Subject : Macro Economics

Balance of Payments and Exchange rates

The Open Economy

All countries trade with and have financial dealings with the rest of the world. In other words, all countries are **open economies.**

- **Open economy –** One that trades with and has financia dealings with other countries.

Indeed, over time the economies of nations have become ever more intimately linked.

Outline for the chapter

What's included!

- The balance of payments account – various components
- Exchange rates
- The determination of the rate of exchange in a free market
- Shifts in the currency demand and supply curves
- Exchange rates and the balance of payments

The balance of payments account

- **Balance of payments account –** The **record of all the economic transactions** between the **residents of a specific country with the rest of the world** for a specific time period, typically a year or a quarter.
- **Receipts** of money from abroad are **regarded as credits** and are entered in the accounts with a **positive sign.**
- **Outflows** of money from the country are **regarded as debits** and are entered with a **negative sign.**
- There are **three main parts** of the balance of payments account: the **current account, the capital account and the financial account.**

The current account

- The **current account** records **payments for imports and exports** of goods and services, plus **incomes flowing into and out of the country,** plus **net transfers of money** into and out of the country.
- It is normally split into **four subdivisions**:

1. **The trade in goods account –** This **records imports and exports of physical goods** (previously known as 'visibles').

- **Exports result in an inflow** of money **and Imports result in an outflow** of money.
- The balance of these is called the **balance on trade in goods** or **balance of visible trade** or **merchandise balance**.
- A surplus is when exports exceed imports. A deficit is when imports exceed exports.

The current account

2. The trade in services account. – This **records imports and exports of services** (such as transport, tourism and insurance).

- **Example:** The purchase of a foreign holiday would be a debit, since it represents an outflow of money, whereas the purchase by an overseas resident of a UK insurance policy would be a credit to the UK services account.
- The **balance of these is called the services balance.**
- The balance of both the goods and services accounts together is known as the **balance on trade in goods and services** or simply the **balance of trade**.

The current account

3. Income flows – These **consist of wages, interest and profits** flowing into and out of the country.

- **For example**, dividends earned by a foreign resident from shares in a UK company would be an outflow of money (a debit item) for the UK.

4. Current transfers of money – These **include government contributions** to and receipts from the EU and international organisations, and **international transfers of money by private individuals and firms for the purpose of consumption**.

- Transfers out of the country are debits.
- Transfers into the country (e.g. money sent from Greece to a Greek student studying in the UK) would be a credit item.

Balance of payments on current account

- It is the **balance on trade in goods and services plus net investment incomes and current transfers.**
- A current account surplus is where credits exceed debits. A current account deficit is where debits exceed credits.
- The figure shows the current account balances of a selection of countries as a proportion of their GDP since 1960:-

	2016		Average 1987–2016 as % of GDP
	£m	% of GDP	
CURRENT ACCOUNT			
Balance on trade in goods	−135 391	−6.9	−4.1
Balance on trade in services	92 378	4.7	2.4
Balance of trade	⊠ 43 013	⊠ 2.2	⊠ 1.7
Income balance	−50 417	−2.6	−0.3
Net current transfers	−22 025	−1.1	−0.8
Current account balance	⊠ 115 455	⊠ 5.9	⊠ 2.7

The capital account

The **capital account** records **the flows of funds**, into the country (credits) and out of the country (debits),

- associated with the **acquisition or disposal of fixed assets** (e.g. land or intangibles, such as patents and trademarks),
- the **transfer of funds by migrants**,
- the **payment of grants by the government** for overseas projects,
- **debt forgiveness by the government** and
- the **receipt of money for capital projects**.

The financial account

The **financial account** of the balance of **payments records cross-border changes in the holding of shares, property, bank deposits and loans, government securities, etc.** This account covers **primarily long-term investment**.

1. Direct investment – This involves a significant and lasting interest in a business in another country.

- If a **foreign company invests money from abroad** in one of its branches or associated companies in the country, this **represents an inflow** of money when the investment is made and **is a credit item. Investment abroad by domestic companies** represents an **outflow** of money when the investment is made. It is thus **a debit item**.

2. Portfolio investment – This relates to **transactions in debt and equity securities** which do not result in the investor having any significant influence on the operations of a particular business.

The financial account

3. Other financial flows – These consist primarily of various types of **short-term monetary movement between the country and the rest of the world.**

- Short-term monetary flows are common between international financial centres to take advantage of differences in countries' interest rates and changes in exchange rates.

4. Flows to and from the reserves – The countries, **hold reserves of gold and foreign currencies. There will be changes in these from time to time.**

- **Drawing on reserves** represents a **credit item** in the balance of payments accounts: money drawn from the reserves **represents an inflow** to the balance of payments (albeit an outflow from the reserves account) and vice versa.

- **Note that in the financial account, credits and debits are recorded net.**

The balance of payments account

- When all the components of the balance of payments account are taken together, the balance of payments should exactly balance: **credits should equal debits.**
- When the statistics are compiled, however, a **number of errors** are likely to occur. As a result, **there will not be a balance**.
- To 'correct' for this, **a net errors and omissions item is included** in the accounts. This ensures that there will be an exact balance.
- The main reason for the errors is that the statistics are obtained from a number of sources, and there are often delays before items are recorded and sometimes omissions too.

The balance of payments account – Example

	2016		Average 1987–2016 as % of GDP
	£m	% of GDP	
CURRENT ACCOUNT			
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Current account balance	**− 115 455**	**− 5.9**	**− 2.7**
CAPITAL ACCOUNT			
Capital account balance	**− 1 344**	**− 0.1**	**0.0**
FINANCIAL ACCOUNT			
Net direct investment	184 345	9.4	−0.6
Portfolio investment balance	139 194	7.1	2.8
Other investment balance	−175 851	−9.0	0.5
Balance of financial derivatives	−21 615	−1.1	0.0
Reserve assets	−6 511	−0.3	−0.2
Financial account balance	**119 562**	**6.1**	**2.6**
Net errors and omissions	**− 2 763**	**− 0.1**	**0.2**
Balance	**0**	**0.0**	**0.0**

Exchange rates

- An exchange rate is the rate at which one currency trades for another on the foreign exchange market.

Need for exchange

Example 1: If you live in the UK and go abroad, you will need to exchange your pounds into euros, dollars, Swiss francs or whatever. You will get the money at the exchange rate in operation at the time you draw it from a cash machine abroad or from a bank: for example, €1.15 to the pound, or $1.25 to the pound.

Example 2: It is similar for firms. If an importer wants to buy, say, some machinery from Japan, it will require yen to pay the Japanese supplier. It will thus ask the foreign exchange section of a bank to quote it a rate of exchange of the pound into yen.

Exchange rates

- Exchange rates are **quoted between each of the major currencies of the world**. These exchange rates are **constantly changing**.
- Minute by minute, **dealers in the foreign exchange** dealing rooms of the banks are adjusting the rates of exchange. They **charge commission when they exchange currencies.**
- One of the problems in assessing what is happening to a particular currency is that its rate of exchange may rise against some currencies (weak currencies) and fall against others (strong currencies).
- In order to gain an overall picture of its fluctuations, therefore, it is best to look at a weighted average exchange rate against all other currencies. This is known as the **exchange rate index**.

Exchange rates and Arbitrage

- **All the exchange rates must be consistent with each other.**
- For example, if £1 exchanged for $1.50 or 150 yen, then $1.50 would have to exchange for 150 yen directly (i.e. $1 = 100 yen), otherwise people could make money by moving around in a circle between the three currencies in a process known as **arbitrage**.
- **Arbitrage** Buying an asset in a market where it has a lower price and selling it again in another market where it has a higher price and thereby making a profit.

The determination of the rate of exchange in a free market

- In a free foreign exchange market, the **rate of exchange is determined by demand and supply**.
- **Floating exchange rate –** When the government does not intervene in the foreign exchange markets, but simply allows the exchange rate to be freely determined by demand and supply.

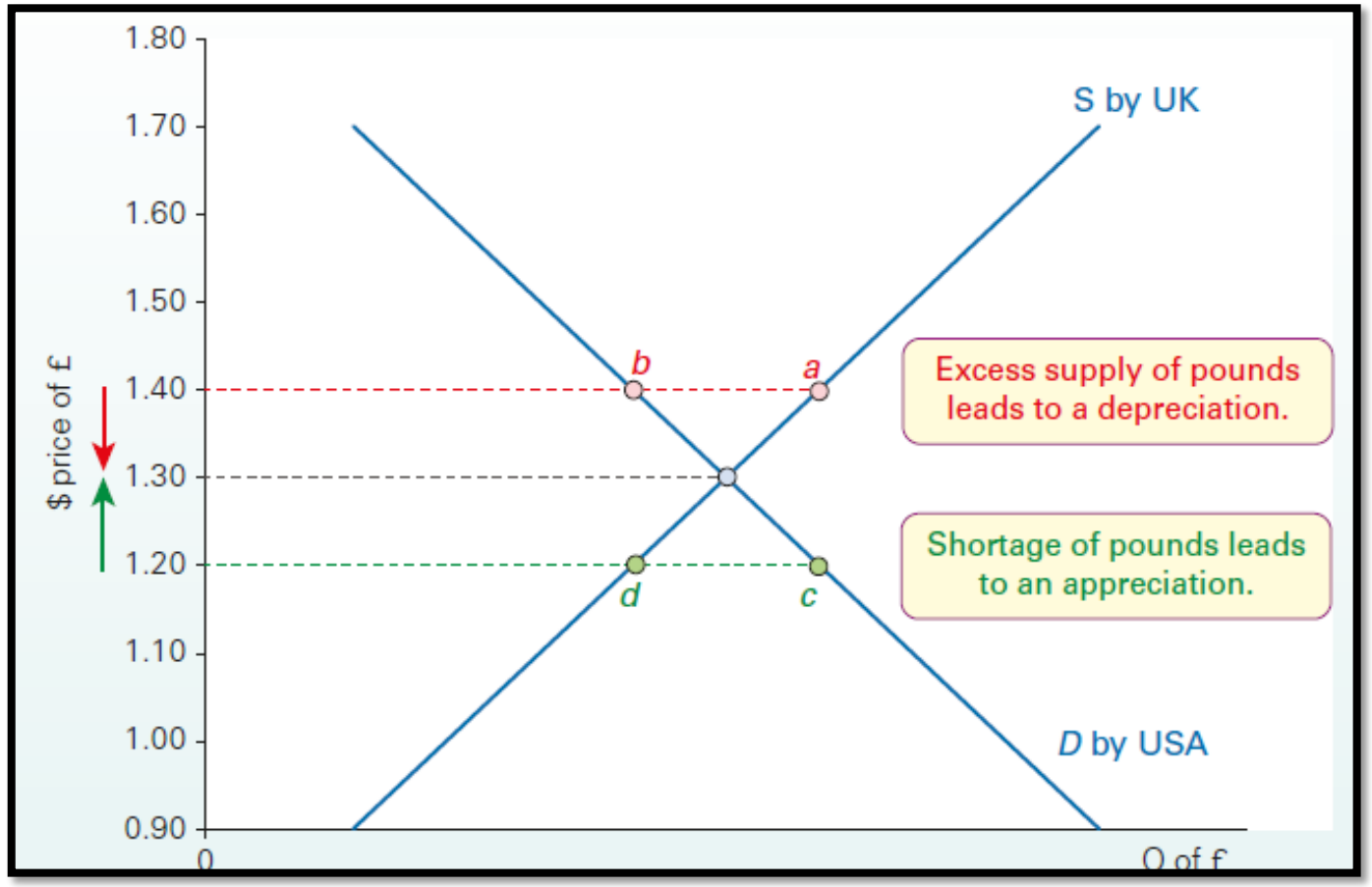
We understand the determination of exchange rate through an example.

- Assume that there are just two countries: the UK and the USA. When UK importers wish to buy goods from the USA, they will supply pounds on the foreign exchange market in order to obtain dollars.
- The higher the exchange rate, the more dollars they will obtain for their pounds. This will effectively make US goods cheaper to buy, and investment more profitable. Thus the higher the exchange rate, the more pounds will be supplied. The **supply curve** of pounds, therefore, **typically slopes upwards.**

The determination of the rate of exchange in a free market

- When US residents wish to purchase UK goods, they will require pounds. They *demand* pounds by selling dollars on the foreign exchange market.
- The lower the dollar price of the pound (the exchange rate), the cheaper it will be for them to obtain UK goods and assets, and hence the more pounds they are likely to demand. **The demand curve** for pounds, therefore, **typically slopes downwards.**
- The equilibrium exchange rate is where the demand for pounds equals the supply.

The determination of the rate of exchange in a free market



Mechanism that equates demand and supply

- As per the figure above, the **current equilibrium exchange rate of £1 = $1.30**.
- If the current exchange rate were **above the equilibrium, say $1.40**, the **supply of pounds** being offered to the banks would **exceed the demand**. There would be an excess supply of pounds of *a* – *b*. The **banks**, wishing to make money by exchanging currency, would have to **lower the exchange rate** in order **to encourage a greater demand for pounds and reduce the excessive supply**. They would continue lowering the rate until demand equalled supply.
- Similarly, if the **rate were below the equilibrium, say $1.20**, there would be a **shortage of pounds of** *c* – *d*. The banks would find themselves with too few pounds to meet all the demand. At the same time, they would have an excess supply of dollars. **The banks would thus raise the exchange rate until demand equalled supply.**
- In practice, **the process of reaching equilibrium is extremely rapid.**

Shifts in the currency demand and supply curves

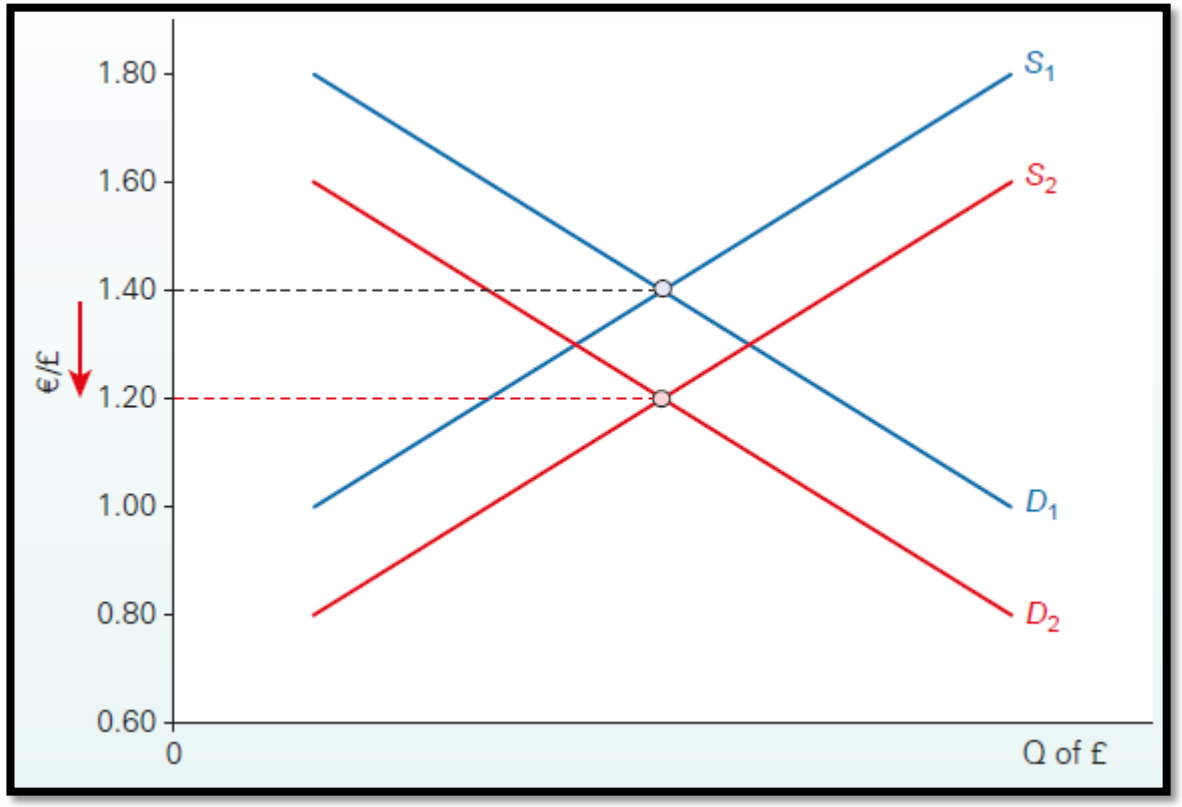
Any shift in the demand or supply curves will cause the exchange rate to change.

This is illustrated in Figure which shows the euro/sterling exchange rate.

- **Depreciation –** A fall in the free-market exchange rate of the domestic currency with foreign currencies.
- **Appreciation –** A rise in the free-market exchange rate of the domestic currency with foreign currencies

DEP - WIDEC

APP - SPICED



Causes of Appreciation or Depreciation

We continue the example which shows the euro/sterling exchange rate. The following are the major possible causes of a depreciation:

1. **A fall in domestic interest rates – UK rates would now be less competitive** for savers and other depositors. More **UK residents** would be likely to **deposit their money abroad** (the supply of sterling would rise), and fewer people abroad would deposit their money in the UK (the demand for sterling would fall).

2. **Higher inflation in the domestic economy than abroad – UK exports will become less competitive.** The demand for sterling will fall. At the same time, imports will become relatively cheaper for UK consumers. The supply of sterling will rise.

Causes of Appreciation or Depreciation

3. **A rise in domestic incomes relative to incomes abroad –** If **UK incomes rise**, the **demand for imports,** and hence the **supply of sterling, will rise**. If incomes in other countries fall, the demand for UK exports, and hence the demand for sterling, will fall.

4. **Speculation that the exchange rate will fall –** If businesses involved in importing and exporting, and also banks and other foreign exchange dealers, **think that the exchange rate is about to fall, they will sell pounds now before the rate does fall.** The supply of sterling will thus rise. People thinking of buying pounds will wait until the rate does fall and hence, in the meantime, the demand for sterling will fall. **Speculation thus helps to bring about the very effect people had anticipated.**

Causes of Appreciation or Depreciation

5. **Relative investment prospects improving abroad –** If investment prospects become brighter abroad than in the UK, perhaps because of better incentives abroad, or because of worries about an impending recession in the UK, again the demand for sterling will fall and the supply of sterling will rise.

6. **Longer-term changes in international trading patterns – Over time the pattern of imports and exports is likely** to change as (a) **consumer tastes change**, (b) **the nature and quality of goods change** and (c) **the costs of production change**. If, as a result, UK goods become less competitive than, say, German or Japanese goods, the demand for sterling will fall and the supply will rise. These shifts, of course, are gradual, taking place over many years.

Exchange rates and the balance of payments

The balance of payments in relation to exchange rates

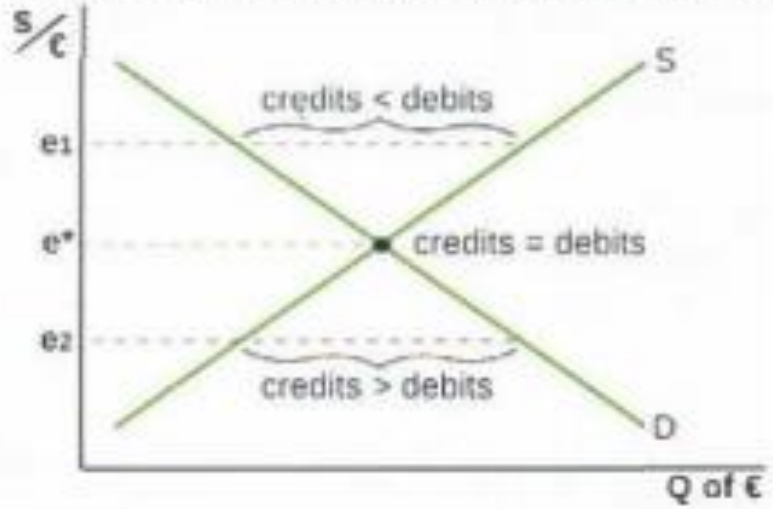
Why the overall balance of the balance of payments is always equal to zero

A currency's exchange rate is always determined by currency D and S (this is true also for fixed exchange rates, where D = S is forced (see p 69). Notice that D for a currency gives rise to credits (inflows of money into a country), and S of a currency gives rise to debits (outflows of money from the country). Since for any given exchange rate, D for the currency = S of the currency, it follows that credits = debits.

How credits equal debits in a freely floating exchange rate system

In a freely floating system, the equilibrium exchange rate is determined by market forces (D and S for the currency). Looking at the € market, at e_1, D for € < S of €, meaning that credits < debits in the eurozone, and so market forces push the value of the € downward to e*, where D for € = S of € and credits = debits. At e_2, D for € > S of €, meaning that credits > debits, and so market forces push the € upward to e*, where again S = D and credits = debits in the eurozone. Therefore market forces ensure that debits will always be equal to credits at the equilibrium exchange rate.

Credits = debits: freely floating exchange rates



Exchange rates and the balance of payments

How credits are made to equal debits in a fixed exchange rate system In a fixed exchange rate system, since the exchange rate cannot change in the event of excess D or excess S of the currency, the central bank or government change D and/or S of the currency to make them produce the desired (fixed) rate (see p 69).	✔ If the exchange rate is fixed at a level where **D < S** and **credits < debits** the central bank must buy the currency (sell foreign exchange) or raise the interest rate (to attract foreign financial capital) ⇒ D for the currency ⇑ to the point where D = S hence credits = debits. **The increase in D for the currency creates the missing credits.**	✔ If the exchange rate is fixed at a level where **D > S** and **credits > debits** the central bank sells the currency (buys foreign exchange) or lowers the interest rate (foreign financial capital leaves) ⇒ S of the currency ⇑ to the point where D = S and credits = debits. **The increase in S for the currency creates the missing debits**

Looking further

The section ahead looks at exchange rates in detail and discusses the various possible exchange rate systems, or regimes and their relationship to the balance of payments.

More specifically, it describes the operation of the two extremes of:

1. a (totally) fixed exchange rate regime
2. a free-floating exchange rate regime

and looks at the pros and cons of each.

Policy objectives: internal and external

A country is likely to have various **internal** and **external policy objectives.**

- **Internal policy objectives –** Objectives relating solely to the domestic economy. (economic growth, low unemployment and low inflation.)
- **External policy objectives –** Objectives relating to the economy's international economic relationships. (avoiding current account balance of payments deficits, encouraging international trade and preventing excessive exchange rate fluctuations)

Internal and external objectives may **come into conflict,** however. We will see how!

Internal and External Balance

Internal balance. –

This is where the **economy is at the potential level of national income**: i.e. where the **output gap is zero**.

External balance. –

This is the term for a **balance of payments equilibrium**. In the context of floating exchange rates, it is normally used in the narrow sense of a **current account balance**, and therefore also a **capital plus financial account balance.**

In the context of a fixed exchange rate, or an exchange rate target, it is often used more loosely to refer merely to a **total currency flow balance**. (**no need for intervention from the reserves)**

Conflicts between internal and external balance

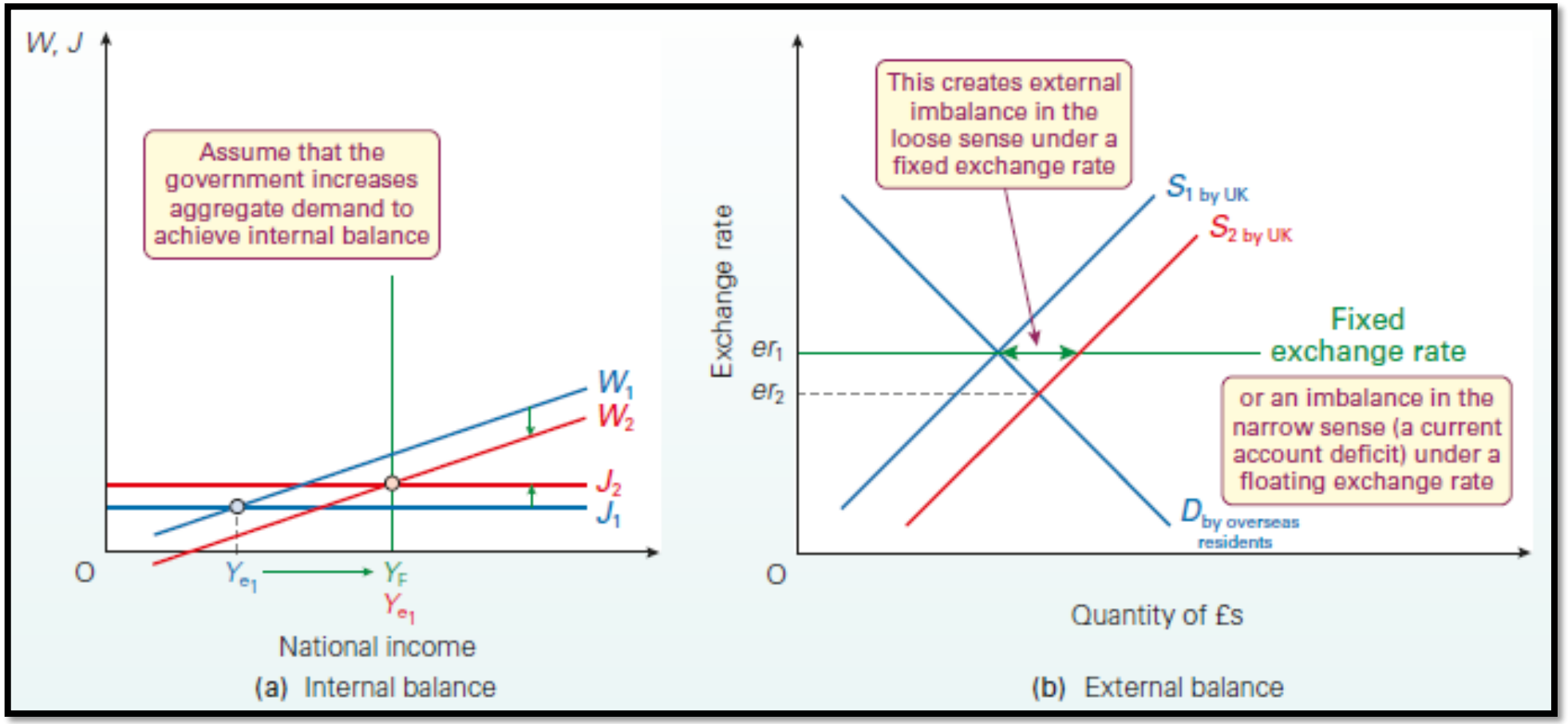
It may, however, be difficult to achieve internal and external balance simultaneously. This is illustrated in Figure below.

Assume (figure b) that the exchange rate is er1. Currency demand and supply curves are given by D and S1 and there is no central bank intervention. Thus er1 is the equilibrium exchange rate and there is external balance in the loose sense. Assume also that there is external balance in the narrow sense: i.e. a current account balance.

Let us also assume, however, that there is a recession. This is illustrated in (figure a). Equilibrium national income is Ye1, where W1 equals J1. There is a deflationary gap: Ye1 is below the full-employment level, YF. There is no internal balance.

Conflicts between internal and external balance

Figure illustrated below:



Conflicts between internal and external balance

- Now assume that the **government expands aggregate demand** through fiscal policy to close the deflationary gap and restore internal balance. It **raises injections** to *J*2 and **reduces withdrawal**s to *W*2. **National income rises** to *Ye*2.
- But this higher national income **leads to an increased demand for imports.** The supply of sterling will shift to *S*2 in Figure (b). There is **now a current account deficit, which destroys external balance** in the narrow sense. If the government maintains the exchange rate at *er*1 (by buying sterling from the reserves), external balance will be destroyed in the loose sense too.
- **External balance** in the loose sense **could be restored** by allowing **the exchange rate to depreciate** to *er*2, so that the demand and supply of sterling are equated at the new lower exchange rate.
- It will go some way to correct the current account deficit and restore external balance by correcting the deficit, as the lower exchange rate will make imports relatively more expensive and exports relatively cheaper.

Conflicts between internal and external balance

- But there may also be an **effect on the financial account**. The **higher aggregate demand** will lead to a **higher demand for money**. This will **drive up interest rates** unless money supply is allowed to expand to offset the higher demand for money.
- If interest rates rise, this will **lead to an inflow of finance** (a financial account surplus). In Figure (b), the supply curve of sterling would shift to the left and the demand curve to the right. The exchange rate would not therefore fall as far as *er*2.
- If the positive effect of higher interest rates on the financial account was bigger than the negative effect of higher imports on the current account, the exchange rate would actually *appreciate.*
- Either way, **there will be a current account deficit** and an **equal and opposite financial plus capital account surplus**.

Exchange rate regime

- The ability of the economy to correct these imbalances depends on the **exchange rate regime.**
- **Exchange rate regime –** The system under which the government allows the exchange rate to be determined.
- We examine alternative exchange rate regimes in the final part of this section, but first we must distinguish between nominal and real exchange rates.

Nominal and real exchange rates

- A nominal exchange rate is simply the rate at which one currency exchanges for another. All exchange rates that we see quoted in the newspaper, Internet, or at travel agents, banks or airports, are nominal rates.
- The **real exchange rate** is the exchange rate index adjusted for changes in the prices of imports (measured in foreign currencies) and exports (measured in domestic prices): in other words, adjusted for the terms of trade.
- The real exchange rate index can be defined as:

$$\text{RERI} = \text{NERI} * P_X/P_M$$

where P_X is the domestic currency price index of exports and P_M is the foreign currencies weighted price index of imports, NERI (Nominal exchange rate index).

Alternative exchange rate regimes

- There are a number of possible exchange rate regimes. They all lie somewhere between two extremes. These **two extreme regimes** are a **totally fixed rate** and a **freely floating rate**.
- In the case of a **fixed rate**, **the government or central bank** will almost certainly **have to intervene in the foreign exchange market** in order to maintain that rate, and will probably have to **take internal policy measures** too.
- In the case of a **freely floating rate**, there is **no government intervention in the foreign exchange market**. Exchange rates fluctuate according to market forces – according to changes in the **demand for and supply of currencies** on the foreign exchange market.
- Between these extremes there are a number of **intermediate regimes**, where exchange rates are partly left to the market, but where the government intervenes to influence the rate

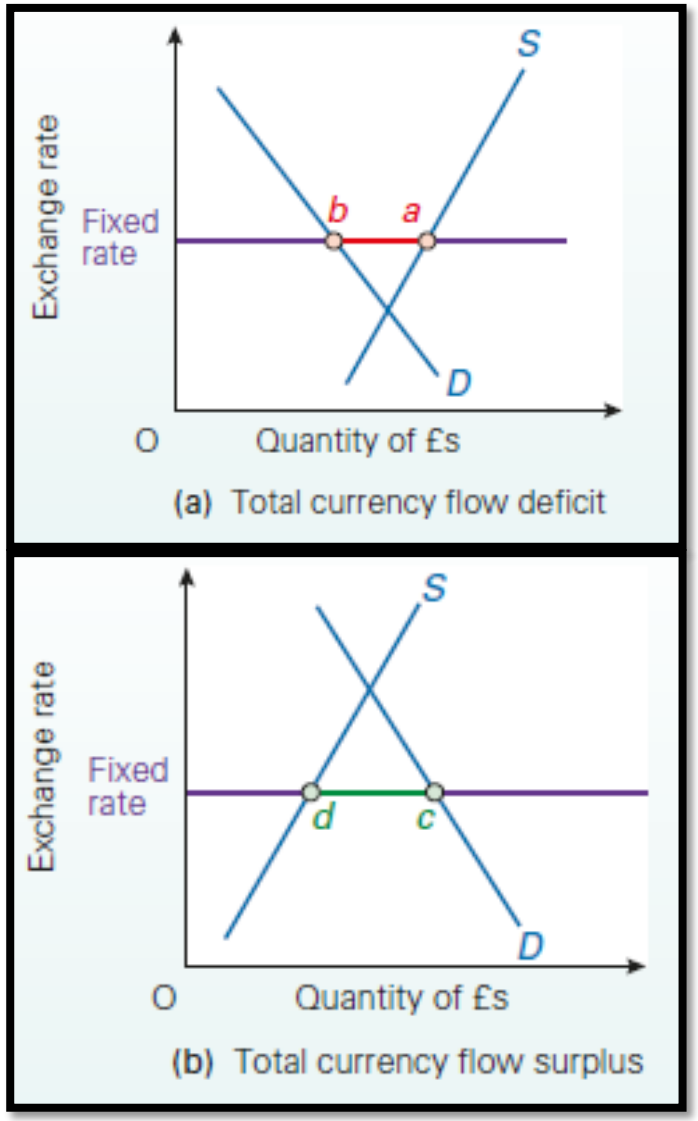
Correction under fixed exchange rates

- **Foreign exchange intervention**

Unless the demand for and supply of the domestic currency on the foreign exchange markets are equal at the fixed rate – **unless**, in other words, **there is a total currency flow balance – the central bank will have to intervene in the market and buy or sell the domestic currency to make up the difference.**

Example: In the case of UK, Figure (a) shows the case of a currency flow deficit (an excess of pounds) of an amount *a* – *b*. The Bank of England thus has to purchase these excess pounds by drawing on its foreign exchange reserves, or by borrowing foreign currency from foreign banks.

Opposite is the case, in situation of a currency flow surplus. Shown in figure (b).



Foreign exchange market intervention and the money supply

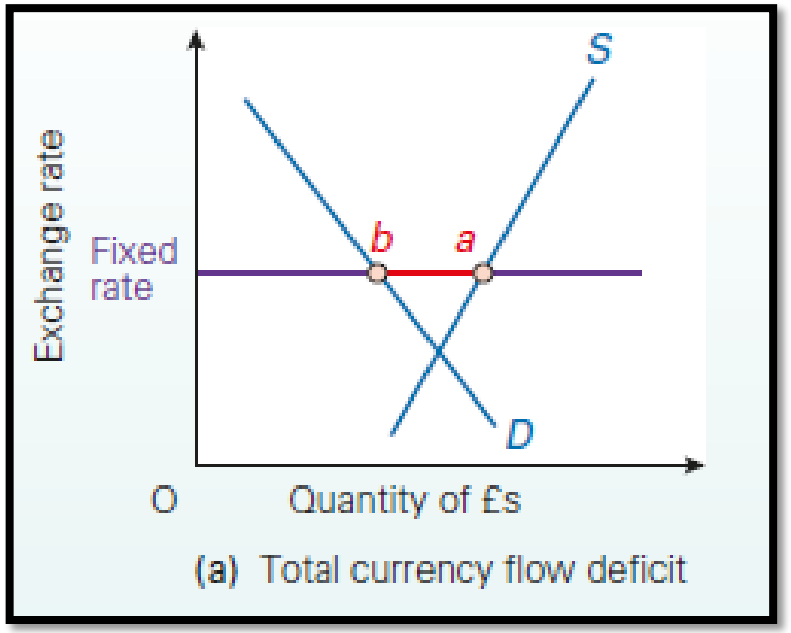
Maintaining a fixed exchange rate causes **changes in the money supply**.

If the **rate is** maintained **above the equilibrium** there is a **total currency flow deficit.**

The Bank of England **buys pounds**. It thereby **withdraws** them from circulation and **reduces the money supply**.

The effect of this reduction in money supply is to raise the equilibrium rate of interest. This attracts financial inflows and improves the financial account. It also dampens aggregate demand, and thus reduces imports and improves the current account.

The net effect is to reduce the overall currency flow deficit and thus reduce the gap *a* – *b* in Figure



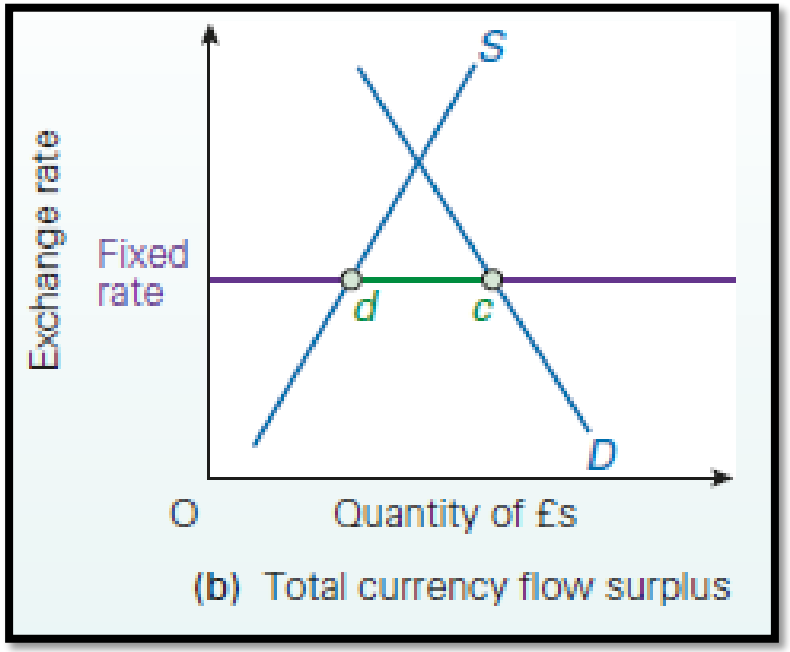
Foreign exchange market intervention and the money supply

If **the rate is** maintained **below equilibrium** (as in the Figure), there is a **total currency flow surplus**.

The Bank of England **supplies additional pounds** (which are spent by people abroad on UK exports, etc., and are thus **injected** into the UK economy). It thereby **increases the money supply.**

The effect of the increased money supply is to reduce interest rates. This worsens the financial account and, by boosting aggregate demand, increases imports. The currency flow surplus is reduced.

The gap d – c narrows.



Sterilisation

- If the Bank of England did **not want the money supply to alter**, it would have to **counter these effects** with other monetary measures: e.g. **open-market operations**. Thus when there is a deficit and money supply falls, the Bank of England could buy back government bonds from the general public, thereby restoring the money supply to its previous level. This will prevent the economy moving into recession.
- This **process of countering the effects on money supply of a balance of payments deficit or surplus is known as sterilisation.**
- There is a **problem with sterilisation**, however. **If the money supply** is **not allowed to change**, the **currency flow deficit or surplus will persist**. In the case of a deficit, a recession may be avoided, but the central bank will have to continue using reserves to support the exchange rate. But **reserves are not infinite. Sooner or later they will run out! A recession may be inevitable**

Correcting the disequilibrium

- If a **balance of payments deficit persists**, and **reserves continue to dwindle** or foreign debts mount, **the government will have to tackle the underlying disequilibrium.**
- If the **exchange rate is to remain fixed**, it must **shift the demand and supply curves** so that they intersect at the fixed exchange rate.
- It can **use contractionary fiscal and monetary policies** for this purpose. Such policies have two main effects on the current account: **an income effect** (**expenditure reducing**) and **a substitution effect** between home and foreign goods (**expenditure switching**).

Expenditure reducing and switching

Expenditure reducing –

Contractionary policy reduces national income. This in turn reduces expenditure, including expenditure on imports, shifting supply curve to the left.

Expenditure switching from a contraction: the substitution effect –

Where contractionary policies lead to a reduction in inflation and thus cause a switch in expenditure away from imports and towards exports.

Expenditure switching can also be achieved by placing restrictions on imports (tariffs and/or quotas) or the subsidising of exports. But this would conflict with the objective of free trade.

- To the extent that fiscal and monetary policies affect interest rates, so this will affect the financial account of the balance of payments.

Correction under free-floating exchange rates

- Freely floating exchange rates should **automatically and immediately correct any balance of payments deficit or surplus**: by **depreciation and appreciation** respectively.
- As with fixed rates, an **income effect and a substitution effect** of the correction process can be distinguished.
- It is only the substitution effect that corrects the disequilibrium. The income effect makes the problem worse!

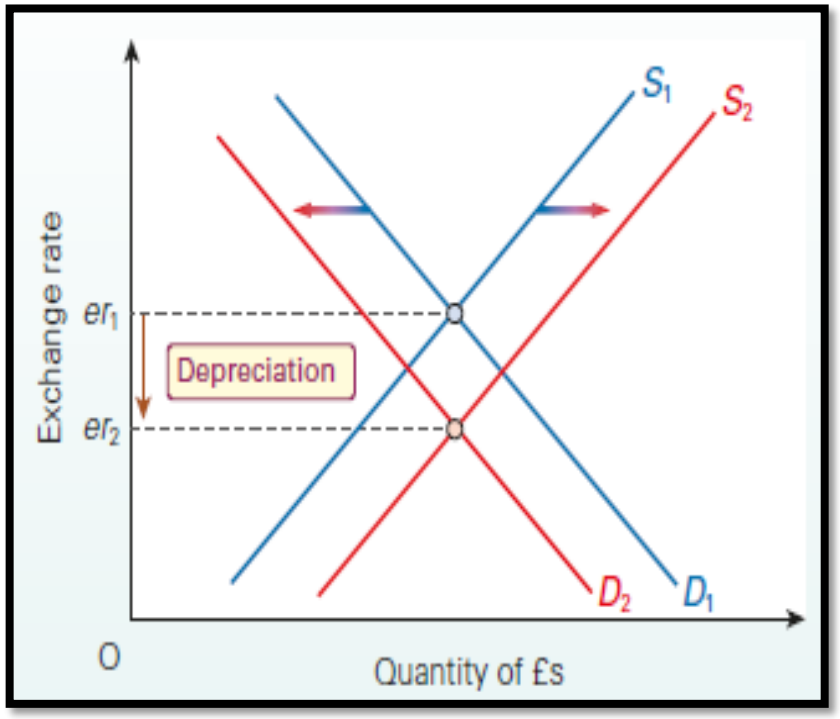
Expenditure switching

Expenditure switching from depreciation: the substitution effect – Where a **lower exchange rate reduces the price of exports** and **increases the price of imports**. This will increase the sale of exports and reduce the sale of imports.

The process of adjustment – Assume a higher rate of inflation in the country than abroad. As a result more imports will be purchased and less exports will be sold. The demand for pounds curve will shift to the left (to D2).

Foreign exchange dealers will now find themselves with a glut of unsold pounds.

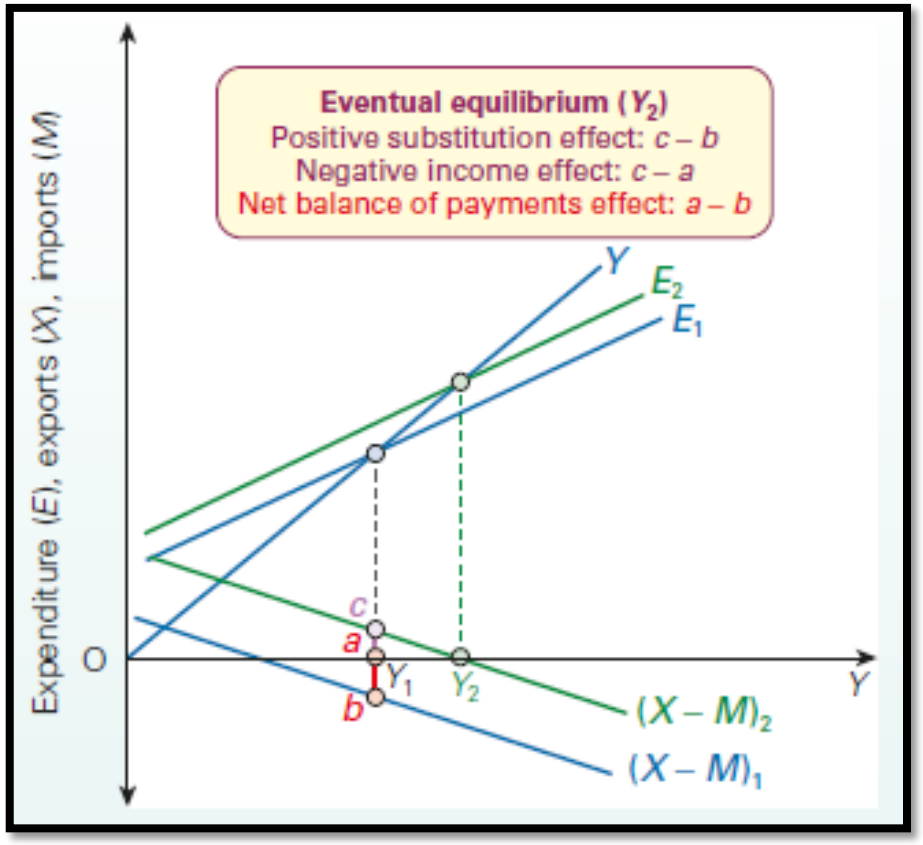
They will therefore lower the exchange rate (to er2 in Figure)



Expenditure changing

Expenditure changing (increasing) from depreciation: the income effect –

Where **depreciation**, via the substitution effect, **will alter the demand for imports and exports,** and this, via the multiplier, **will affect the level of national income** and hence **the demand for imports.**



Intermediate exchange rate regimes

There are a number of possible **intermediate systems** between the two extremes.

- **Adjustable peg** – The **adjustable peg** system is towards the fixed end of the spectrum. **Exchange rates are fixed** (or 'pegged') **for a period of time** – perhaps several years.

In the long term, if a fundamental disequilibrium occurs, the currency can be repegged at a lower or higher rate.

- **Devaluation** Where the government **repegs the exchange rate at a lower level**.
- **Revaluation** Where the government **repegs the exchange rate at a higher level.**

Alternatively, more frequent smaller adjustments could be made, thus moving the system away from the fixed end of the spectrum.

Intermediate exchange rate regimes

- **Managed floating** – It is a system is towards the **free-floating end of the spectrum**. **Exchange rates are not pegged: they are allowed to float**. It is a system of flexible exchange rates, but where the government intervenes to prevent excessive fluctuations or even to achieve an unofficial target exchange rate.
- **Crawling peg** – The system is midway between managed floating and the adjustable peg system. A system whereby the **government allows a gradual adjustment of the exchange rate**.
- **Joint float –** Where a **group of currencies pegged** to each other **jointly float against other currencies.**
- **Exchange rate band –** Where a **currency is allowed to float between an upper and lower exchange rate, but is not allowed to move outside this band**. Exchange rate bands can be incorporated in other systems – the band could be adjustable, crawling or fixed.

All these intermediate systems are attempts to achieve as many as possible of the advantages of both fixed and flexible exchange rates, with as few as possible of the attendant disadvantages

Fixed exchange rates

In this section we examine the causes of balance of payments problems under fixed nominal exchange rates, in both the short run and the long run.

Finally, we assess the desirability of fixed exchange rates.

Causes of longer-term balance of payments problems under fixed exchange rates

Long-term continuing shifts in the demand and supply of imports and exports can make balance of payments problems persist. We will examine causes of these long-term shifts.

1. Different rates of inflation between countries. If a country has persistently higher rates of inflation than the countries with which it trades, it will have a growing current account deficit. Exports and import substitutes will become less and less competitive as its real exchange rate appreciates.

2. Different rates of growth between countries. If a country grows faster than the countries with which it trades, its imports will tend to grow faster than its exports.

Causes of longer-term balance of payments problems under fixed exchange rates

3. Income elasticity of demand for imports higher than for exports. If the income elasticity of demand for imports is relatively high, and the income elasticity of demand for exports is relatively low, then as world incomes grow, the country's imports will grow faster than its exports.

This has been a particular problem for many developing countries: they import manufactured goods and capital equipment, whose demand grows rapidly, and export primary products – food and raw materials – whose demand, until recent years, has grown relatively slowly

Advantages of fixed exchange rates

The following arguments are used in favour of fixed exchange rate systems:

- **Certainty.** With fixed exchange rates, international trade and investment become much less risky, since **profits are not affected by movements in the exchange rate.**
- **Little or no speculation.** Provided **the rate is absolutely fixed** – and people believe that it will remain so – there is **no point in speculating.**
- **Automatic correction of monetary errors**. If the central bank allows the money supply to expand too fast, the resulting extra demand and lower interest rates will lead to a balance of payments deficit. This will force the central bank to intervene to support the exchange rate. Either it must buy the domestic currency on the foreign exchange market, thereby causing money supply to fall again (unless it sterilises the effect), or it must raise interest rates. Either way this will have the effect of correcting the error.

Advantages of fixed exchange rates

- **Preventing governments pursuing 'irresponsible' macroeconomic policies**. If a government deliberately and excessively expands aggregate demand – perhaps in an attempt to gain short-term popularity with the electorate – the resulting balance of payments deficit will force it to constrain demand again (unless it resorts to import controls).

Disadvantages – new classical criticisms

New classicists make **two crucial criticisms of fixed rates**.

1. **Fixed exchange rates make monetary policy ineffective** –

Interest rates must be used to ensure that the overall balance of payments balances. As a result, money supply must be allowed to vary with the demand for money in order to keep interest rates at the necessary level. Thus monetary policy cannot be used for domestic purposes.

Inflation depends on world rates, which may be high and domestically unacceptable.

If the central bank tries to reduce inflation by attempting to reduce money supply and raise interest rates, the current and financial accounts will go into surplus. Money supply will thus increase until domestic inflation rises back to world levels.

Disadvantages – new classical criticisms

2. Fixed rates contradict the objective of having free markets.

Why fix the exchange rate, when a simple depreciation or appreciation can correct a disequilibrium?

In the new classical world where markets clear, and supply and demand are relatively elastic, why not treat the foreign exchange market like any other, and simply leave it to supply and demand?

Disadvantages – Keynesian view

In the Keynesian world, there is no guarantee of achieving both internal and external balance simultaneously when exchange rates are fixed. This leads to the following problems.

1. **Balance of payments deficits can lead to a recession –**

A balance of payments deficit can occur even if there is no excess demand. This could be caused by different rates of growth, a higher income elasticity of demand for imports than for exports, and so on.

If protectionism is to be avoided, and if supply-side policies work only over the long run, the government will be forced to reduce the rate of growth of aggregate demand.

This will lead to higher unemployment and possibly a recession.

Disadvantages – Keynesian view

2. Competitive deflations leading to world depression –

If deficit countries deflated, but surplus countries reflated, there would be no overall world deflation or reflation.

Countries may be quite happy, however, to run a balance of payments surplus and build up reserves. Countries may thus competitively deflate – all trying to achieve a balance of payments surplus.

But this is beggar-my-neighbour policy. Not all countries can have a surplus! Overall, the world must be in balance.

Such policies lead to general world deflation and a restriction in growth.

Disadvantages – Keynesian view

3. Problems of international liquidity –

If trade is to expand, there must be an expansion in the supply of currencies acceptable for world trade (dollars, euros, gold, etc.): **there must be adequate international liquidity**.

Conversely, there **must not be excessive international liquidity**. Otherwise the extra demand that would result would lead to world inflation.

It is important under fixed exchange rates, therefore, to avoid too much or too little international liquidity.

Thus **the problem is** how to maintain **adequate control of international liquidity**.

Disadvantages – Keynesian view

4. Speculation –

If speculators believe that a **fixed rate** simply **cannot be maintained**, **speculation is likely to be massive.**

If there is a huge deficit, there is no chance whatsoever of a revaluation. Either the rate will be devalued or it will remain the same.

Speculators will thus sell the domestic currency. After all, it is a pretty good gamble: heads they win (devaluation); tails they don't lose (no devaluation).

This speculative selling will worsen the deficit, and may itself force the devaluation.

Effectiveness of Monetary policy under fixed rates

Monetary policy

Monetary policy is not very effective under fixed exchange rates.

Assume that the central bank, worried by rising inflation, wishes to reduce the growth in nominal aggregate demand. It thus reduces the rate of growth in money supply. This drives up interest rates and causes a fall in real national income.

What effect will this have on the balance of payments? The lower national income reduces expenditure on imports and hence leads to a surplus on the current account. Also, the higher interest rates encourage an inflow of finance and hence a surplus on the financial account too. This balance of payments surplus will *increase* money supply again and reduce interest rates back towards the original level. Aggregate demand will rise back towards its original level. Monetary policy has been ineffective.

But rather than changing the *supply* of money, can the government not directly alter interest rates? The problem here is that, in order to maintain the rate of exchange at the fixed level, the government's room for manoeuvre is very limited. For example, if it raises interest rates, the resulting inflow of finance will cause a balance of payments surplus. The government could, for a period of time, simply build up reserves, but it may not want to do this indefinitely.

The problem is more serious if the economy is in recession and the central bank wants to increase aggregate demand by *reducing* interest rates. The financial outflow will force the central bank to buy in the domestic currency by using its reserves. But it can do this for only so long. Eventually, it will be forced to raise interest rates again in order to stem the drain on the reserves. In today's world, with little in the way of exchange controls and with massive amounts of short-term international liquidity, such flows can be enormous. This gives the central bank virtually no discretion over changing interest rates. Interest rates will have to be kept at a level so as to maintain the exchange rate. In the case of *perfect* mobility of international finance, interest rates must be kept at world rates. Monetary policy will be totally ineffective.

Effectiveness of Fiscal policy under fixed rates

Fiscal policy

Fiscal policy is much more effective.

Assume that there is a recession and the government wishes to increase aggregate demand. It thus cuts taxes and/or raises government expenditure. This raises national income and increases expenditure on imports. Also, higher inflation raises the real exchange rate. This makes exports less competitive and imports relatively cheaper. The current account moves into deficit.

The increase in aggregate demand will raise the demand for money and hence put upward pressure on interest rates. This will lead to an inflow of finance and a financial account surplus. To prevent this swamping the current account deficit, the central bank must prevent interest rates from rising very much. In the case of an infinitely elastic supply of finance, interest rates must not be allowed to rise at all.

Thus money supply must be allowed to expand to keep interest rates down. This expansion of the money supply thus reinforces the expansionary fiscal policy and prevents crowding out.

Thus a high level of international financial mobility enhances the effectiveness of fiscal policy.

Floating exchange rates

With a freely floating exchange rate there can be **no overall balance of payments disequilibrium**. Foreign exchange dealers will constantly adjust the exchange rate to balance their books, so that the demand for and supply of any currency are equal.

This, therefore, **removes the balance of payments constraint on domestic policy** that exists under a fixed exchange rate.

In reality, however, things are not quite so simple. Even under a totally free-floating exchange rate, **some constraints on domestic policy may be imposed** by the effects of these exchange rate movements.

Purchasing-power parity theory

- **Purchasing-power parity theory –** The theory that the exchange rate will adjust so as to offset differences in countries' inflation rates, with the result that the same quantity of internationally traded goods can be bought at home as abroad with a given amount of the domestic currency.

For example, assume an initial exchange rate of £1 = $2. A UK product costing $2 in the USA will earn £1 for the UK exporter. If UK inflation now causes prices to double, the exchange rate will roughly halve. If it falls to £1 = $1, then the same product costing $2 in the USA will now earn £2 for the UK exporter, which in real terms is the same amount a before. This is the **purchasing-power parity theory**

The carry trade

The problem for current account deficit countries has often been made worse by the **carry trade**, especially in the period running up to the financial crisis.

This involves international investors **taking advantage of nominal interest rate differences between countries.**

Carry trade – Borrowing at low interest rates and then using it to **buy assets that earn higher rates.** In foreign exchange markets, the carry trade involves borrowing money in a currency of a country where interest rates are low and exchanging it for another currency where the country pays higher interest rates.

External shocks

Now let us assume that the rest of the world goes into recession (but with no change in international interest rates).

The demand for UK exports will fall. This will lead to a depreciation of the exchange rate. This in turn will boost the demand for UK exports and domestic substitutes for imports.

This boost to demand again will help to offset the dampening effect of the world recession.

Floating exchange rates thus help to insulate the domestic economy from world economic fluctuations.

Speculation

In the real world, shocks are occurring all the time. Also, there is considerable uncertainty over the future course of the exchange rate path.

What is more, things are made more complicated by the activities of speculators. As soon as **any exchange rate change is anticipated, speculators will buy or sell the currency**.

Speculators seeing the exchange rate falling can react in one of two ways. The first is called stabilising speculation; the second is called destabilising speculation.

Stabilising speculation

This occurs when speculators believe that any exchange rate change will soon be reversed.

In general, stabilising speculation occurs whenever speculators believe that the exchange rate has ‘overreacted’ to the current economic situation.

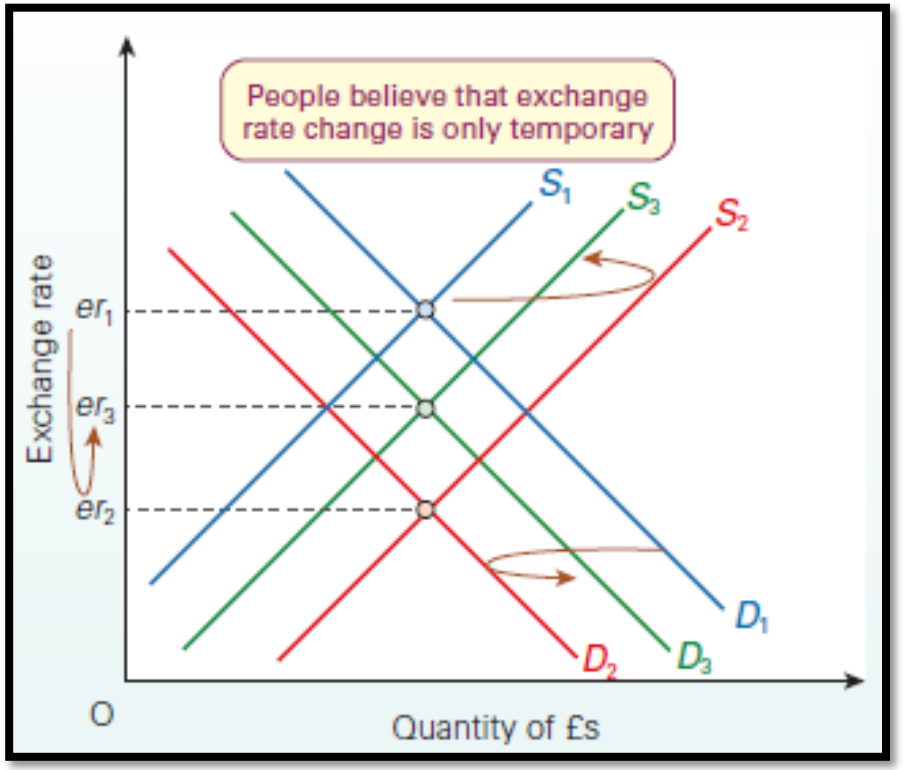
Stabilising speculation

Assume, for example, that there is a rise in UK inflation above international rates, but no change in interest rates.

This causes a fall in the demand for exports and hence a fall in the demand for sterling and a rise in imports and hence a rise in the supply of sterling.

If, speculators may anticipate that the central bank will raise interest rates or take some other measure to reduce inflation. They thus believe that the exchange rate will appreciate again. As a result, they buy more pounds and sell fewer. But this very act of speculation causes the appreciation they had anticipated.

This is illustrated in Figure below.

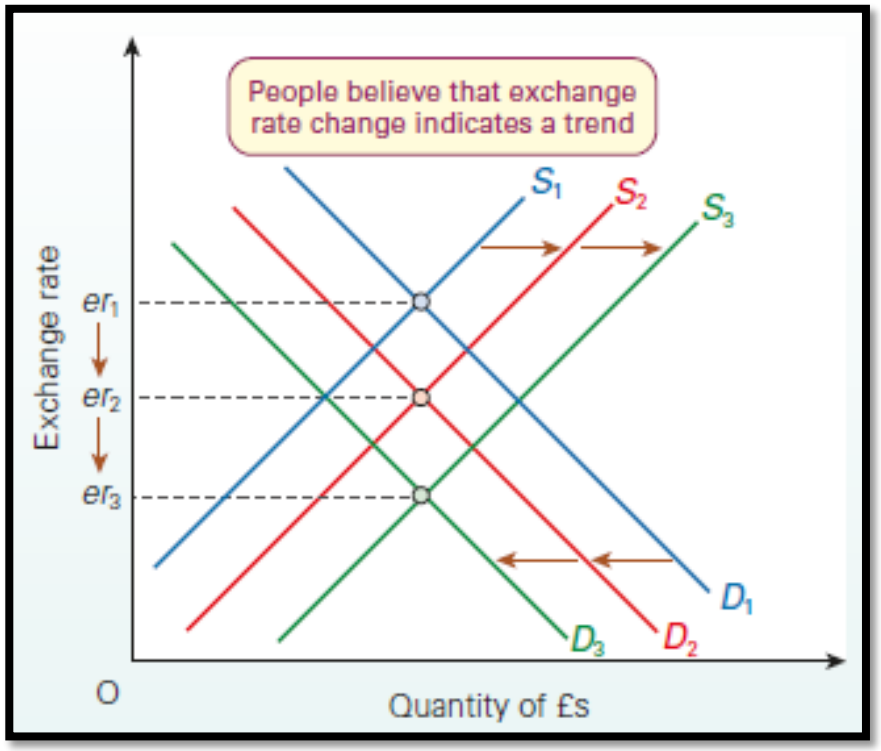


Destabilising speculation

This occurs when speculators believe that exchange rate movements will continue in the same direction.

In our example, speculators may believe that inflation will not be brought under control. They anticipate a continuing fall in the exchange rate and thus sell now before the exchange rate falls any further. This speculation causes the demand and supply curves to shift further, to D3 and S3, and causes the exchange rate to fall further, to er3.

Eventually, however, this destabilising speculation could cause **overshooting**, with the exchange rate falling well below the purchasing-power parity rate. At this point speculators, believing that the rate will rise again, will start buying pounds again. This causes the exchange rate to rise



Comparison

Obviously, governments prefer stabilising to destabilising speculation. Destabilising speculation can cause severe exchange rate fluctuations. The resulting uncertainty is very damaging to trade.

Whatever speculators anticipate will happen to the exchange rate, their actions will help to bring it about. Thus speculators as a whole will gain. This applies to both stabilising and destabilising speculation

It is very important, therefore, that governments create a climate of confidence. People must believe that the government can prevent economic crises from occurring.

Advantages of a free-floating exchange rate

- **Automatic correction.** The government simply lets the exchange rate move freely to the equilibrium. In this way **balance of payments disequilibria are automatically and instantaneously corrected** without the need for specific government policies – policies that under other systems can be mishandled.
- **No problem of international liquidity and reserves**. Since there is no central bank intervention in the foreign exchange market, there is **no need to hold reserves**. A currency is automatically convertible at the current market exchange rate**. International trade is thereby financed.**

Advantages of a free-floating exchange rate

- **Insulation from external economic events**. A country is not tied to a possibly unacceptably high world inflation rate, as it is under a fixed exchange rate. It **can choose its own inflation target**. It is also to some extent **protected against world economic fluctuations and shocks.**

- **Governments are free to choose their domestic policy**. Under a fixed rate, a government may have to deflate the economy even when there is high unemployment. Under a floating rate, the **government can choose whatever level of domestic demand** it considers appropriate, and **simply leave exchange rate movements to take care of any balance of payments effect.** This is a major advantage, especially when the effectiveness of deflation is reduced by downward wage and price rigidity, and when competitive deflation between countries may end up causing a world recession.

Disadvantages of a free-floating exchange rate

Despite the advantages, there are still some serious problems with free-floating exchange rates.

1. **Speculation**.

- **Short-run instability** can be lessened by stabilising speculation, thus making speculation advantageous. Their action therefore helps to lessen the short-run fall in the exchange rate.
- Nevertheless, in an uncertain world where there are few **restrictions on currency speculation,** where the fortunes and policies of governments can change rapidly, and where large amounts of short-term deposits are internationally 'footloose', **speculation can be highly destabilising** in the short run. Considerable **exchange rate overshooting can occur.**

Disadvantages of a free-floating exchange rate

2. Uncertainty for traders and investors.

- The uncertainty caused by currency fluctuations can discourage international trade and investment. To some extent, the problem can be overcome by using the **forward exchange market.**
- **Forward exchange market –** Where contracts are made today for the price at which a currency will be exchanged at some specified future date.
- This will not help long-term investment, however, where decisions are made based on anticipated costs and revenue flows for many years to come. The possibility of exchange rate appreciation may well discourage firms from investing abroad.

Disadvantages of a free-floating exchange rate

3. Lack of discipline on the domestic economy.

- Governments may pursue irresponsibly inflationary policies. Also, unions and firms may well drive up wages and prices, without the same fear of losing overseas markets or of the government imposing deflationary policies.
- The depreciation resulting from this inflation will itself fuel the inflation by raising the price of imports.

Conclusion

Neither fixed nor free-floating exchange rates are free from problems. For this reason, governments have sought a **compromise between the two**, the hope being that some intermediate system will gain the benefits of both, while avoiding most of their disadvantages.

One compromise was tried **after the Second World War. This was the adjustable peg**.

Another is the system that replaced the adjustable peg in the early 1970s and **continues for much of the world today. This is the system of managed floating.**

Practice Question

Suppose that the current exchange rate is $1.20 = £1. Suppose that over the next five years, UK prices increase by 20%, whereas US prices increase by 10%. According to the purchasing power parity theory, the exchange rate in five years' time should be:

A $1.00 = £1.00

B $1.10 = £1.00

C $1.20 = £1.00

D $1.32 = £1.00 [1½]

Practice Question

Option B. According to purchasing power parity, the *nominal* exchange rate should change so as to exactly offset the change in the relative prices (so keeping the *real* exchange rate constant).

So, the exchange rate in five years' time should be:

$$1.20 \times \frac{1.10}{1.20} = 1.10, \text{ ie } \$1.10 = £1.00$$

Exchange rate systems in practice

The adjustable peg system: 1945–73

After the collapse in 1931 of the fixed exchange rate system of the gold standard, the huge scale of the initial disequilibria caused wild swings in exchange rates.

Many countries resorted to protectionism, given the great uncertainties associated with free trade under fluctuating exchange rates.

In 1944, the allied countries met at Bretton Woods in the USA to hammer out a new exchange rate system: one that would avoid the chaos of the 1930s and encourage free trade, but that would avoid the rigidity of the gold standard.

The compromise they worked out was an adjustable peg system that lasted until 1971.

The Bretton Woods system

Bretton Woods system An adjustable peg system whereby currencies were pegged to the US dollar. The USA maintained convertibility of the dollar into gold at the rate of $35 to an ounce.

It was hoped that this would encourage countries to hold dollars as their major reserve currency. After all, if dollars were freely convertible into gold, they were as good as gold. All other countries pegged their exchange rate to the dollar.

To prevent temporary, short-term fluctuations in the exchange rate, central banks intervened on the foreign exchange markets using their foreign reserves. This enabled them to maintain the pegged rate within a 1 per cent band.

The Bretton Woods system

If the **disequilibrium became more serious**, governments were supposed to **pursue policies of deflation or reflation**. In the meantime, in the case of a deficit, the central bank might have insufficient reserves to maintain the exchange rate.

The International Monetary Fund was **set up to provide such liquidity**. All countries were required to deposit a quota of funds with the IMF, depending on the size of their trade. The IMF would then lend to countries in balance of payments deficit to enable them to maintain their exchange rate.

The more a country had to borrow from the IMF, the more the IMF would insist that it pursued appropriate deflationary policies to correct the disequilibrium.

If the **deficit became severe**, **countries could devalue**: the pegged rate could be adjusted (in consultation with the IMF).

Contribution of the Bretton Woods system to world growth

Advocates of an adjustable peg system argue that the Bretton Woods arrangement made a significant contribution to the long boom of the 1950s and 1960s.

- Since rates were fixed for a long period of time – perhaps many years – **uncertainty was reduced and trade was encouraged.**
- Pegged rates, plus the overseeing role of the IMF, prevented governments from pursuing irresponsible policies, and helped to bring about an **international harmonisation** of policies. They **kept world inflation in check**.
- If a deficit became severe, countries could devalue. This **prevented them being forced into a depression or into adopting protectionist policies**. The IMF ensured an orderly process of devaluation.

Problem with the Bretton Woods

However, there were two serious weaknesses with the system.

These became more and more apparent during the 1960s, and eventually led to the system's downfall.

The two problems were:

1. **Problems of adjustment to balance of payments disequilibria.**
2. **Problems of international liquidity and the collapse of the system**.

Problems of adjustment to balance of payments disequilibria

To avoid internal policy being governed by the balance of payments, and to avoid being forced into a depression, countries with a fundamental deficit were supposed to devalue. There were several difficulties here, however.

- Identifying whether a deficit was fundamental. Governments were frequently overoptimistic about the future balance of payments position.
- If devaluation did take place, it could be very disruptive to firms. A devaluation suddenly alters the costs and revenues of importers and exporters by a substantial amount.
- If a devaluation is felt to be imminent, it can cause great uncertainty and may make them reluctant to take on new trade commitments

Problems of international liquidity and the collapse of the system

With an adjustable peg system, there have to be sufficient stocks of internationally acceptable currencies or other liquid assets.

This 'international liquidity' is necessary both to finance trade and to provide enough reserves for central banks to support their currencies whenever there is a currency flow deficit.

Under the Bretton Woods system, there were three main sources of liquidity: gold, dollars and IMF quotas.

But since IMF quotas were only in existing currencies, they were not a source of *additional* liquidity.

Problems of international liquidity and the collapse of the system

The supply of gold was not expanding fast enough, so countries increasingly held dollars. After all, dollars earned interest. The willingness to hold dollars enabled the USA to run large balance of payments deficits. All the USA needed to do to pay for the deficits was to 'print' more dollars, which other countries were prepared to accept as reserves. US balance of payments deficits in the 1960s got steadily worse.

World liquidity thus expanded rapidly, fuelling world inflation.

Furthermore, the rapid growth in overseas dollar holdings meant that US gold reserves were increasingly inadequate to guarantee convertibility. Some countries, fearful that the USA might eventually be forced to suspend convertibility, chose to exchange dollars for gold. US gold reserves fell, creating a further imbalance and a deepening of the crises.

Despite various attempts to rescue the system, **with its overreliance on the dollar, it eventually collapsed**

Managed floating

The world has been on a floating exchange rate system since the breakdown of the Bretton Woods system in the early 1970s.

This allows adjustment to be made to the inevitable shifts in demand and supply, shifts that got more extreme in the early 1970s with a quadrupling of oil prices in 1973–4 and rapid changes in world trading patterns. Domestic policy has been largely freed from balance of payments constraints.

At the same time, managed floating was claimed to allow adjustment to be more gentle, ideally avoiding wild swings in the exchange rate aggravated by speculation.

Some minor currencies remain pegged (but adjustable) to a major currency such as the dollar, but float along with it against other currencies. Other currencies are pegged to each other, but jointly float against the rest of the world.

Managed floating

Some countries allow their currencies to float freely. Most countries, however, from time to time have attempted to stabilise their exchange rate, and have thus been operating a system of 'managed flexibility'.

If the country decides to adopt a managed floating system, how could the central bank prevent the exchange rate from falling? There are two main methods:

Using reserves or foreign loans to purchase domestic currency on the foreign exchange market.

Raising interest rates to attract short-term financial inflows.

Problems with managed floating since 1972

Predicting the long-term equilibrium exchange rate –

Differing inflation rates between countries will require exchange rate adjustments to maintain purchasing-power parity. It is not correct, however, for governments to assume that this will be the only cause of shifts in the long-term equilibrium exchange rate.

It is therefore **very difficult for the government to predict what the long-term equilibrium will be**, and what proportion of any exchange rate movement is therefore due to long-term and what proportion merely to short-term phenomena.

Problems with managed floating since 1972

The growth in speculative financial flows –

Over the years, the scale of speculative flows has continued to increase. Foreign exchange market data from the Bank for International Settlements show that in 2016 some $5 trillion was passing across the international exchanges every day.

Reserves and access to foreign loans are simply inadequate to prevent concerted speculative selling.

To manage the exchange rate, therefore, central banks would have to rely much more on using interest rates.

Problems with managed floating since 1972

Conflicts with internal policy

Using interest rates to support the exchange rate has become more and more unpopular as countries have preferred to use interest rates to keep inflation at or below a target level.

As a result of these problems, countries have increasingly opted for a system of freely floating exchange rates.

The volatility of exchange rates

Exchange rates have become **extremely volatile**. There are a number of **reasons for this volatility**:

- **Inflation or money supply targets.** Central banks may have to make considerable changes to interest rates in order to keep to their targets. These in turn cause exchange rate fluctuations.
- The **growth in information technology.** The simple use of a computer can transfer capital and finance internationally in a matter of seconds.
- The **growing speculative activities** of banks and other financial institutions.
- The **preference for liquidity**. With the danger of currency fluctuations, companies prefer to keep their financial capital as liquid as possible. They do not want to be locked into assets denominated in a declining currency.

The volatility of exchange rates

- A huge **growth in international financial markets**. This has encouraged the international transfer of money and capital.
- The **abolition of exchange controls** in most industrialised countries.
- The **growing speculative activities of trading companies**. Many large companies have a team of dealers to help manage their liquid assets: to switch them from currency to currency in order to take advantage of market movements.
- The growing belief that rumour and 'jumping on the bandwagon' are more important determinants of currency buying or selling than cool long-term appraisal. If people *believe* that **speculation is likely to be destabilising**, their **actions will ensure that it is.** Many have developed a '**speculative mentality**'.
- The growing **belief that governments are powerless to prevent currency movements**. As short-term capital (or 'hot money') grows relative to official reserves, it is **increasingly difficult for central banks to stabilise currencies through exchange market intervention**