International Finance
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Lecture - 25
Evaluation of Foreign Direct Investment

Let us discuss section 25 that is on foreign direct investment. What is the positive negative aspect of foreign direct investment, and how we can evaluate foreign direct investment using the project evaluation methods particularly the NPVIRR method. Before that you have to discuss why, what is the difference between foreign direct investment and foreign portfolio investment. How foreign direct investment is good for the country comparing to foreign portfolio investment, and what are the positive and negative aspect of foreign direct investment, and end of this session we will be discussing about the evaluation aspect of foreign direct investment using a practical example.

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Let us discuss, what is the, what actually the international business. When you mention about international business, it is primarily refers to export and import of goods and services. The foreign direct invest, international business also involves licensing policy. It may be rather not in the form of foreign of export import, may be in the form of technology side, may be in the form of copyrights, patent, trademark these are the licensing side also involved in foreign in foreign investment trade. Similarly, the foreign investment can also take place in the form of joint venture. A venture owned by a domestic company and some extent owned by the foreign partner. It may also involve marginary acquisition of domestic company by a foreign partner.

Then it may directly also involve in the form of setting of foreign company's offices, subsidiary branches in domestic country. That requires large scale investment, take a longer operation period, so when international business. We discuss the international business may be in the form of foreign export import, may be in the form of technology or copyright involve, may be in the form of may be in the form what is called a joint venture, may be in the form of ownership that is a domestic foreign company own the or accused or merged with a domestic company, may be the foreign partner or the foreign company have a office in domestic country particularly in the other country in the form of a branch, in the form of a subsidiary.

So, these are the international business, the type of international business. The international business involves inflow, outflow capital and whether international business will be successful or a failure. How to evaluate? That is the evaluation aspects of foreign direct investment or international business.

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Then when you discuss about international business, there may be some benefits of the international business. Other than domestic country may not allow international business.

So, what are the domestic aspect or the benefits subject of the international business? When a foreign partner come to a come to a particular a foreign to a another country to have to invest they generally evaluate the investment in the form of a large market. Whether by investing in a particular country they are getting a market. The customer base are large, whether they will be in a position to position to sale their product. That is the large market concept first will be in their mind set.

Second whether by opening a subsidiary opening a branch or having a business in a foreign country .The foreigner, the cost of production reducing, whether they are reducing the cost of production in the form of getting cheap labor or they are getting a what is called input, inputs or raw material at cheap cost, that also another part of the discussion then whether they are getting a tax benefits. It may happen the foreign direct investor they go on searching a country which is lowest tax rate. So, arbitrage of tax difference across the country also a part of the decision making process whether to go for a foreign investment or not. Then generally different developing country at present allowing the foreign direct investment giving by giving different kind of benefits.

The benefits in the form of government subsidy, lower taxation, cheap power sources, raw material sources, large market in the form of royalty payments, so in the form of tax deductions in royalty. These are the concept generally or way of attracting foreign direct investment into a domestic economy. All developing countries are now after big big MNC so that the MNC can bring technology MNC can bring large capital and there that will help in the growth of the domestic economy. So, they wanted to give all kind of benefits to foreign investment and these benefits are in the form of subsidy, in the form of cheap labor cost in the form of a input prices, in the form of cheap power, free land. These are the way of attracting foreign direct investment.

Similarly, it may happens it may happen that cost of capital may reduce because foreign direct investment also move one place to another place on to locate where the cost of capital is less the cost of capital is less then they can get a good margin in their production process. It may also happen diversification of production because MNC generally diversify the production base so as to immune the revenue, immune the income source of any kind of recessionary activity. So, diversification of one product also one way of getting the benefits of international business, then new technology new technology generally the domestic economy try to attract new technology through foreign direct investment. The new technology also aspect of benefits of foreign investment.

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Then, there may be some risk of globalization. Risk means when we allow foreign direct investments we also accept their risk. So, globalization at present which is the terminology everybody is using. The globalization is nothing but nothing but opening the economy for foreign direct investment, for foreign institutional investment. By opening up the economy, the domestic economy also all cannot be insulate from the risk of the world economy. So, the risk are, risk also will be there with the foreign direct investment. The risk may be in the form of what is called currency turmoil because we have witnessed the exchange currency crisis. At present the world economy is also in recession.

This has the recession has been spread to many parts of the country, many part of the world. It may it started from the US, then to then also it affected. Effect the European country and now many, many developing country also are affected because of this present world crisis. This world crisis spread to different country because world economy is in the process of integration. The integration nothing but we are allowing the foreign direct investments for institutional investment to our country. This way by allowing them we are also accepting their risk their risk of currency turmoil. Volatility in currency, domestic currency.

That may be it also here, comply with the local regulation. The regulation may be in the form antitrust regulation, labor laws, environmental concern, capital control, disclosure norms so political uncertainty these are also are the part of the foreign direct investment. When a foreign direct investment go to a general go to a country, they accept the political uncertainty of the country. They also accept the tax regulation the other kind of disclosure norms accounting principle, these are the regulation side they are accepting. That they also accept the environmental concern, the labor laws of the country and antitrust agreement, these are the some kind of what is called risk of globalization or risk or foreign direct investment.

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Another part of international capital flow as I mentioned earlier also, that international capital flow may be in the form of institutional investment. That is foreign portfolio investment portfolio investment as we know equity participation in the in the particular company. They, the FII the foreign institutional investment, investor they invest in the equity market of the company and in the equity market of the country, so investment in foreign companies for capital gain. These are for capital gain because equity market they get the returns of capital and that is capital gain.

However, not concerned of our management side, because we are directly ownership is not coming directly ownership is not coming, because they are not investing in the development of the company rather indirectly they are investing in the equity of the company. So, great implication for the crisis it has great implication because by when the equity price is very high, they purchase it when the price is low they sell it. It creates havoc in equity price of the particular company and high volatility because of foreign institutional investment. And foreign portfolio investment are very easy because it is a very easy for the foreigner or the foreign companies, which are investing directly can invest in stock market of a domestic economy and whenever there is a crisis, they sell their equity and go out from the risk.

So, here risk absorption is very less. However, risk creation is very high. So, but foreign direct investment directly they are investing in the participation of the, in the development of the company, by in the management on ownership of the company. They own the company they bring the new technology, they bring new process business. Process they participate in the day to day activity of the company and this very difficult to once they invest very difficult to go out from the system. So, foreign direct investment is a longer process. It is a participation in the development of the company, development of the country. However, for an institutional investment they participate in the equity the equity market development of the company and the company or the country, but whenever there is a volatility or there is a crisis in the company crisis in the economy the foreign institutional investor sell their share and go out from the company.

So, that is the risk from risks of globalization is high volatility, in the form of foreign institutional investment. While risk of globalization through foreign direct investment, is a list. For that reason, many country are attracting foreign direct investment and rather foreign institutional investment.

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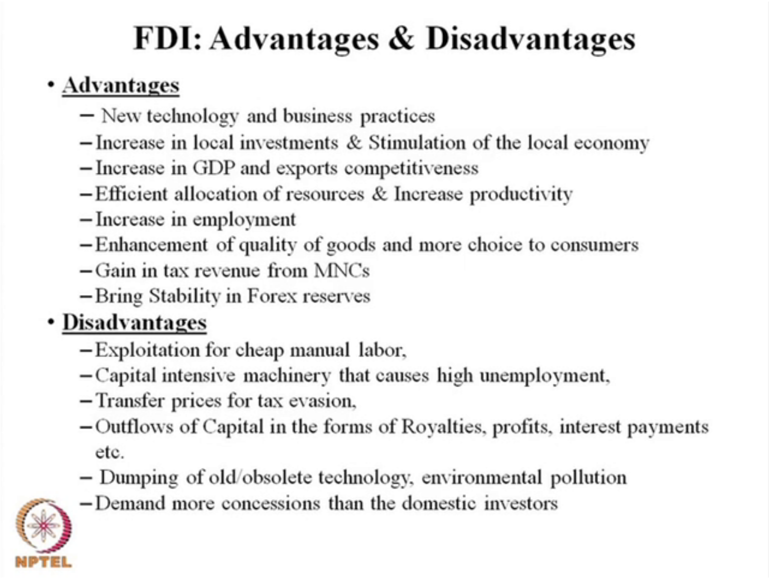

When you when you discuss about the FDI that is foreign direct investment, you have to understand the direct investment in the form of the in the form of ownership of the company, in the form of participation in the management of the company, in the in the form of accepting the risk of the company, in the form of in the form technologic transfer to the company. So, the in the growth of the company the foreign direct investment associated with above. However, there are many advantages, many disadvantages are there for the foreign direct investment. When you discuss about advantages you have to understand that you have to understand that these advantages available to all foreign direct investment and it is it is may be some extent industry specific, because industry rules regulation applicable here.

It may be something applicable to the sectoral growth of the growth because the industry particular sector of the economy. So, sectoral independence in sectoral liberalization also influence the foreign direct investment. Let us discuss the advantages first. When a country attract foreign direct investment, there is some fundamental some bottom line. They assume the assumptions are there. The foreign direct investor will bring new technology and new business practices. The foreign direct investment increases the local investment and stimulate the local economy. Foreign direct investment increases the GDP of the country and provide export competitiveness of the country. In in a it a increase the efficiency of are source allocations and increase productivity of the country.

At the same time it also provides more employment opportunity and enhance the quality of goods and choice for consumers.

Government also get because foreign direct investment, government also get what is called the tax revenue because when the company comes to India they make profit that is a tax on profit, that profit is a tax on profit. It is a revenue source for the government. It in brings the stability in forex reserve, but at for an foreign direct investment once come they cannot very difficult for them to go out. Without selling the company to a domestic owners, they cannot go out. So, foreign direct investment the whatever, the foreign exchange come that will be, that provides stability to forex reserves. These are the assumptions or underlying evaluation process of foreign direct investment. Generally whether the company bring new investment, new technology, new business practices with a matter of discussion.

Similarly, it. No doubt it increase the local investment provide some kind of employment opportunity, but the productivity efficient allocation of resources. It is also a matter of discussion. No doubt the foreign direct investment provides stability to the foreign forex reserve of the country. What are the disadvantages are there? The foreign direct investment where they invest the foreigners are coming to India or coming to any developing country to invest. There may be some benefits for them. The benefits are there may be, they wanted to utilize the local resources of the economy because many developing country have huge amount of natural resources. The natural resources they wanted to in exploit. So, for that reason foreigners are coming and establishing their industry in the domestic economy.

It may happen that, we are assuming that, the foreign companies will bring, will increase the local employment. However, foreign companies are more capital intensive rather labor intensive. They use modern technology to reduce the wages reduce the requirement of labor forces. So, it is, but it is very difficult to say the foreign direct investment increase local employment because they are more in capital intensive rather labor intensive. They use different kind of tax transfer prices because to evade the taxation. Then what is transfer prices? They use their subsidiary because whenever they a company comes to India like a car manufacture; Toyota or Maruti Udyog Dal coming to India. They will establish the process the process of what is called what is called the assembly line process. Rather than manufacturing base. They have their manufacturing base in some other country, they purchase the engine from different country and pay a transfer price.

The transfer price is very what cost they purchase the engine that way that much of revenue will go out from the country to their subsidiary company, so in this way the transfer prices. They try to reduce they get what is called a a way to evade that taxation. So, that may be outflow of capital in the form royalty, debt, in the form of profit, in the form interest payments, in the form of transfer price payment. That is also part of the FDI process when a company comes to India. They demand some kind of subsidies. Subsidy in the form of lower taxation, subsidy in the form of royalty of profit, subsidy in they also wants their they wanted to transfer their profit, they bring foreign capital. The capital that might have sources from abroad, they want to pay interest on that. So, these are the outflow of foreign exchange foreign exchange by the foreign company which are there in the domestic economy.

The outflow they create a umbrella of outflow, in the form of royalty payment, in the form of profit transfer, in the form of interest income. So, these are the these are the way of taking away the foreign fruits of development or fruits of what is called the investment in the economy. They always wanted that to transfer the foreign exchange as soon as possible. Now, these are the way of transferring the foreign exchange from the domestic economy. So, no doubt they create some kind of no doubt they create some kind of what is called income opportunity or the revenue for the economy, domestic economy. However, they are many other way they take away the revenue from the domestic economy. It is also a debatable question, whether the foreign company through the foreign direct investment bring in new technology.

Then it is not the new technology. Many cases it has been found. It is a old old technology obsolete technology. They wanted to dumb in developing country. These are for environmental reason, for other kind of other kind of reason which are which are against the environmental pollution.

So, there may be some there may be possibilities are there. The old technology and old the old obsolete technology they generally bring to developing country through foreign direct investment. They also demand many kind of concession from the domestic economy because they wanted to bring technology in the light of. They wanted to bring technology, productivity, efficiency on this ground. They demands many kind of concession for that government in the form of lower taxation, local tax, local tax subsidy, some kind of free land, some kind of cheap labor, some kind of ownership on mines, natural resources. These are the expensive demands, they expensive demands, they demands from the domestic economy or domestic government for bringing the foreign direct investment. These are the advantages disadvantages of foreign direct investment.

However, these are there are some the some way the advantages are more some other sector their disadvantages are more and it is it is whenever you are allowing the foreign direct investment, you should always look into the features of foreign direct investment and what are the advantages disadvantages are in the foreign direct investment process and it is essential we should allow the sector where domestic economy, domestic investors are not available a domestic capital is not sufficient, you can allow foreign direct investment. Whenever domestic investors are there, domestic technologies are there, capital is sufficient, it is better not to allow the foreign direct investment for the growth of the company or growth of the country.

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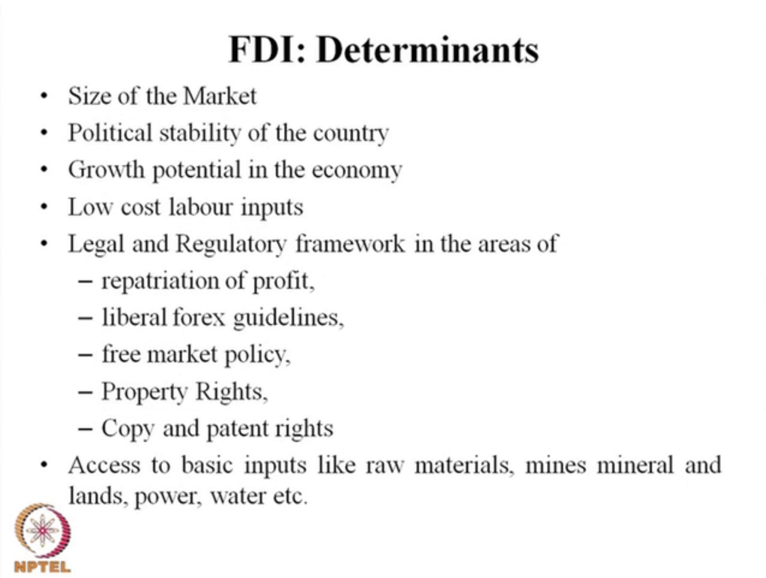

Let us, what are the determent of foreign direct investment? We discussed about advantages disadvantages of foreign direct investment. What are determinant? Determinant means why are the foreign direct investment. What are the component on the basis of which the foreign direct investment decided. Determinant here what what we discussed earlier, the size of the market. What are the size of the market because many developing country like India China or Mexico Brazil, these are the, these are emerging economy and this they have huge market. Market means customer base market means purchasing power and for this reason the all MNC they try to come into the, this country to get advantages of the size of the market and size of the market is the primary determinant of foreign direct investment.

Political stability of the country whenever, a foreigners coming with the foreign direct investment, they see the country's stability. Stability meaning the sense of political stability. So, they generally say whenever a multi-party government is there or single party government is there, whether the government is anarchy or government is a military controlled, there are abiding by rules regulations or not. These are the some kind of political or what is called legal aspect they thought before coming to coming and investing in a domestic economy. If you find political stability is there in India China Brazil Mexico so we are getting huge amount of in foreign direct investment. There is no political stability in country like Pakistan Afghanistan sub Saharan economy. So, there are very difficult to find foreign direct investment that particular country.

Growth potential in the economy, so all emerging economy are having a huge amount of growth; despite recession in the world, China and India that the GDP's increasing more than 5 percent. So India and China one the biggest market in the world, so all foreign direct investment, generally come coming to India and China. The growth of the economy, domestic growth of the economy because of the huge market they spread world recession, India is growing at 5 to 7 percent. Similarly, China also growing at 6 say 6 to 9 percent, despite being world recession. So, these are the growth potential. Growth region. Growth center, for that reason foreign direct investments are coming to this country. Low cost labor inputs another determent of foreign direct investment.

India or any other developing country the cost of labor in the form wage payment, salary payment is very less as compared to many developed country. So, to reduce the overall cost of production all assembled line manufacturing company are coming to this country. These are because they will get skilled labor at lowest possible cost. These are the not available in other developed country. So, to at these are the the labor inputs, labor cost also, another major inputs or determinant of foreign direct investment. Similarly legal and regulatory framework in the area of because legal, and regulatory framework is very important in foreign direct investment. So, what is the legal regulatory framework repatriation of profit, when the foreign direct investment coming to a developing country, they are coming for profit reason.

Not the socio economic development of a domestic economy. Their major criteria to get profit revenue and they want to repatriate the profit in the form of royalty payment, in the form of form of corporate profit, in the form of what is called a transfer payment, in the form of interest payment. They want to repatriate that income from the domestic economy. So, there should be a liberal repatriation of profit guideline or the legal framework they want that from the different country. And developing countries are, what is called competing among each other to attract the foreign direct investment because of that reason many country have what is called a legal a regulatory framework in the form of repatriation profit, is very liberal in natures.

The liberal repatriation rules also one of the major determinant of the foreign direct investment. Similarly, forex guideline the forex guideline should be liberal in natures because they are the foreign direct investment, the foreign company are not only they have investment in domestic economy, but they are they are currency transaction are in foreign country. They have the currency transaction in the form of dollar pound sterling yen some other other currency. They want a liberal foreign currency regulations. There is because there is liberal foreign currency regulation allow them to take away the profit from the domestic economy. So, they have also want a liberal foreign currency guidelines.

Similarly, they want a free market policy. They want their domestic there should not be any guideline on the part of the government to decide the price of the product, price of the labor, price of the wages. They want a free market policy. So, free market policy allows them to charge any kind of price in the domestic economy. Now, they also want a free market policy. Similarly, they want property rights, right on the goods and services, right on the lands, right on the minerals right. On the other resources that is called a property rights. So, many developing country are allowing this property right. Many developing country are against of this property right and because they do not want foreign company. Having say have a ownership on mineral resources the foreign company should have ownership in the properties of the domestic economy. So, they may not they may not provide that kind of right to foreign company. So, many country also allowing many countries are not allowing this.

Copy and patent right. As per the WTO agreement, they want whatever the new technology they are bringing new business processes. Are they bringing, they want they are developing their technology in domestic economy. They should have right on that that also allow as per the WTO guideline. Suppose, because they are investing huge amount in a new product development, new process development, new technology development, new manufacturing product or processes they want copyright trade right patent right on this and many developing country are allowing these rights on the on FDI on foreign direct investment. So, these are also main determinant of FDI.

Similarly, access to raw material; mineral resources mines, minerals of the land power of the domestic economy, they want that kind of rights that kind of access. At least access to these basic services and many developing country are allowing this kind of rights on mineral resources, raw material to FDI or to foreign direct investor and these are the determinant of foreign direct investment. There are many other determinant. However, we have discussed these are the major determinant. Many other determinant also possibilities are there, when foreign direct investments are coming to India they see these all these determinant and try to try to do a short analysis, what is called strength, weaknesses, opportunity and threat before investing in a domestic economy.

The short analysis provide them some kind of road map, some kind of what is called a near future near future possibility whether they are coming to a particular country or not. Whenever they try to evaluate different country for foreign direct investment, they also do these kind of sort analysis to so as to understand which country more attractive in foreign direct investment, which country are least attractive in foreign direct investment. FDI regulation and FDI guideline are also important in in deciding the policy of foreign direct investment.

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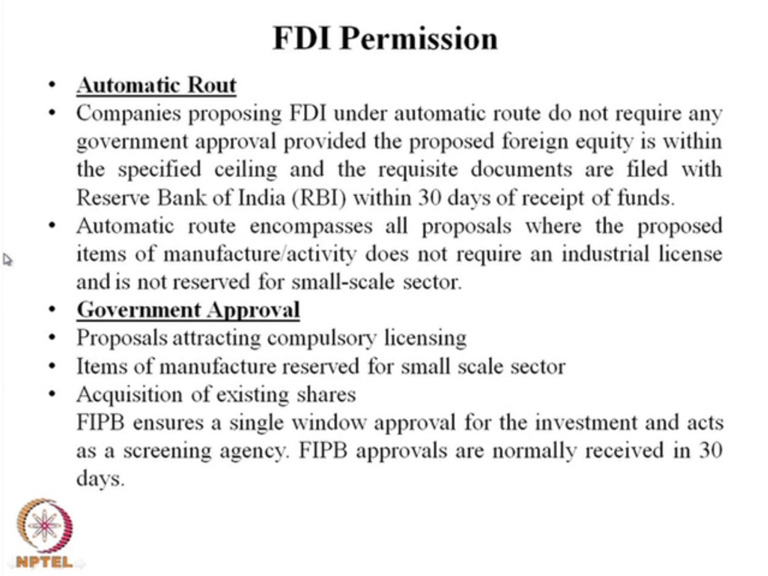

Let us move to what is the FDI permission, we have in India. Indian context if you see they will have automatic rout of that is an automatic rout and there is a government approval rule routes, for foreign direct investment. Indian context automatic route is that FDI can come to India through RBI permission directly and try to participate in the equity market. Try to participate some kind of industry, where there is no requirement of government license and they supposed to invest within 30 days of receipt of the fund. Automatic rout may be proposals are in the form of manufacturing activity, where industrial license do not requires.

Because there are, if you see Indian context there is reserve list and free list. In case of free list the automatic routes are automatic permissions are there in case of reserved list. They have to come through the foreign, they have to come through the foreign investor promotional board and that is called government approval required for a foreign direct investment. Here the proposal to attract compulsory licensing. There is a compulsory license system there because these are the reserve list items where foreign direct investments are coming.

Government has to give the license for foreign direct investment. In that sector these are mainly primarily applicable to small sector, small scale industry and small scale industry foreign direct investments are not allowed. Some extent some sectors are applicable where technologies are coming big investment proposals are there. These these the government approvals are required for foreign direct investment. However, there are significant amount of free list items are there or free list sectors are there, where automatic routes for foreign direct investment coming to India.

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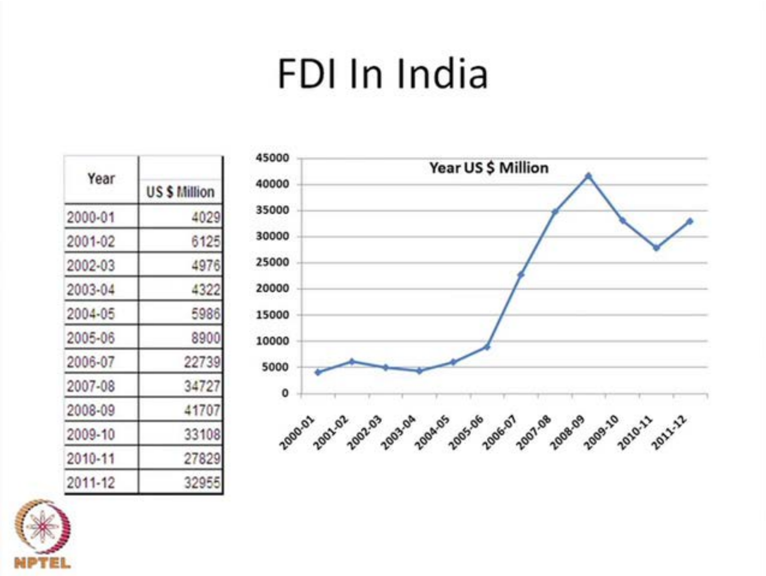

Year	US $ Million
2000-01	4029
2001-02	6125
2002-03	4976
2003-04	4322
2004-05	5986
2005-06	8900
2006-07	22739
2007-08	34727
2008-09	41707
2009-10	33108
2010-11	27829
2011-12	32955

If you see over the period the foreign direct investment, I have given from 2000 to 2012 that how much foreign direct investment has come to India in the form of US dollar billion. There has been huge increase over the year. Only the recession period that is a 2007 8 7 8 9. There has a decline after that, it has start increasing 2011 onwards and from the minute 4 400, 4000 million US dollar, to have the foreign direct investment increased to 32000 million us dollar and these are the different sectors of the economy. The foreign direct investment has come and after the liberalization particularly 94 95 onward the foreign direct investment has been increasing over the years and there has been significant improvement in 2004 to 2007. After that some recession period, we achieved less amount of foreign direct investment however in 2011 12 it has start increasing.

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Sector-Wise FDI in India

	Sector-wise Inflows				
	2007-08	2008-09	2009-10	2010-11	2011-12
Manufacture	3,726	4,777	5,143	4,793	9,337
Construction	2,551	2,237	3,516	1,599	2,634
Financial Services	3,850	4,430	2,206	1,353	2,603
Real Estate Activities	1,336	1,886	2,191	444	340
Electricity and other Energy Generation, Distribution & Transmission	829	669	1,877	1,338	1,395
Communication Services	66	2,067	1,852	1,228	1,458
Business Services	1,158	643	1,554	569	1590
Miscellaneous Services	1,901	1,458	888	509	801
Computer Services	1,035	1,647	866	843	736
Restaurants & Hotels	280	343	671	218	870
Retail & Wholesale Trade	200	294	536	391	567
Mining	461	105	268	592	204
Transport	816	401	220	344	410
Trading	176	400	198	156	6
Education, Research & Development	156	243	91	56	103
Others	884	1,097	384	506	419

The different sector of the economy, if you see sector wise we have different sector of the economy. Here different foreign direct, different amounts of foreign direct investment. Here I have given the sector wise manufacturing sectors, construction, financial services, a real estate, electricity, energy, generation communication sector, business services sector. Some kind of miscellaneous sector, computer services, restaurant, hotel, retail, wholesale trade, mining, transport, trading, education, research and development; these are the sector wise I have provided some kind of foreign direct investment and last four years, that is 2007-8 to 2011-12. If you see the huge amount of foreign exchange and investment has come in the manufacturing sector and after that construction and financial services in real estate. These are three four sector where significant amount of foreign direct investment has come.

Similarly, in the in the sector of business services and computer services also huge amount of foreign direct investment has come to India, but India is no where comparable if you compare with the China or Brazil or Mexico. They have achieved significant part more than India and for that reason it is not comparable.

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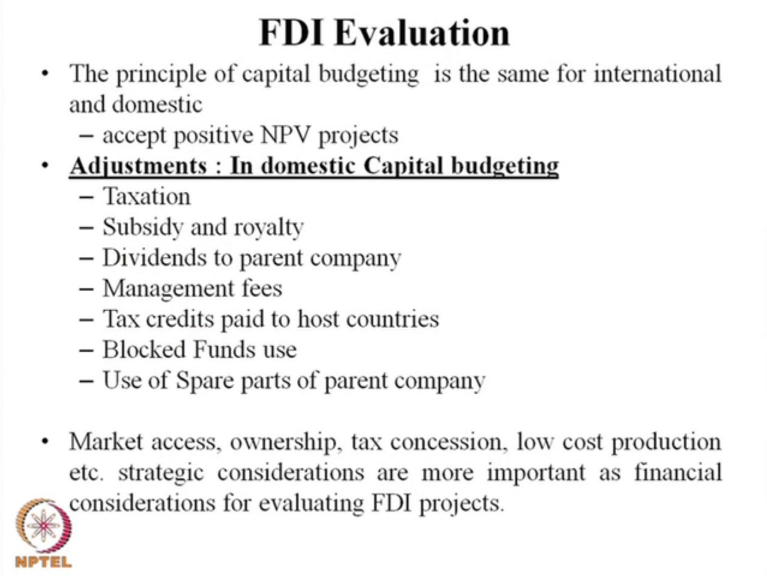

So, when you move for the evaluation of foreign direct investment, because when you fund you have when you decide that foreign, we have to bring the foreign direct investment you have to evaluate the foreign direct investment, whether they contribute to our economy or not one aspect. Second aspect the foreign direct investment investor themselves also try to evaluate the foreign direct investment, whether they are supposed to come to India or China or Brazil or somewhere other country. So, that should be some kind of evaluation procedures. The evaluation procedure is nothing about same capital budget in technology, capital budgeting methodology we use, however, with some kind of other adjustment.

The adjustment requires in the kind of taxation because taxation tax concessions are available for foreign direct investment, similarly, subsidy and royalty. The domestic economy provides subsidy in the form of in the form of lower cost for inputs, free land power, some kind of what is called subsidy, in the form of in the form of what is called less amount of labor charges, local taxes. They also allow the foreign direct investment to get to get royalty and they take away the royalty as without any tax. So, that also affects the evaluation process. Similarly, dividend to parent company because the foreign direct investment, may be subsidiary in the domestic economy however they have their parents in abroad.

So, dividend payments, interest payment, transfer of profit these are the other way the influence the decision making process, similarly task credit to host country, because we have double taxes agreement. So, suppose they pay tax in their own country, they may not pay tax in India so tax credit they will get from India. That also possibilities are there it it can influence the what is called your NPV. Similarly, blocked funds, many developing many FDI have the already invested in India. So, they might be having some funds in India if they withdraw the fund that will pay tax. If they do not withdraw the fund they get some kind of rebate. What is called blocked fund. Blocked fund also some improve the FDI NPV of the evaluation process. Similarly, the spare parts of some foreign company, they can bring the spare parts from abroad at cheap cost rather than manufacturing here.

So, the spare parts so etc also influence the NPV calculation process. Similarly, ownership tax, concession, low cost production a strategic, these are the strategic parameter also influence the overall decision making process in FDI evaluation side. So, when you try to evaluate the FDI, we will evaluate for just as a domestic capital budgeting side. Then adjust that domestic capital budgeting side for the other kind of requirements and primarily then we merge together so as to so as to get the FDI evaluation process.

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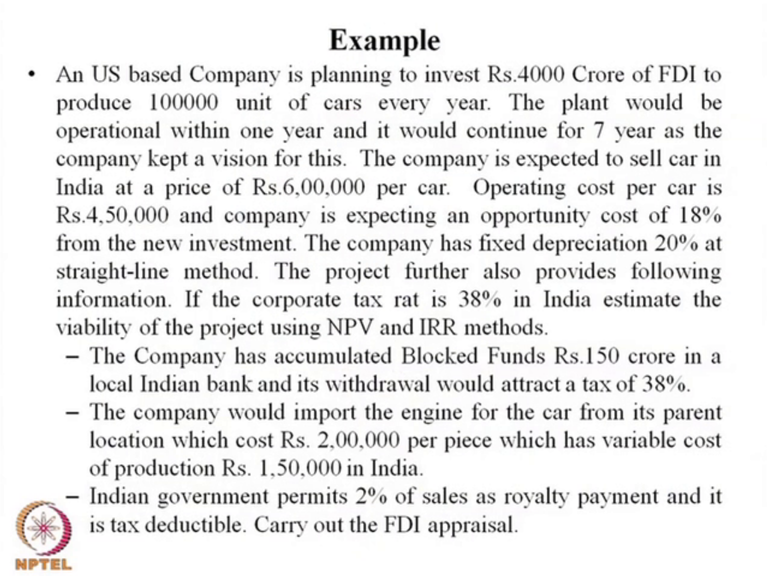

So, before going to analyze this, let us discuss a a one case small case for a manufacturing company in India. They wanted to have a car manufacturing preassemble line in India. So, these are this is MNC coming to India. Let us discuss about this MNC so that you can understand the process of FDI evaluation in India. If you see here a US company is planning to invest 4000 crores of FDI that is US dollar to produce 1 lakh unit of car every year. They want to invest 4000 crores of Indian rupee in the form of FDI and they want to produce 1 1 lakh units of car every year. The plant would be operational within 1 year and it would continue for 7 years. The vision of the company is 7 years.

The company is expected to sell car in India at a price 6 lakh per car and operating cost for car is 450000. The operating cost for the car is 450000 and but the sale price of the car is 6 lakh. Then the company has a opportunity cost of capital it is 18 percent, the discount rate is 18 percent here. They have straight line depreciation of 20 percent straight line depreciation is there. The project further also provides some other information. The information is here the tax in India is 38 percent the corporate tax is 38 percent.

The company has a accumulated blocked funds in India 150 crores. If they withdraw it they have to pay 38 percent tax, if they do not withdraw it use in the company development then there is no need of paying any tax. The company would import engine from an manufacturing based, the company might have manufacture base in other country. If they import the engine, it will be 2 lakhs, 2 lakhs which variable cost is 1,50,000 If they import they will pay 1,50,000 the manufacture in India. It will be 2 lakhs. Indian government permit 2 percent of sales as royalty payments which is the tax deductible. That is they can get to they can transfer the 2 percent of the sales in the form of royalty payment without paying any tax with this information let us evaluate the FDI proposal.

So, our proposal is first we assume the domestic company and try to do the FDI evaluation process. After that you adjust the all other information and factor in the domestic FDI domestic NPV and try to find out what is the overall FDI NPV for the company. So, when you go for the domestic NPV calculation you have to understand what are the process of calculation for domestic side. Here the life time of the project as a visions the prepared 7 years and the initial period initial investment is 4000 4000 crores, so 4000 crores initial investment.

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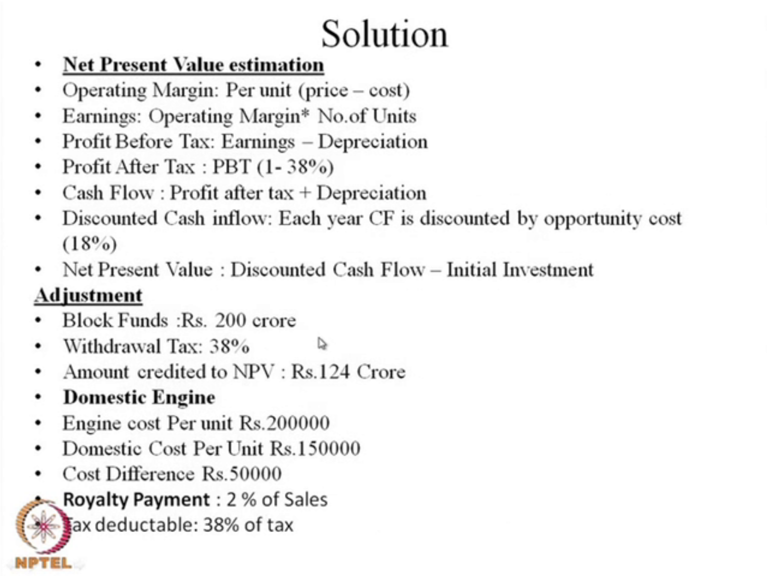

So, first you have to estimate the as per the NPV calculation, domestic NPV calculation. The operating profit, operating margin each here operating margin is profit minus cost what is the initial investment.

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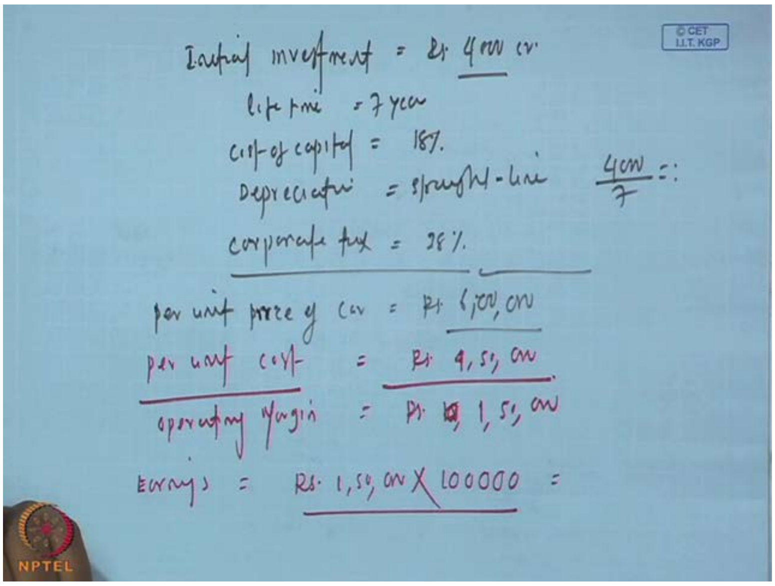

The initial investment has 0 here. So, initial investment initial investment is rupees 4000 crores 4000 crores and the life time of the project is 7 years. So, the lifetime is 7 years. Then cost of capital that is what is called, we call it discount rate. Cost of capital is 18 percent. Depreciation is straight line Depreciation is straight line that is straight line depreciation within 7 years, they have to recover 4000 700 4000 crore. That is 4000 by 7 that is per year depreciation will be there. Then another, any other thing is the tax rate, corporate tax corporate tax is in India is 38 percent. Corporate rate tax is 38 percent. Now, with this with this information we have to estimate the domestic NPV calculation first. So, if you see the operating margin operating margin is per unit price minus per unit sales sale cost.

So, operating margin if you see here, the operating margin is here. Per unit price minus cost per unit cost so per unit price is 6 Lakh per car and per unit cost operating cost is 450000. So operating margin per unit is 150000, so what is the per unit price. Price of per unit per unit price of car is 6 lakh. Per unit price of the car is 6 lakh and the per unit sale, per unit cost is per unit cost that is, operating cost is Rs 450000. So, per that is called operating margin. The difference is operating margin, operating minus difference of two, which is 1 lakh 150000; 150000, 6 lakhs minus 4 1 4.5 lakhs; say 150000 per unit margin. So, they are earning. How much earnings will be so how many cars they have to that is operating margin is 150000 how many car per year? Per year is 1 lakh. So, this our per every year the earnings. So, every year some earning is there. So, what is the profit before tax, profit before tax because they are earning every years.

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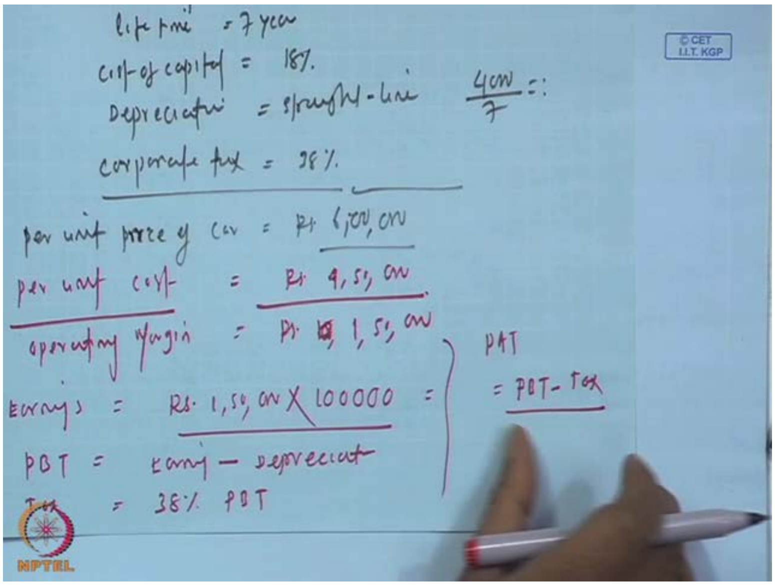

So, we have to calculate profit before tax, PBT. PBT will be earning minus depreciation, so earning minus depreciation. So, what is the earning? Earning is this. Is the earning

150000 into 1 lakh car. This is the earning and what is depreciation? Depreciation is 4000 crores by 7 years. In 7 years you have to recover the 4000 crores as a depreciation, so per year depreciation 4000 crores by 7 that is, this much of crores of crores of appreciation per year. So, you have to minus earning form here we will get the profit before tax. After that you have to tax amount tax amount in India is 38 percent of profit before tax. This is per year tax and what is after profit. Per profit of PAT profit after tax profit, after tax is PBT profit before tax minus tax amount. That is your tax amount per year. What is called profit after tax, so once you got the profit after tax then you have to decide of the cash flow.

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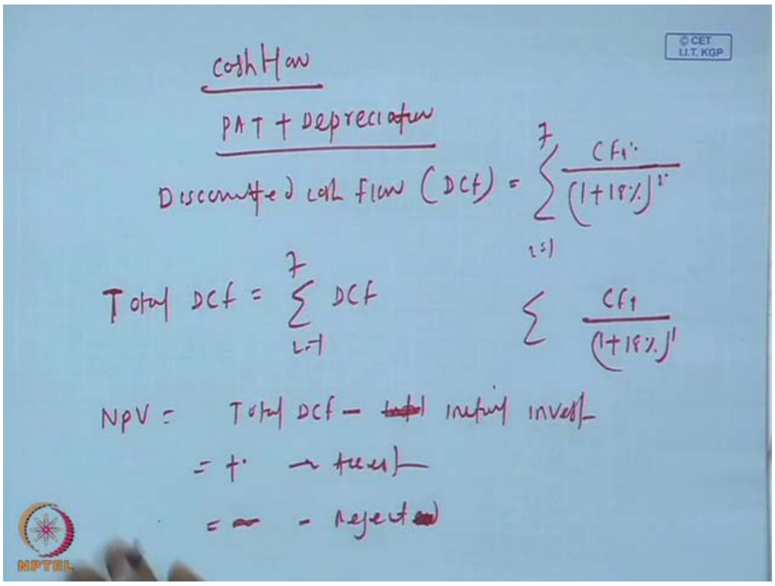

So, what is cash flow? Cash flow is is nothing but profit after tax plus depreciation because depreciation is a adjustment in the system. There is no out flow of money from the system. So, depreciation is cash flow will be every year cash flow will be pat profit after tax plus depreciation. Once you got cash flow, then you have to calculate discounted cash flow discounted cash flow because this cash flow are over the period. So, we have to bring it to present value because our investment 4000 crores is today and this cash flow are future in nature. So, we have to bring the discounted cash flow to the discount to the present value by cash flow by discounting it to 1 18 percent because our cost of capitals or discount rate is 18 percent.

Every year cash, so I want 2 5 7 seven years. So, every year cash flow divided by 1 by 18 percent. First year will be first year will be cash flow of first year divided by 1 plus 18 percent to the power 1. So, like that every year bring it to the discounted cash flow and what is the total discount, total cash flow? Total discounted cash flow is the summation of all discounted cash flow. i 1 to n. i 1 to 7 after getting the total discounted cash flow you have to calculate the NPV. NPV is nothing but total discounted cash flow minus the initial investment initial investment that if it is positive, then accept the project it is accept the project. If it is negative it is reject the project.

But we cannot do rejected the reject the project you cannot do it at present, because it is one part of our analysis after the NPV got from the domestic analysis, we have to go for the NPV adjustment process. Why you have to adjust because the foreign direct investor is getting some kind of other benefit. That in that benefit has to be need to be adjusted with the domestic NPV so that domestic adjustment process is separate here. The adjustment is because he has a 200 crores of block fund, he has, there is no requirement of paying tax, there is also domestic engine, you can purchase a foreign engine as 1,50,000 no need of manufacturing the engine in domestic level.

Similarly, he is getting a royalty of 2 percent that also tax deductible. These are the some kind of other benefit, the foreign direct investment is investor is getting. You have to factor into the domestic NPV so as to allow what is called the NPV actual. Now, let us first discuss about the domestic NPV. What we have done so far. If you see the excel sheet here.

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Simple NPV Estimation

Planned Investment	4500

Year	1	2	3	4	5	6	7
Number of Unit	100000	100000	100000	100000	100000	100000	100000
Operating cost per unit	450000	450000	450000	450000	450000	450000	450000
Revenue Per Unit	600000	600000	600000	600000	600000	600000	600000
Margin per Unit	150000	150000	150000	150000	150000	150000	150000
Net Income(Rs. Crore)	1500	1500	1500	1500	1500	1500	1500
Depreciation (20%)	643	643	643	643	643	643	643
Net Income after Depreciation	857	857	857	857	857	857	857
Tax (38%)	326	326	326	326	326	326	326
Earning After Tax (Rs. Crore)	531	531	531	531	531	531	531
Cash flow(Rs.crore)	1174	1174	1174	1174	1174	1174	1174
Discounted Cash Flow Rs. Crore)	995	843	715	606	513	435	369

The excel sheet is I have given to you. The excel sheet you see the planned investment 4500 crores. So, the planned investment is 4500 crores.

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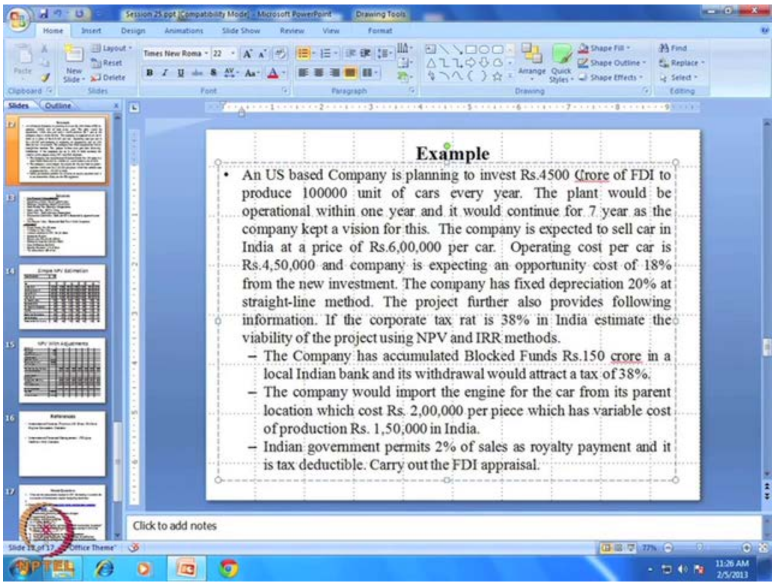

So, if you the planned investment is 4500 crores. So, so we have to see that the fourth every year the 4500 crores is the planned investment. You can see here the 4500 crore a 0 year initial starting period 4500 crores has been invested, so now the number of unit every year 1 lakh unit up to seventh year. The 1 lakh unit they are producing. What is the operating cost per unit? 450000 crores, 450000 crores every year for one unit of production, similarly revenue per unit 6 lakh 6 lakh, I have put here 6 lakh. You see so what is the margin per unit. So, 4 6 lakh is the revenue 4,50,000 is the cost so margin per unit is 1,50,000. 1,50,000 is here.

Now, income 150000 every year. So, but he has to produce how many? He has to produce 1 lakh. So, we have to 1 lakh into 150000, if you multiply the net income in crores. I have given you crores. Every year he is getting a net income of 1500 crores per unit margin, is 150000. He is producing how many unit? 1 lakh unit. 1 lakh into 150000 is divided by if you make into crores all are in rupee. So, make into rupee crores then it will be net income will be in crore 1 1500 every, every year.

Now, depreciation 20 percent. So, how much how much investment 4500 so 4500 divided by 7 every year. Depreciation is 643 crores. 643 crores now, net income after depreciation. Net income is 1500 minus 643 every year. 857 is the net income after depreciation. On net income there you have to pay tax 38 percent. So, 38 percent of 857 every year tax is 326. 326 crore is every year tax. If you are earning after tax and in net income is 857 minus 326 every year income after tax is 5 531 crores, every year 531crores. The cash flow cash flow is earning after tax plus depreciation, 6 5 31 and depreciation is 643.

If you add together the cash flow in every year in crore 1174 1174every year and discount is 1174every year by 18 percent we will get discounted cash flow every year discounted cash flow if you add all discounted cash flow up to 7 year you will get total discounted cash flow that is less than the 4500 crores because it is not recovering. However, it is a loss, but if the company is getting some kind of other benefits. The other benefits you have to factor now, what are the other benefit the adjustment; adjustment in NPV.

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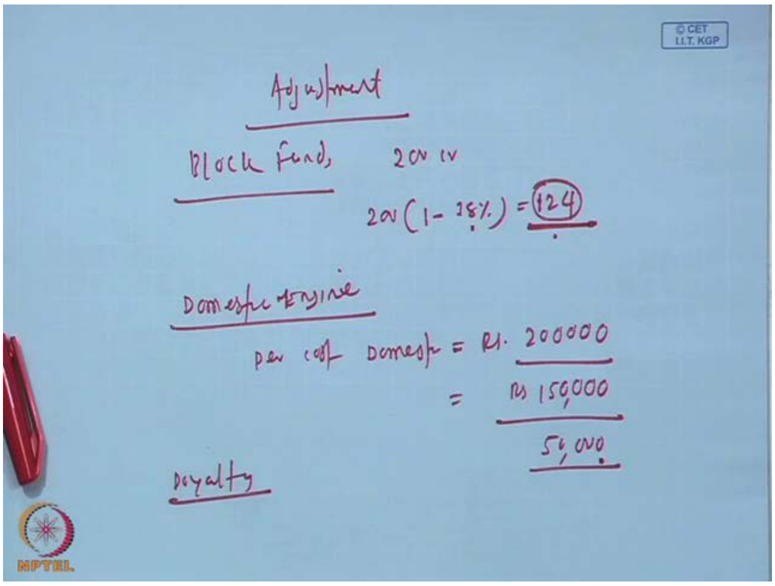

NPV adjustment will be taking place. Adjustment is what block fund. First we will adjust block fund. How much block fund is there? Block fund is 200 crores. If you withdraw you will pay 38 percent tax, if you do not withdraw then you will get the benefit. So, what is the benefit tax is 38 percent so he is getting a benefit of 200 crores into 1 minus 38 percent that is every year he is getting a benefit of a 124 crores. So, 124 crores is the increase in NPV, if he is supposed to pay 38 crores. He is not paying. So, he is getting a benefit of 128 crores 1 minus tax rate. The benefit is 1 minus tax rate. 124crores he is getting the benefit. That will increase the NPV that is earlier NPV whatever the NPV every it is increased by 124 crores.

Next amount domestic engine; domestic engine, suppose he will he will manufacture domestic engine, then engine cost is per 2 lakh cost per engine cost in domestic is Rs 2 lakh, but if we bring it from which subsidiary in abroad he will have a cost of 150000 150000, so he is getting a benefit of 50000 every year because he is supposed to manufacture every year so he is getting a benefit of 50000 every year, but how many units he is producing 1 lakh unit. 1 lakh into 50000 every year that much of benefit he is getting and that much of benefit will spread over to 7 years. So, every year you get a benefit of 50000 crore. 50000 and that will 1 lakh every year. So, it will be it will be 1 lakh every year. 1 lakh into 50000 every year benefit will be there for him.

Then royalty payment; royalty payment he is getting a royalty payment 2 percent of the sale, 2 percent of the sale. So, 2 percent of the sale is sales what are the sales amount 2 percent multiply. He is not supposed to pay 38 percent tax 2 percent sales he will get the benefit.

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NPV With Adjustments

Adjustment								
Block Funds	200							
Withdrawal Tax	38%							
Amount credited to NPV	124							
Domestic Engine								
Engine cost Per unit	200000							
Domestic Cost Per Unit	150000							
Cost Difference	50000							
		1	2	3	4	5	6	7
Total Cost advantage (Rs. Crore)		50.00	50.00	50.00	50.00	50.00	50.00	50.00
DCF of Cost Advantage		42.37	35.91	30.43	25.79	21.86	18.52	15.70
Royalty Payment								
2 % of Sales		120.00	120.00	120.00	120.00	120.00	120.00	120.00
Tax deductable (38% of tax)		45.60	45.60	45.60	45.60	45.60	45.60	45.60
Total Gain		165.60	165.60	165.60	165.60	165.60	165.60	165.60
DCF of Royalty (18%)		140.34	118.93	100.79	85.41	72.39	61.34	51.99
DCF With Adjustment		**1301.87**	**998.19**	**845.93**	**716.89**	**607.53**	**514.86**	**436.32**
Total DCF	**5421.59**							
NPV of the Project	**921.59**							

NPTEL

If you do this it will be separate calculation. Block fund 200 crores withdrawal tax 38 percent he is get a benefit of a 124 crores, domestic engine, power engine getting a benefit of 50,000 every year 50,000 in crores. If you multiply 1 lakh you will get a 50,000 every year. Every year benefit will be there, but this have to bring it to present value. Again you divide by 1 discount by 18 percent, you will get discount at cost advantage every year, similarly royalty payment 2 percent of sale. 2 percent of sales is 1 lakh into sales amount is 6 lakh 6 thousand 6 lakh 1 lakh into 6 lakh that is the sales you have to bring it to 2 percent. 2 percent is 120 crores every year.

So, tax you have to pay 25 38 percent tax. Tax amount is 45 crores. So, 45 crores is your tax and now total gain is 45 plus 120 165 crores every year and discount is 100 and 65 by 18 percent. We will get the benefit, if this benefit and this benefit together. Total DCF will be this much and earlier DCF is whatever earlier amount, where domestic DCF and plus in this DCF together 5421 what he has spent. He is paying, he is investing 4500 crore. The difference of NPV, 921 crores thus 921 crores is a benefit for him. So, without adjustment he was loss with adjustment he was in profit. So, 921 crore is a profit for him.

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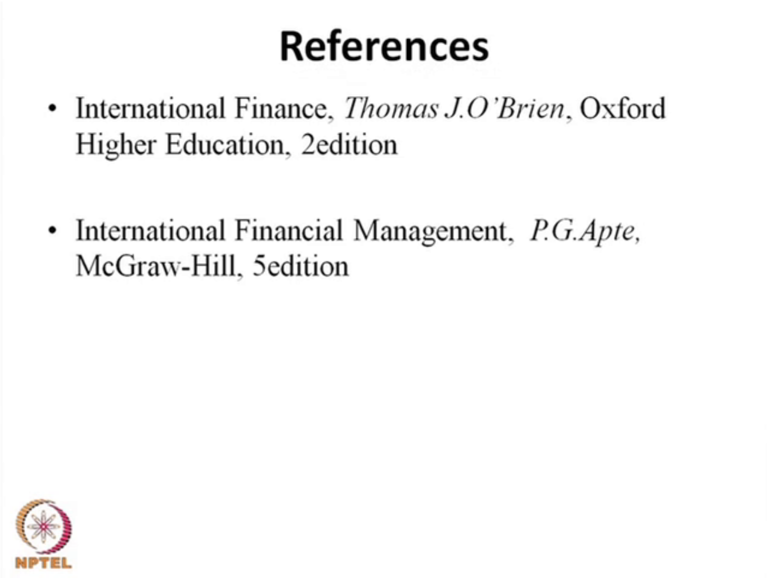

So, this is the calculation process. You can go through the references of these two references. And there are some question, I have kept for you.

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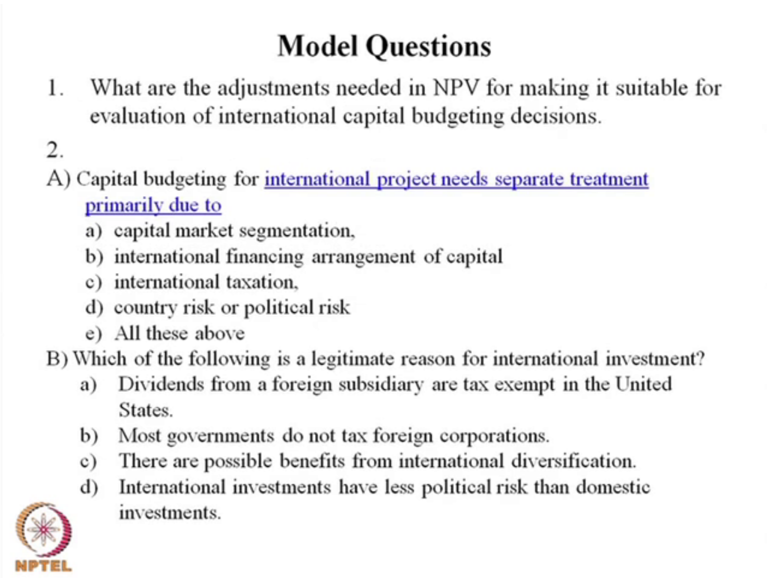

You discuss about the NPV adjustment process. Why, how a domestic NPV can be converted into international NPV? What are the adjustment needed in NPV for making the making it suitable for evaluation of international capital budgeting? I have mention you that the advantages adjustment process, block fund, taxes, royalty payment, less amount of tax these are the adjustment you need to bring out in domestic NPV so as to make it to international NPV. Then some short question I meant you the capital budget capital budgeting for international project need separate treatment primarily due to a) capital market segmentation. b) international financing arrangement of capital. c) international taxation. d) country risk or political risk. e) all these above. This answer is all this above to convert the capital budgeting international budgeting you have to adjust everything.

Second question is that which of the following is a legitimate reason for international investment dividend from these are the choices are a) dividend from foreign subsidiary are tax exempted in United states choice b) most government do not tax foreign in corporations number c) there are possible benefits from international diversification number d, international investment have less political risk than the domestic investment. So, here the actual is that number b, most of the government do not tax foreign corporation and because of that some kind of investment opportunities are there for multinational MNC.

Thank you.