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# STUDY OF CURRENCY RISK AND THE HEDGING STRATEGIES

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# **ABSTRACT**

The globalization of financial markets achieved by dynamic technological advancements, financial market liberalisation and the departure of capital controls have urged all MNC with foreign money streams the need to manage foreign exchange exposure risks introduced by a volatile exchange system. Today, multinational firms are striving to create methods and methodologies for an efficient and effective exchange risk management. The foreign exchange strategy embraced is essential to an MNC in the present-day condition because of the great inconstancy in transaction rates and needs to advance with the dynamic structure of the organisation. Further, given the way that organisations are continually signing commercial and business contracts titled in foreign currencies, precise estimation and supervision of exposure and economic risks have turned out to be vital to the success of an MNC. This paper review the traditional types of exchange rate risks faced by the firms due to the surge of global quest for trade across borders. The paper further explain the importance of risk management strategies with special reference to hedging and outline the various hedging strategies both external and internal used by Multinational companies (MNC's).

Keywords: Exposure, currency risk, hedging, exchange rate, translation, transaction, operating.

### 1. INTRODUCTION

The integration of economies around the world has allowed businesses today to flourish profitably at an unprecedented rate by allowing them to take advantages of lower cost production factors and suitable market conditions for their product and services. But these advantages have also brought along with them a factor of risk which is associated with the floating exchange rate system, wherein the value of a currency is subject to changes in accordance with the foreign exchange market. The presence of this risk has made the business operations of companies dealing with foreign counterparts highly vulnerable to potential losses or gains arising out of foreign exchange rate fluctuations. The potential gains or losses that companies are exposed to in the present or near future due to exchange rate changes are measured in terms of *foreign exchange exposure* which "is a measure of the potential for the firm profitability, cash flows, and market value to be adversely affected by unanticipated changes in the exchange rate" (Eiteman,2011). The paper focuses on foreign exchange exposures by elucidating traditional types of foreign exchange exposures namely Translational, Transactional, and Operational. The paper also discuss different types of hedging technique used by the multinational Enterprises to moderate risk and be successful globally.

## 2 TYPES OF EXPOSURES

The success and failure of any firm depends on the three financial elements: profit, market value and net cashflow. These elements are subjected to currency exchange rate risk —exposure. The three exposures have been studied by taking into consideration the time period of exchange rate changes and its consecutive effects in the present or near future on the business enterprise operations (Figure-1).

Figure 1- Traditional types of foreign exchange exposures

Moment in time when exchange rate changes

Translation exposure
Changes in reported owners' equity in consolidated financial statements caused by a change in exchange rates

Change in exposure
Exchange rates

Transaction exposure
Impact of settling outstanding obligations entered into before change in exchange rates but to be settled after change in exchange rates

Time

Source: Eiteman et al.(2011)

## 2.1 TRANSLATION EXPOSURE

Since the Gold standard era the value of currency exchange rates are always fluctuating due to their demand and supply in the international market .When a firm faces the risk of value loss or gain due to fluctuation it is know as translation exposure or economic exposure.

Translation exposure occurs when the firms "translate "foreign currency assets and liabilities into home currency for the purpose of finalizing the accounts for any given period (Francis, 2010). Foreign subsidiary's financials represented from the financial statements are to be converted into the parent company's currency denominations so that they can be reported with monetary proclamations of different organisations under their corporate umbrella to create the worldwide consolidated financial statements (Law,2014). Translation exposure happens because of the potential for accounting-derived changes in owner's accounts in a foreign country—those documented at the balance-sheet dated rate or prevailing exchange rate—whichever get profited or lose value held by them as the currency conversion scale fluctuates (Cavusgil et al.,2013).

As per the Accounting Standards Board of the country, in order to report the consolidated financial statements at the end of the accounting year it is required that the MNEs i.e. parent companies translate the foreign currency denominated financial statements of their respective foreign subsidiaries into the domestic currency as it is lies in the business interest of global investors, management of the enterprise to evaluate the MNE"s performance relative to others based on domestic currency. It is in this process of translation of the financial statements where the translation exposure (or accounting) emerges. It is important to bring into notice the point that the translation principles differ from country to country.

The translation of foreign subsidiary's financial statements into domestic currency for the purpose of consolidation is subject to changes in exchange rates. While the accounting equation of Assets = Liabilities+ Equity holds true for the foreign subsidiary in terms of its functional currency (foreign currency in which subsidiary operates) (Habibnia,2013) .The translation into domestic currency at the current exchange rate may result into either increase or decrease in the Shareholder's equity (in balance sheet), and its net earnings (in income statement. The current exchange rate is not used to convert every line item on financial statements of the subsidiary as it will lead to no changes in the parent company. The change arises when certain line items like capital stock, retained earnings etc. are translated at historical exchange rates (Bogicevic,2013).Translation methods are of four types:current Rate, monetary/Non-monetary, temporal and current/Non-current.

In order to understand how translation exposure affects the MNEs net income and net worth, we will be calculating translation exposure by the current rate method in which only the capital stock and retained earnings are translated at

historical exchange rates. **Table 2.1 and 2.2** shows the balance sheet of NOVA Ltd, the Indian affiliate of AVON Ltd a US based cycle manufacturer as on 31 March 2017 .The exchange rates for translation are as follows:

**Table 2.1- Exchange rate for translation** 

Date	Exposed Assets (Rs/US\$)
Historic rate	35
On 31 <sup>st</sup> March"2017	40
On 1 <sup>st</sup> April,,2017	41.5

<sup>\*</sup>Historic rate is the rate at which liabilities and assets were acquired initially.

Table 2.2- Effect of Translation exposure on B/S of NOVA Ltd. (Current rate method)

Table 2.2- Effect of Translation exposure on b/S of NOVA Ltd. (Current fate method)					
Particulars	Amount (Rs.)	Ex-change rate (INR/USD)	Conversion to US\$ as on 31 <sup>st</sup>	Ex-change rate (INR/USD)	Conversion to US\$ as on 1st
Assets			• • • • • • • • • • • • • • • • • • • •		. 2010
Cash	6000	40	150	41.5	144.57
Accounts	4500	40	112.5	41.5	108.43
Receivables					
Inventory	4500	40	112.5	41.5	108.43
Plant and Equipment	10000	40	250	41.5	240.96
Total	25000		625		602.39
Liabilities					
Accounts Payables	3500	40	87.5	41.5	84.33
Short-term loan	1500	40	37.5	41.5	36.14
Long-term loan	4000	40	100	41.5	96.38
Capital Stock	10000	35	285.71	35	285.71
Retained Earnings	6000	35	171.43	35	171.04
CTA	-		-57.14		-71.21
Total	25000		625		602.39

Source: Adapted from Vij (2010)

From the balance sheet above it can be seen that unanticipated change in the exchange rate from Rs.40/US\$ on 31<sup>St</sup> March to Rs.41.5/US\$ has resulted into changes in the translation of the balance sheet. The exposed assets and liabilities of NOVA Ltd stood as **Table 2.3** 

**Table 2.3- Exposures** 

Date	Exposed Assets (\$)	Exposed No Liabilities (\$)	et Exposed (\$)
On 31 <sup>st</sup> March"2017	625	225	400
On 1 <sup>st</sup> April,,2017	602.39	216.85	385.54

Th

e change in exchange rate adversely effected the enterprise and thus resulted into an accounting loss of around \$57.14 on 31st March (\$625-\$682.14) and \$71.21 on 1stApril (\$602.39-\$673.6) as shown in the cumulative translation adjustment (CTA) account in the balance sheet. As per the current rate method, the gains/losses arising out of translation do not get adjusted in the Profit & Loss Statement of the enterprise and thus the net earnings do not change. The CTA account in the B/S directly affects the Stock holder"s equity of the company. In this case, the loss in the CTA account will lead to decrease in the owners" equity thus eroding the impact of profits from Income statement and consequently leading to decrease in the market value of the enterprise.

### 2.2 TRANSACTION EXPOSURE

The extent to which the (realizable) value of future cash transactions of a firm resulting from existing contractual obligations are exposed to by exchange rate fluctuation is known as transaction exposure. Making a transaction in a foreign currency offers to ascend to transaction exchange exposure because the organisation has transactions of either sales or payables in foreign currency that must be settled which may, in the end, result in gain or loss of value (Daniels, Radebaugh and Sullivan, 2013). This exposure arises when a business enterprise is involved in a transaction related to

- Trading goods or services on credit which are denominated in foreign prices
- Repayment of outstanding financial obligations in foreign currencies
- Payment and receipt of account payables and account receivables of foreign currencies
- Forward contracts wherein it is in agreement with other party to buy or sell an asset at a predetermined date and price
- Acquirement of assets or incurring of liabilities which are denominated in foreign currencies

Transaction exposure measures the gain or loss suffered by the business enterprise when the aforementioned transactions are settled at a new exchanged rate which is different from historic exchange rate. A transaction with a foreign party can either result in gains or in losses for the domestic business enterprise and therefore can result in changes in its future expected cash flows. To demonstrate the effect of Transaction exposure, consider an India based exporter denominates its sales in INR, it has no transaction exposure. If it represents the sale of goods sold/ exported in Japan's Yen (JPY), the local rupee value of the receivable rises or falls as the case may be with the exchange rate changes, as illustrated below in **table 2.4**.

Table 2.4

The total Price of Merchandise on Exporter's Books INR 500,000 Initial Exchange Rate 1.6457 ¥/₹

The Initial Underlying Value of Sale ¥822,850 Calculation: ₹500,000 \* 1.6457 = ¥822,850

Which implies, Amount Received by Exporter ¥822,850

Subsequent Exchange Rate 1.7100 ¥/₹

Subsequent Payment Value of Collected Receivable ₹481,198.8304

Calculation: ¥822,850 / 1.7100 = ₹481,198.8304

Loss to the Exporter ₹18,801.1696

Calculation: ₹500,000 - ₹481,198.8304 = ₹18,801.1696

When an Indian company exports books worth INR ₹500,000 to an importer in Japan,

it's paid with ¥822,850—the equivalent in Japanese Yen of Indian ₹500,000 at an exchange rate of 1.6457 ₹/¥. Subsequently, however, when the value of the Japanese

Yen depreciates to a rate of 1.7100 \$/₹, the value of the Indian firm's holding in Yen declines from INR

₹500,000 to INR ₹481,198.8304.

# Source: adapted from (Wild and Wild, 2013)

The aforementioned example clearly indicates how the transaction exposure is a potential threat to the future expected cash flows of the firm in a volatile exchange rate environment. The changes in the cash flows due to changing exchange rates result into either losses or gains for the company involved in buying and selling. These losses and gains arising due to changing cash flows have a direct impact on the operating activities in the cash flow statement. The changes in operating activities are responsible for the determination of revenue for the company. In case of gains in the operating activities the revenue increases and so does profitability (assuming costs are constant) and vice-versa. Since investors are sensitive to the profitability of the company, a profit is likely to lead to increased demand for shared of the company thus resulting into increased market value and vice-versa in case of losses.

# 2.3 OPERATION EXPOSURE

Operating exposure (or economic, competitive) is similar to the two exposures mentioned above in the sense that it arises out of the unanticipated changes in the exchange rates of the country but unlike them operating exposure is said to have a long-term effect on the MNEs and therefore holds a lot more significance in eyes of the management. The measurement of operating exposure goes a little further from transaction exposure by taking into account the implications of the changes in the long-term future cash flows on the MNEs present value and its competitive position in the market. The determination of into account the impact of future unexpected changes in exchange rates on the long-term expected cash flows which are yet to be earned and thus involves the analysis of how the exchange rate changes impact the

- Prices of products and services
- Operating Costs
- Revenues
- Profits
- Contribution margin
- Competitive advantage and others.

In order to understand how the exchange rate changes affects the aforementioned factors we will use the example of an India based exporting firm Kirloskar Ltd. which has accepted the order of 2000 units electrical equipment from a US firm Cummins Ltd which to be supplied within a year . The break-up of the order with the Spot rate at Rs.50/US\$ is mentioned in **Table 2.4**, Base Case column.

Table 2.4- Economic exposure of Kirloskar Ltd in different Ex-change rate scenarios

Particulars	Base Case	Scenario 1 Price ( increases)		Scenario 3 (Only ice decreases nd volume increases)
Total Sales (units)	2000	2000	1800	2200
Price (US\$./unit)	20	22	22	18
Ex-change rate (INR/USD)	50	45	45	45
Revenue (Rs./unit)	1000	990	990	810
Direct Cost	800	800	800	800
Contribution margin	200	190	190	300000
Total fixed cost (per year)	300000	300000	300000	30000
Breakeven Sales	1500	1579	1579	30000
Total Profits	100000	80000	80000	(278,000)

Source: Adapted from Rajib (2015)

Assuming that the INR is likely to appreciate against the US dollar in the future course of time, Kirloskar Ltd. has the following options in its hand which likely to affect its cash flows and profits.

In <u>Scenario 1</u>- Kirloskar Ltd. can increase its prices as the appreciated INR may not likely impact its total sales but may affect it profits by Rs. 20000 (Rs.100000- Rs.20000).

In <u>Scenario 2</u>- The company can increase its price per unit in US\$ which might reduce its total sales and result into profits of only Rs. 80000.

In <u>Scenario 3</u>- In the wake of appreciated INR, Kirloskar Ltd. management can decide to reduce its price per unit which might increase its sales but result into a giant loss of Rs. 278,000

From the scenarios explained above it can easily be concluded that changes in ex-change rate directly impact the competitive position, long-term cash flows and profitability of an enterprise and thus may lead to changes in its market value over the long term time period. One example worth mentioning in the context of economic-exposure involving its effect on investment decisions, is the case of Volkswagen, in 2011, when it chose to open a production line in the United States to exploit the rigidity of Euro and Dollar conversion rates. In view of the value of the euro, it was not being able compete its local rivals in terms of cost in the United States, and it understood that by opening a manufacturing plant in Tennessee, located in the southern U.S., it could exploit solid euro and also bring down work force costs. Following BMW's case of investing in the United States in 2005, VW plans to be aggressive in the United States as well as utilize the United States as a medium of exporter to different nations. Both VW and BMW found that sending out to the United States was convoluted in light of the fact that expenses were created in Euros (the vast majority of its assembling offices were in Europe) while incomes in the United States were in dollars. Subsequently they were making money in a weak currency and expenses in a steady currency, extremely influencing income. One of the

arrangements for betterment was to extend manufacturing activities in the United States to adjust incomes and costs in a similar legal tender.

### 3. MANAGEMENT OF EXCHANGE RATE RISK

Managing exchange rate risk exposure has gained prominence in the last decade. Management of exchange rate risk is important for reducing a firm's vulnerabilities from major exchange rate movements, which could adversely affect profit margins and the value of assets. After Measuring and managing exchange rate risk exposure, a firm needs to decide whether to hedge or not to hedge. A firm with significant exposure need to establish an operational framework of best practices as indicated in **Figure 3.1**.

Figure 3.1 Steps to Measure Currency Exchange risk

Identification & measurement of the types of exchange rate risk that a firm is exposed to (determination of the transaction, translation and economic risks)

Development of an exchange rate risk management strategy by the firm.involving identification of hedging techniques and instruments to be used and the execution process of currency hedging. With the monitoring procedures.

Creation of centralized entity in the firm's treasury to deal with the practical aspects of the execution of exchange rate hedging.

Development of a set of controls to monitor a firm's exchange rate risk and ensure appropriate position taking.

Establishment of a risk oversight committee. This committee would examine the appropriateness of hedging instruments and review the risk management policy on a regular basis.

Source: Adapted from Papaioannou, 2006

### 3.1 HEDGING

Hedging is one of the predominant risk management strategy. It is an approach designed to reduce or offset a possible loss arise due to unknown fluctuations in the investment prices and to lock the profits therein. There are different instruments and strategies to manage currency risks. Hedging can also be used to improve or maintain competitiveness. Companies don't exist in isolation; they compete with other domestic companies in their sector as well as globally.

### 3.1.1 EXTERNAL HEDGING INSTRUMENTS

The external hedging instruments are used for hedging and protect the firm's cash flow against outcomes. The hedging is done when the firms uses financial derivatives whose value is derived from the underlying assets. The available hedging instruments are enormous, both in variety and complexity, and have followed the dramatic increase in the specific hedging needs of the modern firm. The common external instruments are currency forwards, currency futures, currency options, currency swaps and contracts for difference (CFDs).

# **Currency Forwards & Futures**

A currency forward is an obligation to sell or buy a currency at maturity. Forward is an "agreement between to parties to sell or buy an asset at certain future time for a certain price "(Hull 1997). The forwards contract are not traded on organised exchanges. They are frequently used by corporations that deal with foreign exchange. There is no cash transactions at the time of entering a contract as the forward price and the delivery price are equal. The delivery price is chosen in such a way that the value of the forward contract is zero, whether the party holds short or long position in the contract. The party that takes a long position buys currency on specific future dates for certain exchange rate and the party that takes a short position sells the currency for the specific exchange rate. With time forward price is liable to change and may vary with the maturity. The forward price will be different for three month, six months and twelve months contract. After the contract is entered into, it can have a negative or positive value. If the foreign exchange rate increases, it will give a positive value of holding a long position and a negative value of holding a short position. The payoff of holding a long position on one unit of currency is given by the difference between the spot rate and the forward rate at maturity of the contract, whereas the payoff of holding a short position is given by the difference between the forward rate and the spot rate at maturity. An advantage of forward contracts is that they are more tailor-made to the customer's need.

The currency futures contract is an agreement between two parties to buy or sell currency at some date in the future at a specific price. In futures mostly it is cash settlement, but in few cases there may be a physical delivery where one party has the obligations to sell the good to the buyer (Hull, 1997). Prices of the futures are determined in the same way as other prices. The prices need to take into consideration the gap between the interest rates of the two countries involved. The high intrinsic leverage characterizing futures makes them attractive for speculators, and basically means that the capital needed to open a position is much lower than the value of the position.

Comparing currency forward and currency futures markets, the size of the contract and the delivery date are tailored to individual needs in the forward market (i.e., determined between a firm and a bank), as opposed to currency futures contracts that are standardized and guaranteed by some organized exchange. While there is no separate clearing-house function for forward markets, all clearing operations for futures markets are handled by an exchange clearing house, with daily mark-to-market settlements. In terms of liquidation, while most forward contracts are settled by actual delivery and only some by offset—at a cost, in contrast, most futures contracts are settled by offset and only very few by delivery. Furthermore, the price of a futures contract changes over time to reflect the market's anticipation of the future spot rate. If a firm holding a currency futures contract decides before the settlement date that it no longer wants to maintain such a position, it can close out its position by selling an identical futures contract. This, however, cannot be done with forward contracts.

### **Currency Options**

Currency options have gained acceptance as invaluable tools in managing foreign exchange risk. A currency option is a contract which gives the option buyer the right but not the obligation s to buy or sell the underlying at a stated date and at the stated price (NSE India.com, 2019). The call option gives the right to buy and the put option gives the right to sell.

It is possible for firms to incur zero cost in their use of currency options to hedge currency exposure. Firms can trade the options in the over –the –counter market or via a organised exchanges .Both individuals and corporate can derive benefits out of the currency options .

Currency options were used mostly by giant companies while smaller companies preferred to rely more on forward contract than options. Unlike currency forwards, futures which are used to reduce the variability of a hedged position due to their symmetry about the forward rate, options have asymmetric payoffs and thus allow the firms to benefit from an opposite movement in exchange rates. The options are more risky and very expensive. Users of options trading strategies are speculators, hedgers and arbitrageurs. The call option and put premium gets effected by the fluctuation in the exchange rate increases call premium also increases and pit premium decreases. The strike price, risk free interest rate nd time of maturity also increases or decrease the call or put options. With the increase in volatility increases there is high degree of uncertainty about the rate of the currency and hence on the options as indicated in **Table 3.2.** 

**Table 3.2 Factors Influencing Currency options Prices** 

Parameter	Call Premium	Put Premium	
Exchange Rate	As exchange rate increase call premium also increase	As exchange rate increases put premium decrease	
strike rate	As strike rate increase call premium decreases.	As strike rate increases, economy increases, value of Put option decreases.	
Risk free Interest Rate	As the Interest rate in the economy increases, value of Call option increases	As the Interest rate in the economy increases, value of Put option decreases	
Time to maturity	Call & Put options become more valuable as time to maturity increases, it s because of risk as the time increases		
Volatility	As volatility increases there is high degree of uncertainty about the rate of the currency and hence on the option .The owner of the call benefits from the rate increase and that of the put benefits from the rate decreases		

Source: Nseindia.com, 2019

Apart from call and put options the Over the counter market options has a direct link between the buyers and seller .The banks offer flexible foreign currency options s tailored to the

firm's specific needs on all major trading currencies. The firms have the possibility to choose between options that vary by amount, strike price, and maturity. These types of options are listed on an exchange and trade through a clearing house Using the over the counter options is especially dangerous when used to hedge your exposure to some risky assets or security .As seen in the case of Lehman brothers one of the huge investment bank as they were party to countless over the counter market .The options on organized exchanges are also arranged through a clearing house that guarantees required payment is made and act as a counterparty to all option contracts .The options on organized exchanges are attractive for individuals and speculators who don't have access to the OTC-market .

# **Currency Swaps**

After being introduced on the global scale in the early 1980s currency swaps has grown to be one of the largest financial derivative markets in the world. Currency swaps are way to transform a loan in one currency into a loan in another currency swaps are "off balance sheet transactions". They are privately negotiated customized transactions .Swap trading dominate the currency trade ."Foreign —exchange swaps involve the sale or purchase of currency on one date and the offsetting purchase or sale of the same amount on a future date ,with both dates agrees when transaction is initiated "(Levision,2005). The rate at which offsetting purchase or sale is done is known as swap rate . Many swap transactions applies for long-term loans that extend over many years .

The swap dealer or a swap bank functions as a middleman and decide to exchange the same amount of two different currencies for a specified period of time (Eiteman et al.,2011). For example as given in Figure 3, A Japanese firm exporting to United States and earning U.S. Dollars however Japanese firm is not well known in the U.S financial market and if ,it may have no ready access to U.S dollar debt. One way ,in which it could borrow dollars is to participate in cross currency swaps as shown in figure ,The Japanese firm could swap it yen –denominated debt service payments with another firm that has U.S dollar debt service payments .This swap would have the Japanese firm "paying Dollars "and "receiving Yen". The Japanese firm would then have dollar debt service without actually borrowing U.S. dollars .Simultaneously, a U.S. corporation could actually by entering into cross-currency swap in the opposite direction "paying Yen" and "receiving dollars". The Swap dealer is a middleman

JAPANESE CORPORATION UNITED STATES CORPORATION ASSETS LIABILITES & EQUITY ASSETS LIABILITES &EQUITY INFLOW SALES DEBT IN YEN DEBT IN USS INFLOW: SALES TO OF US\$ TQ U.S. RECEIVE RECEIVE DOLLARS YEN PAY DOLLARS **SWAP** DEALER WISHES TO ENTER INTO SWAP TO 'PAY WISHES TO ENTER INTO SWAP TO "PAY DOLLARS & "RECEIVE YEN" YEN& "RECEIVE DOLLARS"

Figure 3.3 CROSS CURRENCY SWAP

Source: Eiteman et al.(2011).

### 3.1.2 INTERNAL HEDGING

Internal hedging techniques minimizes the currency risk within the company itself. The internal hedging methods modify business and are simple in operations. A company can internal hedge some exposure and supplement the remaining one with derivatives Horcher (2005). Some important internal Hedging techniques are:

### **Choice of Invoice Currency**

A way to avoid the total currency risk is to make invoices in the domestic currency. However, the currency risk is in this way only transferred to the foreign importer. Not all foreign importers are willing to be invoiced in the domestic currency of the exporter, unless the importers have other expectations about the future movements in the exchange rate than the exporters. Only in this case way invoice may be written on the domestic currency. It is also highly probable that the importer wants to be paid for taking the currency risk. Which is the party that will end up taking the currency risk also depends on the market power that they have. An alternative is to implement currency clauses in the agreement between firms. They can agree to share the currency risk on payments involving them, so that the impact of volatile exchange rate fluctuations falls on both parties. This is often the situation between firms with continuing buyer-supplier relationship, and it may help to maintain mutually beneficial long.

### **Netting**

A netting strategy involves netting out exposures in currencies. If a firm has receivables and payables in different currencies they can net out the exposure in each currency by matching receivables with payables. For example a company and its foreign subsidiaries might net off the intra-organizational currency flows at the end of each period, so that only the balance is exposed to risk. Then they can use hedging instruments on this exposed balance. An illustrative example of netting is given by an Italian company that transfers components of 15 million to its foreign subsidiary. In the same month as this

transfer, the subsidiary has to transfer final goods for 30 million to the mother company. Instead of transferring 30, it nets out the values of the respective receivables and payables against each other. The amount transferred is

therefore only 15 million, and hence both exposure and transfer costs are reduced. (Pike et al.,1999) classify netting as bilateral netting, which refers to pairs of companies in the same group that net off their positions without a central treasury, and multilateral netting, which involves a central treasury that perform several interactions of subsidiaries netting. Thus, companies that have foreign currency cash inflows and outflows can identify currency exposure by making cash forecasts for each currency. If there is a cumulative gap (deficit or excess currency) between cash inflows and outflows, then hedging could be needed. In many cases cash flows offset over time, and this is therefore a timing issue. (Horcher, 2005).

# Matching

One way to offset an anticipated continuous long exposure to a particular currency is to acquire debt denominated in that currency Matching currency cash flows is a way to hedge an operational cash flow by creating a financial cash outflow and rather than to manage the exposure with contractual financial instrument such as forward contracts. A typical situation of this is when company has a continuing long export sale. For example When the U.S company receives predictable dollar cash inflow with continuing export sales to Canada. The U.S firm uses this to pay the principal and interest payments on Canadian dollar debt and be cash flow matches (Eiteman et al.,2005). This form of hedging is known as matching as it is effective in eliminating currency exposure when the exposure cash flow is relatively constant and predictable over time. The Figure illustrate the produce of matching by using debt financing as a financial hedging strategy.

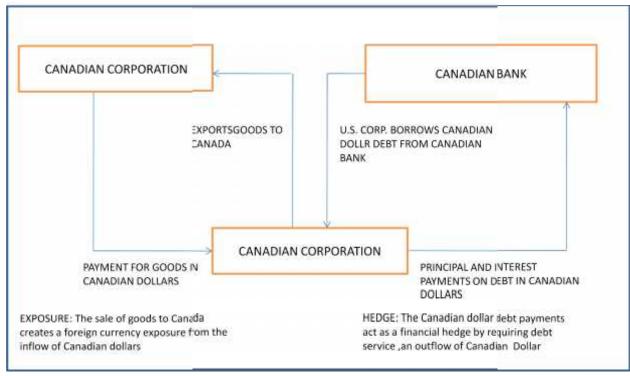


Figure 3.4 : MATCHING: THE FINANCIAL HEDGING STRATEGY

Source: Eiteman et al.(2011)

### Back to Back Loan

They are known as credit swaps or parallel loan .Back to Back Loan's occurs when two business firms in separate countries arrange to borrow each other's currency for specific period of time (Eiteman et al.,2011). They return the borrowed currencies at a agreed terminal date.. For example A British parent firm wants to invest funds in Dutch subsidiary and at the same time Dutch parent firm also want to invest funds in United Kingdom. Avoiding the exchange market entirely ,The

British firm lends pounds to Dutch subsidiary in U.K and Dutch parent firm lends EURO to the British subsidiary .The two loans would be of equal values at current spot rate and for specific maturity .The structure of the typical back –to back is illustrate in below figure

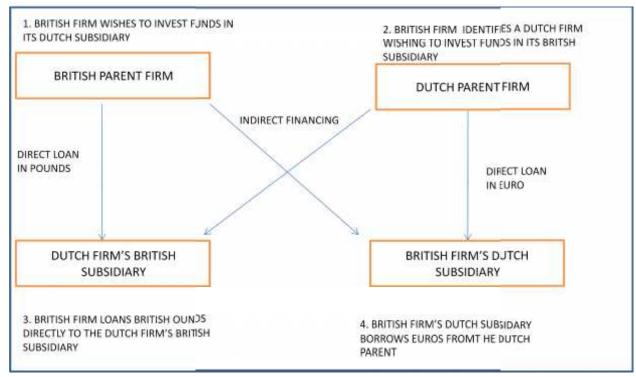


Figure 3.5 : BACK TO BACK LOAN : STRATEGY FOR CURRENCY HEDGING

Source: Eiteman et al.(2011).

# Lead &Lag

Another important internal hedging strategy is the "Lead & Lag" technique. A firm can reduce both operating and transaction exposure by s leading (advancing) payables and lagging (postponing) receivables in "strong" currencies, and conversely, leading receivables and lagging payables in "soft" currencies. This is to avoid losses from depreciation of the soft currency and to benefit from the appreciation of the hard currency. Leading and Lagging can be done between intra company or with intercompany. The leads and Lags In case of Intra company is more feasible as compared to leads and lags between independent firms.

# Reinvoicing

It is a widely used technique to overcome transaction exposure. "A reinvoicing center is a separate corporate subsidiary that serves as a type of middleman between the parent or related unit in one location and all foreign subsidiaries in a geographic region ".The manufacturing affiliate sells the goods to the foreign distribution affiliates only by selling to the reinvoicing center, which in turn resells to the distribution subsidiary. The formation of the center allows the management of all foreign exchange transaction exposure for intra company sales to be located in one place. The reinvoicing center can set firm local currency costs in advance by guaranteeing the exchange rate for future orders. The center can manage intrasubsidiary cash flows, including leads and lags of payments. With a reinvoicing center all subsidiaries settle intra company accounts in their local currencies. For example

# 5. CONCLUSION:

Cash and financial crises emerging from one nation or from several countries have frequently seen to have their influence globally. Amid times of turmoil, currency appreciation/ depreciation and weak currencies across markets over business sectors and the outskirts are regularly becoming a deciding factor for the success of an MNC's performance throughout as learned from the earlier discussion n. MNC's appraisal of a currency's future movement won't be flawless when a past timeframe performance of that currency is utilised as a reference. Be that as it may, if employed judiciously, an MNC may very well profit from such data. To adequately avoid the aforementioned risks a firm first needs to define and quantify the risk as to learn to what extent it is exposed to those risks, regularise and monitor this by imparting it to the reporting system and become accustomed to formulation of strategies by hedging exposure to mitigate the risks identified. However, after a company has identified the level of exposure to the risks and level of cruciality of each risk, it can hedge by opting for operational and/or financial strategies, and must have to deal with the cost-benefit ascertained as well as the operational implications. As we had discussed throughout all of the above are of significant weights in deciding an MNC's success either in terms of profits or operationally.

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