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Lecture - 21
Operating Exposure Assessment

Today we will be discussing about operating exposure assessment, as we have discussed earlier session, exchange rate fluctuation is a risk; that risk may be in the form of transaction exposure, may be in the form of operating exposure, and may also be in the form of translation exposure. In the earlier session, we have discussed about the exposure in the form of transaction exposure, and how wean manage the transaction exposure.

This step, this session we will be discussing about the operating exposure; the meaning of operating exposure, and also how we can assess the operating exposure. When exchange rate fluctuate, it create some exposure; that exposure may be positive in nature, may be negative in nature. If exposure suppose, in the form of appreciation in domestic currency then it may create a risk for exporter, because with the increase or appreciation of domestic currency, the exporter who gets in the form of foreign currency, convert their convert their earning in the domestic currency, and they will be getting less amount.

However in the for a, for a importer, the appreciation of domestic currency make gives some kind of benefit, but the benefit depends upon whether the importer imports goods, which are goods or services or machinery, which can further be utilized for exports, then it create problem for the importer also. So, long run either appreciation or depreciation of currency, which is beyond unexpected or being cannot be, may cannot be absorbed in the domestic balance sheet, it is a risk for the exporter or importer and such kind of such kind of exposure, which change the value of the company or the value of the balance sheet of the company it known as operating exposure.

Operating exposure is nothing but exposure in the form of a value creation or value assessment. When a company has strategic, strategic point of view, they take position in the market to maintain the, maintain the unexpected, unexpected kind of foreign exchange exposure, they have to manage the foreign exchange risk in the form of expected appreciation depreciation or in the form of unexpected appreciation depreciation.

The expected appreciation or depreciation they generally factor in the day to day calculation day to day management of the company. However, unexpected appreciation depreciation very difficult to, which is very difficult to predict, the company may not be in a position to absorb the losses. If it is a loss, or if it is a benefit, they cannot absorb unexpected loss and this create some kind of risk for the company and when the risk are beyond the strategic level the company has to take drastic decision to manage this kind of exposure and one such exposure is operating exposure which is nothing but, nothing but a challenge for the company, which are export oriented or import oriented because these operating exposure need to be addressed not from the marketing side, not from the product pricing side, not from the any kind of derivative product side, but the company as a whole as a, as a whole they have need to absorb these kind of losses by proper planning and proper strategic decision making process.

Today, we will be discussing about this operating exposure, how the operating exposure can be defined, how the operating exposure can be assessed and how the operating exposure, once you assess, once you measure it, we can factor into their day to day planning of the, planning of the company. Operating exposure, as I mentioned these are the fluctuation in foreign currency foreign exchange rate which not only affect the individual transaction, but also entire value of the company.

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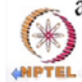
Operating Exposure: Meaning & Assessment

- Fluctuations in foreign exchange rate not only affects individual transactions, it affects the firm value as well.
- The impact of change in foreign exchange rate on firm value is known as the operating exposure.
- Operating exposure measures the change in the present value of the company due to change in future cash flows caused by any unexpected change in the foreign exchange rate.
- Long-term cash flows which are part of the normal cash flows of the company and yet to be contracted are affected because of operating exposure.



The impact of change in foreign currency exchange rate, exchange rate fluctuation may be in the form of appreciation, depreciation which either predictable or unpredictable

predictable exposure generally factor in day to day planning process unpredictable exposure need to be forecast and need to be, need to be addressed through proper strategic, strategic management point of view. Operating exposure measures the change in the present value of the company due to change in future cash flow, caused by any unexpected change in the foreign exchange rate because the exchange rate fluctuation as I mentioned earlier have a two dimension, one dimension is a we can predict the exchange rate some extent and on which are expected in nature and other dimension is unexpected in nature.

Generally a domestic currency depreciate, appreciate over a period of time which can predict with the two percent or five percent in a year. On their and this exposure I expected it nature and company generally priced the factor this exposure in day to day planning process, but unexpected, unexpected exposure create havoc in the problem for the company and this need to be judge or need to be absorbed from the beginning of the company valuation purpose. Long term cash flow which are part of the normal cash flow of the company and yet to be contracted or affected because of operating exposure; it may happen that company might have planned for the planned for the company export import, but they have not contracted it, they have not sign agreement with the exporter or importer and this, however, they plan it for export or import and this plan which are not being contracted create any fluctuation in the exchange rate create risk for the company and this kind of exposure which are unexpected, which lead to change in the value of the company create and create individual transaction some risk these are operating exposure.

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Operating Exposure: Meaning & Assessment

- Operating exposure affects the value of cash flows which are difficult to identify as these are long term in nature.
- Operating exposure is also known as competitive or strategic exposure. Unexpected change in exchange rate shifts competitive scenario for a company (may make it more or less competitive) vis-à-vis the competitors.
- Operating exposure is also known as strategic exposure as management of operating exposure requires a reorientation at a strategic level.
- With INR appreciating, competitive advantage for exports would be becoming difficult for Indian company. The Indian company may renegotiate raw material price it pays to its suppliers.

Operating exposure as I mentioned, mentioned the cash flow of the company, the value of the cash flow of the company affected because of operating exposure and cash flow as we in as we know cash flow are future oriented which are not realised from the beginning and any change in the cash exchange rate, which affect the future cash flow of the company or the future value of the cash flow of the company, is known as operating exposure and since it is very difficult to, very difficult to assess the future cash flow one hand, similarly is very difficult to know the their impact of foreign exchange exposure on the future cash flow.

In operating exposures are future oriented and this change this operating exposure once the company face or the company witness this operating exposure, they have to either change their position in the market or this operating exposure may lead to what is called either the company may, company may lose their competitive advantage because of operating exposure or it may affect severely in the valuation of the company. Because operating exposure generally affect the future cash flow of the company and future dominance of the company in the market or future market value of the company also get affected because of operating exposure.

Operating exposure also known as strategic exposure because it change the change the decision making process of the company, because the company forced to take strategic, strategic decision to maintain this operating exposure or and to absorb this operating

exposure. Generally any appreciation of domestic currency, the exporter get may not get the advantage of the a competitive advantage of their export items and hence their future export items depends upon whether future domestic currency will appreciate or depreciate.

So, if in similarly in the form of a importer, whenever currency depreciate over the period unexpectedly beyond the, beyond the normal depreciation, the importer also get affected because of this unexpected depreciation of currency. Similarly when you have not contracted any kind of exchange rate or when you are not contracted for export import what you have manufactured the goods for export import. However, and keep in your inventory whenever there is appreciation, depreciation their value also get affected. An operating exposure as I mentioned it is a very difficult to not only to define it, but to, but also to assess it, and manage it. Operating exposure it is a it is not a one man to maintain it or absorb it is not a one man job in a company, entire company the marketing division the product pricing division, the manufacturing division and also the division which manage the pricing, manage the finance position of the company should involve in managing the operating exposure.

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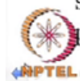
Operating Exposure: Meaning & Assessment

- With the appreciation of INR, export competitiveness of Indian company may reduce.
- Indian exporter may start sourcing raw material from other countries from different vendors. This may expose the Indian exporter to foreign exchange risk from the input side.
- Indian company may consider exporting to another country, which is not easy to operationalise.
- It may also force them to change their manufacturing process to compete with another set of competitors. This is also time consuming and not possible to protect the bottom-line in near future.
- The Indian exporters require to bring in reorientation at strategic level to factor the operating exposure in its business practices.



Operating exposure when the company, suppose in case of India with the appreciation of INR the export competitiveness of Indian company get affected. When the company came to know that the domestic currency that is in case of India it is INR is appreciating,

that export receivable when they convert into Indian rupee they get less amount of the receivable and this process that get this process also create not only the less receivable part, but also our own domestic product will be priced high, as compared to our competitor in the in other country.

Indian exporter may start to absorb this absorb this appreciation of domestic currency, the Indian exporter may start, what is called looking at the looking at the sources of depreciation, sources of appreciation. They come to know that they have to price their product as a less as compared to earlier because our own domestic currency is now appreciated. So, our exporter, our export the company export all affected because of that because when the domestic currency appreciate, in the international, international market our product will be more price and in this process the domestic company lose the export competitiveness. To prevent the export competitiveness or to enjoy the export competitiveness the domestic, domestic price of the good should be lower, that means, the company should start reducing the price in a by either by sourcing the raw material from the from low other country, where it can be available at lower price or the company can also start looking at other country where they can export their item and similarly the country can, the company can also try to reduce the manufacturing cost.

The company can also try to reduce the what is called direct operating cost, where labour cost also a part of that and the and also company can start reducing the overall cost of the company through more efficient production process. Because to prevent, to capture the market in a appreciating currency environment the exporter needs to reduce the price of the good and the pricing of the good can be reduced by through more efficient manner of manufacturing, by sourcing the raw material as a lower possible cost by reducing the overall cost of production by marketing it in other country, where the where the country the currency, the currency is price is lower than the Indian currency price and this only there, is these are the only way where the company can, company can reduce the overall cost of production to maintain the market, in appreciating domestic currency environment.

The company can also try to negotiate with the exporter, negotiate with the importer where they are exporting because negotiation, in the negotiation process the domestic the manufacture of the product may convince the importer that, my domestic currency is appreciated and because of that I am losing the margin and they negotiate for increasing

the margin or what is called the appreciation part of the domestic currency can be absorbed some extent by the importer.

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Operating Exposure: Meaning & Assessment

- Quantifying operating exposure is difficult as change in exchange rate affects future cash flows of the company.
- Operating cash flows can be categorized into two categories i.e cash flows arise from inter-company and intra-company receivables and payables, lease, rent and royalty payments and receipts and financing cash flows. Financing cash flows involve payment and receipt of loans, equity investments and dividend payments and receipts.
- In an efficient market forward rate is an unbiased predictor of futures spot market. Hence the forward rate can throw light on what is going to be future spot rate. Knowledge about the futures spot rate would help the companies to plan their pricing and sourcing strategies.
- If exchange rate changes can be anticipated, then companies plan accordingly.

In other word, in other word the operating exposure in the form of appreciation domestic currency some extent absorbed by the domestic manufacture and also some extent absorbed by the importer of the country importer of the product. Generally in a contract process we cannot predict the exchange rate over a period, that is more than one year or two years and the in the contract itself some clauses are generally put for the renegotiation of price of export on the basis of appreciation or depreciation of currency and this has become a normal practice now a days, because exchange rate all over the world now fluctuating. The fluctuation is not one direction may be some extent appreciation, some extent depreciation, and in this process if the normal currency depreciation, appreciation more than the expected.

Then the unexpected to pass may be renegotiable in the form of in the form of signing a new contract. So, generally all exporter importer now a days if the long run export, import decision they are putting in a clause format, for renegotiation if it is more than 5 percent or ten percent appreciation or depreciation of currency is there, because now-a-days competitiveness is so high that any depreciation or appreciation of currency more than 5 percent, create a difficult environment to operate, because the margin of competitiveness has declined over the year.

The margin the exporter, importer now-a-days enjoying is very thin in nature because of, because of competitiveness in the country, competitiveness in the world market. When we mentioned about the definition of the operating exposure, the meaning of the exposure operating, exposure and how it can affect the domestic exporter, importer. Let us now define what is called quantifying the operating exposure, quantification is very difficult because as I mentioned earlier the operating exposure affect the future cash flow, to quantify the impact of appreciation or depreciation of currency on the future cash flow, then we have to first predict first which are what the component of future cash flow. After that we can define or we can, we can measure the impact of appreciation or depreciation of currency on the future cash flow.

If you see the quantification of operating exposure is difficult, as change in the exchange rate affect future price flow of a country, company. Operating cash flow can be categorised into two categories, that is cash flow arise from inter-company and cash flow arise from intra-company receivables and payables, because when you mention that inter-company and intra-company, it we have to reduce in rate in such a way that company, now-a-days MNC, multinational company. They have subsidiary all over the world when the when the export, import takes place among the subsidiary it is called intra-company transfer of receivables or payables, payment of lease rental, what is called payment of royalty payment of some technology fee that is intra-company transfer.

Intra-company transfer of receivables payables or other, or any other form of cash flow generally managed in a different way. However, when we are discussing operating exposure, we are not discussing of the intra-company transfer, but we are we are discussing about inter-company transfer. Intra-company transfer takes place through transfer pricing mechanism and the transfer pricing mechanism is beyond the scope of the operating exposure, that can be absorbed, that can be redefined when we discuss about translation exposure, but here we are discussing about inter-company operating exposure.

An inter-company operating exposure, we have to define whether the company is a receivable company or payable company because generally, we cannot, we cannot find a company always receivable, we cannot find a company always payable, company because company generally receive and pay in foreign currency. If their exposures are in foreign currency and whenever receivables payables are involved, the receivable payable

for our operating exposure should be future oriented or which generally affect the future cash flow of the company.

Future cash flow of the company, company depends upon what is called the company exposure or company size in the world market. The company size is very big and future cash flow are significant amount, significant then generally the operating exposure may change the competitiveness of the domestic company. However, the domestic company have less amount of future cash flow that is future cash flow which are foreign currency denominated as very less compared to domestic currency, then it may not affect the affect what is called the company valuation side.

However, when you mention here we are discussing about operating exposure for a company whose cash flow is significant in foreign currency and spread over the many years definitely any appreciation or depreciation of domestic currency affect the value of the company and the competitiveness of the company. Our discussion is on that kind of company which cash flow are future oriented, the cash flow are foreign currency denominated and it and are significant enough to change the value of the company in future, because of appreciation or depreciation of currency and here we have to understand that we are operating in environment where efficient markets, the efficient foreign currency market is prevailed.

When efficient foreign currency market is prevailed we can predict some kind of exchange rate which are appreciation, depreciation the part of appreciation or depreciation may be predictable and some part will be unpredictable and predictable exchange part we are factoring in the pricing of the goods itself, in the planning process, in the planning process or in the negotiation process. Unpredictable part we is nothing but our operating exposure, in the unpredictable part if it is prevail upon the company for a for a few years, then it will change the value of the company because any unpredictable which are significant enough to change the value of the company or value of the future cash flow may affect the company valuation also and we are discussing about that kind of exposure which are unanticipated, which cannot be cannot be planned from the beginning and which can which can change, which are significant enough to change the value of the company. Accordingly, we are on now we try to quantify the foreign operating exposure.

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Operating Exposure: Meaning & Assessment

We can discuss the assessment and management of operating exposure with the following example.

An Indian company has agreed to supply 15000 units of pen-drive to Wal-Mart. Wal-Mart has agreed to pay USD 8 per piece. On the date of the contract, the spot rate is INR 51 per USD. Direct cost of manufacturing per unit of pen-drive is INR 350/- . The fixed cost is INR 400,000 per year for manufacturing base of 20,000 units. If INR appreciate to Rs.48 /- per USD what would be level of operating exposure and how the company manage the operating exposure.

To understand the quantification part of the foreign exchange operating exposure, let us discuss a problem, the problem is here an Indian exporter, the Indian exporter, Indian exporter is agreed to supply what is called 1500 units of pen drive to wall-mart. Wall-mart agreed to pay 8 USD, that is US dollar per piece of pen drive on the day of contract signing between Wal-Mart and domestic Indian company the exchange rate prevailed in the market was 51 rupees per USD.

The direct cost of manufacturing per unit of pen drive is 350 rupees and the fixed cost for the company to manufacture, what is called 15,000 units of pen drive, which something around four hundred thousand INR and this 4,00,000 once in a year and the company manufacturing base can produce 20,000 units of pen drive in a year. Now question is here so long as rupee is not depreciating beyond 51 and company transaction process does not change and Wal-Mart continues to buy 15,000 unit, per unit at eight dollar there is no problem for the company.

Suppose here the operating exposure is there because entire 15 20,000 units which is manufactured by the Indian company significant part, that is 15,000 units are exported and they exported to only one company, that is Wal-Mart and Wal-Mart agreed to pay at 8 dollar per unit, but when the Wal-Mart the entire process of transaction or manufacturing that is a pricing of the product at 1 unit is 88 dollar defined by the Indian

company by assuming that, rupee will prevail at 51 51 per dollar and the fixed cost remain as 4000 dollar.

Similarly, the direct cost of manufacturing as 350 rupees per unit and these are the assumptions. Rupee may not prevail at 51 if rupee appreciate, the appreciation is significant enough then the operating exposure that is in the form of cash flow will change the value of the company and our discussion is on this, on the basis of if rupee appreciate significantly what will happen to the company, what how much will be the operating exposure and what way the company can absorb the operating exposure.

This is our discussion part let us start to solve this problem, first you measure the operating exposure, identify the operating exposure, then we will manage then you quantify the operating exposure and then try to find some kind of solution to absorb this operating exposure.

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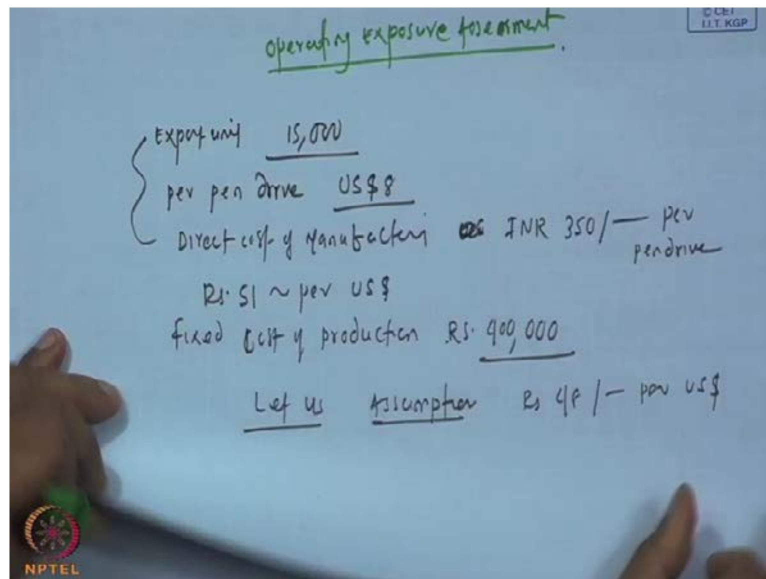

Here we assume that the company is producing 15,000 unit of pen drive, the exporter export unit is how much they are exporting, that export unit is 15,000 the export unit is 15,000 and per pen drive, per pen drive, the company is getting USD 8 and direct cost direct manufacturing cost, direct cost of manufacturing, direct cost of manufacturing in a INR, that is it is manufactured in India.

So, in INR or Indian rupee it is 350 per pen drive and when they take the decision that time a rupee was 51 per USD, that is US dollar and here the fixed cost, fixed cost of production fixed cost, fixed cost of production in in INR that is Indian rupee is 4,00,000 4,00,000. Now so long as rupee remains at 51 Wal-Mart continue to purchase at 8 dollar per unit and per unit manufacturing remain as three fifty there is no problem for the Indian company.

However, a rupee appreciate then that will create what is called operating exposure, because the entire cash flow of the company that is future cash flow of the company depends upon the export of 15,000 unit and they continue to export if the manufacturing, that is a pen drive cost per unit is 8 dollar. Now suppose, we are let us let us imagine that, let us assume that or let us find estimate that rupee appreciated to 48 rupees per dollar. Let us assume, assumption is that rupee become 48 48 per USD rupee is forty eight per USD now question what will happen. So, if you put the entire thing in the form of a discussion that now rupee is appreciating by to 48.

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Now, initial calculation was, when we calculate initially our pen drive cost in US dollar is eight. Then, we have US, US Indian rupee Indian rupee in USD the calculation was per Indian per USD is 51 rupees, our direct manufacturing cost, direct cost is in Indian rupee 350. So, now, 350 is direct cost and 51rupees is per dollar, per dollar and 8 dollar

per unit, now per unit cost, per unit cost per unit cost that is 8 in INR, that is Indian rupee is 51 into 8, 51 into 8 because one unit is 8 rupees 8 dollar and 1 dollar is 51 rupees.

So, per unit cost is 408 rupees now, but direct cost per unit is 350. So, contribution per unit is, per unit of sell that is one pen drive is sold by the Indian company to the Wal-Mart the contribution per unit is something around 58 rupees, 58 rupees now the company Indian company promised to export 15,000 unit.

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Operating Exposure: Meaning & Assessment

	Initial Level	INR Appreciate	Price Increase	Direct cost reduce
Price per Unit ($)	8	8	9	8
Spot rate US$1	51	48	48	48
Fixed cost (Rs.)	400000	400000	400000	400000
Direct Cost per Unit (Rs.)	350	350	350	300
Contribution Per Unit(Rs.)	58	34	82	84
Planned sale (Unit)	15000	10000	7000	12000
Sales (Rs.)	6120000	3840000	3024000	4608000
Fixed Cost (Rs.)	400000	400000	400000	400000
Direct Cost (Rs.)	5250000	3500000	2450000	3600000
Contribution (Rs.)	**470000**	**-60000**	**174000**	**608000**

So, contribution of 15,000 unit will be 58 into 15,000 that will be coming if you see the table 58 into 15,000, 58 in 15,000 that will coming, sales of direct cost we are getting that and finally, the contribution is coming 47 something and this is the cost I have mentioned here.

This is direct contribution is, but however, the sales planned sales is 15,000 so 15,000. When sales, the sales will be in Indian rupee, Indian rupee it will be eight per unit, we are sell, we are exporting 15,000 unit and per dollar is 51 rupees. So, direct sale will be how much, something around it coming 612. This is the direct sell in INR Indian rupee and question is fixed cost is, fixed cost every year the company has to absorb the fixed cost.

The fixed cost is here 4,00,000 total sales will be, sales in the form of Indian rupee is 6,12,00,00 and total fixed cost is total fixed cost is 4,00,000. So, contribution what is

called the contribution is will be, contribution or what can we can tell it in other word profit will be profit will be 4,7,00,00 Indian rupees.

So, if there is no change, what you have done here, we have cost per unit cost if you see that table, per unit cost is 8 dollar and per dollar spot price is 51 and the company has a fixed cost 400,000, company has a fixed cost of 400,000 and cost per unit is 350. How we got 350, now 350 is nothing but direct cost is given to us 350, that is in India the company producing one unit of pen drive at 3 rupees, 350 rupees and 300 he is getting per unit export, the company making a profit of 8 58 rupees, 58 rupees, how we got 51 into 8 minus 350, that is how much you how much you got by exporting it, how much you pay to manufacture it, that difference is at a 350 rupees per unit manufacturing.

Then, but the company promised to sell 15,000 a 15,000 unit and per unit is 8 dollar. So, 15,000 into 8 that is dollar amount of export, to convert into Indian rupee you multiply dollar amount of export into 51 rupees the exchange rate, we got every sales amount 612 61,20,000. Now the fixed cost of the company is 4,00,000 this fixed cost need to be absorbed, then sales minus the fixed cost, sales minus the fixed cost or the it is coming something around fixed cost is absorb the company the direct cost already there.

So, contribution part is 470,000 470,000 that is if the company export 15,000 unit per unit price is eight dollar and dollar remains at 51 rupees the company can get, what is called a 4,70,000 as profit, but that is not happening because rupee appreciating to 48 dollar, 48 per dollar. Now, when rupee appreciate to 48 per dollar, your second INR appreciation, if INR appreciate to 48, that is value of the INR increasing in form of dollar US dollar. Now, same amount continue everything remains same the company making a loss of 60,000 because the company now in place of 51 51 he is getting, when a export one when export one unit, he was they were getting 58 rupees are rupees are contribution margin. Since dollar rupee appreciated to 48 the contribution margin declined to34, but at the same time company need to absorb all direct cost, all fixed cost, there is no change here. So, company is because of the appreciation of dollar, appreciation of Indian rupee the company is making a loss of 60,000.

The company realise that, there is a there is dollar is, rupee is appreciating because of that reason the planned volume of sold planned volume has declined from 15,000 to 10,000 because when rupee appreciate the Wal-Mart may not agree to purchase 15,000

because the demand may be reduced because of appreciation of Indian rupee. They might have got the import from other county where US dollar, that other country domestic currency may not have appreciated.

So, with the appreciation of domestic currency the, Indian rupee appreciation affected the exporter, an export demand reduced from 15,000 to 10,000. So, one aspect the 15,000 of volume of export is reduced to 10,000 and this has affected the company at the same time the 40 51 rupees, now become 48 rupees per dollar, this also affected the export oriented company and this has reduced this has make the company unprofitable and loss making company of 16 60,000.

Now, realising this the company negotiated with the exporter, negotiated with the Wal-Mart and increased the price of the unit, from 8 dollar to 9 dollar, when the company increased the unit from eight dollar to nine dollar, further the volume of the export declined to 7000 from 10,000 it has declined to 7000. However, the company other thing remain constant, company got a profit of 1, 74,000, earlier it was making a loss of 60,000 by increasing the one dollar of price from 8 to 9, then company making a profit of 17 1, 74,000.

But volume has reduced, export volume has reduced from 10,000 to 7,000. Company realised that the time has come to increase the export volume and there is two way we can do it by increasing the, increasing the unit price of sale. So, company has agreed that I have to reduce the unit price of sale and bring it to present value, present price that is earlier price of 8 dollar, but some other way there is need to absorb the increase cost and that other way is to that is a direct cost. Direct cost company try to absorb the direct cost, direct cost per unit 350 the company reduced to 300 by increasing efficiency, by reducing the raw material cost, by paying less amount of salary wages to employee, they reduced the direct cost to three hundred three hundred per unit and however, they reduced the unit cost of export from 9 dollar to 8 dollar and this way the company make 60,000 60,08,000 profit.

Earlier it was making a 17,04,000 now they, because of reduction of price from 9 to 8 dollar per unit, a reduction of direct cost from 350 to 300 they made a they increased the contribution margin and increase the and also the sales volume increased from 7,000 to

12,000 and there is a profit of 68,000 and this is this is a way the company try to absorb the operating cost or the operating exposure.

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Operating Exposure: Meaning & Assessment

- Total Sales in INR
  - Spot rate * Price per unit * Total Sale in unit
- Total Direct Cost in INR:
  - Direct cost per unit * Total Sale in Unit
- Contribution Margin:
  - Spot rate * Price per unit- Direct cost per unit
- Profit:
  - Contribution Margin * Total Unit Sales – Fixed Cost

  Initial Phase
  - Spot rate Rs.51/- per USD
  - Price per unit : USD 8
  - Total Unit Sold: 15000
  - Profit: Rs.4,70,000

What way we have done it, we have done it the sales total sales in INR is spot rate into price per unit into total sale in unit. Similarly, direct total, direct cost in INR total direct cost in INR is nothing, but direct cost per unit into total sale in unit, contribution margin that is spot rate into price per unit minus direct cost per unit and profit is contribution margin into total unit sale minus the fixed cost. This is the way we follow to calculate and then what are the initial phase? Initial phase was the company selling at 8 dollar per unit and spot rate was 15 51 rupees per USD and total amount of sale for is 15,000unit, the company was making a profit of 4,70,000.

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Operating Exposure: Meaning & Assessment

Appreciation of INR

- INR appreciate from Rs.51/- to Rs.48 /- per USD
- Unit sales declined from 15000 to 10000
- Contribution margin per unit declined from Rs.58/- to Rs.34
- Profit declined from Rs.4,70,000 /- to Rs.(-) Rs.60,000
- There is a requirement for the Indian company to increase the unit price of pen drive.

Unit Price increase

- Realising this the Indian company increase the unit price to USD 9 from USD 8.
- Unit sales further declined to 7000
- Contribution margin per unit increased from Rs.34/- to Rs.82

- Profit improved to Rs.1,74,000 /- from Rs.(-) Rs.60,000

Now, after next is INR appreciated from 51 to 48 rupees, unit sale declined from 15,000 to 10,000 and this lead to decline in contribution margin from 58 rupees to 34 rupees, then profit margin also declined from 4,70,000 to minus 60,000, that is a loss for the company. The company realised that loss and they increased the price of the product, when they increased the unit price of the product from 8 dollar to 9 dollar the demand fall and demand reduced to 7000 and however, the company absorb, there is a increase in positive increase in the profit, but sales volume reduced from 15,000 to 7000.

The company realized that there is a requirement for the company to increase the sales volume and they reduced the price of the per unit per unit sold that is, per unit price was earlier 9 dollar they reduced it to 8 dollar, but tried to absorb the cost through the other way that is the direct manufacturing cost.

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Operating Exposure: Meaning & Assessment

Increase of Sales Volume

- To improve the sales volume the Indian company address the issue of reducing the price of pen drive.
- The company take some steps to reduce the direct operating cost so as to reduce the overall production cost.
- By reducing the direct cost from Rs.350 per unit to Rs.300/- the company is able to bring the per unit pen drive to its original level of USD8 despite the USD 1 remains at Rs.48/-.
- This has increased the sales volume to 12000 units and improve the profit to Rs.6,0,8000/-
- Direct cost might have reduced by reducing the labour cost, sourcing low cost inputs and improving efficiency in the company.

The direct manufacturing cost, if you see that by direct manufacturing cost they reduced from 350 per unit, Indian rupee per unit to 300 per unit and this and this and by reducing the per unit cost from 9 dollar to 8 dollar and reducing the direct cost from 350 to 300 the company make a profit of 6,08,000 and this reduction on in reduction in direct manufacturing cost possible may because may be because of sourcing the low cost raw material, low cost labour input and also by increasing the efficiency within the organisation and this is only possible to this is the only way the company can possible to absorb the operating exposure.

But it is it is also possible for the company by exporting the looking at looking at the exporting in from the Wal-Mart to any other organisation or the other company which can give them more price than the 8 dollar per unit, but that need that that possible, possibility is there only by searching the new market, new vendor, new importer for company and this is a long term measure not a short term measures. Short term measure is to absorb the cost by reducing the by reducing what is called the direct manufacturing cost and also, and also by increasing the efficiency in the within the organisation. So, that manufacturing cost can be reduced.

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Operating Exposure: Management

- At operational level, a company can undertake the following strategies to manage the operating exposure. Appreciation of domestic currency can be managed by
  - Negotiating higher price for the export
  - Reducing the domestic labour cost
  - Improving the manufacturing and delivery supply chains
  - Sourcing low cost inputs from other countries
  - Producing at optimum level and exporting it to other countries against which domestic currency has not appreciate.

If you understood this problem of operating cost, operating cost affect the every stages of the operation, every unit of the operation and all unit together need to absorb this or plan to absorb the operating exposure and this is possibilities are there by negotiating for higher price with the vendor, reducing the domestic labour cost, sourcing the raw material from other, other country from other sources, where cost of raw material may be lower improving the manufacturing and delivery supply chain, because within the supply chain of manufacturing or delivery there may be many inefficiencies is there that possibilities are there by improving the manufacturing and delivery supply chain, producing at optimum level because here if you see the earlier example they were exporting 15,000, but planned production was 20,000 unit so, there is a inefficiency in production system also they can increase by another 5000 unit and exporting it to other country, that possibilities are there.

Producing at optimum level of, optimum level then exporting it to other country against which domestic country, domestic currency has not appreciated has not depreciated. This is another example by sourcing the export from one from one seller to many seller or one sources of currency to any other currency area then also possibilities are there. It generally happen one domestic currency might have might have appreciated per dollar, against the dollar it may not have so for Pound sterling for Yen for Euro or any other currency.

So, possibilities are there we can find other vendor, other importer to get our to where we can supply our other part of the export unit and this is the way we can absorb, what is called the operating exposure.

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References

- International Financial Management, 3nd Edition, by Eun and Resnick, Irwin, 2004.
- Multinational Financial Management by Jeff Madura, Thomson Publications
- Multinational Financial Management, by Alan C. Shapiro, Wiley India, 8th Edition.

When you when you, we try to manage the operating exposure there are many other way to manage the operating exposure and that we will be discussing in our next session. To understand the operating exposure for assessment and quantification you can go through the international financial management book by Eun and Resnick. We also go through the multinational financial management book by (( )) and Madura and also the possibility something you can also discuss with the multinational manufacturing company, multinational financial management by Alan and Shapiro. These three books we can go through that and see how we can understand the assessment and management of operating exposure.

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Model Question

Linton Battery Ltd an export company in India manufactured battery for cars and export to USA. The current FX rate is INR 51 per USD. The company exports 15,000 units a year at price of $ 125 each. The CFO of the company apprehends that spot INR is going to appreciate by 5 % by the next year and would remain unchanged for next 2 years. The fixed cost is INR 25 million. The company does not generate sales from any other source. The direct cost per unit is INR 6000 . What would be the strategy do you recommend for the company to absorb the INR appreciation ?

For model questions, some model question here. I have given a simple problem, a battery company in India they are exporting battery to car battery, car manufacturing manufacture in US. They have signed a agreement with the car manufacturer in US to supply battery they are supplying 15,000 unit of battery, at a rate of 1 lakh 125 dollar per unit, when they do it they sign the contract that time dollar was 51 rupee 51 per 51Indian rupee per dollar, when this is the plan time of plan measure plan the company had sign a agreement with the US company.

However, the company CFO through his calculation, through his assessment they came to know that the dollar may, Indian rupee may appreciate against the US dollar next by 5 percent next year and it may continue to continue at the same level next 2 years. The question is if the appreciations are there over the period, next year 5 percent appreciations are there, then it may affect the company plan proposal and company may face the operating exposure they need to plan to absorb these operating exposures.

Then plan wise drawn though this example the company does not, does not generate any kind of other sales, there is no other export the whatever the battery they manufacture they are exporting to US. The fixed cost of the operation is 50 25 million dollar, 25 million Indian rupee the direct cost for manufacturing per unit manufacturing battery was manufactured in India per unit manufacturing was 600 6000 rupees.

Then question is after the forecasting of the in appreciation of Indian rupee what should be the strategy for the company to absorb this operating exposure, why operating exposure a rise here? because significant part of the battery manufactured battery that is something around 15,000 they were exporting abroad that is to US area, US currency that is dollar and there is a prediction Indian rupee may appreciate by 5 percent coming 1 year and appreciation continue till after 2 years also.

So there is, because future cash, flow involve after one year after next 2 3 years they will get a future cash flow that is in form of US dollar. Dollar will be depreciating against Indian rupee. So, the future cash flow when they get in dollar they will convert into Indian rupee and Indian rupee will be is appreciating against dollar. So, they will get less amount of Indian rupee and this less amount of Indian rupee may affect their competitiveness, they affect may affect their what is called the profitability, of the company and they then need to absorb this kind of operating exposure, then question how they have done it, same thing what we discussed earlier example what they do will. First the currency is appreciating. So, if you see the price of the battery is 125 dollar when they priced it that time Indian rupee was Indian spot rate was 51 rupees. So, fixed cost is 25 million Indian rupee and direct cost per unit, to manufacture one unit of battery it is 6000 Indian rupee. So, the contribution per unit is 375 how I got the 375, 125 into 51 minus 600 6000, is nothing but 375 manufacturing one unit of car battery and exporting it to US, they got 375 per unit, that is profit per unit.

Then planned sale they are exporting how many 15,000. So, sales amount 15,000 into 125 into 51 that is sales amount, these are sales amount the fixed cost already given to you 25 millions Indian rupee direct cost per unit of direct cost is 6000 into 15,000, 6000 per unit of cost to produce in India and how many they are producing 15,000. So, this 15,000 and 6000 is nothing but the direct, direct cost in India and sales minus fixed cost minus direct cost is the profit for the company the domestic company.

So, this profit is this much when 125 unit is the cost of that is the price of the battery the in dollar term and rupee remains as 51. Now suppose rupee appreciate by 5 percent that is the rupee become 51 to 48.45 48.45 same amount remain constant everything remain constant. So, the contribution you need decline to 56.25.

Since rupee appreciate the export decline from 15,000 to 10,000 now after this everything remain constant. So, there is a loss for the company, this is a loss for the company. Now company realise there is a loss they increase the price of the battery in US dollar. So, they increase from 125 to 130 everything remain constant that, so they make a profit of what is called again they are because they increase the price from 125 dollar to 130 dollar the market decline and sales, sales, planned sales reduce from 10,000 to 7,000 and continue to make profit of, continue to make loss of 4,10,000.

Realising that this is not a strategy by a to, a to maintain the profit margin they have, they have to do some other way and they have done it the first, they again reduce the price and bring and brought it to 125 earlier price. however, they have gone for reducing the direct cost per unit, by increasing efficiency by sourcing the raw material from other low cost raw material, they reducing the labour cost by what is called, they are improving the efficiency of the organization they recue the direct manufacturing cost from 6000 to 5000 and in this process they made a profit of, this is the profit they make this is the profit they make it.

So, here you have to understand that by increasing in the price of unit you cannot improve the, cannot reduce the operating cost. Operating cost need to be absorbed by proper planning way by either through renegotiation with the vendor with the exporter importer, by increasing the what is called sales volume, by reducing the price by improving the cost efficiency, by going for what is called what is called that improving the sales what is your efficiency, in the organization by sourcing the raw material from other sources where it is cheaply available, by reducing the overall cost of the company because you have to operate in a highly thin margin highly competitive environment, where operating cost operating exposure cannot be, cannot be reduced by increasing the or price of, the price of the items.

With this let me conclude that operating exposure assessment and their quantification we have discussed. Next class we will be discussing about the management of operating exposure.

Thank you.