Working Capital Management

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Lecture - 16
Working Capital Leverage

Welcome students. So in the last part of discussion we were talking about the operating cycle and the working out the investment, working capital investment requirements that how to work out the investment requirements of the working capital in a firm where we saw that if we are given the say requirement of the current assets and the funds available from the current liabilities and if their duration is already given to us.

So how to work out the working capital requirement or investment in the current assets. So we have seen that under the operating cycle we learnt that how to calculate the duration of different levels of say operating cycle that is from the cash to the inventory stage and then to the WIP and then to the finished goods stage and then to the book debts or the receivables stage and once we are given the duration or once the duration is already worked out.

And if we are also given the requirement of the current assets and the funds available from the current liabilities then how to work out the working capital investment requirements. So we saw that in the previous discussion or the discussion till now we had. Now we will be talking about the say different current assets means the management of the different current assets that we have important current assets which we learn to manage under the working capital are inventory is the first and the foremost asset.

Second is the receivables management and third one is the cash management. So these are the 3 important current assets which we will be learning how to manage these 3 current assets and then we will see that if we have to build up these 3 current assets like inventory, receivables, and the cash as well as the other current assets also. So how much investment is required.

And once we learn or we have already learnt about these 3 assets management current assets management then we will try to see that to fund these current assets what are the different sources of funds available. I told you some time in the past also that we have 9, 10 sources. So we will be starting with the say trade receivables. Then we will be moving to the other sources of funds.

And finally we will be knowing more in detail about the bank finance or role of the bank finance in the managing the working capital or arranging the funds for the short term sources. But before talking about the investment management or the other current assets I would like to introduce you with the concept of working capital leverage. This is a very important concept, working capital leverage and we would first like to understand what is the working capital leverage.

And how it helps to understand the say means overall level of the current assets and how it helps us to understand the relationship between the current assets, existence of the current assets in a firm as well as the return on investment. Because we have discussed sometime in the past that the level of current assets impacts the return on investment right. We have the higher level of the current assets in a firm the overall ROI goes down because current assets are least productive.

You have seen it, we have proven it also as inventory is not at all productive or the receivables are not at all productive. They only need funds to be invested but there is no ROI available or there is no return on investment on these funds is available. So we have already concluded and we have already understood that larger the amount of the current assets in the firm more inefficient it is treated as.

Because current assets are only requiring investment they do not produce any kind of the returns and if there is no return available on this investment then we should try to minimize the investment in the current assets. Now we cannot run the show without the current assets but anyhow we have to learn about that what should be the level of current assets and if we keep the level of current assets as low as possible or I would say low but you would use the word that is optimum level of the current assets, neither too high nor too low.

So if we increase the level of current assets it means it is going to impact the ROI, return on investment. Higher the level of current assets lower is going to be the ROI and vice versa or reverse is going to happen when you are running the show with the low current assets then the return on the investment will be as compared to the say first situation will be higher. So and we have seen the concept of we have learnt and understood the concept of the negative working capital also.

So in the negative working capital we have seen that the firms are running the show where the current liabilities are more than the current assets. So in that case the level of current assets is very low. Level of the current liabilities is very high so cost of funds invested in the current asset is very low and the funds being generated from the current liabilities or we would say from the spontaneous finance is high.

So it means the cost of funds is low so it means when the financial cost goes down and the minimum funds are invested in the current assets so it means ultimately managing your financial cost in a very efficient manner leads to the overall increased profitability. So we have already say concluded that the level of current asset in any firm should not be very high and we should try to keep it at the optimum level.

And the firms who are running the show with the negative working capital they are par excellence and they are able to say minimize the financial cost because most of the funds are coming from the short term sources or from the spontaneous finance which is almost you can call it as free of cost and means indirectly it is free of cost though there is a cost to the spontaneous finance also but directly there is no cost as such like interest or anything.

There is no cost. That is not appearing in the profit and loss account. So we can think about that more funds coming from the current liabilities and lesser investment in the current assets and having the situation of the negative working capital is the best situation. But since it is not possible for all the firms to run the show with a negative working capital so at least if you want to have the positive working capital keep the level of current assets at the optimum level, neither too high nor too low.

So it means let us see now what is the working capital leverage and if the working capital leverage we try to understand in the simpler terms you would say that working capital leverage measures the sensitivity of return on investment.

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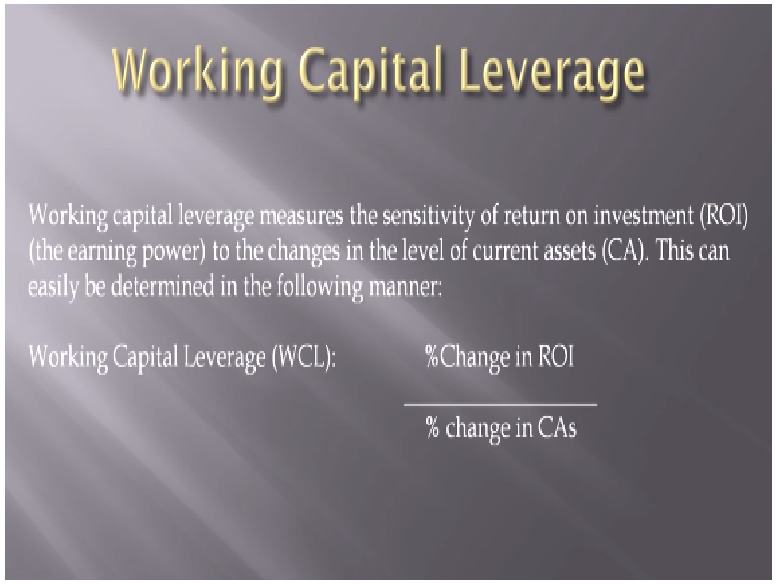

Sensitivity of ROI means that is the earning power to the changes in the level of current assets. Means sensitivity of ROI to the level to the changes in the level of the current assets and this can easily be determined in the following manner. So what is the working capital leverage? Percentage change in ROI divided by the percentage change in the current assets.

So if you have a given level of current assets in your firm or in any firm if you work for if you have the given level of the current assets if you decrease the level of current assets from the given level in the firm so it means what will happen? Keeping the total assets same when the level of current assets will go down certainly the level of long term asset or the fixed assets will go up.

So it means long term assets or the fixed assets being more productive as compared to the current assets so what will happen? The firm's ROI will improve. And if vice versa is going to happen that if keeping the level of total asset is same if the say fixed assets or the long term assets are going to be replaced with the current assets so in that case what is happening current assets being least productive ROI of the firm is going to be impacted negatively.

So we have to think about that what is the relationship between the ROI and the current assets. So it is measured in terms of working capital leverage. That what is the level of say ROI percentage change in ROI as compared to the percentage change in the current assets. So we will have to see it and we will have to understand it in terms of this situation. So let us now measure the working capital leverage or try to understand the concept of working capital leverage with the help of say a situation or a small example that how we can understand it.

So will go for it. First of all how to say show it. What is the formula of measuring the working capital leverage?

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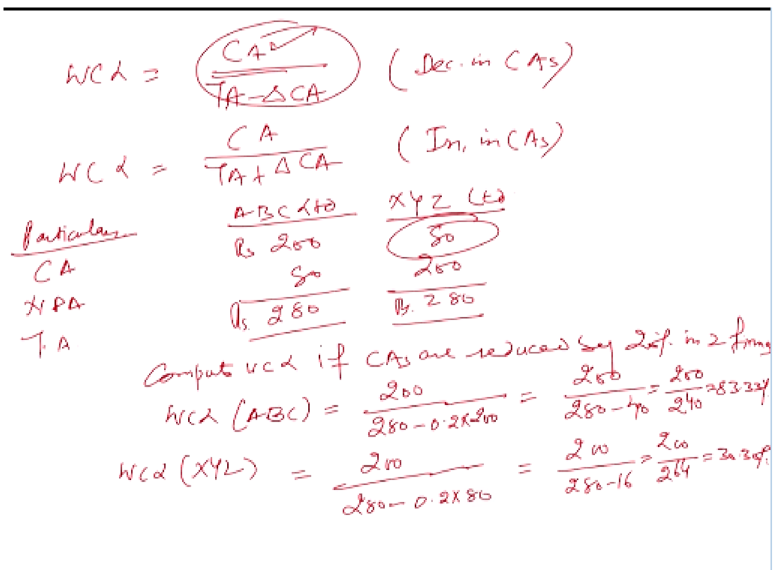

So working capital leverage you can say you can say working capital leverage is current assets divided by total assets minus change in the current assets. This is the concept of the leverage or the working capital leverage which you can say that current assets divided by the total assets minus change in the current asset. So what will happen that if you have the current assets level, some level of the current asset is given to us.

And if there is a change in the current assets that is say delta change. So it means current assets are being decreased. So what will happen in this case that this formula we are going to use in case of decrease in current assets. In case of decrease in the current assets we are going to use this formula. So we would say that working capital leverage can be worked out with the help of current assets divided by the total assets minus change in the current assets.

This is in case of the decrease in the current assets and second is the working capital leverage in case of the when you are going to increase the increase in current assets. So in this case what is going to happen? This is current assets divided by total assets plus change in the current assets. So it means if there is a increase in the current assets we will use this formula and if there is a decrease in the current assets we will use the above formula.

That is total assets minus change in the current assets and then we will see that how it impacts the ROI or what is the relationship between the current assets level and the ROI level. So in this case how to measure it and how to make use of it let us see a situation of the 2 companies. So I would give you the say particulars here. So this is the particulars and then we have 2 companies. First one is the ABC Limited and second company we have the XYZ Limited.

Second company is XYZ Limited and these are the particulars. So in this case we would see that the situation is like current assets. Current assets are Rs. 200 lakhs in ABC Limited and only 80 lakhs in XYZ Limited. Then we talk about the net fixed assets. Net fixed assets means fixed assets after depreciation. So this is 80 and here it is 200. So what is the level of total assets? If you see the total assets here, total assets are 280, Rs. 280 lakhs. In this case also, 280 lakhs.

This is the level of the total assets. Now you see that there is a complete say different story in the 2 firms. In ABC Limited the level of current assets is very high. Out of the 280 lakh rupees of the total assets largely means the 200 lakhs of the rupees of the assets are current assets, short term assets and only 80 lakhs of the assets are fixed assets or the long term assets. Whereas in the other firm XYZ Limited the situation is reverse.

That only we have the current assets of 80 lakhs and the 200 lakhs of the assets are of the net fixed assets or the fixed assets after depreciation. So if we look at go by the say approaches of the working capital and we see that smaller the amount of current assets more profitable the firm will be and higher the amount of current asset lesser the lesser profitable the firm will be.

If you go by that situation you will easily be able to conclude that the firm XYZ Limited seems to be more profitable because level of the current asset is just 80 lakhs as compared to 200 lakhs in this firm as compared to the firm ABC where the level of current assets is just reverse that is 200 lakhs and the net fixed asset is 80 lakhs. So this is a simple conclusion we can draw by looking at the assets but in terms of the working capital leverage how to measure it.

So let us now assume that we will have to now compute the working capital leverage and first situation we have to say we call it as compute working capital leverage if current assets are reduced by 20%. If the current assets are reduced by 20% and that too in both the firms that too in 2 firms. So if you are reducing the current assets in both the firms by 20% how the working capital leverage is going to be there.

So in that case we will see first of all the working capital leverage in case of ABC. So we will calculate the working capital leverage for ABC and that is going to be how much? What is the formula here? Working capital leverage in case of the say this is the formula we are going to use that is in the decrease in the current asset. So compute working capital leverage if current assets if the current assets are reduced by 20% in 2 firms.

So the working capital leverage in ABC is going to be how much? We have the current assets level and that is given, already given level is 200 right? And the total assets level is how much, 280 minus now delta current assets that is total assets minus change in the current assets. So change in the current asset is how much. That change in the current assets is 0.2 into 200. So this is the reduction by this amount.

And if you calculate this reduction in this amount so this works out as 200 divided by how much 280 and this becomes how much, 40. So it means finally the new situation emerges as 200/240 and what is this percentage. This is called as 83.33%. This situation is 83.33%. Now what is this percentage, I will discuss with you later on but first we will understand the situation in the other firm and then we will see that we interpret in terms of the working capital leverage.

So first of all you calculate this first percentage that is 83.33. Now we calculate the working capital leverage in case of the XYZ Limited and in this case we have again the same situation. Total assets are 200 here and now we have the sorry current assets are 200 and total assets are 280 and now we have the level of current assets in XYZ Limited is how much? The level of current assets is this much. So this is say what we have to do is minus that is 0.2 into 80.

So it will work out as how much. This will be something like 200/280 - 16. So if you find out this amount, so this will be how much? That is 200/264 and that amount will be how much 30.30%. So this is the second percentage that is 83.33 and this is the 30.30 we have calculated in the say 2 companies in case there is a reduction in the current assets by 20%. So we have calculated it. Now how do we interpret it?

We see that this percentage 83.33 percentage percent is in ABC and 30.30 percent is in this case. So it means this these 2 percentages are the working capital leverage in the 2 companies. So 83.33 and 30.33. So it means because the percentage of working capital leverage that is 83% is much higher as compared to 30.30 in the other company.

So working capital leverage can be interpreted in terms of that with the change in the level of current assets in the company ABC Limited or in the firm ABC Limited there will be a higher change in the profitability or in the ROI as compared to the change in the ROI in the company XYZ Limited. This percentage indicates that the magnitude of change, the quantum of change in the return on investment in the 2 companies.

So because the working capital leverage is very high in the first company as compared to the second company so you can say that a minor change in the level of current assets in the 2 companies if there is a minor change in the level of current or any change in the level of current assets in the 2 companies ROI in the company A will be affected at a much higher level as compared to the at a much higher say level in company ABC as compared to XYZ Limited because of the magnitude of the working capital leverage being very high that is 83%.

And it is clear also because we have the level of current assets is 200 lakhs as compared to the fixed assets that is only 80 lakhs. So if you are going to reduce the current assets by 20% it means how much assets we are going to reduce? That is 40 lakhs worth of the assets we are going to reduce and the total say assets we are not saying the total asset we are keeping same. So it means what is happening that the in the total process that level of the total asset is going to go down.

And we are saying here that the total assets are coming down that is change in the current assets so it means the 200 level of the current assets and we are going to reduce the level of current assets from the total assets. So it means finally what will happen? Your percentage is 83.33% of the working capital leverage as compared to the company XYZ Limited.

So any change because of very high level of current assets is impacting the return on investment of the company ABC negatively because the level of current assets is very high as compared to the level of current assets in the XYZ Limited. So if you reduce the level of current assets in ABC it will impact the profitability or return on investment on the of the company at a much higher level or in a much bigger way as compared to the company XYZ Limited because there the magnitude or the level of current assets is already very low.

So invent is already 80,000 or 80 lakhs. From the 80 lakhs if you reduce it by 20 so how much is going to impact and from the 200 lakhs if you are going to reduce it by 20% how much is going to impact it so larger the amount of the current assets in the firm, more impact upon the ROI of the firm is going to be there if there is any change in the level of current assets.

And if the smaller the level of current assets in the firm smaller is going to be the change in the return on investment of any firm if we are going to change the level of current assets in that firm by any level or in any way or in any mean. So this is how we interpret this percentage that how higher the percentage of working capital leverage higher is going to be the change in the profits of the firm if there is a change in the current assets.

And lower the level of working capital leverage percentage lower is going to be the change or the change in the ROI as we change the level of current assets. So now we will see that if we increase the level of current assets what is going to happen. We have reduced it currently we have seen we reduced the level of current assets but for example if we increase the level of current assets what is going to happen in the 2 firms. So again the balance sheets are same.

Current assets are 200 lakhs and the fixed assets are 80 lakhs and in the other firm the current assets are 80 lakhs and the fixed asset net fixed assets are 200 lakhs. So it means if there is a increase in the current assets in the 2 firms by again the same percentage that is the 20% so what will be the working capital leverage in this case.

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$$WC\alpha = \frac{CA}{TA + 0.2CA}$$

$$WC\alpha(ABC) = \frac{200}{280+40} = \frac{200}{320} = 62.5\%$$

$$WC\alpha(XYZ) = \frac{80}{280+16} = \frac{80}{296} = 27.03\%$$

So what will happen? The formula now will become is current asset divided by the total assets minus sorry plus 0.2 of the current assets. Now working capital leverage of working capital leverage of ABC. Working capital leverage of ABC. Current assets are how much? 200 and what is the level of the fixed assets 200 plus we are going to increase the current assets plus 40. So it means in this case what is going to happen?

This is 200/320 and this is going to be, the percentage is going to be 62.5%. In the second case if you calculate, working capital leverage of XYZ Limited, in this case what is going to happen? Again the level of sorry current assets level is how much? The current assets level is current assets level we have here is 80 and we have 280 plus how much is going to be there 16. So we are going to add up the 16 lakhs of the current assets more.

So we will compare it with the adjusting level. It means this is going to be 80/296. So this is going to be again the same percentage that is 27.03%. So now the situation remains the same. In this case also when we are adding up the more current assets so it means the 62% is the working capital leverage in ABC and 27.03% is the leverage in the XYZ Limited.

Now you see that first we say when you interpret the working capital leverage you say that higher the percentage of the working capital leverage, higher is going to be the impact upon the profitability of the firm as compared to the firm having the lower percentage of the working capital leverage out of the 2 firms. So in this case we are seeing that level of current assets was already very high, 280.

So it means now we are going to add up more current assets so this is going to further increase. Total assets will become 320 and if you see the working capital leverage that will be 62.5% and in the other firm we are going to add up the current assets but the level is going to move up from the 80 lakhs to 96 lakhs. So the percentage of the working capital leverage is going to be 27.03%. Now in this case we will see that again the same interpretation will come here.

What do we mean by the working capital leverage if there is a increase in the current assets of the level of the current assets and we will see that higher will be the change more sensitive will be the ROI or change in the ROI in the company as compared to the company B. In the ABC change in the return on investment will be more sensitive to the change in the current assets as compared to the company XYZ Limited.

Because working capital leverage percentage is low that is 27.03%. Now, in what direction ROI will move? Because we are seeing that in the previous case we have seen that in this situation what we have done is we have reduced the level of current assets. So ROI is means sensitivity of the ROI to the change in the level of the current assets. That is the definition of the working capital leverage. Sensitivity of ROI to the change in the level of current assets in the firm.

So in the first case what we have seen? We have reduced the current assets from the existing level, whatever the level is 280, we have reduced it by 20% in both the firms. We have seen that this working capital leverage is much more higher in the ABC Limited as compared to the second firm XYZ Limited. We will see that profitability or the ROI in the firm ABC will be changed at a much faster rate or in a much bigger magnitude as compared to the second firm.

Now, we are understanding that change will be bigger in first firm as compared to the second firm. So what will be the movement of the ROI. That movement in the ROI will be positive or negative. The movement in the ROI will be positive. Because you are reducing the level of 20%. So it means current assets are being reduced by the 40 lakh rupees. So it means out of 200 they are being reduced by 40 lakh rupees.

So it means ROI will be going up because as say it is already proven fact that if you reduce the level of current assets there is going to be a positive change in the ROI so ROI of the firm ABC will improve much faster or at a bigger level as compared with the ROI of the firm XYZ Limited by reducing the current assets by 20% because current assets being less productive if we reduce the level of current assets from the existing level they add up more towards the profitability or the return on investment of the firm.

So we are seeing that working capital leverage percentage is very high. There is going to be more change in the ROI of the firm ABC as compared to XYZ Limited and more change means that current asset level is going to come down so there will be higher change in the profitability or return on investment of the company ABC as compared to the company XYZ Limited where the percentage of working capital leverage is just 30.30.

So it means the change in the return on investment will be low as compared with the first firm but that low will be means a positive change. The ROI will improve because here in this firm also we are reducing the level of current assets from the existing level of 80 lakhs to say by 16. So it means total assets level is coming down to 264. It means finally in this firm also the level of current assets is coming down.

But the profitability or ROI will not be impacted in the same way as it is being impacted in the first firm but it will also be impacted in the second firm too and that too the profitability or ROI of second firm will also improve. Now, in this case in the next case if you look at we have seen here that again there is a working capital leverage when we increase the level of current assets and we have seen here also that there is a higher percentage of working capital leverage in ABC as compared to the firm XYZ Limited.

So in this situation also there will be a much higher impact on the ROI of the firm ABC as compared to the firm XYZ Limited. So what kind of the impact will be there? Increase or decrease in ROI. ROI will decrease because we are increasing the level of current assets now by same percentage as we were reducing in the previous case. So when you are increasing the level of current assets, percentage of working capital leverage being higher the profitability of the firm A will be negatively impacted.

ROI of the firm A will be negatively impacted at a higher level as compared to the ROI in the firm B where the working capital leverage is just 27.03%. So this is the concept of the working capital leverage which explains the relationship between the change in ROI as there is a change in the current assets. When you increase the current assets level if the current assets level is already very high as we have seen in case of ABC Limited.

And you further add up more current assets in the same firm so what is going to happen? Your profitability is already low and is further going to go down and that reduction is going to be at a much faster rate. Similarly, if the level of current assets is very low but if you are going to add up more assets so that is going to reduce the profitability but not at the same pace and in the same magnitude as it is going to happen in the first firm.

So we have to ultimately here also with the help of working capital leverage also we understand that the level of current assets should be kept as low as possible or you can say optimum level of current assets so that neither we are into the situation of the technical insolvency nor we are into the situation of the extra or the higher level of current assets. So in both the ways it should not impact up the profitability of the firm negatively.

We should have the current assets also and we should have the technical solvency also and we should have the desired level of the profitability also. So working capital leverage is a very important concept. This concept indicates that the level of current assets and the impact of those current assets on the ROI of the firm. So it means finally the working capital leverage measures the sensitivity of change in the ROI as there is a change in the current assets.

So because in these 2 firms we have seen with the reduction of the current assets by 20% we have seen that the sensitivity of the ROI is very high in case of the ABC Limited that is the percentage we have calculated the working capital leverage percentage is 83% because higher level of current assets if you are going to reduce that your profitability is going to increase at a faster pace as compared to the firm where it is already very low 80 lakhs. And if you reduce it by 16 more lakhs profitability is going to improve but not at the same pace as it is going to happen in the firm ABC Limited.

So this is the concept of the working capital leverage we can understand. So again we conclude here that in any firm to be the efficient say manager of the working capital or the finance department in any firm the people in the finance department to call them as the experts or the efficient managers of finance they should try to keep the level of current assets at the optimum level where there is no situation like that we do not have the minimum level of current assets.

So the production process is getting affected. But we should not increase the level of current assets beyond a level where it is impacting the profitability of the firm though we are not taking much risk but we are reducing the profitability also on the name of reducing the risk. So this is we will say stop here in this discussion and we have learnt in this present class that is about the working capital leverage and we have seen that how it is related to the say how it explains the sensitivity of ROI with the change integer the current assets. Thank you very much.