
Integrating Working Capital
and Capital Investment
Processes

UNIT 14 SHORT- TERM INTERNATIONAL FINANCIAL TRANSACTIONS

Objectives

The objectives of this unit are to:

- Survey the situation prevailing in the international short-term market.
- Highlight the implications of foreign exchange market.
- Provide a mechanism for managing exchange rate fluctuations.
- Create awareness of the techniques employed to deal with foreign currency exposure.
- Finally, explain the genesis and operations of Euromarkets.

Structure

- 14.1 Introduction
- 14.2 Markets and Market Participants
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14.1 INTRODUCTION

When finance goes international, problems multiply. The common thread of international aspects of financial management is found in the following: What aspects of the issue are peculiarly international, and what opportunities does a firm have by virtue of its being international? The clues to an answer lie in the basic understanding of the management of the cross border financial assets and liabilities and cash flows. From a corporate perspective, the most important theoretical development in international financial management can be captured by concentrating on the following areas:

- Foreign Exchange Markets
- Foreign Financial Markets
- Euromarkets

What is foreign exchange? Foreign exchange is simply a payment made in some national currency (or artificial currency) that is exchanged for a payment received in another currency. Thus any money can become foreign exchange by surprise and the moment after it has been exchanged it forgets it was foreign exchange. Once more, it is national money.

Unlike the money and capital markets, the foreign exchange market deals not in credit but in means of payment. This brings one to a fundamental point. While foreign exchange deals frequently take place between residents of different countries, the money being traded never actually leaves the country of the currency.

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West German deutsche marks are exchanged for U.S. dollars in London, the deutsche markets and dollars stay in West Germany and the United States respectively. The act of trading only effects a change of ownership of the money. The money itself, in the form of bank deposits, merely gets shifted from one deposit to another through the country's inter bank payments system.

14.2 MARKETS AND MARKET PARTICIPANTS

Participants in foreign exchange markets are diverse. At the bottom, or at the first level, are such traditional users (tourists, importers, exporters and investors, who exchange domestic for foreign currencies to pay for their international transactions) as well as traders and specialists (individuals, investment managers, and corporate treasurers who trade currencies seeking short-term profits by betting on the direction of changes in their relative price). At the next, or second, level are the commercial banks, which act as clearing houses between users and earners of foreign exchange. At third level are foreign exchange brokers, through whom the nation's commercial banks even out their foreign exchange inflows and outflows among themselves (the so-called inter-bank or wholesale market). Finally, at the fourth and highest level is the nation's central bank, which acts as the seller or buyer of last resort when the nation's total foreign exchange earnings and expenditures are required. When the market rate of the currency reaches the upper lines ("upper intervention point") of the band, the central bank of that country must increase sales of its currency in exchange for other currencies. Similarly, the central bank must sell foreign exchange and buy its own currency when the market rate reaches the "lower intervention point". Thus, the central bank either draws down its foreign exchange or adds to them.

14.3 QUOTING FOREIGN EXCHANGE RATES

Foreign exchange rates can be quoted in one of the followings two ways. The first way, the indirect quote, is to quote one unit of local currency as equal to 'n' units of the foreign currency. The second way, the direct quote, is to quote n units of local currency as equal to one unit or 100 units of the foreign currency. London invariably uses the first method of quotation.

In London (indirect quote)

\$ 1.7172/ pound

DM 2. 8451/Pound

* In New York (Direct quote)

100 Deutsche Marks are worth 60. 56 US dollars

We see that the quotation is \$/DM and is the domestic currency at New York, is a direct quote. Similarly, 100 Japanese Yen are worth 1.0052 Us dollars.

Care must be taken when reading off exchange rates to see which method is being employed. To make explicit the role of each currency in an exchange quote, it is helpful to write down the names of each currency in its appropriate position. The currency used as a unit of account is placed in front of the quote. The unit of currency being priced follows the quote. For example, in the following quote of:

\$ 0.60/DM

The unit of account if the U.S. dollar and the unit of currency being priced is one mark. A foreign exchange dealer will usually quote two rates to a potential customer a bid and an offer rate. The dealer is willing to buy at the bid rate and sell at the offer or ask rate. In either case, the currency for which the bid or offer price is given is the unit of item price. When he makes the quotation, he does not know

whether the customer is a buyer or a seller of currency. For example, if the bid rate is Rs. 31.2514 and the offer rate is Rs. 31.3219, the foreign exchange dealer is quoting a spread of Rs. 0.0705. This means that he is prepared to sell Rs. 31.2514 to the dollar and buy them at Rs. 31.3219 to the U.S. dollar. Conversely, he will buy dollars at Rs. 31.2514 to the dollar and sell dollars at Rs. 31.3219 to the dollar.

Table 14.1 : Bid Offer Rates Quoted by Foreign Exchange Dealer

Bid	Offer	
Rs. 31.2514	31.3219	\$
Rs. 50.0013	51.2006	Pound
Rs. 22.4056	22.9058	DM
Rs. 27.0543	27.6009	Sw. Fr.
Rs. 35.6086	36.3095	Yen*

*per 100 units.

The most common type of foreign exchange transaction involves the payment and receipt of the foreign exchange within two business days after the day the transaction is agreed upon. The two – day period gives adequate time for the parties to send instructions to debit and credit the appropriate bank accounts at home and abroad. This type of transaction is called a spot transaction, and the exchange rate at which the transaction takes place is called the spot rate. Besides spot transaction, there are forward transactions. A forward transaction involves an agreement today to buy or sell a specified amount of a foreign currency at a specified future date at a rate agreed upon today (the forward rate). The typical forward contract is for one month; three months; or six months, with three months the most common. Forward contracts for longer periods are not as common because of the great uncertainties involved. However, forward contract can be renegotiated for one or more periods when they become due.

The equilibrium forward rate is determined at the intersection of the market demand and supply curves of foreign exchange for future delivery. The demand for and supply of forward foreign exchange arises in the course of hedging, from foreign exchange speculation and from covered interest arbitrage.

The question for forward rate can be made in two ways. They can be made in terms of the amount of local currency. At which the quoter will buy and sell a unit of foreign currency. This is called the outright rate and is used by the traders in prompting to customers. The forward rates can also be quoted in terms of pips, called the swap rate, and used in inter-bank quotations. The points are added to the spot price if the foreign currency is traded at forward premium; if trading at a forward discount, the forward quotations are subtracted from the spot price. The resulting number is the outright forward rate. In other words, the outright rate is the spot rate adjusted by the swap rate.

How to read the foreign exchange quotation? If the forward quote (the bid or buying figure) is smaller than the forward rate (the offer or selling figure), then in a premium, i.e., the swap rates are added to the spot rate. Conversely, if the first quote is larger than the second, it is a discount. In case the first quote is equal to the second, a quote would require a further specification as to whether it is a premium or a discount. The procedure assures that the buying price is lower than the selling price, and the trader profits from the spread between the two prices. To illustrate, suppose you have called your foreign exchange trader and asked for quotations on the U.S. dollar spot, one month, three month, and six-month.

Working Capital Management: An Integrated View reported with the following:
 \$ 0.032122/8 8/10 7/5

In outright terms these quotes would be expressed as follows:

Table 14.2

Maturity	Bid	offer
Spot	0.032122	0.032128
1-month	0.032130	0.032138
3-month	0.32115	0.32123
6-month	0.032132	0.032140

It shows that the one-month and six-month forward are at premium whereas the three-month forward is at discount.

The value of a currency is often expressed as a single figure, i.e., \$ 0.032125 (US) worth Re.1, rather than being quoted as both a bid and offer rate. The single rate is the middle rate arrived at by adding the bid and offer rate together and dividing by two. In the example, give the dollar bid rate is 0.032122 and the dollar offer rate 0.032128, so the middle rate is $(0.032122 + 0.032128)/2 = 0.032125$

The difference between the bid price and the offer price is known as the spread and it makes the profit. Spreads in the forward market are a function of both the breadth of the market (the volume of transactions/in a given currency and the risk associated with forward contracts). The risks, in turn, are based on the variability of future spot rates. Even if the spot market is stable, there is no guarantee that further rates will remain invariant. This uncertainty will be reflected in the forward markets.

In a foreign exchange market, dealers quote the forward rate only at a discount from, or a premium on, the spot rate. If the forward rate is below the present spot rate, the foreign currency is said to be at a forward discount with respect to the domestic currency. On the other hand, if the forward rate is above the present spot rate, the foreign currency is said to be at a foreign premium. To illustrate, if the spot rate is Rs. 50/ pound and three-month forward rate is Rs. 48/ per pound, we say that the pound is at a three month forward discount of Rs. 2 or 4 per cent (or at a 16 per cent forward discount per year) with respect to the pound. On the other hand, if the spot rate is still Rs. 50/- per pound but the three-month forward rate is Rs. 52 per pound, the pound is said to be a forward premium of Rs. 2 or 4 per cent for three months, or 16 percent per year.

Forward discounts or premiums are usually expressed as percentages per year from the corresponding spot rate and can be calculated formally with the following formula:

$$\text{Forward Premium} = \frac{(\text{Forward Rate} - \text{Spot Rate})}{\text{Spot Rate}} \times \frac{12 \times 100}{\text{Forward contract length in months}}$$

Thus, when the spot rate of the rupee/pound is Rs. 50 per pound and the forward rate is Rs. 48 per pound, we get:

$$\frac{\text{Rs. 48} - \text{Rs. 50}}{\text{Rs. 50}} \times \frac{12}{3} \times 100 = \frac{-2}{50} \times 4 \times 100 = -16\% \text{ p.a.}$$

the same as found earlier without the formula. Similarly if Rs. 52 /pound:

$$\frac{\text{Rs. 52} - \text{Rs. 50}}{\text{Rs. 50}} \times \frac{12}{3} \times 100 = \frac{2}{50} \times 4 \times 100 = +16\% \text{ p.a.}$$

So far we have dealt with only two currencies for simplicity, in reality there are

numerous exchange rates, one between any pair of currencies. The exchange rate between two currencies can be obtained from the rates of these two currencies in terms of a third currency. This is called the cross-rate. For example, if the exchange rate is between the Indian Rupee and the British pound and between the U.S. dollar and the British pound, then the exchange rate between the rupee and the dollar is 31.25 (i.e, it takes Rs. 31.25 to purchase one dollar).

Specifically:

$$\begin{array}{rcccl} & \text{Rs.} & & \text{Rs. value of pound} & \\ \text{Exchange Rate} & \frac{50}{16} & = & \frac{\text{Rs. value of pound}}{\text{\$ value of pound}} & = 31.2 \end{array}$$

Since over time a currency can depreciate with respect to some currencies and appreciate against others, an effective exchange rate is calculated. This is a weighted average of the exchange rates between the domestic currency and the nation's most important trade partners, with weights given by the relative importance of the nation's trade with each of these trade partners.

14.4 ECONOMIC FORCES IN EXCHANGE MARKETS

Geographical Spatial or Arbitrage: The exchange rate between any two currencies is kept the same in different monetary centres by arbitrage. This refers to the purchase of a currency in the monetary center where it is cheaper, for immediate resale in the monetary center where it is more expensive, in order to make a profit.

For example, assume that the quotes of the rupee against the pound sterling in Bombay and London are as follows:

Bombay	London
Rs. 50.021511	Rs. 50.021523

The rupee commands a higher price against the pound sterling in Bombay than in London. It will attract arbitrageurs. They will purchase pounds with rupees in Bombay and convert pound in rupees in London to make profit. As arbitrage takes place, the purchase of pound in Bombay will tend to increase the price of the pound against the rupee in that market. In London, reverse will happen with the sale of pound sterling and hence the fall in the price of the pound against rupee. This arbitrage process tends to equalise the exchange rate between the two currencies in both the markets.

When only two currencies and two monetary centres are involved in arbitrage, we have two-point arbitrage, when three currencies and three monetary centres are involved, we have triangular, or three-point arbitrage. While triangular arbitrage is not very common, it operates in the same manner to ensure consistent indirect, or cross, exchange rates between the three currencies in the three monetary centers. For example, if a foreign exchange dealer quotes on April 1, 1995, the DM was quoted \$ 0.708707/DM and the Indian rupee was quoted Rs. 32.425325/\$ in Bombay. If on the same date New York was quoting Rs. 22.915265/DM and Rs. 32.425325/\$, what are the incentives for arbitrage?

Summary table of calculations is given below:

	New York	Bombay
In terms of Re/\$	32,425325/\$	Rs. 32.425325/\$

Working \$/DM	0.708707/DM	0.706707/DM
Management: An		
Integrated Review	22.980055/DM	22.915265/DM

a) To find Re/DM in New York :

We know $\$/\text{Re} = 0.03084$

Then $\$/\text{Re} = 1/32.425325 = \$ 0.03084$

b) In New York :

We know $\text{Re}/\$ = \text{Rs. } 32.425325/\$$

$\text{Re}/\text{DM} = \text{Rs. } 22.915265/\text{DM}$

Then $\text{DM}/\text{Re} = 1/22.915265 = \text{DM } 0.043639/\text{R}$

$$\text{SO } \$/\text{DM} = \frac{\$/\text{Re}}{\text{DM}/\text{Re}} = \frac{0.3084}{.04639} = .70$$

c) In Bombay:

$\$/\text{DM} = 0.708707/\text{DM}$

Then $\text{DM} = \left(\frac{1}{0.708707} \right) / \$$

$\text{DM} = 1.410203/\$$

$\text{Re}/\$ = \text{Rs. } 32.425325/\$$; therefore,

$\text{DM } 1.4110203/\$ = \text{Rs. } 32.425325/\$$

$$\text{Re}/\text{DM} = \frac{\text{Re}/\$}{\text{DM}/\$} = \frac{32.425325}{1.4110203} = \text{Rs. } 22980055$$

By reading various quotes in two markets , we can say:

- The DM in terms of dollar is cheaper in New York than in Bombay.
- The dollar and the rupee are at parity in both markets;
- The DM in terms of rupee is cheaper in Bombay than in New York.

Therefore, buy DMs against dollars in New York; sell DMs against Rs. in Bombay; and convert Rs. in dollars in either Bombay or New York.

As in the case of two-point arbitrage, triangular arbitrage increases the demand for the currency in the monetary centres when the currency is cheaper, increases the supply of the currency in the monetary centres where the currency is more expensive, and quickly eliminates inconsistent gross rates and the profitability of further arbitrage. As a result, arbitrage quickly equalises exchange rates for each pair of currencies and results in consistent gross rates among all pairs of currencies, thus unifying all international monetary centres into a single market.

Interest arbitrage refers to the international flow of short-term liquid capital to earn high returns abroad. Since the transfer of funds abroad to take advantage of higher interest rates in foreign monetary centers involves the conversion of the domestic to the foreign currency to make the investment, and the subsequent recon version of the funds (plus the interest earned) from the foreign currency to the domestic currency at the time of maturity, a foreign exchange risk is involved due to the possible depreciation of the foreign currency during the period of the investment. Suppose that the interest on risk free security XYZ, is 5 per cent per annum in Singapore and 9 per cent in India on risk-free security ABC. It may then pay for a Singapore investor to exchange dollars for rupees at the current spot rate and invest in India to earn the extra 4 per cent on free interest 1% for the security , XYZ. When the

Indian risk-free security, ABC matures, the Singapore investor gets back the rupees he invested plus the interest he earned back into dollars. However, by that time the rupee may have depreciated so that he would get back fewer dollars for rupee than he paid, if the rupee depreciates by $\frac{1}{2}$ of the 1 per cent during the maturity period, say of 3-months, of the investment, the Singapore investor nets only about $\frac{1}{2}$ on 1 percent from his foreign investment (the extra 1 percent interest he earns minus the $\frac{1}{2}$ of 1 percent that he losses for the depreciation of the rupee). If the rupee depreciates by 1 percent during the three months, the Singapore investor loses, of course, if the rupee appreciates the Singapore investor gains nothing, and if the rupee depreciates by more than 1 percent, the Singapore investor loses, of course, if the rupee appreciates the Singapore investor gains both from the extra interest he earns and from the appreciation of the rupee. This is a case of uncovered interest arbitrate. But as the investors of short-term funds abroad generally want to avoid the foreign exchange risk. Hence, interest arbitrage is usually covered.

Covered interest arbitrage refers to the spot purchase of the foreign currency to make the investment and the offsetting simultaneous forward sale (swap) of the foreign currency to cover the foreign exchange risk. When the risk-free security, say treasury bills, mature, the investor can then get the domestic currency equivalent of the foreign investment plus the interest earned without a foreign exchange risk. Since the currency with the higher interest rate is usually at a forward discount, the net return on investment is roughly equal to the positive interest differential earned abroad minus the forward discount on the foreign currency. This reduction in earnings is the cost of insurance against the foreign exchange risk.

In general, under covered interest arbitrage, there is an incentive to invest in the higher-interest currency to the point where the discount of that currency in the forward market is less than the interest differential. If the discount on the forward market of the currency with the higher interest rate becomes larger than the interest differential, then it pays to invest in the lower-interest currency and take advantage of the excessive forward premium on this currency.

In the real world, significant covered interest arbitrage margins are often observed for long periods. The reason for this is not necessarily that covered interest arbitrage does not work. Rather, it is likely to be the result of other forces at work not accounted for by the pure theory of covered interest arbitrage. Some of these other forces are the different real growth rates among nations; differential growth in their money suppliers; and differences in expectation, in liquidity preferences, in inflation rates, and in fiscal and trade policies. Lack of adequate information and government restrictions on short-term international capital flows can also sometimes account for the persistence of wide covered interest arbitrage margins.

Finally, it must be remembered that behind the demand and supply curves of foreign exchange are not only traders and investors, but also hedgers, speculators, and interest arbitrageurs. Governments also operate in foreign exchange markets, both in their normal function of making and receiving foreign payments and in their effort to affect the level and the movement of exchange rates. It is all of these forces together that determine exchange rates at the intersection of the nation's aggregate demand and supply curves for each foreign currency under a flexible exchange rate system.

14.5 MANAGING EXCHANGE RATE GYRATIONS AND CORPORATE SECTOR

Globalisation of financial markets and gyrations in exchange markets have complicated transnational corporate exposure management. It is complex largely

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the increasing size and variety of exposures which companies incur as they develop internationally and (b) the increasing volatility of the foreign exchange markets. Given this complexity, a logical and structured approach is needed to formulate company's foreign exchange risk management programme. The starting point in such a programme must be to decide exactly which is at risk.

All corporate exposure management strategies must address two questions. Firstly, which definition (s) of exposure is the company concerned with? If the answer embodies more than one definition then priorities and the trade-off between the alternatives should be clearly defined, for example, how much cash are the companies willing to spend to protect against a given unrealized translation loss? Secondly, given alternative definitions of foreign exchange risk, what is corporate attitude towards risk? Is it to maximise foreign exchange gains or minimize exchange losses? Also, what time frame is the company considering does it want to smooth short-term results at the expense of longer term fundamentals, or vice-versa? The time frame consideration is also relevant to the first strategy question, since short-term profit priorities will tend to induce companies to emphasize accounting rather than cash flow exposure.

At micro economic level, transnational companies face varying degrees of business structural and financial structural risks. Their need for information relevant to exposure identification differs. Therefore, as with other areas of corporate exposure management, no single exposure information system will be right for all companies. The appropriate system must be firm-specific; it must take into account the size of the company and its constituent units, the exposure objectives and strategy of the company, its operating and organisational characteristics, personnel strength and so on. There are, however, five basic elements which should be present in all exposure information systems: (1) the information should be anticipatory; (2) the reporting frequency must be adequate; (3) the information flow should be direct to the company; (4) the rationale of the information requirement must be understandable; and (5) finally, the degree of information required should be subsidiary specific. These general reporting principles should be the basis of all exposure information systems.

For analytical purposes, these systems can be categorized into two functional components: the exposure identification system, which requires information on the accounting and /or cash flow exposures generated by group companies; and the exposure management information system, which provides details of decision parameters and constraints to be considered in deciding what exposure management action is required. Analytically, at least, two fundamental exchange risk management strategies may be considered, namely, 'aggressive' and 'defensive'. A key factor in the company's choice between these two strategies will be its ability to accurately forecast exchange rates specifically its ability to outpredict the forward rate. In contrast to the Bretton Wood's era, in the existing flexible exchange rate environment, such forecasting is very difficult. At present, there are large and perhaps confusing variety of techniques used in corporate exchange risk management.

To understand the rationale underlying their use, they may be classified into internal and external techniques according to their basic origin. Internal techniques are mainly used as a part of a company's regulatory financial management aimed at minimizing its continuing exposure to exchange risk. They are basically aimed at reducing or preventing an exposed position from arising. The external techniques are used to ensure against the possibility that exchange losses will result from the exposed position which the internal measures have not been able to eliminate; consisting basically the contractual measures to ensure against an exchange loss (realized or unrealized which may arise from an existing translation or exposed

position.

A) Exposure Management: Internal Techniques

1) Netting

Netting simply means offsetting exposures in one currency with exposure in the same or another currency, where exchange rates are expected to move in such a way that losses (gains) on the first exposed position should be offset by gains(losses) on the secured currency exposure. In the simplest kind of scheme, known as bilateral netting, each pair of subsidiaries nets out their own positions, with each other. Flows are reduced by the lower of each company's purchases from or sales to its netting partner. There is no attempt to introduce the net position of other group companies.

Multilateral netting, a complex form of netting, can take place when affiliates both import from and export to companies within the same corporate groups. Flows are reduced by the lower of each company's total purchase from/sale to affiliates. The focal point in a multilateral netting scheme is the central information point. Participating units must report an inter company position at the end of a given period, and the center then advises the units of the net amount which they are to pay or receive at a certain date. Multilateral netting, therefore, requires a centralized communication system and a lot of discipline on the part of participating units. In this process of multilateral netting, the three most common constraints are: (a) prior approval for netting may be required; (b) trading (rather than financial) transactions only may be netted; and (c) inter company (rather than third party) transactions only may be netted.

The major benefits of netting are reduced banking costs and increased control of inter-company settlements. The reduced number and total amount of payments produces savings in the form of lower flow and lower exchange costs (i.e the buy/sell spread in the spot and forward markets plus the elimination of bank charges, if any). No simple savings percentages can be universally applied to the amount netted since savings will be determined by prevailing buy/sell spreads and the structure of the payment flows eliminated. In addition, the introduction of a netting system does create opportunities for exposure and liquidity management and tax planning. A quick and easy decision format can be evolved to produce an inter company settlement pattern which will help to achieve the company's liquidity and exposure management objectives.

2) Matching

The terms 'netting' and 'matching' are often used interchangeably. But the term netting is typically used only for inter company flows to the netting out of groups, receipts and payments. As such it is applicable only to the operations of a multinational company rather than the exporter or importer. In contrast, matching can be applied to both third party as well as inter- company cash flows, and it can be used by the exporter/importer as well as the multinational company. It is a process whereby a company matches its currency inflows with its currency outflows with respect to amount and (to an appropriate degree) timing. Receipts in a particular currency may then be used to make payments in that currency so that the need to go through the exchanges (spot and forward) is limited to the unmatched portion of foreign currency cash flows. The aggressive company may decide to take forward cover on its currency payables and leave the currency receivables exposed to exchange risk; if it takes the view that the forward rate looks cheaper than the expected spot rate.

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Requirement for a matching operation, then, is a two-way cash flow in the same foreign currency. This kind of operation is sometimes called ‘natural’ matching. There is a further possibility, however, which we will call ‘parallel’ matching. Here the match involves two currencies whose movements are expected to run closely parallel’. In a parallel matching situation, gains in one foreign currency are expected to be offset by losses in another. Needless to say, with parallel matching there is always the risk that the exchange rates will move contrary to expectations, so that both sides of the parallel match lead to exchange losses (or gains).

The major practical problem in implementing matching is the timing of third party receipts and payments. Unexpected delays can cause the mistiming of a match and may consequently leave both receivable and payable exposed to exchange risk. Success requires accurate prediction of the amount of settlement and, more particularly, the timing of settlement dates. Where exchange controls allow, the timing problem can be overcome by the utilisation of foreign currency accounts, which allow the retiming of currency conversions to facilitate matching. The cost of neutralizing exposures in this way is represented by the effective interest rate differential (including the deposit/borrowing rate spread) between the foreign and domestic currency.

3) Leading and Lagging

This simply refers to the adjustment of inter-company credit terms, ‘leading’ meaning a prepayment of a trade obligation and ‘lagging’ a delayed payment. This is primarily an inter company technique between buyer and seller. Whilst netting and matching are purely defensive measures, intercompany leading and lagging can be used as part of either a risk-minimising strategy (to facilitate matching) or an aggressive strategy (to maximise expected exchange gains). In either case a central information and decision point is usually required, to ensure that the timing of inter-company settlement is effective from a group point of view rather than purely a local one.

As with other schemes involving central decision making, leading and lagging requires a lot of discipline on the part of participating subsidiaries. Apart from the exposure impacts, such operations can seriously affect the liquidity and hence profitability of each subsidiary. To overcome the consequent evaluation problem, multinational companies which make extensive use of leading and lagging may either evaluate subsidiary performance on a pre-interest basis or impute interest charges and credits where appropriate.

One very important complicating factor, however, is the existence of local minority interests. If there are powerful local share holders in the “losing” subsidiary there will be strong objections because of the added interest cost / lower profitability resulting from the consequent local borrowing. In such cases of leading and lagging the interests of the minority shareholders are subordinated to those of the majority shareholders (the parent company) . Host governments , via credit and exchange controls , may well restrict such operations.

4) Pricing policy

For exposure management purposes, there are two kinds of pricing tactics: price variation and currency-of invoicing policy. (In effect , the latter tactic is a subtle variant of the former) . For each of these it is necessary to distinguish between external and inter-company trading, since each kind of trading gives rise to a different set of problems and opportunities .

Price Variation : External Trade. One obvious way for a company to protect itself against exchange risk is to raise selling prices to offset the adverse effects of exchange rate fluctuations . But the question which always arises with the pricing option , of course, is that if the company is able to raise prices then why has it not

done so already, irrespective of exposure considerations ? **Integrating Working Capital and Capital Investment**

Given an adverse exchange rate change (or trend), how quickly can local selling processes prices be increased to bring the parent currency equivalent of the foreign operation's cash flows back to the pre-depreciation level ? The determination of this lag requires an analysis of the following questions.

Competitive situation : what sector of the market are the firms in ? A firm selling in the import or import – competing sectors is likely to have greater pricing flexibility than one in the purely domestic sector . The question of timing is also important : is there any scope for anticipatory price increases , given an expectation of an adverse currency movement .

Customer credibility : when did the company last increase its prices and will there be customer resistance to another price rise ?

Price controls : are these in existence or likely to be introduced in the near future ? Given the existence of such controls , to what extent do they allow the adverse impact of an exchange rate change to be recouped by subsequent price increases, and how quickly ?

Internal delays : what are the administrative lags involved in raising prices ? Foreign currency price lists can be the source of significant delays , depending on how regularly they are reviewed and how lengthy is the review process. For a price list involving thousands of items such delays can be serious .

Trading/financing pattern : if a firm does not have pricing flexibility for any of the above reasons , does it have a trading pattern or can one be created in which adverse currency impacts in one area of the business will be offset by positive effects elsewhere ? For example , a foreign subsidiary which imports raw materials and sells locally is exposed to a local currency depreciation . To the extent that it can shift its sourcing (to domestic suppliers) or its selling (to foreign customers), this economic exposure may be reduced .

Price Variation : Inter company Trade. Inter-company (or transfer) price variation refers to the arbitrary pricing of inter company transfers of goods and services at a higher or lower figure than the 'fair' or 'arm's length ' price (the market price if there is an established market or the price which would be charged to a third party customer if there is not) . However , multinational companies must always not set inter-company prices on an arm 's length basis , as generally required by tax and exchange control authorities. In establishing international transfer prices, they try to satisfy a number of objectives not relevant to domestic transfer pricing. For example , the firm wants to minimise taxes and at the same time win approval from the government of the host country. Yet the basic objectives of profit maximisation and performance evaluation also are important . often it is not possible to satisfy all these objectives simultaneously, so a company must decide which objectives are the most important . As a result, a particular transfer price, rather than evolving from a transfer pricing technique , may be established arbitrarily to fulfil an objective involving international considerations .

Currency-of- Invoicing : External Trade. Currency-of- Invoicing tactics can be either aggressive or defensive. As aggressive strategy would be to try to invoice exports in relatively strong currencies relative to the exporter's home currency (HC) and imports in relatively weak currencies. Here the company is increasing its exposure to exchange risk in the expectation that this exposure will produce exchange gains rather than losses.

For the strong currency exporter the defensive approach is the only one available for

since the HC is probably also the strongest currency acceptable to the customer. For the weak currency exporter, however, there may be significant opportunity gains from an aggressive currency – of- invoicing policy. In such circumstances foreign currency invoicing may be attractive to the exporter, in the expectations that the HC equivalent sales proceeds would be increased by a foreign currency appreciation over the credit period. It should be added, however, that there are risks involved in switching from a weak currency to a supposedly stronger one. The relative strengths of the two currencies could reverse themselves in the future and, once having changed to foreign currency billing, companies will find it difficult to switch back to HC-involving if the currency situation alters. In any case, currency-of-invoicing cannot be changed regularly quite apart from customers objections and the loss of customer credibility, there is the problem of price list adjustment lags. Currency-of-invoicing changes will also have to be ‘sold’ to subsidiary management as well as to customers. Indeed, resistance at operating unit level may present major problems to a corporate treasury trying to make the initial switch to foreign currency invoicing. Subsidiaries may be reluctant to give up the perceived marketing advantages of weak currency invoicing, particularly since if corporate exposure management is to be centralised (often a corollary of the switch to foreign currency invoicing) the benefits of foreign currency billing may accrue at corporate treasury.

Currency -of- Invoicing : Inter-company Trade. On a pre-tax basis, the distinction between aggressive and defensive approaches to currency-of- invoicing disappears in the context of inter-company trade, since what is one subsidiary’s benefit (higher profit or lower risk) is another subsidiary’s loss. On an after-tax basis, however, there is scope for an aggressive inter company currency-of-invoicing policy. As an extreme example, if subsidiaries A and B trade with each other and A pays a higher tax rate, then A might be directed to invoice B in a weak currency and B to invoice A in a strong currency. After – tax group income may be increased, although such an approach can also create internal (motivation and evaluation) and external (tax) problems.

5) Asset and Liability Management

Asset and liability management techniques can be used to manage balance sheet, income statement and cash flow exposures. They can also be used aggressively or defensively. The aggressive approach is to increase exposed assets, revenues, and cash inflows denominated in strong currencies and to increase exposed liabilities, expenses, and cash outflows in weak currencies. In contrast, the defensive firm will seek to minimise 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.

In analysing how these objections can be achieved, it is useful to make the distinction between operating variables (trade receivables and payables, inventory, fixed assets) and financial variables (cash, short-term investments and debt).

The currency denomination of operating variables is largely determined by intrinsic business conditions, such as production and marketing factors. Nevertheless, some fine tuning of existing exposures is often possible. Consider the case of a foreign subsidiary located in a weak currency/country. If the ‘all-current’ method of translation is used then operating variables will tend to generate positive balance sheet exposures. Hence, the aim of asset/liability management here might be to reduce the subsidiary’s local currency(LC) asset exposures and increase LC liabilities. LC receivables could be reduced by shortening the length of credit terms, offering special discounts and discounting or factoring – all of which involve costs (lower sales, high cash discounts or factoring charges) which may well outweigh the potential benefits. Similarly, local inventories could be run down to lower levels. The

reverse process is applied on the liability side. Trade payables are managed by deferring payment, which may mean missing trade discounts and a loss of goodwill if applied to third party suppliers. Such costs must be compared with the perceived benefits of reducing the net asset exposure in a given currency.

The next step is to consider how financial variables can be manipulated for exposure management purposes, and it is here that corporate financial management has most discretion over currency denomination. Let us revert to the case of the positive balance sheet exposure of a foreign subsidiary located in a weak currency country. The treasury management objective here would normally be to reduce net exposed financial assets, which means reducing local currency(LC) cash/near cash balance and increasing LC denominated debt. The scarcity of weak currency finance is often a major constraint here but, subject to availability, the parent company would typically borrow the weak currency long term, whilst the subsidiary is usually restricted to local bank (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 bulk 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 long-term borrowing by expatriate subsidiaries, arguing that – for balance of payments reasons – long-term funds should be supplied by the parent company.

In the context of cash flow exposure management, the distinction between aggressive and defensive currency-of-financing policies is an important one. With an aggressive financial management strategy the aim of currency-of-financing policy is simply to borrow in those currencies which have the cheapest effective interest cost, after tax. For the defensive firm the aim of international financial management should be to arrange the financing pattern of the company so that the detrimental effects of currency movements are minimised, whatever the exchange rate scenario. This can be done by structuring the group's liabilities in such a way that any change in cash inflows (operating revenues) induced by a currency movement is offset as much as possible by a countervailing change in cash outflows (effective interest costs).

B) Exposure Management : External Techniques

In contrast to internal exposure management methods, the complete range of external techniques can be used by both exporters and Importers as well as by multinational companies. Further, the costs of the external exposure management methods are fixed and predetermined. The main external exposure management techniques are examined below:

1) Forward Exchange Contracts

By covering forward the currency commitment, exporter/importer need no longer worry about the exchange risk element in the foreign transactions. What price has been paid for this protectionism is clearly an important question since, in deciding between various covering techniques it is the least-cost alternative which should be chosen. There is, however, some disagreement on how to calculate the cost of forward cover, mainly because there are two kinds of 'cost' involved : an ex ante cost and an ex post (opportunity) cost.

2) Short-Term Borrowing

An alternative to covering or hedging on the forward market is the short-term borrowing technique. A company can borrow either dollar (or some other foreign currency) or the local currency. Through short-term borrowing techniques, the settlement dates and the continuing stream of foreign currency exposure, two main practical transactions' exposure management difficulties, can be handled quite easily. Indeed, short-term borrowing has some advantages here, over forward cover. The

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short-term borrowing cover is the home currency (HC) amount which would have been received if the expose receivable had been left measured (i.e. the foreign currency converted into HC at the settlement date), less the HC amount which the short-term borrowing technique yielded. Again, a company may cover a continuing stream of foreign currency exposures by arranging a borrowing facility, as an alternative to entering into 'bulk' forward option contracts, either in the currency of invoicing (in the case of exporter) or the home currency (for the importer). This technique can be used to simultaneously handle the problems of continuing foreign currency exposures and uncertain settlement dates.

3) **Discounting**

Unlike the first two techniques, discounting can be used to cover only export receivables. It cannot be used to cover foreign currency payable or to hedge a translation exposure. Where an exports receivable is to be settled by bill of exchange the exporter can discount the bill and thereby receive payment before the receivable settlement date. The bill may be discounted either with a foreign bank in the customer's country, in which case the foreign currency proceeds can be repatriated immediately, at the current spot rate; or it can be discounted with a bank in the exporter's country/ (HC). Either way the exporter is covered against exchange risk, the explicit cost being the discount rate charged by the bank.

The discounting technique for covering receivables exposures is very similar to the alternative of short-term borrowing except here the ex ante cost is the effective discount rate less the HC deposit rate, rather than the foreign currency borrowing rate less the HC deposit rate. With both techniques, of course, the basic aim is to convert the proceeds from the foreign currency receivable into the HC as soon as possible. As with straight borrowing operations, discounting is a non-sequitur in many exchange-controlled countries since foreign currency borrowing of any sort is permitted only under certain conditions.

4) **Factoring**

Like discounting, factoring can only be used as a means of covering export receivables. When the export receivable is to be settled on open account, rather than by bill of exchange, the receivables can be assigned as collateral for selected bank financing. Under which circumstances such a service will give protection against exchange rate changes, though during unsettled periods in the foreign exchange markets, appropriate variations may be made in the factoring agreement.

For the exporter the technique is very straight forward. He simply sells his export receivables to the factor and receives HC in return. The costs involved include both credit risks (the customer may default) and the cost of financing (if the exporter wants to receive payment before the receivable maturity date), as well as the cost of covering the exchange risk (the forward discount/premium). Factoring therefore tends to be a high-priced means of covering exposure, although there may be offsetting benefits and credit collection costs (the exporter may simply hand over the invoices against payment, the book-keeping and credit collection being done by the factor).

5) **Government Exchange Risk Guarantees**

To encourage exports, government agencies in many countries offer their exporters, insurance against export credit risk and special export financing schemes. In recent years a few of these agencies have begun to offer exchange risk insurance to their exporters, as well as the usual export credit guarantees. Typically, the exporter will pay a small premium on his export sales and, for this premium, the government agency will absorb all exchange losses (and gains) beyond a certain threshold level.

Initially, such exchange risk guarantee schemes were introduced to cover the exchange risk of exporters, where receivable exposure terms can be of a very long-term nature. More, recently however, some schemes have been extended to cover the exchange risk arising on consumer as well as capital goods' export. Government exchange risk guarantees are also given to cover foreign currency borrowing by public bodies.

It may be noted that the various exposure management techniques described above are not available in all circumstances. This is mainly because of limitations imposed by the market-place (as forward market exists in many of the 'exotic' currencies of the developing countries) and by regulation (the hedging of translation exposures on the forward markets is not allowed in many countries). Similarly, the availability of internal techniques is largely a function of the international involvement of each company.

14.6 FOREIGN FINANCIAL MARKETS

Most of the savings and investments of a country take place in that country's domestic financial market. However, many financial markets have extensive links abroad. Domestic investors purchase foreign securities and invest funds in foreign financial institutions. Conversely, domestic banks can lend to foreign residents, and foreign residents can issue securities in the national market or deposit funds with resident financial intermediaries. These are the traditional foreign markets for international financial transactions.

The significant aspect of such traditional foreign lending and borrowing is that all transactions take place under the rules, nuances, and institutional arrangements prevailing in the respective national market. Most important, all these transactions are directly subject to public policy governing foreign transactions in a particular market. To illustrate, when savers purchase securities in a foreign market, they do so according to the rules, market practices, and regulatory precepts that govern such transactions in that particular market. The same applies to those who invest their funds with foreign financial intermediaries.

Likewise, foreign borrowers who wish to issue securities in a national market must follow the rules and regulations of that market. Frequently these rules are discriminatory and restrictive. The same is true with respect to financial intermediaries; the borrower who approaches a foreign financial institution for a loan obtains funds at rates and conditions imposed by the financial institutions of the foreign country and is directly affected by the authorities' policy towards lending to foreign residents.

14.7 EUROMARKETS AND THEIR LINKAGES

Euro currencies which are neither currencies (they are deposits, loans, or securities) nor are they necessarily connected with Europe—represent the separation of currency of denomination from the country of jurisdiction.

The Eurocurrency markets constitute the short-to-medium term debt part of the international capital flow structure. The market is made by banks and other financial institutions that accept time deposits and make loans in a currency or currencies other than that of the country in which they are located. The latter characteristic defines the Eurocurrency market — it is a non domestic financial intermediary. In the light of the rapid growth of similar institutions in Hong Kong and Singapore (and to a lesser extent in the Middle East) the market is new worldwide and is more appropriately called the "offshore" or "external" money market.

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Working Capital network of intermediaries has been spectacular. The Eurocurrency market is extremely large and has grown rapidly in a short interval. It has received a bad press from central banks, which continue to call it a major cause of inflation and an obstacle to their control of domestic monetary systems. A number of basic questions and issues crop up soon as one looks at the offshore capital markets. First, what separates them from domestic markets? Second, why were they needed and how could they grow so fast when sophisticated domestic capital markets already existed? Third, is there a process of offshore money creation analogous to money creation in a domestic banking system and what effect does this have on world inflation?

14.8 THE CREATION OF EUROMONEY

There are no offshore currencies but only national currencies of different countries. A national currency deposit becomes part of the offshore currency market when it is transferred to a bank outside the controlled national monetary system. This usually means transferred to a bank outside the nation in question. Offshore deposits can be created in two ways:

1. One can take the physical currency of a country and deposit it in a bank in another country. Banks do hold currency of other countries but mainly for the convenience of travellers. And large quantities of currency have been smuggled out from time to time in recent years. However, this is usually done with the expectations of a depreciation of the currency being smuggled, and the receiving banks quickly convert these balances into some hard currency. So this method is in general of trivial importance as a creator of deposits.
2. One can transfer deposits from within the country whose currency is in question to an offshore bank. This may well be an overseas subsidiary of the very same bank with which the original deposit was held.

If we confine our attention to domestic money supplies, the offshore currency markets could only cause inflationary pressure if they could lower statutory reserves against deposits by allowing transformation of deposits from one category to another (and if there were different reserve requirements against the different categories of deposits). This actually happened in the United States in the late 1960s. While there were reserve requirements against ordinary deposits, there were none against banks' borrowings from foreign branches. When domestic rates came to exceed the CD ceilings, then in effect, funds from domestic U.S. CDs were transferred to London branches of American banks (which faced no interest rate ceilings) and were then loaned to the parent banks. Since there were no reserve requirements, the same volume of CDs supported more loans than before.

Of course, once offshore banking systems exist in tandem with domestic banking systems it is no longer particularly meaningful to measure money supplies according to the domestic banking system exclusively. What are you interested in when you measure the money supply? What purpose do these measurements serve? If our interest is inflation, we are concerned with the demand for and the supply of money balances for transactions purposes. To the extent that they are negotiable, Euro market CDs are probably used as transactions balances. Analysis of problems involving the money supply should, therefore, embrace a money supply consisting of the domestic monetary aggregates plus the negotiable part of offshore deposits in the currency concerned. If the relevant domestic monetary aggregate includes time deposits, then one should include also Eurotime deposits of the same maturity.

The offshore banking system is outside the control of the central banks whose currencies it uses. We should consider briefly whether this is good or bad, or even,

for some purposes, true. Let us consider first the question of **Integrating Working Capital and Capital Investment Processes** of inflation. Since banks have now lost control of the money supply and therefore of inflation, every Eurocurrency unit has its origin in a domestic currency deposit or cash unit, this cannot be true. Just as in a system of purely domestic banking, the central bank controls the monetary base and so controls the money supply, up to the vagaries of the money multiplier. The monetary base is multiplied to create the money supply, because deposits are relent except for the portion held as reserves plus the portion held as cash by the public. The offshore currency markets might make the multiplier different in size, or they might make it more variable. A multiplier different in size from that in a purely domestic banking system does not affect the monetary control of the central bank. The latter body must simply know that it is working with a multiplier of size x rather than size y . Hence problems in monetary control arise from variability of the size of the multiplier.

For practical purposes we have one short-term CD cum time deposit market, and whatever practical problems there are in the conception and implementation of monetary policy cannot be sensibly described as more severe in one part of this whole than in another part.

If this is so, we must explain the hostility central bankers often voice towards the offshore markets. A number of factors are important here. First, while the central banks have as much control as they ever had on creation of money, they have no control over allocation of credit in the offshore capital market. Second, as the Euromarkets are still viewed by the press and the public as mysterious and omnipotent, they make convenient scapegoats for failures of nerves in the handling of domestic monetary policy. Finally, the European central banks made fools of themselves in the 1960s in their Euromarket dealings in a way which they would rather forget, but which is instructive for us to examine.

In the 1960s the European central banks were pegging exchange rates, and absorbing growing dollar deficits. In the early 1960s these dollar deficits, which became dollar reserves of the absorbing central banks, were matched by growth of U.S. official obligations to foreign central banks in the U.S. balance of payments accounts. However, in the late 1960s the European central banks were surprised to observe a growing discrepancy between the change in U.S. official obligations to foreign central banks and their own record of dollar reserves held. The central bankers kept getting more and more dollars than the United States seemed to be losing on the official settlements definition of the balance of payments. The well-known economist Fritz Machulpsaid of them, "Most magicians who pull rabbits out of their hats know full well that they put them there before the beginning of the show. The magicians in (this) story, however, are more naïve, they are just as surprised as the audience by the emergence of the rabbits from their hats."

What happened? Commonly when central banks undervalued their countries' currencies against the dollar they would take the dollars they received in pegging the price and buy U.S. Treasury Bills with them. From an accounting viewpoint, the U.S. deficit with Germany, say, equaled in dollar value the German surplus with the United States. A U.S. deficit with Germany meant that more dollar checks were written to purchase DM and DM checks were written to purchase dollars. The Bundesbank became the owner of the excess U.S. demand deposits, which it used to purchase Treasury Bills. Thus the U.S. deficit was represented by these excess demand deposits but entered the official settlements balance only when the demand deposits were converted to bills.

Now suppose a foreign central bank decided to earn higher interest on its reserves by converting its acquired U.S. demand deposits to Eurodollar CDs rather than Treasury Bills. As we have seen, such an action transfers the ownership of the U.S. demand deposits representing the new foreign reserves to some private, offshore bank. 17

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The U.S. deposits were turned into foreign exchange to create the capital outflow that the European central bank absorbed. Subsequently they became the property of the private foreign bank. This was not recorded on the official settlements part of the balance of payments accounts though it certainly constituted foreign reserves created by the deficit, just as before. This explains part of the mystery, but the best part is yet to come.

Consider what might have happened to the Eurodollar deposits owned by the foreign central banks. Under the fixed exchange rate system there were periodic exchange crises, during which people would try to switch other currencies into DM or Swiss francs in anticipation of appreciation. Frequently the offshore banks would lend the dollar deposits of the Swiss and German central banks to speculators who converted them into DM or Swiss francs. Under their exchange pegging policies, these tendered dollars had to be absorbed by the central banks, who re-deposited in the offshore markets, so that they could be lent again ! This is the rabbit in the hat trick of which Machlup was speaking. The central banks came to own very large Eurodollar claims by this circular process, but these large claims were not on the United States but rather (indirectly) on the speculators.

14.9 EXPLANATION FOR THE GROWTH OF THE EUROMARKETS

The Euro markets are not a bogeyman but an unregulated financial intermediary. They bring together borrowers and lenders, frequently from the same country. They deal only in the currencies of individual countries and are thus a substitute for the domestic banking system. The incredibly rapid growth of the Euro-markets show that they were a strongly preferred substitute. But why ? The question has an obvious answer. An offshore credit market will not exist unless :

- Depositors receive better terms than they can receive onshore, and
- Borrowers can borrow more, possibly at lower rates, than they can onshore.

That is, banks in the offshore market must operate with a lower spread between the interest rates they charge to borrowers and the ones they pay to lenders.

The rapid emergence in the 1960s of a world-wide Eurocurrency market that coexists and competes with traditional foreign exchange banking resulted from the peculiarly stringent and detailed official regulations governing residents operating with their own national currencies. These regulations contrast sharply with the relatively great freedom of non-residents to make deposits or borrow foreign currencies from these same constrained national banking systems. On an international scale, offshore unregulated financial markets compete with onshore regulated ones.

The differences in national regulatory regimes and the internationalisation of finance brought the birth of the Eurodollar markets. From basic factors that contributed to the rise of the Eurodollar markets are :

- i) U.S. financial regulation played a very major role in the creation of the Eurodollar markets, especially Regulation Q. (Restriction on currency convertibility prevented the commercial exploitation of U.S. dollar held in Europe, while low interest rates in the U.S. enforced by Regulation Q depressed the returns. This was reinforced by Interest Equalisation Tax in 1963. These conditions were in part responsible for the Eurodollar market centred in London).
- ii) The U.S. balance of payments deficits and to the accumulation of dollars stride the U.S.
- iii) The U.S. dollar was the key international currency for trading and for reserve

- purposes, **Integrating Working Capital and Capital Investment**
- iv) No receive ratios were required in many of the countries, therefore, off-balance sheet funding outside the regulatory controls was possible enabling the establishment of Eurodollar markets. **Processes**

Within the turbulent environment the inter-bank (Eurodollar) market soon became the central mechanism to channel international flows of funds amongst banks. This truly international market linked the various components of the international financial system to the corresponding domestic market.

The internationalisation of finance placed international and national regulatory systems era under further stress to liberalise financial markets and remove the long standing barriers to trade in financial services. This trend enveloped several related developments, most notably: some countries allowed foreign institutions a larger role in domestic financial markets ; the erosion of domestic restrictions on capital markets; and the increasing integration of domestic and international markets.

These changes initiated national policies of liberalisation and deregulation which were designed to attract capital to its financial markets. Furthermore, they have been characterised by a trend toward a breakdown in the segmentation of financial markets. Distinctions among services offered by different financial institutions are blurring in many countries, and national markets are becoming increasingly integrated internationally. The nature and extent of these changes differ across countries, but almost everywhere competition in financial markets has intensified.

14.10 SUMMARY

It is common that when finance goes international, problems multiply. One has to focus on the operation of exchange markets, financial and euro markets. When companies operate across nations, they face political, tax, foreign exchange and the economic constraints. A clear understanding of the issues is all that is desired in an international context. The basic issues pertain to the quotations and factors that influence the exchange markets. Managing exchange rate fluctuations is also highly important. The present unit focuses on both the internal and external techniques to deal with this phenomenon. The internal techniques include: Netting, Matching, Leading and Lagging, Pricing and Asset-liability management [ALBM]. External techniques include: Forward exchange contracts, short-term borrowing, discounting, factoring and guarantees. Finally, the developments in the Euro-markets need to be closely studied for their effects on the company borrowing and financing programme. Getting more mileage out of the funds involves a clear understanding of the implications of change in the national and international contexts.

14.11 KEY WORDS

Foreign Exchange : Payment made in other country's currency

Bid-Ask Rates : The prices quoted by the sellers and buyers for their dealings in foreign exchange.

Interest Arbitrage : Investment of funds in other countries for securing high interest income.

Netting : Offsetting exposures in one currency with exposure in the same or another currency.

Factoring : Selling of export receivables to a third party

Working Capital : Money maintained outside the country of origin; mainly in the form of deposits in the off-shore banks..
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14.12 SELF ASSESMENT QUESTIONS

1. Explain the principle of covered interest arbitrage and interest parity theory.
2. The following quotations and expectations exist for the German Mark:

Present Spot Rate	\$ 0.5000
90 days Forward Rate	0.5200
Your expectation of the Spot Rate 90 days hence	0.5500

 - a) What is the premium or discount on the forward G.M.
 - (b) If your expectation proves correct, what would be your dollar profit or loss from investing \$ 4,000 in the spot market? How much capital do you need now to carry out this operation? What are the major risks associated with this speculation?
 - c) If your expectation is correct what would be your dollar profit or loss from investing \$ 4,000 in the forward market?
3. Mr. Morales a trader at one of the major banks in New York has received information from the economic research department of his bank that short-term interest rates in the United States are bound to increase by 100 basis points within a month. (100 basis points equal 1 %).

1-year interest rates:

United States	6.45%
Canada	4.46%

Spot rate: \$ 0.996899/Canadian dollar

Forward rate :

1 year	\$ 1.016636
1 month	\$ 0.998453

 - i) What is the premium or discount on the Canadian dollar?
 - ii) What does the new information mean in terms of future rates? If Mr. Morales is bound by the rule 'buy equals sell, ' what opportunities does he have to profit from the information given to him by his economic research department?
 - iii) What are the costs or gains of such alternatives,
 - 1) If the U.S. interest rate increases to 7.45% within a month?
 - 2) If interest rates remain constant ?
 - 3) If Spot Canadian dollars on day 30 were \$ 0.9500?
 - iv) What course of action would you advise the trader to follow?
- 4) The spot Danish krone is selling for \$ 0.17400 and the 3-month forward is selling for \$0.17440. The three-month inter bank rate for the U.S. dollar is 11.60% and for the Danish krone is 11.25%.
 - i) Are the forward rates and interest rates in equilibrium? Why?
 - ii) If not, what would you do to take advantage of the situation?

- iii) If a large number of individuals take similar actions, how would this appear in the market?
- 5) A foreign exchange trader gives the following quotes for the Belgian franc spot, one month, three-months and six-months to a U.S. based treasurer.
\$ 0.0247 8/80 4/6 9/8 14/11
- i) Calculate the outright quotes for one, three and six months forward.
- ii) If the treasurer wished to buy Belgian francs three months forward, how much would he pay in dollars?
- iii) If he wished to purchase U.S. dollars one month forward. How much would he have to pay in Belgian francs?
- iv) Assuming that Belgian francs are being bought, what is the premium or discount, for the one, three, and six month forward rates in annual percentage terms?
- 6) The Eurocurrency market is often commented upon for its apparent ability to create vast amounts of credit. Explain how this credit creation process takes place with the help of an example. Also explain how the interest rates work in the Eurocurrency market.
- 7) “With the growth in availability of Eurodollars, Euro-banks have begun to extend medium term Eurodollar loans for multinational companies to finance their medium-term needs. Although the Eurobond market is of a more recent vintage, it is of a parallel development of importance to Multinational financial management.” Discuss.
- 8) Under what circumstances would a financial manager of an MNC consider using Euro-Currency markets? What advantages or special features can these markets offer compared to borrowing from domestic markets? Are there drawbacks? Explain.
- 9) What is the difference between a Eurocurrency loan and a Eurobond? Explain some factors accounting for the existence and growth of the Eurodollar market.
- 10) What is meant by “Covered-Interest-Arbitrage and Interest parity”? Why is interest parity more realistically represented by a band rather than a line? Explain with the help of an example.
- 11) How does speculation in the forward exchange market differ from speculation in the spot market? What is meant by going ‘long’ or ‘short’ in the currency market? Under what conditions would you sell a certain currency forward?
- 12) Explain the mechanism of an Interest rate swap with the help of an example.
- 13) What is the difference between the Eurodollar market and the Eurobond market? In this context explain the rationale of the Eurodollar market.
- 14) Explain how the Eurocurrency, Euro-credit, and Eurobond markets differ from one another.

14.13 FURTHER READINGS

1. Van Horne, James C., 2002, *Financial Management and Policy*, Indian Reprint, Peortron, Delhi.
2. Shapiro, Alan C., 2001, *Multinational Financial Management*, John Wiley & Sons, New York.