Infrastructure Finance
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Lecture - 8
Analysis of Company Performance - Part II

Hi, welcome back to this course on infrastructure finance. This is lecture number 8 on this course, and today will continue what we have been discussing in the last class, which is to analyze a company's performance. Before we actually go to the main lecture today we will quickly discuss the thought question we actually put forward at the end of the previous lecture.

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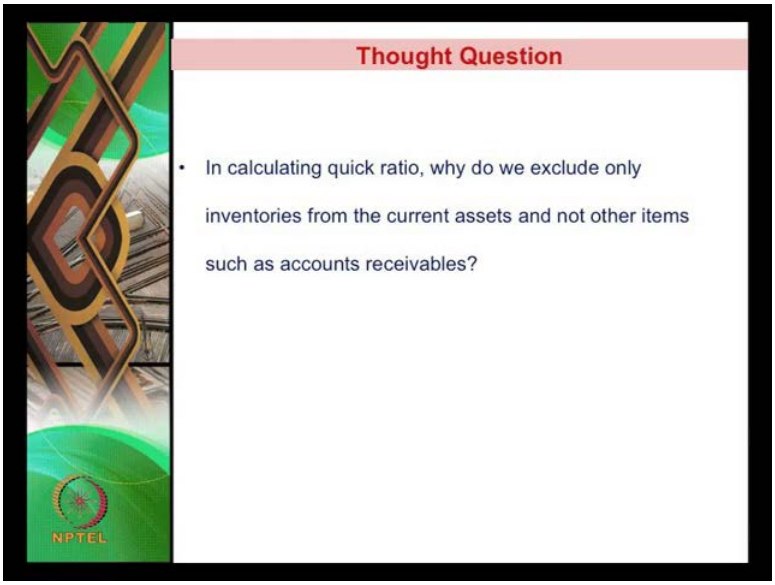

So, the question was when we are calculating quick ratio why did we actually exclude inventories from the current assets and not other items such as accounts receivables. But, first let us try and understand the different components of current assets.

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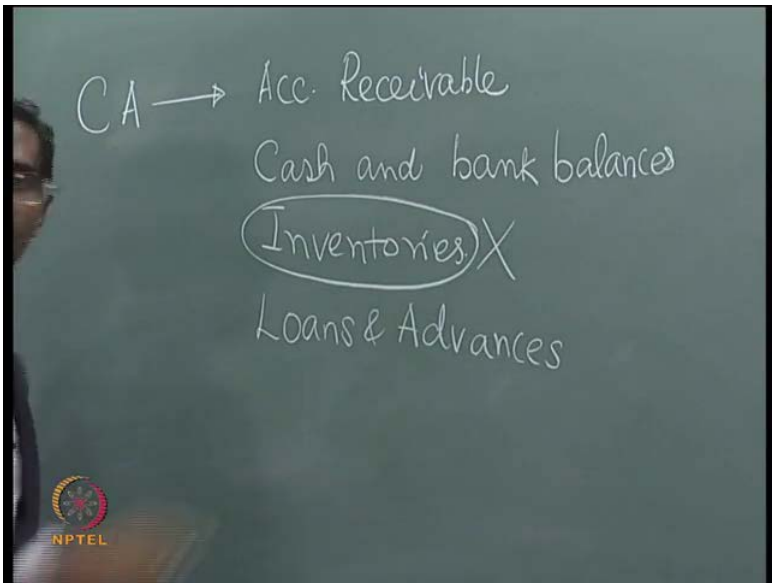

If you look at current assets, current assets consists of the following components, you have accounts receivable then you would have cash and bank balances and then you would have inventories and then you would have loans and advances that the company has made to its employees.

Now, when you are trying to calculate the quick ratio, we were trying to exclude inventories from the current assets and then try and use the remaining part of the current assets to calculate the quick ratio. Why are we not excluding the accounts receivable, accounts receivable presents the sale that the company has made to various customers. And given the fact that this amount is reflected in the account receivable indicates that the customers are accepted the invoice that the company has raised and have accepted to make the payment.

So, it is just a question of time before the payment comes. In case, there is a delay in making the payment there are several ways in which the company can actually accelerate the payments by encasing the accounts receivable portion from different parties. For example, there is a special way in which you can discount the accounts receivables there are specific agents whom you can actually discount its bills with and then recovery your accounts receivables. So, to a certain extent the current assets in the portion of accounts receivable is liquid, if there is a delay it could be easily liquidated to result in to cash. The same is not the case with inventories, if the company is in a need to recover the

amount that is stuck up in inventories, then the inventories have to be sold in the marketplace and whenever there is an urgency with which such sale is associated.

The value that we can recover in those instances can be affected. In some cases, finding out finding an appropriate party who will be in a position to purchases these inventories at short note is also going to be difficult. Given, the fact that in many infrastructure companies the raw material is of a very specialized nature where we will not have many alternate counterparties who will be willing to purchase those kinds of assets. It is going to be very difficult to liquidate many of these inventories.

For example, let us say case of NTPC, if NTPC has in its inventory a specific grade of coal which it needs to use in its power plants. It is going to be very difficult to find an alternate buyer, who probably also would need a very similar type of coal, because as we all know there is a strong dependency between the type of power plant and the kind of fuel that is used in the power plant. And we may not find it easy to find an alternate power plant who can actually use the same type of fuel.

So therefore, it is going to be very difficult for the inventories to be liquidated at very short notice, and since quick ratio is an indicator where we are trying to calculate only those assets that can be easily liquidated to meet the current liabilities, we are trying to exclude the inventories. If you look at the other components of the current assets, cash is in liquid form there is no need to any further liquidation, accounts receivable can be liquidated whenever there is a need.

And loans and advances is a contractual agreement between the employer and the employee. And whenever the employee has to leave the company he will have to settle those loans and advances before his accounts can be settled. So, in a way if you look at it, loans and advances represents an asset category which again can be easily liquidated. So, this explains a reason why we exclude only inventories or largely inventories when you are trying to calculate the quick ratio.

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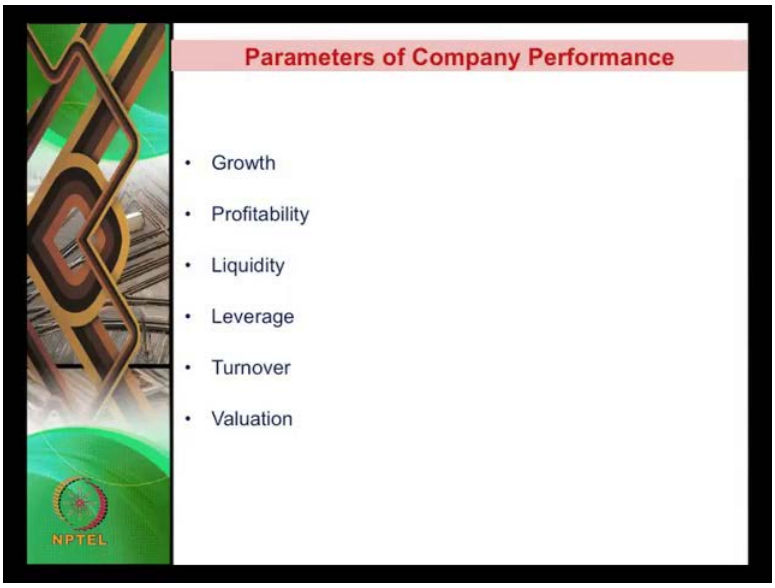

Now, let us try and continue where we left off from the previous class. Parameters of companies performance we broadly discussed can be classified into 6 categories, these are not the only parameters but these are the main parameters that is most commonly looked at, and we will also try and restrict our discussion around this 6 parameters. So, in lecture number 7 we looked at the first three aspects which is your growth profitability and liquidity. And in this lecture we will look at the remaining 3 parameters and we will spend some time in discussing them.

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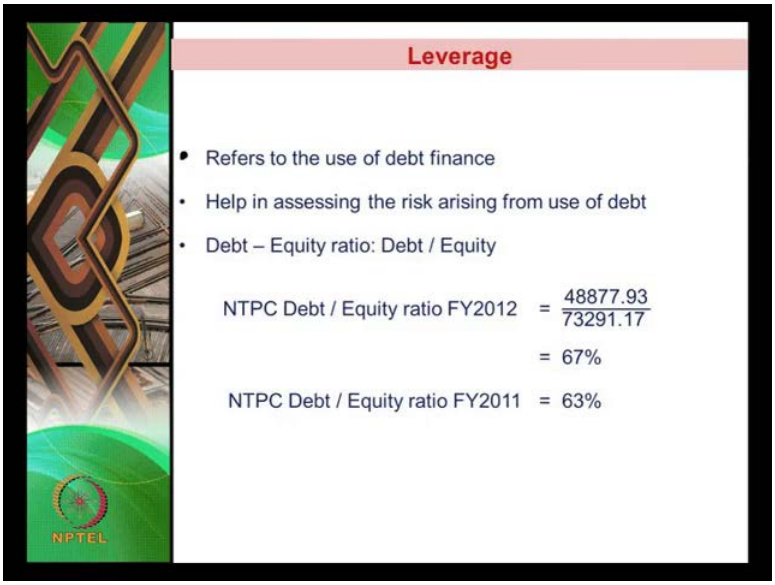

So, the fourth parameter that we will look at is leverage. What is leverage, simply speaking a company can actually raise its finance from broadly 2 sources, equity which is the money contributed by the owners or the shareholders. The second the company can actually borrow from banks or any other institutions to raise the remaining part of the capital. If we look at equity if we look at debt these are the two broad sources of capital that the company can use.

Now, the total of debt and equity represents the total capital that the company has raised, and the amount of debt that the company uses in its total capital is an indicator of leverage. So, why do firms raise debt, why cannot it fund entirely by equity, now these are all very difficult questions which we will come to over a period of time, but by enlarge if you look at it, most of the companies would generally have both equity and debt in its balance sheet.

The advantage of debt is, the debt is having a low cost of capital as compared to equity. In some sense if you want to see it debt is cheap as compared to equity but there is also a disadvantage when you have debt in balance sheet which is presence of debt in the balance sheet increases the risk of the company. Why because whenever you have debt the company is obligated to meet the interest payments on the debt as well as your principal repayments. And if the company for some reason is not in a position to make this interest payments or debt repayments, then there is always what is called as threat of bankruptcy that means the creditors can take over the assets of the company liquidated and recover their capital.

If there is no debt in the balance sheet, then the company is not obliged there is no threat of bankruptcy because there is no need there is no obligation for payment of interest or principal. So, along with the advantage there is a disadvantage as well. The advantage is the low-cost of capital, the disadvantage is your threat of bankruptcy. In addition whenever we have debt there are some tax shields that the company gets, we will also discuss about the tax shields or the tax benefits in due course of time.

So, it is very important for a company to not have very large amounts of debt because whenever the debt is substantially higher than the threat of bankruptcy also higher. Now, let us really look at calculating some of the important indicators of leverage. One of the important indicator of leverage is called as your debt equity ratio that is the proportion of

debt to the value of debt to value of equity. Let, us try and calculate this value for NTPC. So, we get the value of debt and value of equity from the balance sheet.

So, if you want to calculate the leverage for NTPC for the year 2012 then it is calculated by debt which is 48877.93 crores divided by the value of equity which is 73291.17 crores. And this results in a value of 67 percent. So, the leverage ratio for NTPC for the year 2012 is 67 percent. Now, let us try and calculate what it was in financial year 2011it is 63 percent. Just by the number of 67 percent, 63 percent it is not possible to really infer anything substantially, but just for the suffix of the fact that the company is having more equity funding as compared to debt funding. And as we also see the leverage ratio has increased in 2012 as compared to 2011. In 2011 it was 63 percent in 2012 it is 67 percent.

Now, we also need to look at whether the leverage that NTPC has is higher as compared to other companies, because 67 percent is again you know that the dirty good ratio varies from industry to industry. And we also need to find out whether the companies leverage that we are interested is broadly in line with the industry trends. So, if we need to really find out whether the leverage is less or the leverage is higher for NTPC then we need to compare it with other comparable companies in the industry. So, that will tell us whether the company can increase a leverage even further in which case it will actually have access to lower cost of capital, or whether it should decrease the leverage from its existing levels because the existing leverage is higher as compared to the industry trends.

Now, if you look at the leverage that we have calculated just now is based on the numbers that we actually get from the balance sheet. So, in essence we call this as the book value of debt equity ratio that means we are calculating the values of debt and equity from the books of accounts, from the balance sheet. There is another way in which you can calculate the debt equity ratio.

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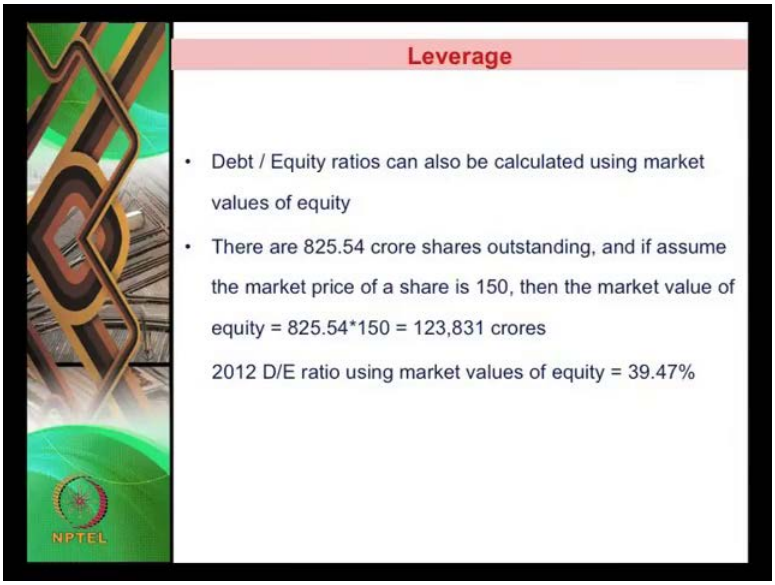

So, debt equity ratios can also be calculated using the market values of equity. For example, if you look at a company like NTPC it is a publicly traded company so the equity shares have a market value. We can use these market values to calculate the debt equity ratio. Now, let us try and calculate what the market debt equity ratios are for NTPC. If we look at from the balance sheet there are 825.54 crores shares that are outstanding for NTPC. If you assume, let us say the average market price of an NTPC equity share is 150 in the stock exchange, then the market value of equity turns out to be 825.54 crores shares multiplied by the market price of an equity share.

So, the total market value approximately works out to be 123831 crores. Now, we use this market value of equity to calculate the leverage and if we use the market value of equity then the debt equity ratio for the year 2012 turns out to be 39.47 percent.So, in essence what we see is a leverage ratio which is lower as compared to the leverage calculating the using book values.

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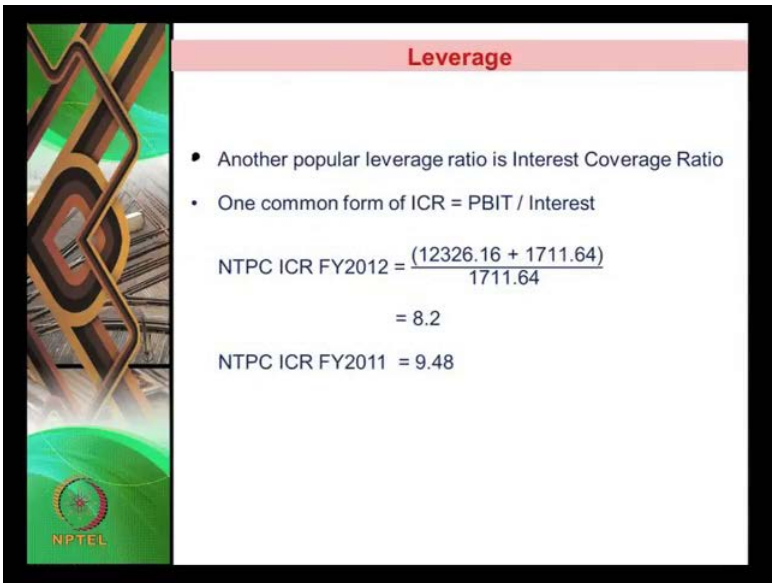

Now, let us look at another indicator of leverage. This is called as your interest coverage ratio, so interest coverage ratio indicates how comfortable the company is in a position to meet its interest obligations. So, remember a company if it has debt in its balance sheet will have to pay interest. And what is a proportion, what is a comfort, what is a coverage that the company is in a position to provide the lenders on in interest payments, this is defined as the interest coverage ratio. A common expression for interest coverage ratio is nothing but profit before interest and tax divided by your interest. So, we are calculating the earnings before interest and tax that the company has earned during a particular period, and divided by the interest that the company is to pay to the lenders during that period and that actually gives your interest coverage ratio.

If you look at it the profit before interest and tax and the interest payment is obtained from your profit and loss account. And we can actually use this expression to calculate the interest coverage ratio for NTPC for 2012.So, for 2012 if you look at NTPC balance sheet, you do not actually have a separate line item called profit before interest and tax. So, what you actually have is an expression which is your profit before tax, which is net of financial charges.

The financial charges are nothing but predominantly interest payments of the company will have to pay on its loans. Therefore, to calculate PBIT, we add back the financial charges to the profit before tax number. So, therefore we get the profit before interest tax

as 12326.16 plus1711.64 crores, so this is your PBIT, and this we divided by the interest payment which is your 1711.64.Therefore, if you look at it the interest coverage ratio for 2012 is 8.2.

Again, the interest coverage ratio depends on many factors, it depends on how stable the company's revenues are, if the companies revenues are stable then the lenders will be more comfortable with a lower interest coverage ratio. On the other hand, if the company's revenues are very stable and it shows a high degree of fluctuation or volatility, then the lenders would expect a higher level of a coverage ratio.

Now, who actually looks at this coverage ratio, the interest coverage ratio is mainly concerned with the lenders, because for them the ability of the company to replace interest on time is a very important factor. Therefore, lenders constantly monitor the interest coverage ratio of the company. In fact the interest coverage ratio is also mentioned the minimum interest coverage that the company will have to provide at all times even in the loan documents. Let us try and calculate what is the interest coverage ratio for the financial year 2011?

Using the same procedure if you calculate it, the interest coverage ratio for 2011 happens to be 9.48. Now, between these two numbers if you see there is a reduction in the interest coverage ratio in 2012 as compared to 2011. So, in absolute terms you may find that the lenders would be more comfortable to advance alone to the company in 2011 as compared to in 2012, because interest coverage ratio has reduced.

But, it also depends on what is the minimum interest coverage ratio that the bankers or the lenders would be comfortable with a company like NTPC. Now, if the lenders are ok with an interest coverage ratio of 5 then it does not really matter this reduction. On the other hand if the lenders insist that the interest coverage ratio should be more than 9 then the company might find it very difficult to obtain loan in 2012, because of the fact that the interest coverage ratio is lesser than 9.

Like we saw in the case of debt equity ratio, the interest coverage ratio it also depends on the broadly what is the trends that we see in the industry, it depends on the companies size it depends on the revenue trends and it also depends on the other factors like the collateral liability of the assets and so on.

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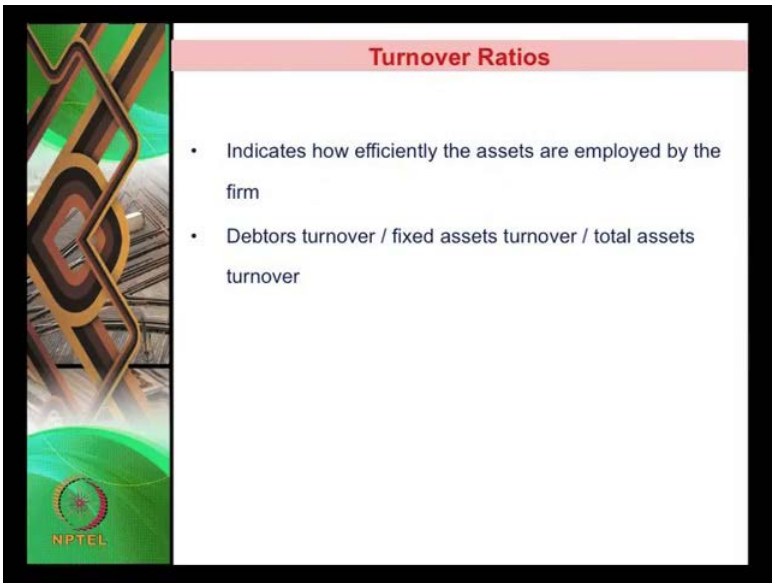

Next, we will look at the sixth performance parameter which is your turnover ratios, as we can see each and every parameter looks at one particular aspect of performance of the company. In the case of leverage we are trying to see how much extent the company is actually levered, in the case of liquidity we have seeing how good is the company in terms of meeting it in a short term obligations. So, the turnover ratio is one such performance parameters so turnover ratio is a parameter which helps us to understand the efficiency of the company.

So, turnover ratio broadly indicates how efficiently the assets are employed by the firm. And broadly speaking there are different categories of turnover ratios. So, they are debtors turnover, fixed assets turnover and total assets turnover. Let us look at each of them one by one, start with debtors turnover.

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Remember, we look at it a company makes a sale and whenever sale is made normally the sale is made on credit, and when the customer pays the company then the cash is received by the company. So, from the time a sale is made till the time the cash is received by the company we have what is called as the amount of sale being reflected in the accounts receivable. Let us look at it in a very simple way.

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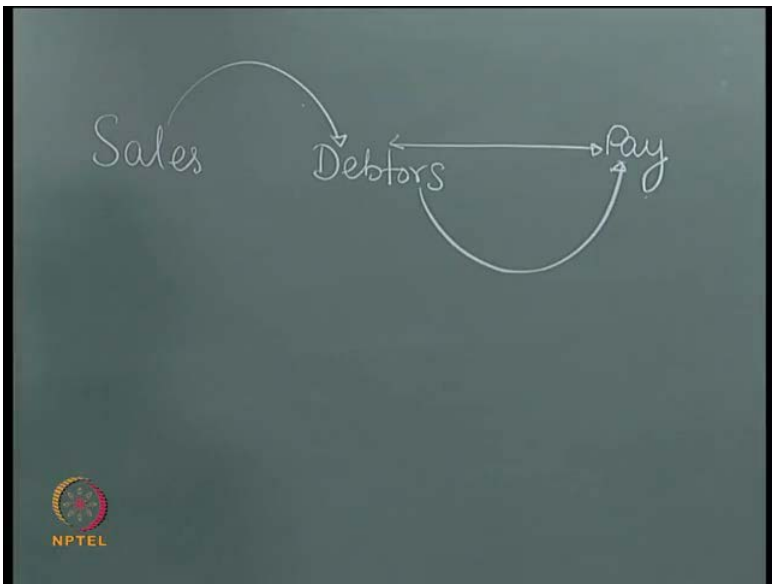

So, the company makes a sale and as soon as the sale is made it is reflected in the accounts receivable. And then when the accounts receivable they pay, so from the time a

sales is made till the time the customer pays is called as one cycle. If this period is lesser, so that means it indicates that the company is able to receive cash on its sale much quicker, as compared to other companies which has actually have a lockers.

So, debtor turnover indicates that how quickly the company is able to turnover its debtors that is, from accounts receivables to cash. The expression for debtors turnover is sales upon accounts receivable and for the year 2012, the debtor turnover is 64830.65 divided by 5832.51 and it is 11.08. So, simply speaking the company has been able to turnover its debtors11 times in a year. Now, let us look at the debtors turnover for 2011, and 2011the debtors turnover happens to be 40.Therefore, you can infer that the company has been able to turnover debtors 40 times in a year in 2011.

Now, which is more efficient. If you are able to turnover your debtors faster then you are able to reduce the time between debtors and the time you actually get cash much faster. Therefore, if you look at it from a debtors turnover prospective the company has been a lot more efficient in 2011 as compared to 2012. If the debtors turnover is lesser, that means you have more number of accounts receivables that means your current assets increases, but you are not able to have translate that into cash which is what is needed for the business.

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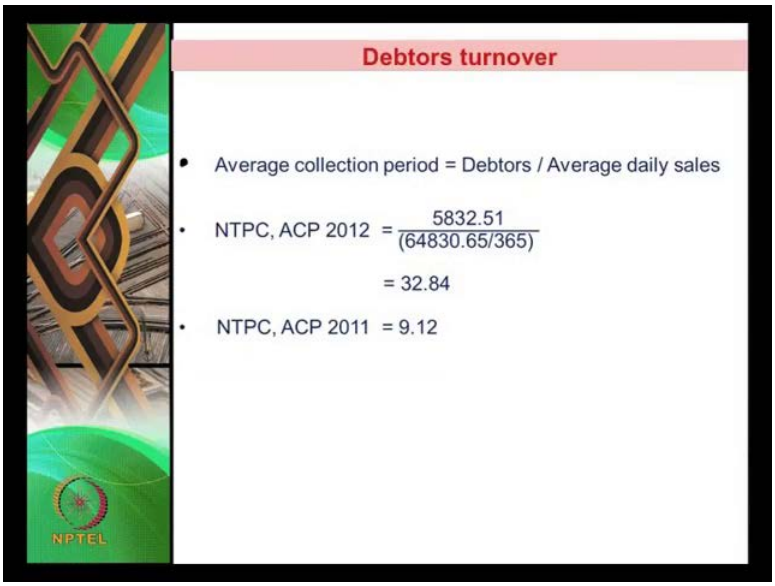

A related aspect of debtors turnover is what is called as your average collection period. Average collection period is nothing but from the time a sale is made till the time you

actually get cash from the customer how long does it take, what is the average collection period to receive cash from the customer from the time a sale is being made. So, this is your average collection period.

Let us look at the average collection period for 2012, so we have debtors which is 5832.51 and then it has to be divided by the average daily sales. Average daily sales is nothing but the total sales for the year divided by 365.We simply assume that, a sale per day is can be easily found out by the total sales divided by number of days in a year. So, average daily sales will be 64830.65 divided by 365, and this gives you the average collection period of 32.84 days. So, that means in 2012 from the time NTPC has made a sale it needs 32.84 days to get the cash from the customers, customer takes broadly about a month to repay, customer needs broadly about a month to pay off its accounts receivables.

Now, let us look at what is the case in 2011.In 2011it is 9.12.So there is a very dramatic increase in average collection period in 2012 as compared to 2011, it is almost more than a threefold increase is what we see in 2012. This simply indicates a fact that the collection efficiency has been much lower in 2012 as compared to 2011, but we also need to find out what could be the reason behind this dramatic increase in collection efficiency.

Unless until we are able to find out the reasons behind its very difficult for the company to take appropriate action. So, all of the ratio analysis that we kind of doing in this lecture and the previous one they are likes a symptom, but the root causes next to be diagnosed before we can actually take corrective action. Now, let us look at a second turnover ratio which is your fixed assets turnover.

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Fixed assets turnover indicates how efficiently the fixed assets has been utilized by the company, the company actually is made certain amount of investment in fixed assets and using that investment how much of sales has the company been able to generate. If the company is more efficient then for a given level of fixed assets the company will be able to generate a higher amount of sale, by operating or functioning lot more efficiently. So, that is what this ratio tries to measure.

The expression for fixed assets turnover is nothing but sales divided by your fixed assets. And this gives you an indication as for a given investment in fixed assets how much the company has been able to generate in terms of sales. For the year 2012 the fixed assets turnover for NTPC works out to be 64830.65 crores divided by fixed assets. Now, if you look at the balance sheet, broadly we see two categories of fixed assets one is your tangible assets the other is your intangible assets. So, we will combine both in calculating the total fixed assets.

Therefore, the fixed assets turnover works out to be 1.43 in the case of 2012.Let us also try and calculate what is the fixed asset in 2011, in 2011 it happens to be 1.46, so by enlarge if you see there has been a slight reduction in fixed assets turnover in 2012. But, by enlarge the fixed assets turnover level has been more or less the same between these 2 years. There has been no rapid improvement nor deterioration in the fixed asserts turnover during this 2 years.

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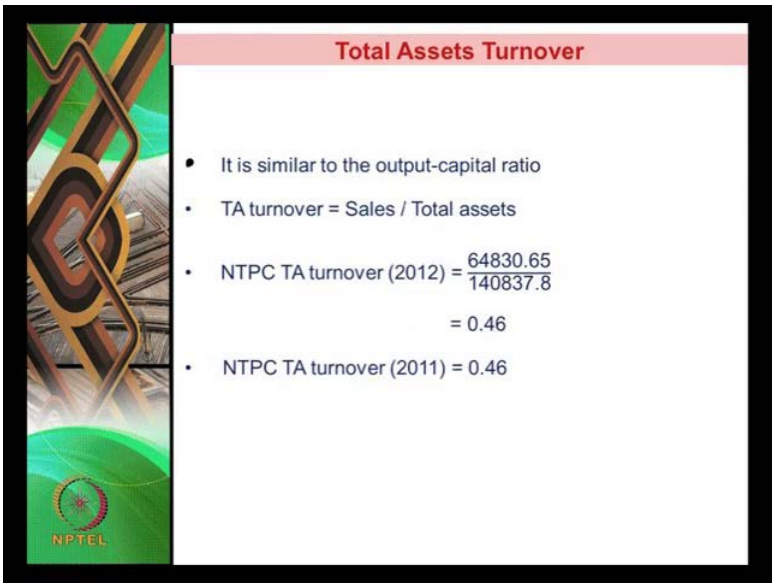

Now, let us look at the third turnover ratio which is your total assets turnover. Total assets turnover is very similar to what we see in the case of fixed assets turnover except that in this case we are measuring the amount of sales generated on the total investment that is been made in the company.

So, total assets is the sum of both fixed assets as well as your current assets. And in a sense if you look at it from an economic angle it is nothing but an output and input ratio. Input is nothing but the capital that is invested in the business and output is nothing but the sales that the company generates. So, the output the input ratio can be considered as the total assets turnover. The expression for total assets turnover is nothing but sales divided by your total assets and for the year 2012, the total assets turnover is 64830.65 divided by 140837.8 and this gives a figure of 0.46.

Let us also try and calculate for comparison the total assets turnover for 2011it is nothing but 0.46. So, if you look at the assets turnover either a fixed assets turnover or either a total assets turnover you broadly find that there has been no major change from the 2011 level to the 2012 level. Now, let us look at the sixth performance parameter that mentioned which is your valuation.

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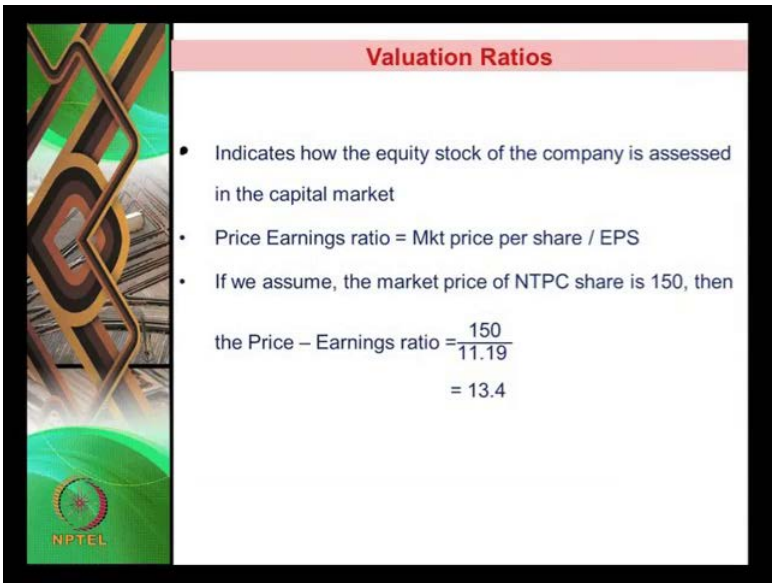

Valuation indicates how the equity stock of the company is assessed in the capital market. So, one is you actually find out the total amount of equity capital from the balance sheet and you also actually have, let us say company stock that are traded in the stock exchange. So, there is a book value of equity and then there is a market value of equity, so valuation ratio gives you an indication as to know how the market values the company's equity share.

The most commonly used valuation ratio is what is called as your price earnings ratio, price earnings ratio is nothing but the market price of the share divided by the earnings per share. So, the earnings per share is based on the book values. The company actually has certain amount of profits made during the year and then the total profit during the year divided by the number of shares of the company has issued gives the earnings per share. So, this is your book value, this reflects the book value book earnings per share.

And then the market price of the share reflects the market value of the share. If you assume the market price of NTPC share is 150, then the price earnings ratio is nothing but 150 divided by 11.19. So,11.19 is nothing but the earnings per share during 2012 and you can actually get this number from the profit and loss account and this works out to 13.4.So, the price earnings ratio or the price earnings multiple for 2012 is 13.4, so this price earnings ratio gives you an indication of the company's growth prospects. The company which has a very high price earnings ratio is expected to have very high growth

prospects in the future as compared to a company which is having a lower price earnings ratio.

Normally, you will find technology companies will have a very high price earnings ratio because most of the value of the company are expected to come from the future prospects of the company. But, many companies which are having tangible assets like for the case of infrastructure companies their price earnings ratio might not be very large. So, a price earnings ratio of 13.4is not considered to be very large but is considered to be somewhere in the mid-range, if you compare the overall price earnings multiple that we see in the market place.

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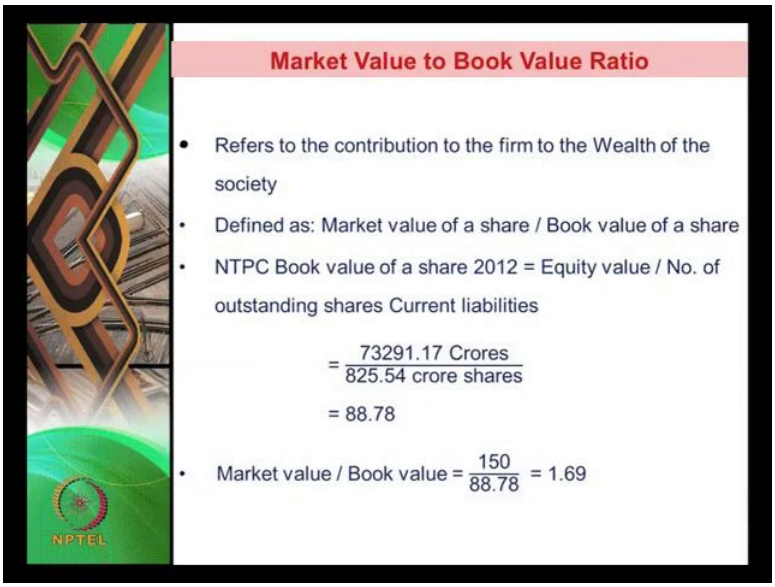

Another indicator of valuation is what is called as your market value to the book value ratio. So, essentially this ratio reflects or refers to the contribution of the firm in generating wealth to the society. Now, the company has actually taken investment from various shareholders and the amount in the balance sheet reflects the total sum that the equity holders or the shareholders have invested in the company.

Now, if the total market value of the company shares are more than the sum that it is actually obtained from the shareholders. Then it can be said that the company is actually generated wealth to the society it has actually generated wealth to the shareholders because the value of the company share is more than the value that the company has received from the shareholders.

So, how do we actually find out the market value to book value it is simply nothing but the market value of a share divided by the book value of a share. Market value of a share is nothing but the market price and the book value of a share is nothing but the total equity of the company divided by a number of outstanding shares. So, the total equity value is 73291.17 crores and if we divide it by the total number of shares it is 825.54 crore shares. The book value of the share works out to be 88.78.

And if you want to compare the market value to the book value it is nothing but 150 which is the market value divided by 88.78 which gives you a ratio of 1.69. That means, the market value is 1.69 times the book value of the company share to that extent the company has generated wealth for the shareholders because this ratio is more than 1.If this ratio is 1 there has been no wealth creation because market price is equal to the book value. If it is less than 1 the company has actually resulted in erosion of wealth for the shareholders, but now in this case it is more than 1 so it indicates a kind of wealth the company has generated for its shareholders. With this we have concluded the discussion on the 6 major parameters that we have talked about.

Now, the question is how do we actually use this, how do we actually use this parameters in, let say manage real decision making and it is very important for us to first whenever we are trying to use these kinds of analysis based on the company's performance we also need to understand how we can use it for enhancing the decision making. Let, me also point out to a way where we can decompose some of these ratios in such a way that we are able to understand little bit more in terms of the company's performance. I will give you a very simple example, we talked about what is called as your return on equity.

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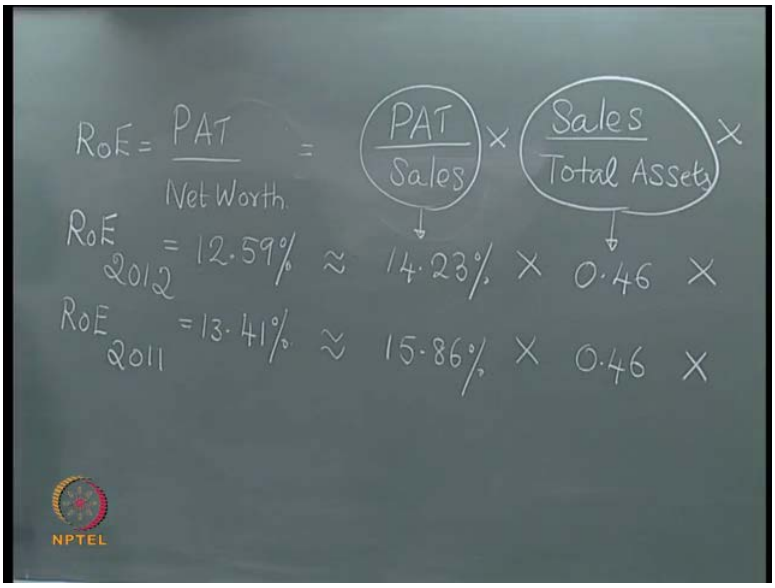

We have what is called as your return on equity, return on equity is nothing but your profit after tax divided by your net worth, net worth or the value of equity. Now, this can be rewritten as follows, this can be rewritten as profit after tax divided by your sales, multiplied by sales divided by your total assets, multiplied by total assets divided by net worth. If you remember, this ratio is your net profit margin and this ratio is your total assets turnover and this is your leverage multiplier.

Now, we have the return on equity and then return on equity is again further decomposed into 3 different multiples, your net profit margin, your total assets turnover and your leverage multiplier. By trying to separate the return on earnings into 3 different components, we are able to identify in which of the components have the company is been able to show a better performance and in which of those indicators of the company experienced a deterioration in performance.

Now, let us try and calculate this for both 2012 and 2011. So, return on equityfor2012we have seen it works out to about12.59 percent. And then the net profit margin for 2012 was14.23 percent. If you look at it these are the numbers that we calculated in the previous lecture and the total assets turnover was0.46 and this number is nothing but the total assets140837.8 divided by 73291.17and this equals 1.92.

So, return on equity is nothing but net profit margin multiplied by total assets turnover which is again multiplied by the leverage multiplier. Because, of the rounding of errors

you may not get 12.59, but you may actually get a number that is close to 12.59 percent. Now, let us try and calculate the return on equity for2011,so for 2011 we had calculated is13.41 percent.

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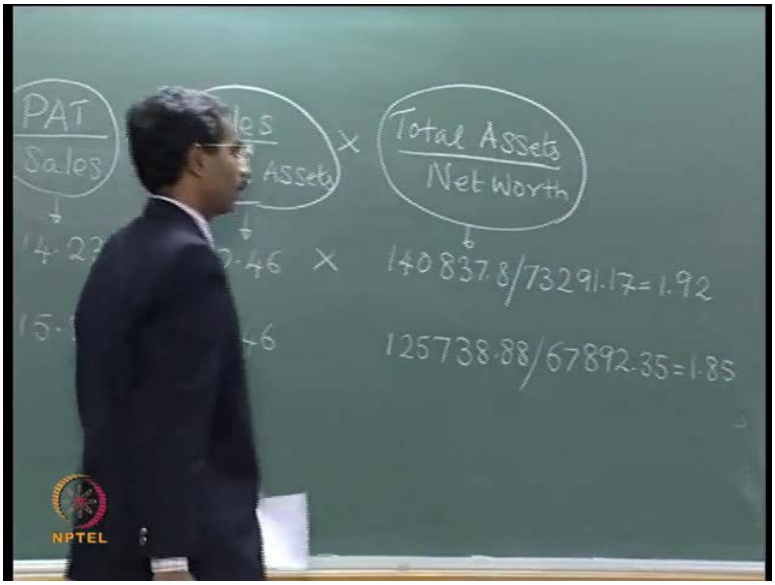

The net profit margin was 15.86 percent, the total assets turnover for 2011 was 0.46 and then leverage multiplayer was 125. So, return on equity is nothing but net profit margin multiplied by your total assets turnover multiplied by your leverage multiplier. And because of some rounding off errors you will find that this is not exactly equal, but more or less equal to 13.41 percent. So, what we see here is from 2011 to 2012 the return on equity has reduced, it is reduced from 13.41 percent to 12.59 percent, but why has it reduced what could be the reason for this reduction, that answer we will be able to get when we analyze the different components.

So, why has it reduced, it has reduced because the profit margin has reduced. So, the profit margin has reduced from15.86 to 14.23 percent in 2012. So, there is no change in your total assets turnover it remains 0.46 in both the years. If you look at total assets to net worth, you actually find it has increased in 2012, the leverage ratio as increased in 2012 as compared to what it was in 2011. But, despite that increase there is a reduction in your return on equity. So, this simply indicates that this increase in the leverage multiplier did not adequately compensate for the decrease in your net profit margin. So, the net profit margin has decreased more than this increase in your leverage multiplier.

So, by making this into 3 different components, we are able to identify what is a main source for this drop in return of earnings in 2012. The main reason for this drop in earnings in 2012 is simply because of the fact that a profit margins of the company has reduced in this 1 year. Now, the next step for us would be to understand why did the profit margin reduce, this ratio analysis has given us an indication as to where should we be actually looking for in terms of finding out the reason for the poor performance or a performance that is slightly deteriorated in 2012. And after having found out the reason that profitable margin is seem to be playing a major role, our next step is to find out what is actually caused the reduction in your profit margin.

Now, that is something we cannot completely find out by looking at the financial statements alone. We need inputs from various operating parameters and other aspects of the marketplace and so on. But, what we will do is, we will stop this the discussion here with the understanding that these parameters convey a lot of important information about the performance of the company. And when you are looking at financing of projects when you are looking at making investment decisions, trying to calculate these kinds of performance parameters is very helpful and it is very important as well.

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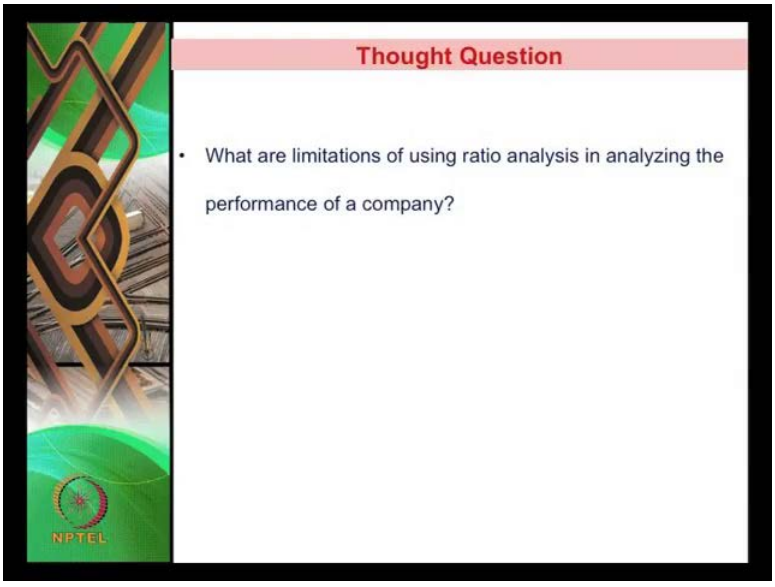

Before we close the lecture a thought question, what are the limitations of using ratio analysis in analyzing the performance of a company, remember whatever we used whatever the analysis that we did is essentially called as ratio analysis because we are

calculating various ratios using information obtained from the profit and loss account of the balance sheet. Now, though these ratios are very helpful there are also some limitations and it is important for us to understand these limitations when we use this ratio analysis for our decision making. So, the question is what are the limitations of this ratio analysis that we have to be aware of? So, please think about it and then we will discuss this in your next class.