



Business Finance : course n°8

Foreign Exchange market

Currency risk management : forward

BA 2nd Year - 01/11/2019

Foreign exchange market

- Market participants are mainly commercial banks, which concentrate the flows of customers (companies, central banks), they exchange between them via electronic marketplaces (for example EBS) and interbank brokers (IDB = Inter Dealers Brokers).

Foreign exchange market

Transactions totales :	5 100 milliards \$	
Swap	2 400 milliards \$	47,1%
Spot	1 700 milliards \$	33,3%
Forward	700 milliards \$	13,7%
Options	250 milliards \$	4,9%
		99,0%

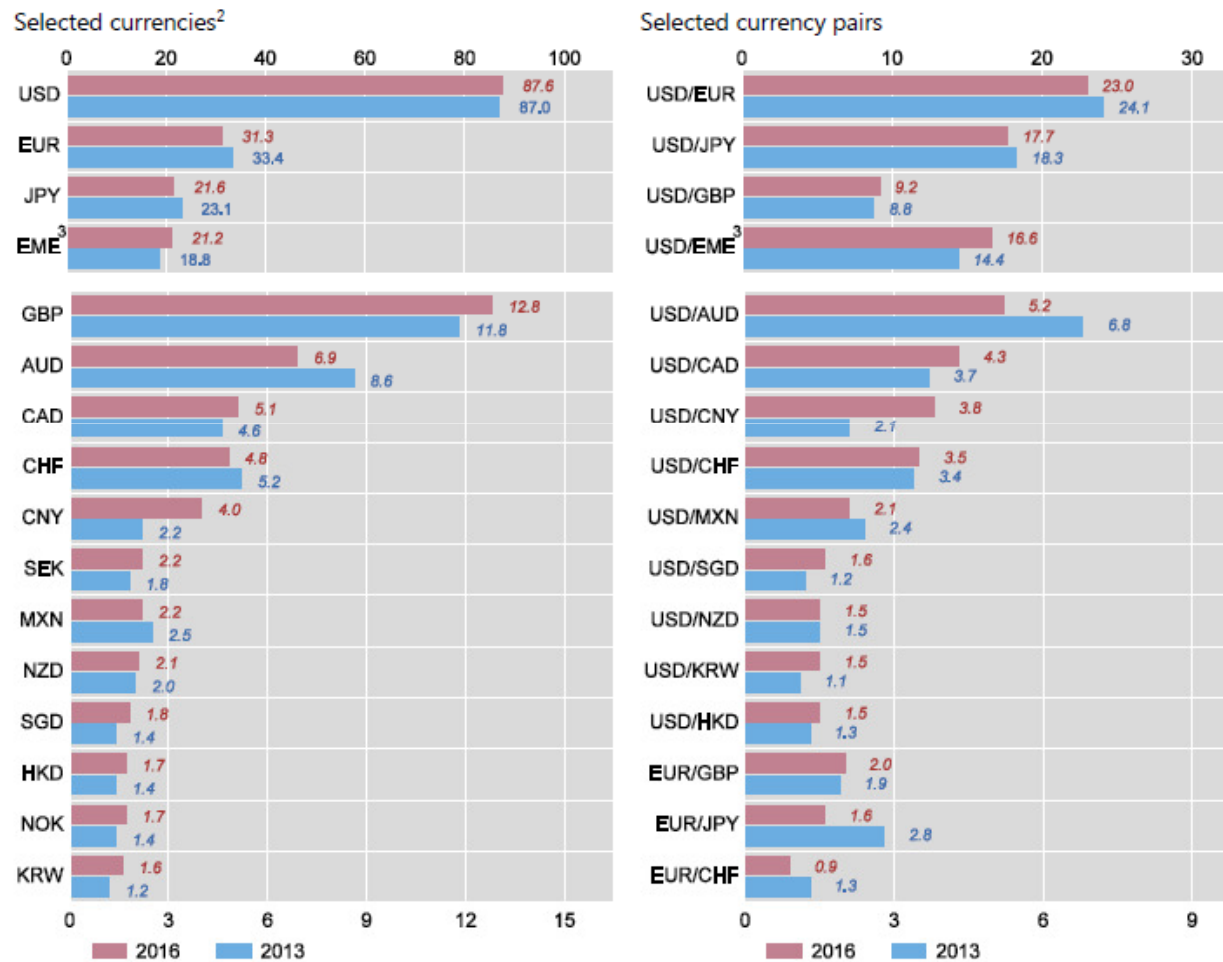
Transactions totales quotidiennes	5 100 milliards \$
Transactions totales annuelle (base 220 jours de trading) (a)	1 122 000 milliards \$
PIB mondial	75 000 milliards \$
Exportations mondiales (b)	24 000 milliards \$
a /b	46,8

Foreign exchange market

Foreign exchange market turnover by currency and currency pairs

Net-net basis,¹ daily averages in April, in per cent

Graph 1



¹ Adjusted for local and cross-border inter-dealer double-counting. ² As two currencies are involved in each transaction, the sum of shares in individual currencies will total 200%. ³ Emerging market currencies.

Source: BIS Triennial Central Bank Survey. For additional data by currency and currency pairs, see Tables 2 and 3 on pages 10 and 11.

Source : BIS Triennial
Central Bank Survey,
September 2016

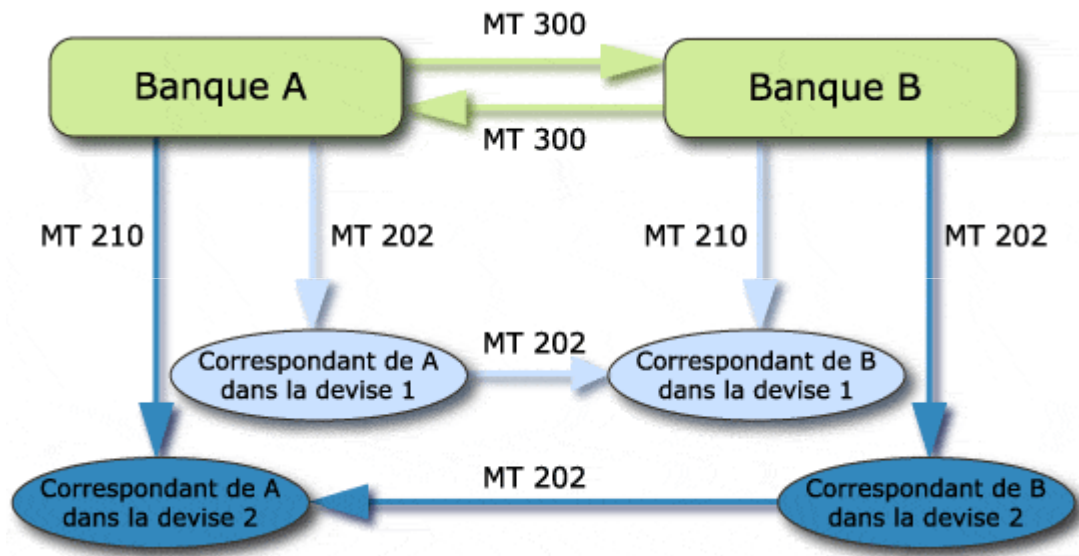
Foreign exchange transaction main features

- The main currency, also called **base currency**
- **Side of the trade** : buy or sell
- The secondary currency, or "**price**" **currency** : currency sold if it is a purchase, currency purchased if it is a sale.
- The trading date or "**trade date**"
- The value date or "**spot date**": usually equal to the trading date + 2 business days. Note: a spot exchange contract has a zero life; there is no "end date".
- The **negotiated amount**, expressed in the main currency
- The **negotiated price** (or exchange rate)
- The amount in the secondary currency, also called the price currency, calculated from the principal amount and the price

Features common to all market transactions

- The **trading book** or "book", possibly the identity of the trader
- The **counterpart** : on an **OTC (Over The Counter)** market we know its counterpart, unlike on an organized market
- Possibly the intermediary, or "**broker**", by whom the negotiation was made
- **Settlement instructions** : identification of correspondents (bank and counterparty) where the currency is to be delivered / received.

FX operation settlement



MT XXX = SWIFT message code (Society for Worldwide Interbank Financial Telecommunication)

Source : http://www.fimarkets.com/pages/operations_change.php

Cotations

- Market participants always quote currencies in the form of a price range : the lowest is the price at which the trader is willing to buy: the **bid** or bid price, and the highest price he is the price at which the trader is willing to sale : **ask** or ask price. The difference most often refers to "**points**", which refer to the 3rd and 4th digits after the decimal point; the "figure" refers to the 2nd digit after the decimal point.
- A course **Dev1 / Dev2** means "a unit of Dev1 = the course in Dev2. Dev1 is the negotiated currency, the so-called "base" currency, and Dev2 the "price" currency.
- For example a quotation EUR / USD = 1.0810 / 15 means that the trader buys 1 Euro for 1.0810 USD and sells against 1.0815 USD.

Practical work

- Exporting company, you want to sell 1M USD against EUR, your bank quotation is EURUSD 1.0915 / 1.0920
- How many euros will you get?
- What would be a USDEUR quote?

Institutional trading platform example : FX All

FXall - Alain@banquefinama

Requirements EUR.USD1 EUR.AUD EUR.USD2

Pair: EUR.USD Account: FINAMA

Type: Spot/Outright Request: Two Way RFQ

100,000.00 SPOT 22-Jan-2008 0 Days - Tue

Buy USD **114** Sell USD

Bank	Buy USD	Sell USD
ABN_AMRO	1.4701	1.4708
CITI	1.4702	1.4705
DB	1.4703	1.4704
RBC	1.4712	1.4714
HSBC	1.4703	1.4706

Nothing Done

Status	Type	Pair	Value D...	Account	B/S	Coy	Amount	Rate	Pts	All-in	Provi...	FXall ...	Client...
Done	Forw...	EUR.JPY	07-Feb-08	FINAMA	B	JPY	9,157...	157.00	-24.84	156.7516	DB	50945...	
Done	Forw...	EUR.USD	30-Jan-08	FINAMA	B	USD	200,0...	1.4612	0.65	1.461265	UBS	50923...	

Don't you notice something strange ?

Foreign exchange risk in the context of commercial transactions

- Also called transaction exchange risk
- In the case of foreign sales but also purchases of raw material or goods denominated in foreign currency
-
- What risk?
- If you sell in currency? If you buy in currency?

Terminology

- If the debts (to pay) prevails over the receivables (receivable), in a particular currency, it is said that the position is **short**, on the contrary, it will be said that the position is **long**.
- The positions are held currencies by currency, we can distinguish by term position: cash, 3 months, 12 months.

Practical work : Calculate a foreign exchange gain or loss

- You sell 150,000 bottles of Champagne to an American customer for \$ 25 / bottle. The price of the EURUSD is 1.09
- After 15 days of transport you are paid against delivery (documentary credit technique). EURUSD is then 1.15
- What is my risk ? What is the gain or loss ?

Practical work : Calculate a foreign exchange gain or loss

- Calculation 1: $150\,000 \text{ bottles} * \$ 25 * (1.15-1.09) / 1.15/1.09 = 179\,497.41 \text{ €}$
- Calculation 2 : put the flows down on the paper
 - $\$ 3,750,000 / 1.09 = 3,440,366.97 \text{ €}$
 - $\$ 3,750,000 / 1.15 = 3,260,869.57 \text{ €}$
 - Loss = $179\,497.41 \text{ €}$

Currency risk and forwards

The most difficult market to predict !

- *“Having endeavoured to forecast exchange rates for more than half a century, I have understandably developed significant humility about my ability in this area.”* Alan Greenspan
- *“If you think writing about the fortunes of the stock market is tricky, try getting your arms around currencies.”* Bill Gross
- *“Explaining the yen, dollar and euro exchange rates is still a very difficult task, even ex-post.”* Kenneth Rogoff
- *“I’ll buy EURUSD now (at around 1.12) to target 1.25 in 6 to 18 months”* Alexis Nass, January 2016 ...

How to try to predict the evolution of the exchange?

- Political factors : especially on the emerging
- Economic factors : trade balance, balance of payments
- Financial factors : inflation differential, interest rate differential.
- Futures rates based on interest-rate parity can be calculated; this is the only real world trade-off relationship. The price is therefore calculated at a future executable date today.
- Forwards do not predict the future spot price!

Covered Interest Rate Parity (CIRP) theory

- I have a EURZAR short position at 3 months
- How to calculate the forward rate?

Covered Interest Rate Parity (CIRP) theory

- I can **sell EURZAR now**, which assumes to **borrow the EUR** (the EUR I sell it in 3 months, it is assumed that today I do not have it to coincide with the purchase of ZAR), and to **lend the ZAR** obtained (since I need it only in 3 months).
- In 3 months I'm paying off my EUR and I'm repaying the loan, and I cash in the ZAR I wanted to get
- $$\text{EURZAR forward} = \frac{\text{EURZAR spot} * (1 + \text{rate ZAR} * \text{nb days} / \text{basis})}{(1 + \text{rate EUR} * \text{nb days} / \text{basis})}$$

Covered Interest Rate Parity (CIRP) theory

- EURZAR = 18.00; EUR rate = -0.25%; base EUR = 360 days; ZAR rate = 7.5%; ZAR basis = 365 days
- EURZAR at 3 months = $18 * (1 + 7.5\% * 90/365) / (1 - 0.25\% * 90/360)$
= 18.3443
- Attention to the base 365 !!! = Countries concerned: Commonwealth: UK, Australia, Canada, New Zealand, South Africa, India, Hong Kong, Singapore + Japan, Poland

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