

Strategic Management - The Competitive Edge

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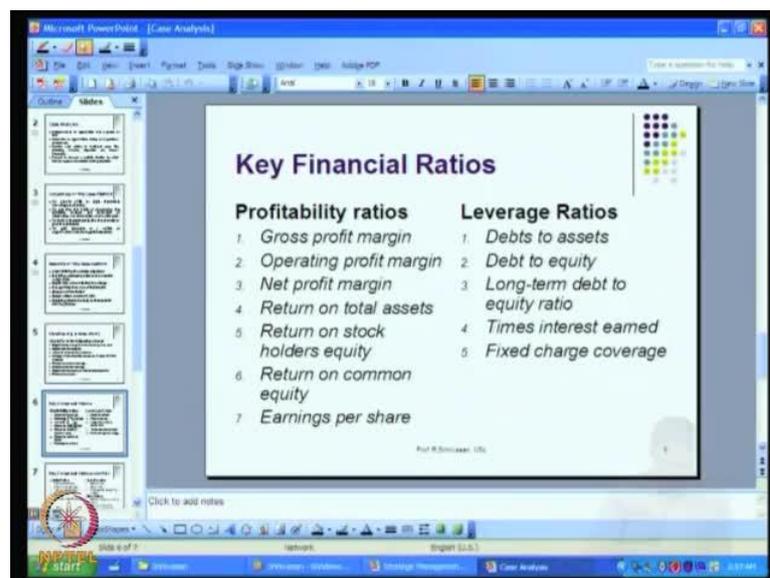
Module No. # 04

Lecture No. # 18

Key Financial Ratios

Welcome to this class. We were discussing the case analysis. How should you go about analyzing the case? When we discussed this, we looked at some measures of financial performance. When we looked at some measures of financial performance, we considered the ROI, EPS, ROE, EVA and MVA. EVA stands for the Economic Value Added and MVA stands for the Market Value Added. We also looked at the stakeholder measures, the stakeholders are consumers, suppliers, financial community, employees, government, consumer advocates and the environmentalists. After having looked at these measures of financial performance, let us now look at some key financial ratios today.

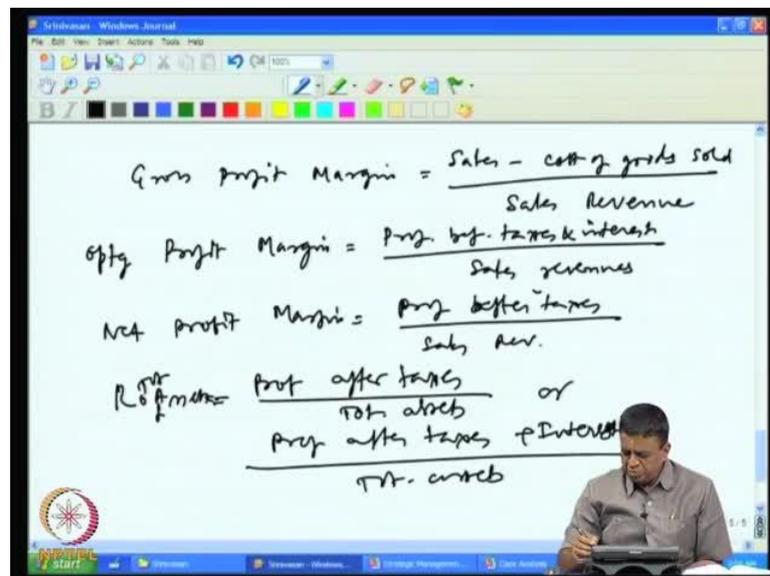
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These are the ratios, which are of interest to us. One is the profitability ratios and they are listed here. I will be discussing each one of them in great detail. When we look at profitability ratios, we look at gross profit margin, then operating profit margin, net profit margin, return on total assets, return on stock holders' equity, return on common equity and earnings per share. All these we are going to discuss in greater detail.

Now, let me just take you down to some of the formula, which we have already listed. If you look at the different types of ... In the last class, we looked at financial performance, the different shareholder group measures, stakeholder measures and we listed all of them.

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Now, in the similar manner, let us look at these financial ratios. What does gross profit margin mean? How do you calculate this gross profit margin? This gross profit margin is calculated by sales minus the cost of goods sold divided by the sales revenue. What does it tell you? It gives you an indication of the total margin available to cover operating expenses and yield a profit. It tells you, by how much have you been able to cover the cost of goods or cover the operating expenses and get a profit through your sales.

What is the operating profit margin? How do you calculate this operating profit margin? The operating profit margin is nothing but, profit before taxes and interest divided by sales revenue. So, before the company pays money on taxes and interests, it is the profit

earned divided by the sales revenue. What does it tell you? It gives you an indication of the firm's profitability from current operations without regard to the interest charges occurring from the capital structure. So, the company has not yet paid taxes and kindly note that, this is due to the government or other bodies and this is before. How much is a profit margin? When you take it after taxes, you get the net profit margin. So, the company has paid everything, which is due to the different bodies. It will get on hand, what exactly is the margin on profits; the sales revenue. It shows that after tax profit per rupee of sales, subpar profit margins indicate that firm's sale prices are relatively low or its costs are relatively high or both.

Suppose, the company is not able to really get profit margins, after this it shows that its operating costs are high or its sales prices are relatively low. It could have priced its products higher in the marketplace and not doing it. These are the type of implications and each one of these ratios has a gross profit margin, operating profit margin, net profit margin.

The next one we are interested is called as the return on assets. How do we calculate the return on total assets? In fact, the return on total assets is equal to profit after taxes divided by total assets. There is another formula profit after taxes plus interest divided by total assets. So, this is the other formula or method of calculating. What does it tell you? A measure of the return on total investment in the enterprise is what I mentioned in the last class. Why will you invest in a company? Suppose, your investment is not fetching you the returns, let us say, why should you invest in such a company? What is the return on investment? These are the questions, which keep on cropping up in routine manner in the industries.

You talk of something and they keep on asking you these figures. You wanted this much money, this is the investment that is made and how much this money has brought in and that is what is the return on this to the company. So, the return on total assets is - you have made use of the assets of the company to produce products. Suppose, it is a manufacturing company, it can be your production lines. The type of equipment that you are making use is used to produce the products and you have introduced them into the market. After introducing them into the market, you expect the sales to reflect a certain amount of return, which the company expects to yield a reasonable profit margin and this is what it normally means.

A measure of the return on total investment in the enterprise is sometimes desirable to add interest or after tax profits to the numerator of the ratio, since total assets are financed by creditors as well as by stockholders. Hence, it is accurate to measure the productivity of the assets by the returns provided to both classes of investors. Suppose, so many people have paid to the company to create assets, the company has borrowed. Then you add that interest, which is given to these firms. So, both are accepted measures of calculation for ROE.

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The image shows a screenshot of a Windows Journal application with three handwritten formulas:

$$\text{Ret. on Stockholder's equity} = \frac{\text{Prof. after taxes}}{\text{Total Stockholder's equity}}$$

$$\text{Ret. on common equity} = \frac{\text{Prof. after taxes} - \text{Preferred Stock Dividends}}{\text{Total Stockholder's equity} - \text{Par value of preferred stock}}$$

$$\text{EPS} = \frac{\text{Prof. after taxes} - \text{Preferred Stock Dividends}}{\text{Nr. of Shares of common stock outstanding}}$$

Similarly, the next one, which we are interested, is return on stakeholder's equity. How do we calculate this return on stockholder's equity? It is calculated by profit after taxes; kindly note all these formulae carefully, divided by the total stockholder's equity. After the taxes, how much is the stockholder's equity? How much of the stockholder's investment is there in the enterprise? What is the measure? What is the return? What does it give you? It gives you a measure of the rate of return on the stockholder's investment in the enterprise.

Suppose, you have invested 100 rupees, you expect a return more than a bank return as an individual investor. This is what I was trying to tell you in the other classes also. If you are getting 1 rupee for 100 rupees, you need not have invested in this particular company because even putting that 100 rupees in a bank in a savings account will get you more than that 1 rupee. It gets you 3.5 rupees at the present rate of interest without

any risk involved or the risk is negligible. Similarly, if you are a little forth coming or having some enterprising spirit, you can make investment in company. Deposits of good companies earn a much higher rate of interest than the fixed deposit rates of interests in a bank. You may get it even around 9 to 10 percent. So, your 100 rupees will be getting you 10 rupees. Suppose, you want to make an investment in a particular company, what are you expecting? You are expecting a rate of return, which is higher than this rate of return. You expect something more than 10. This is the way you have to look at it as an individual investor. Now, this is one way of calculating the return on stockholder's and this is the way of looking at return on stockholder's equity.

We can also look at return on common equity. This return on common equity can be calculated using the formula profit after taxes minus preferred stock dividends divided by the total stockholder's equity minus par value of preferred stock. You are looking at profit after taxes minus the preferred stock dividends and that is some people have this preferred stock. What are the dividends due you have to pay? You will come to the common equity holders after these stocks preferred stock dividends are paid. Then the totals divided by the total stockholder's equity minus the par value of the preferred stock. What does this give you? It gives a measure of the rate of return on the investment that the owners of the common stock have made in the enterprise.

Let us say, you have some 1000 people investing in a particular enterprise. They all form these common equity stockholders and they come into that category. Suppose, let us say, you have 10 people who have made capital investments in the enterprise. They are the owners of the firm and 100 people picking up equity are hypothetical examples. So, they are coming under the common equity pool. When you are saying return on common equity, there are 10 people and the 10 people are the preferred stockholders, this 100 people are forming the common equity.

Now, you calculate the formula on the return on common equity. It tells you how the company is able to pay. How is it able to provide the return on this common equity? So, measure of the rate of return on the investment that the owners of the common stock have made in the enterprise. Now, this is return on common equity.

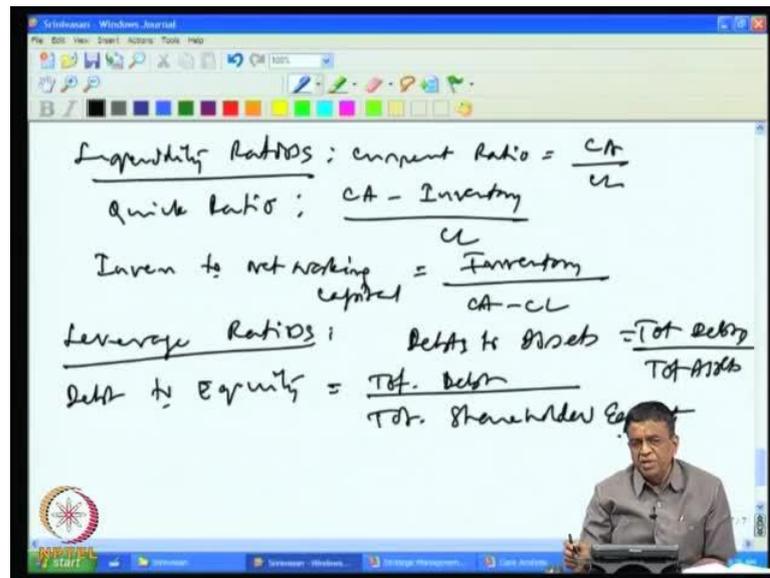
The last one, which we are interested, is earnings per share. The earnings per share is calculated by profit after taxes, note that we are looking at profit in most of these

calculations after taxes. Why are we looking that after taxes? There is no further encumbrance on this profit figure and so after this, taxes are paid. So, profit after taxes minus the preferred stock dividends. These people are preferred stockholders divided by the number of shares of common stock outstanding.

I gave you the example in the last calculation; 10 people are the owners. Let us say, 100 people having equity, a hypothetical case of 100 shares, 1 share is not really true. So, after paying the profit after taxes, what does earning per share tell you? It shows the earnings available to the owners of the common stock. After these preferred stock dividends are made, these 10 people who have made investments are paid out from the dividends at a particular decided rate, which you have come to agreement even before this other equity was distributed and that is a common equity. So, there is a certain amount of fixed dividends to be paid for these preferred stockholders. The profit after taxes minus the preferred stock dividends divided by the number of shares of common stock outstanding will give you the earnings per share. What does it tell you? It tells you the earnings available to the owners of the common equity.

So, these are different ratios, which we listed till now. They broadly come under the umbrella of the profitability ratios. So, just to repeat, the profitability ratios are gross profit margin, operating profit margin, net profit margin, the return on total assets, return on the stockholder's equity, return on common equity, the earnings per share. So, all these come under the umbrella of profitability ratios.

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Now, we will look at another important category of ratios, these are called liquidity ratios. This is liquidity ratios. What are these liquidity ratios? We are looking at some of the important ratios. One is called as the current ratio. Current ratio is nothing but the current assets divided by the current liabilities. What does this give you? It indicates the extent to which the claims of short term creditors are covered by assets that are expected to be converted to cash in a period roughly corresponding to the maturity of the liabilities.

So, translated into mundane terms, what does it mean? Suppose, your current assets are rupees, it is equal to 200 rupees and your current liabilities is equal to 100 rupees. What does that mean? Your current assets are able to take care of your current liabilities by a margin of 2:1. That is your current asset is 2 and your current liabilities is 1. So, this is the way it is 2:1. Your current assets are always higher than the current liabilities and this is normally what the financial institutions or the financial community look while advancing loan to different companies. They look at these types of ratios. What is the liquidity ratio of the company? How is it? They always prefer this 2:1 to be the minimum acceptable level at which they can lend for the firm.

The other ratio, which the companies look is also called quick ratio. What is quick ratio? You are looking at the same current ratio, but adding one more term into this and that is current assets minus the inventory divided by current liabilities. Why do you want to add

this? You want to take this inventory because inventory is something, which you feel that it may not be able to convert immediately. Suppose, you are not able to convert immediately, then you want to find out through the quick ratio, by how much is the current assets covering the current liabilities without taking into account the inventory? So, a measure of the firm's ability to pay short term obligations without relying upon the sale of inventories.

He does not have to sell the inventories. So, he does not have to really go after a buyer for the inventory and says, yes, we are able to cover. In fact, an ideal thing would be your quick ratio at 2:1 and your company is better off. So, we able to meet the obligations much better than the inventory to networking capital inventory. This is calculated by inventory divided by current assets minus current liabilities. You take the stock of the inventories divided by current assets minus current liabilities. What does it give you? It gives you a measure of the extent to which the firm's working capital is tied up in inventory. So, this is a very fairly important ratio.

Whenever, we look at a small-scale enterprise or a medium scale enterprise, we always look at this ratio. How much inventory is locked up? How much of the money is locked up in the inventory? The main problem with many of the small-scale industries is they are forced to close doors or forced to close the shutters due to this problem of working capital. They are not able to get money for working capital. Why they are not able to get money for working capital? We can only say that the financial management could have been better. What are the indicators of this? One of the very strong indicators of this is the inventory to networking capital. So, given by this calculation, inventory divided by the CA minus CL and that is the current assets minus the current liabilities. It gives you the extent to which the firm's working capital is tied up in inventory. So, it is a very important ratio. All these 3 are the current ratio, quick ratio, inventory to networking capital. They all come under the category of liquidity ratios and these are called liquidity ratios. There are 3 of them: current ratio, quick ratio and inventory to networking capital.

The next type of ratios we are interested is what is called the leverage ratios leverage ratios what are these leverage ratios. I will list some of the ratios for you and one is debt to assets. You could have almost made out now, by how much have you borrowed. What is the asset created? What is the coverage this asset is able to have on the debts? That is the total debt divided by the total assets. So, this is the way this whole formula gets

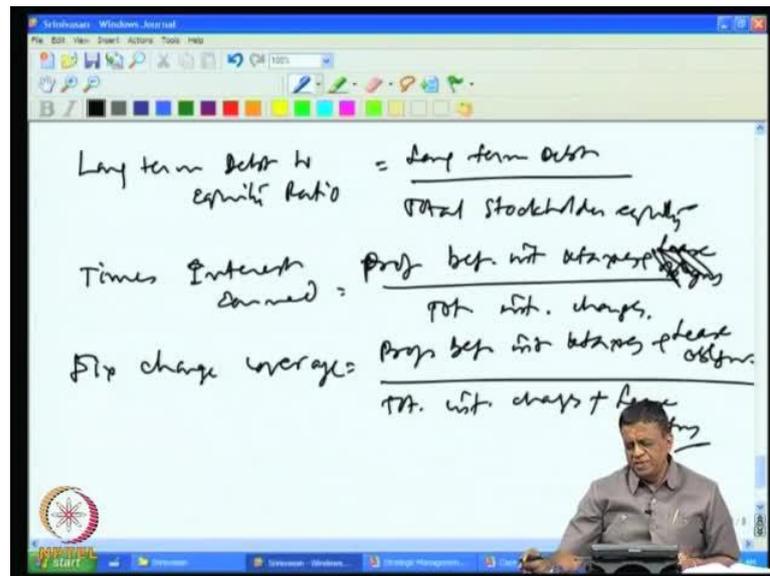
calculated. What does it tell you? As I told you, measures the extent to which the borrowed funds have been used to finance the firm's operations. How much of the debts you took from the different companies? How much of it you have used up to create assets for the firm?

Many times this is what we are seeing in the present day context. Note that it was not there earlier or earlier it was there, but now a days, we are seeing many of these financial improprieties being resorted. Many entrepreneurs take the loan in the name of one company to create assets, but assets are created for some other company. It is not the right thing to do because this can always be detected and does not speak well of the financial management. So, this leverage ratios can be very helpful in calculating or in finding out all these types of discrepancies, which the companies might have done. It is not that all companies do. Suppose, a company does it, these types of ratios can detect it.

The next one is debt to equity, how do you calculate this? You calculate this by taking the total debt divided by the total shareholders equity. What does it give you? It gives you a measure of the funds provided by creditors to that provided by owners. If you really see the previous one, instead of the shareholders, this is the stockholder's equity. Kindly note the change in the formula, it is the total stockholder's equity. What does that mean? This much money is available both from the preferred stockholder's as well as the other persons who have contributed to the equity of the firm.

These equity holders in that sense are the owners of the firm. How much money they have been able to bring? Suppose, let us say, your total debt is 200 rupees and your total stockholder's equity is 100 rupees. For 100 rupee, you are able to raise to 200 rupees that is 2:1. So, this is the normal financing range at which financial institutions fund companies. They say bring 100 rupees, we will be able to give you 200 rupees. What does it mean? It means that your 100 rupees plus his 200 rupees should be able to pay off his 200 rupees through the operations of the firm and that is what he expects. They say you bring 100 rupees; we will finance you up to 200 rupees. So, 2:1 normally is the way they look at these ratios. So, debt to equity provides a measure of the firm's funds provided by creditors to that provided by the owners.

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The next one is long-term debt to equity ratio. What is this long-term debt? This long-term debt is given to the company for 5 to 10 years. There is a certain moratorium also available to the company. So, for 1 or 2 years, the company need not pay or make any return on this. So, this is calculated by the formula long-term debt divided by the total stockholder's equity. This is the widely used measure of the balance between debt and equity in the firm's long-term capital structure. This is used by most of the financial institutions.

Suppose a state financial institution is given a long-term loan going up to repayment period going up to 10 years. So, first 2 years of operation or 3 years of operation of the firm, no installments are to be paid. Installments start from the commencement from the 4th year of operation. So, what does it mean? It means that the financial institution expects the firm to be healthy or in a position to start paying back after 3 years. It has almost covered the entire operating cost to make reasonable profit margins and that it is in a position to start repaying the different financial creditors; the long-term creditors and that is financial institutions. So, this is what these long term financial institutions are looking for. In order to ensure this, what do they do? They would like to place a nominee director from that institution to the board of this firm. His main job is to ensure that the money, which is due in terms of the EMI's to the financial institution are paid in time.

Suppose, the company starts defaulting in the payment of returns every month or every quarter or whatever it may be. Then the director or the nominee director on behalf of this financial institution will have to show up in the board meeting and say, first clear the dues of these financial institutions. Of course, there are certain classes of how many financial creditors are there? What is the charge? Who is having the first charge? Who is having the second charge? All these types of things, but generally the companies do discharge the liabilities to long-term debts after a certain period. It is a very important ratio, which is used by financial institutions.

The other one is called the times interest earned. What does this mean? The times interest earned stands for the profit before interest, taxes before interest and taxes plus the lease obligation. Suppose, you have lease obligations, put plus the lease obligations divided by the total interest earned before for this. In this first case, we do not take the lease obligations; we just take the profit before interest and taxes divided by the total interest charges. So, we want to make it at this level.

In a little simpler way, the times interest earned are the profit before interest and taxes divided by the total interest charges. What does this give you? It measures the extent to which the earnings can decline, without the firm becoming unable to meet its annual interest cost. It gives you an idea of how much the earnings may decline, but the firm is able to meet the annual interest cost. By how much is the earnings declining, this is what you are trying to say. What is the total interest charge? What is the profit that you have earned before interest and taxes? By how much time, is it covering? Now, you want to make this a little more stringent. You want to look at it in a little more stringent way that is you want to see by how much is the charge being covered and that is the fixed charge coverage.

Suppose, you want to do that fixed charge coverage, then you are going to take into account the lease obligations that is the profit before interest and taxes plus the lease obligation. So, there may be obligations of lease divided by the total interest charges plus the lease obligations. In other words, you are not really going to have a great difference between this ratio and the other ratio. To me, it can be a more inclusive way of doing things. That is a more inclusive indication of the firm's ability to meet all its fixed charge obligations. There may be a charge and that is what I just mentioned as first charge,

second charge. All these types of things, they say in financial terminologies, which the firm is to meet.

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The image shows a whiteboard with handwritten financial formulas for activity ratios. The formulas are as follows:

- Activity Ratio: $\text{Inven. T/O} = \frac{\text{Sales rev.}}{\text{Inv. of F/G.}}$
- Fix. Assets T/O: $\frac{\text{Sales rev.}}{\text{F/A}}$
- Tot Assets T/O: $\frac{\text{Sales rev.}}{\text{Tot Assets}}$
- Accts Receivable T/O: $\frac{\text{Annual Credit Sales}}{\text{Accts receivable.}}$
- Avg collen. Period: $\frac{\text{Accts receivable}}{\text{TT. Sales } \div 365}$ or $\frac{\text{Accts receivable}}{\text{Avg daily Sales}}$

This is the next one, which we may have to do. So, this is the other category of ratios that is the leverage ratios. We were looking at debt to assets, debt to equity, long-term debt to equity ratio. We were looking at times interest earned, then the fixed charges charge coverage.

The next category of ratios, which we are interested is called activity ratios. In this activity ratios, which we are interested have some ratios as the inventory turnover. How do you calculate this inventory turnover? This inventory turnover is calculated by sales revenues divided by inventory of finished goods. What does it give you, when compared to industry averages? It provides an indication of whether the company has excess or inadequate inventory of finished goods. So, it is very important for a company to sell its finished good stock.

Suppose, the finished goods are lying in the yards of the company, then what is it going to add up to? It is going to add up to the cost of holding of these finished goods. That is the inventory of the finished goods and to that extent your sales revenue is locked up. So, you are not able to sell this finished goods in the market or not able to push it in the market on time to convert it into cash and that is what it means.

It is always desirable for a firm to have less of inventory of finished goods. In many of these reputed automotive manufacturers, you have to wait before you get your automotive car or whatever. So, most of these reputed manufacturers like Toyota, you order the car; say a Toyota Corolla, it does not come to you immediately. If you order today, it is not available for you tomorrow. He says it will take about 2 to 3 months before the car could be delivered. So that means to say, somehow the processes are gone through and ensured that all the quality checks and other things are gone through before the car is delivered. So, the company holds the inventory of the finished goods to the minimum.

Similarly, you have fixed assets turnover. What is this fixed assets turnover? Fixed assets turnover is given by the sales revenues divided by the fixed assets. What does it tell you? It tells you a measure of the sales productivity and utilization of the plant and equipment. How much of your plant and equipment have been used to convert or to make into finished goods or to into your production line to come up with finished goods? So, this is a measure of the sales, productivity and utilization of the plant and equipment.

The other one is called the total assets turnover. Again, it is given by sales revenue divided by total assets. What does it give you? It gives you a measure of the utilization of the firm's assets. A ratio below the industry average indicates the company is not generating enough volume of business. Given the size of its asset investments, which is not good for the company, then this is with respect to the inventories and the assets.

Now, we are also interested in what is due for the company. That is what is called the accounts receivable turnover. The accounts receivable turnover is calculated by the annual credit sales divided by the accounts receivable. What does it mean? In a very simple manner, let us say, a company has sold 100 rupees goods and that the company is telling we have sold 100 rupees worth goods. As an auditor, you say, give me the 100 rupees as the sales revenue. It tells about accounts receivable, what do you mean by that? We have given this 100 rupees sale on credit, this money is due to us and it is not yet received by us. So, this money is due to us and he has not yet paid the money.

Now, the next question comes is this, where many of these retailing trade businesses operate? A simple example could be you are supplying some commodities to a supermarket store like Big Bazaar. Let us say, you send or you give 100 units to this Big

Bazaar person. Now, do you get the money immediately? No, it will be given after a certain lock end period, which is 90 days or 6 months depending on what item that you are giving him. Why is he saying so? He wants to ensure that there is a movement of the item that you gave him. Many mobile phone manufacturers give the mobile, but that particular model of the mobile may not move at all, then how does he pay? This is the way the companies look at. Now, for the mobile company that particular person may say, I have given this on credit sale, but till you receive the money, the sale is actually not through, kindly note that. This is annual credit sales divided by the accounts receivable, it gives a measure of the length of time it takes the firm to the sales made on credit. This is what I just explained to you.

The other one, which we are interested, is called the average collection period. Average collection period is equal to the accounts receivable divided by the total plus 365 for the annual days or the accounts receivable divided by the average daily sales. So, this is the other method of calculating this. What does it give you? It indicates the average length of time, the firm must wait after making a sale and before it receives payment. So, what is the track record of the firm in getting this money? It is the average collection period. Many of the banking institutions also lend loans to many people. Then the question is - how to recover this loan? Many times, some of these people, who have taken the loan from the bank are hard nuts. They are either not traceable or don't pay the loan on time and all those things. What do many of these, especially these cooperative banking institutions do? You might have seen, there is a vehicle and on that vehicle there will be a big board - loan recovery vehicle.

Suppose, loan recovery vehicle stands in front of a house, what does it indicate? It indicates to the other persons that this particular house owner has taken money from this particular bank and has defaulted in payment. So, this vehicle is coming and standing there. So, what do you call the mythological tale of Harishchandra owing money to Vishwamitra. What did Vishwamitra do? He put Nakshatrika as incharge and told to get the money, which is due from Harishchandra. So, this vehicle is standing like a Nakshatrika from the bank in front of the house. It also conveys a very bad connotation to other neighbors, which every owner would like to avoid. So, these are some of the ratios, which we are interested in. There are also some other ratios, which we are interested. We will have a look at those ratios in the next class. Thank you.