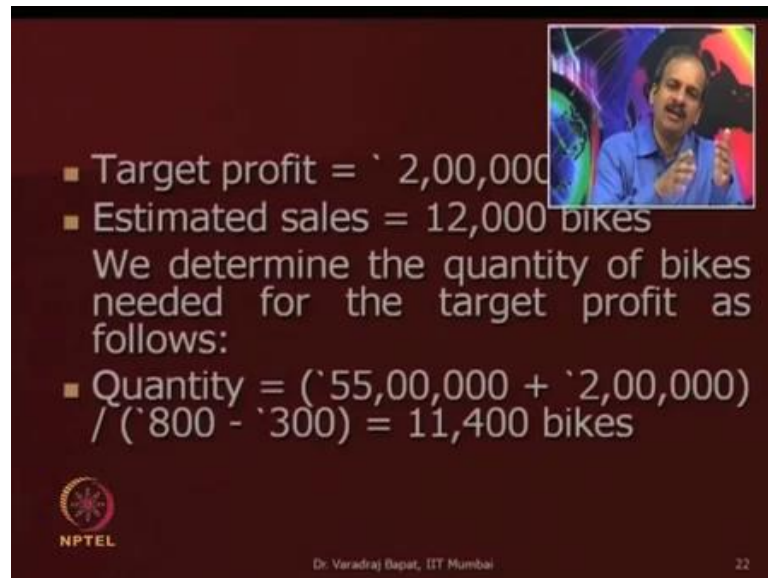
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Now, let us look at a simple example. Now, suppose there is a company super bike, they want to a new mountain bike called as hero 1 is now been launch, the information is like this. Price per bike is rupees 800, variable cost is rupees 300, fixed cost is 55 lakhs.

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Targeted profit is 2 lakhs, estimated sale is 12,000. Now, we may be asked, I will just ((Refer Time: 20:28)) take you back to the information we know that SP is 800. We know VC is 300. We know FC is 55 lakhs. Now, using this data we can calculate, how many bikes need to be sold to generate the target profit of 2 lakhs. So, this is calculated, so quantity to be produced we need 55 lakhs to pay fixed cost plus 2 lakhs of profit plus 55 plus 2 lakhs in bracket divided by 800 minus 300.

Because, by selling one bike we make a profit of 500, 800 minus 300 is 500 is a margin. So, 57 lakh upon 500, we get 11,400 as a target sells. Our estimated sales are 12,000, based on the market search. So, we can go in for the production. This is how you can use this information for variety of decision making.

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Now, let us try to understand one more concept that is known as profit volume ratio, popularly known as PV ratio. Now, the contribution margin it is also known as contribution margin ratio or CMR. So, CMR or PVR whatever you call it is the percentage by which selling price per unit exceeds the variable cost per unit. We can simply calculate it as contribution upon the selling price. So, we take contribution margin as, percentage of revenue as the name suggest it is PV. So, it is contribution upon sales.

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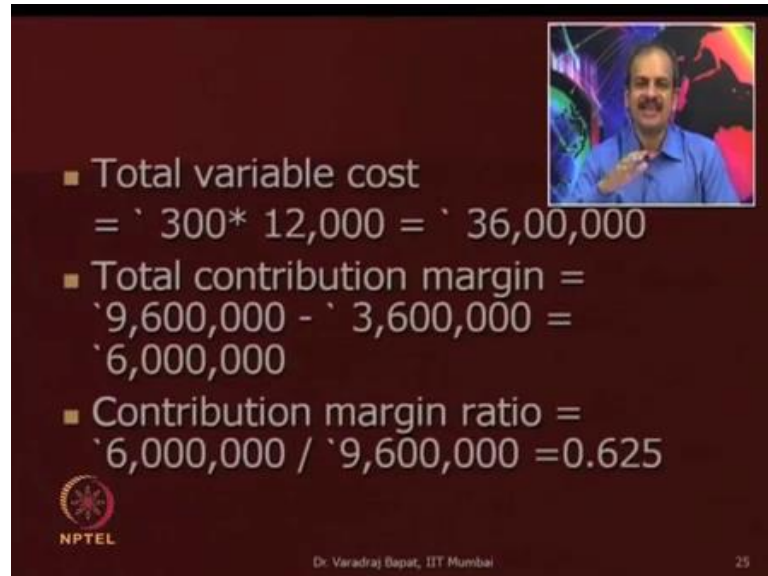
Now, if you try to do it for hero, we know that 12,000 is our estimated sales, 800 is a selling price. So, 12,000 into 800 the estimated revenue is 96 lakhs.

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Total variable cost is 300 into 12,000. 300 is a cost per unit, 12,000 numbers of units, so 36 lakhs. So, total estimated contribution margin is 96 minus 36. So, 60 lakhs is expected to be the margin. So, contribution margin ratio will be 60 lakhs upon 96 lakhs, which is 0.625 or we can say 62.50 percent I hope it is clear to you. So the idea is, when I sell goods worth 100 rupees, how much margin is I am earning. So, when I sell goods of 100, I am making margin of 62.5.

Higher the margin naturally, higher will be the ultimate profits and lower risk for us. From this margin the total margin, which you can see 60 lakhs we pay our fixed cost and remaining is our profit. So, in the current example you can see 60 lakhs minus fixed cost of 55 lakhs. So, 5 lakhs is our profits. Let us, look at one more concept and once we see that concept will go to some cases.

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This is known as breakeven point analysis in breakeven point analysis we tried to calculate the minimum quantity, which must be produced to avoid losses, because every company or every entity or any unit do not want to be in loss. So, they must know the minimum level, which has to be achieved to reach that particular level of to reach out to come out of losses I will say. Below that level you are in loss, once you reach level which is no profit no loss it is known as breakeven point, above that you will start making profits.

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This is again useful for finding a suitable product mix. This is useful for deciding the sales target to know the profit, I mean to for a particular profit. What should be the sale target and it also helps us to know the profit at different levels of activity.

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In breakeven point we use CVP analysis to calculate the BEP. As we have just seen the BEP is a level of operating activity, at which revenue are equal to cost. So, there is a 0 profit or this is a point of low profit or no loss.

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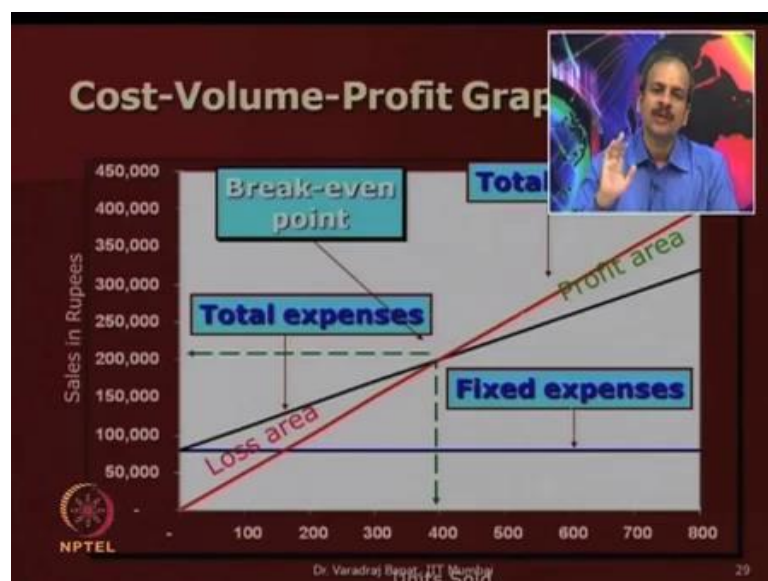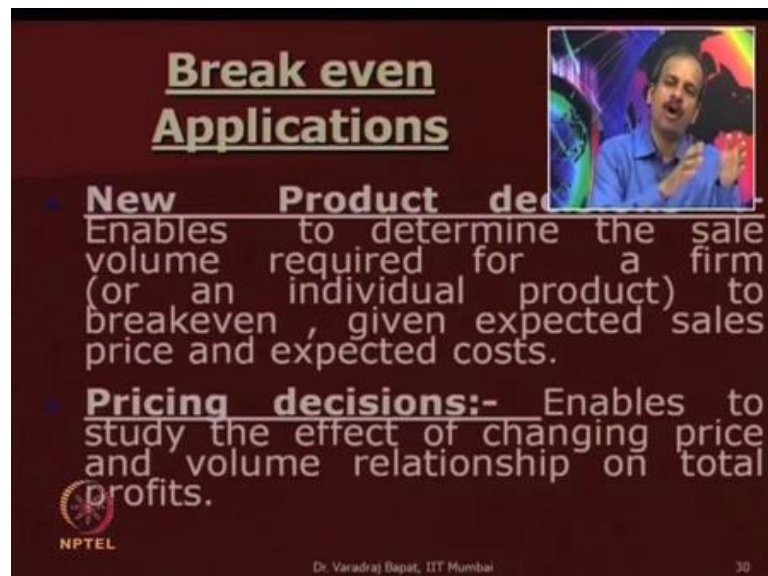
This is a interesting chart for you. This is known as cost volume profit graph, you can see the red line going from down to up, this is the total sale line. As the units are raising in the horizontal pain the sales are raising in the linear passion. The cost to begin with are at 1 lakh. And they are fixed cost and total cost line is also going up linearly, but it does not start with 0 it is start with 1 lakh. You can see fixed cost line is horizontal. So, fixed cost remain at 1 lakh all the time.

Variable cost are going up, so the total cost are also going up. Total cost and fixed cost meet at a particular point, you can see here at 2 lakhs and in terms of units it is at 400. So, at that point of time the sale margin takes over the total cost line. Below that, that is for volume of less than 400 you can see the sale line, that is at red line is below the total cost line or total expense line as is given here. So, you have loss area, because sales are less than the cost.

Add BEP sales are exactly equal to cost, above BEP sales cross the cost. So, you have a profit area as the sales will increase now, there will be more and more profit. Is it clear to you? Now, this breakeven point can been seen graphically and it is very much useful for making variety of decisions.

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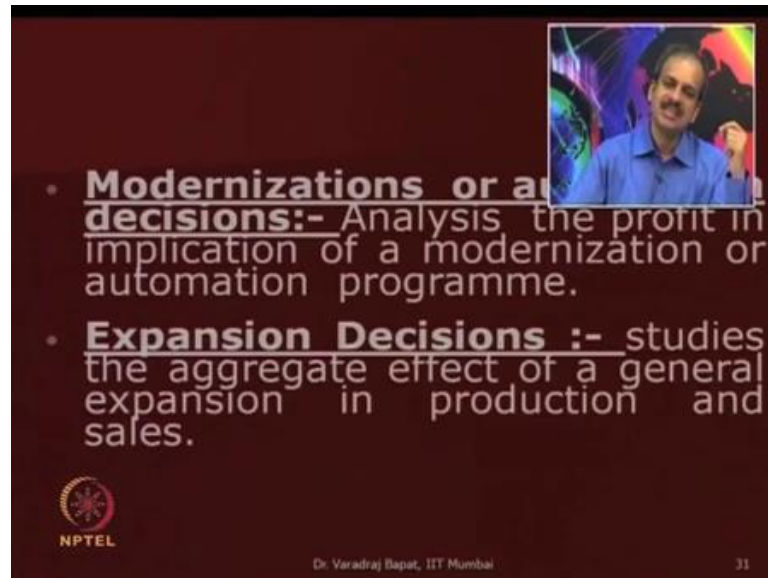
Here there are some applications of breakeven point. It is useful for new product decisions. Because, before launching any product company would like to know, whether it is likely to be in profit or loss, it is also useful for pricing decisions. Because, changes

in prices in turn changes in I have changes on ((Refer Time: 27:42)) the activity. So, we should know that for what price and at what activity, how much will be the profit, so that the proper decision on price can be taken.

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It is also useful for capital budgeting decisions like for modernization or for automation, because it will involve some cost, but it will save time, in turn saving the variable cost. It is also useful for expansion decisions, when we want to increase the capacity for the product. Then we can increase the level of activity later, but it will entail extra fixed cost for us. So, expansion and modernization, both decisions can be taken using breakeven point analysis.

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Here are the formulas for calculating the BEP, for calculating the BEP in units take fixed cost and divide it by contribution per unit. We know that contribution per unit is nothing but, selling price minus variable cost. So, fixed cost upon contribution per unit gives us BEP in units. For BEP in rupees or in sale value we take fixed cost upon PV ratio. Are this clear to you? Now, soon will see some cases, where in it will be very much clear to you. How exactly BEP and CVP operates?

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So, you can see here, the sale quantities is 5000. Selling price is 50, variable cost is 30, fixed cost are 35,000. Using this information we have to calculate the breakeven point. So, first step is compute the contribution per unit, which is 50 minus 30, so 20. So in other words, when I sale a product for 50 rupees the variable cost is 30. So, after selling every product at 50, I make a margin of 20.

Now, I have to calculate how many units need to be sold to cover my fixed cost of 35,000. Can you think of you can even do it orally. So, every one product or one unit being sold gives me 20 rupees. I need at least 35,000 to cover my fixed cost. So, how many units have to sell could you calculate? Do not look at 5000 that is a estimated sale, but we want know the minimum units required to cover up the cost.

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So, you know the formula it is fixed cost upon contribution. So, 35,000 upon 20 you get o1750. So, 1750 units is known as breakeven point. If you multiply by 50 you get 87500 rupees which is breakeven sales required.

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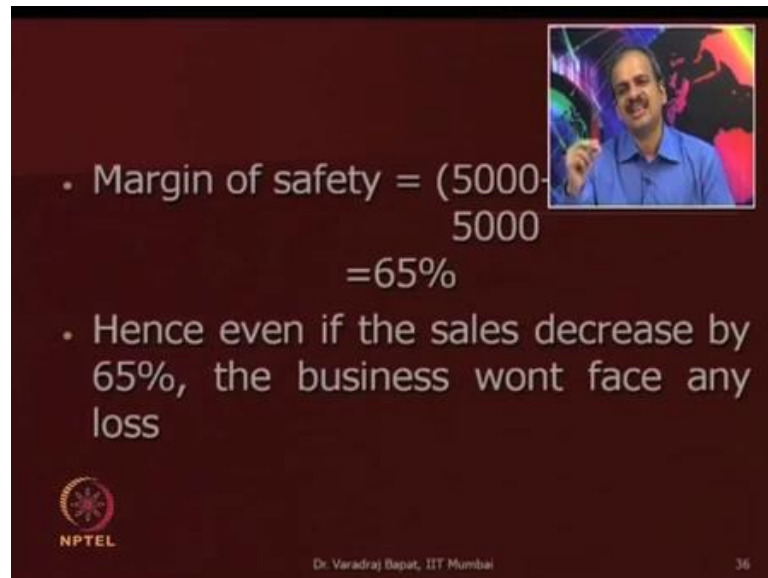
There is one more concept related to breakeven point. Now once, the company is operating at profitable level. They want to know, how much safety margin they have. So, how much are the actual sales above breakeven sales. So, that they do go do not go into losses. So, margin of safety is actual sales minus breakeven sales, this is different between sales and BEP sell. It can also be calculated as a percentage, where we in take sales minus BEP, that is margin of safety divide by sales into 100. So, margin of safety enables the unit or the department to know. That due to recitation or due to lower sales, in case their sales start falling down, how much it can fall before they go into the land up in losses.

- Margin of safety = (5000-
                        5000
              =65%
- Hence even if the sales decrease by 65%, the business wont face any loss

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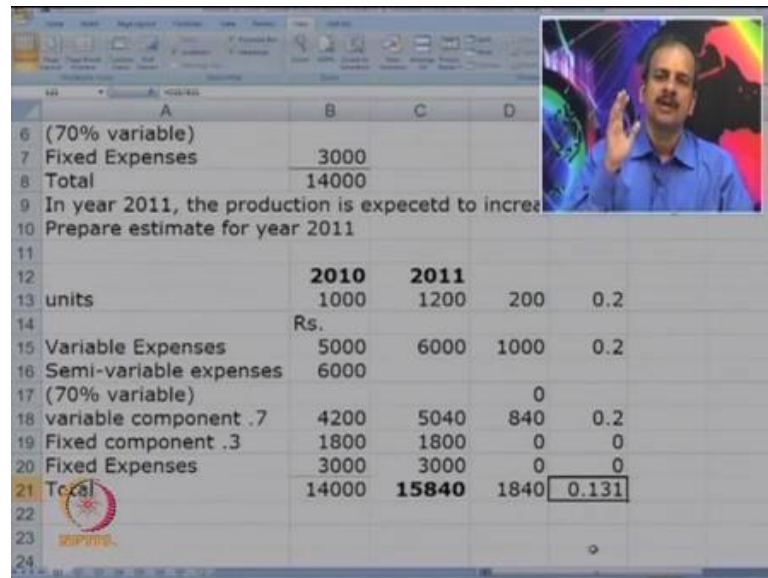
Now, in our case, you know that 5000 was the estimated sale volume. 5000 minus 1750 is the margin of safety in terms of percentage you can say 5000 minus 1750 upon 5000. So, we get 65 percent, which means that our current sale of 5000, even if falls by 65 percent we will not land up in losses. So, this shows the margin we have with which we can face the recitation or fall in volume. So, now we have understood most of the concepts let us go, for some cases.

So, that we actually, see how the concepts can be applied. I will just repeat in short, we have seen the contribution. Can you tell me the formula for calculating contribution? It is sale minus variable cost, next we have seen PV ratio, profit volume ratio, which is contribution upon sales. Third we have seen breakeven point, which is FC upon contribution margin, because we want to know the number of units required to cover fixed cost.

So, FC upon contribution margin and last we have seen margin of safety, which is sale minus breakeven point. So, this four formulas are important. Now, let us look at cases, where we will apply whatever we have discuss to a practical situation.

Now, let us go to the cases, first one you can see that the company produced 1000 kg's of product ABC in your 2010 and these are the estimated expenses. Variable cost is 5000, semi variable expense is 6000, which as 70 percent variable component, fixed cost are 3000, the total costs are 14,000. Now, the production is expected to increase to 12,000. We have to calculate the revised cost for the year 2011.

How to go about? In a traditional manner, system we have we know that the total cost is 14, we will only stick to that and try to say that the cost is will increase at some proportion. Because, you can see that the output is likely to increase by 20 percent from 1000 to 1200 kg's. So, we will say, that the cost will increase by 20 percent or 15 percent something like that. But, here we have got a break up of the cost into variable, semi variable and fixed. Now, how will you calculate the cost for 2011? Just think over?

Now, we have variable cost, now this cost structure as you can see here is for 1000 units. Current level is 1200 it has increased by 20 percent. So, what will be the cost now, what will be variable cost? We all know that variable cost increases in the same proportion. So, into 1200 upon 1000 it will become 6000. In other words, it will also increase by 20 percent. Semi variable we do not know, we cannot say it will increase by 20 percent, because it is semi variable.

As far as fixed is concerned we know that it does not change, so it remains at 3000. What shall we do with semi variable? Let us, break it down into fixed and variable. Then our

work will be simple. It is given that 70 percent of it is variable. So, how much is a variable component. So, the cost of 6000, I will try to brake to know it is variable component. So, it is 6000 into 0.7, because 70 percent is semi variable. So, it becomes 4200 and remaining 30 percent is a fixed component. Please try to do it with me.
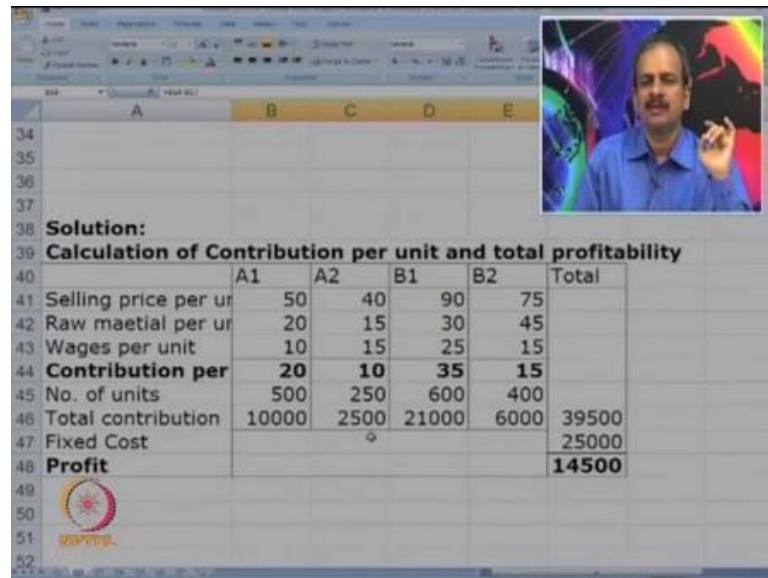
I am just doing it slowly, so that you can catch up immediately. Now, this fixed component you know is 0.3 and variable component was 0.7 or 70 percent. So, 1800 is the fix component of course, total should not increase. Now we are not taking this into account. This 6000 is divided into 4200 and 1800. So, in year 2011 for which we are doing the calculation, see this is 2010 that is last year. We are trying to calculate it for the next year.

Now, how much will be the variable cost, you know that the total units have increased to 1200 from 1000. So, the variable component will also increase to 5040, fixed component will remain unchanged. So, now all the cost are ready with us, will try to take the total. So, there are some problems. So, 15,840 could you all do it. This is the estimated cost. So, how much is a percentage increase? If we try to find the percentage change how much it will be, so you can see the absolute increases like this.

If we try to find the percentage increase for our own clarity, so you can see that variable cost has increased by 20 percent, this I will just delete. Variable component of SVC will also increase by 20 percent. Fixed component of SVC will not change total fixed cost will not change, over all there is increase by 13.1 percent. So, this is how we can estimate the cost of next year. If we can break down the cost properly into variable and fixed. This is the way also you can calculate the final answer.

That variable cost will be now 6, semi variable is 5040, semi variable 6840 the total and fixed is 3, so 15,840 will be the revised cost, it is clear, I am going very slow I hope you can do it as I am discussing.

	A1	A2	B1	B2	Total
Solution:					
Calculation of Contribution per unit and total profitability					
Selling price per unit	50	40	90	75	
Raw maetial per unit	20	15	30	45	
Wages per unit	10	15	25	15	
Contribution per	**20**	**10**	**35**	**15**	
No. of units	500	250	600	400	
Total contribution	10000	2500	21000	6000	39500
Fixed Cost					25000
Profit					**14500**

Now, let us look at the next case. Now calculate the contribution per unit and the total profitability. We have been given the data about four products. I will just push it this side, so that you can see. Number of units are 500, 250, 600 and 400 the selling prices are 50, 40, 90 and 75 respectively. Raw material cost and wages are also given. And we have to calculate the fix we are also given fix expenses 25,000 they are naturally common, not for each product.

Now, from this we have to calculate, the product wise contribution and also the total profitability. So, how shall we proceed? Now, if you look at this data, you can see that raw material cost and selling price per unit, raw material cost and wage cost. Are going to change with the level of activity? Fixed cost will not change, they will remain constant and they are common in nature. So, first of all for each product we need to calculate the contribution margin.

Let us, calculate variable cost per unit, which you know is raw material plus wages that is 20 plus 10, 30. For product A 1 same way for product A 2, B 1 and B 2. Now, we have a selling price here and variable cost, you are aware that the contribution margin is nothing but, selling price minus variable cost. So, it is 50 minus 30, 20 rupees per unit for A 1 and 10, 35, 15 respectively for others, that is A 2, B 1 and B 2.

Now, once you know contribution per unit, we can calculate the total contribution generated by that product. So, 20 per unit multiplied by 500, which is the number of

units sold, so this is the total contribution. 10,000 for A 1 and if we apply the same formulas it will be 2500, 21,000 and 6000 for A 2, B 1 and B 2 respectively. Now, here we can take a sum. So, 39,500 is the total contribution generated by this four products.

From this we will subtract the fixed cost 25,000, so profit is 14500. Is it very clear to all? So, here for each product we have calculate that the profitability by calculating the contribution and then go on into calculating the final profit, this is the way it can be calculated.

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Now, let us take one more. Now here, there are four products Puci, Quci, Ruci and Suci. Again the number of units and other things are given. You have to calculate the contribution per unit and the total profitability, a similar problem. So, now we can do it very fast. You know that, the first step is you have to calculate variable cost per unit, which is 23 and 10. Next is will go for contribution per unit. So, 50 minus 33, 17 and then so on.

Now, this will help us to calculate that total contribution, so 9197 from Puci, then 2500 from Quci and so on. Now, let us take a sum of that contribution generated by all the four products that is 39427. Fixed costs are also given on per unit basis, but that is not of, so much use to us. Actually, we need that fix cost on total basis. So, we will calculate the total fixed cost. So, 19980 is the total fixed cost and the profit is 19447.

So, you know that, profit is contribution minus fixed cost. Is it clear? This is the way also it can be calculated, if you calculate fixed cost separately below.
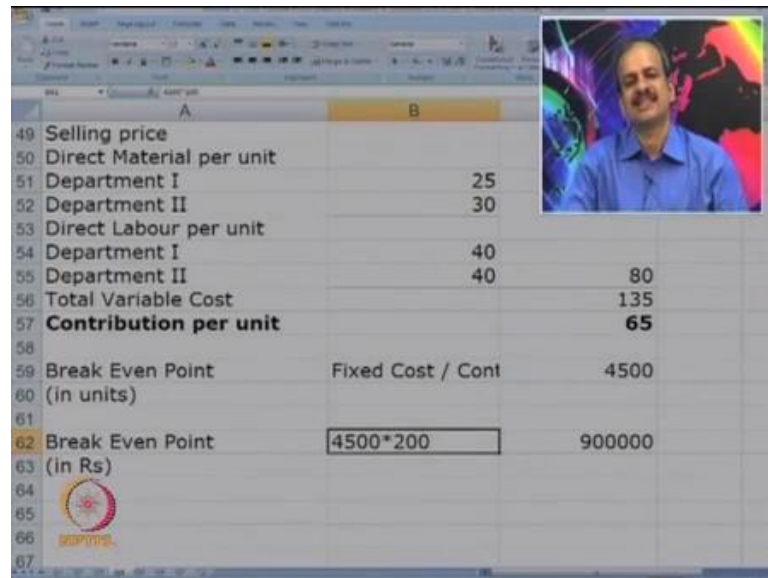
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Now, let us look at the last case for the day that is on breakeven point analysis. We have to calculate now breakeven point there is information about two departments, D 1 and D 2. The direct material and labor costs are given. And the fixed expenses are 292500, the volume currently is 8000. But, they want to know, how much will be the point where they should be above profit or loss. So, first step you all know now is we must calculate the contribution margin. So, for department 1 and 2, the information given currently is on variable cost.

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A	B	
49 Selling price		
50 Direct Material per unit		
51 Department I	25	
52 Department II	30	
53 Direct Labour per unit		
54 Department I	40	
55 Department II	40	80
56 Total Variable Cost		135
57 **Contribution per unit**		**65**
58		
59 Break Even Point	Fixed Cost / Cont	4500
60 (in units)		
61		
62 Break Even Point	4500*200	900000
63 (in Rs)		

So, I will just go down to the solution, because we can immediately understand it faster. Selling price you know is 200 as is given here. For D 1 and D 2 the total direct material cost that is 25 plus 30 is 55. Labor cost is 40 plus 40, 80. So, total variable is 55 and 80, 135 from 200 minus 135 we get contribution. You know now that contribution is sale minus variable cost. Now, you are aware that the total fixed costs are 292500, so to cover up to 292500 how much units are to be sold, so 292500 upon 65.

Fixed cost upon contribution per unit, so the answer is it is 4500. Now, the same thing can be also converted in rupees terms. So, we have 4500 into the selling price, which is 200 it gives us 9 lakhs. So, will stop here, we will see some more cases in the current session we have discuss on CVP analysis, PV ratio, breakeven point, margin of safety and we also seen some cases. In the next session will continue with some more cases on these aspects.

Thank you so much.