Financial Accounting
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Lecture – 75
6.6 Profitability Ratios

In this video, we are going to discuss the indicators used to gauge the profitability position of a business.

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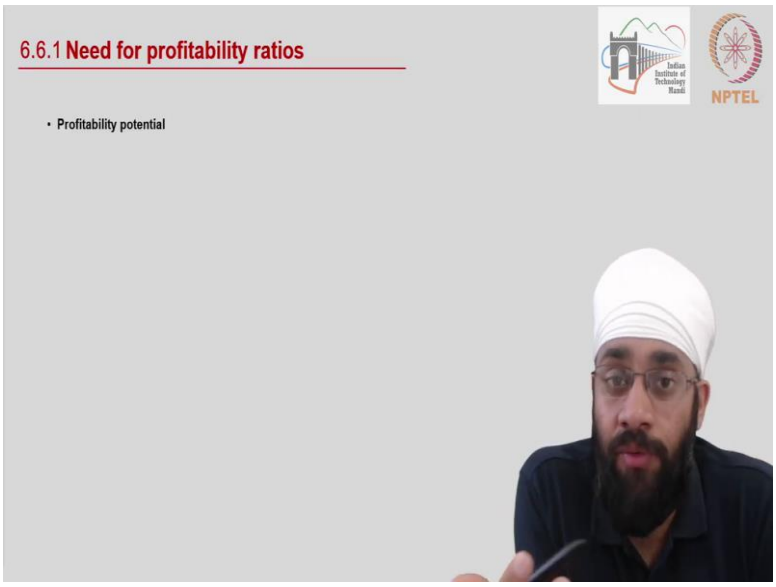

Profitability may refer to the gross margins, the net margins and may also be looked at from the point of view of the stakeholders in the business. For example, equity shareholders would like to know what is the return on the investment or, in general, what is the return that business is generating on all the capital that has been employed in the business. Also, there are some indicators from the market point of view, with respect to the investors who want to invest in the shares of the company; how do they perceive the profitability of the company?

So, we will look at about 10 indicators of profitability; but understand that these indicators can be different across different resources. When you look at different textbooks, there can be more indicators as well; they are necessarily a variation of the existing ratios that we will discuss.

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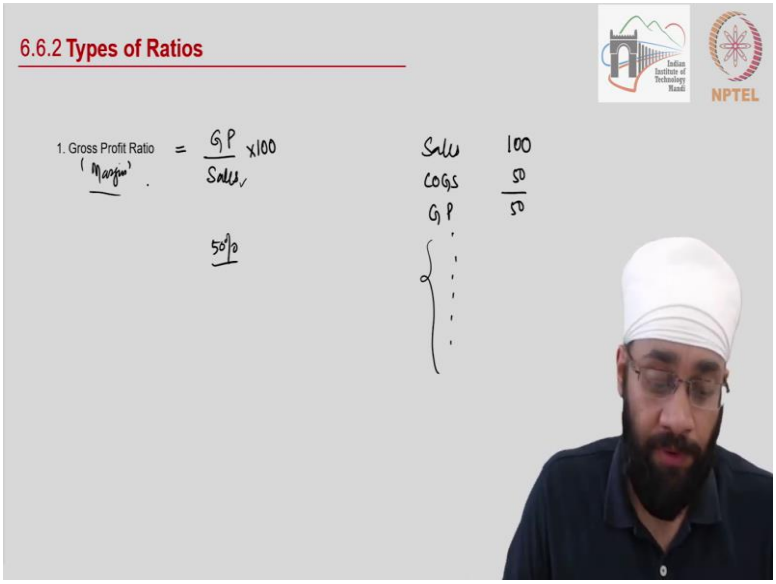

Let us get started with the first ratio which is called ***Gross Profit Ratio***. You are very familiar with the number gross profit; the gross profit is divided by sales and multiplied by 100. So, in the profitability ratios, most of the ratios are going to be calculated taking sales as the base; the total revenue that you make and as a percentage of that what is the gross profit. Thus, a gross profit of 50 percent would mean that from the sales; if you remember the income statement format, the cost of goods sold are 50 and 50 is your gross profit and then you have the rest of the expenses that follow. To begin with, you have a 50 percent margin at the top of the goods that you produce, the cost of the goods that you produce. And then you can use this rest of 50 percent to pay off the selling administrative and finance costs that are there, very straightforward. Gross profit ratio is also called the margin in general or the gross margin more specifically. It tells you the profitability position at the highest level.

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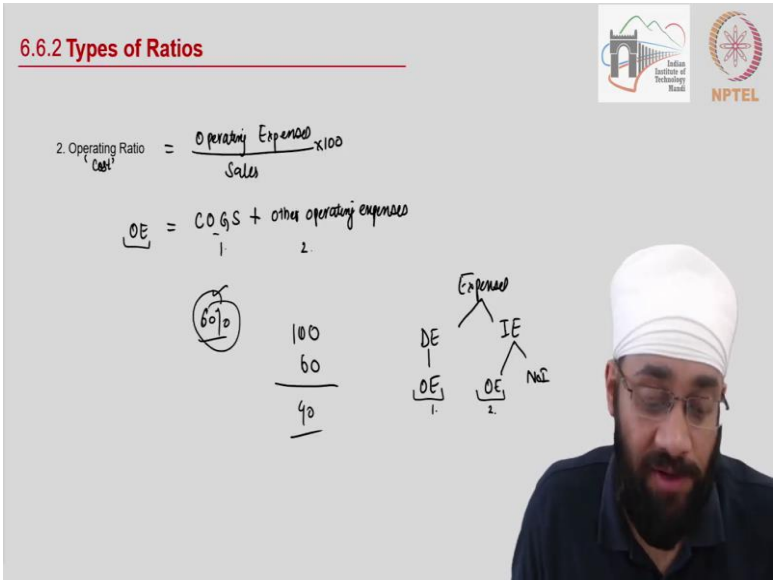

The second ratio is called the ***Operating Ratio***. The operating ratio is also sometimes called operating cost ratio. It is equal to the operating expenses of the business divided by the sales. How do you calculate the operating expenses? Operating expenses are equal to cost of the goods sold, this is the first section in the profit and loss account if you remember. Thus, the entire cost of the goods sold is part of operating expenses because the cost of goods sold includes all the direct expenses, and all direct expenses are operating. You add to it the other operating expenses, which are part of indirect expenses. I hope you remember this classification. You have expenses categorized into direct expenses and indirect expenses. Indirect expenses can be operating expenses or non-operating expenses; direct expenses are always operating expenses. In order to figure out total operating expenses, you are looking for these two components 1 and 2; this is how you get the operating expenses. Now, what does operating ratio mean? Let us say if the operating ratio is 60 percent; that means that operating expenses in the business, and operating expenses are the expenses which are primary to the business for which the business is being run, they are directly contributing to the generation of revenue. So, 60 percent operating ratio means; if 100 is your sales, then 60 rupees certainly go into operations of the business which are essential, which you have to do. So, you are left with only 40 as the remaining profit. The idea here is to distinguish between the operating and non operating expenses, and look at how much operating expenses are contributing to the total cost of the business. So that is the operating ratio.

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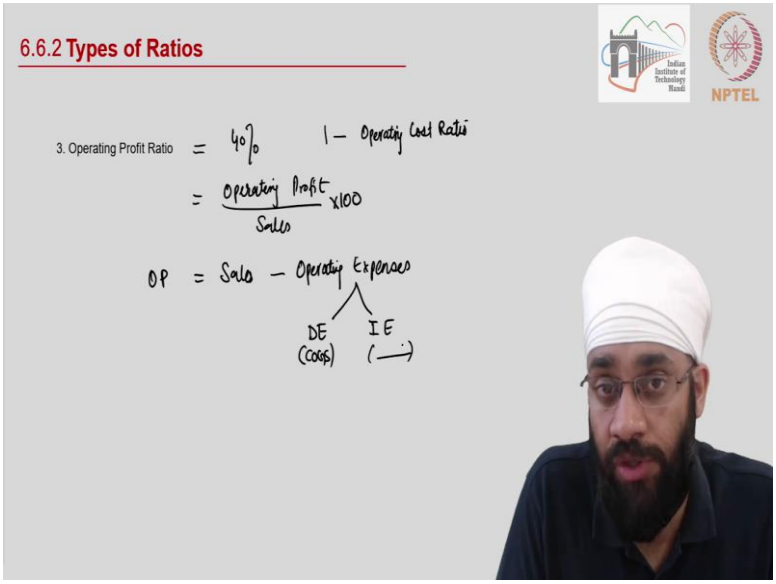

The next indicator is called ***Operating Profit Ratio***. This is complementary to the operating ratio. If your operating ratio is 60 percent that means operating profit ratio is going to be 40 percent. So, operating cost is 60 percent; that means remaining 40 percent is your operating profit. Operating profit ratio is equal to 1 minus the operating cost ratio or in simpler terms, you have to calculate the operating profit and divide this by sales. What is operating profit? Operating profit is equal to sales minus all the operating expenses, all the operating expenses. What are all the operating expenses? Well, there are two types; there can be direct operating expenses, there can be indirect operating expenses. Direct operating expenses are called cost of the goods sold and indirect expenses have to be looked up in the income statement and there you go; you have an operating profit ratio.

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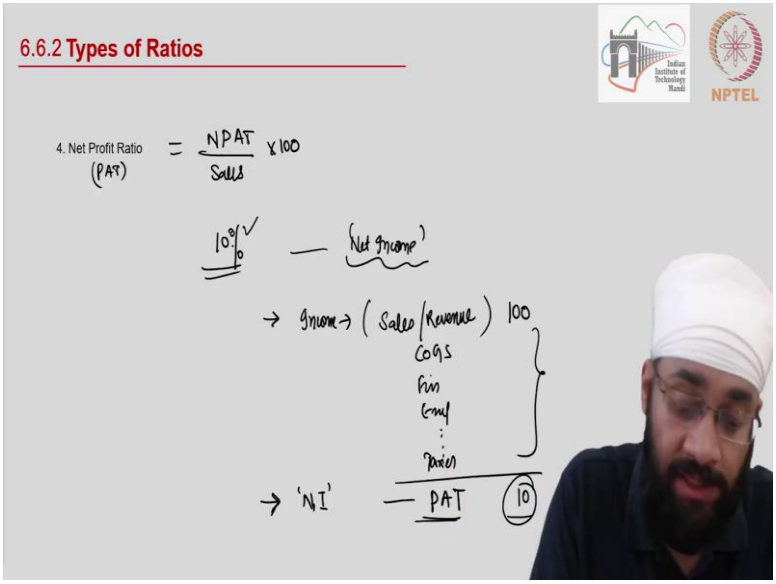

The next indicator is called ***Net Profit Ratio***. Here, net profit is profit after tax. All you do is you take profit after tax or net profit after tax and you divide this by sales into 100. Let us say this number comes out to be 10 percent; this means you take care of all the expenses in the business and finally, you are left with the 10 percent. This is called the net income of the business as well. Do make a distinction between the income of the business and net income of the business; the two are very different items. We have the income statement, where you have let us say 100; the sales can be referred to as the revenue as well and all of this can be referred to as income in the business. And then you pay all the expenses cost of goods sold, finance cost, employee benefit expenses, and taxes as well. Finally, the number that you arrive at is profit after tax, this is called net income. Therefore, net income and income are very different terms. Net income is used to refer to profit after tax, the final profit which is called the *bottom line*. So, income is the *top line* of the income statement and the net income is the *bottom line* of the income statement.

You are interested in figuring out that after paying all the required expenses; what is the money that the business makes? That is 10 percent, the net profit ratio.

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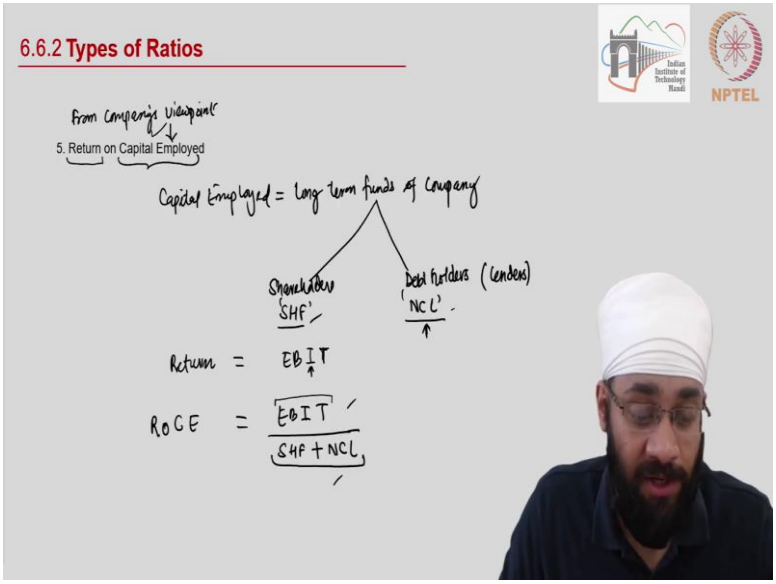

Let us look at another indicator which is called ***Return on Capital Employed***. So, let us first decide, what is this capital employed and how do you get to this number? Capital employed refers to the long-term funds in the business. Where do the long-term funds come from? There are two sources; you get this money from shareholders and you can get this money from the debt holders. Who are the debt holders? Debt holders are the lenders. Shareholders' investment can be figured out by using this number, shareholders' funds. On the other hand, debt holders are all the non-current liabilities taken together: these are the long-term funds in the business. Thus, the capital employed, the word capital is being used in a different sense; we are not referring to shareholder capital here. We are saying in the business what is the long-term capital that has been employed by the business; not by the owners, but by the business. So, the lens that you have to really wear is here of the company. From the company's point of view, what is the capital employed? Not from an equity shareholders perspective. Thus, you have to take these two and then you have the return.

What is the return generated? Let us define return. The return is defined as the earnings which would be available to both shareholders and the debt holders, which is equal to the earnings before you pay the interest and you pay the taxes, this is the earning. Tax essentially is a mandatory item that everybody has to pay; but the real earnings are before that, the earning potential of the company is before you pay the tax.

So, earnings before interest and tax is taken as the return; the interest is paid to debt holders. We want to look at the return to the debt holders plus the shareholders at one go, therefore we are going to take earnings before interest and tax. And in order to figure out return on capital employed, we are going to divide the earnings before interest and tax and then we are going to use shareholders' funds plus the non-current liabilities, the long-term funds invested in the business. So, the business is deploying these two types of funds and then clubbing it, and then EBIT is the money which is earned by the business. After this, the business distributes this money, some in the form of interest to the non-current liabilities, and the rest in the form of dividends to the equity shareholders. That is the idea here. So, you use earnings before interest and tax and you use both the long-term funds of the business, to figure out their return on capital employed. Again, the capital employed is from the point of view of the company, not the owners of the business, not the shareholders of the business. These are the five indicators.

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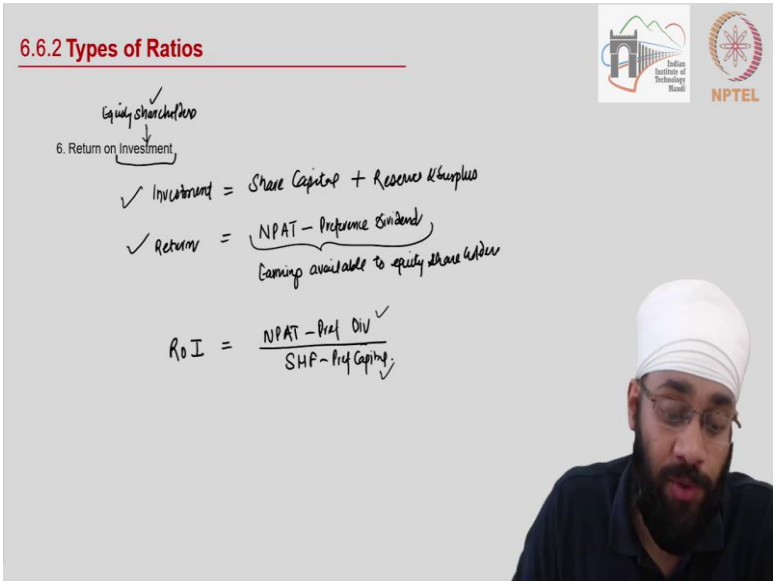

Let us go to the sixth indicator of profitability, it is called ***Return on Investment***. Now we are talking about investment from the point of view of equity shareholders; not even preference shareholders, only the equity shareholder, the common shareholders in the business. What is the return on investment? First of all, let us define, what is an investment? The investment here is equal to the funds invested by the equity shareholders. So, you will write share capital and any reserves and surpluses in the business: they also belong to the equity shareholders. This is the investment made by one specific party. Now we are looking at it from the point of view of equity shareholders. The next question is, what is the return that the equity shareholders make?

What is the money that they earn? Money that they earn is the net profit after taxes minus the dividend that has to be paid to the preference shareholders, then you have the earnings available to the equity shareholders. So, this amount here is called earnings available to equity shareholders.

Equity shareholders versus preference shareholders: in both you have the investment and the return. Return on investment to the equity shareholders is equal to net profit after taxes minus the preference dividend. And you divide this by shareholders' funds minus the preference capital. You do not want to include preference capital, because you have taken out the preference dividend as well. The question can be, why are we taking out preference capital from this equation? Because preference shareholders have a fixed return; you do not need to do any calculation to figure that out. Preference shareholders have a fixed return, 10 percent for example, and they know that is their return, no calculation required at all. So, the only calculation that is required is for equity shareholders. We take the numerator as the return to the equity and also in the denominator. We take the money invested by the equity shareholders and take out the contribution of preference shareholders. So, return on investment again is from the point of view of the equity shareholders. Let me emphasize here that if you look at different textbooks, everybody defines these numbers differently. You could redefine return on investment and say that equity shareholders are the people from whose point of view we have to calculate the return on investment. But can I calculate return on investment from the point of view of preference shareholders? The number is straightforward, but you can redefine these numbers as well. Various websites that give you the financial ratios of different companies, they also give their definitions. Before interpreting any of those numbers, you should look at their definition and accordingly interpret it. For example, we could switch the two; maybe one of the financial websites that you look at says that return on investment should be from businesses point of view, not equity shareholders point of view. So, they may switch the indicator number 5 and 6; return on capital employed should be from the point of view of the equity shareholders. So, there can be those debates. But the nomenclature is of less importance; the contents, the ingredients of these indicators is what is more important. Whenever you are interpreting these, do not go by the standard definition; because it may be different for different sources that you are referring to. Look at the definition and accordingly interpret, accordingly come to conclusions about the meanings of these ratios.

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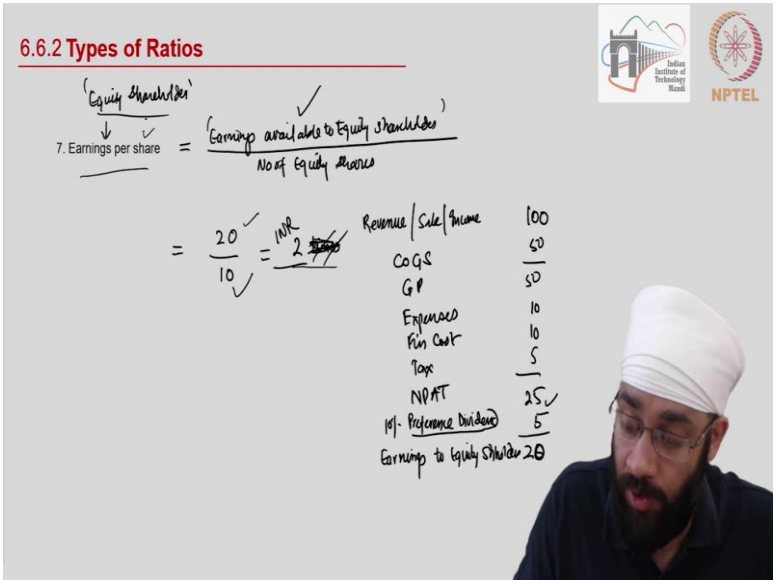

Let us move on. The next indicator is called ***Earnings Per Share***. Earnings per share is from the point of view of equity shareholders and there is no debate about it; there are no two ways about it. This is standard, this is uniform, across all sources. Earnings per share is equal to earnings available to equity shareholders divided by the number of equity shares as it says per share. Number of equity shares is given in the balance sheet, that is a straightforward number that you just plug and play. The earnings available to equity shareholders: we just discussed this in the previous indicator. I will explain it again. What is of most importance is the format of the income statement. Revenue or income whatever name you want to call it, you take out from it the cost of goods sold, let us say 50 and you have 50 as the gross profit. Then you take out all the other expenses you have, finance costs and then you pay taxes. So, let us say 10, 10 and 5 and you are left with 25 as net profit after taxes. Out of this profit, the first right on this profit belongs to the preference shareholders. So, you have to pay a dividend to preference shareholders at a certain rate, let us say 10 percent. Note that this 10 percent dividend does not mean 10 percent of this 25, the net profit. No, it is 10 percent of the investment made by the preference shareholders. What is the investment made by the preference shareholders? Well, you go to the balance sheet and look at the capital contributed by the preference shareholders, and multiply that by 10 percent. That is the number that we are talking about. When the payment is made to the preference shareholders, you are left with the amount which is now available as an earning to the equity shareholders. This is the amount we are talking about; these are the earnings available to equity shareholders, this is the amount that you plug into this ratio here. Let us say the earnings available are 20 and you have 10 shares in the business. So,

earning per share is 2 times, this is referred to as 2. So, earning per share means that, for every equity share; what is the return, what is the earning? Now, you do not get this money in hand, the equity shareholders are not receiving this money. The only thing which is happening is the business has x number of shares, 10 shares; for each share the business has earned Rs. 2 that is all it means; it does not mean that you are receiving the money. So, 2 rupees per share is what has been earned. 2 rupees per share is the earning and if the price per share is 10, then you can say I made a 20 percent return. Earnings per share is a popular indicator which is used and EPS is something which you hear quite often, if you follow business news channels or read business newspapers. EPS is further used in another indicator, which we will discuss going forward.

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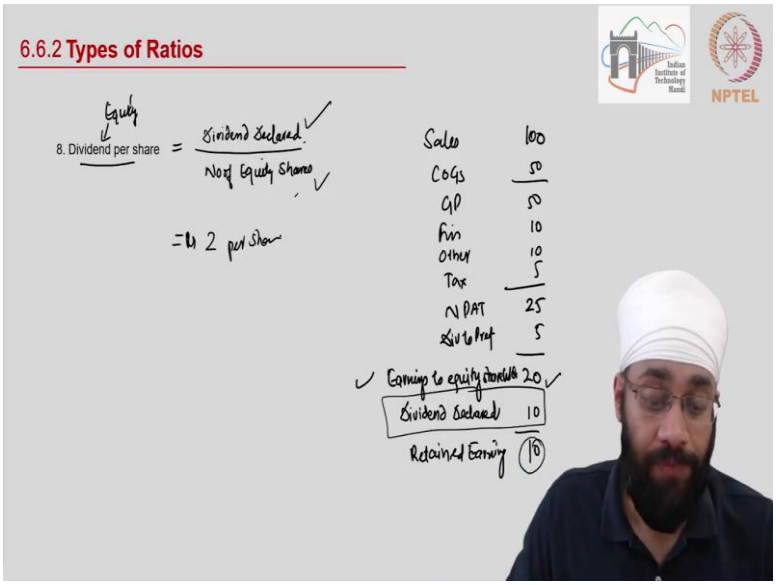

Dividend Per Share is the next indicator. Now, dividend here refers to equity shareholders, from the point of view of the equity shareholders. Again, there are no two ways about it, this definition is also pretty certain; dividend per share is equal to the dividend declared during the year divided by number of equity shares. Now, what does this dividend declared during the year mean? Again, let me draw this: sales 100, cost of goods sold 50 and then you have your gross profit; you pay finance expenses, other expenses, taxes and then you are left with net profit after taxes. So, 10, 10, 5 and 25 is the net profit after taxes. Then you pay a dividend to preference; you pay a dividend to preference, 5 and then you are left with 20. This 20 is what we term as earnings available to equity shareholders. Remember this, we are going to do this many times over; so, you better have this format in your mind. The earnings which are available to equity shareholders, I said the business, the company, is not going to pay all of this money

to the shareholders. The board of the company; the company is run by a board, they will decide that out of this 20, we are going to pay off 10 as the dividend. So, dividend declared or dividend paid is a portion of the earnings which are available; the remaining amount is going to be retained in the business, so retained earnings. If you remember, we looked at the balance sheet of the Reliance Industries Limited and I showed you a section called retained earnings; that is the money that goes into reserves and surpluses. So, business does not pay out all the money, it retains some money; whatever is paid out is the dividend which is paid, is the dividend declared by the company to the equity shareholders. So, dividend declared divided by the number of equity shares will give you the per share dividend that the company has declared. Look at the numbers; in the next video we will take an example and do these calculations, but dividend per share let us say, 2 per share, rupees 2 per share comes out to be the dividend per share.

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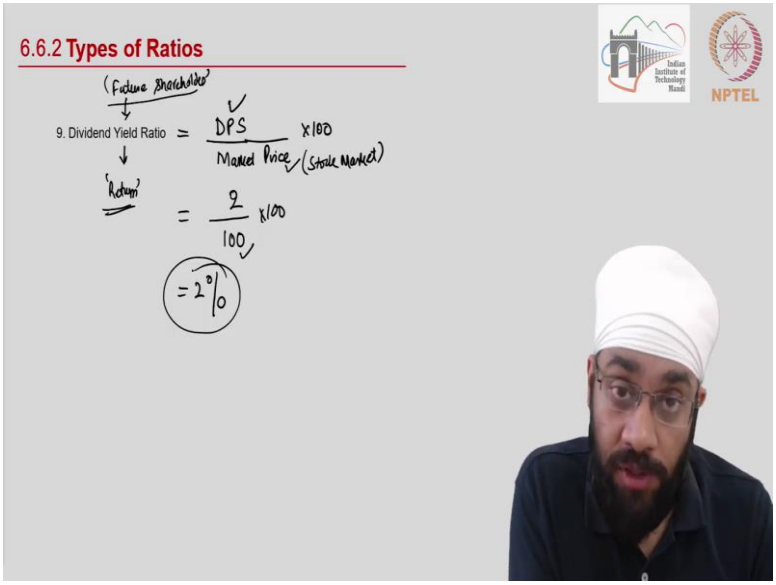

Then you have something called ***Dividend Yield Ratio***. Dividend yield ratio is equal to dividend per share and divide this by the market price of the share into 100. Dividend per share, we just discussed what is dividend per share. Let us say 2 rupees per share is being distributed as the dividend, you have to divide it by the market price of the share as at that time. So, if the market price of the company share is 100, it means that the dividend yield ratio is 2 percent. What is this yield? Yield is another term for return. Now, it is from the point of view of future shareholders, future investors. People who want to become the shareholders of the business, if they have to invest in this company, at this point in time, they will have to purchase the share

in the market. Market price simply refers to the price of the share in the stock market. So, that is the market that we are talking about. Price of the share is 100. So, if I have to become a shareholder in this company, I will have to spend 100 rupees. What do I get in return? I get in return 2 rupees a year, because that is the dividend per share, the company actually pays out 2 rupees per share. So, I am only making a 2 percent return. This number helps the future investors figure out if they want to invest in the company. From the company's point of view, they want to increase this number as much as possible to attract more people to invest into the company.

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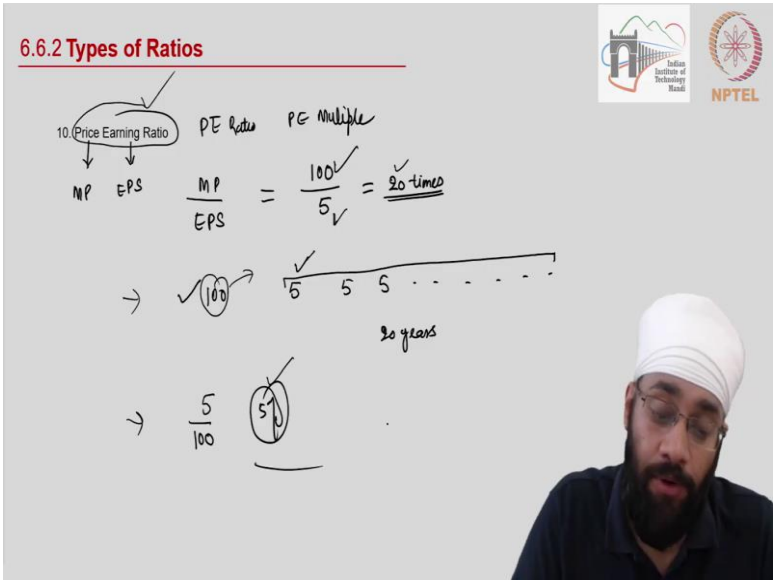

Last ratio is ***Price Earnings Ratio*** which is again a very popular ratio used very often in the business news or for various kinds of analysis, like, for valuations of the companies. You would have heard it, it is also called PE ratio or also referred to as PE multiple.

What is the price we are referring to and what are the earnings that we are referring to? The price is the market price, the earning is the earning per share. You know both these numbers. So, all we are doing is, we are taking the market price of the share and dividing it by earnings per share. Right now, if the market price of the share is 100 and the earning per share are 5; then the PE multiple is 20 times. This is mentioned in times. 20 times means the market price of share is 20 times the earnings per share. Now, what does this mean? This ratio has a lot of implications and interpretations. If you are investing in this company, then you will have to invest; you have to buy a share for 100 rupees. What will you get in return? You will get in

return 5 every year, 5 every year and so on, alright. This means, if you are buying the share right now; if you take the decision to purchase the share, then you will be able to recover your investment in how many years? At least 20 years. And if you consider the time value of money, then it will be more than 20 years; say 20 to 25 years is the time horizon. This means that you have faith in the company, that the company is going to exist for at least this long; if you have to recover this money. That is one way of looking at the PE ratio; the price earning multiple. The higher the ratio, the more faith the people have, the investors have in the existence of the company. However, too high PE ratio may also mean that the market, the investors, have over expectations, too many people want to purchase the share. So, the price of the share is going up, but the earning potential may not necessarily be that much. PE ratio, again as I said, is used in valuation of the companies as well, but that is beyond the scope of this discussion in this course. However, understand that whenever you see PE ratio, it indicates the faith that the people, the investors have in the company, how long this company is going to exist. The other interpretation of this can be that people are happy getting 5 rupee in return for an investment of 100. People are happy to invest their money in this company for as low return as 5 percent. It is not only these 5 rupees that come to them every year, but they also expect to sell the share. They hope that this 100 will become 120 in 1-2 years and then they will not only make these 5 rupees, but also 20 additional rupees. So, that is how despite the low return offered by the company, people still subscribe to the shares, purchase the shares of the company. So, that is the interpretation of the price earnings ratio. We have looked at 10 indicators of profitability of a company and we have done some discussion. In the next video, we are going to do a tutorial where we will calculate these numbers and discuss more about the interpretation of these numbers. I will see you in the next video.