

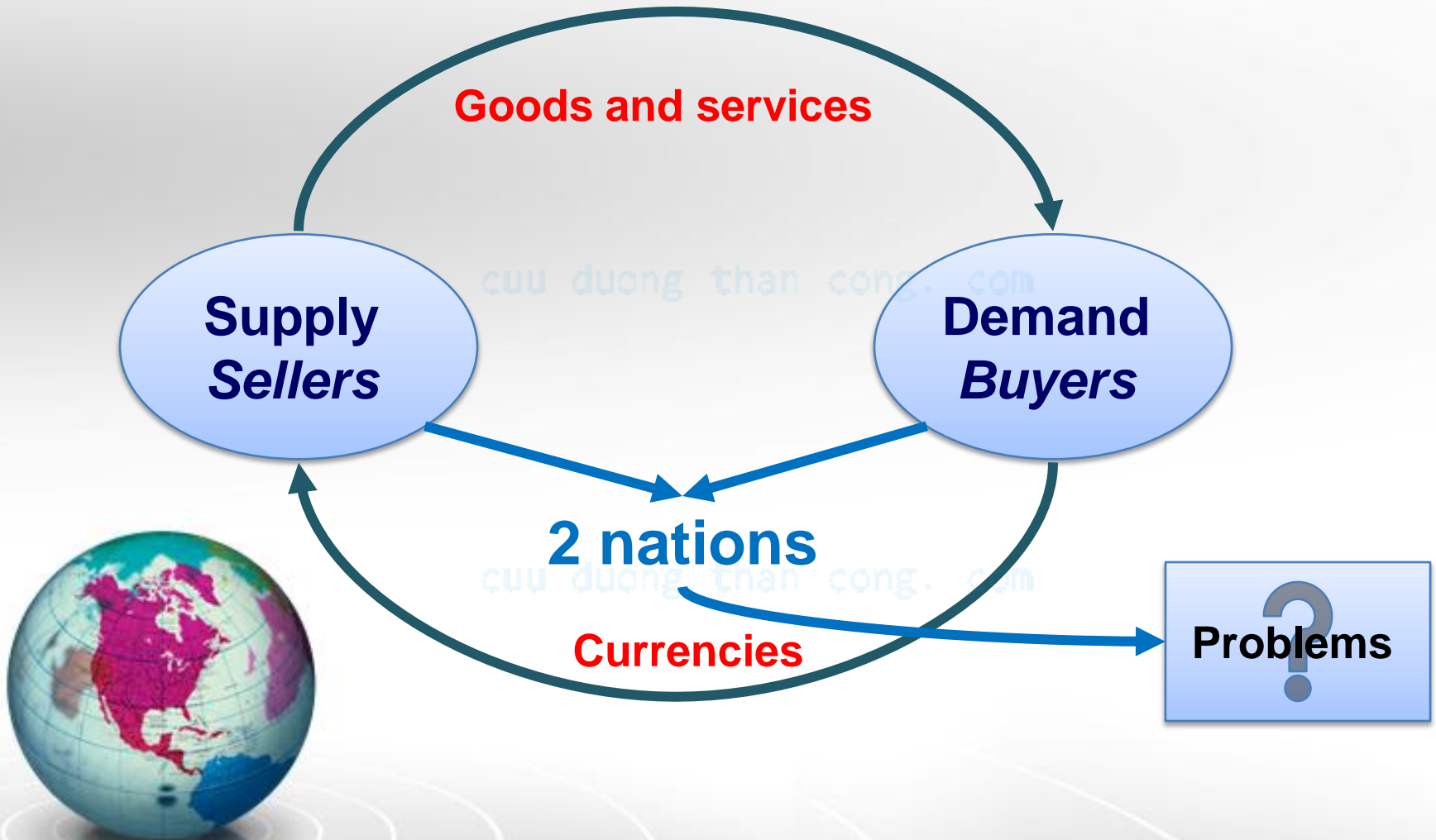
Chapter 6

Foreign Exchange Markets and Exchange Rates

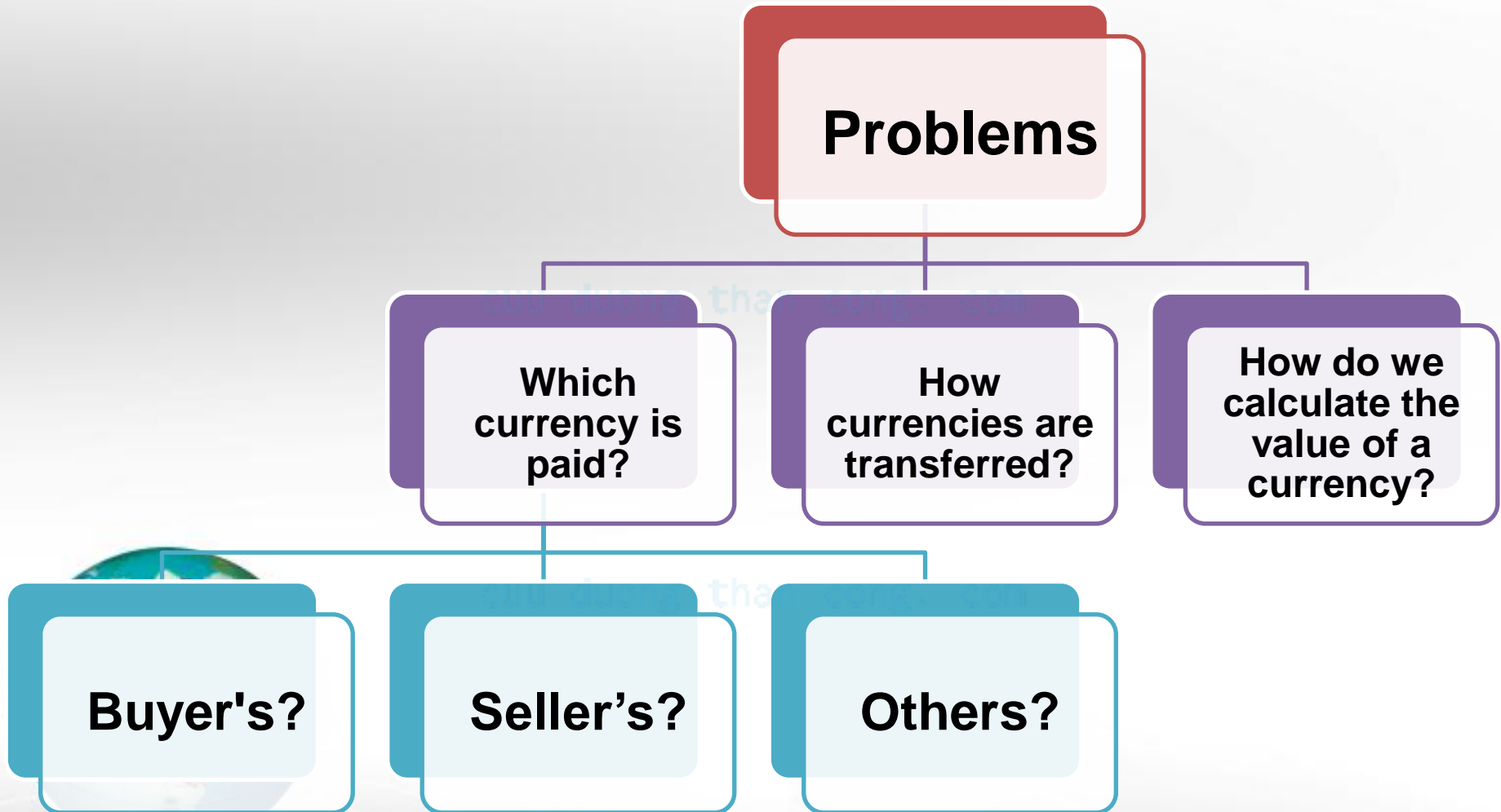


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Introduction



Introduction



Learning Goals

Understand the meaning and functions of the foreign exchange markets (FX)

Define spot, forward and cross rates and deals with foreign exchange risks, hedging, and speculation;

Understand the exchange rates determination



Contents

1. Definition, characteristics, participants and functions of **foreign exchange market**
2. **Exchange rates**: Definition, classification and the equilibrium exchange rates.
3. Factors that Influence Exchange Rates
4. Arbitrage, hedging and speculation in foreign exchange market



Foreign Exchange Market - Definition

- What is the FX market?
 - The foreign exchange market is the market in which foreign currencies or foreign exchange are traded/ converted
- What types of foreign exchange?
 - International settlement instruments (checks, bonds, bills of exchange...)
 - Foreign currencies
 - Special drawing rights – SDRs
 - Gold at International standard



Foreign Exchange Market - Definition

- What is the FX market for the US dollar?
 - The FX market for US dollar is comprised of all the locations where the dollars are bought and sold for other currencies.
 - *These monetary centers are connected electronically and are in constant contact with one another, thus forming a single international foreign exchange market.*
- Why do we need to exchange one currency for another?
 - To pay for goods and services activities
 - **To make profit and speculations**



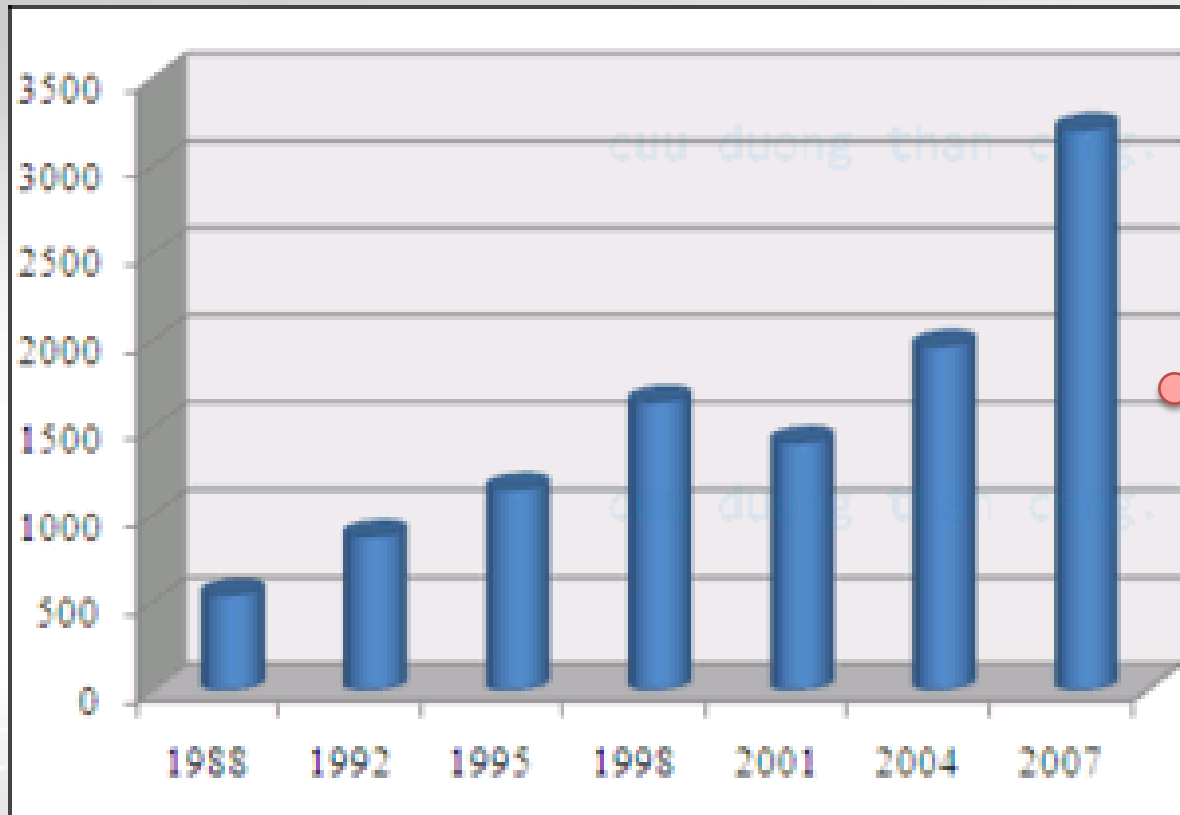
FX Market - characteristics

- Huge trading volume
- Continuous operation and geographical dispersion
- The variety of factors that affect exchange rates
- Exchange rate between currencies are equalized
- ...



Global Foreign Exchange Market Turnover in the Traditional Foreign Exchange Market

Daily averages in April in billions of US dollars
at April 2007 exchange rates



Source: BIS


CuuDuongThanCong.com

Which is the
next largest
market in the
world?

Which
organizations
or institutions
set rules or
supervise FX?

<https://fb.com/tailieudientucntt>

Choose the right words?



Individual trades of \$200 – 500 million are not uncommon/common
Quoted prices change as often as 20 times a(n) minute/hour
It is estimated that the world's most active exchange rates can change 18,000 times a day/week
Most of these foreign exchange transactions take place through debiting and crediting bank accounts rather than through actual currency exchanges. True or False?

Geographical dispersion and Continuous operation



Most traded currencies

Currency distribution of reported FX market turnover

Rank	Currency	<u>ISO 4217</u> code	% daily share (April 2007)
1	<u>United States dollar</u>	USD (\$)	86.3%
2	<u>Euro</u>	EUR (€)	37.0%
3	<u>Japanese yen</u>	JPY (¥)	17.0%
4	<u>Pound sterling</u>	GBP (£)	15.0%
5	<u>Swiss franc</u>	CHF (Fr)	6.8%
6	<u>Australian dollar</u>	AUD (\$)	6.7%
7	<u>Canadian dollar</u>	CAD (\$)	4.2%
8-9	<u>Swedish krona</u>	SEK (kr)	2.8%
8-9	<u>Hong Kong dollar</u>	HKD (\$)	2.8%
10	<u>Norwegian krone</u>	NOK (kr)	2.2%
Other			19.2%
Total			200%

Why not
100%

The variety of factors that affect

destabilization of coalition
governments in Pakistan and
can negatively affect
of their currencies

trade deficits may
have a negative
impact on a nation's
currency

"Buy the
rumor, sell
the fact"

Economic factors

- Economic policy
- Economic conditions
- Economic indicators

Political conditions

- Internal conditions
- Regional conditions
- International conditions
- Events

Market psychology

- Market psychology
- Trader perceptions

FX Market - Functions

FUNCTIONS

to transfer funds or purchasing power from one nation and currency to another

→ *Through electronic transfers and Internet*

the credit function

→ *Credit is usually needed when goods are in transit and also to allow the buyer some time to resell the goods and make the payment (60 days or 90 days after sight)*

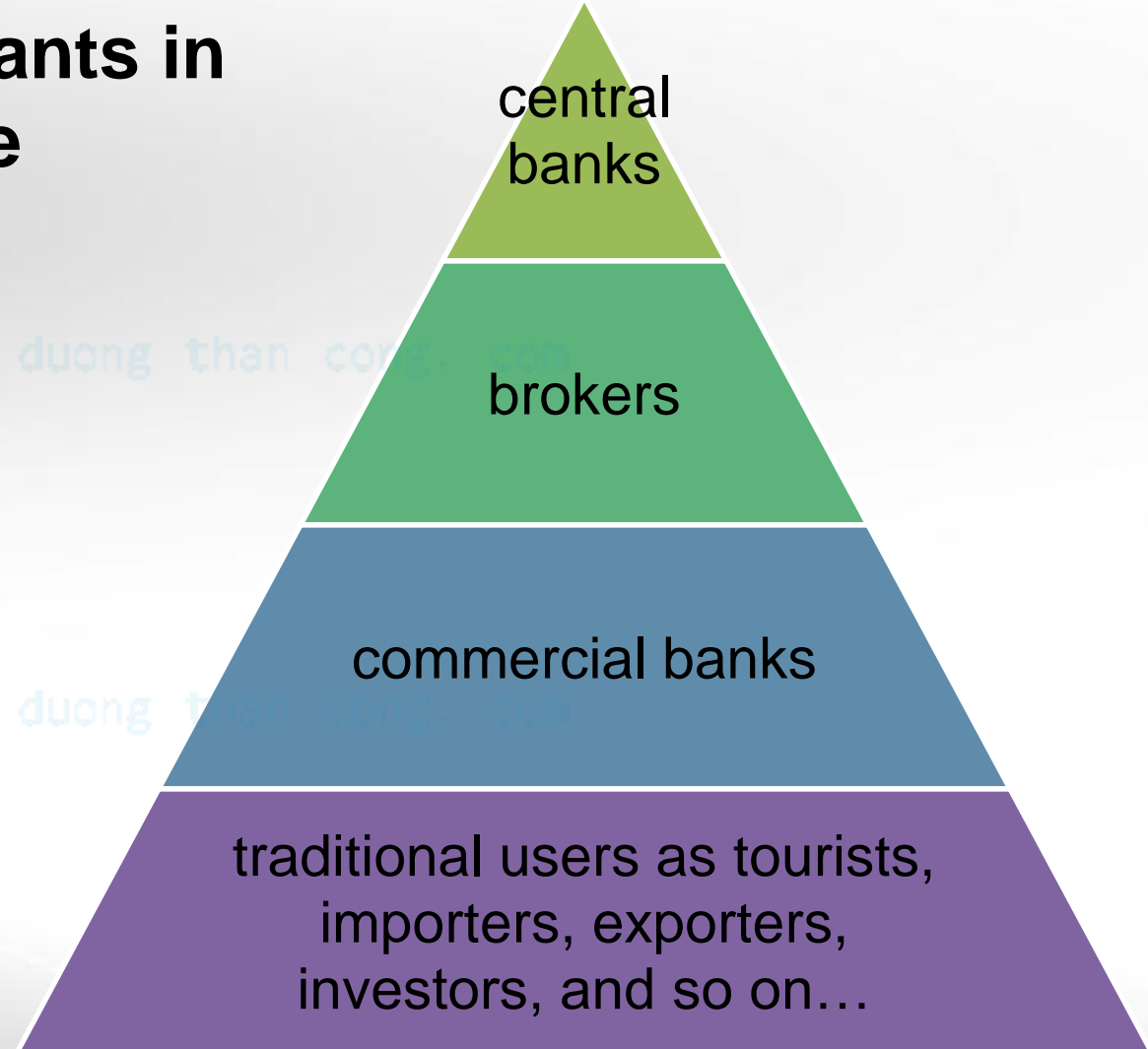
to provide the facilities for hedging and speculation

→ *Through financial instruments: spot, forward, future, option and swap contracts*

Today, about 90 percent of foreign exchange trading reflects purely financial transactions and only about 10 percent trade financing.

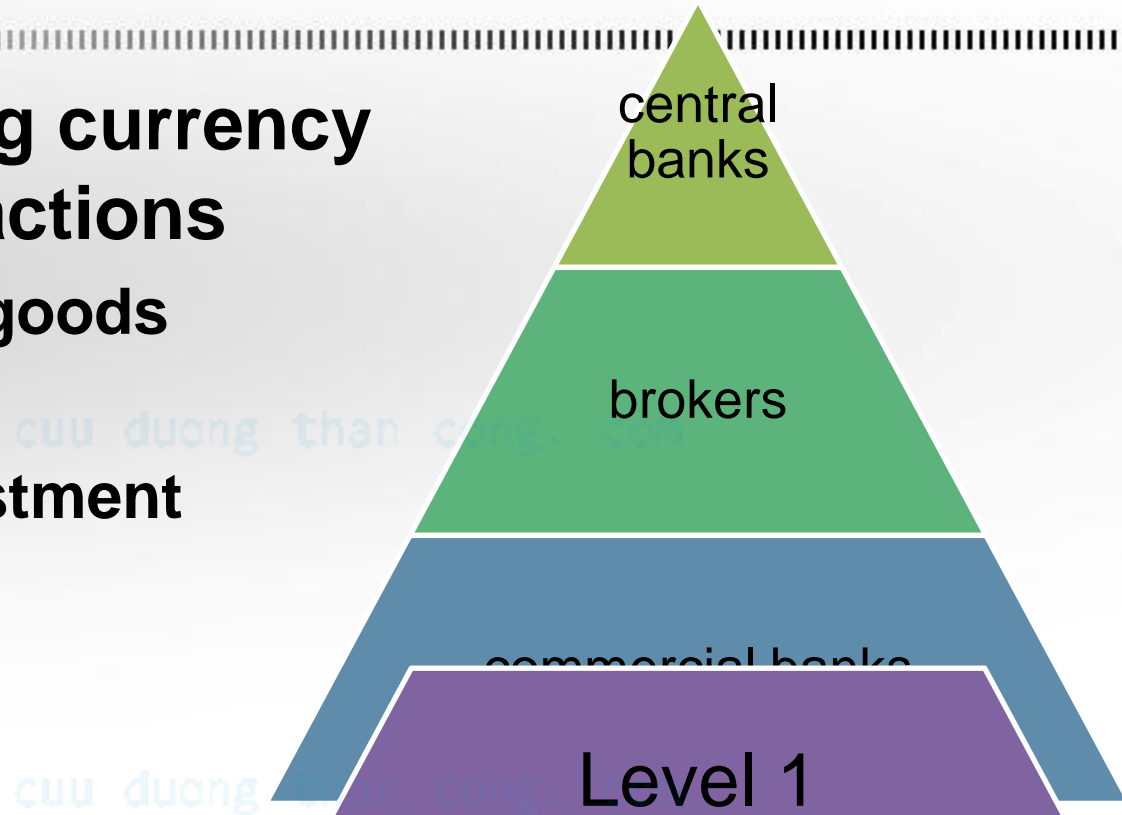
Participants in FX markets

- **Who are participants in foreign exchange markets?**



Participants in foreign exchange markets

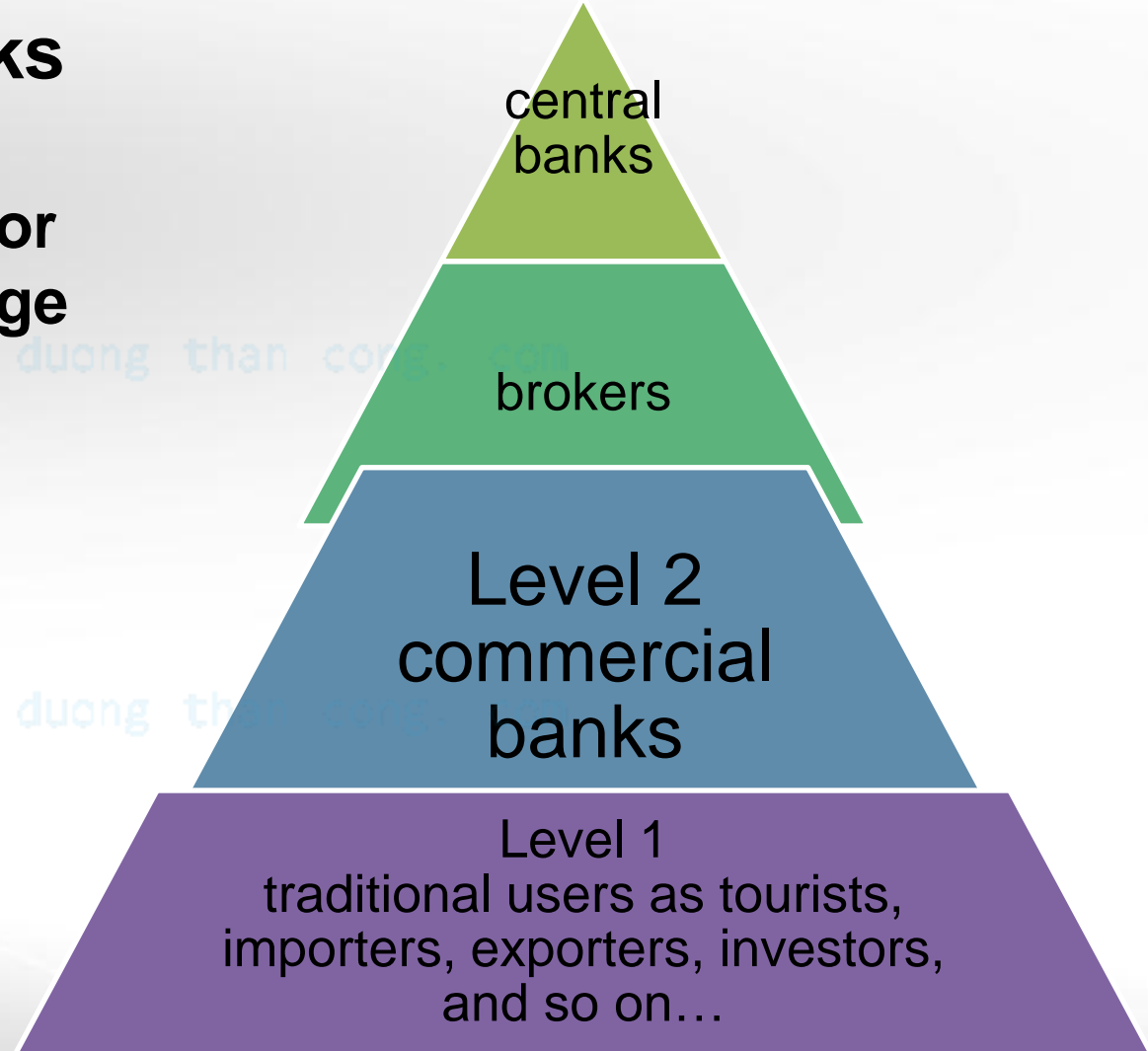
- **Those needing currency to fund transactions**
 - Purchase of goods
 - Tourism
 - Foreign investment



Level 1
traditional users as
tourists, importers,
exporters, investors,
and so on...

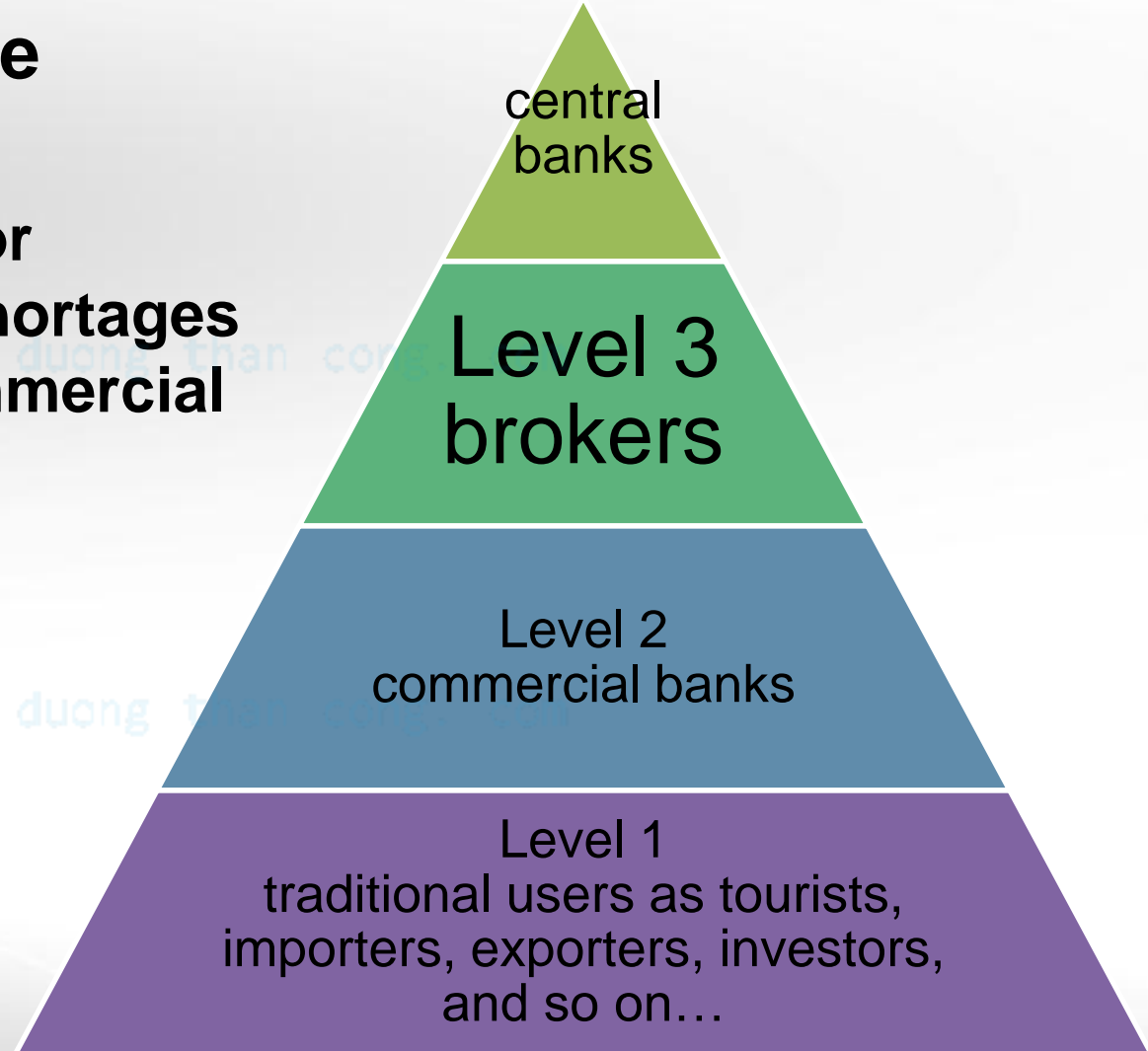
Participants in foreign exchange markets

- **Commercial banks**
 - Serve as the clearinghouses for currency exchange



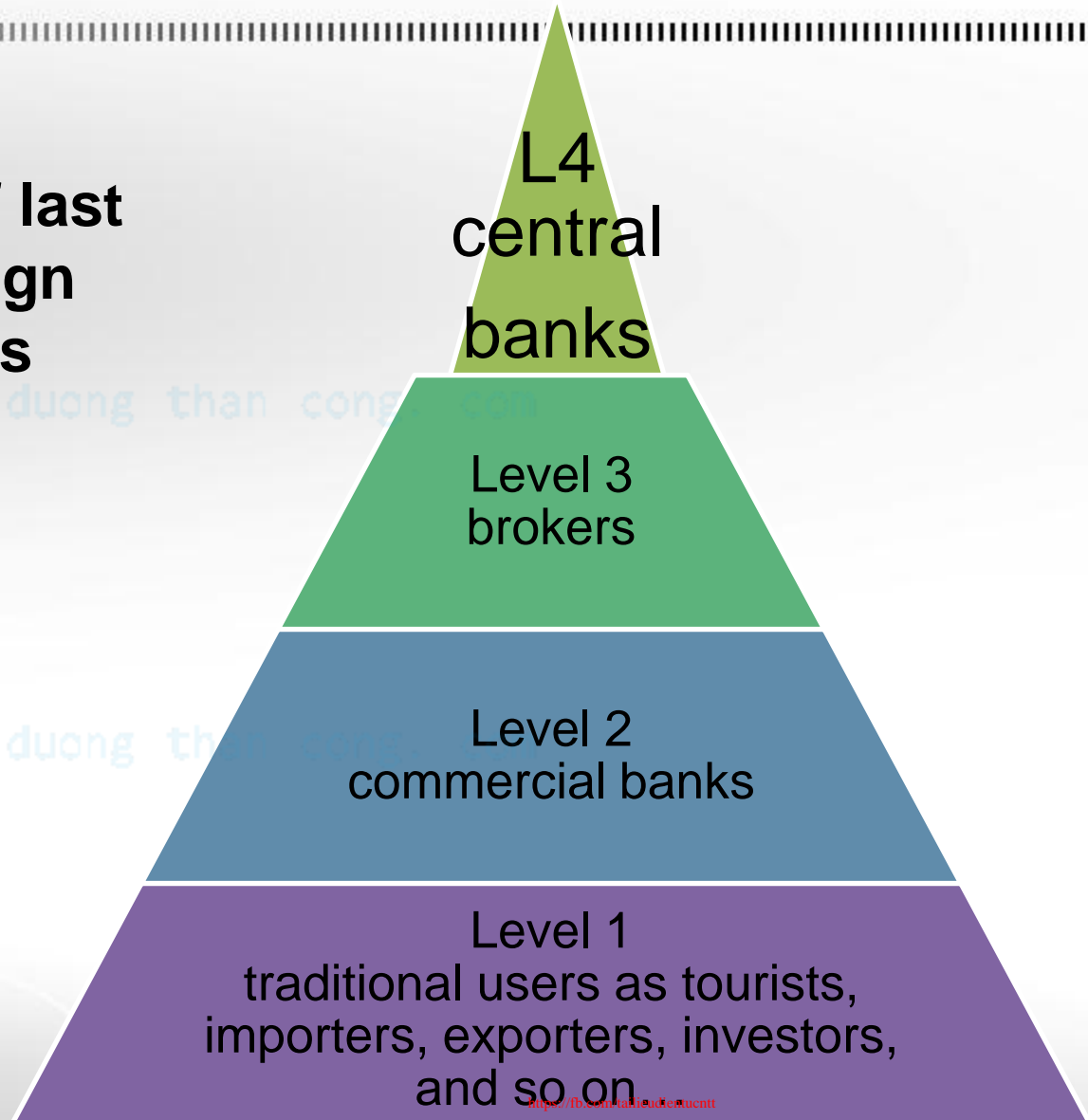
Participants in foreign exchange markets

- **Foreign exchange brokers**
 - Clearinghouse for surpluses and shortages between the commercial banks



Participants in foreign exchange markets

- **Central banks**
 - Buyer or seller of last resort in the foreign exchange markets



Foreign Exchange Rates (ER)

Definition

Quotations

Types of ER

**Factors that
influence ER**



ER – definition

An exchange rate is the price of one currency in terms of another

- For example, an exchange rate of 19000 Vietnamese Dong (VND) to the United States dollar (USD, \$) means that VND 19000 is worth the same as USD 1.
- $E(\text{VND/USD}) = 19000$



ER – quotations

Direct quote

- 1 foreign currency unit = x home currency units

Indirect quote

- 1 home currency unit = x foreign currency units

American terms

- dollars per other currency unit

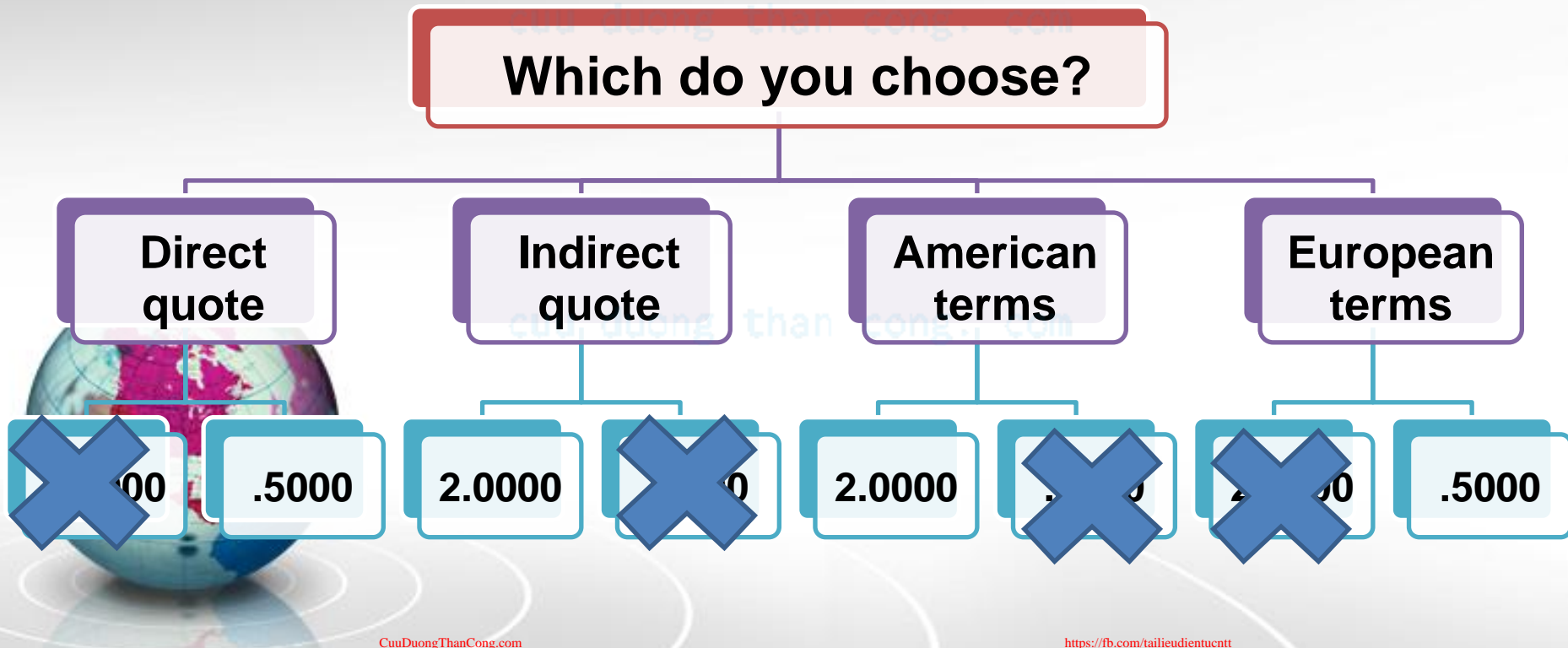
European terms

- other currency units per dollar



ER – quotations

- For example, suppose that the pound is trading at 2.0000 dollars per pound or .5000 pounds per dollar. Which is the exchange rate between the dollar and the pound (the pound is the home currency)?



ER – direct quotations

base currency (unit currency, transaction currency)

$$E(\text{VND/USD}) = 19150 \rightarrow 1 \text{ USD} = 19150 \text{ VND}$$

quote currency (*price currency, payment currency, term currency*)

The quote currency is thus the numerator in the ratio, and the base currency is the denominator.

The value of the base currency (denominator) is always 1

ER – direct quotation

if the home currency is strengthening (i.e. appreciating) then the exchange rate number decreases

If the foreign currency is strengthening, the exchange rate number increases and the home currency is depreciating

When E (VND/USD) rises, the dollar strengthens/loses and the dong strengthens/loses its value



Depreciation & Appreciation

- **Depreciation:** an **increase** in the domestic price of the foreign currency.
- **Appreciation:** a **decline** in the domestic price of the foreign currency.
- An appreciation of the domestic currency means a depreciation of the foreign currency and vice versa.



ER - Classification

Types of Exchange Rate

Spot
exchange
rate

Forward
exchange
rate

Cross
exchange
rate

Effective
exchange
rate

Types of exchange rates

- Spot exchange rate
 - The exchange rate that calls for payment and receipt of the foreign exchange within two business days from the date when the transaction was made.
- Forward exchange rate
 - The exchange rate that calls for delivery of the foreign exchange one, three, six, twelve or twenty-four months after the date the contract is signed.



Types of exchange rates

- The forward rate can be equal to, above, or below the corresponding 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.
 - If the forward rate is **above the present spot rate**, the foreign currency is said to be at a **forward premium**.



Forward Discount and Forward Premium

Example 1

- The spot rate: $\$1 = \text{€} 1$
- The three-month forward rate: $\$0.99 = \text{€} 1$
- ➔ The euro is at a three-month forward discount of 1 cent or 1% (or a 4% forward discount per year) with respect to the dollar.

Example 2

- The spot rate: $\$1 = \text{€} 1$
- The three-month forward rate: $\$1.01 = \text{€} 1$
- ➔ The euro is said to be at a forward premium of 1 cent or 1% for three months, or 4% per year.

Forward Discount and Forward Premium

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

$$FD \text{ — or — } FP = \frac{FR_{t \text{ — months}} - SR}{SR} \times \frac{12}{t} \times 100$$



Forward Discount and Forward Premium

$$FD \text{ — or — } FP = \frac{FR_{t \text{ — months}} - SR}{SR} \times \frac{12}{t} \times 100$$

If $SR = \$1.00$, $FR_3 = \$0.99$

- Forward discounts
 $= (\$0.99 - \$1.00) / \$1.00 \times 4 \times 100$
 $= -\$0.01 / \$1.00 \times 4 \times 100$
 $= -0.01 \times 4 \times 100$
 $= -4\%$

If $SR = \$1.00$, $FR_3 = \$1.01$

- Forward premiums
 $= (\$1.01 - \$1.00) / \$1.00 \times 4 \times 100$
 $= \$0.01 / \$1.00 \times 4 \times 100$
 $= 0.01 \times 4 \times 100$
 $= +4\%$

Types of exchange rates

- Cross exchange rate
 - The exchange rate between currencies A and B given the exchange rate between currency A and C and between B and C.
- Example
 - Suppose dollar/yen exchange rate is \$0.01 and the dollar/pound exchange rate is \$2.
 - The cross exchange rate between yen and pounds is $\$2 \div \$0.01 = 200 \text{ ¥/£}$.



Types of exchange rates

- Effective exchange rate
 - The effective exchange rate is a weighted average of the exchange rates between the domestic currency and the nation's most important trading partners.



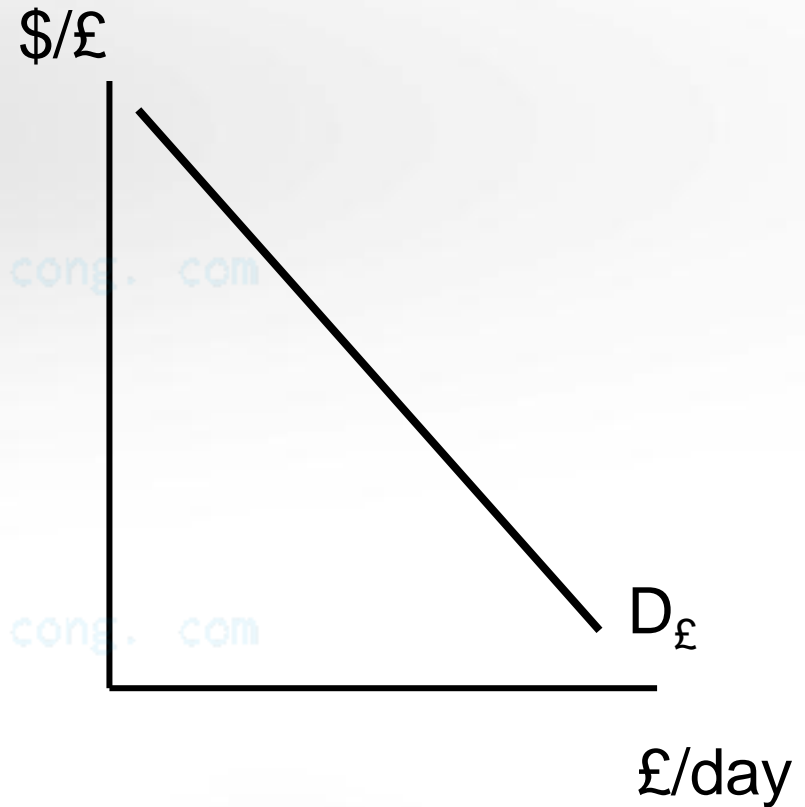
Equilibrium Foreign Exchange Rates

- Many theories determines the equilibrium ER. These theories are based on:
 - the monetary approach
 - the asset market approach
 - Portfolio balance approach
 - ...
- Supply and demand model



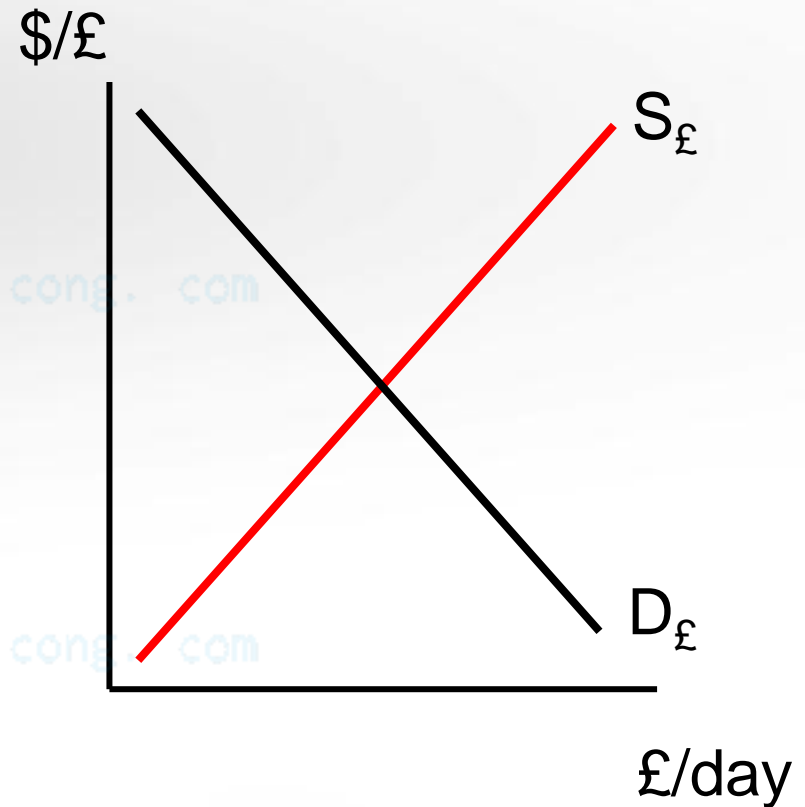
Supply and demand model

- Demand for foreign currency (£) in FX is driven by transactions requiring foreign currency.
 - Imports
 - Asset flows abroad



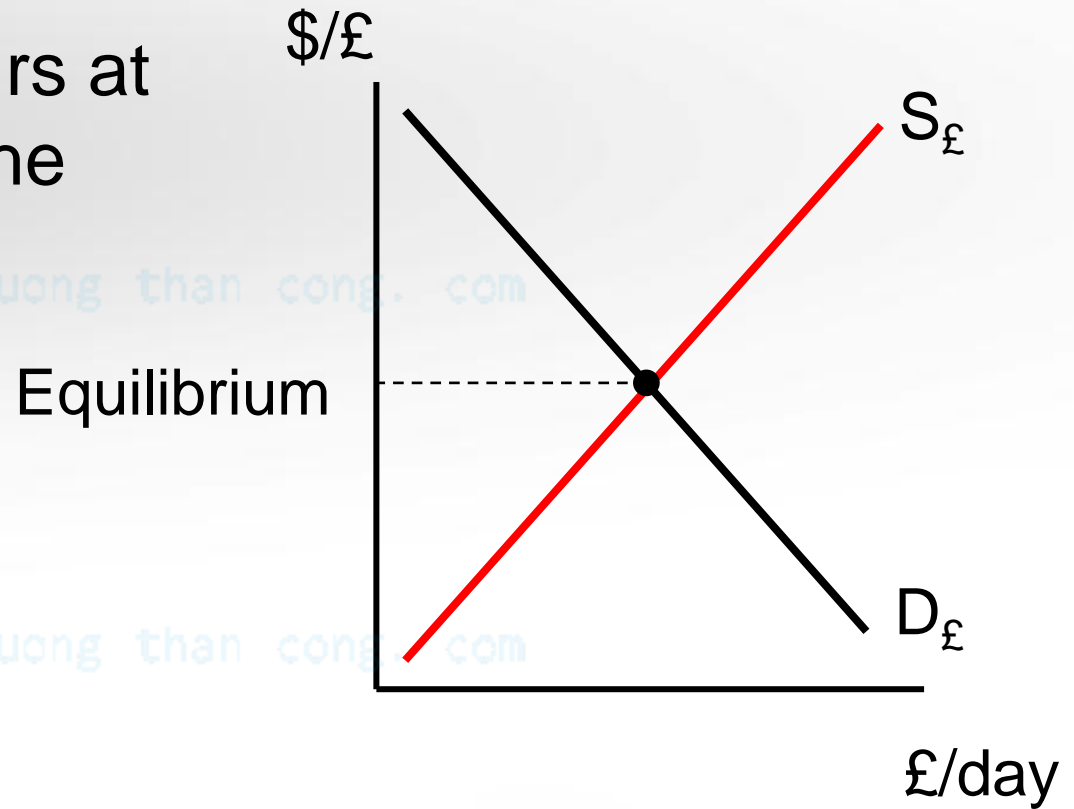
Supply and demand model

- Supply for foreign currency (£) in the FX is driven by transactions requiring dollars.
 - Exports
 - Asset flows to the U.S.
 - Use of the dollar as the “international currency”



Supply and demand model

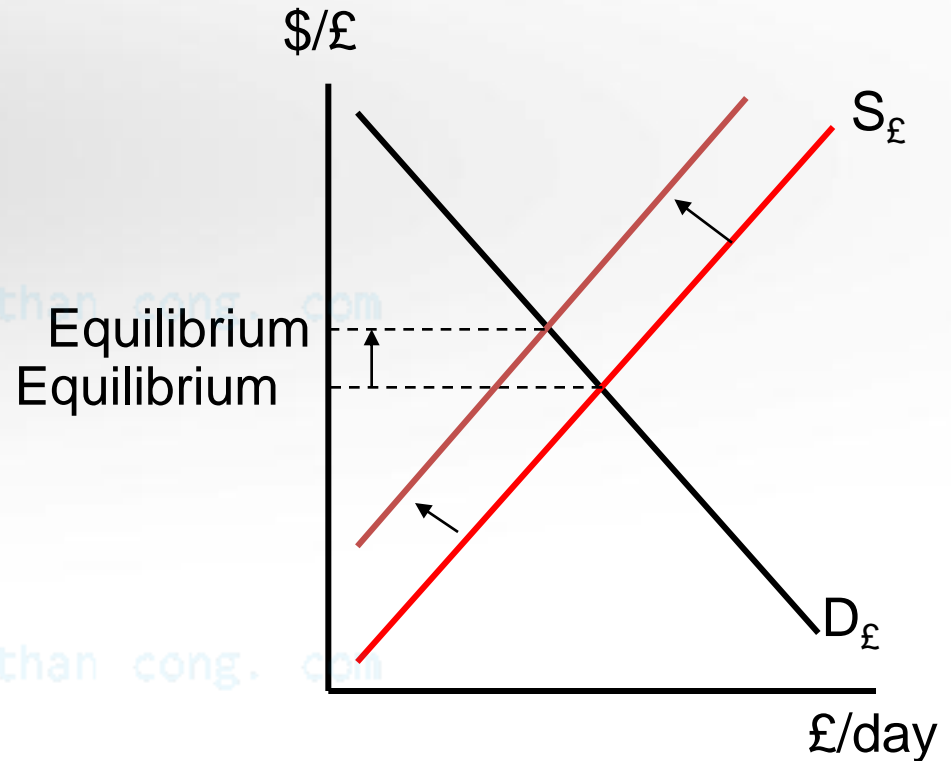
- The equilibrium exchange rate occurs at the intersection of the supply and demand curves.



Changes to equilibrium

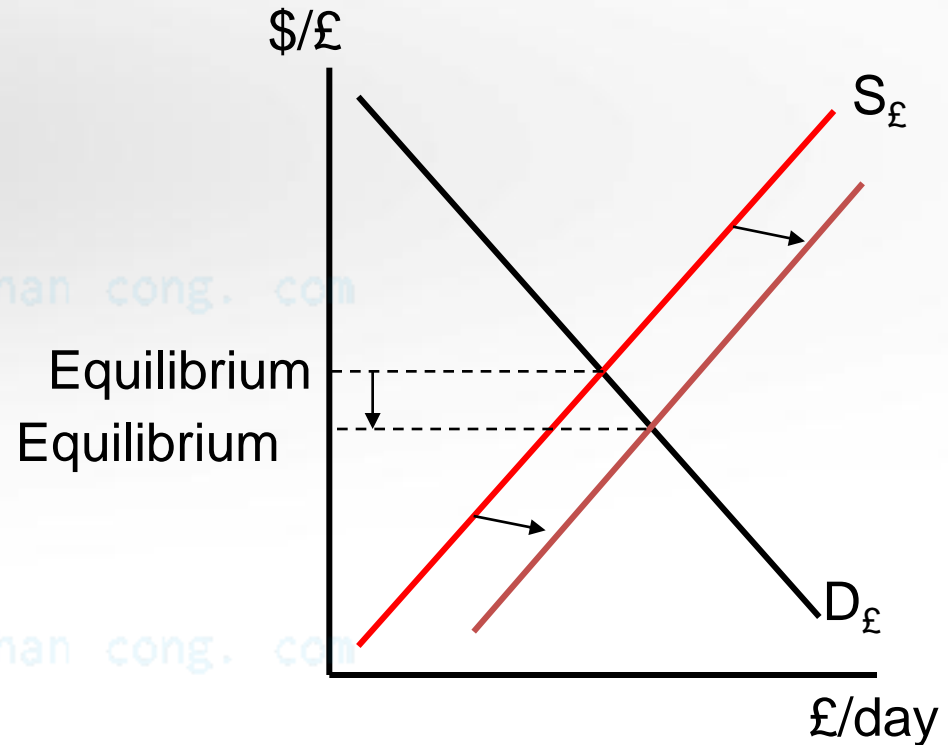
- Example

- Suppose that the supply of £ falls due to a decrease in the role of the dollar as the “international currency.”
- Since more dollars are required to buy £, the dollar has weakened or depreciated.



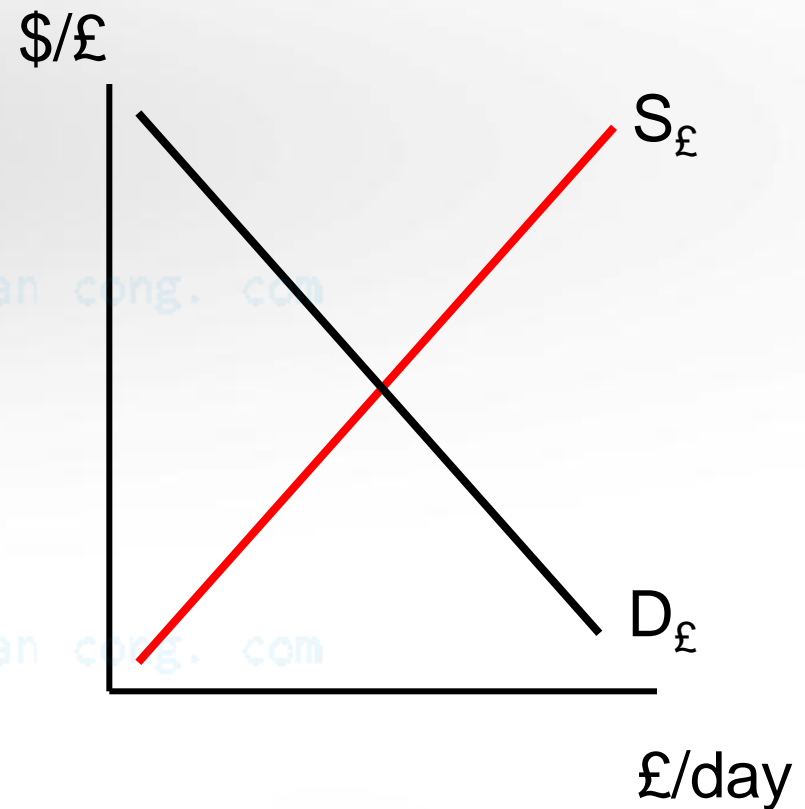
Changes to equilibrium

- Example
 - Suppose that the supply of £ increases from an increased desire to purchase U.S. goods.
 - Since fewer dollars are required to buy £, the dollar has strengthened or appreciated.



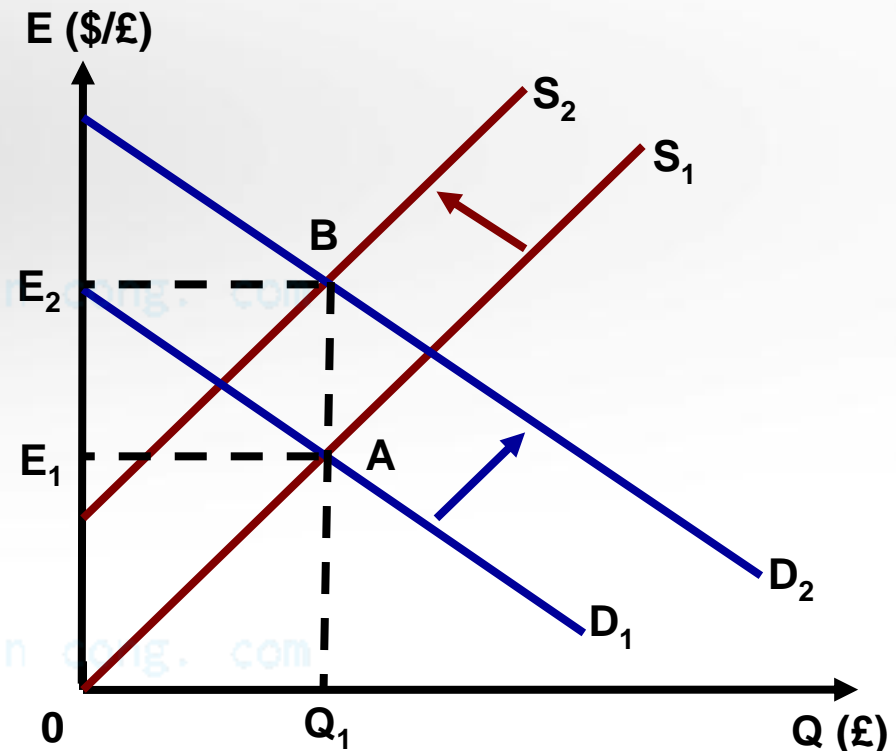
Factors that Influence Exchange Rates

- Factors which affect the demand and supply of foreign currencies will impact on the equilibrium of ER
- What are they?



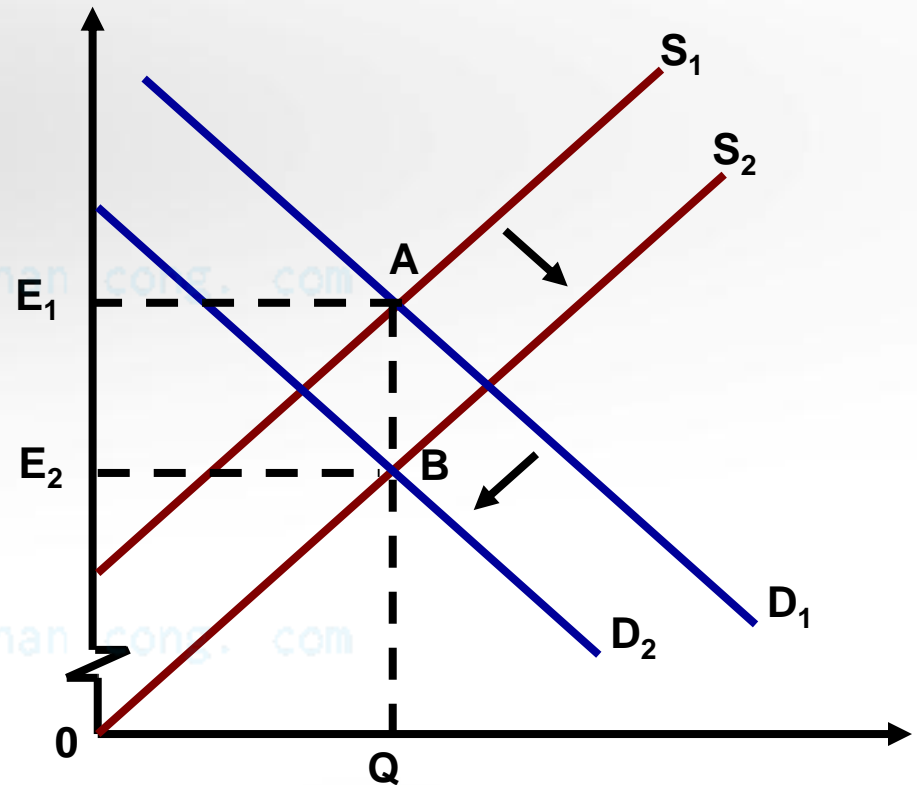
Factors that Influence ER - Relative Inflation Rates

- U.S. inflation \uparrow
 - $\Rightarrow \uparrow$ U.S. demand for British goods, and hence £.
 - $\Rightarrow \downarrow$ British desire for U.S. goods, and hence the supply of £.



Factors that Influence ER - Relative Interest Rates

U.S. interest rates \uparrow
 \Rightarrow \downarrow U.S. demand for
British bank
deposits, and hence
 \Rightarrow \uparrow British desire for
U.S. bank deposits,
and hence the
supply of £.



Factors that Influence ER - Relative Interest Rates

- A relatively high interest rate may actually reflect expectations of relatively high inflation, which discourages foreign investment.
- It is thus useful to consider *real interest rates*, which adjust the nominal interest rates for inflation.



Factors that Influence ER - Relative Interest Rates

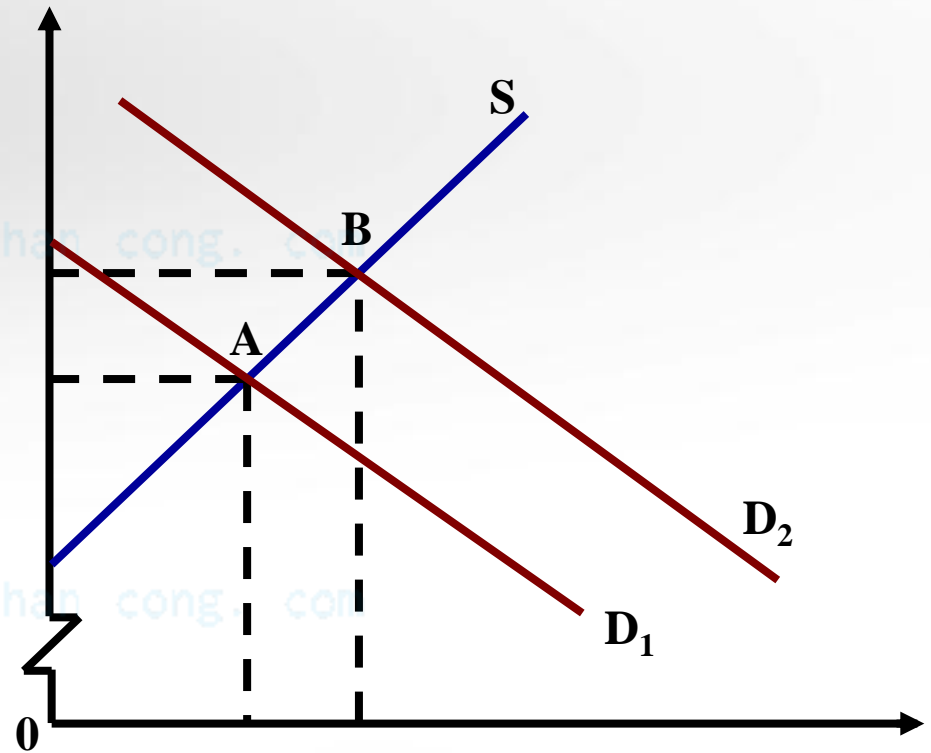
Relative Interest Rates

- $$\begin{array}{c} \text{real} \\ \text{interest} \\ \text{rate} \end{array} \approx \begin{array}{c} \text{nominal} \\ \text{interest} \\ \text{rate} \end{array} - \text{inflation rate}$$
- This relationship is sometimes called the *Fisher effect*.



Factors that Influence ER – Relative Income Levels

- U.S. income level \uparrow
 - \Rightarrow \uparrow U.S. demand for British goods, and hence £.
 - \Rightarrow No expected change for the supply of £.



Factors that Influence ER - *Government Controls*

- Governments may influence the equilibrium exchange rate by:
 - imposing foreign exchange barriers,
 - imposing foreign trade barriers,
 - intervening in the foreign exchange market, and
 - affecting macro variables such as inflation, interest rates, and income levels.



Factors that Influence ER - *Expectations*

Expectations

- Foreign exchange markets react to any news that may have a future effect.
- Institutional investors often take currency positions based on anticipated interest rate movements in various countries.
- Because of speculative transactions, foreign exchange rates can be very volatile.



Factors that Influence ER - *Expectations*

Signal

Impact on \$

Poor U.S. economic indicators

Fed chairman suggests Fed is
unlikely to cut U.S. interest rates

A possible decline in German
interest rates

Central banks expected to
intervene to boost the euro



Factors that Influence ER - *Expectations*

Signal

Impact on \$

Poor U.S. economic indicators

Weakened

Fed chairman suggests Fed is unlikely to cut U.S. interest rates

Strengthened

A possible decline in German interest rates

Strengthened

Central banks expected to intervene to boost the euro

Weakened



Thank You!

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