Financial Management for Managers
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Lecture-41
Risk Analysis in Capital Budgeting Part II

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Welcome all. So, in the previous class while initiating the discussion about the risk analysis in the Capital Budgeting Proposals. Now, we will be talking about the say the next part of the next important component of this particular topic the Risk Analysis is the Sources and Perspective of Risk, Sources and Perspective of Risk. That from where the risk comes? What causes a risk to the investment proposals, capital investment proposals?

And how to deal with that? Because if you know the source of the risk then we can probably try to find out the remedies also that, yes, if this kind of the risk comes I will deal with this risk this way and if that risk come comes I will deal with the risk that way. So, yes, first we have to try to find out the source of the risk and type of the risk and then once we know the source and the type of the risk, we can try to find out the remedies, ways and means also how to deal with that risk.

So, first try to let us try to know about the sources of the risk. And when you try to know about the sources of the risk these are the 5 important sources which cause the risk through the capital investment proposals like project specific risk are there, then competitive risk are there, then industry specific risk are there, market risk are there and then we have the International risk.

So, when you talk about the say project specific risk, project specific risk can be that when you talk about the project specific risk in that case what we have to do is that we have to say estimate the cash flows which I discussed in the previous class also. And main cause of the risk is the estimation of the cash flows, because there can be any kind of the error and if even a minor error is there in estimation of the cash flows that may cause a big loss, that may be cause big problem.

So, in the project specific risk major source of the risk is, major cause of the risk is the cash flow estimation. Because in both ways when you estimate the say investment we are going to make in any project, whatever the investment we are anticipating or we are planning that may be not up to the mark, so or cannot be means correctly anticipated or estimated. So, if the cash outflow increases or start increases increasing or it unendingly increases.

So it means we are planning for some amount and it is becoming 2 times or 3 times of the planned amount, so it means in that case the problem comes up and we will have to means deal with that problem. So, cash outflow estimation should be correctly done and if we know that how much is require for this investment or this proposal, how much investment is required then I think we should be prepared for making that much investment some difference of 5 - 10 percent even 15 percent can be taken care of.

But if it becomes 100 percent, 200 percent, 300 percent then I think it is going to be may be a profit making proposition can become the loss making proposition, so that is one. Second is the say as I told you in the previous class also estimation of the cash inflows, because they depend upon the market and when you go for conducting the market survey you ask the potential buyers or the people that if this product comes in the market if this services comes in the market would you like to buy it, yes, people may say, “Oh! Yes, if this survey comes I am looking for this I am waiting for it.”

But actually when that product comes in the market, when the services comes in the market some time people do not like the feature in terms of taste, in terms of quality, in terms of the size, in terms of the say price even sometimes and sometime people feel that yes this is not my requirement at the moment, I can postpone my need. So, simply at the time of conducting the survey people have the different opinion but at the time of actually buying the product when it is available or it is provided to them people have different opinion, so that affects the cash inflows.

Because sells are affecting the revenues and revenues are affecting the cash inflows, because ultimately, the source of cash inflows is the sells and sells depend upon the acceptability or non-acceptability of the product by the people or non-acceptability of the service by the people. So, major source of the risk which is called as the project specific risk is because of the error in estimation of the cash flows. Then is the competitive risk, then is the competitive risk, competitive risk is because of unanticipated emergence of the competitors in the market.

Or sometime unanticipated actions of the competitors in the market. Now, for example, you talk about the emergence of Jio in 2016, Airtel and Vodafone and Idea these were the companies who were giving us mobile service. And when Jio came up in the market, they came up with the such a lucrative schemes, that for a few initial months they started given the service free of cost, now who can afford to give the service free of cost, means as a promotional expense they treated as a promotional expense.

They knew it that this market is competitive and existing very you can call it as strength full sound player are existing in the market, Airtel in already there in the market, Vodafone in there in the market, Idea is there in the market, even BSNL is there in the market and if we have now say become the another service provider in the market, we have to give something different to the people.

So, with the emergence of the Jio or with the entry of the Jio reliance Jio in the market, you see that even it was a time we have seen that we were means we were being given the 1GB or 2 GB or 1.5 GB data for 300 rupees. And we were is very carefully using that data that we were when using it for internet surfing and we see how many MB's of the data we have used, but today is the time when you get how much? You get say 1.5 GB data per day, 1.5 GB data per day and the price you are paying is somewhere is 300 to 400 rupees.

So, the telephone expense, your mobile expenses have means significantly fallen and this has created the problem for the existing telephone mobile service providers, but Jio had to adopt this strategy for say making their presence in the market, for entry in the market. So, in the one sense it was the win-win situation for the users of the mobile services, but it was the very-very pathetic situation a pathetic state of a fears for the existing mobile service provider or the companies who were in to this particular sector.

So, that as a result of that to deal with this competition or to sustain in the market Idea and Vodafone had to move into say for forming the joint venture, now they are means a one company because they thought there is competition coming up from the Jio in the market, it will not be possible for them. Vodafone means it is a multinational company UK based multinational company, but they also could not means stand with the competition and they had means find out a strategy.

So who had anticipated that Jio will come means nobody even thought about that Jio will come in the market and when they will come to the market, they will come this way in this big way that means it will create a problem. It was a challenge to Airtel also who is the leader in the mobile telephony market, it was a challenge to them, even for some period of time Airtel turned into a loss making business or maybe the loss making company from the profit making company. Even today, the profit of the Airtel is not very high.

So, this changes takes place in the market. Another very good example I would give you here is that if you go back little in say ’98, ‘99 or 2000, in the electronic segment in India only 2 names were there Onida and Videocon, means people used to think about that if I am able to own a Onida colour TV, I am really going to be a different person in the society and even the say advertisement of the say Onida products was sometime like that it is the neighbour’s envy, owner’s pride.

They were using this was the punch line of Onida neighbours envy, owner’s pride, so it means people used to consider at the time to buy a Onida product and it was a means a proud moment for the people when they use to acquire a Onida product. But where is Onida today, where is Videocon today, there was a time till even ‘99, 2000 I would say they were having the 45 percent market share in the electronic segment, means almost half of the market was with these 2 companies and today there market share is just 1 percent 2 percent.

So, it means who has anticipated that competitors actions will be creating so series problems that in case of electronics market just I am talking to you is that the idea, sorry say your say Onida and Videocon who were the leaders in the market they are completely removes from the market by this Korean and Japanese companies, Samsung and LG, 2 Korean companies and Sony from Japan they had and some other means you can call it as in the row.

There are some Chinese companies, Xiaomi and others also there in the market even say other companies, small companies are also there in the market. So, the leaders in the market who had 45 percent market share they must not have anticipated that Samsung will create such a problem, LG will create a problem, Sony will create a problem or some Chinese companies will create a problem to them in their electronic market and even the survival of this leaders will become a challenge.

But it happen in the market. So, it means it is if it comes at the later years, for example, Onida had already recover the investment they had already made sufficient profits and they had means already means crossed that threshold level, then there is no problem. But in the beginning itself once you are means just recovering your investment or you are looking for forward that we had anticipated with the 5 year peaceful years, but from the second year onwards the third year onwards competitors started given the problem, then it creates a problem.

So, it becomes a very serious challenge, means the competitive risk becomes a serious challenge for the firms who are new in the market, if they are establish firms in the market shares may keep on means dwindling like some time it goes up sometime 1 - 2 percent is goes down, then it does not make a difference. But means Airtel your say Idea your Vodafone could sustain in the market, because they were already a establish player in the market. But if a new player comes in the market, for example, there was one company Uninor, that could not sustain in the market they had to means sell of the business, there was the Tata teleservices.

So, there Docomo was the service from the Tata teleservices that could not sustain the market, they had to go out of the market and that all happen because of the risk caused by the competitors. So, competitive risk is the another risk which is sometimes even never anticipated and can create the serious problem. So, we have to be very careful in analysing those risk. Then third risk is industry specific risk.

Third risk is the industry specific that sometime the industry has a hold gets negatively affected, Say now you talk about these days there is a hue and cry with regard to the plastic industry. People are disliking the plastic products right from the polythene bag to the normal plastic products, even people have started talking about that, even the government should banned this bottled water, that this processed water that even this water is not good because this companies are not producing water, this companies are producing bottles.

So, means huge output of this huge manufacturing or maybe sell of this plastic bottles is there and people have started rejecting it. So, means there was a time when polythene bags were manufacturing of the polythene bags were supported by the government, even the employ unemployed youth through the district industry centres were provided the loans also financial assistance also the were ask to establish the polythene bag manufacturing units.

And they were even assisted by the to by the unsold product. Because output from even a smallest say capacity plant capacity of manufacturing the polythene bags is so high that even after selling huge sell say part of the production in the market some production remains unsold which sometimes at that time government had to ensure the people that if or not able to sell your 100 percent production in the market we will buy it from you.

And today you that how the say plastic industries scenario is people are rejecting the products we have realised it that plastic is not good for the help, plastic is not good for the environment, plastic is not good for the ecology, so whole industry is under scanner now, whole industry is under the threat. So, it means now the people who are into the plastic product manufacturing business they must have started looking for the alternatives because they know it that certainly is going to be a problem.

Another important thing could be that, for example, now these days we are talking about the say electrical cars, now they are coming in the market in many companies have already launched the vehicle and some are testing them. So, it may be possible that today oil and this gas industry which is the fossil fuel I would say petroleum industry which is means they are making dollars, they are making huge sales entire world is depending upon the Middle East countries. But a time may come that this product is not required, this product demand for this product may be even maybe maybe cut down to half or maybe sometime 25 percent.

Because all your transport vehicles will be running on the electrical this fuel or the electrical power. So, any time the things may change and when things may change then certainly what happens, your sales declined, when the sales decline revenue is declined, your everything your total cash flow statement get disturbed, your balance sheet get disturbed, even the well-functioning organization initially becomes sick and then later on they have to be close down or they have to liquidated.

So, industries specific risk is always there which I think people cannot very easily anticipate, to some extend we can anticipate by the budget of the government. Every year when the budget is presented then the government gives some signals or some hints that budget documents of the signals some hints to the people that which are the sectors, which are the industries going to be supported by the government and which are the sectors are not going to be supported.

So, it means government policy to a larger extend can help us to anticipate to find out that how the market will behave and how the industries will get affected by the government policy. That maybe the one indication or sometimes you can study and you can evaluate the performance of different industries by studying the international trends. That in the other countries which are the industries now coming up or being supported or being appreciated and which are the industries or the products in the industries are getting discouraged.

So, we should move into that area which has the future, which has the time, especially when we are going to start a new investment process and we are going to be a new entrepreneur in the market, we are going to have a start up in the market or we are going to maybe even a existing from going to add up a new facility. So, we should be very careful that future of that industry should be secured, or the industries specific risk should not be creating a problem. Then we talk about the next is market risk. Market risk I have already talk to you in the previous class also, we call this risk as a, you call it as say systemic risk.

And systemic risk comes not because of one or other factors it comes because of the whole system or the whole market. And market or the system gets affected largely by the micro factors intrastate, inflation rates, export import, situations agriculture production or may be the output of the similarly other industrial products in the market, demand for say demand scenario in the market, supply scenario in the market all this things. Now, these days, for example, recession is say affecting or hitting the Indian market where the purchasing power of the people is down.

Now, RBI has reduce the repo rate by initially by last weak also by 0.25 percentage, 0.25 percentage point and it is they are expecting that you it will add further liquidity in the market, loans will get cheaper and demand for the credited will say going up in the market and will people willy availing more credited facility it will help you or say manufacturing sector it will help your housing, it will help your even say the services sector also which is negatively hit these days.

So, different actions are taken by the government also by the regulators also, but largely the risk the market risk comes because of the government policy, because of the regulatory environment in the country and nobody can anticipate how the things will take place. But means we should try to handle that if any change in the market takes place how we should be taking care of that situation. So, means the point here is anticipating in advance, what is going to happen in the market?

If you are able to anticipate and to guess what is going to happen in the market, I think we can we means prepared about that how to take care of those kind of negative developments in the market. And last one is the international risk, another source of the risk is the international risk. This risk is largely to those firms, or those projects, or those investment proposals, which are going to depend upon the say import and export processes, international trade I would say.

And you cannot say that always international trade is affecting the large scale industries, even the small scale industries, even the tiny units, even the tiny units are say getting affected by the international factors. For example, we talk about in this northern part of the country Ludhiana; we are the hosiery products are being manufactured by the people even are the household level, they have started very small units, machines they have means say placed at their houses and there are producing very good quality hosiery products.

And they are not selling those products in the market, they have the contact with the exporters. So, exporters are buying their entire production in bulk and they are exporting to other countries and supporting their business. So, it may be possible that sometimes when the say demand in the other countries for the countries products changes, certainly it gets means it effect on the manufacturers in the host country. For example these days the relationship between India and Pakistan are passing through every, we can call it as a say bad phase grim phase, so it has affected both the sides.

For example, vegetables and fruits are getting say the prices are soaring going up. But we have seen the change in India also, the prices of the dry fruits, the prices of spices which are importing from Pakistan they are means toughing, means rocketing sky high. So, it means then the relationship with any 2 countries means improve or get means worsened or deteriorated, it affects. Another case is the say exchanges it, when exchange rates get affected it means your imports becomes costlier your exports become cheaper.

Similarly, means say, for example, in case of the rupee dollar exchange rates, so if the rupee is getting you call it as costlier then it is a direct effect that your say imports are becoming cheaper and your exports are becoming are becoming dearer. But if the rupees becoming means cheaper you have to sell out more rupees to buy the dollars, it has the means negative effect upon the international trade. So, exchange rates, similarly your export import scenario, similarly your say relationship of the 2 countries bilateral relationship of the 2 countries.

They affect the businesses and they affect all kind of the business, small business, medium business, large business. When the car industry is getting hit, because say demand of the Indian cars in the other countries is getting say reduced, even the hosiery industries also getting hit, so car industry is a large scale industry, but the hosiery industry even a small scale industry and both are getting hit, so it means international factors can also cause the risk. So, we will have to be careful before establishing any unit or going for any investment decision.

That what are the potential sources of the risk and if any risk comes up in ever this investment process how to take care of that. So, these are the 5 different sources we should be means analysing and knowing them in advance and then we talk about the perspective of risk.

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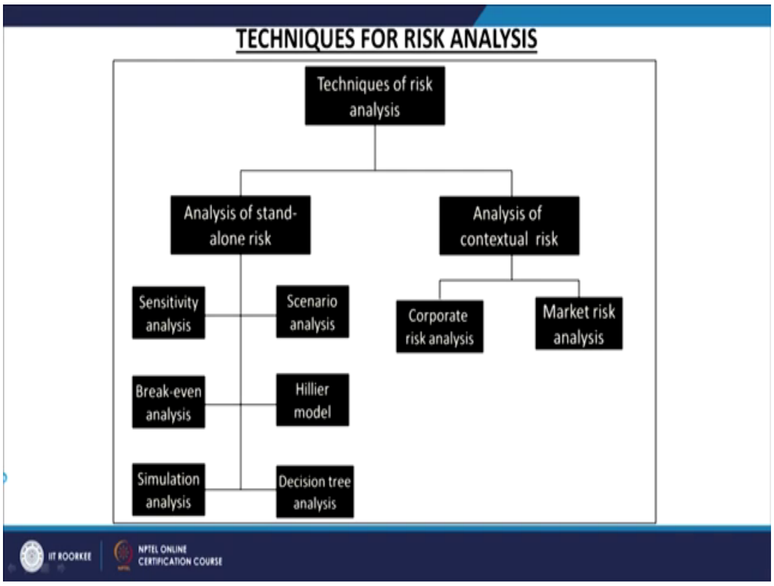

As I have discuss in the previous discussion also in previous class also that when you talk about the say perspective of the risk or the even the techniques of the risk, we have seen that technique of the risk we analyse in 2 ways that in terms of the standalone risk or risk for the single project or the contextual risk.

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And here also in the case of the perspective of the risk that in what perspective you are looking for the risk you are anticipating the risk, is it a standalone project risk or you are talking about the firm risk or you are talking about the market risk. So, we have to manage these different risk in the different manner. Standalone risk has to be manage differently, for example, if there is a demand supply problem, so you have to look for how to improve the demand for your product which is only means affecting the product in question or the project in question.

It is not affecting the firm as a whole, it is not affecting all the say products other products of the firm, so which risk we are talking about? In that perspective we have to look for the solution, or you are talking about the firm risk, corporate risk, so if it is a corporate risk we will have to look for that this project is positively supporting the firm or negatively affecting the firm. And then if the standalone risk is causing the corporate risk also then both have to be taken means together or to be seen together.

And we have to find out the corrective action or the solutions for say doing away that particular kind of the problem. So, means perspective should be very clear or it is a market risk. If it is a market risk then what do we do means you talk about the 3 risk, standalone risk, corporate risk and the market risk. In the stand-alone risk what we do is, because ultimately the objective of every business as I told you earlier is the maximization of the firm’s value, or the maximization of the shareholders’ value.

If there is a standalone risk but the firm is already existing, they have added a new product in the market, so in that case, it is going to affect the profit of the existing operations of the firm and ultimately the value of the firm will get eroded or negatively hit, so value of the shareholders will get a negatively hit. So, for that purpose we will have to say look for the solutions which are going to resolve the issues with the standalone project, so that it does not affect the performance of the firm as whole.

When you are correcting the stand-alone projects problems you are automatically correcting the firm's problems. And then if there is a market risk then the strategy has to be different, that for that what the shareholders do? Shareholders use the diversification strategy; they do not make their investment, total investment in one business. If they are small shareholders or retail shareholder, retail investors who are buying the stocks from the secondary market, in that case they buy the stocks or they make their investments into the different stokes of the different companies.

Warren Buffett the say you can call it as the best known investors in the market, best known investors in the market Warren Buffett. He always advices the people, he says 2 things, 1 thing is that you do not put all your eggs into 1 basket, one, and the second thing you take risk with the because without taking risk you cannot grow in the market, but always take calculated risk. So, calculated risk and not putting all your eggs into one basket can be the 2 strategies to deal with the market risk.

So, diversification, investors do so that the loss in one say companies stocks can be made good by the profit in the other companies stocks. So, depending upon the perspective we have to find out the resolution or the way out, the remedy of the problem, so different 3 type of the contexts are there, different 3 types of the perspective are there and different 3 kind of the solutions we have to find out. What we should be knowing the perspective in advance? We should be knowing the say the context in advanced and if we know it that firm way are the potential is expected to come, we are prepare to deal with that.

So, this all is very important and required to be known in advance, so that we can take care of the risk which is going to affect the firm negatively in the market. Then we now move forward to the next part and now we start learning about the techniques of say taking care of or dealing with the standalone risk. First we will deal with the techniques of the standalone risk then we will move to the say techniques of the corporate handling the corporate risk. And as I told you the market risk we will talk more about the market risk while we will discuss the cost of capital approach or the cost capital topic.

So, now we move to the different techniques of dealing with of or handling the say or analysing the say standalone risk and first technique is sensitivity analysis, first technique is sensitivity analysis. Now, what is the sensitivity analysis? We have seen that in the previous slide we have seen 2 techniques are there majorly there are 2 techniques, 1 is the sensitivity analysis another is the scenario analysis. In the sensitivity analysis, we try to find out how the project is sensitive to the different variables, which are going to, which are going to affect the cash flows of the project.

How sensitive the project is? How sensitive this investment proposal is towards the different variables, which are going to impact the cash flows of the product of the project. Now, there the different variables, one is the investment you are going to make, if the say outflow, the investment which is required to made is so high and cash inflow is expected in relation to that are not that much, so it means but the project will end up a loss making proposition. So, we have to now, what we do in the sensitivity analysis?

One by one, we pick one factor, we take one variable, we change the value of one variable at a time and then we see changing the value of one variable at a time how to impacts the NPV of the firm. For example, we change the one variable is the investment what it much, how much investment is required to be made? For example, the optimum amount we have already worked out. So, we increase that investment, we say that no it will not be requiring 2 million rupees, it will be requiring 3 million rupees.

For example, if 3 million rupees of the investment is required other factors remaining same, how the NPV of the project will get affected? Then we change another factor we bring that investment factor back to the pavilion again but then we change the another factor for example senses we are anticipating we will be selling 1000 units per month if we start manufacturing and selling the product in the market. Now, we say that no 1000 will be too high we will be selling 500 units only, so in change the sales and keep other variables a same and then see how the NPV of the project gets affected.

Similarly, change the variable cost, change the fixed cost and then see changing one variable at a time how it is affecting the NPV of the project because minimum decision making criteria requires there NPV of the project has to be 0. If it is positive very good, but if it is negative, it is not acceptable. So, we have to ultimately find out the NPV of the project and when we apply the technique of sensitivity analysis for the project risk analysis we change one variable at a time out of the given variables.

And then we try to see that if one variable is changed how it is going to impact the other variables or the means the firm as a whole and the NPV of the firm is going to be get affected. Whereas in case of the scenario analysis, in the scenario analysis we change more than one variables at a time, we do not change only one variable, we change more than one variables at a time and then we see that, for example, your investment is becoming higher than anticipated.

Your sales are getting lesser than anticipated, your fixed cost is means going up more than the anticipated, your variable cost is say going up more than the anticipated, so you will create 3 scenarios in that case. The pessimistic scenario means optimistic was created, because when we are prepare the DPFR we have created some estimates some situation we have already calculated NPV and that scenario is called as the optimum scenario, most optimum or the you can call it as the optimistic, not optimistic I would say the optimum scenario or the most likely scenario.

But then you create 2 more scenarios, 1 is the most pessimistic scenario and then 1 is more most optimistic scenario and then you try to see that if we create these 3 scenarios, if there is most likely situation in the market we have already anticipated, we have already done the calculations and we have already found out how much NPV will be there and that is why we are taking the decision of making this investment. But if the pessimistic scenario comes up in the market, then what is going to happen?

Should be go still go for the investment or if you the optimistic scenario happens, how it positively it is going to affect the firm? So, all these factors we have to bear in mind, in case of sensitivity analysis change the variable only one variable at a time and see the impact on the whole of the firms performance and see how the NPV of the firms behave. In case of the scenario analysis you change more than one variable at a time and then see how the whole firms NPV behaves and how say the cash inflows and cash outflows means behave get affected and how we can deal with that situation.

So, these 2 techniques are very means you can call it as prominently used in the risk analysis of the capital budgeting process. And say on the basis of sensitivity analysis and on the basis of scenario analysis say many decisions are taken and finalised and risk element which is associated to any investment proposal are say anticipated in advance. So, how we can apply the sensitivity analysis, how we can apply practically the scenario analysis, I have got some problem which are done here, we have already means anticipated the problem we have the solution here, so we will discuss that in the next class.

And similarly we will do for the scenario analysis also, so one means say anticipated problem or may be a problem like the one anticipated problem in case of the sensitivity scenario or the breakeven analysis we will do here and then later on at the end of this say fundamental or conceptual discussion I will do some problems, so that you can learn practically, how we can analysis the risk associated to the capital budgeting proposals, that this all sensitivity analysis and scenario analysis and the practical problems associated to that I will do in the next class, for the moment I will stop here. Thank you very much.