

Exchange rate definitions

- Exchange rates may be quoted as:
 - ▶ foreign currency per unit of domestic currency
 - ★ How much can be exchanged for £1: €1.18/£
 - ▶ domestic currency per unit of foreign currency
 - ★ How much can be exchanged for one Euro: £0.8475/€
- Allow us to denominate the cost of a good or service in a common currency
 - ▶ How much does a Renault cost?
 - ★ €25,000
 - ★ $25,000 \times £0.847512/€ = £21,188$

Outline

1 Exchange rate definitions

- Definitions

2 Short run

- Foreign exchange market
- Money market (interest rates)
- Links between money and foreign exchange markets
- Fixed exchange rate regimes

3 Long run

- Purchasing power parity

4 Summary

- Main conclusions

Calculating return in different currencies

- Imagine you hold \$100, and may invest in dollars or euros
 - ▶ interest rate on a dollar deposit is 2%
 - ▶ interest rate on a euro deposit is 4%
 - ▶ exchange rate today is \$1/€1 and expected rate in one year is \$0.97/€1
 - ★ Euro expected to depreciate by 3%
- assume for convenience inflation 0% so nominal rate of return = real rate of return (short run/day trading)
- If invest in dollars:
 - ▶ in one years time receive \$102
 - ▶ rate of return in dollars:

$$\frac{\$102 - \$100}{\$100} = 0.02 = 2\%$$

Interest parity (cont.)

- If parity didn't hold, e.g.

$$R_{\$} > R_{\text{€}} + \frac{(E_{\$/\text{€}}^e - E_{\$/\text{€}})}{E_{\$/\text{€}}}$$

- ▶ everyone want dollars
- ▶ dollar appreciate
- ▶ if expectations constant, expected appreciation of euro increases until parity

Effect of interest rate changes

- 1 What will happen to the exchange rate if US interest rates (return on dollar deposits) rise?
- 2 What will happen to the exchange rate if Eurozone interest rates rise?

Supply of money

Money supply determined by central bank

- money printed and supplied into economy
- reserve ratios (money multiplier)

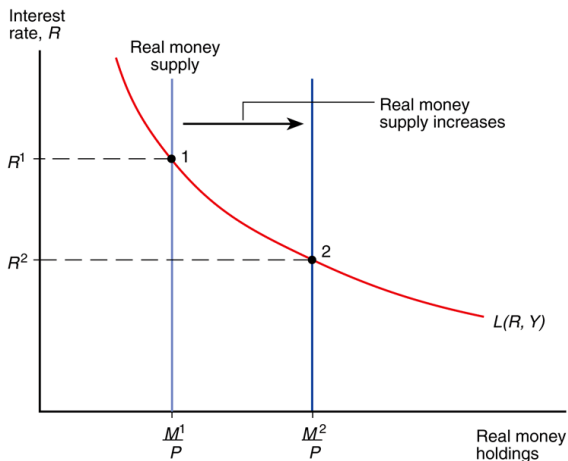
Equilibrium in money market where:

$$M^s = M^d$$

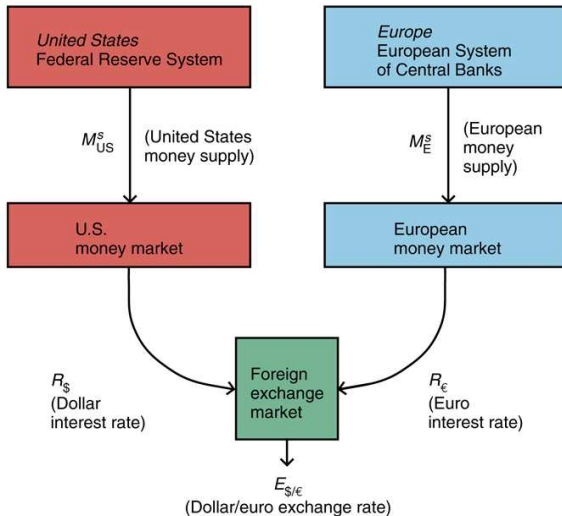
$$\frac{M^s}{P} = L(R, Y)$$

Effect of changes in money supply

Increases in real money supply reduce interest rates



Links between money and exchange markets



Advantages of fixed exchange rates

① exchange rate stability

- ▶ Reduces exchange rate uncertainty => increased trade
- ▶ BUT not easy to find empirically

② reduces scope for irresponsible monetary policy

- ▶ if pegged to country with low inflation
- ▶ can import credibility of central bank by pegging exchange rate

Long run - prices adjust

- Until now have implicitly assumed prices (output and factor) fixed - short run model
- In long run prices adjust to reflect goods and money market equilibria
 - ▶ model of exchange rates based on this not completely realistic
 - ▶ reflects how market participants form expectations of future exchange rates

Law of one price

Identical goods in different competitive markets must sell for the same price if transportation costs and barriers to trade are unimportant

Example

Suppose price of pizza in restaurant is £10, while the price of the same pizza at an identical restaurant at the other end of the street is £20

- Entrepreneurs have incentive to buy pizzas in cheap location and sell in expensive
 - ▶ trade increases demand (so price) of cheap pizzas
 - ▶ trade reduces demand (so price) of expensive pizzas
- Pizza arbitrage will occur until prices equal

If the restaurants in different countries (but still close) expect the same logic to apply:

$$P_{UK}^{pizza} = E_{\pounds/\text{€}} * P_{eurozone}^{pizza}$$