**Financial Management For Managers**
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**Lecture 57**
**Capital Structure**

Welcome all, so we are carrying forward the process of learning about the say different other aspects of the capital structure and continuing with the process of a say taxes and the corporate structure or the say impact of the taxes on the capital structure of the firm. In the previous class, we discussed that the capital structure is impacted by the taxes, especially the borrowing part, the debt part is the say impacted by the taxes.

And say we have seen in the previous class that how the corporate taxes, impact the capital structure or maybe have the say positive impact on the debt capital because ultimately when we have seen in the previous class that the impact of taxes on the say borrowing was less severe as compared to the say equity capital and ultimately the combined income when we calculated of the say firms that one firm was a levered firm, another firm was a unlevered firm.

So combined income of the debt holders and the say your equity holders was higher in the levered firm as compared to the say your unlevered firm. So it means in this case we have to means be clear about that say ultimately the taxes impact to the capital structure and Modigliani Miller also have accepted in their second proposition that because of the tax impact or the debt being tax deductible or having the advantage of tax deductible, it is cheaper source of finance.

Overall cost of capital goes down with regard to the debt and if you have the say equal amount of debt and equity in the capital structure, then certainly the cost, overall cost of capital of the firm gets down. So in the previous class we have seen the impact on the say combined income of the debenture holders and the or the debt suppliers or the lenders and the equity share holders because of the corporate taxes or the impact of the corporate taxes on the capital structure. And now we will see the combined effect of the corporate taxes and the personal taxes.

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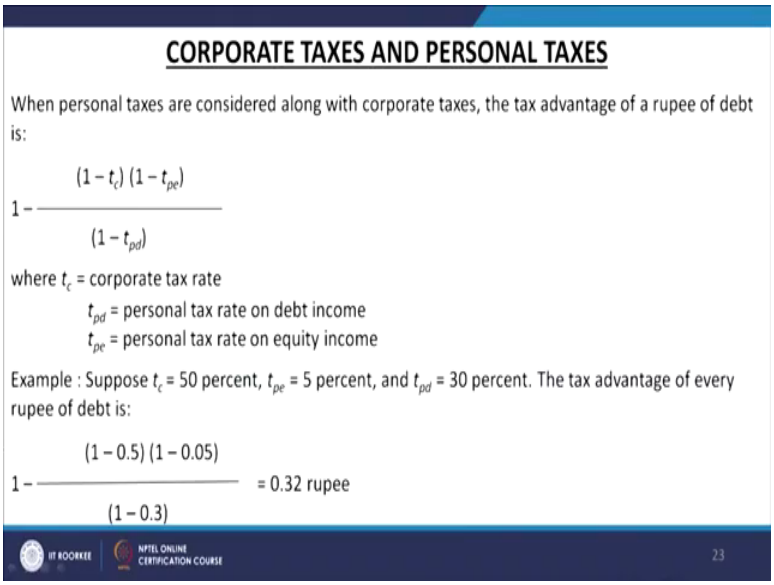


And even say taking into consideration the personal taxes along with the corporate taxes the combined income of the say equity (holders) shareholders or the equity suppliers and the debt suppliers or the lenders will be more in the levered firm as compared to the unlevered firm because say the debt having that tax deductible advantage.

It helps the firm to reduce the overall costs of capital and increase the total return to the equity shareholders. So it means ultimately because of this tax deductible nature of the debt finance or the borrowings, overall cost of the capital goes down and value of the firm maximizes. So capital structure is getting affected because of the taxes, both the corporate taxes and the personal taxes.

So let us see now that how the personal taxes are impacting the overall capital structure of the firm and say what is the impact up on the combined income of the shareholders and the lenders after the personal taxes let us see about that.

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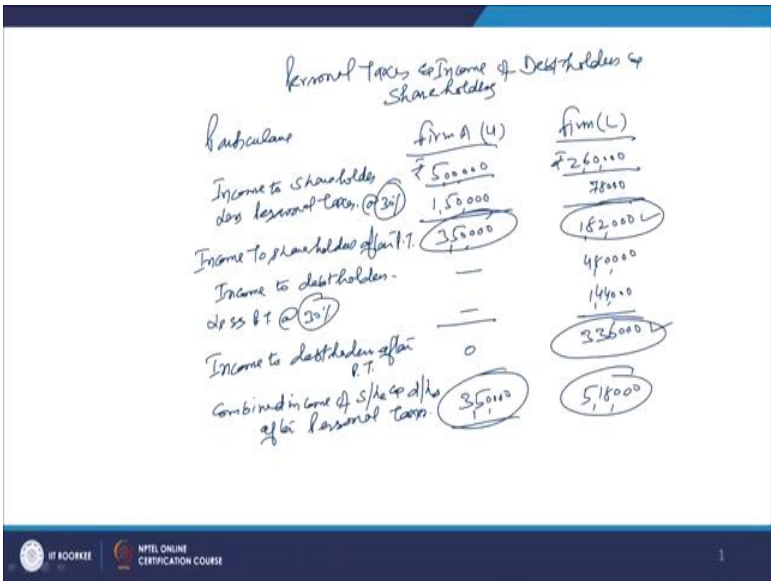


So we will write here, personal taxes and income of debt holders and shareholders. So again we take here as the particulars. Again, we take here as the particulars and we take the firms A, this is a firm A and this firm is called as the unlevered firm. And this is the firm B, which is the levered firm right. So we are means carrying forward the say same example which we have done in the previous class, where we have seen the impact of the corporate taxes on the income of the say combined effect of the taxes on the income of the shareholders and the say lenders.

So we are carrying forward the same example here and we are going to see now the impact of the personal taxes along with the corporate taxes and how the overall cost of capital goes down and the income to the say shareholders as well as the say debt suppliers or the lenders gets affected. So we have taken the two firms again, firm A and firm B and if you take forward the or carry forward the previous example so you can see here that what was the income in that say previous case, the income available to shareholders was how much?

Income to shareholders, if you recall that or if you see the previous lecture, so income to the shareholders we had to calculate was because total income was 1000000 rupees. So 50 percent was the tax. You call it as that was the corporate tax and remaining income which was passed on to the equity shareholders was half and that was say here in this case 500000 rupees or the 500000 rupees.

In this case it came down to 260000 rupees right. So this was the income to the shareholders. And now we say take the effect of the personal taxes, less personal taxes and if you calculate the impact of the personal taxes, so you can say here we are assuming that the tax, personal tax rate is 30 percent, right. We are assuming it as the personal tax rate is a 30 percent. So if you take this rate as the 30 percent in both the cases, on the debt as well as on the equity at the rate of 30 percent. So in this case, you can say what is the personal tax rate?

You have to subtract the personal tax and this is 150000. We have to take this amount the tax amount as the 150000 or 150000 rupees. So this is the effect 150000 rupees and in this case, how much is the tax effect? This is going to be only 78000. So you can say income available to shareholders after personal taxes, income to shareholders after personal taxes, I am writing here as a pt. How much is this income? This income is 350000 right. And in this case, the income is 182000.

So this is the income we have carried forward from the previous example. And we have assumed the tax rate in this case as a 30 percent, personal tax rate as the 30 percent. So income to shareholders after the personal tax we have calculated is 350000, 182000. Now we take into the second part of the income to the debt, supplier or the debt holders. So what was the income?

Income to debt holders or the bondholders the income because in this firm it is unlevered firm, no debt is there, whereas in this case the income was there and that we had to calculated was 480000 rupees. If we recall, we had assumed that the total borrowing of the firm were the 4 million rupees and say the interest rate was 12 percent. So the say income to or interest cost to the firm and the income to the debt holder was the 480000 rupees. This is all in rupees right.

We all are taking this in rupee. So this is also in rupees 480000. And here also we assumed that the tax rate here is less, personal tax at the rate of 30 percent, personal taxes at the rate of 30 percent. So how much is a tax? No tax here because there is no income because there is no debt in the unlevered firm. But here in this case say personal tax at the rate of 30 percent, so if you take this, this works out as 144000. This works out as 144000.

So finally, you can calculate as that income to, income to debt holders after personal taxes. So how much is that income to the debt holders after personal taxes? This income is here. You call it as zero because there is no debt. But in this case, the income is 336000. If you subtract from

the 480000, the total income, the tax component 144000, so income to the debt holders after the personal tax, is this 336000.

And finally the combined income of shareholders and debt holders, d oblique h shareholders and debt holders after personal taxes if you calculated this income, so this we have if you take the combined effect of the income, this will come here as after personal taxes, if you take this so you can say here that only this income is there 350000 rupees. And in this case, if you see this income will be how much?

This income is going to be the say the income to the shareholders this much and this much. So this works out as 518000. So you can say that the impact of the debt, if any firm is having some amount of debt in their capital structure, so you can say that the amount of the debt is going to create the say the difference here. And if we look at this the difference is going to be very clear in this case.

So the total combined income, if you look at in both the cases, so combined income of the shareholders and debt holders after the personal taxes it is 350000 rupees. In this case, it is 518000 rupees because the income to the shareholders after personal taxes is 182000. And the income to the debt holders after personal tax is 336000. So it means combined income of the shareholders and debt holders after the personal taxes is this much and in this firm it is this much right.

So it means ultimately, when you talk about the whole thing in terms of the corporate taxes and the personal taxes, after taking into consideration the effect of both the corporate and the personal taxes, even the levered firms stand at a better position and ultimate income to the say combined income to the shareholders as well as the debt holders or the say lenders is more as compared to the income of the say shareholders in the unlevered form, because ultimately this is a very big advantage.

Tax advantage or tax deductible advantage of the debt component is very big advantage. And because of that, because of this effect of taxes, even the Modigliani and Millar have also accepted in their second proposition that because of the tax factor or the tax advantages the (ultimately) ultimate cost of capital of the debt capital comes down, and any firm which is

having the mix of the debt and equity in their capital structure, their overall cost of capital is going to get down.

And ultimately the purpose of a good capital structure, optimum capital structure is, that the overall cost of capital should be as low as possible, or at least not low but at least optimum so that the return to the equity shareholders can be maximized, maximizing the value of the firm. So we have seen the impact of the taxes.

First we saw the impact of the corporate taxes and then we extended the same example means remaining part towards considering the effect of the personal taxes. And then we have seen here the ultimate income to the say combined income to the shareholders and debt holders in levered firm is higher as compared to the unlevered firm.

So the tax deductible advantage or the tax deductible nature of debt capital is totally clear. It is crystal clear. So it means now after discussing 4 theories net income approach, net operating income approach, traditional approach and Modigliani Millar's the two propositions we have concluded here that a capital structure makes a difference and in the capital structure, if you have the mix of both internal and external sources of the funds, both debt and equity.

So ultimately the capital structure which is having the funds from both the sources is the better capital structure and overall cost of the capital is going to go down. So here is the one part we have seen that in this case, we have assumed the tax rate means further improvement you can make here. We have to consider the tax rate is equal in both the components, on the debt also or on the equity also.

But in the real life scenario, what happens? In the real life scenario the taxes on the equity earnings or the earnings of the equity shareholders are far less as compared to the taxes of the say debt suppliers or the debt holders right. And if that is the situation, if that happens, then this kind of the picture will emerge, means we have assumed in our calculations that the personal tax rate is of the 30 percent and both, equity shareholders and debt holders.

But in the real life scenario, what happens, the say capital gain as well as the dividend income of the equity shareholders is taxed at a lesser rate as compared to the say interest income going to be taxed in the hands of the or at the personal level while it reaches in the hands of the lenders.

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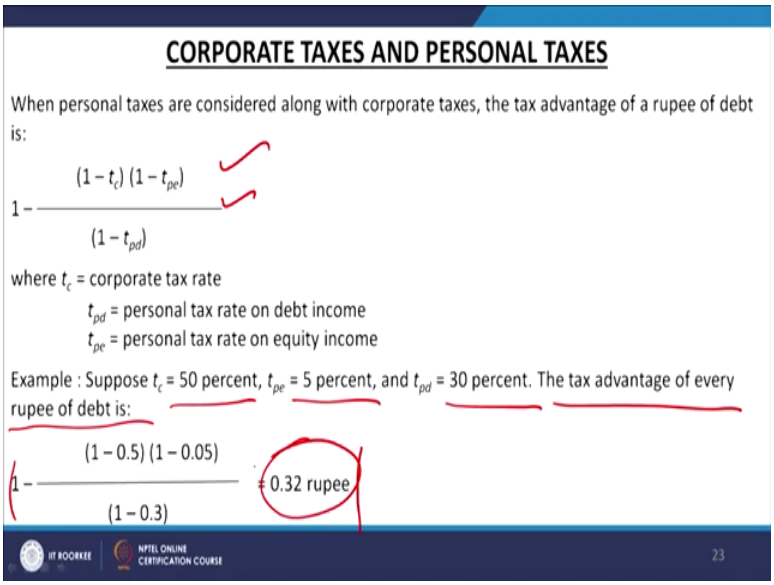


So the rates are different and if that is going to be the case so with the help of this model particularly you can see the effect of the debt capital on the per rupee of the borrowing. So it means with the help of this model, 1 minus 1 into 1 minus 1, minus tc into1 minus tpe divided by 1 minus tpd so tc is basically the corporate tax and say combined effect of the corporate tax. And then the say equity tax or the say tax on that equity shareholders income has to be divided by the 1 minus personal tax on the debt capital or the debt income, especially not capital, debt income.

So it means with the help of this model, you can find out that if the interest rates are different, sorry tax rates are different, tax rates on the say personal tax rate especially for the equity shareholders and debt holders are different, which normally remain different tax rate on that debt income is more as compared to the tax rate on the equity income. So ultimately the advantage of the debt further increases right.

So in this case, you can understand here that suppose the corporate tax rate is 50 percent we have assumed the corporate tax rate is 50 percent and the equity income is taxed at the personal level at the rate of 5 percent and the debt income is taxed again at the rate of 30 percent at the personal level. So finally, you can say what this calculation is done here with the help of this model that the tax advantage of every rupee of debt is how much? 32 paisa.

It means tax advantage on every rupee of borrowing because given this say tax structure or the rate of taxes, corporate tax rate is 50 percent, equity income is taxed at 5 percent and that income

is taxed at 30 percent. So if you happen to say have this kind of the scenario. So ultimately the tax advantage of every rupee of the debt is 32 paisa means you can, just because of the taxes you can, you can say in terms of the taxes 32 paisa on every rupee of the borrowing.

So which is not possible in case of the equity capital, because equity income or you can call it as a tax deductible advantage is not at the corporate level in case of the equity. So equity income means whatever the dividends firm pay, that does not have the tax deductible advantage as compared to the say debt servicing charge. The interest component which the firms are allowed to deduct as a say you can call it as the cost, the financial cost before paying the tax on that.

That property is not associated with the equity capital. So if you follow this model and consider the corporate taxes and the personal taxes and the if the tax rates are different so with the help of this model, you can find out that tax advantage of every rupee of the borrowing every rupee of that is 32 paisa which advantage is not there with regard to the equity capital.

So it means equity capital is also tax at lesser rate of say lesser rate of tax at the personal level and at the corporate level, no tax deductible advantage of the equity is there whereas disadvantages is there are both the levels. In case of the, say debt capital, in case of the corporate level, at least the financial cost is deductible. Tax is tax deductible and that saves the tax up to that particular amount. And because of that say you can call it as this disadvantage or the debts tax deductible nature.

The advantage of the debt is up to 32 paisa you can save 32 paisa by the way of say not paying the taxes on the debt cost or the financial cost which we are paying to the debt holders for providing the debt capital in the firm. So ultimately you can say both the taxes that is a corporate taxes and personal taxes they impact the capital structure. And in both the cases debt capital has the positive effect and say you can save a lot of money because of the tax deductible nature of the debt. You can save a lot of money and you can means ultimately the cost of capital can be brought down significantly.

And if the cost of capital goes down, which is the ultimate purpose of a appropriate capital structure, so the ultimately the value of the firm gets maximized. So we started with the discussion on the capital structure with the say capital structure and the value of the firm and ultimate purpose is to find out the optimum capital structure where the cost of capital is the

optimal one and ultimately the income to the equity shareholders, residual income to the equity shareholders gets maximized maximizing the value of the firm.

So means if you have the debt component in the capital structure, even the Modigliani Millar have agreed that yes, because of having the debt capital, which is a cheaper source of finance in the say out of the total sources. So your overall cost of capital goes down, maximizing the value of the firm or the ultimate say maximizing the residual income to the equity shareholders.

Now we talk about that there are some limitations of the debt capital which do not allow the firm to enjoy the total advantages of the debt capital despite it having the tax deductible nature or the tax deductible advantages. There are some disadvantages associated. So you have to take those disadvantages into consideration and then try to find out that what is the real cost. And for that purpose, they are the two important things which are important here to be considered.

And first important thing is the cost of financial distress. Now what is a financial distress and how it comes? The cost of financial distress is basically when the debt moves into the firm or the debt appears in the capital structure of the firm. So firm moves slowly and steadily towards the say financial distress right, that is not going to happen in the firm, which is totally equity finance firm, because equity is the internal source of the firms.

And if there is any ups and downs happen in the firm, there is no sufficient profitability or there is no sufficient liquidity in the firm. Equity shareholders are not going to raise any hue and cry. But in case of the debt capital, if debt capital is adjusting in the capital structure of the firm and because of the fixed nature of the say debt service charge, as well as the repayment of the say principle component of the debt.

If there is some problem in the firm with regard to its profitability with regard to its liquidity of the profitability and if the required amount of the funds are not available at any point of time to service the debt or to repay the principal, then it brings in the financial distress in the firm right. And their financial distress some time if continues much longer, then can take the firm to the extent of liquidation or say declaring it bankrupt because say debt suppliers or the lenders cannot wait for the unlimited period of time.

And if you are not returning their interest, if you are not paying their say principle component returning on time, then they can take the firm to the court of law and they ask may ask or they may plead for getting the firm declared as insolvent. So that distress cost is again very-very important cost. So we should consider it equally means being important that if the debt moves in the firm, the overall cost of capital gets down because debt is a cheaper source of the funds as compared to equity.

But the real effect of that reduction in the cost of the debt cannot be enjoyed by the firm because the moment that debt moves in the firm, the distress, financial distress also comes in the firm because of the fixed nature of the obligations arising because of raising the part of the funds by way of the debt instruments from that market right. So there are some costs associated to the say existence of debt in the capital structure of the firm. First is the financial distress cost. And second is the agency cost.

These two costs we have to factor to find out the real impact of the say cheaper source of the finance that is the debt capital being the cheaper source of finance. So what is the direct cost means the financial distress has the two kinds of the costs. One is the direct cost, second is the indirect cost.

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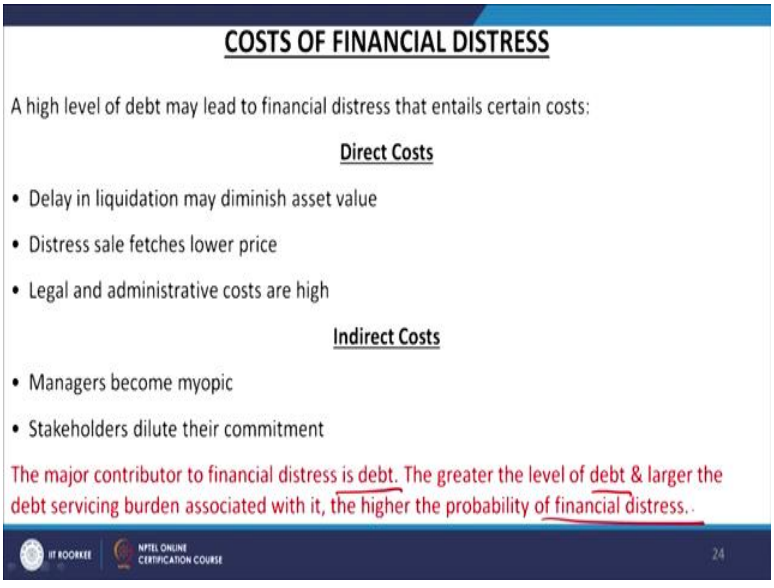


So the direct cost of the financial distress is delaying liquidation may diminish the asset value. Distress sale fetches lower price and legal and administrative costs are high. Sometimes what

happens that for example, if the firm is not doing well and if it has to be liquidated, then there is a dispute between the equity holders and the say lenders. And that dispute sometimes means ultimately for example if the firm is doing very well then fine it is, there is no problem. We can service the debt also because we are getting the sufficient sales, we are getting the sufficient profits and profits are liquid also.

So we are servicing the debt also and we are returning the principle on the due date. There is no problem as such but because of any reason, if the firm has to be closed on or the firm has to be liquidated then because of the existence of both internal and external stakeholder, the financial distress cost further increases and that financial distress which has caused the closure of the firm further creates the problem that ultimately you have to liquidate the firm, sell of the assets of the firms in the market and realize the value and distributed amongst the equity and the debt suppliers.

So means because of the existence of this, both the stakeholders, internal and external this problem comes and sometime dispute comes up and ultimately means if you are going to sell the assets today in the market, they are going to fetch the different price. But dispute continues for 1 year, 2 years, 3 years means in future. So after 3 years, if you are selling the assets in the market of the financial distress firms they are not going to get the same price. So that is a one cost.

Distress sell fetches lower price even otherwise also the say the debt component, which has brought in the distress, financial distress in the firm and which has made the firm sicker. So if you want to sell of the assets of the sick firms in the market, otherwise also they not fetch the competitive price from the market and legal and administrative costs are very high because sometimes when any legal battle starts between the equity shareholders and the say a debt suppliers, then it longs, it prolongs sometime very long and legal and administrative costs keep on increasing.

So there is the financial distress cost. But you see financial distress, we have to subtract as a cost only if the debt is not properly managed in the firms. If the debt is not properly managed in the firm and because of the debt, because of the existence of the debt in the capital structure of the company if any company has to be liquidated so number one means there will be two negative factors associated to the debt.

Number 1 because of the existence of the debt in the capital structure, the firm has to face the financial distress. And when you are going to know, liquidate the firm as a remedy of taking it out and then closing down the business even in the closer or liquidation of the firm. This debt is creating the problem. These are the 3 direct costs which are coming because of the financial distress and distress is coming because of the debt and indirect costs are many ships become myopic. They become totally careless.

They do not pay much heed because they know also that the life of the firm is not very long. It is a distress firm. There is a sick firm and it has to be soon sold in the market. So their quality of the product after sales service, even payment to the creditors, they always created the problems and they do not pay heed they means do not spend sufficient time. So means the indirect costs further increases because suppliers also get annoyed, customers also get annoyed and everybody who was very happy and who was important stakeholder in the growth of the firm.

Now, because of the say not being properly serviced, they are further adding into the say financial distress of the firm. And then is the stakeholders dilute their commitment. Employees you talk about, suppliers you talk about they dilute their commitment towards the company. And the company which is already on the path of closure means they fasten it up. They further add up to the closure of the firm to close it as quickly as possible.

So means I can say here, if the financial distress does not come because of the debt, if the debt comes in the capital structure and if it is properly managed, then there is no issue. The cost of the capital will be very low and the ultimate value of the firm will be maximized, and the residual income to the equity shareholders will be maximum but if because of the say existence of the debt in the capital structure of the firm.

If the firm moves towards the financial distress, then the cost is very high. So you have to be very careful and consider it seriously that distress cost is there and either we should not allow the distress to come in a firm where the debt exists. And in any case, if it comes, then we should be prepared to pay a very heavy cost.

So finally we can say the major contributor to the financial distress is the debt. Major contributor is the, to the financial distress is a debt. The greater the level of the debt and larger the debt servicing burden associated with it, the higher the probability of the financial distress. So we

have to be very careful that bringing the debt in the capital structure of the firm, but not allow the firm to go or move into the financial distress.

If you are not able to service the debt, if you are not able to pay the principal on time, mind it you are going to reduce the cost of capital by bringing more debt in the firm. But taking otherwise happen that even the entire firm may collapse and because of the non-availability of the sufficient profitability because of the not proper management of the affairs of the firm. The profitability may go down.

And even though profits are there but the profits are not cash profits so liquidity may go down. And the objective with which we brought in that debt in the firm may not be met. And firm moves from say, maximizing rather than maximizing the value of the firm to the equity shareholders towards the financial distress. And ultimately it has to be liquidated. So we have to be very careful that debt comes as a steeper source of funds.

It comes as it cheaper to source of funds, but it comes with one limitation. So be careful about that limitation. Do not allow the debt to create a problem in the firm and manage it clearly and carefully. So that means as we have borrowed the debt from the market, we are efficiently make use of it and pay it back to the market.

Second cost is the agency cost because of the existence of the debt in the capital structure of the firm, we have two kind of the agency relationships now. One agency relationship is between the say your shareholder and the managers right because managers manage the fears of the companies and they are agents of the shareholders and second agency relationship is between the shareholders and the lenders or the creditors, right.

So because debt comes in the capital structure of the firm, so the debt suppliers become very-very careful. And they sometime start interfering in the affairs of the firm. And when they start interfering in the affairs of the firm so it increases the overall cost of the managing of the say affairs of the firm and sometimes delaying the important decisions and ultimately it tends about into increasing the overall cost of production.

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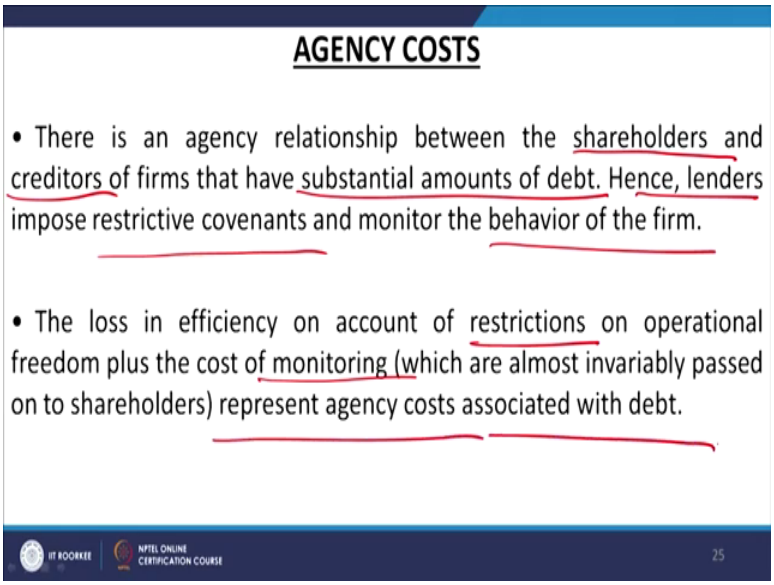


So you can see here what is written. There is an agency relationship between the shareholders and the creditors of the firm that have substantial amount of the debt. Then the people or the financial institutions or maybe the lenders, any other lenders, when they heavily lend to the firm or provide the debt to the firm. In that case, they become careful about the proper use of the debt given by them to the firm and they start interfering.

So it means that becomes the agency relationship and they want shareholders should manage there or get their funds managed properly but when they are not finding the proper management of their firms, they start interfering. Hence, lenders impose restrictive covenants and monitor the behavior of the firm. Lenders impose restricted, restrictive covenants and monitor the behavior of their firm and this monitoring cost is sometimes very high, which has to be paid by the firm.

Because the loss in their efficiency on account of restrictions when they put so many restrictions say for example, they say there are the three projects identified by the firm. Project 1 and 2 are less profitable and project 3 is highly profitable, but little bit risky. Shareholders want that the investment should be made in the third project, but the say lenders may want that no-no, because it is highly risky, so you avoid the investment in the third project.

You make the proportional investment into that project 1 and project 2. So what will be the means outcome? Though you have managed the risk for your personal reasons but the overall return of the firm has gone down and the return to equity shareholders also has gone down. So it

is on the own account of restrictions on the operational, the loss inefficiency on account of restrictions on operational freedom, plus the cost of monitoring which are almost invariably passed on to shareholders represent the agency costs associated with the debt.

So because they want, the debt suppliers that never trust their shareholders and ultimately it also happens in the market that the debt suppliers sorry managers in the companies they are first the agents of the shareholders, the owners of the company, not the agents of the debt suppliers or the debt holders. So debt holders start suspecting the behavior of managers and they also start assuming shareholders are not working in their best interests.

So they directly start interfering into the affairs of the firm. Sometimes they do not allow the investment to be made into the highly profitable but little risky projects. So overall cost of capital increases and rate of return gets down and that advantage of debt being tax deductible and being a say cheaper source of the finance and so automatically gets over. And sometimes that becomes not cheaper, but the costlier source of the finance, because debt comes with the interference of the debt suppliers or the debt holders.

And that means creates a heavy cost on account of the firms operations and efficiency of the firm can be say negatively hampered. So these two negative factors, one is the say moving of the firm into financial distress because of the, not properly managing the debt. And second thing is existence of the agency cost because of the existence of the heavy amount of the debt from external stakeholders. These two costs create the problem. So if these two costs you take into account.

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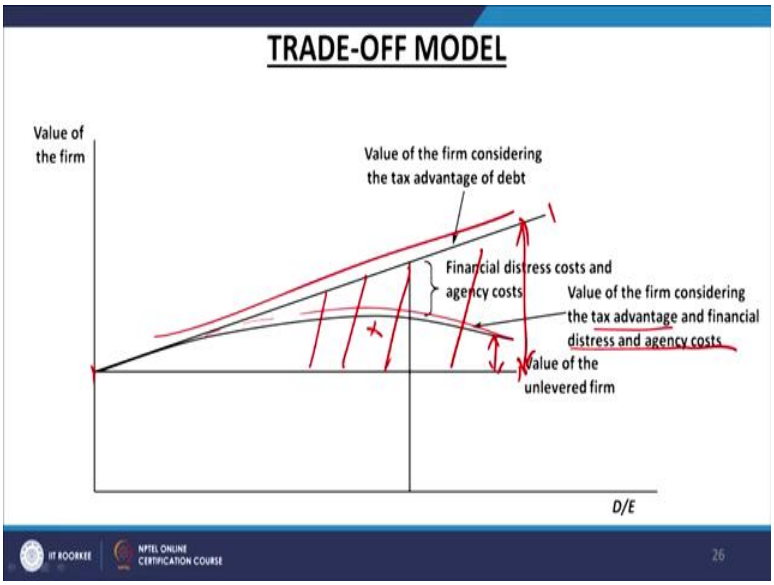


So finally the tradeoff becomes like. Tradeoff model looks like this, that on the one side you had the value of the firm. Here you have the debt equity ratio. Simply for example, if this component is not there, if you look at this, this component is not there. If you are say for example we are applying a cut here, so we say everything is all normal. Firm is not moving to the financial distress firm. Firm is not paying any agency cost also.

So what is the case? Value of the levered firm is depicted by the straight line right this line and this line and value of the, this is a value of the unlevered firm, which is only equity financed and value of the firm considering the tax advantage of the debt is this much because it is going up because ultimately the cost of capital is going down. So the value of the firm is going up, but this does not go this way. This behavior of the say firms income is not like this because in between this gap comes here.

So this gap comes because of or this obstacle comes because of the financial distress cost and the agency cost right. So when the financial distress and agency costs create the problem because of the debt capital, adjusting in the capital structure of the firm. So finally you can say value of the firm, considering the tax advantage and the financial distress and agency costs becomes like this. So it does not go like this. It behaves like this. It comes like this.

So it means gap is not this much gap does not become this much, but the gap comes this much. So we have to be very careful that debt capital is a cheaper source of finance, comes to the firm,

reduces the overall cost of capital. But at the same time, it comes with the two limitations also. It may take the firm towards the financial distress and it may say create the extra problems for the managers of the firm because of the existence of the agency relationship and because of the extra interference of the debt holders.

So if these two costs are carefully taken care of, then ultimate advantage of the debt as a cheaper source of finance can be enjoyed but these two sources are not sorry these two limitations are not properly managed or not taken care of then that tax deductible nature of the debt or debt being a cheaper source of the finance can be means cannot be enjoyed by the firm. So we have to be very careful that debt is cheaper source of finance, provided the financial distress does not come in the way and agency cause does not create a problem.

If these two limitations exists then the ultimate advantage of debt being the cheaper source of finance cannot be enjoyed to the extent as it was perceived to be. So we have to be very careful about these two limitations. Otherwise, what will happen? The income will not go up like this income will be say, moving in a curved form. It will start going up, but then the agency cost and the financial distress will start creating a problem.

So the gap between the income of the levered firm and unlevered firm will be minimizing. So do not allow this gap to be minimized and take care of the financial distress and the agency costs and keep the say cost of the debt intact and ultimately say make sure that we have reduced the cost of the capital, overall cost of the capital with the objective of maximizing the value of the firm. So this is a trade of approach. This is the say second proposition of Modigliani and Miller approach and this is very-very rational approach.

So in the second proposition of the, approach of the capital structure Modigliani and Miller themselves have accepted that capital structure makes a difference. And because of that, say existence of taxes debt capital becomes cheaper. So we should have the optimal mix of debt and equity to have the optimum capital structure. Now I take you to the next level, and that is the say two more theories of the capital structure.

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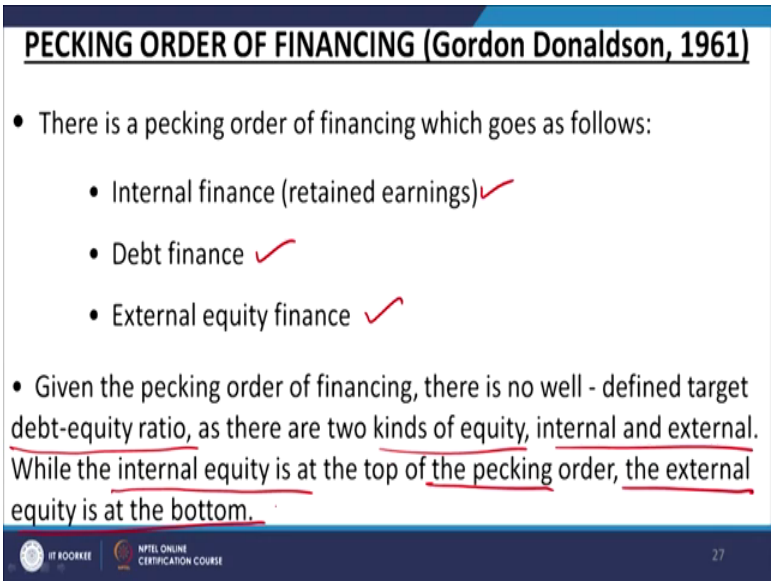


One is the pecking order of financing. And second is the next is the signaling theory right. So these two more theories are there. So if you talk the, these say pecking order and the signaling theory so we will see here that what is the pecking order theory of the financing, which was given to us in 1961 by the Gordon Donaldson.

Gordon Donaldson after studying the capital structure of different companies. He propounded a different theory of the capital structure. And he said that there is a pecking order of financing which goes as follows, that as per this theory first of all, the firms make use of the internal capital. Then they make use of the debt finance and then they make use of the external equity.

This Donaldson has say concluded after studying the capital structure of the many firms in the market and he has said that capital structure is important. He has also not denied the Modigliani Miller theory because Modigliani and Miller theory have assumed that there is a complete market say clarification and complete information symmetry exists.

And managers and investors know each and everything about the market and complete transparency exists in the market. So if the complete transparency exists in the market information symmetry exists in the market, then certainly the tradeoff theory or the second proposition of the model Modigliani and Miller is important theory.

But sometimes when there is a say informational asymmetry in the market and clear information is not available to the investors and managers about that, how the firms are doing, or maybe a new firm want to enter in any industry, where other firms are already existing. So we want to draw a clue about the capital structure of the new firm by drawing a clue from the capital structure of the existing firms.

So in that case we can say that if the information is easily available about that, how much say risk is there, how much return is there, how taxes are going to impacted, so finally you can have the proper capital structure having the different proportion of the debt and equity. So that happens in case of the complete information symmetry, in case of the complete informational, information transformation from the one say place to the another place from the one account to another account.

But if complete information asymmetry is there or information is not easily available, transparency is not there, then to know about the capital structure normally it has been found that this theory can be made use of where the pecking order says that the total sources of the funds used in the firms are on the basis of the pecking order and the pecking order of these sources of the funds is number 1, firms make use of the internal sources of the funds which is the retained earnings.

Then they go for the borrowings from the market and then they go for the external equity finance. So finally it is written here, given the pecking order of financing there is no well-defined target of debt equity ratio, right? If there is no complete transparency in the market, information symmetry is not there then what will happen? The proper debt equity ratio cannot be created as there are two kinds of equity internal and external, right?

So while the internal equity is at the top of the pecking order, the external equity is at the bottom, so this theory says that if there is a complete market information asymmetry, information is not available and say investors and managers are not able to take the proper decision about the capital structure. So what they can do is they can see how the existing firms are doing in the market, how their capital structure is decided.

And after studying some say, existing firms of capital structure, Gordon Donaldson has propounded a theory that there is no point of looking at the debt and equity and anything right.

First of all, firms, because equity is of the two types if theory creates a problem then they say that equity is of the two types. Retained earnings are also internal funds; you can call them as equity and say, external equity by issuing the new shares in the market. That is also the equity.

So which equity you are talking about in case of the tradeoff theory, right. So you cannot say much rely up on the say capital structure. It is better that you follow the pecking order and on the basis of what he has observed from the practical situation in the market. He has said firms raise the funds in this order; first they raise the funds from the internal sources of the finance because there is no flotation cost. Raising the funds are very easy because they are internally available right.

And that is the first source and after that, when they go to the say further requirement of the funds. If there is a further requirement of the funds, then they do not issue the new fresh equity in the market rather they prefer to borrow from the market and why they prefer to borrow from the market? Because of the three advantages. First is the, that debt is not mispriced. Whatever the rate of interest we are going to pay on the borrowings or on the debt that is going to be as per the market rates.

So we are not going to be say we are not going to get affected negatively. This is a one part. Second part is the positive part is that it is not going to affect that the say the position of the equity shareholders. And third is that since the control is not going to be diluted from the equity shareholders because it is the external source of the finance. It has to be only service in terms of the interest and in terms of the repayment of the principal. So the dilution of the control of the equity shareholder is not going to be there.

Equity shareholders position is not going to affected in any other sense. And it is not mispriced also means easily you can find out what is the cost of borrowing from the market. So because of these three properties, raising of the debt is cheaper as compared to raising of the funds by issuing fresh equity in the market because the floatation cost is very high. The process is quite tedious.

So the say this, he says that capital structure you cannot follow in all the cases because of having the two kind of the internal sources on the funds, retained earnings and the equity capital. So the better theory of the capital structure is the pecking order theory and this is what the firms are

falling in the market. He has observed after studying the capital structure of the firms they are not following the trade of theory that bringing the equal amount of capital from debt and equity.

But they are following the pecking order and first they are depending upon the internal sources of funds, then number two is the debt and number three is the say external sources of the funds or even call it as the external equity finance which is coming up by issuing the equity shares, fresh shares in the market.

So means, this is the say another theory you can call it as the fifth theory of the capital structure and it is very helpful also say to know about that, if you are not able to decide properly because of the lack of the proper market information and in the event of the information asymmetry, if it is very difficult to decide the capital structure having the, say different proportions of the debt and equity, then always it is better that we should follow the pecking order theory.

First raise the funds from the internal sources because it is not going to create any problem for the firm. Second is go for the raising that debt from the market and third is then if still you require the funds then issue the fresh equity in the market and raise the remaining amount of the funds. But be careful if you raise the funds from the debt distress may come or debt may take the toward the financial distress or it may create the agency problem.

So we have to be very careful. If we are means careful about these two negative limitations of the debt capital, then if you are not able to follow the second proposition of the Modigliani and Miller theory, then it is better to follow the pecking order theory.

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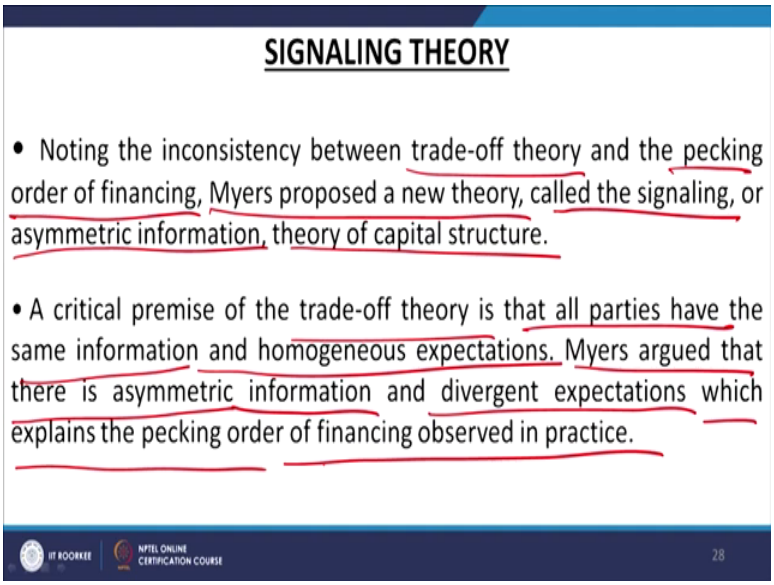


One more theory is the last theory that is called as the signaling theory. I, means the reference of the signaling theory, signaling theory is basically given to us by the Stewart C. Myers and the Nikolas Majluf in 1984 and Nicholas Majluf these are the two economists who have given the signaling theory.

And basically they have extended the pecking order theory given to us by the Mr. this your Gordon Donaldson this theory they extended and they called it the new theory, which they propounded, these two people they called they propounded a new theory, which is known as basically the contribution of these two people. Stewart C. Myers and the, say your Nicholas Majluf who gave this theory in 1984.

And they named it as a signaling theory and signaling he says that these two economists say that normally the say your second proposition of the Modigliani and Miller has to be held good if there is a complete information symmetry right.

If there is a complete information symmetry in the market, then it is better to decide the capital structure by having the different proportions of debt and equity depending upon their respective cost. But if it is not possible to find out and there is a complete market information asymmetry or proper information is not available, managers and investors are not able to decide that from where to raise the funds and how to expect or how much return to expect on particular investment, then it is better to follow the pecking order theory right.

So what is the signaling theory what they have said, noting the inconsistency between the tradeoff and the pecking order financing because tradeoff says there has to be proper say composition of debt and equity. Pecking order says there is nothing like that there is a complete information asymmetry in the market. So the capital structure has to be decided in the form of three sources. First is internal, second is borrowing, third is the external equity.

So Myers proposed a new theory called the signaling or the asymmetric information theory of the capital structure. This name of this theory is another name of the theory is asymmetric information, because when the complete market information is not available then only on the basis of the signals available from the market or the capital structure of the existing firms you can decide that what should be the capital structure of the new firm in the industry and how you can have the signals?

Signals basically come from, because ultimately the managers decide the capital structure of the firm and since they are the insiders in the firm who manage the affairs of the firm, so they have the complete internal information about the financial health of the firm right. So whatever the capital structure, if there is a complete standard capital structure like say, the tradeoff theory proposed by the Modigliani and Miller then signaling theory has no say even the pecking order theory has no say.

But pecking order theory and signaling theory become important when the market is not completely transparent and it is not possible to find out how firms decide the capital structure, then either the pecking order becomes important or signaling theory becomes important. Signaling theory means, why it is called as a signaling theory? That you can draw the signal from the capital structure of the existing firms decided by the managers of the firms because they are insiders in the firm who manage the affairs of the firm and they know the financial health of the firm.

So keeping into consideration the overall financial health of the firm, they decide the capital structure of the firm. So you just try to draw a signal that from there the funds are being raised by the existing firms in the industry. Are there coming from internal sources retained earnings, that capital or equity capital? But that can only happen in case of the lack of the proper information or in the event of the information asymmetry.

If there is proper, complete information symmetry information is available in the market, then the second theory of the Modigliani Miller proposition will be held good and the capital structure will be decided on the basis of the equal portions of debt and equity. But if that is not going to be possible, then draw the, either you follow the pecking order theory or you draw the you follow the signaling theory.

Because, whatever is the adjusting step capital structure of the firms, that gives a signal to the outsiders because that capital structure is decided with their managers, they are the internal stakeholders. They know the complete information about the firms financial health. So how they have decided the capital structure maybe they are going to decide the best capital structure of the firm and if the firm is successful by following that capital structure.

So it is a signal to the rest of the world that the capital structure of the new firm in the market also has to be what is existing capital structure of the existing firms in the market. So you draw the signal from the existing capital structure, which is decided by the internal stakeholders, who are managers of the firms. And then you draw the new capital structure, you decide the new capital structure of the new firms.

So finally, they say a critical premise of the tradeoff theory is that all parties have the same information and homogeneous expectations. If this held this is holds good that all parties have the complete information and homogeneous expectations then there is no alternative of the tradeoff theory or the second proposition of the Modigliani Miller. But if Myers argued that if there is asymmetric information, if there is asymmetric information complete information about that capital structure is not available and divergent expectations which explain the pecking order of the financing observed in practice, right.

Myers argued that there is asymmetric information and divergent expectations which explain the pecking order of the financing observed in the practice because if there is a complete information available, there is no alternative of the second proposition of the Modigliani Miller theory. You have to have the optimum capital structure of the firm to reduce the cost of the capital.

But if there is a lack of information symmetry in the market or a complete information asymmetry exists, then naturally you have to follow either the pecking order theory or you have to draw the signals from the existing capital structure of the firms and decide the capital structure

of the new firm, because that signal is very important that how the existing capital structure of the firms is decided.

Have they used the first the say retained earnings or they have used the debt capital secondly, and thirdly they had to use the equity capital or there is any other way of deciding the capital structure to draw the signal. Either you follow the pecking order theory or you draw the signal from the existing capital structure of the firms and decide the new capital structure of the new firm.

So these are different theories available, which we discussed until now. And we started with the net income approach. Then we moved to the net operating income approach. Then we moved to the traditional say approach. And all these approaches, all these approaches are considered as non-systematic approach, non-scientific approaches of the capital structure. And in 1958, one scientific approach came up given by the Modigliani and Miller and later on they improved their first proposition came with the second proposition, which became popular as a tradeoff theory because it a tradeoff between the risk and return.

And means normally this second theory, tradeoff theory which is a replica of the net income approach is prevalent in the market for deciding the capital structure and the capital structure has a meaning. People say even today that the capital structure has a meaning more the amount of the debt overall cost of capital of the firm goes down because that is the cheaper source of the finance.

But tradeoff theory is possible to be followed only if there is a complete information and homogeneous expectations of all the stakeholders that is investors and managers and even the owners of the company, right. But if the complete information is not available, that how to decide the proportions of debt and equity, what is the cost of debt, what is the cost of equity and what are the expectations of managers and investors in that case, two other theories are there.

Either you can follow the pecking order theory where we can use the retained earnings first, then the debt number 2 and number 3 is the equity capital raised by issuing the fresh equity in the market or even if the pecking order theory is not possible to be followed then we can say use the say signaling theory which was given which is a modification of basically extension, not

modification, extension of the pecking order theory given to us by the Stewart C. Myers and then Nicholas Majluf in 1984.

And I would add here this signaling theory was first propounded in 1977 by Professor Ross which was further means extended by these two financial economist Stewart C. Myers and the Nicholas Majluf in 1984. And basically this signaling theory is the extension of the pecking order theory and if you are not able to follow any of the approaches, including the pecking order, then you use the signaling theory and whatever the signals you get from the existing firms, the capital structure from the market, you also decide the capital structure of the new firm accordingly.

So as far as the conceptual part the, you can call it is a discussion on the capital structure was concerned. I have done it to the say extent possible till now. We have started with the introductory part of the capital structure and discussed the importance of the capital structure and then we discussed the different theories of the capital structure. So say I will stop here with the say discussion on the capital structure.

But complete discussion will be over only once we do one at least one practical problem on the capital structure that how the capital structure of the firms impact the overall cost of capital. So if there is existing capital structure of the firm and if the cost of capital is more, so if you want to raise further capital for the expansion or diversification or further growth of the firm. So we have to be very carefully say look for the sources of the funds which ultimately bring down the overall cost of capital of the firm.

So I will discuss one practical problem, but not in this class, in the next class. After that, I will completely close that discussion on the capital structure and move to the next part. And that is the last topic of this course as a whole and that will be the dividend decisions. So one practical problem on the capital structure and the next topic, dividend decisions, I will start talking to you in the next class, till then thank you very much.