

FOREIGN CURRENCY RISK MANAGEMENT

What is topic about?

Many businesses have significant foreign currency transactions which typically arise from exporting, importing or investing in different countries. In this topic we consider the different types of risk faced by such companies resulting from exchange rate movements (known as exchange rate risk), and also consider the ways in which such risk can be reduced and managed.

Key areas of the chapter are

1. Types of foreign currency risk
2. Exchange rate theory.
3. Hedging techniques
 - a. Internal hedging techniques
 - b. External hedging techniques

Before moving forward we need to focus the term foreign currency risk

What is foreign currency risk?

This refers to the risk of a change in the

- Value of future cash flows or
- Value of assets or liabilities

That arises solely as a result of exchange rate movements.

Example:

Suppose, for example, a UK company whose home currency is the pound, is due to receive \$500,000 in 6 months' time. As the exchange rate between the dollar and the pound changes the equivalent value for the receipt in pounds will also change.

Is risk always bad? No – a mistake that students often make when discussing foreign currency risk is to focus only on the downside. It is important to note that there is both an upside (or favourable) and downside (or adverse) aspect to foreign currency risk. The equivalent value in pounds of the \$500,000 due in 6 months' time could increase or decrease because of an exchange rate change.

When we reduce the risk of an adverse movement in exchange rates it is therefore important to note that in most cases we also reduce the risk of being able to benefit potentially from favourable movements in exchange rates. In most cases, this is acceptable because the overriding aim is to reduce the adverse risk.

Strengthening and Weakening of Currencies

Students often become confused when discussing strengthening and weakening of currencies. What do these terms mean?

Suppose that we have the following scenario:

On 01/01/20X1 the exchange rate is \$1.20 for each €1.00

On 31/12/20X1 the exchange rate is \$1.50 for each €1.00

During 20X1 we can say that:

1. **The euro (€) has strengthened**, or appreciated. This is because each euro is able to buy more dollars at the end of 20X1 than was the case at the beginning of 20X1.
2. **The dollar (\$) has weakened**, or depreciated. This is because it would require more dollars to buy each euro at the end of 20X1 than was the case at the beginning of 20X1.

This, of course, means that as one currency strengthens the other will weaken – therefore make sure that you are very clear about the currency being referred to when you discuss strengthening or weakening.

HUSSAIN QAZI : FM COMPIATION

TYPES OF FOREIGN CURRENCY RISK

Transaction risk

This is the risk of adverse exchange rate movements occurring in the course of normal international trading transactions.

This arises when the prices of imports or exports are fixed in foreign currency terms and there is movement in the exchange rate between the date when the price is agreed and the date when the cash is paid or received in settlement. For example, a sale worth \$3,000 when the exchange rate is \$1.7820 = £1 has an expected sterling value of £1,684. If the dollar has depreciated against sterling to \$1.8500 = £1 when the transaction is settled, the sterling receipt will have fallen to £1,622.

Transaction risk therefore affects cash flows so companies often choose to hedge or protect themselves against transaction risk.

Translation risk

This is the risk that the organisation will make exchange losses when the accounting results of its foreign branches or subsidiaries are translated into the home currency.

Translation losses can result, for example, from restating the book value of a foreign subsidiary's assets at the exchange rate on the balance sheet date. For example, an asset is valued on a balance sheet at \$14 million and was acquired when the exchange rate was \$1.79 = £1. One year later, the exchange rate has moved to \$1.84 = £1 and the balance sheet value of the asset has changed from \$7.82 million to \$7.61 million, resulting in an unrealised (paper) loss of \$0.21 million.

Translation risk does not affect cash flows so does not directly affect shareholder wealth.

However, investors may be influenced by the changing values of assets and liabilities so a company may choose to hedge translation risk through, for example matching the currency of assets and liabilities. For example an asset denominated in euros would be financed by a euro loan.

Economic risk

This refers to the effect of exchange rate movements on the international competitiveness of a company.

For example, a UK company might use raw materials which are priced in US dollars, but export its products mainly within the EU. A depreciation of sterling against the dollar or an appreciation of sterling against other EU currencies will both erode the competitiveness of the company. This sounds a bit technical but is really the long term version of transaction risk.

Economic exposure can be difficult to avoid, although diversification of the supplier and customer base across different countries will reduce this kind of exposure to risk.

NOTE

Transaction risk is seen as the short-term manifestation of economic risk, which could be defined as the risk of the present value of a company's expected future cash flows being affected by exchange rate movements over time. It is difficult to measure economic risk, although its effects can be described, and it is also difficult to hedge against it.

EXCHANGE RATE THEORIES:

1. Purchasing Power Parity Theory
2. Interest Rate Parity Theory
3. Fisher's Effect

Exchange rate movements can be related to changes in interest rate or inflation rates.

Purchasing Power Parity Theory

The relationship between inflation rates and exchange rates is known as purchasing power parity.

Purchasing power parity theory states that the exchange rate between two currencies is the same in equilibrium when the purchasing power of currency is the same in each country.

Purchasing power parity theory predicts that the exchange value of foreign currency depends on the relative purchasing power of each currency in its own country and that spot exchange rates will vary over time according to relative price changes.

The country with the higher rate of inflation is forecast to have its currency weaken against the currency of the country with the lower rate of inflation. Purchasing power parity holds in the longer term, not in the short term and therefore can be used to provide long-term forecasts of exchange rate movements.

There is a formula that can be used to estimate the future spot using PPP.

$$S_1 = S_0 \times \frac{1 + \text{inf}_o}{1 + \text{inf}_b}$$

Where:

S_1 = estimated spot rate in 1 years' time

S_0 = sport rate now

Inf_o = inflation in the counter currency (the counter currency is the currency which varies)

Inf_b = inflation in the base currency (the base currency is the currency that is fixed)

Interest Rate Parity Theory

The relationship between interest rates and exchange rates is known as interest rate parity.

Interest rate parity is a method of predicting foreign exchange rates based on the hypothesis that the difference between the interest rates in the two countries should offset the difference between the spot rates and the forward foreign exchange rates over the same period. The forward rate can be found by multiplying the spot rate by the ratio of the two interest rates.

Need to know!

$$FO = SO \times \frac{1 + inf_o}{1 + inf_b}$$

Where:

FO = forward rate

SO = sport rate now

Inf_o = interest rate in the counter currency (which is the variable currency)

Inf_b = inflation in the base currency (the base currency is the currency that is fixed)

The International Fisher effect

The Fisher effect is a relationship between interest rates in an economy and the levels of inflation. The effect suggests that currencies in which inflation levels are high will generally have higher interest rates, and similarly currencies in which inflation levels are low will generally have lower interest rates.

There are a number of reasons for this. A central bank, for example, using interest rates to control demand led inflation, will raise interest rates when inflation levels rise.

If the Fisher effect holds true, it could be argued that the forward rate (determined using interest rate parity) and the estimated future spot rate (determined using purchasing power parity) will give very similar results. If this is the case then it could also be argued that the forward rate is a good estimate of the future sport rate. This is the international fisher effect.

HEDGING

What is meant by HEDGING?

Hedging is a general term for a risk reduction technique. We can say that risk can be reduced, or hedged, by taking a particular course of action. All of the techniques allow us to hedge or reduce risk to some extent.

Most hedging techniques reduce downside risk but also reduce upside risk (that is the potential to benefit from a favourable exchange rate movement). Options, which we cover later are the exception to this.

INTERNAL HEDGING TECHNIQUES – TRANSACTION RISK

There are a range of possibilities for internal hedging techniques, which include the following:

Invoice in home currency (Currency Invoice)

In this case a company seeks to invoice all customers in the home currency when they export and seeks to be invoiced in the home currency when they import. This effectively passes any foreign currency risk the other party to be transaction.

The ability to do this depends, to a large extent, on the strength of the company in relation to its customers and its suppliers, if, for example, a customer in a foreign market has a choice of potential suppliers, and other suppliers are willing to invoice the customer in the customers own currency, it would be very difficult to compete in that market place if a company sought to invoice in their home currency.

Leading and lagging

This involves bringing forward or delaying (lagging) the transaction. The purpose of this technique is to be able to take advantage of forecast exchange rate changes. Leading means bringing forward a receipt or a payment whereas lagging means delaying a receipt or a payment.

This is more a technique to take advantage of a company's forecasting ability rather than strictly to manage risk. As it is based on forecast those forecasts could, of course, be wrong!

Netting/Direct Matching

Netting (matching FC) refers to the balancing of receipts and payments in the same currency.

If a business has receipts and payments at the same point in time, and in the same foreign currency, they it could be sensible to match the receipt with the payment.

If a German company is due to receive from a customer \$3 million in 4 months' time, and pay to a supplier \$2 million in 4 months' time. It would make sense to use the anticipated receipt to make the payment. This would leave net receipt of \$1 million. There is clearly still transaction risk on that net receipt but that could be hedged using other methods.

The process of matching is made simpler by having foreign currency accounts with a bank. Receipts of foreign currency can be credited to the account pending subsequent payments in the currency.

Matching (Asset & Liabilities)

Foreign currency assets can be matched with foreign currency denominated loans (Will discuss later).

EXTERNAL HEDGING TECHNIQUES – TRANSACTION RISK

External hedging means that a company uses an outside party in some way to hedge the transaction risk that arises. The main techniques that could be used are as follows:

1. Forward exchange contracts.
2. Money market hedging
3. Financial futures
4. Option contracts
5. Currency swaps

Forward Exchange Contracts

A forward contract specifies in advance the rate at which a specified quantity of currency will be bought and sold. These contracts are used extensively for hedging currency transaction exposures.

Features of the forward contract are:

1. Legal Binding Contract
2. Over the Counter (OTC):
 - a. Volume of currency
 - b. Nature of currency
 - c. Contract settlement date

Advantages include:

- Flexibility with regard to the amount to be covered
- Relatively straightforward both to comprehend and to organise.

Disadvantages include:

- No opportunity to benefit from favourable movements in exchange rates.
- Contractual commitment that must be completed on the due date (option date forward contract can be used if uncertain)

Currency Future Contracts

A currency futures contract is a standardized contracts for the sale or purchase at a set future date of a set quantity of currency. A future represents a commitment to an additional transaction in the future that limits the risk of existing commitments.

Features of the future contract are:

1. Legal Binding Contract
2. Marketable Standard Contract (MSC):
 - a. Volume of currency
 - b. Nature of currency
 - c. Traded on a futures market and settlement takes place in three monthly cycles.

Most currency futures contracts are closed out before their settlement dates by undertaking the opposite transaction to the initial futures transaction. For example, if the initial transaction is buying currency futures, it is closed out by selling currency futures. A gain made on the futures transaction will offset a loss made on the currency markets and vice versa.

Advantages include:

- No chances of default
- Most of the time future contracts result more financial viable as compare to forward and money market. (The reason is MSC)

Disadvantages Include:

- Contracts cannot be tailored to the user's exact requirements.
- The arrangement may create over hedging OR under hedging
- Initial margin requirement.
- Hedge inefficiencies/imperfection are caused by having to deal in a whole number of contracts and by basis risk.

Basis Risk is the possibility (risk) that movements in the currency futures price and spot price will be different. It is one of the reasons for an imperfect/inefficient currency futures hedge.

Currency Options

A currency option is a right of an option holder to buy (call) or sell (put) foreign currency at a specific exchange rate at a future date.

Buying a currency option involves paying an upfront premium, which option can lose.

Currency options protect against adverse exchange rate movements while allowing the investor to take advantage of favourable exchange rate movements.

Companies can choose whether to buy a tailor-made currency option from a bank, suited to the company's specific needs (over-the-counter options), or a standard option, in certain currencies only, from an options exchange (traded options).

These contracts are not legal binding contract and particularly useful in situations where the cash flow is not certain to occur (eg when tendering for overseas contracts).

Currency Swaps

Swap means exchange. Currency swaps effectively involve the exchange of debt from one currency to another.

A swap is a formal agreement (legal binding) whereby two organisations contractually agree to exchange payments on different terms, eg in different currencies, or one at a fixed rate and the other at a floating rate.

Currency swaps can provide a hedge against exchange rate movements for longer periods than the forward market, and can be a means of obtaining finance from new countries.

Swaps are easy to arrange and are flexible since they can be arranged in any size and are reversible. Transaction costs are low, like bank fees, since there is no commission or premium to be paid.