Introduction to Accounting and Finance for Civil Engineers

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Lecture-37
Financing resources for working capital

Good morning namaskar and welcome to the course once again in the last lecture we discussed various issues pertaining to working capital. We defined gross working capital, we defined net working capital, we understood the various components of working capital. We also understood what factors to focus on, so that a construction can effectively manage its working capital. In this class we are going to learn the various sources of working capital.

There are different sources of working capital; they can be classified under short term sources and long term sources. Now if you look at the details of these sources.

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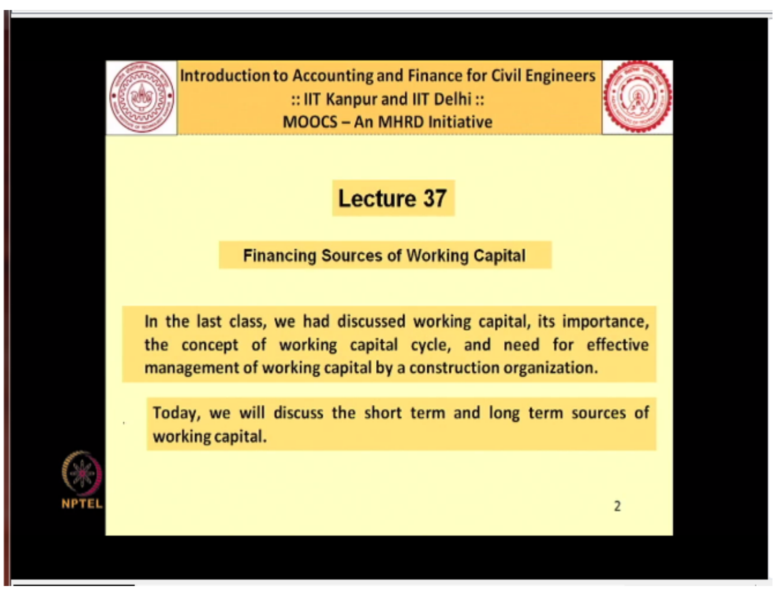

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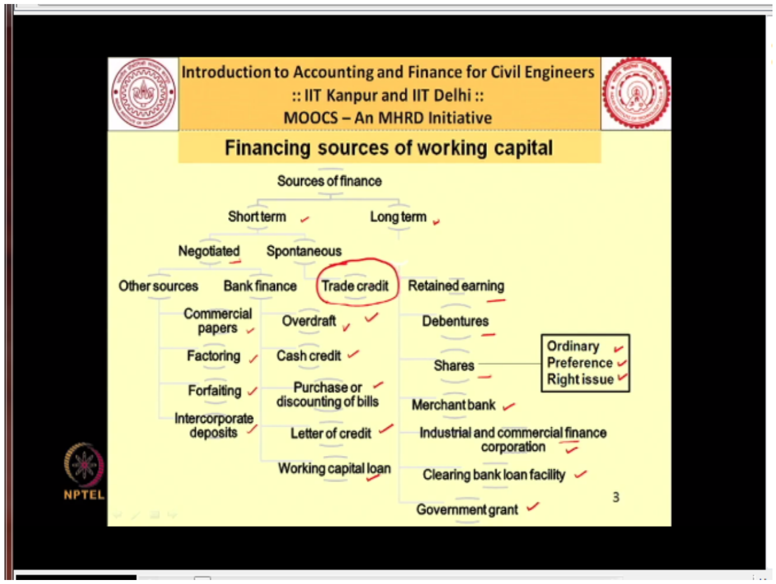

We can classify them under these categories, so you have short term working capital sources and you have long term sources. Now short term again can be classified in 2 heads, 1 we call it as negotiated and then the second one is a spontaneous, and the spontaneous the most common form of source of working capital is trade credit we will see what it is. Then you have bank finance coming under negotiated.

And then there are other sources also falling under negotiated categories. Bank finance there are different types for example there could be over draft facility, cash credit facility purchase or discounting of bills, letter of credit working capital loan and so on. When it comes to other sources we have commercial papers, we have factoring we have forfaiting and we have inter corporate deposits these are the different types of short term sources of finance.

When it comes to long term sources you have retained earnings, you have debentures, you have shares which could be ordinary shares, preferential shares and right issue. You have merchant bank then you have industrial and commercial finance corporation. Then you have clearing bank loan facility and sometimes you also raise these funds through government grants. We will see each one of them and to as start with we will see the most common form of short term sources of finance which is trade credit.

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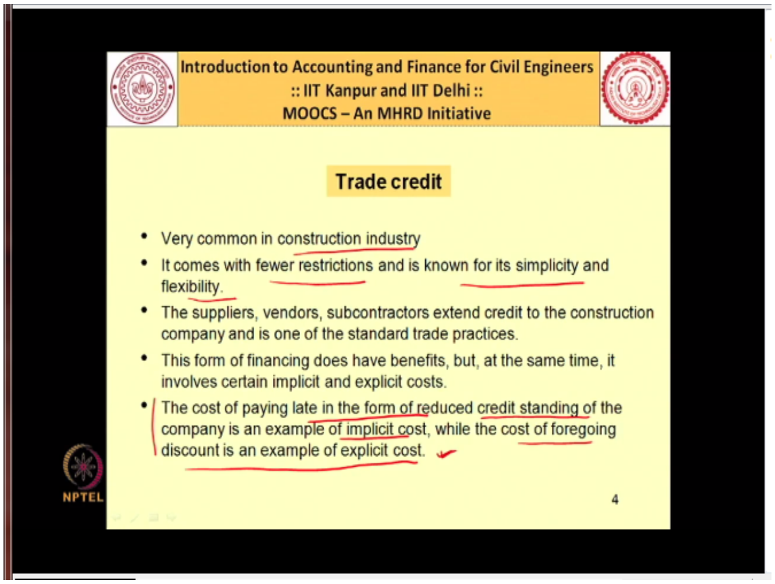

Now as I told you this is very common in construction industry common and you can say popular also because it comes with very fewer restrictions and is also known for its simplicity and flexibility. When I say flexibility it is to be understood in this sense the more business you carry on, the more trade credit you enjoy. And if your business decreases the trade credit also correspondingly decreases, what happens when it comes to the construction business.

You purchased different materials, different labors are engaged, now sometimes what happens whenever you buy these materials you are not supposed to be paying them immediately. So you get some amount of credit, may be either 4 weeks credit or 6 weeks credit depending on the terms and conditions of your contract with the particular vendor. So this is very common because dealing with cash transactions is not that common in construction industries especially for big companies.

If you have a very good business so there will be number of vendors, so we will come to you. And they will extent to you their credit for different materials. Now the more credit you get it is better for you because in that case you will have less requirement of working capital. Then you have to also make sure that this credit period is not unnecessarily long. Because in that case you may have to pay some extra cost, those cost could be either explicit cost or implicit cost.

Now you distinguishing these explicit and implicit costs like this, the cost of paying late in the form of reduced credits standing of the company is an example of implicit cost. On the other hand the cost of foregoing discount is an example of explicit cost, naturally if someone is extending credit to you what happens the prices that they offer you may not be that competitive. For example there is one case where in you pay to the vendor immediately.

And in one case the vendors are paid let us say after 1 month, naturally there might be slight variation in the prices. This would be more pronounced if the vendor knows that you are very fuzzy in releasing the payment. So they will charge this loss of interest in their prices itself, so naturally when you take it in the form of a cash you get slightly cheaper rates.

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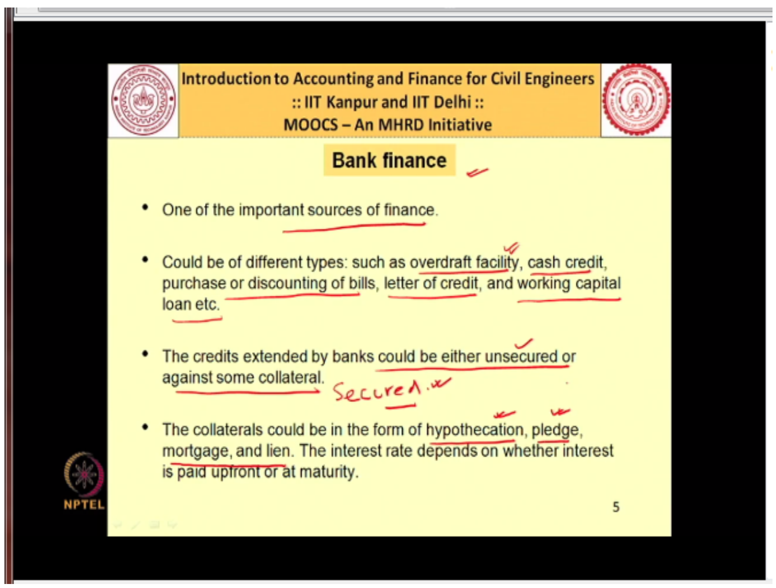

Now we will see some other sources and very commonly use sources bank finance, this is one of the important sources of finance. There are different types of bank finances for example sometimes you can get over draft facility, cash credit, purchase or discounting of bills, letter of credit which is normally encounter when you are dealing with export and import. And then you have working capital loan when it comes to over draft facility.

It is basically the bank is extending you certain limit up to which you can with draw the money even though that much money may not be available in your bank account, say for example right now the money newer account if let say 50,000. But due to some reason you require let us say

60,000 or 70,000 and if the bank has given you this over draft facility even though that much money is not there in your bank account.

The bank may extend you this facility and you can with draw that much money, of course the bank will charge certain money. Because you took this money as over draft, so this is also one of the ways through which sometimes company raises money, then the credits extended by banks could be either unsecured or against some collateral. In this case history is also known as secured loans.

So you have 2 kinds of loan 1 you call it as unsecured loan and another one is secured loan which is obviously against some collateral. So you have to give some property in possession of bank either the physical possession of the bank or it could be only the title of the debt. So, there are different ways in which these collaterals are kept, they are known as hypothecation, pledge, mortgage and lien.

So, these are the 4 ways in which you can keep the collateral with the bank each one of them have different meanings. We will see what they mean.

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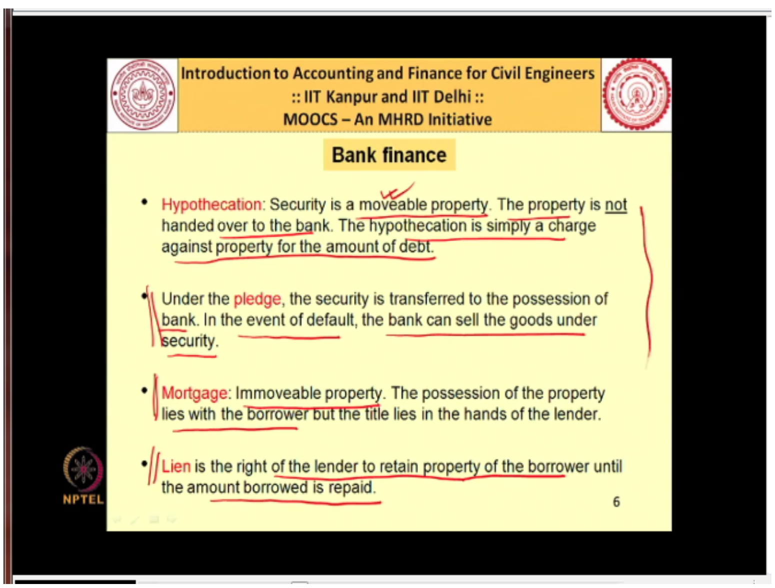

When it comes to hypothecation here the bank keeps the movable property under it is as its security. For example you might be finding that you are financing let us say a car or jeep or sometimes even bus. They write on the bus body that ok this property is hypothecated from let us say Canara Bank or State Bank of India. So although the physical possession is with the borrower but bank has kept that as a security.

The property is not handed over to the bank in the case of hypothecation; the borrower is still able to use the property. So the hypothecation is simply a charge against property for the amount of debt that the bank has given you. But when it comes to pledge the security is transferred to the possession of bank, in hypothecation the bank is not having the physical possession of the property. But in the place of pledge the security is transferred to the possession of bank.

And as you know in the event of the default that means if the borrower is not able to pay the money the bank can sell the goods under security. So whatever property is in the possession of the bank they will keep fold of it, then there is another term called mortgage. Now these are often termed in the context of immovable property whereas in hypothecation we had the security of a movable property, here in mortgage we are discussing immovable property.

The possession of the property lies with the borrower, suppose this is a house of flat. So, the person who has taken the loan that will continue to apply in the particular building or particular house. But the title will be with the position of the bank, then there is another term called lien, this is basically the right of the lender to the retain property of the borrower until the amount borrowed is repaid.

So, depending on whether you are dealing with movable property or whether you are dealing with immovable property. These are the various options you have hypothecation, you have pledge, you have mortgage and you have lien.

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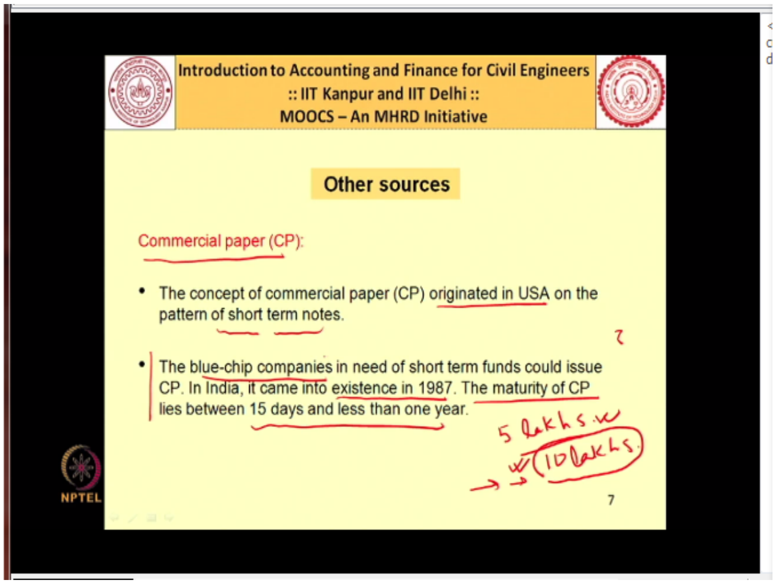

Now we will some other sources of short term finances and one of them is known as commercial paper, this essentially originated in United States. And these are basically very similar to short term notes, in India this came to existence in 1987. The blue chip companies which are very reputed companies they only can range this form of finance right. And here the maturity of this commercial paper is anywhere between 15 days to less than 1 year.

Now they come in a denomination of 500,000. So, commercial papers come in a denomination of 500000, 1000000 and so on right. The minimum that an investor can have in these kind of arrangements is 1000000. So, the minimum that you have to invest is 1000000 right but the disadvantage it is that not all companies can raise these commercial paper. I mean they cannot raise not all companies can generate resources through this approach only the blue chip companies which are very, very reputed. They only can raise finance through these sources.

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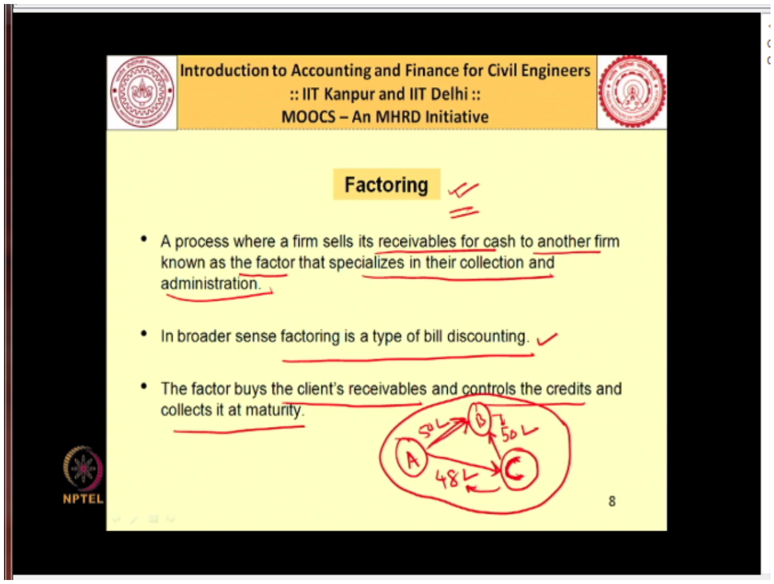

Then there are other sources we call them as factoring, factoring is basically a process where a firm sells its receivable for cash to another firm known as the factor. This factor specializes in their collection and administration, in a broader sense factoring is a type of bill discounting. The factor buys the client's receivables and controls the credits and collects it at maturity. Now this will be more clear if we try to understand with the help of one small example, let us say I am the contractor and I am working for a client.

I did work for let us say this month I raise the bill to the client let us say worth 50,00,000. Now you know client is going to pay me depending on the certification period which is normally 1 month and half month. So that means I am expected to get this 50,00,000 money let us say after 1 month. But let us assume that I am in strong need of this money immediately. So what I do I contact another company let us say company C which in this case will be known as factor.

And I request them to give me the money corresponding to this bill and they can realize this bill after this bill has become due. So let us say you have 3 entities here A let say I am A I am the contractor I am working for client B I raised a bill of 50,00,000 for this month. But I need this money immediately, so I take this bill and take it to a factors C, C is a factor and let us say this factor gives me immediately 48, 00,000.

So, let us say 2,00,000 here charge me the commission because I wanted the money urgently. So, he has kept this bill with him and he has immediately paid me 48,00,000 which I would have got otherwise 50, 00,000 but after 1 month or 1.5 month depending on the certification period. Now after 1 month this C will get this money from B. So 50, 00,000 will be released to C by the entity B, so this is how the factoring works**.**

So if you want the money immediately and you do not want to wait for the credit time in the certification period. In such case you contact some factor and then you can realize the money at a faster place. So, this is although not very common in construction but he will find very soon this would be kind of very popular. Because of the advantages that it has, then there is another method what is known as forfaiting.

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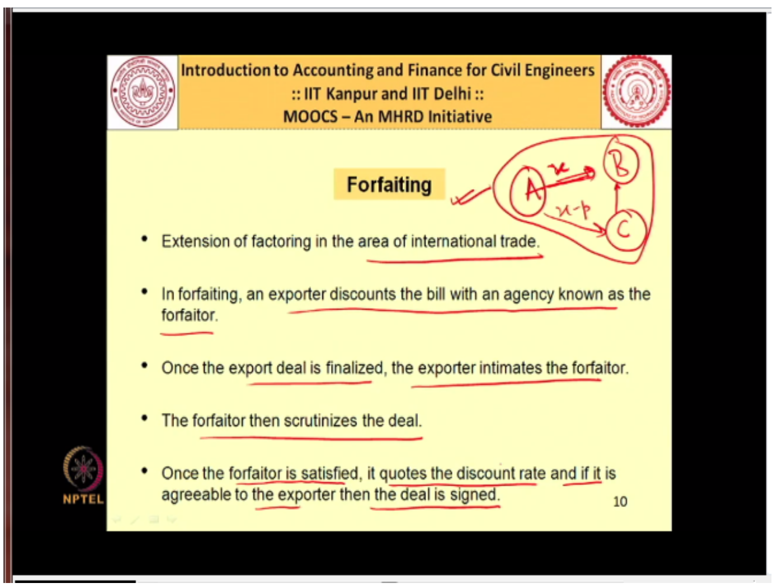

Now it is very much similar to factoring but this is applicable in the area of international trades. So factoring was applicable in the case of domestic market, in forfaiting we are dealing in international trading. So, what happens in forfaiting it is also very much similar. So let us say I am the company who which is let us say trying to import or export some goods to some other company situated in some other country.

So, let us say I am A and I have deal with B right, B is in another company. So, I raise the bill to B and if I want to utilize this money immediately what I will do I will contact another person or another company called C which in this case will be known as forfeiter right. And I will request them to give me my money immediately, so let say if this was x amount which I am supposed to be getting it from B.

They will give some value x-p where p is their commission and later when the period is over this company C will raise the bill to B and collect the bill. So in the same manner as I explained you in case of factoring this also works, but it works in the context of international trading. So, this is what it says in forfeiting and exporter discounts the bill with an agency known as forfeiting. Once the export deal is finalized the exporter intimates the forfeiting, the forfeiting then scrutinizes the deal once the forfeiting is satisfied it quotes the discount rate. And if it is agreeable to the exporter then the deal is signed. So, this is now this works.

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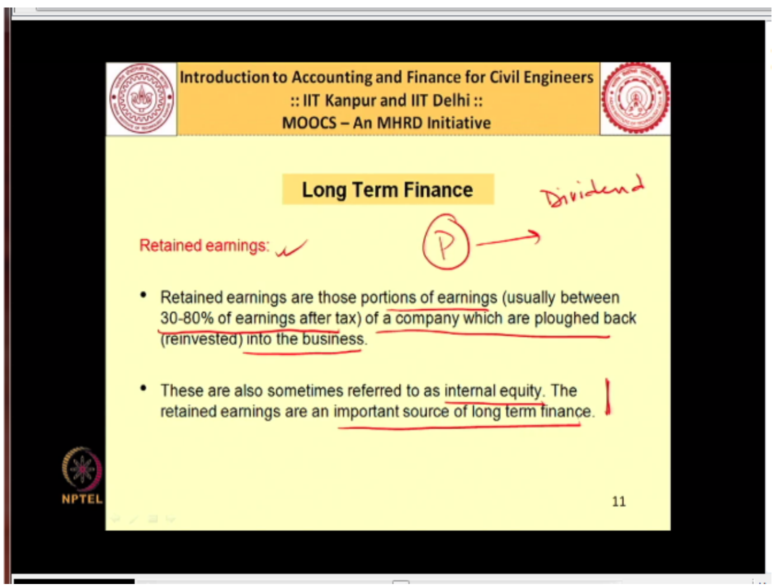

So, these are as far as short term finances were concerned now we will see long term finance and a long term finance one of the key term is retained earning you are already familiar with this. Retained earnings are basically those portions of earnings of a company which are ploughed back that is reinvested into the business. So if you remember if your profit was p for a particular period not all p is reinvested.

Some of it may be going as part of dividend and some of it is load back into the company itself. So normally 30 to 80% of your earnings is ploughed back into the company. And this is what we call them as retained earnings, there also sometimes referred to as internal equity. And as I told you this particular internal equity are retained earning they are an important source of long term finance.

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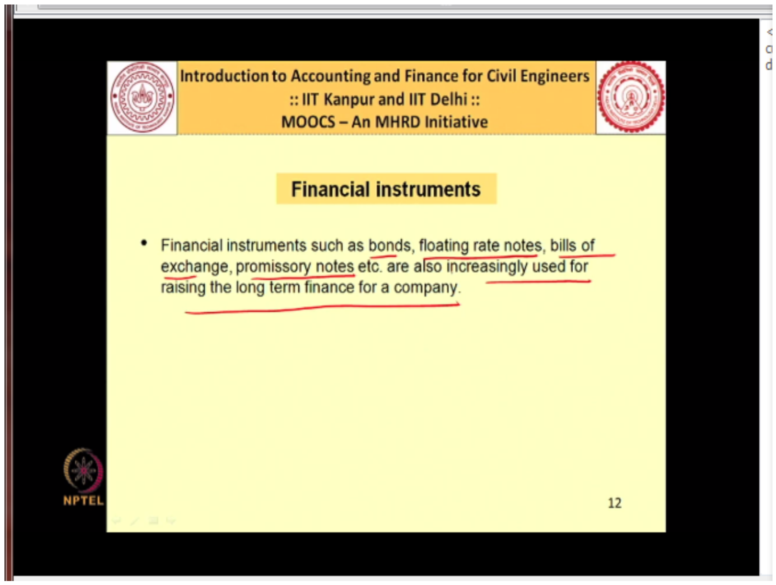

Then in addition to these retained earning you have financial instruments such as bonds, floating rate notes, bills of exchange, promissory notes etc. these are also increasingly used for raising the long term finance for a company. At this point of time I must mention to you that raising long term finance especially for a construction company is not that easy. In fact these days it has become slightly easier but earlier days it was very difficult to raise long term finance for a construction industry or for a construction project.

Because as you know construction project are very, very uncertain, there is lot of risk involved. So, banks were very, very hesitant to give them or offer them long term loans. And these are costly also.

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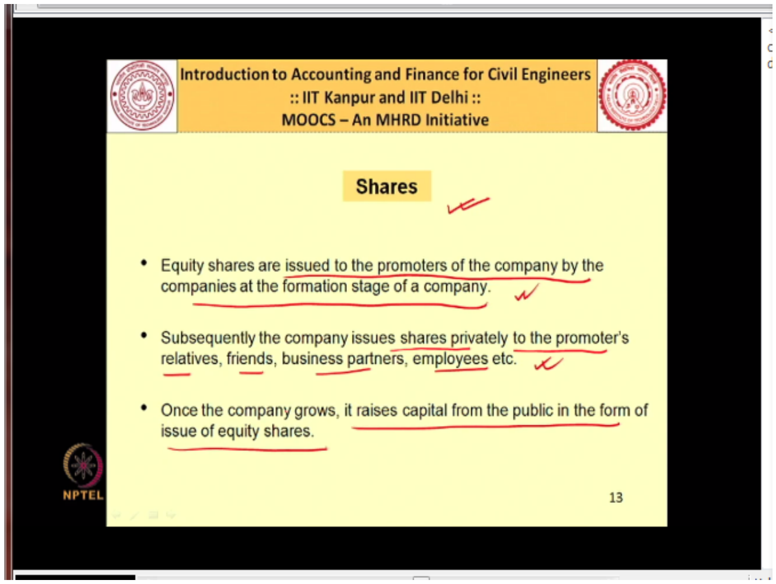

Now there are some other sources like shares, so how shares are utilized you can see this equity shares are issued to the promoters of the company by the companies at the formation stage. So, when the companies in the formation stage they raise the equity shares, subsequently the company issue shares privately to the promoter's relatives, friends, business partners employees etc. Once the company grows it raises capital from the public in the form of issue of equity shares.

So, to start with the shares are offer to the relatives, friends, business partners, employees etc. And subsequently it is open to the public in the form of equity shares. So this is how they raise the finance.

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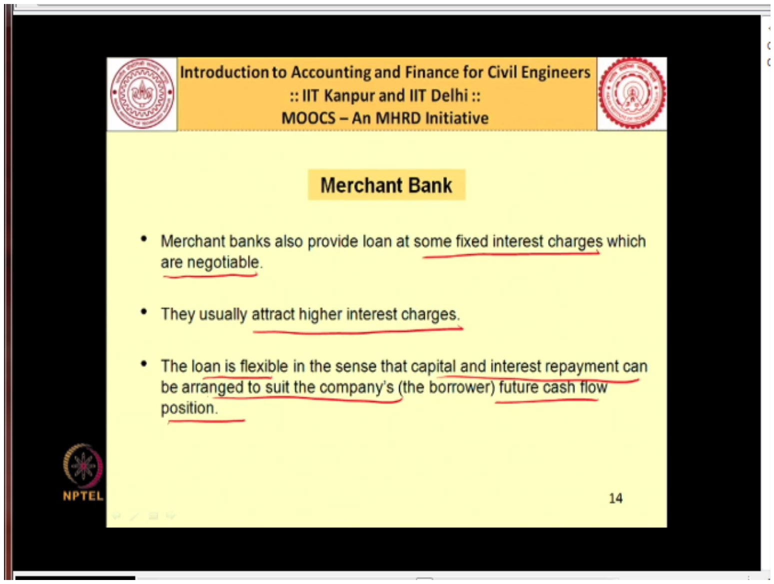

Then there are merchant banks, they also provide loan at some fixed interest charges. These charges could be negotiable; they usually attract higher interest charges. The loan is flexible in the sense that capital and interest repayment can be arranged to suit the company's future cash flow. So at the time of negotiation the company would like to negotiate with the banker that look this is how I project my cash flow and, so I should be in a position to repay your interest at this point of time, repay your part of capital at this point of time and so on. So, all these things are negotiable however interest rates are slightly on a higher side.

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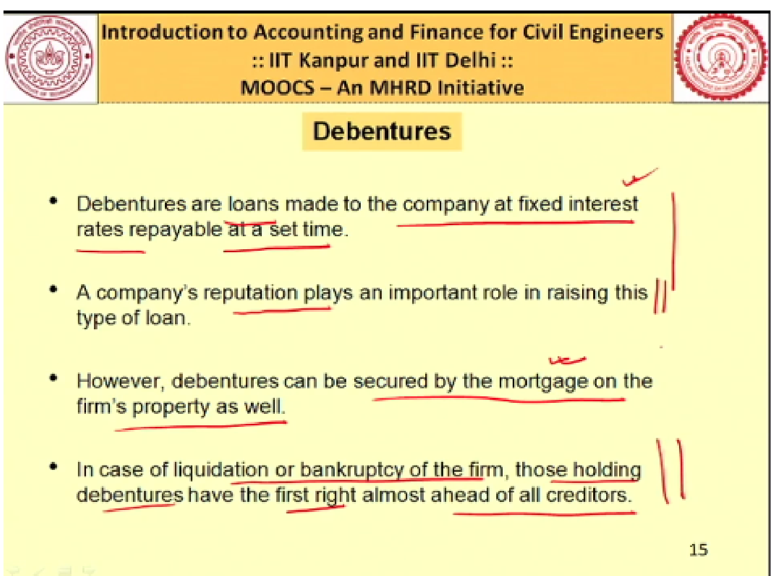

Then another important form of working capital is your debentures. These are basically loans made to the company at fixed interest rates and payable at a set time. So time also is fixed and interest also is fixed, now depending on the company's reputation you can raise such type of loans if the company is not reputed you will find they will not be in a position to attract loan through this media.

Debentures can be secured by the mortgage on the firm's property also; you can get this loan with the help of some kind of a mortgage. In case of a liquidation or bankruptcy of the firm those holding debentures have the first right almost ahead of all creditors. So suppose they have got bankrupt, so debentures holders there the first right to get their due in the first instance. So, whatever money is left out let us say after the company has declared bankruptcy, debenture holders will get reference in getting their payment back.

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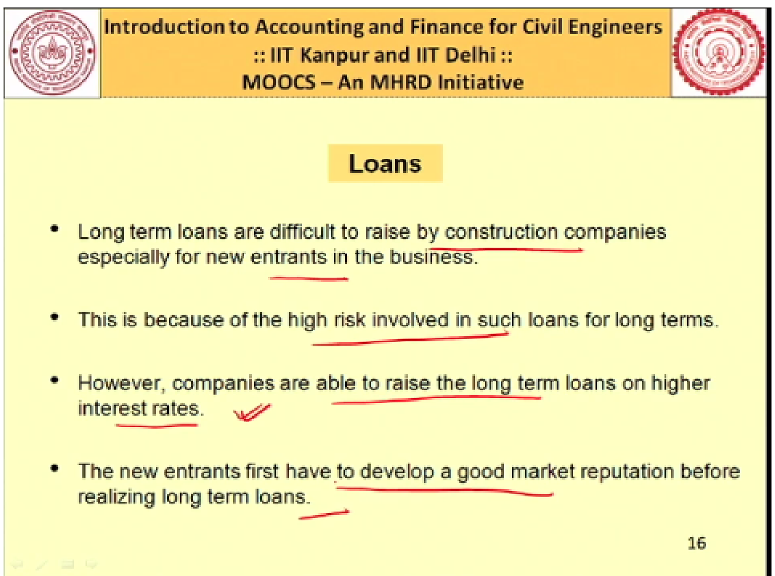

Then there are long term loans and as I told you long term loans are difficult to rise by construction companies especially if the company is new. This is because of the high risk involved in such loans, however the companies are able to rise the long term loans on higher interest rates as I told you if you want to raise this long term loans you will have to pay higher interest rate and the new interns first have to develop a good market reputation before realizing long term loans.

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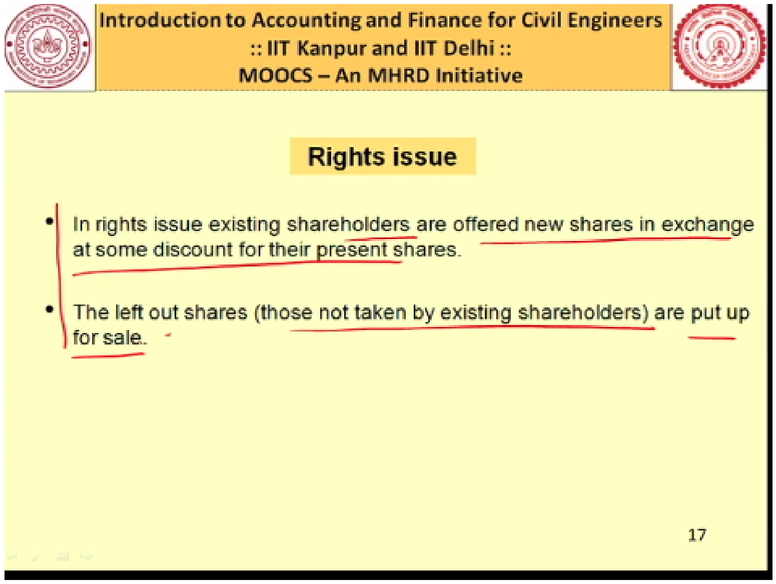

Then we have rights issue; in rights issue the existing share holders those who were already in position of shares of a particular company. They offer new shares in exchange at some discount for their present shares and the left out shares that means those who are not taken by the existing shareholders they are put up for sale.

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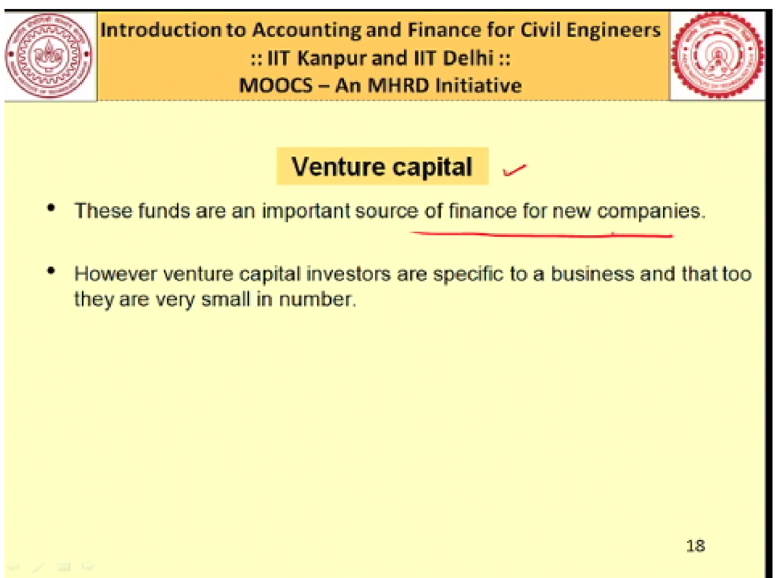

One new such source is venture capital for financing the working capital these funds are an important source of finance. But in construction as such they are that popular maybe in the field of IT they are quite popular, but you never know these venture capital is may find some day construction also has lucrative business and they may start funding the working capital also for construction companies.

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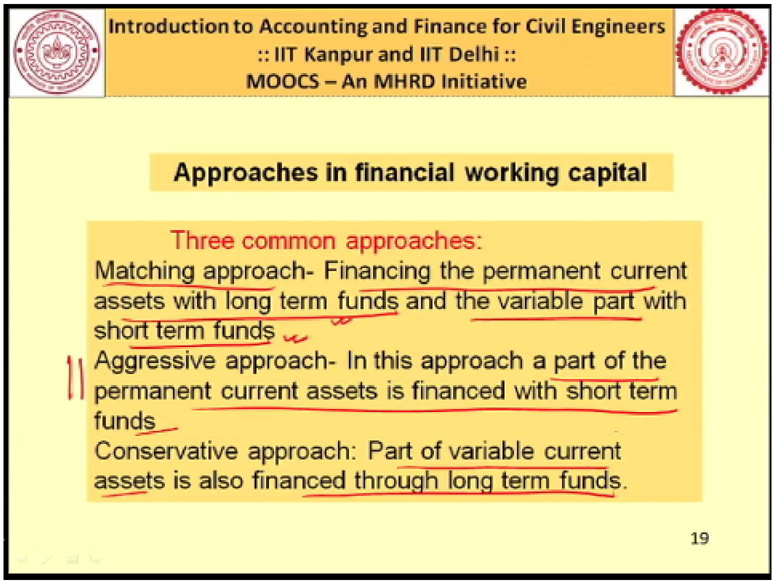

Now we will see depending on the approach that a construction manager takes in managing their working capital or rather in choosing their financing sources, how it affects the profitability of a company. So you have a aggressive approach, you have a conservative approach and then you have a middle path. So how depending on the type of source let us say you have chosen short term sources to financial working capital.

Somebody has chosen majority of long term sources for financing their working capital, how effectively it controls your earnings before tax or earnings after tax we will try to solve this with the help of one small example. So as I told you we have these 3 approaches, 1 we call it as matching approach, in the matching approach financing the permanent current assets is with the long term funds and the variable part is with the short term funds.

So you know there are 2 types of working capital one we have the permanent part and one we have variable part. So, you have the permanent part of working capital is finance with long term funds which you know it is costly and the variable part comes with short term funds which are relatively having less interest rates. Whereas in the aggressive approach a part of the permanent current asset is finance with short-term funds we will see how it is done.

And in the conservative approach part of variable current assets is also finance through long term funds, so we will see how it is done.

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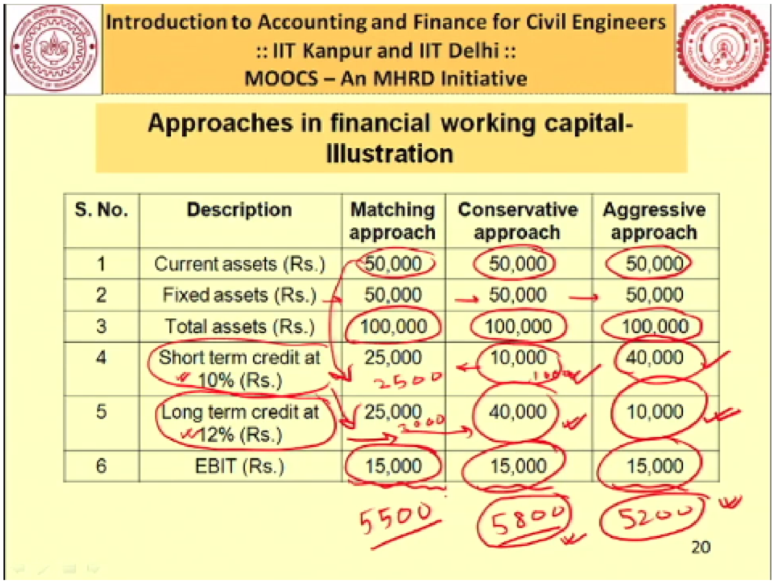

S. No.	Description	Matching approach	Conservative approach	Aggressive approach
1	Current assets (Rs.)	50,000	50,000	50,000
2	Fixed assets (Rs.)	50,000	50,000	50,000
3	Total assets (Rs.)	100,000	100,000	100,000
4	Short term credit at 10% (Rs.)	25,000	10,000	40,000
5	Long term credit at 12% (Rs.)	25,000	40,000	10,000
6	EBIT (Rs.)	15,000	15,000	15,000

Let us say current assets employed by a particular company is 50,000, so 50,000 is there let us say for all the 3 cases whether the person is following matching approach or conservative approach or aggressive approach. Let us say the current asset is 50,000, fixed asset is 50,000 in all the 3 cases, so my total asset is 100,000 sum of current asset+fixed assets. Now this 50,000 I have a choice how do I get it financed.

So in the matching approach what I do I go with 50/50, so 50% of this 50,000 I am going it with short term credit and remaining 50% I am financing it through long term credit. Now you can see short term credit I am able to raise the loan at 10%, long term I am able to raise the loan at 12%. So in the case of matching approach as you can see 50% is being sourced through short term funds and 50% of it is source through long term funds.

Now on the other hand in conservative approach what I am saying is this 10,000, 50,000 is consisting of 10,000 and 40,000. So let us say 10,000 is the permanent part and 40,000 is your let us say variable part, so you can see less of it only 10,000 I am trying to rise to through short term credit and 40,000 the majority of my working capital I am trying to source it through long term credit, so naturally I will be paying more interest.

But this way I am assured, I am in the beginning know okay I will not find any problem in raising my working capital. Because majority of my working capital I am sourcing it through long term finance, so although I am paying more but I am risk free. So, I know that I will not have any problem when I actually start the work. But what happens in aggressive approach the majority portion I will try to take it through short term, so that my interest is less.

So, let us say in this case 40,000, I am raising it through short term source and only 10,000 I am sourcing it through long term source. Now assume that the company is making 50,000 profits in all the 3 cases, here also, here also, here also and now we will see how depending on the selection of these sources my profit is getting eroded. So, in the case of matching approach what will happen how much will be the interest charge that I have to pay 10% of 25,000 which is 2500.

And 12% of 25,000, so which is 3,000, so total interest rate I have to pay here is 5500. On the other hand in the conservative approach 10% of 10,000 which is 1000 and 12% of 40,000 which is 4800. So, in this case you will have to pay 5,800 as interest, how much you have to pay in case of aggressive approach 10% of 40,000 which is 4000 and 12,000, so 5200. So in aggressive approach you are paying very less interest 5200 and in conservative approach you do not want to take any risk but then in that case you have to pay more interest.

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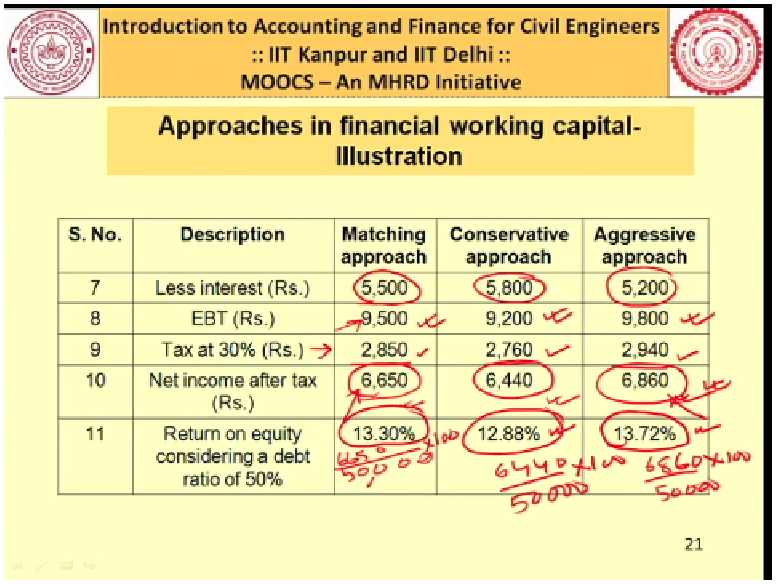

S. No.	Description	Matching approach	Conservative approach	Aggressive approach
7	Less interest (Rs.)	5,500	5,800	5,200
8	EBT (Rs.)	9,500	9,200	9,800
9	Tax at 30% (Rs.)	2,850	2,760	2,940
10	Net income after tax (Rs.)	6,650	6,440	6,860
11	Return on equity considering a debt ratio of 50%	13.30% $\frac{6650}{50000}\times100$	12.88% $\frac{6440\times100}{50000}$	13.72% $\frac{6860\times100}{50000}$

So, these figures are shown here again, so interest as I have already calculated 5,500 here, 5,800 here and 5,200 here. So, how much will be your earnings before taxes it is 15,000-5500, so 9,500 you have 15,000-5800, so 9200 and here it would be 9800. Now suppose the tax that the company has to pay is that 30%, so 30% of 9500 is 2850, here it is 2760 and here it is 2940. So, the net income will be how much 9500-2850, so it is 6650 here, it is 6440 here and it is 6860 here.

So, you can see depending on the source that you have chosen to finance your working capital, your net income changes. In the aggressive approach you are able to make more money; in the conservative approach you are not able to make lot of money. Now if you try to convert this in terms of percentage so you can see 6650 profit was obtain on a current asset of 50,000. So you can divide this 6650 by this 50,000 and multiply it with 100, you will get 13.30%.

So that means this we call it as return on equity, so 13.3% in this case it would be 6440/50,000*100 you will get 12.88% and finally for this case aggressive approach 6860/50,000 you multiplied by 100 you will get 13.72%. So, you can how your profit changes, in this case conservative approach you are getting only 12.88% return, in the aggressive approach you are getting a return of 13.72% and finally in matching you are in between 13.30%.

So, what we have seen here is that depending on the source that you have selected to finance your working capital, your profit also changes. And aggressive manager would tend to take more risk and thus he would like to get more return, conservative manager would slightly go for a conservative approach and in that way he might find that his profit margin is getting eroded.

So in this lecture I essentially covered the different sources of financing of working capital as now you understand they can be classified in short term sources, long term sources and the short term sources we select we have bank finance, we have trade credits and we have some other sources like commercial papers, factoring and forfaiting and so on. In long term financing you have got retained earnings as the major chunk, then you have merchant banking.

Then you have loans, venture capital and so on and towards the end of the lecture we also discussed how depending on the source of working capital finance my profit gets affected. So I will stop at this particular point and see you some other time, thank you very much.