



The Foreign Exchange Market



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1. BACKGROUND TO THE FOREIGN EXCHANGE MARKET

The Foreign Exchange (Forex or FX) market can be described as the market in which transactions are entered into to *exchange a given amount of one currency for an amount of another currency*.

The need for foreign exchange initially emanated from *international trade* which requires settlement in currencies that are legal tender in the countries of both the exporter and the importer. Such a need is far from new and goes back to the first international or inter-provincial flows of commodities and goods. The same requirement applies to capital flows. A borrower raising funds internationally to finance domestic funding needs will need to exchange the foreign currency proceeds of the borrowing into a currency that can be used domestically.

2. INTRODUCTION

The foreign exchange market is *not a physical market*. It is an *organizational framework* where players are connected by telephone, fax and computers. The market operates in most financial centers around the world. The currency bought or sold is rarely seen; it is transferred electronically from one account to another.

The foreign exchange market is an *over-the-counter* market, i.e.

- Currency denomination
- Deal size
- Settlement dates, and
- Prices (exchange rates) are all negotiated by the parties concerned in the transaction.

3. MAJOR PARTICIPANTS IN THE FOREIGN EXCHANGE MARKET

- **Market Makers.** Commercial and/or investment banks are the *market makers* in the foreign exchange market. The prices they quote are the rates of exchange between currencies. These rates provide market users with indications of the latest prices on offer from various market makers. Banks acting as market makers are willing to take on currency risk and will usually be involved in currency trading and speculation.
- **Brokers.** Brokers in the foreign exchange market do not quote their own rates of exchange. Rather, they rely on the rates quoted by market makers to other market participants. The broker will not reveal the name of the party making the price until a positive commitment has been made and the trade concluded. The broker receives *commission* or *brokerage* for the service provided.
- **Central Authorities.** Central authorities intervene in the foreign exchange market to implement monetary policies of governments. This intervention is usually to smooth out fluctuations in the domestic currency which they consider unrealistic or unfavourable by buying or selling the domestic currency. Alternatively, they can use domestic market intervention to influence the exchange rate, i.e. vary domestic interest rates to bring about changes in the level of the exchange rate.
- **International Corporations.** Corporate users of the foreign exchange market normally participate in the market as part of their involvement in international trade. Their involvement may take the form of the exchange of currencies to facilitate trade, or as a result of trade, or alternatively to hedge currency exposures that arise in relation to trade.



4. FOREIGN EXCHANGE POSITIONS

The position of a dealing operation refers to the *net balance* maintained in foreign currencies. More specifically, a *net exchange position* in a given currency is the *difference between all cash inflows* (purchases) *and outflows* (sales) in that currency totalled for all maturity dates.

Net long/overbought position arises when inflows are larger than outflows for a given currency, i.e. the purchases exceed sales.

Net short/oversold position arises when outflows exceed inflows of a currency, i.e. sales exceed purchases.

If inflows = outflows then a *square or flat* position exists, i.e. no net position.

The key point about net exchange positions is that they involve exposure to exchange rate movements. Hence, the *profitability* of the *net position* will be dictated by changes in exchange rates.

Long position is when dealers take a *long* position in a currency if they expect it to *appreciate* in value relative to other currencies.

Short position is when dealers expecting a *depreciation* in a particular currency relative to other currencies, take a *short* position in that currency.

5. EXCHANGE RATES

- The interaction between buyers and sellers, i.e. demand and supply establishes the market price for a currency – known as the exchange rate.
- Thus, an exchange rate can be defined as the price of one currency expressed in terms of another currency.
- While an exchange rate is interpreted as the price of currency A (e.g. US dollar) in terms of currency B (e.g. rand), it can also be interpreted as the reverse – the price of currency B in terms of currency A.
- An exchange rate of USD 1 = ZAR 6.2875 indicates that it will cost 6.2875 ZAR to buy 1 USD, or for 1 USD you will get 6.2875 ZAR
- The two-way interpretation of an exchange rate serves to underline the fact that a foreign exchange transaction involves two currencies, i.e. if you buy currency A against currency B, you simultaneously sell currency B against currency A.

6. COMMODITY VERSUS TERMS CURRENCY

In an exchange rate, which consists of two currencies, the currency being priced is called the *base* or *commodity currency*. The exchange rate is quoted such that a fixed number of units (normally one) of the *base (commodity) currency* is expressed in terms of a variable number of units of the *terms or quoted currency*.

USD 1	JPY 114.75/95
Base Currency	Quoted Currency
Commodity Currency	Terms Currency



7. THE SPOT FOREIGN EXCHANGE MARKET

A spot foreign exchange transaction is an exchange of one currency for another at a specific rate (called the *spot rate*), *settlement* of which takes place *two business days* later. The spot rate is the price of one currency against another expressed as a ratio. It consists of two parts: one is the price maker's buying rate and the other the selling rate. Below is a typical FX spot quote from a market maker.

USD/ZAR = 6.2555/85

7.2555	The rate at which dollars are bought by the market maker. For each dollar received, R6.2555 is paid
7.2585	The rate at which dollars are sold by the market maker. For each dollar sold, R6.2585 will be received
USD	base currency / commodity currency
ZAR	quoted currency / terms currency
BID (price maker)	buy the base currency / sell quoted currency
OFFER (price maker)	sell the base currency / buy the quoted currency

Understanding how currencies are quoted has always seemed to confuse a number of non-professionals to the greatest enjoyment of the professionals who in some cases think that knowing how to read exchange rates should confer privileges reserved to some elite! Buying and selling currencies against each other is like any other trade.

8. SPOT RATES

Let's take a USD/CHF quote of 1.3650. The USD is referred to as the base or commodity currency. The CHF is known as the quoted or traded (terms) currency. The quote given simply indicates the price of USD 1 in CHF. Most currencies are quoted with the USD as the base currency, except for a number of Commonwealth currencies, which are quoted on a reciprocal basis, i.e. with a non-dollar base currency. The more important are: EUR (nothing to do with the Commonwealth in this case!), GBP, AUD and NZD. The EUR is the base against GBP. The CAD, INR and ZAR used to be quoted on a reciprocal basis but are now quoted in a conventional fashion.

Having established the difference between the base and the quoted currencies, we can look at market quotes and see how to read them.

EXAMPLE 1

Imagine an FX trader quoting: USD/CHF: 1.3640/50. The commodity currency here is the USD. The meaning of the quote is that for one USD the trader is ready to pay CHF1.3640 or receive CHF1.3650. The buy price (or bid) is 1.3640 and the sell price (or offer) is 1.3650. In other words, the trader buys low and sells high as in any other trade, be it commodities, currencies, or otherwise.



EXAMPLE 2

A US company is paid an amount of GBP1 million for a shipment of goods to the UK. The US exporter needs to sell the GBP against USD. The bank's quote for GBP/USD is: 1.6320/25. Since the client is selling the base currency, the bank is buying it. The bank will transact at 1.6320, giving the American company an amount of $\text{GBP}1,000,000 \times 1.6320 = \text{USD}1,632,000$.

<p style="text-align: center;">GBP 1 = USD 1.6320 GBP 1,000,000 = USD 1,632,000</p>
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9. CROSS FOREIGN EXCHANGE RATES

In the market, all currencies are quoted against USD either in a conventional format or in a reciprocal one (EUR and others). Naturally, not all currency transactions ultimately involve the USD. Therefore, there is a need for what is referred to as a *cross rate* where currencies are quoted against other currencies which are not the USD.

Any transaction requiring a cross rate will be *theoretically* priced on the basis of two separate transactions against the USD.

EXAMPLE

A South African company exports steel rods to a Swiss company. The shipment comes to CHF5 million. Upon receipt of the CHF proceeds, the South African company will *sell CHF and buy ZAR*.

The exporter asks the bank for a CHF/ZAR quote. The bank trader would calculate the price as if the client wanted to:

- a) sell CHF and buy USD (the bank would buy CHF and sell USD)
- b) sell USD and buy ZAR (the bank would buy USD and sell ZAR)

Given the following quotes:

USD/CHF: 1.2375/80 USD/ZAR: 6.0350/50

Transaction a) would be done at 1.2380 and transaction b) at 6.0350

The resulting exchange rate would be therefore:

$6.0350/1.2380 = 4.8748$ (this is the CHF/ZAR quote).

<p style="text-align: center;">USD 1 = CHF 1.2380 USD 1 = ZAR 6.0350 CHF 1.2380 = ZAR 6.0350 CHF 1 = ZAR 4.8748</p>
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If the *two quotes* constituting a cross rate are both *conventional quotes* or both *reciprocal rates*, the two prices must be *divided* to give the cross rate (usually the higher number is divided by the lower number). If the one of the quotes is *conventional* and the other *reciprocal*, the two numbers are then *multiplied* to give the final cross rate.

10. CALCULATING EXCHANGE PROFITS AND LOSSES



Foreign exchange profits and losses are generated from the buying and selling of currencies at different exchange rates. The exchange profit/loss is calculated by keeping the units of one of the currencies constant and then determining the difference in the number of units in the second currency. The method of calculating exchange profits/losses varies depending on whether the base currency or the quoted currency is kept constant. The calculated profit/loss is expressed in units of the currency that is not kept constant.

EXAMPLE

Calculate the exchange profit/loss when \$5,000,000 is purchased against the rand at an exchange rate of 6.3215 and sold at an exchange rate of 6.3300 against the rand.

+\$5,000,000	- R31,607,500
-\$5,000,000	+R31,650,000
<u>NIL</u>	<u>+R 42,500</u>

Therefore, a profit of R42,500.

11. THE FORWARD FOREIGN EXCHANGE MARKET

When foreign exchange is bought or sold for any period other than the spot date it represents a forward transaction. There are two distinct types of forward transactions - the forward outright and the foreign exchange (FX) swap.

- **Forward Outright.** This is a deal to exchange currencies on a specific future date at an *agreed rate of exchange*. It involves *one deal and one transaction*. These are normally non-interbank, i.e. between a bank and a client. They are normally quoted in outright terms, i.e. the full forward exchange rate is quoted.
- **Foreign Exchange Swaps (FX Swaps).** This is one deal involving *two transactions*. One transaction is to exchange currencies on the spot date at the ruling spot rate. The second transaction is to reverse the exchange of the same currencies on an agreed future date at an agreed future rate. Swaps are quoted in *forward points*. These are referred to as *swap points*. Swaps are quoted offer/bid because the reference is to the quoted currency on the far date. The FX swap basically constitutes one transaction with two legs. Firstly, an exchange of two currencies on a particular date and secondly a re-exchange of the same two currencies at a future (forward) date.

An outright forward exchange deal is a contract between two counterparties, to buy or sell, a given amount of currency for settlement at a specified date in the future, at an exchange rate agreed at the time of transacting.

A counterparty will *fix a forward exchange rate* on a known amount of foreign currency at a point in the future because it is unwilling to take the risk of loss due to movements in the underlying exchange rate during the known period. In return for covering the exchange risk (lock into a known future exchange rate) the counterparty also forfeits any potential gains arising from favourable movements in the underlying exchange rate.

Both the risk and the potential gains are passed on to the other counterparty, normally a bank. In the outright forward transaction, no cash changes hands at the time of entering into the transaction.



A foreign exchange swap is a pair of transactions executed today between two counterparties in which one currency is sold spot against another currency and bought back at a future agreed date. The only difference between the two rates is the interest rate differential between the two currencies.

Presented differently: An FX swap is an agreement between two counterparties to exchange two specific amounts of currencies for an agreed period of time. The principal amounts will be exchanged at the beginning and at the end. The cash flow at the end should include the possible interest rate differential between the two currencies.

12. TYPES OF FOREIGN EXCHANGE RISK

The corporation, multi-national company or importers and exporters of goods and services across borders are exposed to movements in exchange rates.

Typically, exposure can be categorized as follows:

- Transaction exposure
- Translation exposure
- Economic exposure

12.1 Transaction exposure

Transaction exposure can be described as the impact of changing foreign exchange rates on *known cash flows*. Managing transaction exposures should be the highest priority of every corporate foreign exchange manager. The exposure is highly visible, because realized currency gains/losses are reported in the income statement and therefore affect both reported income and cash flow.

Transaction exposure represents the difference between the exchange rate at which the *transaction is booked* and the *exchange rate at the time of payment*. A booked transaction is one where there is actually a *firm commitment* – either an actual payable or receivable or some other form of commitment. Transaction exposure is easily hedged with most accounting conventions deferring any gains/losses on any hedges until the underlying transaction is completed.

12.2 Translation exposure

Translation exposure usually refers to the translation of *unhedged foreign assets/liabilities* through the company's balance sheet. Accordingly, if a company acquires a foreign subsidiary and experiences a strengthening of the local currency, it will show a *translation loss* in the balance sheet.

Translation losses *do not affect reported income*. Accounting practice follows the purchasing power parity theory (PPP) which states that in the long run, *variances in exchange rates will be offset by changes in relative inflation levels*. Because of this, currency-driven changes are usually reported as *cumulative translation adjustment* to shareholders' equity on the consolidated balance sheet.

Hedges of translation exposure are generally accorded favourable accounting treatment, particularly if the hedged assets/liabilities have a direct profit and loss (P&L) link.



Despite favourable accounting treatment, many companies ignore translation exposure. The main reason is that companies are reluctant to use cash consuming hedging instruments to hedge non-cash exposures. However, in many cases, it is not difficult to justify hedging, i.e.

- Companies seeking to maintain ratios (debt/equity etc.)
- Anticipatory sale/purchase of foreign assets

In both cases, the hedge would be concluded because it could lead to a cash outflow/inflow. In the first instance, translation losses could impair the company's net worth, leading to a higher debt/equity ratio, a lower credit rating and increased borrowing costs. In the second instance, the liquidation of the foreign subsidiary crystallizes translation profits/losses into transaction profits/losses and subsequently moves from the equity account to the income statement, improving or reducing earnings.

12.3 Economic exposure

Economic or competitive exposure can be defined as the long-term ability of an organization to provide market-related returns to its shareholders. It is the foreign exchange impact on revenue, costs, profits, cash flows, assets and liabilities, and ultimately on value.

A company which is heavily reliant on exports clearly suffers in the short term if the domestic currency were to appreciate and if the company is unable to adjust its export prices. However, in reality, the mark-to-market loss would be far greater because the revenue stream is likely to continue for some time before it is possible to switch export markets. This expected inflow, beyond the amount actually managed, represents the company's economic exposure.

Economic exposure is not reflected in the financial statements as a currency item. It is invisible because it appears only as a change in the current valuation of future costs or revenues. You might think that a company suffering from adverse economic exposure should raise prices to offset exchange losses, but competition and other restraints often prevent this course of action. Think about the possible loss of market share due to the increase in prices!!

In the long run, price and cost adjustments in line with PPP are the defence against economic exposure.

13. KEY POINT SUMMARY

- The present forex markets have been in existence essentially since the collapse of the Bretton Woods Agreement in 1971 and are now very large and very liquid. More business is now carried out in the forward than the spot markets.
- In the interbank market, exchange rates are quoted as the number of units of the quoted currency against a unit of the base currency. The USD is typically the base currency. The USD/CHF rate will represent the amount in CHF, which the bank will pay to buy USD and the amount in CHF, which the bank will require to sell USD. A market maker will aim to buy low/sell high (the base currency). There are 4 significant exceptions to the convention of using the USD as the base currency, of which the most important is the EUR.
- It is possible to obtain cross rates which are the exchange of two currencies, neither of which is the USD. These rates may be quoted direct but can always be obtained by converting one of the currency pair into USD and then using this to acquire the second currency.



- Forward rates are based on the interest rate differential between the two currencies, representing the cost (or benefit) to the bank of hedging the forward trade. Forward rates are not therefore a forecast, but a mathematical calculation based on prevailing spot rates and interest differentials.
- Forward rates are actually quoted as the difference between the spot and forward outright rate. These forward points must be added to or subtracted from the spot rate to obtain the forward outright rate.
- A foreign exchange swap is the exchange of two currencies for a fixed period of time. The exchange rate at the end of the swap will be different from that at the start to reflect, again, the interest rate differential.



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