Mergers, Acquisitions and Corporate Restructuring
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Module No # 04
Lecture No # 16
Valuation in M and A: Cash Flow Based Approach-5 (Free Cash Flow Models)

Hello friends welcome to the session on mergers accused and corporate structuring we are continuing with the valuation of company using different models. So we will again continue with the one of the very popular method of evaluation that is called free cash flow for the farm or the equity for that may be.

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So in this particular session we will touch upon the free cash flow concept we will, talk about the free cash for the farm was not otherwise known as FCFF. Will be also talking like in the previous session which of course (()) (00:59). We also talked about that but when you talk about the company's valuation using free cash flow that method of valuation is considering the gas flow from the core operation of the business.

But the company may have some non-core assets non-operating assets and those there may be some cash flow for that they may not be any cash flow from there also. But when the company is being acquired we are acquiring also the other assets of the company. In that case those assets have to valued separately because any cash flow from that has not been captured in estimate when you estimate the free cash flow for the firm.

So how to deal with that we will talk about that will, also have a comprehensive exercise using spreadsheet how to find out the free cash flow with revenue and expense given. And then using free cables how to value the company so this is the agenda for this particular class.

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So we have evaluation we have talked FCFF we will have values of non-operating assets we will talk about them.

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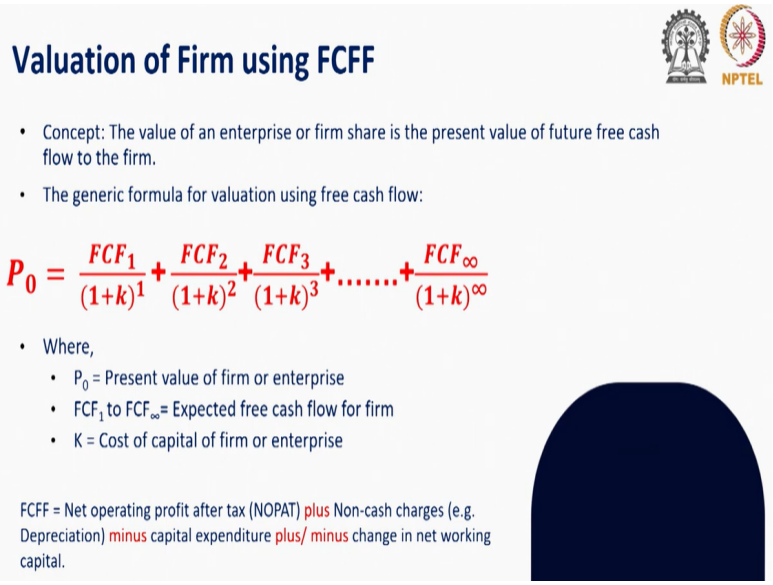

And coming to the exercise yes we have discussed in the previous session again the free cash flow for the company is FCF or FCFF. And which is nothing but net operating profit after tax no part plus any depreciation because the precision does not involve any cash flow so we add it back. Then take care of the Capex and also take care of the change in networking capital.

And so that you can use that to find out the value of the company this is generic fund it is a, repetition of what we discussed in the previous session.

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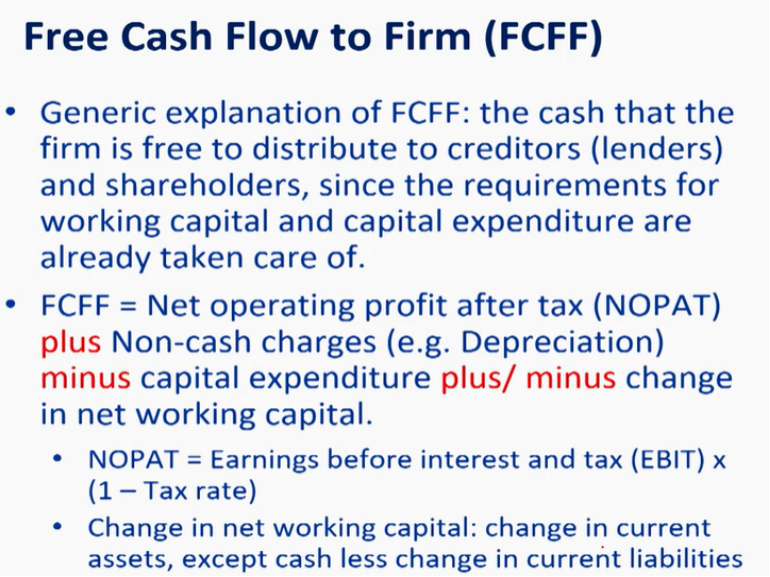

So again just to recapitulate what you discussed the free cash flow nothing but the prey that investor the farm is free to distribute to its investors like creditors or and shareholders. Since all the requirements for the growth in terms of working capital and the Capex has been taken care of. So we have this no part plus known cash minus these, working capital. Now no part is nothing but earnings before; interesting tax into one minus tax rate and change in working capital nothing but change in current assets excluding cash minus change in the current liabilities. So that is what we are going to use to find out the free cash flow for it farm.

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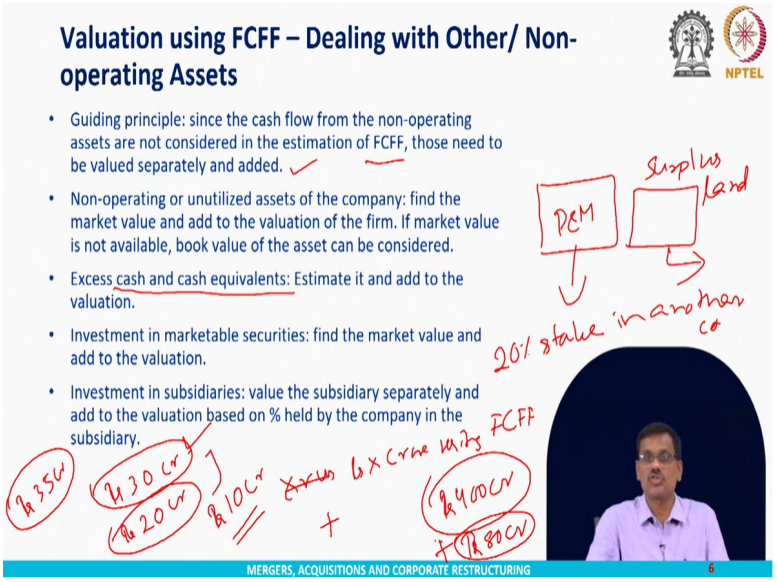

And before we proceed for a full phase valuation we should also be careful that the free chaos flow, for the farm deals with only the chaos flows generated from the core activity of the business it does not consider anything else. As an example let us say there is a company which is manufacturing and selling certain products. And they have a realistic property which includes a plant established a real estate and there is also a surplus land.

So they have 2 lands let us say 2 real estate one with, plant and machinery or offices headquarter etc. Another is a surplus land which is not used for anything it is also not least to any what is there. So when you are going to acquire this company you are going to acquire the company together so you are going to acquire the plant and machine also the surplus land that is what we expect.

And in that case when you talk about free cash flow which is, nothing but revenue minus expenses plus adjustment depression all those things that the major thing is called revenue. A revenue was coming from these assets the core assets there is nothing revenue coming from the surplus land. So in that case what should we do so what value we got by using free cash flow it is talking about the operating part of the company not the non-operating part?

But non-operating part of the part of the company also so in that case the land has to be valued separately. And we find the value using free cash flow for the operating part to that we add any surplus land is there. Suppose the company which is not used for anything but you are going to acquire the company means you are going to get the land. So land will validate some other value so add them then we say, value of the company as a together assess.

So that is the philosophy here there could be surplus layer there could be some machines which is not new there could be some other investment some other company those things can also be there. So you have to value them separately so we deal with them separately since the free cash flow from non-operating are not consider the estimation of free cash flow so, those need to be valued separately.

So there could be some on utilized assets in that case we have to find out the market value of those assets and separately add that. So suppose we got the valuation of particular company x crore using rupees x crore using discounting of free cash flow. So then what will happen? You add this value of the land if the land is the non operating asset for the company. Then there is

one more thing which is also discussed by different author's valuers also that is called with respect to cash and cash and excess so how to do that?

What is the concept what is excess cash the company has because when you get you can take the company you have cash can cash equivalents a part of the company you get that along with the company what is excess cash? Excess cash is something that, cash which is over and above the cash required for running the business. So how to find out that how much money is required running the business that one can go make a technical estimation.

But as an example let us say a particular company has rupees 30 crores as the cash but somebody made an estimation that the company can survive on day to day basis by having only rupees 20 crores. So the 20 crores is, essentially the operating asset that comes in very bare minimum required for operating the business but the company has got 30 crore cash. So that means; the company has excess gas or rupees 10 crore so this 10 crore is not helping us any generation of any revenue or production so 20 crores is sufficient.

So the 10 core is taken as an extra money that is available the companies and extra, asset is a non-core asset for this company. So that has to be simply added so honest to find out what the excess cash and add it back. It is also possible that the company has rupees 30 crore cash but when you take over this company we feel that to run this particular company because of our liquidity policy we may require rupees 35 crore on the business.

That means 5 crores deficiency is there in, that case this 5 crores has to be removed when you do the valuation. So the excess free cash excess cash is there we add it back to the valuation the deficit cash and equivalency cash and cash is there then you have to actually remove undo the values. Because you have to pump in that money for liquidity after acquisition so that money has to be given at later point of time.

So you cannot give it, now to the sellers of the company for that matter similarly company may have some marketable securities invested. And let us keep in mind when you did the free cash flow calculation we did not consider any other income from income from investment we do not consider. So if investment is there we valued separately so as per marker whatever value is available are they add that value to the company, valuation that you got.

Similarly company may have a subsidiary some stake in some other company subsidiary or group company for is there. So in that case the subsidiary or the group company has to valued

separately and depending on the how much stake this company has let us say a company has 20% stake in another company. So in that case first of all we have to find out another company, valuation?

Let us say that company is valued as rupees 400 crore so 20% stake in this 400 crores value companies for us this is rupees 80 crore. So this rupees 80 crore will be now added to the valuation that we did by using discounting of free cash flow. So this is the way we can take care of the valuation where we have non-operating assets in existence. So that is what the total sensitizes that, yes your free cash flow does not consider any cash flow attributed to non-operating assets.

So non-operating assets like investments etcetera has to valued separately and added back to the valuation of the when you do the valuation.

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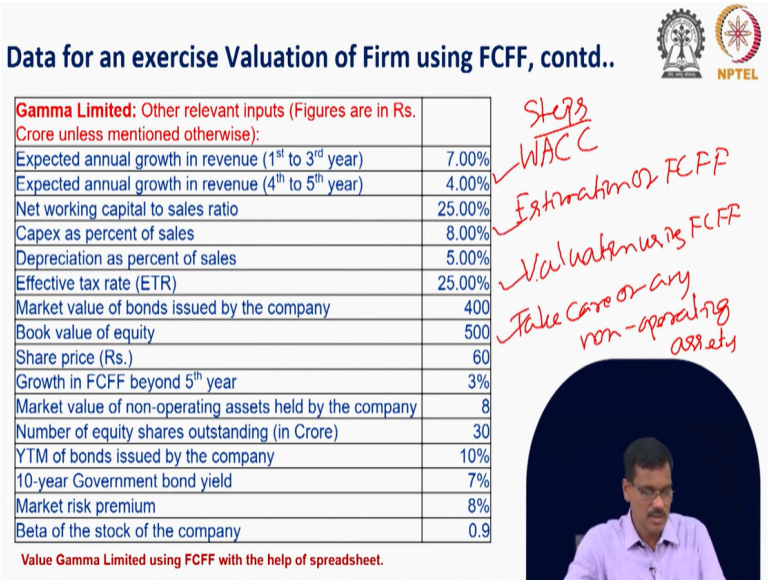

So what you will do will have a full-fledged exercise with help of spread sheet this is a company hypothetical company gamma limited. We have got a certain income , statement related items like from for the year the 2 day this year the present year so present here so presently like revenue these are all a group is crore 200 2500 like that. We have got fixed cost then depreciation variable cost selling expelling general admission expenses SG and A.

Then you have some other non-operating item like the company made a loss and fixed sale of fixed assets of 12, income rather such like that your company has this figures. And we have got this particular figure available with us so now we have to find out the gas flow for the company separately using so what will do in this case? Then you have some other information

also that is growth in revenue is there growth in revenue for to 4 to fifth year separately given then you have a networking capital sales, givens.

All that relevant information is there so that we can do a full-fledged exercise on the evaluation that is Capex is given then depression is given tax rate is given. We have other valuation related thing cost of capital related information we will use this and to find out the value of the company. So now when you do that steps are that first what you do a simpler step that because we need to, have the cost of capital. So first what we do we find out the query levels cost of capital for this company that is first step.

Then we will do the estimation of free cash flow ok then we will do the valuation using FCFF then we take care of any non-operating assets. So these are the steps that you are going to follow 1, 2, 3 and 4 and then find out the value of the company. So we will be, using a spreadsheet to do this one so this data are reproduced in the spread sheet.

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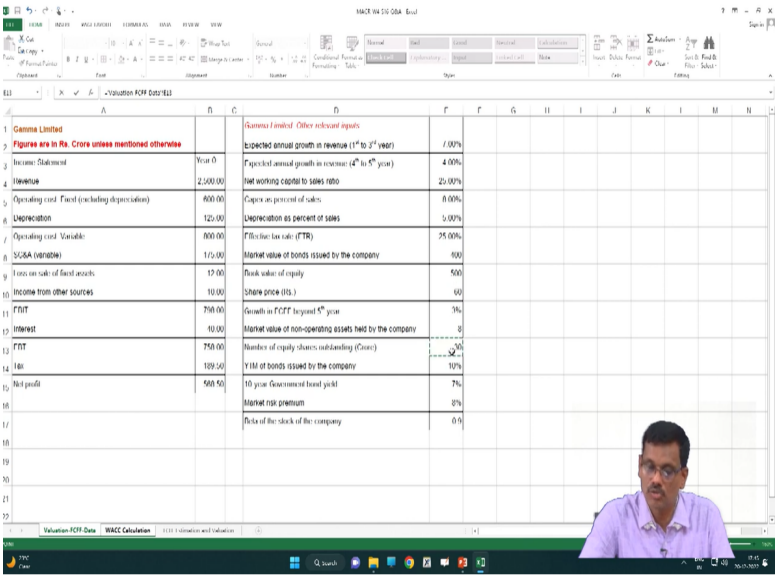

Here is the data that you have here revenue expenses all those things are there then so what we do here first thing as we discussed. Let us first complete the calculation of whatever average cost of capital so cost of capital. So first of all we go for cost of date then you go for cost of equity then find out the, weight of date and weight of equity. We had a separate session exclusively on finding out the cost of capital one can refer to that session to understand more.

So cost of date we have pre-tax cost update nothing but the yield of the date as of now that we have got here 10% that the bonds of the government yield the market yield is 10 so that is my

pre-tax cost of debt. And my post has cost up, is nothing but 10% into 1 - t that is 1 - tax rate, tax rate is given here as 25% effective tax rate.

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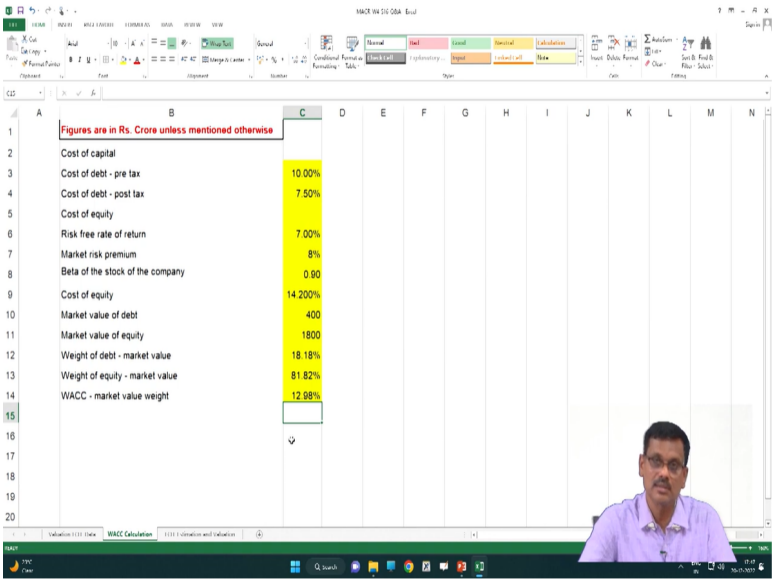

So that gives us the 7.5% is the cost update for this country company for cost of equity depending on if the information given we can use CAPM capital asset pricing model for which require is creative return beta of the stock and market risk premium. So our risk, free nothing but the government bond yield which is given as 7% here our risk market is premium is nothing but given as 8% here and the beta of this stock is given as 0.9.

So once you have this information we can find out cost of equity there is nothing but risk creative return + v beta into risk premiums that is 8%. So that gives us 14.20%is the risk, cost of equity for this per company. Then you have to find the weight of the date and weight of the equity for this. So in that case our market value of date is given here we have we are doing as you discussed.

Suppose you have the market validative information given instead of book value will be using market value for the valuation of for the violation of weights of the computer estimating weights, of the data and equity. So in that case the value of date is given here that is 400 crore that is given and the value of equity nothing but the company has number of shares issued 2 into share price.

So the company has 60 rupees per share and company of 30 crore shares multiplied with 60 share price that comes to 1800. So the value of the date weight of the weight of the date is 400

divided by, date plus equity. So that gives us 18.18% and then value of equity is nothing but 1800 divided by 400 + 1800 that is so in fact that we can add the cell itself that is 400 plus debt is deferred debt and plus equity that is 1800.

So that gives us this one so this one because the total is 100% so work is nothing but weight of date weight of, date multiplied with cost of debt that is 7.5% and weight of equity that is 18.18-82% multiplied with cost of equity that is 14.2% so whatever average cost capital for us is 12.98%. So that is the first step in doing the calculation because we need this for discounting the future cash flow.

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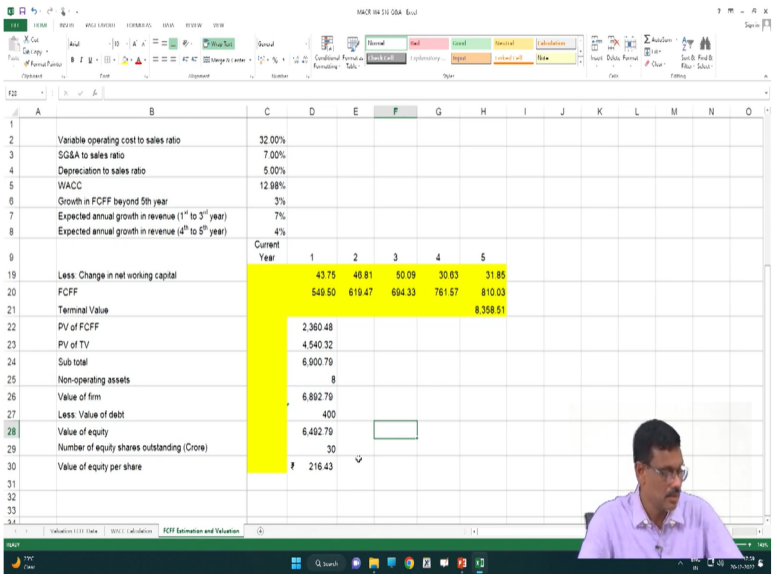

Then we go to free cash flow rate, estimation so in that case what you do here when talking about the estimation revenue can be estimated with help of growth. Then operating cost can be estimated with the help of the operating cost percentage and we know there are certain cost which is variable certain cost which is fixed in nature. So here in this given that the fixed cost separately given and operating costs other cost is given, separately that are variable cost given separately.

So first what you do let us find out the variable cost ratio so that you can use this particular ratio for estimating the cost per different years. The variable cost ratio is given from the year zero so here 0 we have the data the variable cost operating cost is 800 divided by the revenue of the that year 2500 that comes to around 32% is the variable cost to sales ratio. Similarly another variable cost is selling and general admission expenses that ratio comes to we have 175 divided by 2500 that gives us 7%.

Then depression to sell in this k example the precision is given as a percentage of sale sometime depression can be given as a fixed amount. But here it is given as a percentage of cells that means the company is expanding into assets so depression no need not remain constant depression can also can go up that is the philosophy here. So here depreciation the percentage already given here that is directly given in this 5% and what we need the work?

We have already calculated work earlier so you can take the figure from there and then growth in free cash flow beyond fifth, year we need that for perpetuity calculation. That is already given that is given here in 3% that is in the e 11 cell in the previous sheet then expected growth because we need this information for cake as estimation. So let us take from here 7% is the growth in revenue from year 1 to 3. And after that for fourth to fifth year it will grow at that is 4% so that, is what.

So these are the inputs given now it is very easy to find out the estimate the free cash flow with formula so what you do you take this figure current year figure first you take year zero that is revenue is this figure. Then selling general admission expenses we can take that so we can take those figures also or we may this one. Then operating fixed cost that is cash that is given here that is you have this one and depreciation is given here for this year zero.

Then we have no part we also have selling inspections that is given here that comes to for this year 175. So like that and we know not find out the operating profit after tax per year zero we do not bother about that. We need to estimate the cash flow for your one to your 5 and subsequently as converse so these are not, required to estimate here. So what you do if first of all what we do we find out the revenue which is going to be there in the year 1, 2, 3 and 4.

So your one revenue is going to be 7% more than the previous year so my revenue is going to be how much? Last year revenue into 1 + the growth and we can freeze this one also so that we can, copy and we drag it to third year. Because so it goes at 7% and then fourth year the revenue will be 4% extra then third year. So third year into one plus the growth that is four percent so that is this one and fifth year it is going to be also 4% extra compared to the previous year so we go this one.

So these are the revenue forecasted and let me emphasize, here for casting of cash flow the major challenge is growing forecast in the revenue itself you grow your revenue can be forecasted then growth cash flow estimation is very easy to do asset. Now operating cost

variable that comes to how much is 32%. So we will use the 32% directly and multiply the revenue then comes to variable expense called selling general and admission expenses, that comes to how much?

We have 7% we have calculate that ratio we are assuming this first ratio will be maintained so into the revenue then we have operating cost fact fixed cost that will remain like this which will remain 600. Then depreciation is given as percentage of cells that is 5% of sales and so that gives us when you know what you do? We remove we take revenue minus, operating cost variable minus other variable costly selling generation expenses minus fixed expenses in cash and minus depression.

So that gives us a PBIT for this particular company for your one and we can drag it to 50 years we got now the PBIT for this particular company for 5 years here together. So now no part is; nothing but this one the PBIT into 1 - t so 1- tax rate tax, rate is here we have this tax rate here in the data set that is 25%. And so let me re-estimate that so 898 into 1 minus the tax rate the tax rate is 25%.

So that comes to no parts and you can drag it and then add back depreciation so depreciation already given we have already calculated here then less Capex is given as certain percentage of cells that is Capex. We have here Capex, percentage is 8% of sales and change in working capital has to be networking capital that has to be taken care that is our working capital to sales is 25% is required.

So 25% is the working capital sales so what you can do you can take the 25% of this increase in revenue change in revenue so that is nothing but the change in networking capital. So in that case we have, 25% into the change in revenue that comes to revenue is given here minus the revenue last year. So that gives us the change in working capital and the free cash will be nothing but plus depreciation minus Capex minus change in working capital.

So that gives us the forecast for the firm and we can drag it to this and so networking capital has to be frozen the ratio then we drag it. So this is, the estimation of free cash flow then what do you do we have to know the terminal value because fifth year onward the combines also existing so for that what you require? We take the free cash flow for the fifth year into the perpetual growth that is given as 1 + 3% divided by cost of capital that is 12.98% minus the growth that is 3%.

So that gives us, the terminal value and then what we do we find out the present value of free cash flow we find present with terminal. So present value free cash flowing a thing but we can use in excel NPV formula directly instead of discounting separate to the cash flow year wise we can directly use NPV formula. So for that you require the discounting rate that is our cost of capital and we require the series of, cash flow for which we require the present value that is your one to your free cash flow.

So that gives us the NPV and present value terminal value because it is fifth year value you have to divide by the discounting factor that is 1 + the cost of capital 12.98% on discount how many times your discount 5 times because this is at the end of fifth year. So d by discount to the power five that gives us 4540.32. Then we do the total so this one plus this one that gives us the violation of the company the operating part only.

But this company also has some non-operating assets for example the data we have got here the company has 8 crore of some of non-operating hours which is valued at 8 crore market value so we, have to add it back. So now what you do we take that particular value 8 crore from here and add to the value of the tote what you got so now the value of the company is 690 - 8 that comes to 6892.79.

And if you want to find out the value this is my value this is the value of the farm or the enterprise using free cash flow approach and if you ask to, honest to find out the value of the company well equity for that matter we take the date out. So date is how much already debt value is given that is comes to 400 so the value of equity is nothing but 696892 point this one minus this one that gives us the value of equity.

And this company has how many shares it has got 630 crore shares are there so value power, share comes to 6498.79divided by 30 that comes to 216.43 that is the value of the share. So that the value you got and this is the way one can find out the value of the share. So first of all we found the value of the company then you find the value of the share by removing the dead part.

So this is from value free cash flow for the, firm also can be used to find the value of the equity of the company.

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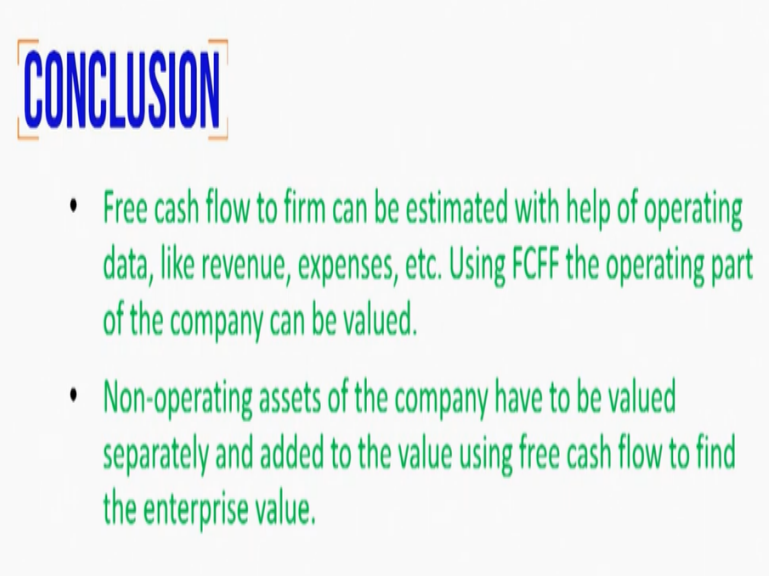

So we did that and in conclusion yes free cash flow can be estimated using operating data like revenue expenses etc. And using free cash flow we can find out the operating for the company then for non-opening assets we have to value them separately in add to the operating part. And from there if you remove the date we can get the value of the equity. So with this we conclude this particular session happy learning and see you in the next session thank you.