Working Capital Management
Prof. Dr. Anil K. Sharma
Department Of Management Studies
Indian Institute of Technology-Roorkee

Lecture-52
Measures of Liquidity

Welcome, so in the previous class we were discussing the models of cash management and we talked about the 2 models that is a certainty model and the uncertainty model and we try to learn that how to find out the optimum balance of cash or maybe say range of the cash where the firm will be comfortable and means both the objectives of maintaining sufficient liquidity.

And avoiding the technical in solvency can be achieved. I told you in the previous class that now will be moving to the payables management or the management of accounts payable that is the say current liabilities but before that we will discuss some more things with regard to this cash management or especially call it as liquidity management.

We have talked about the liquidity earlier also and where we talked about that to manage to maintain the liquidity sufficient liquidity in the firm. The firm must have pure cash and the backup liquidity. So that is in terms of the marketable securities. So, that is say okay that yes we can have cash and we can have the backup liquidity in the firm of the marketable securities.

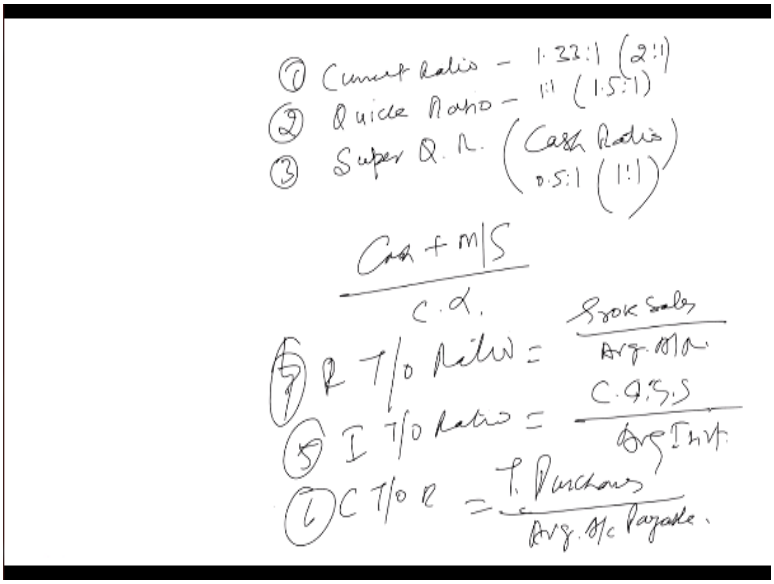
But there are certain other important concepts also to deal with the liquidity and to say understand the liquidity position of the firm and that we will talk today liquidity management little more about the liquidity management and 1 more thing I will talk to you, I thought that it is important to talk to you is about the window dressing that is with regard to the say again say studying the liquidity position of the firm, sometime firms indulgent to the window dressing.

And with the help of window dressing they improve the ratios, so we should be careful and we should be capable of finding it out whether the firm has improved is current and quick ratio just by window dressing or by really say they have that much of the liquidity which is defected by the

current ratio and the quick ratios. So, we will talk these 2 things before we move to the management of accounts payable.

So, when you talk about the liquidity management we normally study 3 ratios and these 3 ratios I think you have already discussed these ratios at length in the past also and the quick means review of the liquidity position of the firm can be had with the help of these 3 ratios.

(Refer Slide Time: 02:51)



That is the current ratio then this is the first ratio then we go for the quick ratio and then third one is the super quick ratio we call it as super quick ratio or sometime we call it as cash ratio also. So, these are the 3 ratios we calculate, we try to calculate the current ratio where the rule of thumb is that is 1.33:1 earlier it was how much 2:1 but now it is revised and it has been brought down from the 2:1 to 1.33:1.

So, this is the current ratio we have discuss this ratio at length many times then we have the quick ratio, quick ratio earlier means the current rule of thumb is that is 1 sorry 1:1 this ratio should be earlier rule was 1.5:1. And the super quick ratio is now the current rule is earlier rule was it the current rule first we discuss that is it is 0.5:1 earlier the rule was 1:1. So, we have changed the rule of thumb for the infestation of this ratios are understanding the liquidity position of the firm.

But say these 3 ratios are not sufficient to defect the liquidity of the firm say for the example in the current ratio we take all current assets divide them by current liabilities and try to find out, how many times are current assets are of the current liabilities. Simple quick ratio be subtract from the current total current assets only inventory and then we see that other than inventory how many quick assets are there which are called as quick asset not current asset.

So, how many are what is the amount of the quick assets in the firm divide them with the current liabilities and then we calculate the ratio and in the super quick ratio we normally take the pure liquidity and the backup liquidity. That is cash and marketable securities and dividing them by the current liabilities. So, we assume that 50% of your current equal to the 50% of the total current liabilities firm must keep cash+the backup liquidity in the form of short term securities, very short term securities which are called as marketable securities right.

So, these 3 ratios normally we calculate workout while we try to study the liquidity position of the firm, apart from that there are certain other liquidity ratios also. So, for example receivables turnover ratio we calculate the receivables turnover ratio where we calculate the turnover of the accounts receivables and for calculating that receivables turnover ratio what we do is that is we take the say sometime the credit sales or we take some time we take the total sales.

And on the basis of that we calculate thee ratios, so when you calculated with the help of the say receivables turnover ratio we take gross sales right and divided by the average receivables opening and the closing balance of the say accounts receivables. So we divide the gross sales and we interpret that higher the ratio better it is, higher the amount of the numerator that is a gross sales as compare to the denominator that is average accounts receivables.

So, we presume that the firm is maintaining sufficient liquidity, similarly we have the other ratio that is called as the inventory turnover ratio. We also studied under 2 parts that is under the source turnover ratio also and sometime we studied under the liquidity ratio also. Because liquidity of the firm can be studied with the help of this inventory also how quickly we are converting our inventory into sales or cash.

So, we call it as inventory turnover ratio and for calculating this we take the C. O. G. S/the average inventory. Normally we take the inventory of finish goods but sometime we can take the total inventory also of the raw material then the work in process and then the finish goods. So, this is another ratio we study or work out for studying the liquidity position of the firm and this is with regard to the assets, current assets.

Because accounts receivable is also a current asset, inventory is also a current asset and to know the liquidity position of the firm we try to calculate the creditors turnover ratio or accounts payable turnover ratio where we take the purchases or maybe sometime we take the total purchases. If the credit purchase is not possible to be taken then you take the total purchases and then is you take care is the average accounts payable right.

So, these are the say 6 ratios 1, 2, 3 sorry this was 4 this is 5 and this is 6 ratios. So, these 6 ratios we have been talking in the past also and while studying the say financial structure of the firm we have refer to these some of these ratios at that time also. So, till this date might be you have studied or understood that by say for studying the liquidity position of the firm.

We should calculate these 6 ratios starting with the current ratios and then say knowing about the turnover of the accounts receivables and the inventory and then the accounts payable and apart from the current ratio we calculate the quick ratio and the super quick ratio. And the rule of thumbs are better descried in the literature, so this gives us the overall liquidity position of the firm.

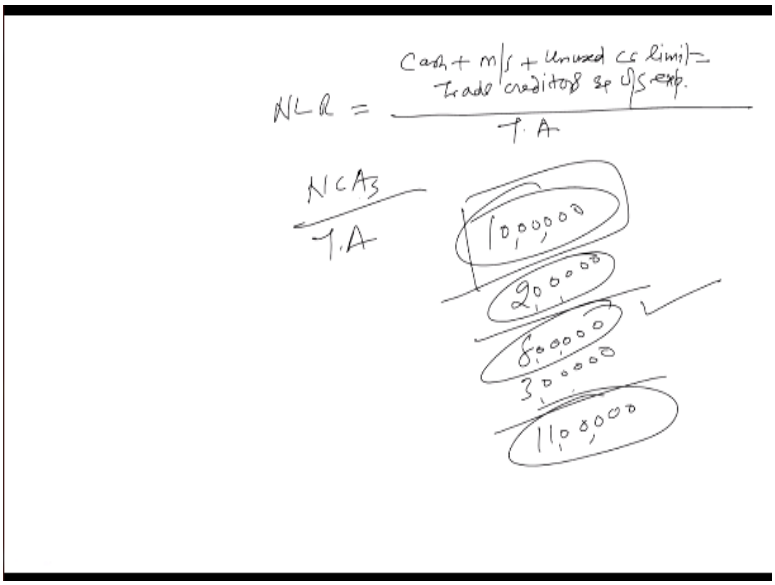
So, I would add here 1 more ratio which experts suggest financial experts suggest that apart from studying these 6 ratios. We should calculate 1 more ratio to know the liquidity of the firm and if you calculate that ratio that will give you the better picture of the liquidity position of the firm. So, you go for these 6 ratios or you calculate these first 3 ratios, current ratio, quick ratio and super quick ratio.

And apart from that you calculate 1 more ratio which I am going to discuss with you now and then that will give you the better picture and as I say further analysis if you want to go for then

the turnovers of the inventory receivables and payables can also be studied. So, this total bunch of 7 ratios will make the say study of the liquidity position of the firm possible and that will give you much better idea that any supplier if you want to supply to the firm.

Or say any bank want to say extend the loan, working capital loan or maybe through CC limit if they want to extend the financial help to the company. So, that will be possible but they want to make sure that yes firm should be able to pay off at our obligations as and when they become dues. So, there should be sufficient liquidity, so to study that liquidity position or to understand the liquidity position of the firm, we can study this total bunch of the 7 ratios.

(Refer Slide Time: 10:02)



So, which one is now the seventh ratio that seventh ratio is called as the NLR, net liquidity ratio. Net liquidity ratio is what this can be calculated with the help of cash+marketable securities+unused CC limit-this is all the numerator trade creditors means creditors and outstanding expenses or the expense credits, outstanding expenses this all means total of cash+marketable securities+unused CC limit-trade creditors and outstanding expenses.

That is called as expense credit to be divided by total assets, if you calculate this ratio and try to understand the liquidity position of the firm which is called as the net liquidity ratio. So, will be able to know more about the liquidity and this will be helping us to understand the net liquidity

position of the firm. Here now what we are taking we are taking extra item here is that is the unused CC limits.

We have discuss the concept of CC limit at length and say for example there are 2 balances in the CC limit there can be 2 balances when any bank sanction the CC limit. For example say we call it as 10 lakhs right. So, this is a 100000 limit is there, so in this limit means this account is open by the bank in it is own branch companies account is open that is a CC limit account.

And condition is that firm now will not have any other current account in any other branch maybe of same bank or the other banks. Whatever the total receipt and payments of the firm will be now there will be routed through this account right. So, for example you have say 10 lakhs limit is sanction by the bank it means 10 lakhs rupees will be available to the firm anytime firm can write the cheques against this balance and they can make use of this money.

For example firm rights ahead say first cheque of rupees say how much 2 lakh rupees right. So, now the balance of the firm will come down to 8 lakh rupees right. Next day the firm receives 3 lakh rupees that is the from it is buyers on credit. So, the balance of the firm will become 11 lakh rupees right. So, this way the balance of the firm keep on or balance of the CC limit account keep on fluctuating sometimes it becomes more than the sanction amount.

If the receives are more than the payments sometime it is less than the sanction amount when the payments are more than the receives. So, for example if there is a CC limit sanction to the bank by the bank to the firm which is 10 lakh rupees firm has used only 2 lakh rupees and this 8 lakh rupees is still available with the firm. It means this should also be added into the total current assets which are cash assets I would say not current assets, cash asset cash is cash, marketable security is the backup liquidity or near cash.

Similarly the CC limit is also the near cash, so we should count this also because this is as good as cash or as good as the cash lying in any bank account. If the firm has to make any payment to anybody and if this 8 lakh rupees is available in the bank and no other source of the funding is

there, no other source of finance is there then firm can simply write a cheque of 2 lakh rupees, 3 lakh rupees up to 8 lakh rupees they are not need to worry about.

Because they have the CC limit and a positive balance say sufficient balance of the 8 lakh rupees is available in the CC limit account right. So, expert say that while calculating the NLR net liquidity ratio cash+marketable securities+unused CC limit should also be added. And from that whatever the current liabilities are you subtract that, that is the normally the current liabilities are 2 only salary creditors and the expense creditors.

Expense creditors are say wages of the workers, salaries of the employees say outstanding bills of the electricity, water maybe sometime taxes also. So, they all should be which are short term in nature should be subtracted. So, what you will be left with finally if you do like this, you will be left with the net current assets/total assets. So, what is the ratio of the net current asset to the total assets.

If you interfere this ratio from the point of view of the lender then he wants that this ratio should be as high as possible. Level of current asset should be as high as possible as compare to total assets but from the point of view of the firm itself they would say that yes we are ready to maintain a level of NCA net current assets but it should be we should be allow to maintain a optimum amount of the net current assets.

Because again you are maintaining cash, you are maintaining marketable securities. So, cash is almost not generating anything. However marketable securities generates some return and unused limit is not causing any cost. So, they would like to make maximum use of the limit, they would like to have maximum return from the marketable securities and they would like to keep minimum balance as the cash.

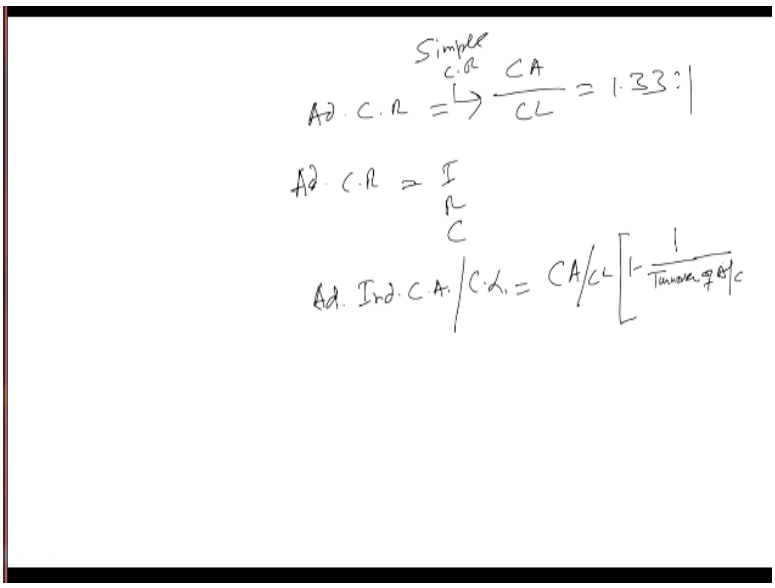
So, from the firms point of view if you interpret the ratio, if you are the borrower tomorrow and if you go to the bank and bank ask for this ratio NLR then you say that yes we are maintaining as sufficient handsome and NLR net liquidity ratio. But if the bank insists for more then we can

convince the bank that is not in the trust of the found to have high level of the cash because it is unprotected.

And if you are a lender then you should insist for that the NLR should be sufficiently high, so that there is a sufficient liquidity prevailing in the firm and that liquidity can be used at any particular point of time as and when that is of any requirement right. So, this is the NLR we should calculate and interpretation will be depend upon if you are a borrower it will be different, you are lender then it will be different.

And how you have to interpret it I have discussed with you just now right. Now there is 1 more ratio before we close the discussion on the liquidity there is one more ratio which should be calculated and this ratio is called as adjusted current ratio.

(Refer Slide Time: 16:33)



Till now we have been calculating is simple current ratio then the simple current ratio what you do is current assets/the current liabilities and we say that the ratio should be 1.33:1 right. This is the simple I am talking about this ratio is this is the simple current ratio and when you talk about the adjusted current ratio now how you have to calculate the adjusted current ratio.

We have to adjust all individual current assets and current liabilities to their turnovers, having inventory in the balance sheet, having receivables in the balance sheet, having cash in the

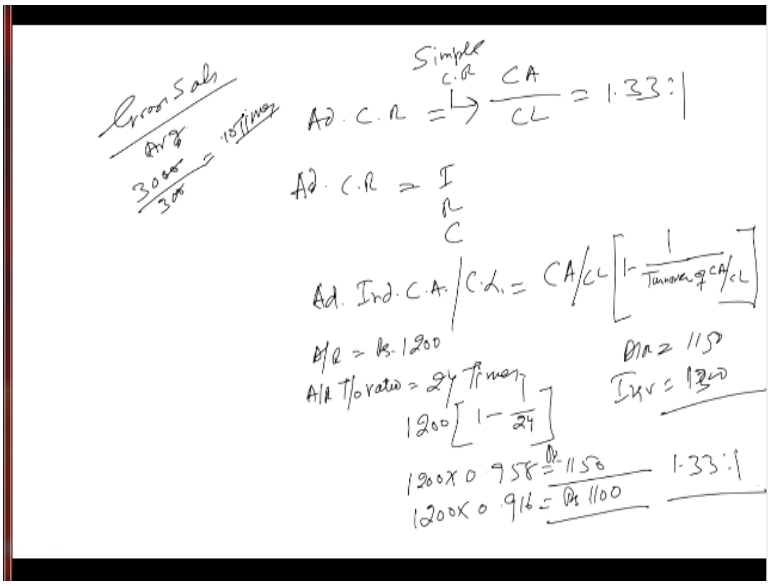
balance sheet does not give you as simple picture or a very a picture which is easily understandable. So, we should relate these current assets to it is inventory sorry turnover ratios, you are keeping inventory nothing wrong in that.

But how quickly we are converting the inventory into cash or sales and sales into cash, you have accounts receivables, credit sales no harm we can have it. But how quickly we are converting those credit sales into cash, you are having the cash but what is the turnover of the cash how quickly you are using this cash. So, in case of inventory especially in case of inventory and receivables they are working out their turnover is most important.

And if you adjust the all individual current assets according to their turnover then that will reflect the much better picture. So, how we have to calculate the adjusted current ratio for calculating the adjusted current ratio I will give you a model let we have to use this model. So, you can say adjusted we have to adjust the individual current assets and the current liabilities.

So, it means for adjusting that we have to calculate the adjusted individual current asset oblique current liabilities and how to adjust that. That will be adjusted in a way that is current asset or current liability right it can be current asset or it can be current liability and put a bracket here and that is 1-1/turnover of asset or liability sorry I would write it here as the current asset or current liability.

(Refer Slide Time: 19:16)



We write it here as the turnover of the current asset oblique current liability and close the bracket here right. So, you have to adjust the current assets to their turnovers similarly the current liabilities to their turnover. So, the real value will be reflected after adjusting these current asset individually all the current assets and the current liabilities and after that whatever the value of the current assets you find you have to calculate the current ratio.

Then you will be able to find out that what is the actual realizable value of these current assets we are keeping inventory but how you are converting this inventory into sales that is a million dollar question. And similarly the accounts receivables, how quickly we are converting that into cash that is again the very important question to be answer. So, use the turnover say of these assets.

And once the turnover is available then you can make use of current asset and current liabilities and then you can calculate the current ratio. So, how to adjust the individual current assets, we have seen it, this is the model available here. So, I will take a small example here say for example we have accounts receivables we take here as rupees 1200 and we have the accounts receivables turnover ratio.

And that is 24, how you calculated that is the gross sales we calculated gross sales/average receivables. So, for example here I am taking your gross sales are say 3000 and your average

receivables are 300. So, it means say your receivables turnover ratio is how many times we can say here it is that is this 10 times right, this is ratio is 10 times.

So, we can calculate, so this way you have to calculated, so we have for example assumed here that accounts receivables balance here is 1200 and accounts receivables turnover ratio is 24 that is 24 times. Here we calculate this ratio in terms of times, this is 24 times, so how we can adjust it, you will have to see the model sales, current asset or current liability, it is a current asset now 1200 into that is 1-1/turnover of the current asset, accounts receivables is how much 24 right.

And then it is this value, if you solve this how much it comes at as 1200* 0.958 and if you multiply this it will work out as 11 50. So, it means when you adjust your current assets to it is turnover the real value will be realizable value will be reflected and those current assets which were in the absolute firm were shown in the balance sheet as 1200 rupees, if you have adjusted that against the turnover of your accounts receivables.

Then we have found out is that if you relate it to the turnover then it should not be counted as 1200's what it should be counted as 1150 right. Now for example if you are say turnover changes, if the turnover comes down to 12 times, if it is 12 times how much it will become it will be something like 0.916 and if you multiply it this will become how much 11 rupees 1100 right, this is 1150.

So, it means higher the turnover more will be the value of the current asset adjusted value of the current asset, lesser the turnover of the current asset lower will be the value reflected after adjusting the current assets. So, when the turnover was 24, your value was when your gross sales level is very high right and your average means average receivables accounts receivables is quite low.

So, we can interpret it that as compare to the gross sales of the firm credit sales amount is very very low. So, that is acceptable nobody can do the business entirely on cash right but when the ratio is 12 as against 24 then we would say that the level of credit sales as compare to the total

sales is very high. So, the firm who is force to sell more on the credit rather than on cash they raises a doubt that the firms overall credibility is not good in the market.

So, their liquidity position is questionable, so rather than taking the plain current assets or the current liabilities, you take the adjusted current assets and current liabilities and then try to find out this ratio and that ratio will be reflecting the true liquidity position of the firm rather than a plain liquidity ratio. So, it means that is very important to adjust these ratios against your turnovers right.

Similarly you can adjust all current liabilities, you just accounts receivables, you are just the expense credits which are true current liabilities and then you try to find out that what is my now the net current ratio. That is adjusted current ratio after adjusting it to the turnover. So, this is a 1 more new development recently has taken place that rather than calculating simple and plain current ratio you calculate adjusted current ratio and adjust all current assets individually.

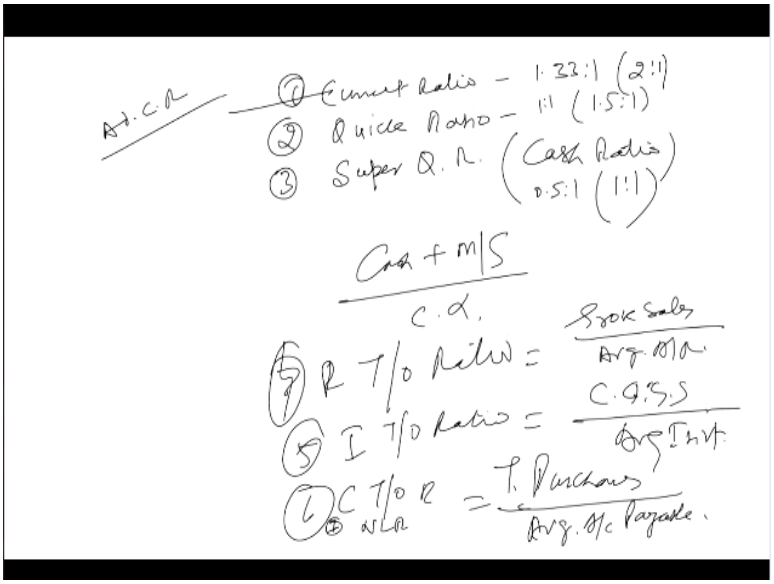
So, you will adjust here now the accounts receivables we have found out is say 1150 right maybe if you adjust the inventory maybe say actually it is say 1500 but that may work out as 1300. So, what will happen your current assets will be changing their value will be reflecting as the lesser value as compare to their say value which is appearing in the balance sheet and same thing you can do in case of the current liabilities.

And then you adjust the individual current assets, current liabilities and then current calculate the adjustable current ratio and then interpret it and in case of the adjusted current ratio also rule of thumb will be again that is a same, that is 1.33:1 that will not change simple that differences in case of the simple current ratio you are not adjusting the current asset and current liabilities whereas in the adjusted current ratio, you are adjusting the current assets and current liabilities to it is turnover.

And then you are calculating the current ratio to understand the true liquidity position of the firm whereas in both the cases the rule of thumb of 1.33:1 will remain the same right. So, these are the 2 important ratios to be studied while understanding the liquidity position of the firm. One is the

net liquidity ratio and second one is the say your adjusted current ratio, so and other ratios we have already talked about that is these ratios we have talked about is that is your say current ratio, quick ratio, super quick ratio.

(Refer Slide Time: 26:51)



Then is the receivables turnover ratio, inventory turnover ratio, creditors turnover ratio. So, here I would add here that is a current ratio or you can make it not 7 we are making it a list of seventh one is analogue net liquidity ratio and rather than in case of the current asset along with the current ratio, you calculate the adjusted current ratio also. So, this way the current ratio as plain and current ratio as adjusted you calculate these ratios.

And then you will be able to find out what is the real liquidity position of the firm. So, in the practical situation, if you calculate these 7, 8 ratios you would be trough with the liquidity position of the firm and would be very easy for you to understand that whether the firm will be able to pay off it is applications on time as and when they become due or there will be the possibility of technical insolvency.

Because every lender wants it whether he is a lender of funds or he is a lender of material or a lender of services, every lender he is ready to do business on credit, he is ready to extend the credit, he is ready to extend the supplies on credit, he is ready to lend the same services on credit.

But his payment should be secured and that is only possible when the liquidity position is okay or acceptable.

So, for example in case of the Kingfisher airlines sometime back it happen that suddenly it say become bankrupt and even the salaries of the employees were not paid. So, it means it was a question of employees who never means ever had thought about that such a good brand name Kingfisher will fall flat suddenly and they will not even getting their salary they will be losing the job and whatever the time period they have worked for.

They will not get the salaries for that, say for example if they any of them had even Iota of doubt they would have gone for the say studying the liquidity position of the firm and they could have come to know that overall liquidity position of the firm is not good and they are not means they should not expect even the payment of their salaries and their job is at the stake. So, similarly if any companies overall financial behavior seems to be undesirable.

In that case also we can do one thing that we should say because balance sheet is very open document, balance sheet is open document is a public document it cannot be hidden document, nobody can hide that. So, you maybe as a employee maybe as a supplier or maybe as a lender as a banker easily can calculate these ratios and in many cases these ratios are not to be calculated by the suppliers or the service lenders or by the say lenders.

This task is left to the firm itself, when any firm goes to the bank with the request that lenders the funds CC limit or working capital loan or maybe the long term or maybe the discounting of the credit sale bills. Banks asks them that you calculate these ratios and give us the total liquidity analysis after doing it give us the total liquidity analysis, bank employees or bank officials only look at that analysis how they have done it.

Then they compared with the balance sheet and if both the figures are comparable means details are available, everything is available then we can understand that yes the firm is the reliable is liquidity position is acceptable and we can go ahead with the extending of credit to the firm that

is quite possible. So, in case of the bankers, firms do it and then after doing this analysis they go to the bank.

In case of suppliers relationship suppliers when they are say quite say you can call it as financially sound and they do not have only reason to depend upon the company who is asking them to buy from any supplier on credit. In that case bigger suppliers ask the potential or the prospective buyers to do the liquidity analysis themselves of their liquidity analysis themselves and then finally say come with that analyzed balance sheet.

And calculate these ratio sum of the ratios and then they will look at make the analysis. So, it means you should have an idea just you do working capital management, how to study the overall liquidity position of the firm, you should have a clear cut idea that we should calculate these 7 ratios and especially should be able to tell the person concerned that we should not rely upon a plain current ratio.

But we should calculate the adjusted current ratio right, so this is all about the liquidity position and understanding the liquidity position of a firm and how to do it these are some ratios which may help us, this is one. Now the second thing will talk today is that is about the window dressing, I just talk to you about the window dressing that sometime to maintain the pseudo liquidity by the firms and to fool the lenders they go or they take the help of the window dressing.

Now how what is the window dressing, how the firms do the window dressing that all I will discuss with you in the next class, thank you very much.