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1. Learning Outcomes

After studying this module, you shall be able to

- Know the rationale behind the exposure management.
- Know the internal and external techniques of management of exposure.
- Analyse internal techniques.
- Analyse external techniques.

2. Introduction

To hedge or not to hedge a foreign exchange risks and exposures is not a simple question. To decide hedging strategy managers need to have right answers to three basic fundamental questions:

- ✓ How well does the manager understand the firm's exposures?
- ✓ If identified, would hedging these risks make shareholder better off?
- ✓ If so, is it practical to hedge these risks adequately?

The present module is basically deals with these three issues and makes reader familiar about the overall management of foreign exchange risks and exposures.

3. Know the Rationale behind the Exposure Management

Foreign exchange risk management has become increasingly important since the abolishment of the fixed exchange rate system of Bretton Woods in 1976. This tends to shift in the exchange rate regime from fixed to floating. In a floating rates system, price of currencies is determined by supply and demand of money. As we know such supply and demand for money are bound to frequent changes due to numerous external factors, this floating exchange rates system is responsible for currency fluctuations. Moreover, economies are getting more and more open and competitive in nature and companies become as a result more exposed to foreign exchange rate fluctuations.

4. Know the Internal and External Techniques of Management of Exposure.

Risk and in particular foreign exchange risk can be managed in various manners. In this we are taking about hedging the risk. A distinction between the hedging techniques can be made: there are internal and external hedging techniques. The former include all the techniques that do not require external parties. External hedging techniques deal mainly with financial with contracts such as futures, forward, options and swaps. If the company organises its international transactions within the company itself, it is called internal technique. It is also noted that internal techniques use methods of exposure management which are part of a firm's regulatory financial management and do not resort to special contractual relationship outside the group of company itself.These techniques aim to reduce or prevent exposed positions from arising. The main forms of internal techniques are netting, matching, pricing policies and asset liability management and leading and lagging. When choosing between different types of hedging, the risk manager must

compare costs, taxes, effects on accounting conventions and regulation. Several objectives can be assigned to risk management, the most common ones are: to minimize foreign exchange losses, to reduce the volatility of cash flows, to protect earning fluctuations, to hedge the risk irrespective of the views on foreign exchange risk. Most corporations do not use only one technique but rather determine which technique is the most suitable for a particular case.

5. Analyse Internal Techniques

5.1 Netting

Netting is probably one of the most used methods. The idea is to reduce the number of transactions that a firm needs to make in order to cover an exposure. It requires the firm to have a centralized organization of its cash management. The centralization means that the company collects foreign currency cash flows between subsidiaries and groups them together so as an inflow offsets an outflow in the same currency. Two types of netting exist: bilateral and multilateral netting. Let us illustrate the bilateral netting with an example. Consider an Australia based company with two subsidiaries: one in Germany and one in the USA. The German subsidiary owes the American subsidiary 20000 Euro. The American subsidiary owes the German subsidiary 30000 Euro. Netting these two flows leaves the company with a payment of 10000 Euro from the American to the German subsidiary. Thus the number of transactions has been reduced as well as the total amount of the exposure. This technique is repeated for each currency to which the company is exposed.

Multilateral netting is more complex, but follows the same rationale. The same Swiss firm opens a third subsidiary in Japan. Suppose the subsidiaries owe each other some amount as reported in figure 2. When netting the payments, we obtain table 1. Rather than having all these transactions taking place, only the netted amounts are exchanged through a netting center (Figure 3). Netting is an appropriate and easy to implement technique to hedge transaction exposure.

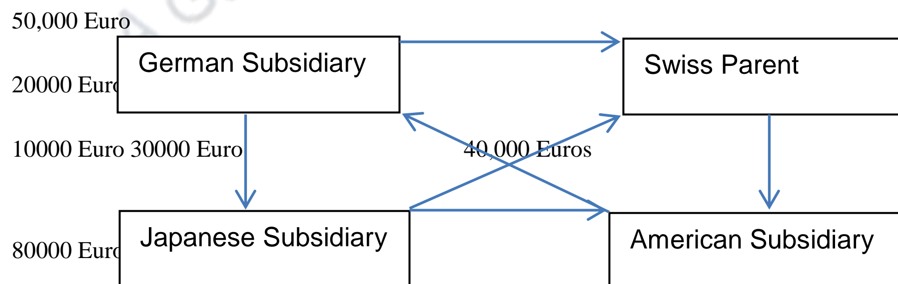

Figure 2: Before Netting

Table 1: Multilateral Netting

Pays		Receive	Net
Swiss	40000	80000	+40000
German	60000	30000	(-)30000

Japanese	110000	10000	(-)100000
American	30000	120000	+90000
			0

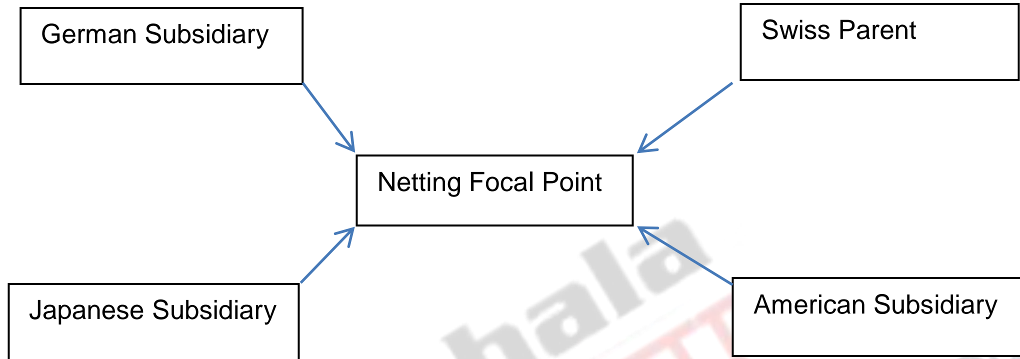

Figure 3: Multilateral Netting

5.2 Matching

Although netting and matching are terms that are frequently used interchangeably, there are distinctions. Strictly speaking, netting is a term applied to potential flows within a group of companies whereas matching can be applied to both intra-group and third-party balancing.

Matching is a mechanism whereby a company matches its foreign currency inflows with its foreign currency outflows in respect of amount and approximate timing. Receipts in a particular currency are used to make payments in that currency, thereby reducing the need for a group of companies to go through the foreign exchange markets to the unmatched portion of foreign currency cash flows.

The prerequisite for a matching operation is a two-way cash flow in the same foreign currency within a group of companies; this gives rise to a potential for natural matching. This should be distinguished from parallel matching, in which the matching is achieved with receipt and payment in different currencies but these currencies are expected to move closely together, near enough in parallel. An example would be currencies that adhere to a joint currency float. Of course, there is always the chance with parallel matching that the currencies concerned may move away from their previously parallel paths. In this case the expected match fails to be realized.

The practical mechanics of matching are rather like multilateral netting, since it involves the group treasury and gives rise to the need for information centralization with the group finance function just before settlement.

Practical problems may arise because of the uncertain timing of third-party receipts and payments. Unexpected delays can create problems for the multinational treasury in its endeavours to match receipts and payments. There are obvious difficulties in the

possibility that receipt of a sum due on a certain settlement day is postponed, but payment is nonetheless made on that same date as originally anticipated. For this reason, success in matching is very much a function of the quality of information coming to the corporate financial centre, including realistic and accurate predictions of settlement dates. Like netting, the extent of matching is constrained by the exchange controls of some countries.

5.3 Leading and Lagging

Leading and lagging are carried out to adjust the timing of receipts and payments. 'Leading is making a payment early, while 'lagging' is delaying payment. Leading and lagging are best suited to the intercompany settlement environment rather that for dealing with third parties. It enables a group to manage both its cash position and its currency exposures in such a way as to benefit from offsetting positions within the group.Leading and lagging can enable a group to adjust the timing of currency flows to eliminate unnecessary dealing to take advantage of expected currency movements.

Example:-

Subsidiary X owes Subsidiary Y USD 1 million, payable on 30 June. Subsidiary Z owes Subsidiary X USD 1 million, payable on 31 July.

Subsidiary X either obtains agreement from Subsidiary Y to delay payment until 31 July or request Subsidiary Z to pay one month early, on 30 June. Alternatively, a compromise could be reached with payments being made at some point between these two dates so that Y and Z share the disadvantage. The result of leading and lagging is that internal sources of currency have been used and settlement has been made without the need to enter into foreign exchange contracts.

Where its base currency is weak, a company would seek to lead its foreign currency payments and lag its foreign currency receipts. If its base currency is strong, however, it would take the opposite approach. The aim is to maximise assets in strong currencies and to maximise liabilities in weaker currencies.

Leading and lagging is only really appropriate where there is a reasonable volume of intercompany cross-border trade and where there are no governmental or regulatory restrictions. Because leading and lagging can become complex, and because it is essentially carried out to obtain a group benefit, there is a strong argument for a central treasury to be responsible for implementing and controlling it. Where there is a local minority interest, it may not be possible to lead and lag if local costs are incurred in order to achieve a group benefit.

5.4 Pricing Policy

Price adjustment can be made in different manners. First, when the local currency of a subsidiary is devaluating, the subsidiary can increase the price, so as to cancel the effect of devaluation. This technique is particularly used in countries where devaluation is high and where derivative markets are inefficient. On the side of disadvantages, the difficult implementation of this method needs to be signalled. Prices cannot be raised without any consideration about competitors because if the price increases too much the customer

will choose an equivalent and cheaper product from a competitor. In the same logic, a firm can increase the export price. But then the price adjustment is even more complex, since the company has to face not only local but also international competitors. Second, the company can change the currency of billing. Third, the firm can use export currency of billing to transfer profits from one affiliate to another. The purpose is to raise or lower intergroup selling prices by billing rate adjustment so that profits appear in hard currency or low-tax companies. This technique is very aggressive and can be forbidden by regulation.

5.5 Asset and Liability Management

This is another internal technique to manage unfavourable change in exchange rate in the future. Asset and liability management technique can be used to manage balance sheet, income statement and cash flow exposures. It can also be used aggressively or defensively. They aggressive approach reflects to increase exposed assets, revenues, and cash inflows denominated in strong currencies and to increase exposed liabilities, expenses, and cash outflows in weak currencies. The defensive firm will seek to minimize foreign exchange gains and losses by matching the currency denomination of assets/liabilities, revenues/expenses and cash inflows/outflows, irrespective of the distinction between strong and weak currencies. To achieve these objectives, variables are grouped. Operating variables includes trade receivables and payables, inventory & fixed assets and financial variables cash, short-term investments and debt. The currency denomination of operating variables is determined by intrinsic business conditions, production and marketing factors.

Financial variables can be used for exposure management purpose and thus corporate financial management has more discretion over currency denomination. The paucity of currency finance is often a major problem. The parent company would borrow the weak currency for long term while the subsidiary is usually limited to short term borrowing. This is because: - (a) most subsidiaries are not individually listed on a stock exchange, so that the public issue of debt instruments is very difficult, hence, the substance of long-term loans taken out by foreign subsidiaries are private placements; (b) many foreign subsidiaries are relatively small and not well known to the local financial community; and (c) host governments may be reluctant to allow term borrowing by expatriate subsidiaries.

6. Analyse External Techniques

6.1 Currency Forwards

Forward contracts obligate one party to buy the underlying at a fixed price at a certain time in the future from a counter party who is obliged to sell the underlying at that fixed price. Take a case of an Indian exporter who expects to receive, say, US$ 1 million in six months. Suppose the prevailing exchange rate is Rs 53.60 now. If the price of the dollar falls by 20%, the exporter loses Rs 107.20 lakhs. But by selling dollar forward, the exporter fixes the current rate of Rs 53.60 which means even after dollar depreciating by

20% in the next 6 months, the exporter would still get Rs.53.60 per dollar. Thus, the exporter has completely hedged him to reduce his exposure to exchange rates.

6.2 Currency Futures

A similar contract to the forward is a futures contract. For the first time it was introduced in 1972. Major currencies on which futures exist are the GBP, USD, CHF, CAD, and Euro. In practice, this contract is not often used to hedge foreign exchange risk. Moreover, as the amounts and delivery dates for futures are standardized, a perfect hedge through futures is not possible. Apart from this, there are intermediate cashflows under futures contracts owing to ‘mark-to-market’ mechanism.
Naturally, such cashflows could be positive or negative. In contrary to said above, futures are more liquid, more regulated and more secure than forward contracts.

6.3 Currency Options

Options on foreign currencies are an alternative to hedging in the forward or money markets. Option contract allows the buyer to participate in the good side of the risk, while insuring against the bad side of the risk. An option has a right but no obligation to perform. Thus, an importer who purchased a call option will have a right to buy the underlying i.e., dollar at the agreed price, even if the current spot price is higher the price under option. On the other hand, if the spot price is much less than the price under option, the option holder will not perform the contract and acquire dollars from the spot market.

6.4 Currency Swaps

Another popular tool is the swap. In a swap, companies exchange funds directly. Two companies in two different countries agree to sell each other their own home currencies at current spot rates and at the same time they agree to buy back the currencies at a given future date and a given exchange rate. It is like borrowing and lending at the same time with the same counterpart.

6.5 Money Market Contracts

A company can hedge it foreign exchange exposure by using the money market. For instance, an exporting company will be receiving dollar in six months. The treasurer does not know what the dollar will be worth in next six months. He could simply borrow dollars now from a bank and covert these to Euro at the spot rate on that date. Thus he has a dollar debt, but that does not matter because he can repay this debt when he receives the dollars in six months. The company has the amount of Euro needed and can deposit it in a bank and thus earn the six months’ interest. This process permits the firm

to dispose immediately with money and not to wait six months for the dollars. In addition, the exchange rate risk is covered.

7.Summary

- Exposure management is the process of minimising the financial effects of changes in the exchange rates by using internal and external hedging techniques.
- Forecast exposure is also known as uncommitted exposure. A currency exposure which is expected to arise based on reasonable forecasts of future trading patterns.
- Internal techniques of exposure management are those that do not resort to special contractual relationships outside the group of companies concerned. Such techniques include netting, matching, leading and lagging, pricing policies and asset/liability management.
- External techniques of exposure management are those that resort to special contractual relationships outside the group of companies concerned. Such techniques include derivatives like forward, futures, options and swaps.
- Netting involves associated companies with debts, possibly as a result of trade with each other. Associate companies simply cancel out amounts owed with amounts due and settle for the difference. At its simplest level, there is bilateral netting; at a more sophisticated level, we have multilateral netting. Either way, the group treasury plays an active part in co-ordinating settlement payments between associated companies.
- Netting reduces banking costs. It has been estimated that savings of approximately one-sixth of 1 per cent of the flows eliminated are likely to accrue from netting.
- Matching is a term applied to a similar technique which involves not just affiliates, but also third parties.
- Leading and lagging are techniques that are resorted to in the light of expected devaluations or revaluations. These mechanisms simply involve making an advance payment or delaying payment on amounts due and denominated in foreign currency. The basic idea is to reduce the amount of local currency needed to settle a debt. It should be noted that it is necessary to take into account the effects of interest payments and receipts when considering the implementation of a leading or lagging tactic
- Pricing policy, used as an exposure management technique, simply involves increasing prices to allow for expected changes in exchange rates or invoicing in a particular currency to reduce the risk associated with invoicing in the host currency when devaluation is expected.
- Asset and liability management, used in the context of exposure management, involves manipulation of operating or financial variables to balance the currency of payments with the currency of inflows.

- Forward contracts obligate one party to buy the underlying at a fixed price at a certain time in the future from a counter party who is obliged to sell the underlying at that fixed price.
- A similar contract to the forward is a futures contract. For the first time it was introduced in 1972. Major currencies on which futures exist are the GBP, USD, CHF, CAD, and Euro. In practice, this contract is not often used to hedge foreign exchange risk. A perfect hedge through futures is not possible.
- Options on foreign currencies are an alternative to hedging in the forward or money markets. Option contract allows the buyer to participate in the good side of the risk, while insuring against the bad side of the risk.
- In a swap, companies exchange funds directly. Two companies in two different countries agree to sell each other their own home currencies at current spot rates and at the same time they agree to buy back the currencies at a given future date and a given exchange rate.
- A company can hedge it foreign exchange exposure by using the money market contracts.

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