Financial Management for Managers
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Lecture 19
Capital Budgeting - Part III

Welcome all, so we are in the process of learning about the capital budgeting, very important concept in financial management and in the previous class we had some initial discussion about the fundamentals of capital budgeting and say something about the capital budgeting process.

Now, I will take you means to the next level and that is say the project classification that when we go for identification of the projects or selection of the projects for incurring this expenditure so it means how, we can identify the projects and we are means the investment has to made how to take out those projects or those investment say, proposals.

Identification of those proposals and say finalizing those proposals we have some say basic classification process here. And in this basic classification process we have say some ideas about where the capital budgeting, investment proposals can be identified.

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So, say for example, some of the projects are mandatory investments, some of the projects are like replacement projects some of the investments are like expansion projects some are diversification projects, research and development projects and miscellaneous projects.

So, when you talk about these mandatory investments when we talk about the mandatory investments so, there are certain kind of investments which becomes mandatory now, first of

all means the initially mandatory investment will be that, when we are into the new project or means say starting manufacturing a new product or generating a new service.

So, whatever the investments are required to made there, so because, we have to identify the project already may be by the existing form or a new form or a new organization may be in the form of startup or say any beginning business activity by the new entrepreneurs so, whenever a new project is identified, whether by the existing or by the new firms then some investments are mandatory investments.

For example, say land plant building machinery so, those investments are mandatory investments. And we have to means made that so, identification is that which are essential investments we have to do those are in the new projects or the new capital investment proposals. We have already identified and on the basis of those identifications we go ahead or start means a plan to go ahead for giving the shape to the project so, those kind of the proposals which become the essential investments are called as the mandatory investments.

Then we talk about the next kind of the projects are replacement projects some time what happens that, say a replacement of the technology or the replacement of the machines because, when you talk about the any investments we are making and that investments becomes over dated or may be technology becomes out dated so, we need to replace the existing technology with the new technology, existing machines with the new machines and that happens with every fixed asset.

That in the firms in any manufacturing organization in any of the business projects when we use the plant and machinery that has a limited life normally, say 10 years 12 years life especially when we talk about the IT equipments, their life is very very short 3 years sometime 4 years or maximum 5 years.

So, means at the end of that useful life that equipment has to be that plant machinery has to be replaced and for that replacement process we have to make investment and when we make investment we call it as a capital investment proposal or the capital budgeting proposal so, we have to for the replacement of the machinery or the replacement of the plant and machinery because, of the out dated technology.

I would share here an example with you of that of the say SAIL Steel Authority of India Limited, steel authority of India limited, was means even today it is a public sector

organization and till 1991 it was the sole, steel manufacturer in India though TESCO was also there but, larger market share was with the Steel Authority of India Limited.

So, they had at that time their own plant technology, they have 4 major plants at the 4 different locations that is Rourkela, Bokaro, Bhilai and one more location so, four locations they have the plants and to 2 more some locations they have but, these larger locations Bokaro, Rourkela, Bhilai and this one more plant is there. So, 4 major plants were there where they are manufacturing.

Converting the iron ore into the say furnishes steel and selling in the country but, after 1991 when the liberalization was accepted in this economy and the steel sector was opened up for the private sector participation. So, what happen that, Steel Authority of India Limited SAIL also had to see or face stiff competition from the private sector players.

The major (())(05:41) competition or the major players which arrived or appeared in the market who are the Jindal steels and the SR steel, Layered steel. So, because of the emergence of these private sector players. Because, now the sector is open up for the private sector participation also.

So, when they started there or they stablish their plants means the new establishments by these private sector players may be by Jindal or by SR by the Layered steel. So, their plants, their machinery, there know how was latest that was as per the current market requirements and the market needs.

But, with the SAILs technology was the age older technology because, they never thought of replacing it, with the or operating the technology with the passage of time. So, when these private sector players came with the latest technology it mandated the SAIL also to change the plant and machinery and means now, huge investment is required to be made.

So, that was called as a on the one sense you can say it is a mandatory investment because, if you do not change your plant and machinery then what will happen, your product manufacture will be inferior in quality, very high in terms of price so, we may means loose the market, people will shift from the existing supplier to the new supplier in the market because, new supplier is giving as the better product at a very competitive price.

So, on the one sense it was the mandatory investment for the SAIL because, they had to stay in the market and second was you can call it as the replacement projects. So, replacement of

the existing plant and machinery with the new plant and machinery was a necessitated because of that change in the market.

Because of the opening of the steel sector for the private sector participation and the private sector players came up with the latest technology so SAIL was also required to say make investment. So, for them it became a mandatory replacement investment. So, both these projects or these capital investment proposals required a proper complete process of the capital budgeting and here you can say that yes.

Some investments are mandatory because, you have to keep your plant building and say your machinery going on to keep your organization functional and some are replacement once also because, we have to move with the time so, replacement talk the old technology with the new technology, old know how with the knowhow, that is the important requirement.

Then some time we have to go for the expansion of the projects, whatever we are doing currently because always when any time a new firm is created or a new business is created may be by a single individual, his see his say idea is dream is that one day I would like to see it as a transnational company, multinational company a transnational company.

So, expansion is always one important part of the growth of the firm so, when you start it as a sole proprietorship, it becomes a partnership firm it becomes a private limited company, it becomes a public limited company, it starts operating within the country then we start exporting to other countries then we create the manufacturing facilities in the other countries when it becomes the multinational company and then, when the number of countries where the company's presence is increases it becomes a transnational company.

So, expansion is always the one important moto of the company and for the expansion of the projects, or the expansion of the company's business we have to go for the identifying the new expansion areas, products and services where we can venture into or we can start say adding of the new products and new services.

So, that the total portfolio of the firm increases and every time when we are adding a new product or a new service, itself it is a new project and new expansion opportunity for that for example now, say you talk about Nirma I means always refer to that Nirma when it was started by Karsanbhai long back it was a one man organization today it is a international company and they have diversified also.

So, every time when they are growing from the one level to the next level they need additional investment because they want to grow in terms of the product profile in terms of the market profile in terms of the say your distribution profile. So, when there is growth requirement certainly we will need the more investments and every investment is an independent capitally investment proposal and we need to have the say evaluation of that with the help of the capital budgeting process.

Then we talk about the diversification projects when you talk about the diversification certainly we are into one area but, now we are to go for that, we have to diversify I refer to you the anchor story that they are basically or they were into the electrical products segment but, they then thought of that because of the multinationals competition in their say conventional area of electrical products.

They have to diversify and they got an idea to diversify towards the consumer products, they started that means they attempted that fruit bear project but it could not materialize but, still anchor is into many consumer products and that is only for the sustenance of the company or company's business and the brand name.

Though their electrical business has been sold to Panasonic but, they are into other areas also so, diversification is the other needs of the time and we will have to now, diversify to different areas because, sometimes what happens that, one are becomes so competitive that the firm has to think of means moving out of that area so if they have already diversified.

Then, it may be possible there the loss in one area may become the loss in one area and the profit in the, another area that helps the firms to sustain in those areas also for certain period of time where they are incurring the loses because, they are incurring the, they are earning the profits in the other areas.

So, sustenance is quite possible, so diversification when we want to do, in that diversification process also we will have to a say make new investments these days we are finding out for example, that. Many manufacturing organizations they are moving towards the services sector.

And many large manufacturing companies they are into the say education sector and many good business stablish houses you will talk about the Birla's, you talk about Jindal's you talk about the even Mahindra's they are moving towards the say even you talk about the Hero

moto co-op group they are moving towards the education sector and they are stablishing their own world class universities of the educational installations.

So, ultimately it is a business for them every investment whether that is into the services sector or whether that is into the manufacturing sector it is a business for them and they have to means take it like a business and say means consider every investment opportunity as a new investment, so diversification can be the another opportunity available where we have to think for the investment opportunities.

Then, research and development, yes, it is a very very serious project and requires huge amount of investment, all the times because, whatever we have now, in our (())(13:04) today the products which we are manufacturing and selling in the market that may be sufficient only for a certain period of time but after that we have to add some new features new qualities to that new properties to that product and for adding the new features and new properties you will have to incur the R and D expenditure.

So, when we means want to say add any new feature to our existing products or may be say think of introducing new products in the market or new services in the market R and D is a very very continues and the regular process. So, every R and D project is a new investment opportunity and we will have to evaluate it in terms of the techniques or the criteria of the capital budgeting.

Similarly, you talk about the miscellaneous projects these days now the say for example, CSR has become the very important requirement of the private sector companies and when they are profit making part of their profit, 2 percent of the average profit of the past 3 years has to go to the say social sector. So, they have to make investment into the sources sectors and when they create the facilities for the social requirements, they themselves become the projects independent projects for them. So, miscellaneous requirements could be there.

Or may be sometimes that say for example, there is a company (())(14:24) which is manufacturing shoes, so their main business is shoe manufacturing company or the shoe manufacturing is their main say object or objective in the memorandum of association in the object clause they are created a company for manufacturing the shoes or manufacturing the glass say products and for a packaging or their products they are say depending upon somebody else who is supplying the packaging material the boxes, the packaging boxes somebody else is supplying them.

But now, the company may decided, that rather than depending upon somebody else for having the packaging material why not to start manufacturing it, so they may think of a stablishing a new project new area new investment opportunity so that, there is a you can call it as the vertical diversification or may be not vertical diversification this will be the horizontal diversification.

So, it means we will, we looking for the opportunities where the investment say, requirements are there, and those investments are say possible to be manage in the best possible manner and then ultimately say every requirement of a good business is going to be fulfilled from that investment if that kind of the possibilities are there certainly we would like to look for those kind of the opportunities and those kind of the say proposals.

So, these are some of the areas some of the projects which can be say the ideas can be had for identification of the projects say in terms of the mandatory investments, in terms of the replacements, in terms of the expansion, in terms of the diversification, R and D and the miscellaneous projects.

So, means every project every investment opportunity or a every investment proposal is independent projects and we will have to look like a independent investment proposal and we will have to evaluate it like an independent project.

Now, we move to the investment criteria which is the very important you can call it as the backbone of the capital budgeting process. This is a crucks of the capital budgeting process which we call it as the investment criteria, how to make investment, whether to make investment or not to make investment.

So, criteria means that to say yes for making that investment or say no for making that investment that is called as the investment criteria, and it is a very very important in the capital budgeting all your capital investment proposals will be accepted or rejected based upon this investment criteria and if you look at this investment criteria.

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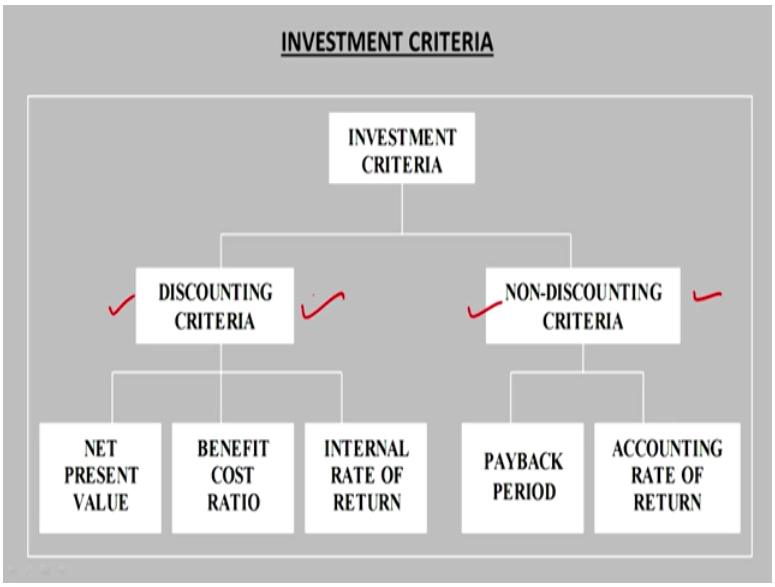

You can see that it has two parts one is the say discounted criteria and another is the non-discounted criteria actually this one is the quit old criteria, non-discounted criteria, discounted criteria has come is of the recent origin when the time value of money has been invented and we have realized that the time, this money has the different value at the different points of time then we started making use of the discounted criteria otherwise normally we make use of the, we have been make a use of the non-discounted criteria for evaluating the investment proposals.

So, in this case non-discounted criteria has a two methods here, one is the payback method and, payback period method and second is the accounting rate of return. Under this payback method what we will simply trying to find out is, that whatever the investment we are going to make in any project for example.

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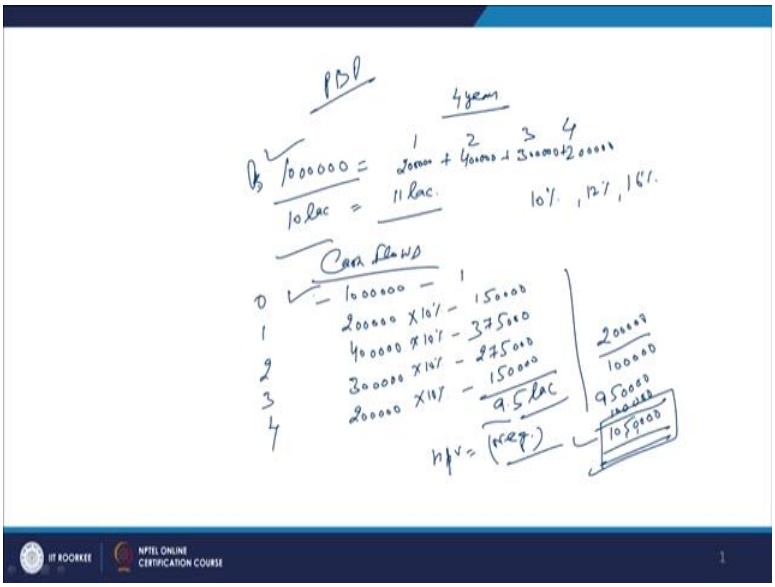

We are require to make investment of how much, say 1 million rupees this is 10,00000 rupees investment is require to be made in one project the investment requirements are 10 ,00000 rupees right, and then the returns available normally the force you have the life of the project is how many years? 4 years.

So, in these 4 years in the first 1, 2, 3 and 4 in these 4 years in the first year we are going to get back 200000 rupees then we are going to get back say 400000 rupees and then we are going get back 3,00000 rupees here, and then we are going to get back again to 200000 rupees here.

So, under the non-discounted criteria what we will do, the total a cash outflow the investment is 10,00000 rupees and this plus this plus this is going to be how much, this is going to be 6, 9 and 11. So, we are going to say here, the simple 10,00000 are going to be means equal to there, this amount is going to be equal to 11 ,00000 so in this case we are saying that normally the payback period of this investment of the 1 million rupees 10,00000 rupees is around 4 years or something less than that.

Approximately you can say because the total inflow available over a period of the 4 years is that is 11,00000 rupees are there, so you can say in the Laymen's language we can say that, if I make investment of 1 million rupees in any project or in any investment opportunity then, how many years my investment is going to come back me.

So, it means this is very rough estimate but, largely we are concerned with the safety of my investment because, there is a twin objective of any financial management issue, when we

means study or learn the financial management may be of individuals or may be of the organizations.

We learn it with that twin objectives first objective is that first objective of a good financial management is the safety of the funds and second one is the growth of the funds. Even when we make investment of our surplus funds whatever the funds we are left with us means whatever is the earning, monthly earning of any individual after consuming one part of that the remaining part whatever is the left out the remaining part is.

If that has to be means invested somewhere in the market means we always remain concern about it, that what is the safety concern of my investment and second thing is, means first we are concerned about the safety and second then we are concerned about the growth.

So, in this case also we try to find out here that as a Laymen estimate now the Payback Period says that is a called as the PBP this method is called as the PBP Payback Period Method and this PBP methods says in how many years the given investment which is made in the current period in the 0 period is going to come back to the investor and that is called as the payback period.

And this is called as a non-discounted criteria because, when you are taking about all these cash flows, this is a cash outflow and this is the cash inflow all these cash inflow and outflow they are non-discounted, they are non-discounted here, 10,00000 is equal to 10,00000 and certainly equal to 10,00000 because it is in the present period we are going to make this investment and this is the again going to be 11,00000 rupees and some of these 4 values, 4 inflows is going to be 11,00000 rupees.

So, it means we are comparing these 11,00000 rupees with these 10,00000 rupees and we are saying that the payback period for this investment is close to 4 years. But here, the major limitation of this is that we are considering 2,00000 rupees coming back to us after one year is equal to 2,00000, 4,00000 rupees coming back to us after 2 years is 4,00000 6,00000 coming back to us after 3 years is 6,00000 and 2,00000 coming back to us after 4 years is 2,00000 which is not the case.

But, when the discounted criteria were not there we will simply be making use of it even in our olden days our 4 fathers even the old business peoples when they were ask by anybody that if you make investment of this much of rupees or this much of amount in this project, you are going to get good returns. So, his question means normally was that in how many

years I am going to get my investment back, because we are more concerned first about the safety of our investment.

Second is the growth, growth is important second objective but, first is the safety if my investment is safe I can expect the growth also but, if the investment is not safe, if I am investing 10,00000 rupees and if that is not coming back to me, there is a question of the growth of them. So, first I am saying I want my investment back, later on for the subsequent number of years. That is the remaining life of the project whatever the returns I will get, that will give me the growth.

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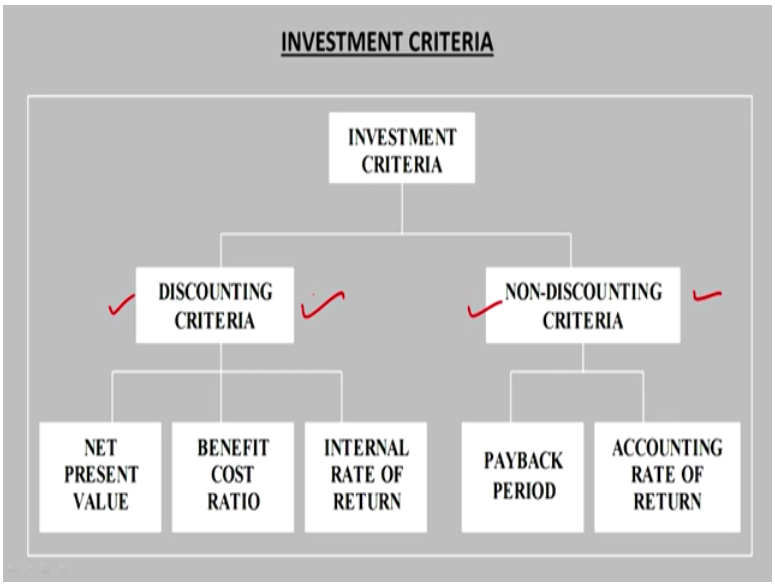

So, in this case that discounted, non-discounted criteria when the discounted criteria was not there it was only a non-discounted criteria, non-discounted criteria is much older as compare to the discounted criteria. So, first method was the payback period and second method is the accounting rate of return.

Under this accounting rate of return we try to find out the accounting profit, we try to find out the accounting profit by preparing the projected financial statements and then by preparing the projected income statements profit and loss account, we try to find out the profit before tax profit, after tax and comparing that profit with the investment we are making. We are try to find out the accounting rate of return.

And that to again number one, the limitation of the accounting rate of return is that, that is also non-discounted and second thing is that profit is basically the say that rate of return is basically the nominal rate of return not the real rate of return because, the profit reported by the profit and loss account is always nominal not real, so these are the two limitations that

number one is, payback period is possible to be calculated but that is non-discounted and second thing is accounting rate of return also it is non-discounted and that is basically the nominal profit, based upon the nominal profit, not on the real profit.

But, today also even sometimes just to have a rough estimate rough idea about any investment or any investment opportunity we always make use of the non-discounted criteria in which the payback period is very very common and very very popular.

Now, after that you talk about is the discounted criteria which is commonly in use because now we have known the concept of the time value of money, we have identified the concept of the time value of money, and in this concept of the time value of money, in the discounted criteria.

We have the 3 methods or 3 ways to say evaluate or say (())(25:04) the any investment or the efficacy of any investment and these 3 are, net present value and PB method we call it as benefit cost ratio or profitability index. The second name of this method is the profitability index and the third one is the internal rate of return IRR so these are the 3 important methods under the discounting criteria and here, when we use the discounted criteria we make use of the time value of money.

We always say, that the cash outflow in the current period time fine equal to 100 percent but, the inflows coming over the number of subsequent years in future they have to be discounted to make it equal to the value of money as per todays value. So, the we discount those cash flows and then we calculate the NPV we calculate the benefit cost ratio and then, we calculate the internal rate of return.

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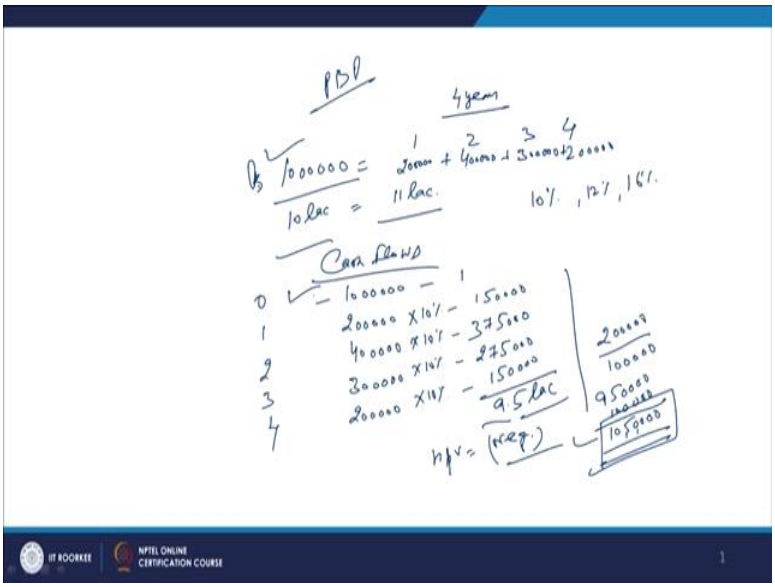

Here now, when I was talking to you is about the payback period, in the payback period that the limitation of the payback period was that it is basically non-discounted, it is basically non-discounted. So, for example, we have the say cash flows here, and we are saying to want to calculate the payback period.

So, I am saying that the cash flows are like this that in the current year this is how money, 10,00000 rupees minus figure means it is the cash outflow and the inflows are coming up is the 2, 00000 rupees in this and then it is 4, 00000 rupees in the second year and then it is 3,00000 rupees in the next year and then is the 2, 00000 rupees here.

So, it means I have got these inflows so, this is the year 1, this is the year 0, you can call it as this is year and if you say this, these years if you take, here year 0 this is the year 1, this is year 2, this is year 3, this is year 4.

So, this is equal to 1, and then what we would doing, we will be discounting it against the discount factor because, you can apply the discount factor depending upon the discount rate, that discount rate may be 10 percent or it may be 12 percent or it may be say 16 percent, whatever it is, the discount rate these cash flows can be discounted. So, if you discounted against 10 percent so you can find out that discounted cash flows also and then the discounted value is can be taken.

For example, I am not taking the original values but for example, this 2, 00000 after discounting at the rate of 10 percent by calculating the discount factor it becomes, 150000 so it means and in this amount becomes here, if you discount, means I am not using the real factors but, we are assuming that because, when you discount it so, the this cash flow value

will come down and this amount becomes as 175000 rupees sorry, this amount becomes 4, so this becomes 375000 rupees when you do, this you discount it this becomes is, that is 275000 rupees and this amount becomes 150000 rupees.

So, you can total it up so, you will find it out this amount will become how much, this will become is a 9.5, 00000 total is 9.5,00000 this will be total will be the 3,00000 but 3 and 3 is 6 and then it is 8 and so, one 9.5 ,00000. So, you can say that the payback period under the non-discounted criteria which was the approximately 4 years for making this investment of 10,00000 rupees.

If you discount it, and the discounted value for example, some of is a 9.5 it means and if after this there is no inflow available so, what is happening, then the NPV of this project will be something you call it as if you calculate the NPV, NPV of the project will be becoming here, as the negative value.

So, we will not be going for this investment but, for example in the fifth year also some cash flow is available and that cash flow is see, for example 2, 00000 rupees and if you discount it, this amount becomes again, say after discounting it becomes 1 ,00000 rupees it remains after 5 years.

If you are discounting it for 5 years then the rate of 10 percent, this amount becomes. So, you will be adding 950000 and then 1,00000 here so this amount becomes 10 and 50000 rupees and this 10 and 50000 rupees amount is now the amount to be considered, which is the discounted value of the cash flows available from this project.

So, what will happen, now you will compare this 10,50000 with the 10 ,00000 rupees so cash outflow is 10 ,00000 then cash inflows discounted value is 10,50000 but that to at the end of the fifth year. So, now what will happen, if you take the discounted value then the payback period is 5 years approximately.

But, if you take the non-discounted value then the payback period is 4 years so, the limitation of the payback period method which was earlier there, that it takes into account the non-discounted say cash flows has been done away and we are using even today also.

Many of firms practically also, many a firms they use this payback period method and the limitation of non-discounting has been done away and now we discount the cash flows which are expected to be there. We discount it against certain discount factor and try to find out what is the discounted some of value of this inflows and try to find out that say, what is the

total value of the inflows that is the discounted value of the inflows and what is the outflow. So, outflow can be compared with the discounted value of the inflows and then you can calculate the discounted payback period.

So, limitation of the payback period which was earlier there, has been done away now, and now we are not calculating the simple payback period but the discounted payback period. So, some idea I gave you about the payback period and the accounting rate of return but, more I will be discussing with some examples later on. First let us talk about the discounted criteria because, this criteria is a practically more in use these days.

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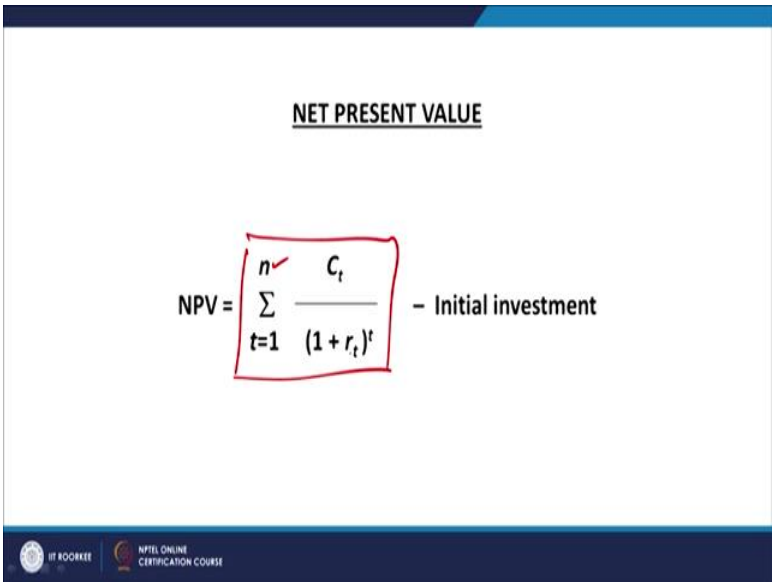

So, in this criteria first one is the NPV criteria Net Present Value criteria. This is the first one, and if talk about this if you look at this model of the net present value you will find something what we have already discussed under the time value of money. Under the time value of money that I discussed the something with you that is the discounting of the future cash flows.

Discounting of the we discussed different things under the time value of money one thing we discussed was the discounting of the future cash flows in that we discussed the discounting of the uneven cash flows then we discussed the problem of the discounting of the NOTs the cash flows which are in the NOTs. So, this model we have already discussed in the time value of money and same model now we are going to make use here, for calculation of the NPV because basically what is happening here.

This model if you look at it at, that Ct is the cash flow cash inflow available in the year t and r is basically the r is the discount rate to be use for discounting those cash flows, n is the

number of years for which the cash flows are expected. So, summing up those number of years cash flows which is Ct and discounting it against some given rate of interest which is r in this case power by t number of years.

So, it means we can easily find out the present value of that all those cash flows whatever the cash flows are going to be there with the business, there is a cash present value can be found out with this particular part which is in the red can be found out. And from that present value if you subtract the initial investment then we are means left with something and that is called as that value that is the total discounted cash flows sum of the discounted cash flows minus initial investment becomes the, the figure is called as the Net Present Value, that figure is called as the Net Present Value.

And now, here when you talk about this r discount rate now what should be this discount rate at what rate this cash flow have to be discounted. So, this discount rate has to be the cost of capital. It should be based upon it should be linked to the cost of capital and we should try to find out that, what is the cost of capital, when I am again going to repeat when you calculate the cost of capital, it is not basically the rate of return you expect but, it is something more than that.

Means it is not the opportunity cost of capital, that I make investment in the business, how much return I am going to get, if I making investment in the say bank or any financial institution how much return I am going to get, in the business, if you are going to get the returns or expect the returns that should be more than the bank returns because, you are going to take here the huge risk and premium for the risk is the one important thing.

So, we discount it against the cost of capital, largely it is the weighted average of cost of capital WACC we will discuss later on. Now, we will talk about the concept of the cost of capital. So, this r is basically the cost of capital and against that cost of capital we will have to discount those cash flows for the given number of years.

And those given number of years are largely the force even life of the project. The cash flows for the force you have a life of the project. So, we will calculate all those cash flows we know the cash outflow we will calculate the cash inflows, as cash outflows value again I am repeating is equal to 100 percent and the cash inflow value has to be discounted for an over the number of years and both have to be compared.

So, it means the presented value of the cash inflows minus initial investment that is the cash outflow and the difference of these two is called as the NPV Net Present Value. Now, if you are calculating the net present value, that if means we have to then apply certain criteria as certain rule here, for taking the decision but before that, let us discuss here, that say what is the decision criteria here and how we take the decision here for.

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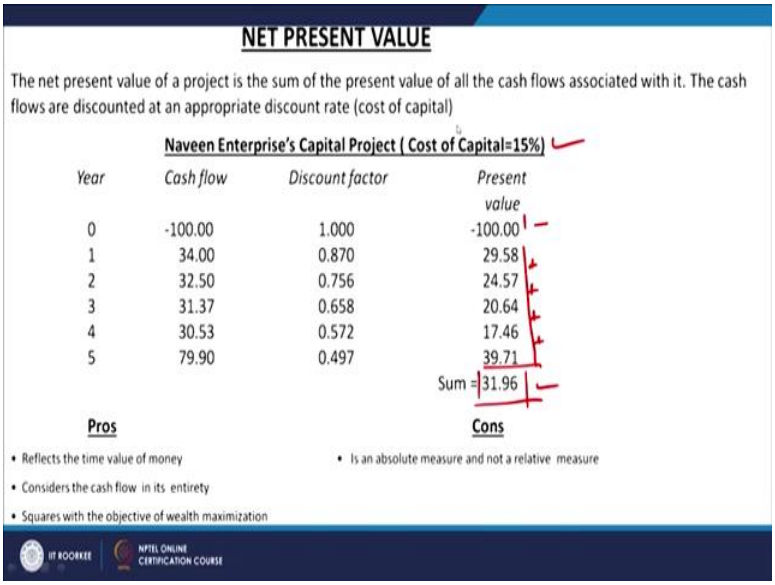

Deciding the say means applying this criteria of the net present value, look at here that for example, we are given the information about something and that is called as some information some details then the net present value of a project means first is the definition of it, the net present value of the project is, sum of the present value is of all the cash flows associated with it.

Sum of the present values of all the cash flows associated with it whether it is a cash outflow or whether it is a cash inflow it is the sum of the present values, the cash flows are discounted at an appropriate discount rate and that is at the cost of capital, appropriate discount rate and that is at the cost of capital so in this case for example, we have taken now the hypothetical figures here.

And for taking these figures we are taking in the number of years is 5, 0 to 5 and cash flows are worked out here, discount factor is worked out here and then is the present value calculated here this discount factor is taken directly from the table that is a same, you can call it as a present value, interest factor table is there, PVIF that is there, that is at the end of every book, so from that table we have taken that factor at the rate of 15 percent cost of capital we have selected here is, 15 percent.

So, all these cash flows have been discounted against 15 percent and we have got these factors and then the discounted values are calculated here, these are called as the present values and finally we have calculated this sum, and this sum is basically what is, 31.96 so what how we have calculated this.

This is one part this is another part, this part is 100 and minus sum total of these. So, it means this plus this, then plus this then, plus this then, plus this we have taken so sum something has come that may be means we total it up, this will work out as 100, 31.986 and the initial investment is 100, so it means the net result here is NPV of this project is 31.96.

So, what is the now decision criteria how we apply these criteria net present value that what value we have to look for, while applying these criteria so the simple value is you have to means simple mode of decision making you have to apply is.

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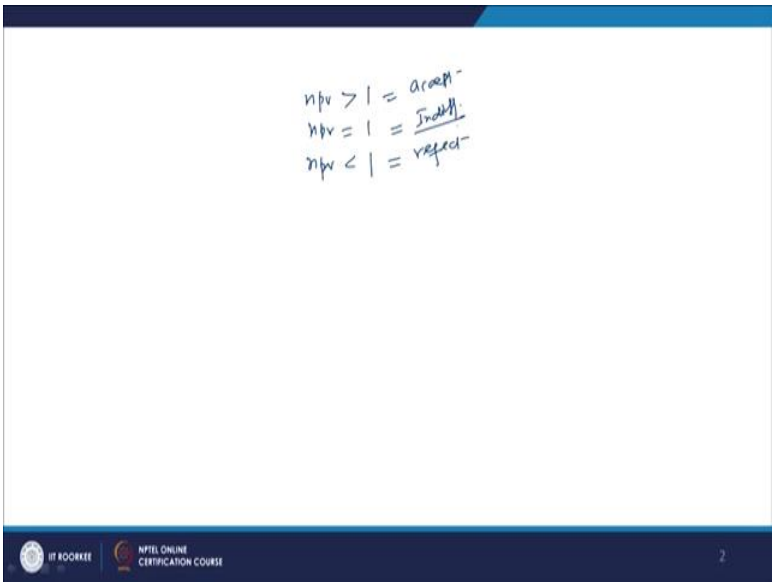

That, if you are talking about the NPV we have talk in terms of that the means the fundamental rule of applying this or accepting or the rejecting the project, under NPV criteria. So, if NPV is a we can call it as NPV is greater than 1, equal to 1, and it can be NPV can be less than 1.

These can be 3 situations NPV is positive, which is greater than 1, and NPV is equal to 1, and NPV is less than 1. So it means NPV is more than 1, means the present value of the cash inflows is more than thus. Sum total present value of all the cash inflows is equal to the present value of the cash outflows that is why the, Net Present Value is positive, and we have going to accept the project.

In this case we will have to accept the project, that yes, the project is going to give us the positive NPV. So, we can accept the project, so we can go ahead with this, and when the NPV is less than 1. Negative you can call it as, we have to simply take a decision and we have to go for then reject the project and in this case, if you talk about the NPV is equal to 1, we are indifferent, we are indifferent.

Whether to go for it, or whether not to go for it at least it is assured that we are going to get back the investment whatever the investment is made here, we are going to get this investment back, so NPV of the project is just equal to the cash means the discounted value of the cash outflow is equal to the cash inflows and we may go for this investment, we may not go for this investment.

But, currently the result is we are going to recover our investment as per is the future surplus is concern that will depend upon the future codes of action or after recovering the initial investment. So, you can apply this if the NPV is positive, more than 1 you go for acceptance of the project, less than 1, reject the project and if it is equal to 1, yes we are indifferent depends upon the circumstances, whether to go for making this investment or not making this investment.

So, this is how this entire process of the say NPV has been explained here with the help of this example later on we will do some more problems also, but I am just first of all, of the opinion that conceptually this set all the criteria must be discussed with you, must be means communicated to you and then we can discuss some more problems relating to the NPV or may be the other say a discounting criteria, so that you are means clear about it.

So, with this discussion I will stop here by discussing the first criteria that is the net present value and still, some more discussion about NPV and some another aspect of NPV are there. So, that remaining discussion with regard to this first criteria, discounted criteria of the capital budgeting, I will have with you in the next class till then, till then thank you very much.