

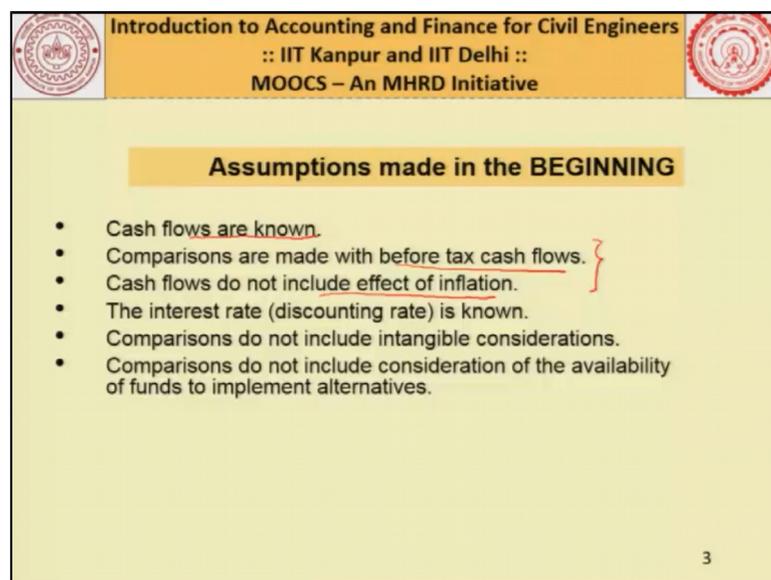
Introduction to Accounting and Finance for Civil Engineers
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Module No. #03
Lecture No. #14
Effect of Depreciation on Cash Flows

Good morning, Namaskar, and welcome to this course, once again. In the last lecture, if you remember, you were taught about, different forms of depreciation. You understood, what is Straight Line Method of depreciation, what is Sum of Years Digit Method of depreciation, and some other methods of depreciation, as well.

In this lecture, we are going to see, what are the impact of, these depreciation, on our evaluation of alternatives. If you remember, in one of the previous lectures, I had given you a set of assumptions. I will just quickly tell you, the set of assumptions, that we had assumed so far, for all our analysis purpose.

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Assumptions made in the BEGINNING

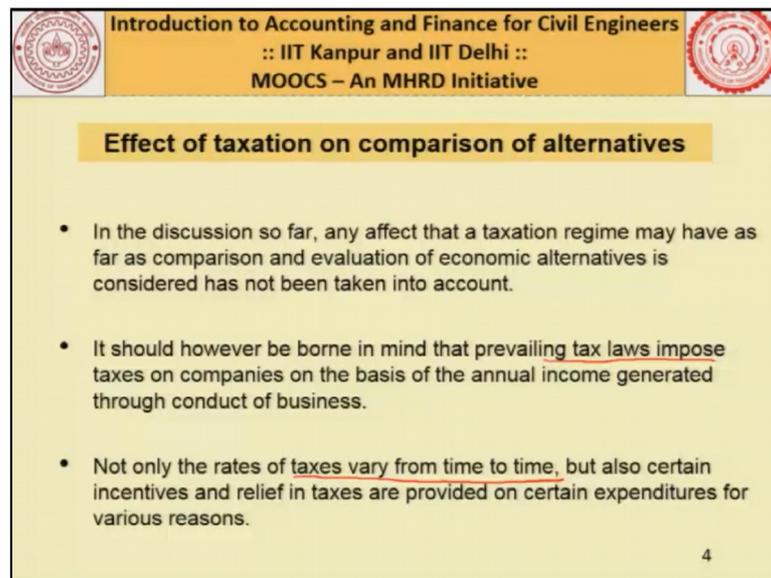
- Cash flows are known.
- Comparisons are made with before tax cash flows. }
- Cash flows do not include effect of inflation. }
- The interest rate (discounting rate) is known.
- Comparisons do not include intangible considerations.
- Comparisons do not include consideration of the availability of funds to implement alternatives.

3

If you remember, the first assumption that we had made was, that the cash flows are known. In fact, in some later lectures, we varied this assumption. We made to, change these variables. And then, we understood, what is the impact on the, evaluation of alternatives. Now, one of the other assumptions was, that the comparisons are made with, before tax cash flows. So, we assumed that, all our incomes are free from taxes.

But, you know that, that is not the case. In real life situation, you have to pay taxes, whether it is your personal income, or whether it is your corporate income. Of course, the tax rates are different. We also assume that, cash flows do not include, effect of inflation. We will see, what inflation means. And, we will also see, how to take care of inflation, in our evaluation of alternatives. So, basically, in this class, we are going to see, the impact of taxes, as well as inflation, on our evaluation of alternatives.

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The slide is titled "Introduction to Accounting and Finance for Civil Engineers :: IIT Kanpur and IIT Delhi :: MOOCS – An MHRD Initiative". The main heading is "Effect of taxation on comparison of alternatives". It contains three bullet points:

- In the discussion so far, any affect that a taxation regime may have as far as comparison and evaluation of economic alternatives is considered has not been taken into account.
- It should however be borne in mind that prevailing tax laws impose taxes on companies on the basis of the annual income generated through conduct of business.
- Not only the rates of taxes vary from time to time, but also certain incentives and relief in taxes are provided on certain expenditures for various reasons.

4

So, what we do is, as I told you, in any Government systems, any income that you make, they are liable for, different kinds of taxation. State Government levies, separate tax. The Central Government levies, separate tax. Corporates are levied, taxes at a different slab. Personal incomes are taxed, at a different rate. Now, so depending on the tax regime, that is followed in a particular country, you will find that, when we compare various alternatives, it clearly impacts our decision.

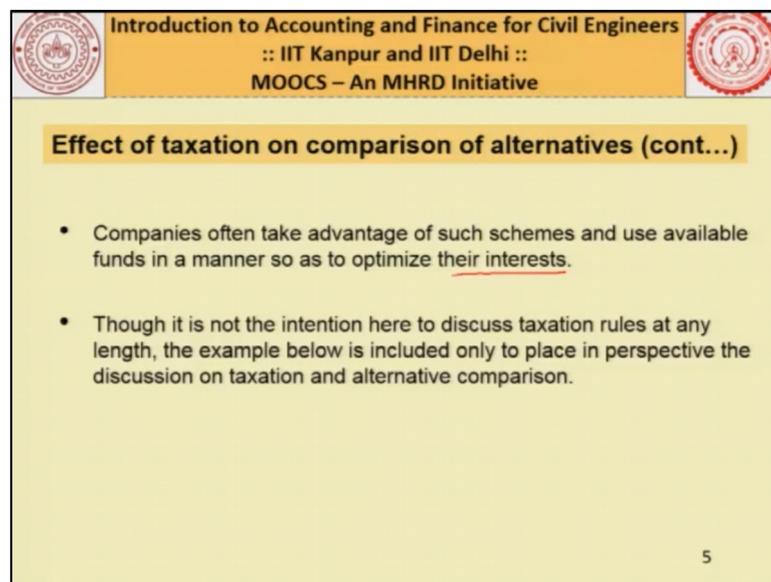
So, in this class, we are going to see, how to take care of taxes. And, you will also find that, when you understood, the method of depreciation calculation, we will see, how depending on the methods of depreciation, our alternative changes, as far as, evaluation of a Post-tax cash flows are concerned. You also understand that, these tax rates vary, from time to time.

And, in addition to these changes, sometimes, some Governments, they also provide certain incentives. For example, Government would like you to, invest in some kinds of investment, which will bring upliftment to the poor, it will give impetus to the economy, and so on. So,

there are certain rebates, that the Government provides, bid in the form of your personal income, as well as, in the form of corporate incomes.

So, if you remember, let us say, if you are familiar with your incomes, you will find that, whenever you are investing in, let us say, scheme such as, LIC or NSE, Government gives you certain tax benefits. Likewise, in the case of corporate incomes, if you are spending on, let us say, training your employees, Government provide certain incentives. So, we say that, these expenses are admissible for, tax rebates. So, we will see, how this admissible expenses play a role, in our evaluation of alternatives.

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The slide is titled "Introduction to Accounting and Finance for Civil Engineers :: IIT Kanpur and IIT Delhi :: MOOCS – An MHRD Initiative". The main content is under the heading "Effect of taxation on comparison of alternatives (cont...)" and contains two bullet points:

- Companies often take advantage of such schemes and use available funds in a manner so as to optimize their interests.
- Though it is not the intention here to discuss taxation rules at any length, the example below is included only to place in perspective the discussion on taxation and alternative comparison.

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Obviously, companies will try to go for, taking benefits, as far as, these incentives are concerned, and so that they can optimise their interests. Now, we are not going to discuss, the various taxes and rules, in this lecture. But, I am going to give you, is a broad idea like, how Post-tax cash flow scenario, changes or may change, your decisions.

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Illustrative example – The effect of depreciation on selection of alternative

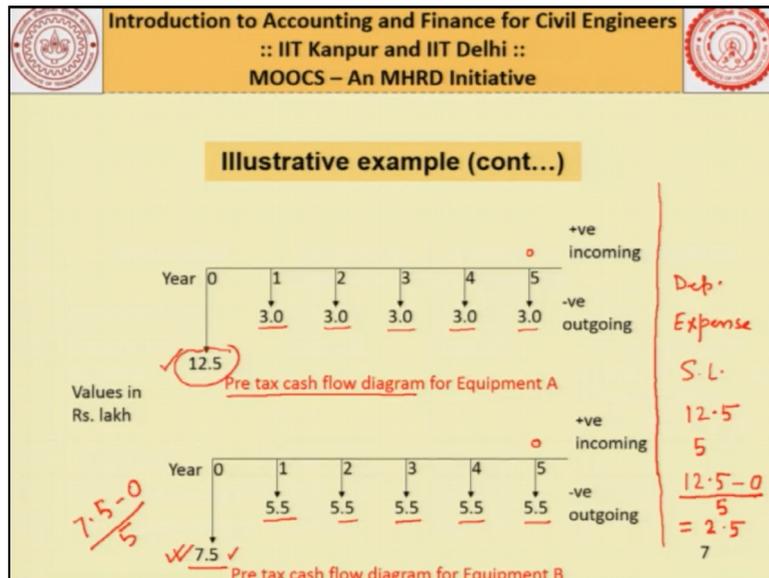
Description	Equipment A	Equipment B
Initial cost	Rs. <u>12.5</u> lakh	Rs. <u>7.5</u> lakh
Operating cost	Rs. 3 lakh ✓	Rs. 5.5 lakh ✓
Economic life	5 years ✓	5 years ✓
Corporate tax	50% }	50% }
Salvage value	0 ✓	0 ✓

6

So, we try to illustrate this, with the help of one small example. So, let us say, as before, we have got two alternatives, before us. We have Equipment-A, and we have Equipment-B. Now, the cost of Equipment-A is, 12.5 Lakhs. Now, the Equipment-B, I am able to get it for, 7.5 Lakhs. Operating cost for Equipment-A is, Rupees 3 Lakhs, while it is, 5.5 Lakhs for Equipment-B. The life for both the equipment's are, 5 years.

Now, the corporate tax, that is, whatever income you are generating, through your business, they are taxed at, 50% flat rate. Salvage value, in both the cases are, zero. Now, so far, when we have analysed, these two alternatives, we never considered, taxes. Now, in this lecture, we will see, how taxes play a role, and how some of the admissible expenses, also play a role. So, as before, we first draw the cash flow diagrams, for Equipment-A, as well as, for Equipment-B.

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Now, they are given, in this slide. So as is given to you, Equipment-A is costing you, 12.5 Lakhs. So, it is here, at time T is equal to 0. And, every year, you are spending 3 Lakhs, as part of operation and maintenance expenses. You can see, operating cost is, Rupees 3 Lakhs. So, this 3 Lakhs, every year you are spending, for next 5 years. Salvage value is, 0 here. So it is, 0 here. So now, this cash flow diagram, we are calling it as, Pre-tax cash flow diagram.

This is not, new to you. You have already been exposed to drawing, Pre-tax cash flow diagrams. Because, in all those problems, we never considered the taxes. Now, as far as, Equipment-B is concerned, if you remember, the problem, it was given that, at time T is equal to 0. Your initial cost is, 7.5 Lakhs. And, every year, you are spending, 5.5 Lakhs. So, whether its year 1 end, year 2 end, year 3 end, year 4 end, year 5 end, we are spending 5.5 Lakhs. And, here also, you will find, the salvage value is zero.

So far, nothing new. We have been, doing this. We have been drawing the, Pre-tax cash flow diagram, for different alternatives. Now, what I do is, you understand the concept of depreciation, now. Now, one point, which needs emphasis, when we are discussing this is, depreciation is considered as an expense, only for taxation purpose. So, when you say, I have incurred this much depreciation expense, it is not that, that money has gone out of your pocket.

It is only on paper, that you are showing that, look, I purchase this equipment, 5 years back, or 4 years back, and this is my depreciation for this year, so that, I am claiming it for my tax benefit. As I told you, in the beginning of this lecture, there are certain expenses, which are

admissible for tax rebates. Now, depreciation is also one such expense, where Government provides you benefit. So, what you have to do is, whatever is your income, we are deducting this depreciation also, as expense, and then, we are calculating the net income.

And, only on that net income, Government is deducting the taxes. So, let us try to calculate, the depreciation first. So, you have purchased this equipment for, 12.5 Lakhs. Now, let us assume, we are using, a Straight Line Method of depreciation. So, initial cost is, 12.5 Lakhs. Life is, 5 years. You know, in Straight Line Method, the rate of depreciation is same, throughout the life of the equipment, or throughout the life of the asset.

So, I can calculate, the depreciation every year, like this. It would be, $12.5 - 0$. Because, there is zero salvage value, divided by 5. So, I can calculate, 2.5 Lakh depreciation, every year, for next 5 years. Same manner, when I have to calculate, the depreciation for the 7.5 Lakhs, it would be, $7.5 - 0$, divided by 5. So, that is going to be the depreciation, for next 5 years. Now, we will see, how to take care of this depreciation, on an annual basis.

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Illustrative example (cont...)				
S. No.	Description	Amount for Equipment A	Amount for Equipment B	Explanation
(1)	Operating cost ✓	300,000 ✓	550,000 ✓	Given
(2)	Depreciation using straight-line method ✓ <i>Expense</i>	250,000 ✓	150,000 ✓	For Equipment A $(12,50,000 - 0) \div 5$ For Equipment B $(750,000 - 0) \div 5$
(3)	Total taxable amount	550,000 ✓	700,000 ✓	(1) + (2)
(4)	Corporate tax @50%	275,000 ✓	350,000 ✓	(3) X (0.5)
(5)	Net cost per annum	25,000 ✓	200,000 ✓	(1) - (4)

So, let us see this. What you find here is that, operating cost every year is, 3 Lakhs for Equipment-A. I have already calculated the depreciation to be, 2.5 Lakh, which is 250,000, for Equipment-A. So, the total taxable amount becomes, $300,000 + 250,000$. So, this is basically your total expense, you can say. Instead of total taxable amount, we can, as well say this as, total expense that we are making, in Option-A is, 550,000.

Now, taxes are, at the rate of 50%. So, it may look slightly odd to you, at this point of time. But, later, it will become more clear to you. We are saying that, this is my expense, but still I am charging the tax. But remember, this is the tax rebate. So, this much of rebate, you are going to get, because of your expense, that you have made, both on your operating cost. Here, we are assuming that, operating cost is also, exempted from tax.

And, depreciation anyway, most of the Governments, they provide you incentive. So, this is considered as, part of admissible expenses. So, what we are in a fact getting is, a rebate of 275,000. So, it is not the tax that we are paying, but the Government is giving me a benefit of 275,000, because I spent 550,000 on my expense, both my operating expense, as well as the depreciation expense. Now, sometimes, not all operating expenses, may be admissible for taxes.

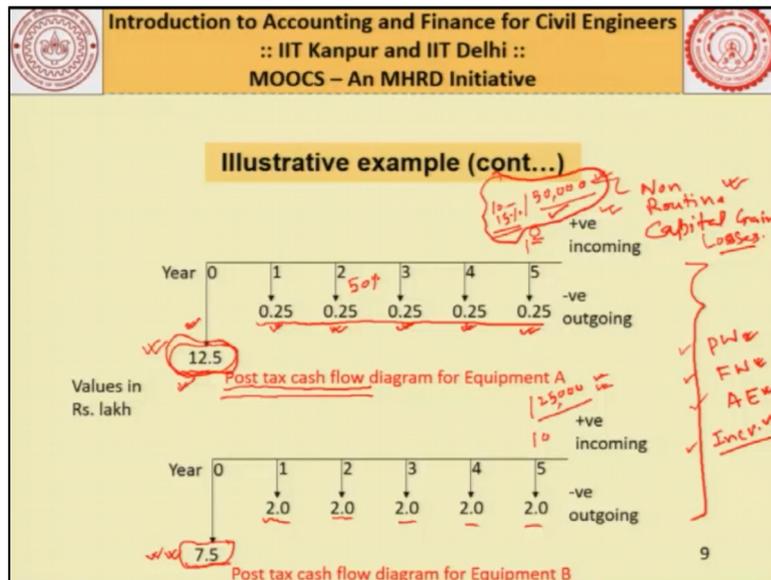
But, for simplifying in this particular problem, I am assuming that, all my operating expenses, are liable for tax rebate. There are certain specific kind of expenses, which are admissible for tax rebates. These are for example, in case of a corporate, if you are providing training to your staff. So, let us say, you have a short term training program, or you have a long term training program, you are sponsoring them for some university courses.

So, these type of expenses, Government gives them benefit. So, here in this particular problem, I am assuming that, operating cost is all, admissible for tax rebates. So, this 300,000 + this 250,000, total is 550,000. So, this whole amount, we are getting a rebate. And, the rebate will be, at the rate of 50%. So, 275,000. So, what is the net expense, that we are making. Now, here is the catch. You just look, very carefully, this particular slide. As I told you, depreciation is only a notional expense.

So, this money, has not gone out of your pocket. So, in a fact, what we are getting is, my net operating cost is, $300 - 275$, which is 25,000. So, you are getting, a net expense of 25,000, per annum only, as against 300,000, which you are getting. This is because, you purchased an equipment, worth 12.5 Lakhs, at time T is equal to 0. And, you are getting, rebate on depreciation, every year. And, that is coming to be about, 2,50,000. So, your net cost per annum is coming to be, $300,000 - 275,000$.

Right now, this may not be, very clear to you. But, when I do one example, in which I take the case of income also, it will be more clear. So, just bear with me, for some time, and it will be more clear to you. In the same manner, when it comes to Equipment-B, the cost is 550,000, the depreciation expense is 150,000. So, total is 700,000. So, the tax incentive, that you would get, on this 700,000 is, 350,000. So, the net cost, that we are incurring every year, for this particular equipment is, 200,000.

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So, the same information, I can put it on a, cash flow diagram. And now, this cash flow diagram, I am calling it as, Post-tax cash flow diagram. So now, all my analysis, I will be doing it on my, Post-tax cash flow diagram. Remember, to start with, I considered that, there are no taxes. And then, all my decisions were made on, Pre-tax cash flow diagram. Whereas, if you see here, I am doing everything on, Post-tax cash flow diagram.

Now here, in order to evaluate, these two alternatives, I can use, either Present Worth Method, or I can use, Future Worth Method, or Annual Cost Equivalent Method, or for that matter, Incremental Analysis. Any one method, I can use. And, you will find that, my answers are going to be the same. So, we will see this, for this particular example. So, you can see, 12.5 is, as it is. Likewise, there is no salvage value.

So, this is also, as it is. The only thing, that is varying is, the annual net expense, in the Post-tax cash flow. So, in the Pre-tax cash flow, if you remember, this value was 3 Lakhs, this value was 3 Lakhs, all of them were 3 Lakhs. But now, because the Government has given

me an incentive, on my depreciation expense, as well as, on my operating expense, I am getting a reduced net cost every year, which is equal to 25,000, or 0.25 Lakh.

Same manner, when I do it for Equipment-B, the 7.5 remains as it is. When it comes to annual expenses, 2, 2, 2 here, 2 here, and 2 here. So, all the 5 years, the net expense is coming to be, 2 Lakh. Now, some of you may have a doubt, why we are not changing this value, in the Post-tax scenario. Neither, I have changed it here, nor I have changed it here.

This is because, likewise, even if I would have some salvage value, suppose my salvage value would have been, let us say, 50,000 a year. Just a hypothetical situation. And, in this case, let us say, it would have been, 25,000. Just to explain you the point. So, even though, I have an income here of 50,000, and here 25,000, in the Post-tax cash flow diagram, when I draw the diagram, I will not make any changes here.

The reason is, the tax, which the Government levies, on such incomes, these are basically non-routine incomes. Because, at this point of time, you sold off your equipment. That is not your business. Your business is to earn, out of production, through this machine. That is your regular business. So, your regular income, through the business, which you are doing, is charged at a different tax rate.

And, your non-routine income, they are charged at, slightly different rate. Normally, the tax rates, the difference would be, very large. So, if in this case, let us say, it is 50%. Here, it could be, may be of the order of, 10 to 15%. The exact rate, you will have to change, you will have to check, from the tax laws. But, the difference could be, very substantial. Likewise, here also, we are not considering this because, you are not into the business of purchase, and sale of equipment.

So, this and this, they are charged at, a different tax rate, whereas your routine operations are charged at, a different tax rate. So, what we do is, for our simplification of calculation, we simply neglect them. So, we do not consider, taxes here, as well as, here. So, only for the routine, or the regular business income, we are considering the taxes. So, even in the Post-tax cash flow diagram, you will see here, I have not make changes here, I have not make changes here. Sometimes, they are also referred to it, we also refer to them as, Capital Gains or Losses.

So, you will find that, your Capital Gain tax, is different than, your regular taxes. And, that is the reason, still the difference is huge, we normally, neglect them. Now, as before, as I told you, you can use either the Present Worth Method of comparison, or the Future Worth Method of comparison, or Annual Cost Equivalent Method of comparison. You can, even use the Incremental Analysis. We will illustrate that, for this example, as well.

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Illustrative example (cont...)

Evaluation using Present worth method:

- Net Present Worth of Equipment A
 - = - 12.5 - 0.25(P/A, 10%, 5)
 - = - 12.5 - 0.25 x 3.7908 = - **13.45 Lakhs** $\overbrace{12.5}^{t=0}$ $\underbrace{0.25 \dots 0.25}_{t=1 \dots 5}$ 13.45 (A)
- Net Present Worth of Equipment B
 - = - 7.5 - 2(P/A, 10%, 5)
 - = - 7.5 - 2 x 3.7908 = - **15.08 Lakhs** $\overbrace{7.5}^{t=0}$ $\underbrace{2 \dots 2}_{t=1 \dots 5}$ 15.08 (B)
- Hence, **choose equipment A** as its net present worth is more (in other words it costs less). ✓

10

So, let us try to do this, using Present Worth Method. So, you have 12.5 here. And then, you have every year, 0.25, for 5 years. And, there is no salvage value. So, how I can calculate the net present worth? If you are writing this as negative, so it would be, - 12.5. This is because, this is, at time T is equal to 0 itself. - 0.25, which is the operating expense, Post-tax, P given A. Why we are doing this? Because, we are interested in finding P, we are given A, interest rate is 10%, and life is 5 years.

So, this interest factor, if you look some table, you will get a value of, 3.7908. So, when you calculate this, you are getting, - 13.45. When you say minus, it means, this is cost, so 13.45 Lakh is your cost implication Post-tax, if you are going in for, Option-A. In the same manner, now in this case for Equipment-B, you have 7.5 Lakhs here, and then every year, it is 2 for next 5 years, and no salvage value.

So, you can do it, like this. Here again, all of them are in negative. So, this is - 7.5, - 2 into 3.7908, which is - 15.08 Lakhs. That means, the cost for going in, Option-B is, 15.08 Lakhs.

So, obviously, you find that, the cost implication for Equipment-B, is more than A. So, you find that, it is wise to go for, Equipment-A.

Now, sometimes, it may so happen that, Pre-tax cash flow, you get some other answer, and when you do Post-tax cash flow analysis, you may get some other answer. In real life situation, always it is advisable to go for, Post-tax cash flow diagram. And, let our decision be based on, Post-tax cash flow diagram only. Now, this was as far as, illustration of Present Worth Method was concerned. Now, we will do the, annual work method, for the same problem.

(Refer Slide Time: 20:12)

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Illustrative example (cont...)

Evaluation using Annual worth method:

- Annual worth of equipment A
 $= -12.5 \times (A/P, 10\%, 5) - 0.25$
 $= -12.5 \times (0.2638) - 0.25 = -3.55 \text{ Lakhs}$
- Annual worth of equipment B
 $= -7.5 \times (A/P, 10\%, 5) - 2$
 $= -7.5 \times (0.2638) - 2 = -3.98 \text{ Lakhs}$
- Hence, **choose equipment A** as its cost is less.

11

Here, what we need to do? We have the cash flow diagram, 12.5, and then, these are all, 0.25 every year, for next 5 years. So, this 12.5, if I convert it into annualized value, which is converted like this, - 12.5, A given P, for an interest rate of 10%, for a time period of 5 years. And, you add 0.25. So, you find, every year, your cost implications are, 3.55 Lakhs. So, if you are buying Equipment-A, Post-tax, your liability is, 3.55 Lakhs, every year.

On the other hand, if you do the similar analysis for, Equipment-B, wherein, you were investing 7.5 at the beginning, that is at time T is equal to 0. And then, every year, 2 Lakh. So, equivalent cost for 7.5 is, 7.5 in to 0.2638, you add 2 here, we are getting 3.98 Lakhs. So, you find that, Equipment-A, using this method also, is going to be the best one. Because, the cost implication is only 3.55 Lakhs here, as against cost implication of 3.98 Lakh, for Option-B.

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Illustrative example (cont...)

Evaluation using Incremental rate of return method:

- Preferring equipment A over B: (considering post tax cash flow diagrams of equipment A and B)

POST TAX CASH FLOW INCREMENTAL

12

Now, we can use Incremental Rate of Return Method also, for this. Now, as you know, for finding the result, using incremental analysis, we have to do slight manipulations. Manipulations would be, like this. So, I draw the both cash flow diagram, before you. 12.5 here, 0.25 here, 0.25, and so on, for next 5 years. This is year 1, 2, and so on. This is, time T is equal to 0. This is Equipment-A. Now, for B, this is 7.5, and this is 2, 2, and so on, for next 5 years.

So, the manipulation, what I was telling you about, is like this. So, what is the extra, I have invested in A over B? Or rather, what additional investment, you require in A over and above B? So here, you are investing 12.5 Lakhs, and here, you have to invest only 7.5 Lakhs. So, how much extra we are investing, it is $12.5 - 7.5$, which is 5. So, if I am going in for Option-A, I have to invest, 5 Lakh extra here. Now, what is the benefit, I am deriving out of this extra investment.

So, extra investment will be, in the form of a saving, because here, you have to invest 2 Lakh, every year. Now, in this option, you are investing, only 0.25. So, the difference is, your saving. So, every year, you are going to save, $2 - 0.25$, which is 1.7 Lakh, for the next 5 years. So, you can see, this is year 1, year 2, 3, 4 and 5, there is no salvage value. So, this is your incremental cash flow diagram. Remember, this is Post-tax cash flow diagram. So, you have been drawing, Pre-tax cash flow diagram, on incremental basis also.

But remember, this is Post-tax cash flow diagram, on incremental basis. So, what I have done. I have seen, how much extra, I am investing, over and above B. So, I know, I have

invested, 5 Lakh extra. And, this is giving me a, saving of 1.75 Lakhs, every year, for next 5 years. Now, I can find out, the exact rate of return, for this. And, I just compare that with, minimum attractive rate of return of 10%. So, let me just try to find out, what is the exact rate of return, that I am getting it. So, I will start doing, trial and error.

(Refer Slide Time: 24:09)

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Illustrative example (cont...)

- Assume $i = 10\%$ ✓
 N.P.W. = $-5 + 1.75 \times (P/A, 10\%, 5)$
 = $-5 + 1.75 \times (3.7908)$
 (+) = 1.633 Lakhs
- Assume $i = 20\%$ ✓
 N.P.W. = $-5 + 1.75 \times (P/A, 20\%, 5)$
 = $-5 + 1.75 \times (2.9906)$
 (+) = 0.233 Lakh

13

So, I assume, let us say, I is equal to 10%. So, when you have 5 years, and when you have 1.75, I am now ready to find the rate of return. Because, earlier I was not able to find the rate of return, because all my entries were only in the, negative side. But now, what you find, I have entries, both in minus, as well as in plus side. So now, I am in a position to find out, the rate of return.

So, what I will do, at I is equal to 10%, assumed value, my net present worth is going to be – 5, + 1.75, multiplied by P given A, 10% for 5 years. So, this is coming to be, 1.633 Lakhs. So, what I find here is that, net present worth is, positive. So, that means, my rate of return is, more than 10%. So, I further increase it.

And, let us say, my I value, for the next trial is 20%. So, what I do? I take, - 5 here again, + 1.75, and now my factor is corresponding to, P given A, for 20% interest rate, and for 5 years, this factor is now, 2.9906. Now, I am getting a value of, 0.233 Lakhs. This is still positive. What does this mean. That means, we still have a higher return, more than 20%.

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Illustrative example (cont...)

i = 20%, NPW = 0.233
i = 25%, NPW = -0.294

• Assume $i = 25\%$
N.P.W. = $-5 + 1.75 \times (P/A, 25\%, 5)$
= $-5 + 1.75 \times (2.68928)$
= -0.294 Lakh

• By interpolation $i = 22.2\%$ ✓

• Since this is more than MARR = 10%, hence it will be preferable to **choose equipment A.** ✓

• Thus, all the three methods gave same result that of **choosing equipment A.**

14

So, I will just go with, another value. Let us say, I is equal to 25%. Same way, here you have, if you remember, 5 here, and 1.75 every year, for 5 years. This 1, 2, 3, 4, 5. So, I will calculate, the net present worth, here again. So, this will be, $-5 + 1.75$, multiplied by P given A, for 25% interest, and for 5 years. Now, this value is 2.68928. And, you find that, now it is negative.

So, that means, at I is equal to 20%, I am getting a net present worth of, positive. And, that was equal to, how much? It was, 0.233 Lakhs, + 0.233, and corresponding to I is equal to 25%, my net present worth is -0.294 . So now, between these two, I can carry out interpolation, and I can find that, the value of I is, 22.2%. You can calculate this.

Now, since this is more than, minimum attractive rate of return of 10%, so you will find that, it is better to go for, Equipment-A. So, that means, higher investment in A is desirable. So, what you find here is that, all the three methods, have given you the same result. And, you are finding that, choosing Equipment-A, is the best choice. So, what we have done in this lecture is, I have told you, how to draw, the Post-tax cash flow diagram. Earlier, we were drawing, all Pre-tax cash flow diagram. Because, our assumption was that, there are no taxes. And, whatever income we are making, they are all free of taxes.

However, in real life situation, that is not the case. Now, Government gives us incentive, for investing in, let us say, buying of equipment, training our manpower. So, the expenses

towards this, are admissible for tax rebates. Right. That means, if I spend X unit, of course, there is certain ceiling, that you cannot spend more, than this particular value. So, within that permissible value, whatever expense you are incurring, Government gives you a benefit on that.

So, once you get that benefit, you can see, what is your Post-tax cash flow analysis. And then, using any one of the methods, that we learned earlier, whether it was Present Worth Method, Future Worth, or Annual Cost and Equivalent Method, or for that matter, Incremental Analysis, we can use, any one of these methods, to calculate the Net Present Worth, or Net Future Worth, or Rate of Return, and accordingly, we can take a decision.

So, we will stop, at this particular point. And, in the next lecture, when we re-assemble, we will discuss, the impact of different methods of depreciation. So, if I go with Straight Line Method of depreciation, how my decision changes. If I am going in for, Double Declining Balance Method, how my tax calculations change. So, this is what, we will be learning, in the next lecture. So, till then, thank you, and goodbye.