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Factors Affecting Exchange Rates Part - 3

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Factors Affecting Exchange Rates and Exposures

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Factors Affecting Exchange Rates Part-3

Academic Script

1. Introduction

Many firms are exposed to foreign exchange risk - i.e. their wealth is affected by movements in exchange rates - and will seek to manage their risk exposure. This session looks at the different types of foreign exchange risk i.e. transaction risk, economic risk and translation risk. The Statistical Analysis of these exposures is done using VaR i.e. Value at Risk is also talked about in this session. We will also be introducing the methods for hedging that risk. These methods of hedging include internal as well as external techniques which will be discussed in detail in today's session.

2. Types of Foreign Exchange Risk

Transaction risk

This is the risk of an exchange rate changing between the transaction date and the subsequent settlement date, i.e. it is the gain or loss arising on conversion.

This type of risk is primarily associated with imports and exports. If a company exports goods on credit then it has a figure for debtors in its accounts. The amount it will finally receive depends on the foreign exchange movement from the transaction date to the settlement date.

As transaction risk has a potential impact on the cash flows of a company, most companies choose to hedge against such exposure. Measuring and monitoring transaction risk is normally an important component of treasury risk management.

The degree of exposure is dependent on:

(a) The size of the transaction,

(b) The hedge period, the time period before the expected cash flows occurs.

(c) The anticipated volatility of the exchange rates during the hedge period.

The corporate risk management policy should state what degree of exposure is acceptable. This will probably be dependent on whether the Treasury Department has been established as a cost or profit centre.

Economic risk

Transaction exposure focuses on relatively short-term cash flows effects; economic exposure encompasses these plus the longer-term affects of changes in exchange rates on the market value of a company. Basically this means a change in the present value of the future after tax cash flows due to changes in exchange rates.

There are two ways in which a company is exposed to economic risk.

Directly

If your firm's home currency strengthens then foreign competitors are able to gain sales at your expense because your products have become more expensive (or you have reduced your margins) in the eyes of customers both abroad and at home.

Indirectly

Even if your home currency does not move vis-a -vis your customer's currency you may lose competitive position. For example suppose a South African firm is selling into Hong Kong and its main competitor is a New Zealand firm. If the New Zealand dollar weakens against the Hong Kong dollar the South African firm has lost some competitive position.

Economic risk is difficult to quantify but a favoured strategy to manage it is to diversify internationally, in terms of sales, location of production facilities, raw materials and financing. Such diversification is likely to significantly reduce the impact of economic exposure relative to a purely domestic company, and provide much greater flexibility to react to real exchange rate changes.

Translation risk

The financial statements of overseas subsidiaries are usually translated into the home currency in order that they can be consolidated into the group's financial statements. Note that this is purely a paper-based exercise - it is the translation not the conversion of real money from one currency to another.

The reported performance of an overseas subsidiary in home-based currency terms can be severely distorted if there has been a significant foreign exchange movement.

If initially the exchange rate is given by $/£1.00 and an American subsidiary is worth $500,000, then the UK parent company will anticipate a balance sheet value of £500,000 for the subsidiary. A depreciation of the US dollar to $/£2.00 would result in only £250,000 being translated.

Unless managers believe that the company's share price will fall as a result of showing a translation exposure loss in the company's accounts, translation exposure will not normally be hedged. The company's share price, in an efficient market, should only react to exposure that is likely to have an impact on cash flows.

Let me try explaining you how these risk were faced, tackled and managed by an MNC by taking up an example of How BMW

dealt with exchange rate risk and successfully established itself as one of the leaders.

So let me start the story.

BMW Group, owner of the BMW, Mini and Rolls-Royce brands, has been based in Munich since its founding in 1916. But by 2011, only 17 per cent of the cars it sold were bought in Germany.

In recent years, China has become BMW's fastest-growing market, accounting for 14 per cent of BMW's global sales volume in 2011. India, Russia and eastern Europe have also become key markets.

The challenge

Despite rising sales revenues, BMW was conscious that its profits were often severely eroded by changes in exchange rates. The company's own calculations in its annual reports suggest that the negative effect of exchange rates totalled €2.4bn between 2005 and 2009.

BMW did not want to pass on its exchange rate costs to consumers through price increases. Its rival Porsche had done this at the end of the 1980s in the US and sales had plunged.

Coming to the strategy used by BMW:

BMW took a two-pronged approach to managing its foreign exchange exposure.

One strategy was to use a "natural hedge" – meaning it would develop ways to spend money in the same currency as where sales were taking place, meaning revenues would also be in the local currency.

However, not all exposure could be offset in this way, so BMW decided it would also use formal financial hedges. To achieve

this, BMW set up regional treasury centres in the US, the UK and Singapore.

How the strategy was implemented.

The natural hedge strategy was implemented in two ways. The first involved establishing factories in the markets where it sold its products; the second involved making more purchases denominated in the currencies of its main markets.

BMW now has production facilities for cars and components in 13 countries. In 2000, its overseas production volume accounted for 20 per cent of the total. By 2011, it had risen to 44 per cent.

In the 1990s, BMW had become one of the first premium carmakers from overseas to set up a plant in the US – in Spartanburg, South Carolina. In 2008, BMW announced it was investing $750m to expand its Spartanburg plant. This would create 5,000 jobs in the US while cutting 8,100 jobs in Germany.

This also had the effect of shortening the supply chain between Germany and the US market.

The company boosted its purchasing in US dollars generally, especially in the North American Free Trade Agreement region. Its office in Mexico City made $615m of purchases of Mexican auto parts in 2009, expected to rise significantly in following years.

A joint venture with Brilliance China Automotive was set up in Shenyang, China, where half the BMW cars for sale in the country are now manufactured. The carmaker also set up a local office to help its group purchasing department to select competitive suppliers in China. By the end of 2009, Rmb6bn worth of purchases were from local suppliers. Again, this had

the effect of shortening supply chains and improving customer service.

At the end of 2010, BMW announced it would invest 1.8bn rupees in its production plant in Chennai, India, and increase production capacity in India from 6,000 to 10,000 units. It also announced plans to increase production in Kaliningrad, Russia.

Meanwhile, the overseas regional treasury centres were instructed to review the exchange rate exposure in their regions on a weekly basis and report it to a group treasurer, part of the group finance operation, in Munich. The group treasurer team then consolidates risk figures globally and recommends actions to mitigate foreign exchange risk.

So, the lessons learnt

By moving production to foreign markets the company not only reduces its foreign exchange exposure but also benefits from being close to its customers.

In addition, sourcing parts overseas, and therefore closer to its foreign markets, also helps to diversify supply chain risks.

3. Hedging Transaction Risk- The Internal Techniques

Internal techniques to manage/reduce forex exposure should always be considered before external methods on cost grounds. Internal techniques include the following:

Invoice in home currency

One easy way is to insist that all foreign customers pay in your home currency and that your company pays for all imports in your home currency.

However the exchange-rate risk has not gone away, it has just been passed onto the customer. Your customer may not be too

happy with your strategy and simply look for an alternative supplier.

Leading and lagging

If an importer (payment) expects that the currency it is due to pay will depreciate, it may attempt to delay payment. This may be achieved by agreement or by exceeding credit terms.

If an exporter (receipt) expects that the currency it is due to receive will depreciate over the next three months it may try to obtain payment immediately. This may be achieved by offering a discount for immediate payment.

The problem lies in guessing which way the exchange rate will move.

Matching

When a company has receipts and payments in the same foreign currency due at the same time, it can simply match them against each other.

It is then only necessary to deal on the forex markets for the unmatched portion of the total transactions.

An extension of the matching idea is setting up a foreign currency bank account.

Decide to do nothing?

The company would "win some, lose some".

Theory suggests that, in the long run, gains and losses net off to leave a similar result to that if hedged.

In the short run, however, losses may be significant.

One additional advantage of this policy is the savings in transaction costs.

4. Hedging Transaction Risk- The External Techniques

Transaction risk can also be hedged using a range of financial products. These are introduced to you further.

(A) **MONEY MARKET HEDGES**

The basic idea is to avoid future exchange rate uncertainty by making the exchange at today's spot rate instead. This is achieved by depositing/borrowing the foreign currency until the actual commercial transaction cash flows occur. This effectively fixes the future rate.

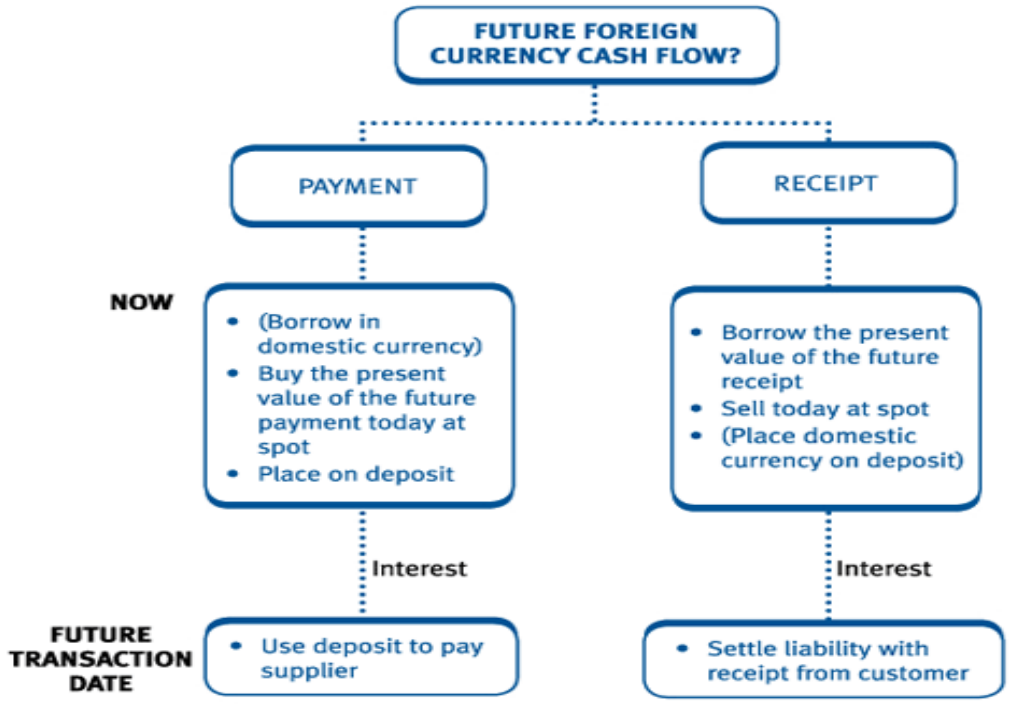
Basic idea

The money markets are markets for wholesale (large-scale) lending and borrowing, or trading in short-term financial instruments. Many companies are able to borrow or deposit funds through their bank in the money markets.

Instead of hedging a currency exposure with a forward contract, a company could use the money markets to lend or borrow, and achieve a similar result.

Since forward exchange rates are derived from spot rates and money market interest rates, the end result from hedging should be roughly the same by either method.

Setting up the hedge



In effect a foreign currency asset is set up to match against a future liability (and vice-versa).

If you are hedging a future payment:

- buy the present value of the foreign currency amount today at the spot rate
- the foreign currency purchased is placed on deposit and accrues interest until the transaction date.
- the deposit is then used to make the foreign currency payment.

If you are hedging a receipt:

- borrow the present value of the foreign currency amount today
- the foreign loan accrues interest until the transaction date
- the loan is then repaid with the foreign currency receipt

Advantages and disadvantages

Forward exchange contracts are used extensively for hedging currency transaction exposures.

Advantages include:

- fixes the future rate, thus eliminating downside risk exposure

- flexibility with regard to the amount to be covered
- money market hedges may be feasible as a way of hedging for currencies where forward contracts are not available.

Disadvantages include:

- more complicated to organise than a forward contract
- Fixes the future rate - no opportunity to benefit from favourable movements in exchange rates.

(B) **FUTURES CONTRACTS**

Futures contracts are standard sized, traded hedging instruments.

The aim of a currency futures contract is to fix an exchange rate at some future date, subject to basis risk.

Currency futures are a tool for hedging foreign exchange risk.

Futures hedging calculations

Step 1: Set up the hedge by addressing three key questions:

- Do we initially buy or sell futures?
- How many contracts?
- Which expiry date should be chosen?

Step 2: Contact the exchange. Pay the initial margin. Then wait until the transaction / settlement date.

Step 3: Calculate profit or loss in the futures market by closing out the futures contracts, and calculate the value of the transaction using the spot rate on the transaction date.

Setting up the hedge

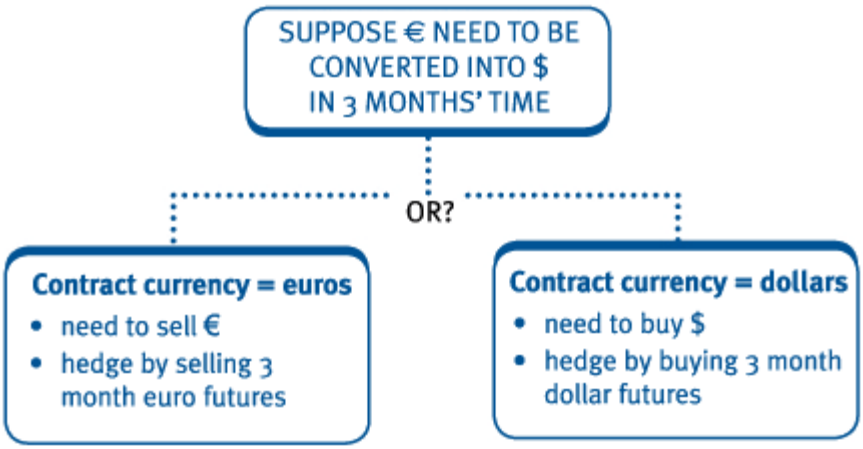
Buying or selling futures and the currency of the contract

- A key issue with currency futures is to establish the currency of the contract or CC. For example if the CC is $ and your transaction involves buying $, you should buy futures now to set up the hedge.

In exam questions the contract size will always be given to you, quoted in terms of the CC. For example,

Future	Contract size	Price quotation	Tick size	Value of one tick
£/US dollar	£62,500	US$ per £1	$0.0001	$6.25
€/US dollar	€200,000	US$ per €1	$0.0001	$20.00
Swiss franc/ US dollar	SFr 125,000	US$ per SFR1	$0.0001	$12.50
Yen/US dollar	12.5 million yen	US$ per 1 yen	$0.000001	$12.50
€/sterling	€100,000	£ per €1	£0.0001	£10

The CC is the currency in which the contract size is quoted.



Expiry date

We assume that the contracts mature or expire at the end of March, June, September and December. It is normal to choose the first contract to expiry after the conversion date.

The range of available futures is limited and includes: $/£, $/Y, $/SFR, $/A$, $/C$ and $/€. Therefore if you are asked to give a hedge strategy for a "minor" currency you should not recommend a futures contract.

5. Summary

This session looked at the different types of foreign exchange risk i.e. transaction risk, Economic risk and translation risk. The Statistical Analysis of these exposures is done using VaR i.e. Value at Risk is also talked about in this session. We were introduced to the methods for hedging that risk. These methods of hedging include internal as well as external techniques. The internal techniques included invoicing in home currency, Leading and Lagging, Matching as well as what if company chooses to do nothing of these. The external techniques included Money market hedges, Future contracts, Forwards contracts, Flexible forward Contracts, Currency Swaps and Currency Options. Of these in today's session we covered few external techniques and rest will be covered in the next session. I hope this session was helpful to you in understand the factors affecting exchange rates and exposures under international financial management better. Thank You.